

Evaluation, Measurement, and Verification Report for Virginia Electric and Power Company (Dominion Energy)

Case No. PUR-2018-00168 (Virginia)
Docket No. E-22 Sub 577 (North Carolina)
VOLUME 3 OF 4
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Appendix D. Program to Date Net Energy Savings Tables for Virginia and North Carolina Programs 2010-2019

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

PROGRAM: Residential Income and Age Qualifying Home Improvement Program
DSM Phase IV Program
Type: Energy Efficiency
Program Measure Life: 14.0 years (2015-2017); 15.0 years (after 2018)

Table 1		Participation												
Month	Year	VA					NC					System		
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP		
January	2015	0		0		0				0		0		0
February	2015	0		0		0				0		0		0
March	2015	0		0		0				0		0		0
April	2015	0		0		0				0		0		0
May	2015	0		0		0				0		0		0
June	2015	0		0		0				0		0		0
July	2015	0		0		0				0		0		0
August	2015	0		0		0				0		0		0
September	2015	0		0		0				0		0		0
October	2015	44		44		44				44		44		44
November	2015	712		756		756				756		756		756
December	2015	767		1,523		1,523				1,523		1,523		1,523
January	2016	114		1,637		1,637	0			1,637		1,637		1,637
February	2016	224		1,861		1,861	0			1,861		1,861		1,861
March	2016	295		2,156		2,156	0			2,156		2,156		2,156
April	2016	544		2,700		2,700	0			2,700		2,700		2,700
May	2016	319		3,019		3,019	0			3,019		3,019		3,019
June	2016	623		3,642		3,642	0			3,642		3,642		3,642
July	2016	638		4,280		4,280	20		20	4,300		4,300		4,300
August	2016	1,891		6,171		6,171	12		32	6,203		6,203		6,203
September	2016	769		6,940		6,940	9		41	6,981		6,981		6,981
October	2016	904		7,844		7,844	25		66	7,910		7,910		7,910
November	2016	1,566		9,410		9,410	37		103	9,513		9,513		9,513
December	2016	516		9,926		9,926	54		157	10,083		10,083		10,083
January	2017	428		10,354		10,354	42		199	10,553		10,553		10,553
February	2017	202		10,556		10,556	16		215	10,771		10,771		10,771
March	2017	737		11,293		11,293	12		227	11,520		11,520		11,520
April	2017	507		11,800		11,800	13		240	12,040		12,040		12,040
May	2017	617		12,417		12,417	6		246	12,663		12,663		12,663
June	2017	585		13,002		13,002	4		250	13,252		13,252		13,252
July	2017	443		13,445		13,445	2		252	13,697		13,697		13,697
August	2017	252		13,697		13,697	4		256	13,953		13,953		13,953
September	2017	101		13,798		13,798	2		258	14,056		14,056		14,056
October	2017	513		14,311		14,311	0		258	14,569		14,569		14,569
November	2017	822		15,133		15,133	7		265	15,398		15,398		15,398
December	2017	763		15,896		15,896	22		287	16,183		16,183		16,183
January	2018	2		15,898		15,898	1		288	16,186		16,186		16,186
February	2018	0		15,898		15,898	0		288	16,186		16,186		16,186
March	2018	0		15,898		15,898	0		288	16,186		16,186		16,186
April	2018	0		15,898		15,898	0		288	16,186		16,186		16,186
May	2018	0		15,898		15,898	0		288	16,186		16,186		16,186
June	2018	0		15,898		15,898	0		288	16,186		16,186		16,186
July	2018	0		15,898		15,898	0		288	16,186		16,186		16,186
August	2018	0		15,898		15,898	0		288	16,186		16,186		16,186
September	2018	75		15,973		15,973	0		288	16,261		16,261		16,261
October	2018	100		16,073		16,073	0		288	16,361		16,361		16,361
November	2018	387		16,460		16,460	0		288	16,748		16,748		16,748
December	2018	577		17,037		17,037	0		288	17,325		17,325		17,325
January	2019	76		17,113		17,113	0		288	17,401		17,401		17,401
February	2019	16		17,129		17,129	0		288	17,417		17,417		17,417
March	2019	16		17,145		17,145	0		288	17,433		17,433		17,433
April	2019	615		17,760		17,760	6		294	18,054		18,054		18,054
May	2019	219		17,979		17,979	0		294	18,273		18,273		18,273
June	2019	734		18,713		18,713	25		319	19,032		19,032		19,032
July	2019	293		19,006		19,006	77		396	19,402		19,402		19,402
August	2019	435		19,441		19,441	4		400	19,841		19,841		19,841
September	2019	564		20,005		20,005	20		420	20,425		20,425		20,425
October	2019	869		20,874		20,874	0		420	21,294		21,294		21,294
November	2019	1,036		21,910		21,910	0		420	22,330		22,330		22,330
December	2019	1,024		22,934		22,934	0		420	23,354		23,354		23,354

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Energy Savings												
Month	Year	Net kWh										System Cum for IRP		
		VA					NC							
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
January	2015	0		0		0								
February	2015	0		0		0								
March	2015	0		0		0				0			0	0
April	2015	0		0		0				0			0	0
May	2015	0		0		0				0			0	0
June	2015	0		0		0				0			0	0
July	2015	0		0		0				0			0	0
August	2015	0		0		0				0			0	0
September	2015	0		0		0				0			0	0
October	2015	1,825		1,825		1,825				0			0	1,825
November	2015	43,106		44,931		44,931				0			0	44,931
December	2015	20,684		65,615		65,615				0			0	65,615
January	2016	3,631		69,246		69,246	0			0			0	69,246
February	2016	5,519		74,765		74,765	0			0			0	74,765
March	2016	11,453		86,218		86,218	0			0			0	86,218
April	2016	15,292		101,510		101,510	0			0			0	101,510
May	2016	7,940		109,450		109,450	0			0			0	109,450
June	2016	17,718		127,168		127,168	0			0			0	127,168
July	2016	19,386		146,554		146,554	779			779	779		779	147,333
August	2016	50,978		197,532		197,532	498			1,277	1,277		1,277	198,809
September	2016	24,586		222,118		222,118	435			1,712	1,712		1,712	223,830
October	2016	22,140		244,258		244,258	998			2,710	2,710		2,710	246,969
November	2016	45,168		289,427		289,427	2,372			5,082	5,082		5,082	294,509
December	2016	14,555		303,982		303,982	2,010			7,092	7,092		7,092	311,073
January	2017	14,682		318,663		318,663	2,738			9,829	9,829		9,829	328,493
February	2017	3,927		322,590		322,590	696			10,526	10,526		10,526	333,116
March	2017	31,043		353,633		353,633	735			11,260	11,260		11,260	364,893
April	2017	14,799		368,432		368,432	475			11,735	11,735		11,735	380,167
May	2017	20,750		389,182		389,182	288			12,023	12,023		12,023	401,205
June	2017	14,720		403,902		403,902	180			12,203	12,203		12,203	416,105
July	2017	9,294		413,196		413,196	121			12,324	12,324		12,324	425,520
August	2017	8,028		421,225		421,225	365			12,689	12,689		12,689	433,914
September	2017	2,272		423,496		423,496	354			13,043	13,043		13,043	436,540
October	2017	12,427		435,924		435,924	0			13,043	13,043		13,043	448,967
November	2017	16,075		451,999		451,999	291			13,334	13,334		13,334	465,333
December	2017	14,098		466,097		466,097	1,077			14,412	14,412		14,412	480,509
January	2018	58		466,156		466,156	48			14,460	14,460		14,460	480,615
February	2018	0		466,156		466,156	0			14,460	14,460		14,460	480,615
March	2018	0		466,156		466,156	0			14,460	14,460		14,460	480,615
April	2018	0		466,156		466,156	0			14,460	14,460		14,460	480,615
May	2018	0		466,156		466,156	0			14,460	14,460		14,460	480,615
June	2018	0		466,156		466,156	0			14,460	14,460		14,460	480,615
July	2018	0		466,156		466,156	0			14,460	14,460		14,460	480,615
August	2018	0		466,156		466,156	0			14,460	14,460		14,460	480,615
September	2018	1,718		467,874		467,874	0			14,460	14,460		14,460	482,334
October	2018	3,662		471,536		471,536	0			14,460	14,460		14,460	485,996
November	2018	14,789		486,325		486,325	0			14,460	14,460		14,460	500,785
December	2018	9,624		495,949		495,949	0			14,460	14,460		14,460	510,409
January	2019	1,555		497,504		497,504	0			14,460	14,460		14,460	511,964
February	2019	236		497,740		497,740	0			14,460	14,460		14,460	512,200
March	2019	329		498,070		498,070	0			14,460	14,460		14,460	512,529
April	2019	8,205		506,274		506,274	174			14,634	14,634		14,634	520,908
May	2019	3,918		510,192		510,192	0			14,634	14,634		14,634	524,826
June	2019	11,954		522,146		522,146	460			15,094	15,094		15,094	537,240
July	2019	4,343		526,489		526,489	2,878			17,972	2,878		17,972	544,461
August	2019	8,539		535,029		535,029	107			18,079	2,985		18,079	553,108
September	2019	8,565		543,593		543,593	706			18,785	3,691		18,785	562,378
October	2019	16,215		559,808		559,808	0			18,785	3,691		18,785	578,593
November	2019	15,654		575,462		575,462	0			18,785	3,691		18,785	594,247
December	2019	17,407		592,869		592,869	0			18,785	3,691		18,785	611,654

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2015	0		0		0							-	-	-	-	-	-
February	2015	0		0		0							-	-	-	-	-	-
March	2015	0		0		0		0		0	0	0	-	-	-	-	-	-
April	2015	0		0		0		0		0	0	0	-	-	-	-	-	-
May	2015	0		0		0		0		0	0	0	-	-	-	-	-	-
June	2015	0		0		0		0		0	0	0	-	-	-	-	-	-
July	2015	0		0		0		0		0	0	0	-	-	-	-	-	-
August	2015	0		0		0		0		0	0	0	-	-	-	-	-	-
September	2015	0		0		0		0		0	0	0	-	-	-	-	-	-
October	2015	2		2		2		0		0	2	2	41	-	41	0.05	-	0.05
November	2015	36		38		38		0		0	38	38	59	-	59	0.05	-	0.05
December	2015	26		64		64		0		0	64	64	43	-	43	0.04	-	0.04
January	2016	4		68		68	0			0	68	68	42	-	42	0.04	-	0.04
February	2016	9		78		78	0			0	78	78	40	-	40	0.04	-	0.04
March	2016	14		92		92	0			0	92	92	40	-	40	0.04	-	0.04
April	2016	20		112		112	0			0	112	112	38	-	38	0.04	-	0.04
May	2016	10		122		122	0			0	122	122	36	-	36	0.04	-	0.04
June	2016	23		145		145	0			0	145	145	35	-	35	0.04	-	0.04
July	2016	24		169		169	1		1	1	170	170	34	39	34	0.04	0.05	0.04
August	2016	69		239		239	1		2	2	240	240	32	40	32	0.04	0.05	0.04
September	2016	28		267		267	1		2	2	269	269	32	42	32	0.04	0.05	0.04
October	2016	31		297		297	1		3	3	301	301	31	41	31	0.04	0.05	0.04
November	2016	67		365		365	3		6	6	371	371	31	49	31	0.04	0.06	0.04
December	2016	18		383		383	2		8	8	391	391	31	45	31	0.04	0.05	0.04
January	2017	15		398		398	3		11	11	409	409	31	49	31	0.04	0.06	0.04
February	2017	6		404		404	1		12	12	415	415	31	49	31	0.04	0.06	0.04
March	2017	29		433		433	1		13	13	446	446	31	50	32	0.04	0.06	0.04
April	2017	17		450		450	1		13	13	463	463	31	49	32	0.04	0.06	0.04
May	2017	23		473		473	0		14	14	486	486	31	49	32	0.04	0.06	0.04
June	2017	17		490		490	0		14	14	504	504	31	49	31	0.04	0.06	0.04
July	2017	12		502		502	0		14	14	516	516	31	49	31	0.04	0.06	0.04
August	2017	7		509		509	0		14	14	524	524	31	50	31	0.04	0.06	0.04
September	2017	3		512		512	0		14	14	527	527	31	51	31	0.04	0.06	0.04
October	2017	13		526		526	0		14	14	540	540	30	51	31	0.04	0.06	0.04
November	2017	21		547		547	0		15	15	562	562	30	50	30	0.04	0.06	0.04
December	2017	18		565		565	1		16	16	581	581	29	50	30	0.04	0.06	0.04
January	2018	0		565		565	0		16	16	581	581	29	50	30	0.04	0.05	0.04
February	2018	0		565		565	0		16	16	581	581	29	50	30	0.04	0.05	0.04
March	2018	0		565		565	0		16	16	581	581	29	50	30	0.04	0.05	0.04
April	2018	0		565		565	0		16	16	581	581	29	50	30	0.04	0.05	0.04
May	2018	0		565		565	0		16	16	581	581	29	50	30	0.04	0.05	0.04
June	2018	0		565		565	0		16	16	581	581	29	50	30	0.04	0.05	0.04
July	2018	0		565		565	0		16	16	581	581	29	50	30	0.04	0.05	0.04
August	2018	0		565		565	0		16	16	581	581	29	50	30	0.04	0.05	0.04
September	2018	2		567		567	0		16	16	583	583	29	50	30	0.04	0.05	0.04
October	2018	3		569		569	0		16	16	585	585	29	50	30	0.04	0.05	0.04
November	2018	15		584		584	0		16	16	600	600	30	50	30	0.04	0.05	0.04
December	2018	9		593		593	0		16	16	609	609	29	50	29	0.03	0.05	0.04
January	2019	2		595		595	0		16	16	611	611	29	50	29	0.03	0.05	0.04
February	2019	0		596		596	0		16	16	611	611	29	50	29	0.03	0.05	0.04
March	2019	1		596		596	0		16	16	612	612	29	50	29	0.03	0.05	0.04
April	2019	21		617		617	1		17	17	634	634	29	50	29	0.03	0.06	0.04
May	2019	8		625		625	0		17	17	641	641	28	50	29	0.03	0.06	0.04
June	2019	17		641		641	1		18	18	659	659	28	47	28	0.03	0.06	0.03
July	2019	6		648		648	10		28	10	676	676	28	45	28	0.03	0.07	0.03
August	2019	21		668		668	0		28	10	697	697	28	45	28	0.03	0.07	0.04
September	2019	14		683		683	2		31	13	714	714	27	45	28	0.03	0.07	0.03
October	2019	28		711		711	0		31	13	742	742	27	45	27	0.03	0.07	0.03
November	2019	26		737		737	0		31	13	768	768	26	45	27	0.03	0.07	0.03
December	2019	39		776		776	0		31	13	807	807	26	45	26	0.03	0.07	0.03

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Participation										
Month	Year	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2020			22,934		22,934			420		101	23,354
February	2020			22,934		22,934			420		101	23,354
March	2020			22,934		22,934			420		101	23,354
April	2020			22,934		22,934			420		101	23,354
May	2020			22,934		22,934			420		101	23,354
June	2020			22,934		22,934			420		101	23,354
July	2020			22,934		22,934			420		101	23,354
August	2020			22,934		22,934			420		101	23,354
September	2020			22,934		22,934			420		101	23,354
October	2020			22,934		22,934			420		101	23,354
November	2020			22,934		22,934			420		101	23,354
December	2020			22,934		22,934			420		101	23,354
January	2021			22,934		22,934			420		101	23,354
February	2021			22,934		22,934			420		101	23,354
March	2021			22,934		22,934			420		101	23,354
April	2021			22,934		22,934			420		101	23,354
May	2021			22,934		22,934			420		101	23,354
June	2021			22,934		22,934			420		101	23,354
July	2021			22,934		22,934			420		101	23,354
August	2021			22,934		22,934			420		101	23,354
September	2021			22,934		22,934			420		101	23,354
October	2021			22,934		22,934			420		101	23,354
November	2021			22,934		22,934			420		101	23,354
December	2021			22,934		22,934			420		101	23,354
January	2022			22,934		22,934			420		101	23,354
February	2022			22,934		22,934			420		101	23,354
March	2022			22,934		22,934			420		101	23,354
April	2022			22,934		22,934			420		101	23,354
May	2022			22,934		22,934			420		101	23,354
June	2022			22,934		22,934			420		101	23,354
July	2022			22,934		22,934			420		101	23,354
August	2022			22,934		22,934			420		101	23,354
September	2022			22,934		22,934			420		101	23,354
October	2022			22,934		22,934			420		101	23,354
November	2022			22,934		22,934			420		101	23,354
December	2022			22,934		22,934			420		101	23,354
January	2023			22,934		22,934			420		101	23,354
February	2023			22,934		22,934			420		101	23,354
March	2023			22,934		22,934			420		101	23,354
April	2023			22,934		22,934			420		101	23,354
May	2023			22,934		22,934			420		101	23,354
June	2023			22,934		22,934			420		101	23,354
July	2023			22,934		22,934			420		101	23,354
August	2023			22,934		22,934			420		101	23,354
September	2023			22,934		22,934			420		101	23,354
October	2023			22,934		22,934			420		101	23,354
November	2023			22,934		22,934			420		101	23,354
December	2023			22,934		22,934			420		101	23,354
January	2024			22,934		22,934			420		101	23,354
February	2024			22,934		22,934			420		101	23,354
March	2024			22,934		22,934			420		101	23,354
April	2024			22,934		22,934			420		101	23,354
May	2024			22,934		22,934			420		101	23,354
June	2024			22,934		22,934			420		101	23,354
July	2024			22,934		22,934			420		101	23,354
August	2024			22,934		22,934			420		101	23,354
September	2024			22,934		22,934			420		101	23,354
October	2024			22,934		22,934			420		101	23,354
November	2024			22,934		22,934			420		101	23,354
December	2024			22,934		22,934			420		101	23,354

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Energy Savings										
Month	Year	Net kWh					System					
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
VA Monthly New	VA Monthly Retired	NC Monthly New	NC Monthly Retired									
January	2020			592,869		592,869			18,785		3,691	611,654
February	2020			592,869		592,869			18,785		3,691	611,654
March	2020			592,869		592,869			18,785		3,691	611,654
April	2020			592,869		592,869			18,785		3,691	611,654
May	2020			592,869		592,869			18,785		3,691	611,654
June	2020			592,869		592,869			18,785		3,691	611,654
July	2020			592,869		592,869			18,785		3,691	611,654
August	2020			592,869		592,869			18,785		3,691	611,654
September	2020			592,869		592,869			18,785		3,691	611,654
October	2020			592,869		592,869			18,785		3,691	611,654
November	2020			592,869		592,869			18,785		3,691	611,654
December	2020			592,869		592,869			18,785		3,691	611,654
January	2021			592,869		592,869			18,785		3,691	611,654
February	2021			592,869		592,869			18,785		3,691	611,654
March	2021			592,869		592,869			18,785		3,691	611,654
April	2021			592,869		592,869			18,785		3,691	611,654
May	2021			592,869		592,869			18,785		3,691	611,654
June	2021			592,869		592,869			18,785		3,691	611,654
July	2021			592,869		592,869			18,785		3,691	611,654
August	2021			592,869		592,869			18,785		3,691	611,654
September	2021			592,869		592,869			18,785		3,691	611,654
October	2021			592,869		592,869			18,785		3,691	611,654
November	2021			592,869		592,869			18,785		3,691	611,654
December	2021			592,869		592,869			18,785		3,691	611,654
January	2022	0		592,869		592,869	0		18,785		3,691	611,654
February	2022	0		592,869		592,869	0		18,785		3,691	611,654
March	2022	0		592,869		592,869	0		18,785		3,691	611,654
April	2022	0		592,869		592,869	0		18,785		3,691	611,654
May	2022	0		592,869		592,869	0		18,785		3,691	611,654
June	2022	0		592,869		592,869	0		18,785		3,691	611,654
July	2022	0		592,869		592,869	0		18,785		3,691	611,654
August	2022	0		592,869		592,869	0		18,785		3,691	611,654
September	2022	0		592,869		592,869	0		18,785		3,691	611,654
October	2022	0		592,869		592,869	0		18,785		3,691	611,654
November	2022	0		592,869		592,869	0		18,785		3,691	611,654
December	2022	0		592,869		592,869	0		18,785		3,691	611,654
January	2023	0		592,869		592,869	0		18,785		3,691	611,654
February	2023	0		592,869		592,869	0		18,785		3,691	611,654
March	2023	0		592,869		592,869	0		18,785		3,691	611,654
April	2023	0		592,869		592,869	0		18,785		3,691	611,654
May	2023	0		592,869		592,869	0		18,785		3,691	611,654
June	2023	0		592,869		592,869	0		18,785		3,691	611,654
July	2023	0		592,869		592,869	0		18,785		3,691	611,654
August	2023	0		592,869		592,869	0		18,785		3,691	611,654
September	2023	0		592,869		592,869	0		18,785		3,691	611,654
October	2023	0		592,869		592,869	0		18,785		3,691	611,654
November	2023	0		592,869		592,869	0		18,785		3,691	611,654
December	2023	0		592,869		592,869	0		18,785		3,691	611,654
January	2024	0		592,869		592,869	0		18,785		3,691	611,654
February	2024	0		592,869		592,869	0		18,785		3,691	611,654
March	2024	0		592,869		592,869	0		18,785		3,691	611,654
April	2024	0		592,869		592,869	0		18,785		3,691	611,654
May	2024	0		592,869		592,869	0		18,785		3,691	611,654
June	2024	0		592,869		592,869	0		18,785		3,691	611,654
July	2024	0		592,869		592,869	0		18,785		3,691	611,654
August	2024	0		592,869		592,869	0		18,785		3,691	611,654
September	2024	0		592,869		592,869	0		18,785		3,691	611,654
October	2024	0		592,869		592,869	0		18,785		3,691	611,654
November	2024	0		592,869		592,869	0		18,785		3,691	611,654
December	2024	0		592,869		592,869	0		18,785		3,691	611,654

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW VA					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2020			776		776			31		13	807	26	45	26	0.03	0.07	0.03
January	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2021			776		776			31		13	807	26	45	26	0.03	0.07	0.03
January	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2022			776		776			31		13	807	26	45	26	0.03	0.07	0.03
January	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2023			776		776			31		13	807	26	45	26	0.03	0.07	0.03
January	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2024			776		776			31		13	807	26	45	26	0.03	0.07	0.03

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2025			22,934		22,934			420		101	23,354
February	2025			22,934		22,934			420		101	23,354
March	2025			22,934		22,934			420		101	23,354
April	2025			22,934		22,934			420		101	23,354
May	2025			22,934		22,934			420		101	23,354
June	2025			22,934		22,934			420		101	23,354
July	2025			22,934		22,934			420		101	23,354
August	2025			22,934		22,934			420		101	23,354
September	2025			22,934		22,934			420		101	23,354
October	2025			22,934		22,934			420		101	23,354
November	2025			22,934		22,934			420		101	23,354
December	2025			22,934		22,934			420		101	23,354
January	2026			22,934		22,934			420		101	23,354
February	2026			22,934		22,934			420		101	23,354
March	2026			22,934		22,934			420		101	23,354
April	2026			22,934		22,934			420		101	23,354
May	2026			22,934		22,934			420		101	23,354
June	2026			22,934		22,934			420		101	23,354
July	2026			22,934		22,934			420		101	23,354
August	2026			22,934		22,934			420		101	23,354
September	2026			22,934		22,934			420		101	23,354
October	2026			22,934		22,934			420		101	23,354
November	2026			22,934		22,934			420		101	23,354
December	2026			22,934		22,934			420		101	23,354
January	2027			22,934		22,934			420		101	23,354
February	2027			22,934		22,934			420		101	23,354
March	2027			22,934		22,934			420		101	23,354
April	2027			22,934		22,934			420		101	23,354
May	2027			22,934		22,934			420		101	23,354
June	2027			22,934		22,934			420		101	23,354
July	2027			22,934		22,934			420		101	23,354
August	2027			22,934		22,934			420		101	23,354
September	2027			22,934		22,934			420		101	23,354
October	2027			22,934		22,934			420		101	23,354
November	2027			22,934		22,934			420		101	23,354
December	2027			22,934		22,934			420		101	23,354
January	2028			22,934		22,934			420		101	23,354
February	2028			22,934		22,934			420		101	23,354
March	2028			22,934		22,934			420		101	23,354
April	2028			22,934		22,934			420		101	23,354
May	2028			22,934		22,934			420		101	23,354
June	2028			22,934		22,934			420		101	23,354
July	2028			22,934		22,934			420		101	23,354
August	2028			22,934		22,934			420		101	23,354
September	2028			22,934		22,934			420		101	23,354
October	2028			22,934		22,934			420		101	23,354
November	2028			22,934		22,934			420		101	23,354
December	2028			22,934		22,934			420		101	23,354
January	2029			22,934		22,934			420		101	23,354
February	2029			22,934		22,934			420		101	23,354
March	2029			22,934		22,934			420		101	23,354
April	2029			22,934		22,934			420		101	23,354
May	2029			22,934		22,934			420		101	23,354
June	2029			22,934		22,934			420		101	23,354
July	2029			22,934		22,934			420		101	23,354
August	2029			22,934		22,934			420		101	23,354
September	2029			22,934		22,934			420		101	23,354
October	2029		-44	22,890		22,890			420		101	23,310
November	2029		-712	22,178		22,178			420		101	22,598
December	2029		-767	21,411		21,411			420		101	21,831

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Energy Savings										
Month	Year	Net kWh				NC					System	
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
VA Monthly New	VA Monthly Retired	NC Monthly New	NC Monthly Retired									
January	2025	0		592,869		592,869	0		18,785		3,691	611,654
February	2025	0		592,869		592,869	0		18,785		3,691	611,654
March	2025	0		592,869		592,869	0		18,785		3,691	611,654
April	2025	0		592,869		592,869	0		18,785		3,691	611,654
May	2025	0		592,869		592,869	0		18,785		3,691	611,654
June	2025	0		592,869		592,869	0		18,785		3,691	611,654
July	2025	0		592,869		592,869	0		18,785		3,691	611,654
August	2025	0		592,869		592,869	0		18,785		3,691	611,654
September	2025	0		592,869		592,869	0		18,785		3,691	611,654
October	2025	0		592,869		592,869	0		18,785		3,691	611,654
November	2025	0		592,869		592,869	0		18,785		3,691	611,654
December	2025	0		592,869		592,869	0		18,785		3,691	611,654
January	2026	0		592,869		592,869	0		18,785		3,691	611,654
February	2026	0		592,869		592,869	0		18,785		3,691	611,654
March	2026	0		592,869		592,869	0		18,785		3,691	611,654
April	2026	0		592,869		592,869	0		18,785		3,691	611,654
May	2026	0		592,869		592,869	0		18,785		3,691	611,654
June	2026	0		592,869		592,869	0		18,785		3,691	611,654
July	2026	0		592,869		592,869	0		18,785		3,691	611,654
August	2026	0		592,869		592,869	0		18,785		3,691	611,654
September	2026	0		592,869		592,869	0		18,785		3,691	611,654
October	2026	0		592,869		592,869	0		18,785		3,691	611,654
November	2026	0		592,869		592,869	0		18,785		3,691	611,654
December	2026	0		592,869		592,869	0		18,785		3,691	611,654
January	2027	0		592,869		592,869	0		18,785		3,691	611,654
February	2027	0		592,869		592,869	0		18,785		3,691	611,654
March	2027	0		592,869		592,869	0		18,785		3,691	611,654
April	2027	0		592,869		592,869	0		18,785		3,691	611,654
May	2027	0		592,869		592,869	0		18,785		3,691	611,654
June	2027	0		592,869		592,869	0		18,785		3,691	611,654
July	2027	0		592,869		592,869	0		18,785		3,691	611,654
August	2027	0		592,869		592,869	0		18,785		3,691	611,654
September	2027	0		592,869		592,869	0		18,785		3,691	611,654
October	2027	0		592,869		592,869	0		18,785		3,691	611,654
November	2027	0		592,869		592,869	0		18,785		3,691	611,654
December	2027	0		592,869		592,869	0		18,785		3,691	611,654
January	2028	0		592,869		592,869	0		18,785		3,691	611,654
February	2028	0		592,869		592,869	0		18,785		3,691	611,654
March	2028	0		592,869		592,869	0		18,785		3,691	611,654
April	2028	0		592,869		592,869	0		18,785		3,691	611,654
May	2028	0		592,869		592,869	0		18,785		3,691	611,654
June	2028	0		592,869		592,869	0		18,785		3,691	611,654
July	2028	0		592,869		592,869	0		18,785		3,691	611,654
August	2028	0		592,869		592,869	0		18,785		3,691	611,654
September	2028	0		592,869		592,869	0		18,785		3,691	611,654
October	2028	0		592,869		592,869	0		18,785		3,691	611,654
November	2028	0		592,869		592,869	0		18,785		3,691	611,654
December	2028	0		592,869		592,869	0		18,785		3,691	611,654
January	2029	0		592,869		592,869	0		18,785		3,691	611,654
February	2029	0		592,869		592,869	0		18,785		3,691	611,654
March	2029	0		592,869		592,869	0		18,785		3,691	611,654
April	2029	0		592,869		592,869	0		18,785		3,691	611,654
May	2029	0		592,869		592,869	0		18,785		3,691	611,654
June	2029	0		592,869		592,869	0		18,785		3,691	611,654
July	2029	0		592,869		592,869	0		18,785		3,691	611,654
August	2029	0		592,869		592,869	0		18,785		3,691	611,654
September	2029	0		592,869		592,869	0		18,785		3,691	611,654
October	2029	0	-1,825	591,044		591,044	0		18,785		3,691	609,829
November	2029	0	-43,106	547,938		547,938	0		18,785		3,691	566,723
December	2029	0	-20,684	527,254		527,254	0		18,785		3,691	546,039

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2025			776		776			31		13	807	26	45	26	0.03	0.07	0.03
January	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2026			776		776			31		13	807	26	45	26	0.03	0.07	0.03
January	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2027			776		776			31		13	807	26	45	26	0.03	0.07	0.03
January	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
November	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
December	2028			776		776			31		13	807	26	45	26	0.03	0.07	0.03
January	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
February	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
March	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
April	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
May	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
June	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
July	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
August	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
September	2029			776		776			31		13	807	26	45	26	0.03	0.07	0.03
October	2029		-2	774		774			31		13	805	26	45	26	0.03	0.07	0.03
November	2029		-36	738		738			31		13	769	25	45	25	0.03	0.07	0.03
December	2029		-26	712		712			31		13	743	25	45	25	0.03	0.07	0.03

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2030		-114	21,297		21,297			420		101	21,717
February	2030		-224	21,073		21,073			420		101	21,493
March	2030		-295	20,778		20,778			420		101	21,198
April	2030		-544	20,234		20,234			420		101	20,654
May	2030		-319	19,915		19,915			420		101	20,335
June	2030		-623	19,292		19,292			420		101	19,712
July	2030		-638	18,654		18,654		-20	400		81	19,054
August	2030		-1,891	16,763		16,763		-12	388		69	17,151
September	2030		-769	15,994		15,994		-9	379		60	16,373
October	2030		-904	15,090		15,090		-25	354		35	15,444
November	2030		-1,566	13,524		13,524		-37	317		-2	13,841
December	2030		-516	13,008		13,008		-54	263		-56	13,271
January	2031		-428	12,580		12,580		-42	221		-98	12,801
February	2031		-202	12,378		12,378		-16	205		-114	12,583
March	2031		-737	11,641		11,641		-12	193		-126	11,834
April	2031		-507	11,134		11,134		-13	180		-139	11,314
May	2031		-617	10,517		10,517		-6	174		-145	10,691
June	2031		-585	9,932		9,932		-4	170		-149	10,102
July	2031		-443	9,489		9,489		-2	168		-151	9,657
August	2031		-252	9,237		9,237		-4	164		-155	9,401
September	2031		-101	9,136		9,136		-2	162		-157	9,298
October	2031		-513	8,623		8,623		0	162		-157	8,785
November	2031		-822	7,801		7,801		-7	155		-164	7,956
December	2031		-763	7,038		7,038		-22	133		-186	7,171
January	2032		0	7,038		7,038		0	133		-186	7,171
February	2032		0	7,038		7,038		0	133		-186	7,171
March	2032		0	7,038		7,038		0	133		-186	7,171
April	2032		0	7,038		7,038		0	133		-186	7,171
May	2032		0	7,038		7,038		0	133		-186	7,171
June	2032		0	7,038		7,038		0	133		-186	7,171
July	2032		0	7,038		7,038		0	133		-186	7,171
August	2032		0	7,038		7,038		0	133		-186	7,171
September	2032		0	7,038		7,038		0	133		-186	7,171
October	2032		0	7,038		7,038		0	133		-186	7,171
November	2032		0	7,038		7,038		0	133		-186	7,171
December	2032		0	7,038		7,038		0	133		-186	7,171
January	2033		-2	7,036		7,036		-1	132		-187	7,168
February	2033		0	7,036		7,036		0	132		-187	7,168
March	2033		0	7,036		7,036		0	132		-187	7,168
April	2033		0	7,036		7,036		0	132		-187	7,168
May	2033		0	7,036		7,036		0	132		-187	7,168
June	2033		0	7,036		7,036		0	132		-187	7,168
July	2033		0	7,036		7,036		0	132		-187	7,168
August	2033		0	7,036		7,036		0	132		-187	7,168
September	2033		-75	6,961		6,961		0	132		-187	7,093
October	2033		-100	6,861		6,861		0	132		-187	6,993
November	2033		-387	6,474		6,474		0	132		-187	6,606
December	2033		-577	5,897		5,897		0	132		-187	6,029
January	2034		-76	5,821		5,821		0	132		-187	5,953
February	2034		-16	5,805		5,805		0	132		-187	5,937
March	2034		-16	5,789		5,789		0	132		-187	5,921
April	2034		-615	5,174		5,174		-6	126		-193	5,300
May	2034		-219	4,955		4,955		0	126		-193	5,081
June	2034		-734	4,221		4,221		-25	101		-218	4,322
July	2034		-293	3,928		3,928		-77	24		-295	3,952
August	2034		-435	3,493		3,493		-4	20		-299	3,513
September	2034		-564	2,929		2,929		-20	0		-319	2,929
October	2034		-869	2,060		2,060		0	0		-319	2,060
November	2034		-1,036	1,024		1,024		0	0		-319	1,024
December	2034		-1,024	0		0		0	0		-319	0
January	2035		0	0		0		0	0		-319	0
February	2035		0	0		0		0	0		-319	0
March	2035		0	0		0		0	0		-319	0
April	2035		0	0		0		0	0		-319	0
May	2035		0	0		0		0	0		-319	0
June	2035		0	0		0		0	0		-319	0
July	2035		0	0		0		0	0		-319	0
August	2035		0	0		0		0	0		-319	0
September	2035		0	0		0		0	0		-319	0
October	2035		0	0		0		0	0		-319	0
November	2035		0	0		0		0	0		-319	0
December	2035		0	0		0		0	0		-319	0

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Energy Savings										
Month	Year	Net kWh					NC					System
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
VA Monthly New	VA Monthly Retired	NC Monthly New	NC Monthly Retired									
January	2030	0	-3,631	523,623		523,623	0		18,785		3,691	542,408
February	2030	0	-5,519	518,104		518,104	0		18,785		3,691	536,889
March	2030	0	-11,453	506,651		506,651	0		18,785		3,691	525,436
April	2030	0	-15,292	491,359		491,359	0		18,785		3,691	510,144
May	2030	0	-7,940	483,420		483,420	0		18,785		3,691	502,205
June	2030	0	-17,718	465,701		465,701	0		18,785		3,691	484,486
July	2030	0	-19,386	446,315		446,315	0	-779	18,006		2,913	464,321
August	2030	0	-50,978	395,337		395,337	0	-498	17,508		2,415	412,846
September	2030	0	-24,586	370,751		370,751	0	-435	17,073		1,979	387,824
October	2030	0	-22,140	348,611		348,611	0	-998	16,075		981	364,686
November	2030	0	-45,168	303,442		303,442	0	-2,372	13,703		-1,391	317,145
December	2030	0	-14,555	288,888		288,888	0	-2,010	11,693		-3,401	300,581
January	2031	0	-14,682	274,206		274,206	0	-2,738	8,956		-6,138	283,162
February	2031	0	-3,927	270,279		270,279	0	-696	8,259		-6,835	278,539
March	2031	0	-31,043	239,236		239,236	0	-735	7,525		-7,569	246,761
April	2031	0	-14,799	224,437		224,437	0	-475	7,050		-8,044	231,487
May	2031	0	-20,750	203,687		203,687	0	-288	6,762		-8,332	210,449
June	2031	0	-14,720	188,967		188,967	0	-180	6,582		-8,512	195,550
July	2031	0	-9,294	179,673		179,673	0	-121	6,461		-8,633	186,134
August	2031	0	-8,028	171,645		171,645	0	-365	6,096		-8,998	177,741
September	2031	0	-2,272	169,373		169,373	0	-354	5,742		-9,352	175,114
October	2031	0	-12,427	156,946		156,946	0	0	5,742		-9,352	162,687
November	2031	0	-16,075	140,870		140,870	0	-291	5,451		-9,643	146,321
December	2031	0	-14,098	126,772		126,772	0	-1,077	4,373		-10,720	131,145
January	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
February	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
March	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
April	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
May	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
June	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
July	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
August	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
September	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
October	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
November	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
December	2032	0	0	126,772		126,772	0	0	4,373		-10,720	131,145
January	2033		-58	126,714		126,714	0	-48	4,325		-10,769	131,039
February	2033		0	126,714		126,714	0	0	4,325		-10,769	131,039
March	2033		0	126,714		126,714	0	0	4,325		-10,769	131,039
April	2033		0	126,714		126,714	0	0	4,325		-10,769	131,039
May	2033		0	126,714		126,714	0	0	4,325		-10,769	131,039
June	2033		0	126,714		126,714	0	0	4,325		-10,769	131,039
July	2033		0	126,714		126,714	0	0	4,325		-10,769	131,039
August	2033		0	126,714		126,714	0	0	4,325		-10,769	131,039
September	2033		-1,718	124,995		124,995	0	0	4,325		-10,769	129,321
October	2033		-3,662	121,333		121,333	0	0	4,325		-10,769	125,658
November	2033		-14,789	106,544		106,544	0	0	4,325		-10,769	110,870
December	2033		-9,624	96,920		96,920	0	0	4,325		-10,769	101,246
January	2034		-1,555	95,365		95,365	0	0	4,325		-10,769	99,690
February	2034		-236	95,129		95,129	0	0	4,325		-10,769	99,454
March	2034		-329	94,800		94,800	0	0	4,325		-10,769	99,125
April	2034		-8,205	86,595		86,595	0	-174	4,151		-10,943	90,746
May	2034		-3,918	82,677		82,677	0	0	4,151		-10,943	86,828
June	2034		-11,954	70,723		70,723	0	-460	3,691		-11,403	74,414
July	2034		-4,343	66,380		66,380	0	-2,878	813		-14,281	67,193
August	2034		-8,539	57,841		57,841	0	-107	706		-14,388	58,546
September	2034		-8,565	49,276		49,276	0	-706	0		-15,094	49,276
October	2034		-16,215	33,061		33,061	0	0	0		-15,094	33,061
November	2034		-15,654	17,407		17,407	0	0	0		-15,094	17,407
December	2034		-17,407	0		0	0	0	0		-15,094	0
January	2035		0	0		0	0	0	0		-15,094	0
February	2035		0	0		0	0	0	0		-15,094	0
March	2035		0	0		0	0	0	0		-15,094	0
April	2035		0	0		0	0	0	0		-15,094	0
May	2035		0	0		0	0	0	0		-15,094	0
June	2035		0	0		0	0	0	0		-15,094	0
July	2035		0	0		0	0	0	0		-15,094	0
August	2035		0	0		0	0	0	0		-15,094	0
September	2035		0	0		0	0	0	0		-15,094	0
October	2035		0	0		0	0	0	0		-15,094	0
November	2035		0	0		0	0	0	0		-15,094	0
December	2035		0	0		0	0	0	0		-15,094	0

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2030		-4	708		708			31		13	739	25	45	25	0.03	0.07	0.03
February	2030		-9	699		699			31		13	730	25	45	25	0.03	0.07	0.03
March	2030		-14	684		684			31		13	715	24	45	25	0.03	0.07	0.03
April	2030		-20	665		665			31		13	696	24	45	25	0.03	0.07	0.03
May	2030		-10	654		654			31		13	685	24	45	25	0.03	0.07	0.03
June	2030		-23	631		631			31		13	662	24	45	25	0.03	0.07	0.03
July	2030		-24	607		607		-1	30		12	637	24	45	24	0.03	0.07	0.03
August	2030		-69	538		538		-1	29		11	567	24	45	24	0.03	0.08	0.03
September	2030		-28	510		510		-1	29		11	538	23	45	24	0.03	0.08	0.03
October	2030		-31	479		479		-1	27		9	506	23	45	24	0.03	0.08	0.03
November	2030		-67	412		412		-3	25		7	437	22	43	23	0.03	0.08	0.03
December	2030		-18	394		394		-2	22		4	416	22	44	23	0.03	0.09	0.03
January	2031		-15	379		379		-3	20		2	399	22	41	22	0.03	0.09	0.03
February	2031		-6	373		373		-1	19		1	392	22	40	22	0.03	0.09	0.03
March	2031		-29	343		343		-1	18		0	362	21	39	21	0.03	0.10	0.03
April	2031		-17	327		327		-1	18		0	344	20	39	20	0.03	0.10	0.03
May	2031		-23	304		304		0	17		-1	321	19	39	20	0.03	0.10	0.03
June	2031		-17	286		286		0	17		-1	303	19	39	19	0.03	0.10	0.03
July	2031		-12	274		274		0	17		-1	291	19	38	19	0.03	0.10	0.03
August	2031		-7	267		267		0	17		-1	284	19	37	19	0.03	0.10	0.03
September	2031		-3	264		264		0	17		-1	281	19	35	19	0.03	0.10	0.03
October	2031		-13	251		251		0	17		-1	267	18	35	19	0.03	0.10	0.03
November	2031		-21	229		229		0	16		-2	246	18	35	18	0.03	0.11	0.03
December	2031		-18	211		211		-1	15		-3	227	18	33	18	0.03	0.11	0.03
January	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
February	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
March	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
April	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
May	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
June	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
July	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
August	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
September	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
October	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
November	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
December	2032		0	211		211		0	15		-3	227	18	33	18	0.03	0.11	0.03
January	2033		0	211		211		0	15		-3	226	18	33	18	0.03	0.11	0.03
February	2033		0	211		211		0	15		-3	226	18	33	18	0.03	0.11	0.03
March	2033		0	211		211		0	15		-3	226	18	33	18	0.03	0.11	0.03
April	2033		0	211		211		0	15		-3	226	18	33	18	0.03	0.11	0.03
May	2033		0	211		211		0	15		-3	226	18	33	18	0.03	0.11	0.03
June	2033		0	211		211		0	15		-3	226	18	33	18	0.03	0.11	0.03
July	2033		0	211		211		0	15		-3	226	18	33	18	0.03	0.11	0.03
August	2033		0	211		211		0	15		-3	226	18	33	18	0.03	0.11	0.03
September	2033		-2	209		209		0	15		-3	225	18	33	18	0.03	0.11	0.03
October	2033		-3	207		207		0	15		-3	222	18	33	18	0.03	0.11	0.03
November	2033		-15	192		192		0	15		-3	208	16	33	17	0.03	0.11	0.03
December	2033		-9	183		183		0	15		-3	199	16	33	17	0.03	0.11	0.03
January	2034		-2	181		181		0	15		-3	196	16	33	17	0.03	0.11	0.03
February	2034		0	181		181		0	15		-3	196	16	33	17	0.03	0.11	0.03
March	2034		-1	180		180		0	15		-3	195	16	33	17	0.03	0.11	0.03
April	2034		-21	159		159		-1	14		-4	174	17	33	17	0.03	0.11	0.03
May	2034		-8	152		152		0	14		-4	166	17	33	17	0.03	0.11	0.03
June	2034		-17	135		135		-1	13		-5	148	17	37	17	0.03	0.13	0.03
July	2034		-6	129		129		-10	3		-15	131	17	34	17	0.03	0.12	0.03
August	2034		-21	108		108		0	2		-16	111	17	35	17	0.03	0.12	0.03
September	2034		-14	94		94		-2	0		-18	94	17	-	17	0.03	-	0.03
October	2034		-28	66		66		0	0		-18	66	16	-	16	0.03	-	0.03
November	2034		-26	39		39		0	0		-18	39	17	-	17	0.04	-	0.04
December	2034		-39	0		0		0	0		-18	0	-	-	-	-	-	-
January	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
February	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
March	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
April	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
May	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
June	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
July	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
August	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
September	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
October	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
November	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-
December	2035		0	0		0		0	0		-18	0	-	-	-	-	-	-

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 2. EM&V Data Incremental by Vintage Year

Year	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2015	1,523	1,523	-	-	1,523					
2016	8,403	8,403	157	157	8,560					
2017	5,970	5,970	130	130	6,100					
2018	1,141	1,141	1	1	1,142					
2019	5,897	5,897	132	101	6,029					
2020	-	-	-	-	-					
2021	-	-	-	-	-					
2022	-	-	-	-	-					
2023	-	-	-	-	-					
2024	-	-	-	-	-					
2025	-	-	-	-	-					
2026	-	-	-	-	-					
2027	-	-	-	-	-					
2028	-	-	-	-	-					
2029	-1,523	-1,523	-	-	-1,523					
2030	-8,403	-8,403	-157	-157	-8,560					
2031	-5,970	-5,970	-130	-130	-6,100					
2032	-	-	-	-	-					
2033	-1,141	-1,141	-1	-1	-1,142					
2034	-5,897	-5,897	-132	-132	-6,029					
2035	-	-	-	-	-					

Table 3. EM&V Data Annualized by Vintage Year

Year	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2015	1,523	1,523	-	-	1,523					
2016	8,403	8,403	157	157	8,560					
2017	5,970	5,970	130	130	6,100					
2018	1,141	1,141	1	1	1,142					
2019	5,897	5,897	132	101	6,029					
2020	-	-	-	-	-					
2021	-	-	-	-	-					
2022	-	-	-	-	-					
2023	-	-	-	-	-					
2024	-	-	-	-	-					
2025	-	-	-	-	-					
2026	-	-	-	-	-					
2027	-	-	-	-	-					
2028	-	-	-	-	-					
2029	-1,523	-1,523	-	-	-1,523					
2030	-8,403	-8,403	-157	-157	-8,560					
2031	-5,970	-5,970	-130	-130	-6,100					
2032	-	-	-	-	-					
2033	-1,141	-1,141	-1	-1	-1,142					
2034	-5,897	-5,897	-132	-132	-6,029					
2035	-	-	-	-	-					

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

Year	Program Participants									
	VA	NC PPI	System							
2015		-								
2016		157								
2017		287								
2018		288								
2019		420								
2020		420								
2021		420								

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 2. EM&V Data Incremental by Vintage Year

	Net Incremental Energy (kWh)									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2015	112,372	112,372	-	-	112,372					
2016	1,184,845	1,184,845	18,652	18,652	1,203,497					
2017	1,120,561	1,120,561	61,320	61,320	1,181,880					
2018	57,761	57,761	579	579	58,340					
2019	413,790	413,790	25,415	24,147	439,205					
2020	-	-	-	-	-					
2021	-	-	-	-	-					
2022	-	-	-	-	-					
2023	-	-	-	-	-					
2024	-	-	-	-	-					
2025	-	-	-	-	-					
2026	-	-	-	-	-					
2027	-	-	-	-	-					
2028	-	-	-	-	-					
2029	-112,372	-112,372	-	-	-112,372					
2030	-1,184,845	-1,184,845	-18,652	-18,652	-1,203,497					
2031	-1,120,561	-1,120,561	-61,320	-61,320	-1,181,880					
2032	-	-	-	-	-					
2033	-57,761	-57,761	-579	-579	-58,340					
2034	-413,790	-413,790	-25,415	-25,415	-439,205					
2035	-	-	-	-	-					

Table 3. EM&V Data Annualized by Vintage Year

	Net Annualized Energy (kWh)									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2015	787,384	787,384	-	-	787,384					
2016	2,860,394	2,860,394	85,103	85,103	2,945,497					
2017	1,945,390	1,945,390	87,835	87,835	2,033,225					
2018	358,220	358,220	579	579	358,799					
2019	1,163,044	1,163,044	51,903	44,295	1,214,947					
2020	-	-	-	-	-					
2021	-	-	-	-	-					
2022	-	-	-	-	-					
2023	-	-	-	-	-					
2024	-	-	-	-	-					
2025	-	-	-	-	-					
2026	-	-	-	-	-					
2027	-	-	-	-	-					
2028	-	-	-	-	-					
2029	-787,384	-787,384	-	-	-787,384					
2030	-2,860,394	-2,860,394	-85,103	-85,103	-2,945,497					
2031	-1,945,390	-1,945,390	-87,835	-87,835	-2,033,225					
2032	-	-	-	-	-					
2033	-358,220	-358,220	-579	-579	-358,799					
2034	-1,163,044	-1,163,044	-51,903	-51,903	-1,214,947					
2035	-	-	-	-	-					

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Net Energy (kWh) for PPI									
	VA	NC PPI	System							
2015	-	-	-							
2016	-	18,652	-							
2017	-	146,423	-							
2018	-	173,518	-							
2019	-	113,829	-							
2020	-	52,482	-							
2021	-	51,903	-							

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA	NC	System	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System		
2015				64	64	-	-	64	74	-	74	0.04	-	0.04		
2016				318	318	8	8	327	141	119	141	0.04	0.05	0.04		
2017				182	182	7	7	190	188	472	194	0.03	0.06	0.03		
2018				28	28	-	-	28	51	579	51	0.02	0.00	0.02		
2019				183	183	15	13	199	70	193	73	0.03	0.11	0.03		
2020				-	-	-	-	-	-	-	-	-	-	-		
2021				-	-	-	-	-	-	-	-	-	-	-		
2022				-	-	-	-	-	-	-	-	-	-	-		
2023				-	-	-	-	-	-	-	-	-	-	-		
2024				-	-	-	-	-	-	-	-	-	-	-		
2025				-	-	-	-	-	-	-	-	-	-	-		
2026				-	-	-	-	-	-	-	-	-	-	-		
2027				-	-	-	-	-	-	-	-	-	-	-		
2028				-	-	-	-	-	-	-	-	-	-	-		
2029				-64	-64	-	-	-64	74	-	74	0.04	-	0.04		
2030				-318	-318	-8	-8	-327	141	119	141	0.04	0.05	0.04		
2031				-182	-182	-7	-7	-190	188	472	194	0.03	0.06	0.03		
2032				-	-	-	-	-	-	-	-	-	-	-		
2033				-28	-28	-	-	-28	51	579	51	0.02	0.00	0.02		
2034				-183	-183	-15	-15	-199	70	193	73	0.03	0.11	0.03		
2035				-	-	-	-	-	-	-	-	-	-	-		

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA	NC	System	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System		
2015				64	64	-	-	64	517	-	517	0.04	-	0.04		
2016				318	318	8	8	327	340	542	344	0.04	0.05	0.04		
2017				182	182	7	7	190	326	676	333	0.03	0.06	0.03		
2018				28	28	-	-	28	314	579	314	0.02	0.00	0.02		
2019				183	183	15	13	199	197	393	202	0.03	0.11	0.03		
2020				-	-	-	-	-	-	-	-	-	-	-		
2021				-	-	-	-	-	-	-	-	-	-	-		
2022				-	-	-	-	-	-	-	-	-	-	-		
2023				-	-	-	-	-	-	-	-	-	-	-		
2024				-	-	-	-	-	-	-	-	-	-	-		
2025				-	-	-	-	-	-	-	-	-	-	-		
2026				-	-	-	-	-	-	-	-	-	-	-		
2027				-	-	-	-	-	-	-	-	-	-	-		
2028				-	-	-	-	-	-	-	-	-	-	-		
2029				-64	-64	-	-	-64	517	-	517	0.04	-	0.04		
2030				-318	-318	-8	-8	-327	340	542	344	0.04	0.05	0.04		
2031				-182	-182	-7	-7	-190	326	676	333	0.03	0.06	0.03		
2032				-	-	-	-	-	-	-	-	-	-	-		
2033				-28	-28	-	-	-28	314	579	314	0.02	0.00	0.02		
2034				-183	-183	-15	-15	-199	197	393	202	0.03	0.11	0.03		
2035				-	-	-	-	-	-	-	-	-	-	-		

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System		
2015																
2016						8								0.05		
2017						16								0.06		
2018						16								0.05		
2019						31								0.07		
2020						31								0.07		
2021						31								0.07		

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Year	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2015	1,523	1,523	-	-	1,523					
2016	9,926	9,926	157	157	10,083					
2017	15,896	15,896	287	287	16,183					
2018	17,037	17,037	288	288	17,325					
2019	22,934	22,934	420	101	23,354					
2020	22,934	22,934	420	101	23,354					
2021	22,934	22,934	420	101	23,354					
2022	22,934	22,934	420	101	23,354					
2023	22,934	22,934	420	101	23,354					
2024	22,934	22,934	420	101	23,354					
2025	22,934	22,934	420	101	23,354					
2026	22,934	22,934	420	101	23,354					
2027	22,934	22,934	420	101	23,354					
2028	22,934	22,934	420	101	23,354					
2029	21,411	21,411	420	101	21,831					
2030	13,008	13,008	263	-	13,271					
2031	7,038	7,038	133	-	7,171					
2032	7,038	7,038	133	-	7,171					
2033	5,897	5,897	132	-	6,029					
2034	-	-	-	-	-					
2035	-	-	-	-	-					

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

Year	Program Participants									
	VA Lifetime	NC Lifetime	System Lifetime							
2015	1,523	-	1,523							
2016	9,926	157	10,083							
2017	15,896	287	16,183							
2018	17,037	288	17,325							
2019	22,934	420	23,354							
2020	22,934	420	23,354							
2021	22,934	420	23,354							
2022	22,934	420	23,354							
2023	22,934	420	23,354							
2024	22,934	420	23,354							
2025	22,934	420	23,354							
2026	22,934	420	23,354							
2027	22,934	420	23,354							
2028	22,934	420	23,354							
2029	22,934	420	23,354							
2030	22,934	420	23,354							
2031	22,934	420	23,354							
2032	22,934	420	23,354							
2033	22,934	420	23,354							
2034	22,934	420	23,354							
2035	22,934	420	23,354							

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Year	Net Energy (kWh)									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2015	112,372	112,372	-	-	112,372					
2016	1,972,230	1,972,230	18,652	18,652	1,990,881					
2017	4,768,339	4,768,339	146,423	146,423	4,914,762					
2018	5,650,929	5,650,929	173,518	173,518	5,824,446					
2019	6,365,178	6,365,178	198,933	168,745	6,564,110					
2020	7,114,432	7,114,432	225,421	44,295	7,339,852					
2021	7,114,432	7,114,432	225,421	44,295	7,339,852					
2022	7,114,432	7,114,432	225,421	44,295	7,339,852					
2023	7,114,432	7,114,432	225,421	44,295	7,339,852					
2024	7,114,432	7,114,432	225,421	44,295	7,339,852					
2025	7,114,432	7,114,432	225,421	44,295	7,339,852					
2026	7,114,432	7,114,432	225,421	44,295	7,339,852					
2027	7,114,432	7,114,432	225,421	44,295	7,339,852					
2028	7,114,432	7,114,432	225,421	44,295	7,339,852					
2029	7,002,060	7,002,060	225,421	44,295	7,227,480					
2030	5,142,202	5,142,202	206,769	25,644	5,348,971					
2031	2,346,093	2,346,093	78,998	-	2,425,091					
2032	1,521,264	1,521,264	52,482	-	1,573,746					
2033	1,463,503	1,463,503	51,903	-	1,515,406					
2034	749,254	749,254	26,488	-	775,742					
2035	-	-	-	-	-					

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

Year	Net Energy (kWh)									
	VA Lifetime	NC Lifetime	System Lifetime							
2015	112,372	-	112,372							
2016	2,084,602	18,652	2,103,253							
2017	6,852,940	165,075	7,018,015							
2018	12,503,869	338,592	12,842,462							
2019	18,869,047	537,525	19,406,572							
2020	25,983,479	762,946	26,746,424							
2021	33,097,910	988,367	34,086,277							
2022	40,212,342	1,213,788	41,426,129							
2023	47,326,773	1,439,208	48,765,982							
2024	54,441,205	1,664,629	56,105,834							
2025	61,555,636	1,890,050	63,445,687							
2026	68,670,068	2,115,471	70,785,539							
2027	75,784,500	2,340,892	78,125,392							
2028	82,898,931	2,566,313	85,465,244							
2029	89,900,991	2,791,734	92,692,725							
2030	95,043,193	2,998,503	98,041,696							
2031	97,389,285	3,077,501	100,466,786							
2032	98,910,549	3,129,983	102,040,532							
2033	100,374,052	3,181,886	103,555,938							
2034	101,123,306	3,208,374	104,331,680							
2035	101,123,306	3,208,374	104,331,680							

Appendix D.1 Residential Income and Age Qualifying Home Improvement Program 2015-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Year	Net Peak Demand (kW)						System IRP			Net kWh/Participant			Net kW/Participant			
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System	VA	NC	System		
2015	64	64	-	-	64	74	-	74	74	-	74	0.04	-	0.04		
2016	383	383	8	8	391	199	119	197	199	119	197	0.04	0.05	0.04		
2017	565	565	16	16	581	300	510	304	300	510	304	0.04	0.06	0.04		
2018	593	593	16	16	609	332	602	336	332	602	336	0.03	0.05	0.04		
2019	776	776	31	31	807	278	474	281	278	474	281	0.03	0.07	0.03		
2020	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2021	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2022	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2023	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2024	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2025	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2026	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2027	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2028	776	776	31	31	807	310	537	314	310	537	314	0.03	0.07	0.03		
2029	712	712	31	31	743	327	537	331	327	537	331	0.03	0.07	0.03		
2030	394	394	22	22	416	395	786	403	395	786	403	0.03	0.09	0.03		
2031	211	211	15	15	227	333	594	338	333	594	338	0.03	0.11	0.03		
2032	211	211	15	15	227	216	395	219	216	395	219	0.03	0.11	0.03		
2033	183	183	15	15	199	248	393	251	248	393	251	0.03	0.11	0.03		
2034	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
2035	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)											Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
Year	Net Peak Demand (kW)						System Lifetime	Net kWh/Participant			Net kW/Participant					
	VA Lifetime	VA NLR	NC Lifetime	NC NLR	System Lifetime	VA		NC	System	VA	NC	System				
2015	64	64	-	-	64	74	74	-	74	0.04	-	0.04				
2016	383	383	8	8	391	210	119	209	391	210	119	209	0.04	0.05	0.04	
2017	565	565	16	16	581	431	575	434	581	431	575	434	0.04	0.06	0.04	
2018	593	593	16	16	609	734	1,176	741	609	734	1,176	741	0.03	0.05	0.04	
2019	776	776	31	31	807	823	1,280	831	807	823	1,280	831	0.03	0.07	0.03	
2020	776	776	31	31	807	1,133	1,817	1,145	807	1,133	1,817	1,145	0.03	0.07	0.03	
2021	776	776	31	31	807	1,443	2,353	1,460	807	1,443	2,353	1,460	0.03	0.07	0.03	
2022	776	776	31	31	807	1,753	2,890	1,774	807	1,753	2,890	1,774	0.03	0.07	0.03	
2023	776	776	31	31	807	2,064	3,427	2,088	807	2,064	3,427	2,088	0.03	0.07	0.03	
2024	776	776	31	31	807	2,374	3,963	2,402	807	2,374	3,963	2,402	0.03	0.07	0.03	
2025	776	776	31	31	807	2,684	4,500	2,717	807	2,684	4,500	2,717	0.03	0.07	0.03	
2026	776	776	31	31	807	2,994	5,037	3,031	807	2,994	5,037	3,031	0.03	0.07	0.03	
2027	776	776	31	31	807	3,304	5,574	3,345	807	3,304	5,574	3,345	0.03	0.07	0.03	
2028	776	776	31	31	807	3,615	6,110	3,660	807	3,615	6,110	3,660	0.03	0.07	0.03	
2029	776	776	31	31	807	3,920	6,647	3,969	807	3,920	6,647	3,969	0.03	0.07	0.03	
2030	776	776	31	31	807	4,144	7,139	4,198	807	4,144	7,139	4,198	0.03	0.07	0.03	
2031	776	776	31	31	807	4,247	7,327	4,302	807	4,247	7,327	4,302	0.03	0.07	0.03	
2032	776	776	31	31	807	4,313	7,452	4,369	807	4,313	7,452	4,369	0.03	0.07	0.03	
2033	776	776	31	31	807	4,377	7,576	4,434	807	4,377	7,576	4,434	0.03	0.07	0.03	
2034	776	776	31	31	807	4,409	7,639	4,467	807	4,409	7,639	4,467	0.03	0.07	0.03	
2035	776	776	31	31	807	4,409	7,639	4,467	807	4,409	7,639	4,467	0.03	0.07	0.03	

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

PROGRAM: Residential LED Program
DSM Phase VI Program
Type: Energy Efficiency
Program Measure Life: 20.0 years

Table 1		Participation										
Month	Year	VA Participants					NC					System
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP
December	2016											0
January	2017						0			0		0
February	2017						0			0		0
March	2017						0			0		0
April	2017						0			0		0
May	2017						0			0		0
June	2017						0			0		0
July	2017						0			0		0
August	2017						5,018			5,018		5,018
September	2017						14,683			19,701		19,701
October	2017						14,758			34,459		34,459
November	2017						19,836			54,295		54,295
December	2017						15,966			70,261		70,261
January	2018						12,482			82,743		82,743
February	2018						29,279			112,022		112,022
March	2018						13,614			125,636		125,636
April	2018						21,629			147,265		147,265
May	2018						11,552			158,817		158,817
June	2018						14,694			173,511		173,511
July	2018						20,050			193,561		193,561
August	2018						25,185			218,746		218,746
September	2018						32,534			251,280		251,280
October	2018						11,899			263,179		263,179
November	2018						42,003			305,182		305,182
December	2018						29,315			334,497		334,497
January	2019						0			334,497		334,497
February	2019						0			334,497		334,497
March	2019						0			334,497		334,497
April	2019						0			334,497		334,497
May	2019						0			334,497		334,497
June	2019						0			334,497		334,497
July	2019						0			334,497	0	334,497
August	2019						0			334,497	0	334,497
September	2019						0			334,497	0	334,497
October	2019						0			334,497	0	334,497
November	2019						0			334,497	0	334,497
December	2019						0			334,497	0	334,497
January	2020									334,497		334,497
February	2020									334,497		334,497
March	2020									334,497		334,497
April	2020									334,497		334,497
May	2020									334,497		334,497
June	2020									334,497		334,497
July	2020									334,497		334,497
August	2020									334,497		334,497
September	2020									334,497		334,497
October	2020									334,497		334,497
November	2020									334,497		334,497
December	2020									334,497		334,497
January	2021									334,497		334,497
February	2021									334,497		334,497
March	2021									334,497		334,497
April	2021									334,497		334,497
May	2021									334,497		334,497
June	2021									334,497		334,497
July	2021									334,497		334,497
August	2021									334,497		334,497
September	2021									334,497		334,497
October	2021									334,497		334,497
November	2021									334,497		334,497
December	2021									334,497		334,497

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Energy Savings																				
Month	Year	Net kWh										System Cum for IRP										
		VA					NC															
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)											
December	2016																					0
January	2017																					0
February	2017																					0
March	2017																					0
April	2017																					0
May	2017																					0
June	2017																					0
July	2017																					0
August	2017																					0
September	2017																					0
October	2017																					0
November	2017																					0
December	2017																					0
January	2018																					0
February	2018																					0
March	2018																					0
April	2018																					0
May	2018																					0
June	2018																					0
July	2018																					0
August	2018																					0
September	2018																					0
October	2018																					0
November	2018																					0
December	2018																					0
January	2019																					0
February	2019																					0
March	2019																					0
April	2019																					0
May	2019																					0
June	2019																					0
July	2019																					0
August	2019																					0
September	2019																					0
October	2019																					0
November	2019																					0
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February	2020																					0
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October	2020																					0
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December	2020																					0
January	2021																					0
February	2021																					0
March	2021																					0
April	2021																					0
May	2021																					0
June	2021																					0
July	2021																					0
August	2021																					0
September	2021																					0
October	2021																					0
November	2021																					0
December	2021																					0

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant				
Month	Year	Net kW					System					Net kWh/Participant for IRP			Net kW/Participant for IRP				
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System	
December	2016										0								
January	2017						0			0	0								
February	2017						0			0	0								
March	2017						0			0	0								
April	2017						0			0	0								
May	2017						0			0	0								
June	2017						0			0	0								
July	2017						0			0	0								
August	2017						15			15	15				2	2		0.00	0.00
September	2017						42			56	56				2	2		0.00	0.00
October	2017						42			99	99				2	2		0.00	0.00
November	2017						60			158	158				2	2		0.00	0.00
December	2017						48			206	206				2	2		0.00	0.00
January	2018						24			230	230				2	2		0.00	0.00
February	2018						59			289	289				2	2		0.00	0.00
March	2018						27			316	316				2	2		0.00	0.00
April	2018						41			357	357				2	2		0.00	0.00
May	2018						23			381	381				2	2		0.00	0.00
June	2018						30			411	411				2	2		0.00	0.00
July	2018						39			450	450				2	2		0.00	0.00
August	2018						48			498	498				2	2		0.00	0.00
September	2018						56			555	555				2	2		0.00	0.00
October	2018						25			580	580				2	2		0.00	0.00
November	2018						79			659	659				2	2		0.00	0.00
December	2018						62			721	721				2	2		0.00	0.00
January	2019						0			721	721				2	2		0.00	0.00
February	2019						0			721	721				2	2		0.00	0.00
March	2019						0			721	721				2	2		0.00	0.00
April	2019						0			721	721				2	2		0.00	0.00
May	2019						0			721	721				2	2		0.00	0.00
June	2019						0			721	721				2	2		0.00	0.00
July	2019						0			721	721	0			2	2		0.00	0.00
August	2019						0			721	721	0			2	2		0.00	0.00
September	2019						0			721	721	0			2	2		0.00	0.00
October	2019						0			721	721	0			2	2		0.00	0.00
November	2019						0			721	721	0			2	2		0.00	0.00
December	2019						0			721	721	0			2	2		0.00	0.00
January	2020									721	721	0			2	2		0.00	0.00
February	2020									721	721	0			2	2		0.00	0.00
March	2020									721	721	0			2	2		0.00	0.00
April	2020									721	721	0			2	2		0.00	0.00
May	2020									721	721	0			2	2		0.00	0.00
June	2020									721	721	0			2	2		0.00	0.00
July	2020									721	721	0			2	2		0.00	0.00
August	2020									721	721	0			2	2		0.00	0.00
September	2020									721	721	0			2	2		0.00	0.00
October	2020									721	721	0			2	2		0.00	0.00
November	2020									721	721	0			2	2		0.00	0.00
December	2020									721	721	0			2	2		0.00	0.00
January	2021									721	721	0			2	2		0.00	0.00
February	2021									721	721	0			2	2		0.00	0.00
March	2021									721	721	0			2	2		0.00	0.00
April	2021									721	721	0			2	2		0.00	0.00
May	2021									721	721	0			2	2		0.00	0.00
June	2021									721	721	0			2	2		0.00	0.00
July	2021									721	721	0			2	2		0.00	0.00
August	2021									721	721	0			2	2		0.00	0.00
September	2021									721	721	0			2	2		0.00	0.00
October	2021									721	721	0			2	2		0.00	0.00
November	2021									721	721	0			2	2		0.00	0.00
December	2021									721	721	0			2	2		0.00	0.00

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Participation										
Month	Year	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2022									334,497	0	334,497
February	2022					334,497				334,497	0	334,497
March	2022									334,497	0	334,497
April	2022									334,497	0	334,497
May	2022									334,497	0	334,497
June	2022									334,497	0	334,497
July	2022									334,497	0	334,497
August	2022									334,497	0	334,497
September	2022									334,497	0	334,497
October	2022									334,497	0	334,497
November	2022									334,497	0	334,497
December	2022									334,497	0	334,497
January	2023									334,497	0	334,497
February	2023									334,497	0	334,497
March	2023									334,497	0	334,497
April	2023									334,497	0	334,497
May	2023									334,497	0	334,497
June	2023									334,497	0	334,497
July	2023									334,497	0	334,497
August	2023									334,497	0	334,497
September	2023									334,497	0	334,497
October	2023									334,497	0	334,497
November	2023									334,497	0	334,497
December	2023									334,497	0	334,497
January	2024									334,497	0	334,497
February	2024									334,497	0	334,497
March	2024									334,497	0	334,497
April	2024									334,497	0	334,497
May	2024									334,497	0	334,497
June	2024									334,497	0	334,497
July	2024									334,497	0	334,497
August	2024									334,497	0	334,497
September	2024									334,497	0	334,497
October	2024									334,497	0	334,497
November	2024									334,497	0	334,497
December	2024									334,497	0	334,497
January	2025									334,497	0	334,497
February	2025									334,497	0	334,497
March	2025									334,497	0	334,497
April	2025									334,497	0	334,497
May	2025									334,497	0	334,497
June	2025									334,497	0	334,497
July	2025									334,497	0	334,497
August	2025									334,497	0	334,497
September	2025									334,497	0	334,497
October	2025									334,497	0	334,497
November	2025									334,497	0	334,497
December	2025									334,497	0	334,497
January	2026									334,497	0	334,497
February	2026									334,497	0	334,497
March	2026									334,497	0	334,497
April	2026									334,497	0	334,497
May	2026									334,497	0	334,497
June	2026									334,497	0	334,497
July	2026									334,497	0	334,497
August	2026									334,497	0	334,497
September	2026									334,497	0	334,497
October	2026									334,497	0	334,497
November	2026									334,497	0	334,497
December	2026									334,497	0	334,497

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA				NC				System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2022									576,111	0	576,111
February	2022									576,111	0	576,111
March	2022									576,111	0	576,111
April	2022									576,111	0	576,111
May	2022									576,111	0	576,111
June	2022									576,111	0	576,111
July	2022									576,111	0	576,111
August	2022									576,111	0	576,111
September	2022									576,111	0	576,111
October	2022									576,111	0	576,111
November	2022									576,111	0	576,111
December	2022									576,111	0	576,111
January	2023									576,111	0	576,111
February	2023									576,111	0	576,111
March	2023									576,111	0	576,111
April	2023									576,111	0	576,111
May	2023									576,111	0	576,111
June	2023									576,111	0	576,111
July	2023									576,111	0	576,111
August	2023									576,111	0	576,111
September	2023									576,111	0	576,111
October	2023									576,111	0	576,111
November	2023									576,111	0	576,111
December	2023									576,111	0	576,111
January	2024									576,111	0	576,111
February	2024									576,111	0	576,111
March	2024									576,111	0	576,111
April	2024									576,111	0	576,111
May	2024									576,111	0	576,111
June	2024									576,111	0	576,111
July	2024									576,111	0	576,111
August	2024									576,111	0	576,111
September	2024									576,111	0	576,111
October	2024									576,111	0	576,111
November	2024									576,111	0	576,111
December	2024									576,111	0	576,111
January	2025									576,111	0	576,111
February	2025									576,111	0	576,111
March	2025									576,111	0	576,111
April	2025									576,111	0	576,111
May	2025									576,111	0	576,111
June	2025									576,111	0	576,111
July	2025									576,111	0	576,111
August	2025									576,111	0	576,111
September	2025									576,111	0	576,111
October	2025									576,111	0	576,111
November	2025									576,111	0	576,111
December	2025									576,111	0	576,111
January	2026									576,111	0	576,111
February	2026									576,111	0	576,111
March	2026									576,111	0	576,111
April	2026									576,111	0	576,111
May	2026									576,111	0	576,111
June	2026									576,111	0	576,111
July	2026									576,111	0	576,111
August	2026									576,111	0	576,111
September	2026									576,111	0	576,111
October	2026									576,111	0	576,111
November	2026									576,111	0	576,111
December	2026									576,111	0	576,111

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Participation												
Month	Year	Program Participants										System		
		VA					NC							
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
January	2027										334,497		0	334,497
February	2027										334,497		0	334,497
March	2027										334,497		0	334,497
April	2027										334,497		0	334,497
May	2027										334,497		0	334,497
June	2027										334,497		0	334,497
July	2027										334,497		0	334,497
August	2027										334,497		0	334,497
September	2027										334,497		0	334,497
October	2027										334,497		0	334,497
November	2027										334,497		0	334,497
December	2027										334,497		0	334,497
January	2028										334,497		0	334,497
February	2028										334,497		0	334,497
March	2028										334,497		0	334,497
April	2028										334,497		0	334,497
May	2028										334,497		0	334,497
June	2028										334,497		0	334,497
July	2028										334,497		0	334,497
August	2028										334,497		0	334,497
September	2028										334,497		0	334,497
October	2028										334,497		0	334,497
November	2028										334,497		0	334,497
December	2028										334,497		0	334,497
January	2029										334,497		0	334,497
February	2029										334,497		0	334,497
March	2029										334,497		0	334,497
April	2029										334,497		0	334,497
May	2029										334,497		0	334,497
June	2029										334,497		0	334,497
July	2029										334,497		0	334,497
August	2029										334,497		0	334,497
September	2029										334,497		0	334,497
October	2029										334,497		0	334,497
November	2029										334,497		0	334,497
December	2029										334,497		0	334,497
January	2030										334,497		0	334,497
February	2030										334,497		0	334,497
March	2030										334,497		0	334,497
April	2030										334,497		0	334,497
May	2030										334,497		0	334,497
June	2030										334,497		0	334,497
July	2030										334,497		0	334,497
August	2030										334,497		0	334,497
September	2030										334,497		0	334,497
October	2030										334,497		0	334,497
November	2030										334,497		0	334,497
December	2030										334,497		0	334,497
January	2031										334,497		0	334,497
February	2031										334,497		0	334,497
March	2031										334,497		0	334,497
April	2031										334,497		0	334,497
May	2031										334,497		0	334,497
June	2031										334,497		0	334,497
July	2031										334,497		0	334,497
August	2031										334,497		0	334,497
September	2031										334,497		0	334,497
October	2031										334,497		0	334,497
November	2031										334,497		0	334,497
December	2031										334,497		0	334,497

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Energy Savings											
Month	Year	Net kWh											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
January	2027									576,111		0	576,111
February	2027									576,111		0	576,111
March	2027									576,111		0	576,111
April	2027									576,111		0	576,111
May	2027									576,111		0	576,111
June	2027									576,111		0	576,111
July	2027									576,111		0	576,111
August	2027									576,111		0	576,111
September	2027									576,111		0	576,111
October	2027									576,111		0	576,111
November	2027									576,111		0	576,111
December	2027									576,111		0	576,111
January	2028									576,111		0	576,111
February	2028									576,111		0	576,111
March	2028									576,111		0	576,111
April	2028									576,111		0	576,111
May	2028									576,111		0	576,111
June	2028									576,111		0	576,111
July	2028									576,111		0	576,111
August	2028									576,111		0	576,111
September	2028									576,111		0	576,111
October	2028									576,111		0	576,111
November	2028									576,111		0	576,111
December	2028									576,111		0	576,111
January	2029									576,111		0	576,111
February	2029									576,111		0	576,111
March	2029									576,111		0	576,111
April	2029									576,111		0	576,111
May	2029									576,111		0	576,111
June	2029									576,111		0	576,111
July	2029									576,111		0	576,111
August	2029									576,111		0	576,111
September	2029									576,111		0	576,111
October	2029									576,111		0	576,111
November	2029									576,111		0	576,111
December	2029									576,111		0	576,111
January	2030									576,111		0	576,111
February	2030									576,111		0	576,111
March	2030									576,111		0	576,111
April	2030									576,111		0	576,111
May	2030									576,111		0	576,111
June	2030									576,111		0	576,111
July	2030									576,111		0	576,111
August	2030									576,111		0	576,111
September	2030									576,111		0	576,111
October	2030									576,111		0	576,111
November	2030									576,111		0	576,111
December	2030									576,111		0	576,111
January	2031									576,111		0	576,111
February	2031									576,111		0	576,111
March	2031									576,111		0	576,111
April	2031									576,111		0	576,111
May	2031									576,111		0	576,111
June	2031									576,111		0	576,111
July	2031									576,111		0	576,111
August	2031									576,111		0	576,111
September	2031									576,111		0	576,111
October	2031									576,111		0	576,111
November	2031									576,111		0	576,111
December	2031									576,111		0	576,111

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant				
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP				
		VA					NC					System			VA	NC	System	VA	NC
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System	
January	2027									721	0	721		2	2			0.00	0.00
February	2027									721	0	721		2	2			0.00	0.00
March	2027									721	0	721		2	2			0.00	0.00
April	2027									721	0	721		2	2			0.00	0.00
May	2027									721	0	721		2	2			0.00	0.00
June	2027									721	0	721		2	2			0.00	0.00
July	2027									721	0	721		2	2			0.00	0.00
August	2027									721	0	721		2	2			0.00	0.00
September	2027									721	0	721		2	2			0.00	0.00
October	2027									721	0	721		2	2			0.00	0.00
November	2027									721	0	721		2	2			0.00	0.00
December	2027									721	0	721		2	2			0.00	0.00
January	2028									721	0	721		2	2			0.00	0.00
February	2028									721	0	721		2	2			0.00	0.00
March	2028									721	0	721		2	2			0.00	0.00
April	2028									721	0	721		2	2			0.00	0.00
May	2028									721	0	721		2	2			0.00	0.00
June	2028									721	0	721		2	2			0.00	0.00
July	2028									721	0	721		2	2			0.00	0.00
August	2028									721	0	721		2	2			0.00	0.00
September	2028									721	0	721		2	2			0.00	0.00
October	2028									721	0	721		2	2			0.00	0.00
November	2028									721	0	721		2	2			0.00	0.00
December	2028									721	0	721		2	2			0.00	0.00
January	2029									721	0	721		2	2			0.00	0.00
February	2029									721	0	721		2	2			0.00	0.00
March	2029									721	0	721		2	2			0.00	0.00
April	2029									721	0	721		2	2			0.00	0.00
May	2029									721	0	721		2	2			0.00	0.00
June	2029									721	0	721		2	2			0.00	0.00
July	2029									721	0	721		2	2			0.00	0.00
August	2029									721	0	721		2	2			0.00	0.00
September	2029									721	0	721		2	2			0.00	0.00
October	2029									721	0	721		2	2			0.00	0.00
November	2029									721	0	721		2	2			0.00	0.00
December	2029									721	0	721		2	2			0.00	0.00
January	2030									721	0	721		2	2			0.00	0.00
February	2030									721	0	721		2	2			0.00	0.00
March	2030									721	0	721		2	2			0.00	0.00
April	2030									721	0	721		2	2			0.00	0.00
May	2030									721	0	721		2	2			0.00	0.00
June	2030									721	0	721		2	2			0.00	0.00
July	2030									721	0	721		2	2			0.00	0.00
August	2030									721	0	721		2	2			0.00	0.00
September	2030									721	0	721		2	2			0.00	0.00
October	2030									721	0	721		2	2			0.00	0.00
November	2030									721	0	721		2	2			0.00	0.00
December	2030									721	0	721		2	2			0.00	0.00
January	2031									721	0	721		2	2			0.00	0.00
February	2031									721	0	721		2	2			0.00	0.00
March	2031									721	0	721		2	2			0.00	0.00
April	2031									721	0	721		2	2			0.00	0.00
May	2031									721	0	721		2	2			0.00	0.00
June	2031									721	0	721		2	2			0.00	0.00
July	2031									721	0	721		2	2			0.00	0.00
August	2031									721	0	721		2	2			0.00	0.00
September	2031									721	0	721		2	2			0.00	0.00
October	2031									721	0	721		2	2			0.00	0.00
November	2031									721	0	721		2	2			0.00	0.00
December	2031									721	0	721		2	2			0.00	0.00

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Participation										
Month	Year	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2032									334,497	0	334,497
February	2032									334,497	0	334,497
March	2032									334,497	0	334,497
April	2032									334,497	0	334,497
May	2032									334,497	0	334,497
June	2032									334,497	0	334,497
July	2032									334,497	0	334,497
August	2032									334,497	0	334,497
September	2032									334,497	0	334,497
October	2032									334,497	0	334,497
November	2032									334,497	0	334,497
December	2032									334,497	0	334,497
January	2033									334,497	0	334,497
February	2033									334,497	0	334,497
March	2033									334,497	0	334,497
April	2033									334,497	0	334,497
May	2033									334,497	0	334,497
June	2033									334,497	0	334,497
July	2033									334,497	0	334,497
August	2033									334,497	0	334,497
September	2033									334,497	0	334,497
October	2033									334,497	0	334,497
November	2033									334,497	0	334,497
December	2033									334,497	0	334,497
January	2034									334,497	0	334,497
February	2034									334,497	0	334,497
March	2034									334,497	0	334,497
April	2034									334,497	0	334,497
May	2034									334,497	0	334,497
June	2034									334,497	0	334,497
July	2034									334,497	0	334,497
August	2034									334,497	0	334,497
September	2034									334,497	0	334,497
October	2034									334,497	0	334,497
November	2034									334,497	0	334,497
December	2034									334,497	0	334,497
January	2035									334,497	0	334,497
February	2035									334,497	0	334,497
March	2035									334,497	0	334,497
April	2035									334,497	0	334,497
May	2035									334,497	0	334,497
June	2035									334,497	0	334,497
July	2035									334,497	0	334,497
August	2035									334,497	0	334,497
September	2035									334,497	0	334,497
October	2035									334,497	0	334,497
November	2035									334,497	0	334,497
December	2035									334,497	0	334,497
January	2036									334,497	0	334,497
February	2036									334,497	0	334,497
March	2036									334,497	0	334,497
April	2036									334,497	0	334,497
May	2036									334,497	0	334,497
June	2036									334,497	0	334,497
July	2036									334,497	0	334,497
August	2036									334,497	0	334,497
September	2036									334,497	0	334,497
October	2036									334,497	0	334,497
November	2036									334,497	0	334,497
December	2036									334,497	0	334,497

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Energy Savings											
Month	Year	Net kWh											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
January	2032									576,111		0	576,111
February	2032									576,111		0	576,111
March	2032									576,111		0	576,111
April	2032									576,111		0	576,111
May	2032									576,111		0	576,111
June	2032									576,111		0	576,111
July	2032									576,111		0	576,111
August	2032									576,111		0	576,111
September	2032									576,111		0	576,111
October	2032									576,111		0	576,111
November	2032									576,111		0	576,111
December	2032									576,111		0	576,111
January	2033									576,111		0	576,111
February	2033									576,111		0	576,111
March	2033									576,111		0	576,111
April	2033									576,111		0	576,111
May	2033									576,111		0	576,111
June	2033									576,111		0	576,111
July	2033									576,111		0	576,111
August	2033									576,111		0	576,111
September	2033									576,111		0	576,111
October	2033									576,111		0	576,111
November	2033									576,111		0	576,111
December	2033									576,111		0	576,111
January	2034									576,111		0	576,111
February	2034									576,111		0	576,111
March	2034									576,111		0	576,111
April	2034									576,111		0	576,111
May	2034									576,111		0	576,111
June	2034									576,111		0	576,111
July	2034									576,111		0	576,111
August	2034									576,111		0	576,111
September	2034									576,111		0	576,111
October	2034									576,111		0	576,111
November	2034									576,111		0	576,111
December	2034									576,111		0	576,111
January	2035									576,111		0	576,111
February	2035									576,111		0	576,111
March	2035									576,111		0	576,111
April	2035									576,111		0	576,111
May	2035									576,111		0	576,111
June	2035									576,111		0	576,111
July	2035									576,111		0	576,111
August	2035									576,111		0	576,111
September	2035									576,111		0	576,111
October	2035									576,111		0	576,111
November	2035									576,111		0	576,111
December	2035									576,111		0	576,111
January	2036									576,111		0	576,111
February	2036									576,111		0	576,111
March	2036									576,111		0	576,111
April	2036									576,111		0	576,111
May	2036									576,111		0	576,111
June	2036									576,111		0	576,111
July	2036									576,111		0	576,111
August	2036									576,111		0	576,111
September	2036									576,111		0	576,111
October	2036									576,111		0	576,111
November	2036									576,111		0	576,111
December	2036									576,111		0	576,111

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant				
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		VA	NC	System	VA	NC	System	
January	2032									0	721		2	2				0.00	0.00
February	2032									0	721		2	2				0.00	0.00
March	2032									0	721		2	2				0.00	0.00
April	2032									0	721		2	2				0.00	0.00
May	2032									0	721		2	2				0.00	0.00
June	2032									0	721		2	2				0.00	0.00
July	2032									0	721		2	2				0.00	0.00
August	2032									0	721		2	2				0.00	0.00
September	2032									0	721		2	2				0.00	0.00
October	2032									0	721		2	2				0.00	0.00
November	2032									0	721		2	2				0.00	0.00
December	2032									0	721		2	2				0.00	0.00
January	2033									0	721		2	2				0.00	0.00
February	2033									0	721		2	2				0.00	0.00
March	2033									0	721		2	2				0.00	0.00
April	2033									0	721		2	2				0.00	0.00
May	2033									0	721		2	2				0.00	0.00
June	2033									0	721		2	2				0.00	0.00
July	2033									0	721		2	2				0.00	0.00
August	2033									0	721		2	2				0.00	0.00
September	2033									0	721		2	2				0.00	0.00
October	2033									0	721		2	2				0.00	0.00
November	2033									0	721		2	2				0.00	0.00
December	2033									0	721		2	2				0.00	0.00
January	2034									0	721		2	2				0.00	0.00
February	2034									0	721		2	2				0.00	0.00
March	2034									0	721		2	2				0.00	0.00
April	2034									0	721		2	2				0.00	0.00
May	2034									0	721		2	2				0.00	0.00
June	2034									0	721		2	2				0.00	0.00
July	2034									0	721		2	2				0.00	0.00
August	2034									0	721		2	2				0.00	0.00
September	2034									0	721		2	2				0.00	0.00
October	2034									0	721		2	2				0.00	0.00
November	2034									0	721		2	2				0.00	0.00
December	2034									0	721		2	2				0.00	0.00
January	2035									0	721		2	2				0.00	0.00
February	2035									0	721		2	2				0.00	0.00
March	2035									0	721		2	2				0.00	0.00
April	2035									0	721		2	2				0.00	0.00
May	2035									0	721		2	2				0.00	0.00
June	2035									0	721		2	2				0.00	0.00
July	2035									0	721		2	2				0.00	0.00
August	2035									0	721		2	2				0.00	0.00
September	2035									0	721		2	2				0.00	0.00
October	2035									0	721		2	2				0.00	0.00
November	2035									0	721		2	2				0.00	0.00
December	2035									0	721		2	2				0.00	0.00
January	2036									0	721		2	2				0.00	0.00
February	2036									0	721		2	2				0.00	0.00
March	2036									0	721		2	2				0.00	0.00
April	2036									0	721		2	2				0.00	0.00
May	2036									0	721		2	2				0.00	0.00
June	2036									0	721		2	2				0.00	0.00
July	2036									0	721		2	2				0.00	0.00
August	2036									0	721		2	2				0.00	0.00
September	2036									0	721		2	2				0.00	0.00
October	2036									0	721		2	2				0.00	0.00
November	2036									0	721		2	2				0.00	0.00
December	2036									0	721		2	2				0.00	0.00

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Participation											
Month	Year	Program Participants										System Cum for IRP	
		VA					NC						
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
January	2037										334,497	0	334,497
February	2037										334,497	0	334,497
March	2037										334,497	0	334,497
April	2037										334,497	0	334,497
May	2037										334,497	0	334,497
June	2037										334,497	0	334,497
July	2037										334,497	0	334,497
August	2037									-5,018	329,479	-5,018	329,479
September	2037									-14,683	314,796	-19,701	314,796
October	2037									-14,758	300,038	-34,459	300,038
November	2037									-19,836	280,202	-54,295	280,202
December	2037									-15,966	264,236	-70,261	264,236
January	2038									-12,482	251,754	-82,743	251,754
February	2038									-29,279	222,475	-112,022	222,475
March	2038									-13,614	208,861	-125,636	208,861
April	2038									-21,629	187,232	-147,265	187,232
May	2038									-11,552	175,680	-158,817	175,680
June	2038									-14,694	160,986	-173,511	160,986
July	2038									-20,050	140,936	-193,561	140,936
August	2038									-25,185	115,751	-218,746	115,751
September	2038									-32,534	83,217	-251,280	83,217
October	2038									-11,899	71,318	-263,179	71,318
November	2038									-42,003	29,315	-305,182	29,315
December	2038									-29,315	0	-334,497	0
January	2039									0	0	-334,497	0
February	2039									0	0	-334,497	0
March	2039									0	0	-334,497	0
April	2039									0	0	-334,497	0
May	2039									0	0	-334,497	0
June	2039									0	0	-334,497	0
July	2039									0	0	-334,497	0
August	2039									0	0	-334,497	0
September	2039									0	0	-334,497	0
October	2039									0	0	-334,497	0
November	2039									0	0	-334,497	0
December	2039									0	0	-334,497	0
January	2040									0	0	-334,497	0
February	2040									0	0	-334,497	0
March	2040									0	0	-334,497	0
April	2040									0	0	-334,497	0
May	2040									0	0	-334,497	0
June	2040									0	0	-334,497	0
July	2040									0	0	-334,497	0
August	2040									0	0	-334,497	0
September	2040									0	0	-334,497	0
October	2040									0	0	-334,497	0
November	2040									0	0	-334,497	0
December	2040									0	0	-334,497	0

Table 2. EM&V Data Incremental by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2017			70,261	70,261	70,261					
2018			264,236	264,236	264,236					
2019			-	-334,497	-					

Table 3. EM&V Data Annualized by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2017			70,261	70,261	70,261					
2018			264,236	264,236	264,236					
2019			-	-	-					

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Energy Savings											
Month	Year	Net kWh											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
January	2037									576,111		0	576,111
February	2037									576,111		0	576,111
March	2037									576,111		0	576,111
April	2037									576,111		0	576,111
May	2037									576,111		0	576,111
June	2037									576,111		0	576,111
July	2037									576,111		0	576,111
August	2037									576,111		0	576,111
September	2037									576,111		0	576,111
October	2037									576,111		0	576,111
November	2037									576,111		0	576,111
December	2037									576,111		0	576,111
January	2038									576,111		0	576,111
February	2038									576,111		0	576,111
March	2038									576,111		0	576,111
April	2038									576,111		0	576,111
May	2038									576,111		0	576,111
June	2038									576,111		0	576,111
July	2038									576,111		0	576,111
August	2038									576,111		0	576,111
September	2038									576,111		0	576,111
October	2038									576,111		0	576,111
November	2038									576,111		0	576,111
December	2038									576,111		0	576,111
January	2039									576,111		0	576,111
February	2039									576,111		0	576,111
March	2039									576,111		0	576,111
April	2039									576,111		0	576,111
May	2039									576,111		0	576,111
June	2039									576,111		0	576,111
July	2039									576,111		0	576,111
August	2039									576,111		0	576,111
September	2039									576,111		0	576,111
October	2039									576,111		0	576,111
November	2039									576,111		0	576,111
December	2039									576,111		0	576,111
January	2040									576,111		0	576,111
February	2040									576,111		0	576,111
March	2040									576,111		0	576,111
April	2040									576,111		0	576,111
May	2040									576,111		0	576,111
June	2040									576,111		0	576,111
July	2040									576,111		0	576,111
August	2040									576,111		0	576,111
September	2040									576,111		0	576,111
October	2040									576,111		0	576,111
November	2040									576,111		0	576,111
December	2040									576,111		0	576,111

Table 2. EM&V Data Incremental by Vintage Year									
	Net Incremental Energy (kWh)								
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP				
2017			406,822	406,822	406,822				
2018			2,419,705	2,419,705	2,419,705				
2019			-	-	-				

Table 3. EM&V Data Annualized by Vintage Year									
	Net Annualized Energy (kWh)								
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP				
2017			1,882,812	1,882,812	1,882,812				
2018			5,030,524	5,030,524	5,030,524				
2019			-	-	-				

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC					System			System			
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
January	2037									721	0	721		2	2		0.00	0.00
February	2037									721	0	721		2	2		0.00	0.00
March	2037									721	0	721		2	2		0.00	0.00
April	2037									721	0	721		2	2		0.00	0.00
May	2037									721	0	721		2	2		0.00	0.00
June	2037									721	0	721		2	2		0.00	0.00
July	2037									721	0	721		2	2		0.00	0.00
August	2037									707	-15	707		2	2		0.00	0.00
September	2037									665	-56	665		2	2		0.00	0.00
October	2037									622	-99	622		2	2		0.00	0.00
November	2037									563	-158	563		2	2		0.00	0.00
December	2037									515	-206	515		2	2		0.00	0.00
January	2038									491	-230	491		2	2		0.00	0.00
February	2038									432	-289	432		2	2		0.00	0.00
March	2038									405	-316	405		2	2		0.00	0.00
April	2038									364	-357	364		2	2		0.00	0.00
May	2038									341	-381	341		2	2		0.00	0.00
June	2038									311	-411	311		2	2		0.00	0.00
July	2038									271	-450	271		2	2		0.00	0.00
August	2038									223	-498	223		2	2		0.00	0.00
September	2038									167	-555	167		2	2		0.00	0.00
October	2038									142	-580	142		2	2		0.00	0.00
November	2038									62	-659	62		2	2		0.00	0.00
December	2038									0	-721	0		-	-		-	-
January	2039									0	-721	0		-	-		-	-
February	2039									0	-721	0		-	-		-	-
March	2039									0	-721	0		-	-		-	-
April	2039									0	-721	0		-	-		-	-
May	2039									0	-721	0		-	-		-	-
June	2039									0	-721	0		-	-		-	-
July	2039									0	-721	0		-	-		-	-
August	2039									0	-721	0		-	-		-	-
September	2039									0	-721	0		-	-		-	-
October	2039									0	-721	0		-	-		-	-
November	2039									0	-721	0		-	-		-	-
December	2039									0	-721	0		-	-		-	-
January	2040									0	-721	0		-	-		-	-
February	2040									0	-721	0		-	-		-	-
March	2040									0	-721	0		-	-		-	-
April	2040									0	-721	0		-	-		-	-
May	2040									0	-721	0		-	-		-	-
June	2040									0	-721	0		-	-		-	-
July	2040									0	-721	0		-	-		-	-
August	2040									0	-721	0		-	-		-	-
September	2040									0	-721	0		-	-		-	-
October	2040									0	-721	0		-	-		-	-
November	2040									0	-721	0		-	-		-	-
December	2040									0	-721	0		-	-		-	-

Table 2. EM&V Data Incremental by Vintage Year										Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP	VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2017						206		206	206		6	6		0.00	0.00
2018						515		515	515		9	9		0.00	0.00
2019						-		-	-		-	-		-	-

Table 3. EM&V Data Annualized by Vintage Year										Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP	VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2017						206		206	206		27	27		0.00	0.00
2018						515		515	515		19	19		0.00	0.00
2019						-		-	-		-	-		-	-

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)									
	Program Participants							NC PPI	System
	VA								
2017							70,261		
2018							334,497		
2019							334,497		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
	Program Participants							NC IRP	NC NLR	System IRP
	VA IRP	VA NLR								
2017							70,261	70,261	70,261	
2018							334,497	334,497	334,497	
2019							334,497	-	334,497	
2020							334,497	-	334,497	
2021							334,497	-	334,497	
2022							334,497	-	334,497	
2023							334,497	-	334,497	
2024							334,497	-	334,497	
2025							334,497	-	334,497	
2026							334,497	-	334,497	
2027							334,497	-	334,497	
2028							334,497	-	334,497	
2029							334,497	-	334,497	
2030							334,497	-	334,497	
2031							334,497	-	334,497	
2032							334,497	-	334,497	
2033							334,497	-	334,497	
2034							334,497	-	334,497	
2035							334,497	-	334,497	
2036							334,497	-	334,497	
2037							264,236	-	264,236	
2038							-	-	-	
2039							-	-	-	
2040							-	-	-	

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)									
	Program Participants							NC Lifetime	System Lifetime
	VA Lifetime								
2017							334,497	334,497	334,497
2018							334,497	334,497	334,497
2019							334,497	334,497	334,497
2020							334,497	334,497	334,497
2021							334,497	334,497	334,497
2022							334,497	334,497	334,497
2023							334,497	334,497	334,497
2024							334,497	334,497	334,497
2025							334,497	334,497	334,497
2026							334,497	334,497	334,497
2027							334,497	334,497	334,497
2028							334,497	334,497	334,497
2029							334,497	334,497	334,497
2030							334,497	334,497	334,497
2031							334,497	334,497	334,497
2032							334,497	334,497	334,497
2033							334,497	334,497	334,497
2034							334,497	334,497	334,497
2035							334,497	334,497	334,497
2036							334,497	334,497	334,497
2037							334,497	334,497	334,497
2038							334,497	334,497	334,497
2039							334,497	334,497	334,497
2040							334,497	334,497	334,497

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
	Net Energy (kWh) for PPI										
	VA							NC PPI			System
2017								406,822			
2018								4,302,517			
2019								5,030,524			

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017								406,822		406,822	406,822
2018								4,302,517		4,302,517	4,302,517
2019								6,913,336		5,761,113	6,913,336
2020								6,913,336		-	6,913,336
2021								6,913,336		-	6,913,336
2022								6,913,336		-	6,913,336
2023								6,913,336		-	6,913,336
2024								6,913,336		-	6,913,336
2025								6,913,336		-	6,913,336
2026								6,913,336		-	6,913,336
2027								6,913,336		-	6,913,336
2028								6,913,336		-	6,913,336
2029								6,913,336		-	6,913,336
2030								6,913,336		-	6,913,336
2031								6,913,336		-	6,913,336
2032								6,913,336		-	6,913,336
2033								6,913,336		-	6,913,336
2034								6,913,336		-	6,913,336
2035								6,913,336		-	6,913,336
2036								6,913,336		-	6,913,336
2037								6,506,513		-	6,506,513
2038								2,610,819		-	2,610,819
2039								-		-	-
2040								-		-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA Lifetime					NC Lifetime			System Lifetime
2017								406,822			406,822
2018								4,709,339			4,709,339
2019								11,622,674			11,622,674
2020								18,536,010			18,536,010
2021								25,449,346			25,449,346
2022								32,362,681			32,362,681
2023								39,276,017			39,276,017
2024								46,189,352			46,189,352
2025								53,102,688			53,102,688
2026								60,016,023			60,016,023
2027								66,929,359			66,929,359
2028								73,842,694			73,842,694
2029								80,756,030			80,756,030
2030								87,669,365			87,669,365
2031								94,582,701			94,582,701
2032								101,496,036			101,496,036
2033								108,409,372			108,409,372
2034								115,322,708			115,322,708
2035								122,236,043			122,236,043
2036								129,149,379			129,149,379
2037								135,655,892			135,655,892
2038								138,266,711			138,266,711
2039								138,266,711			138,266,711
2040								138,266,711			138,266,711

Appendix D.2 Residential Retail LED Lighting Program 2017-2019

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)									Net kWh/Participant			Net kW/Participant		
	VA						NC PPI		System	VA	NC	System	VA	NC	System
2017							206					6			0.00
2018							721					13			0.00
2019							721					15			0.00

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)	Net Peak Demand (kW)									IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
		VA IRP	VA NLR				NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System
2017							206	206	206		6	6		0.00	0.00
2018							721	721	721		13	13		0.00	0.00
2019							721	-	721		21	21		0.00	0.00
2020							721	-	721		21	21		0.00	0.00
2021							721	-	721		21	21		0.00	0.00
2022							721	-	721		21	21		0.00	0.00
2023							721	-	721		21	21		0.00	0.00
2024							721	-	721		21	21		0.00	0.00
2025							721	-	721		21	21		0.00	0.00
2026							721	-	721		21	21		0.00	0.00
2027							721	-	721		21	21		0.00	0.00
2028							721	-	721		21	21		0.00	0.00
2029							721	-	721		21	21		0.00	0.00
2030							721	-	721		21	21		0.00	0.00
2031							721	-	721		21	21		0.00	0.00
2032							721	-	721		21	21		0.00	0.00
2033							721	-	721		21	21		0.00	0.00
2034							721	-	721		21	21		0.00	0.00
2035							721	-	721		21	21		0.00	0.00
2036							721	-	721		21	21		0.00	0.00
2037							515	-	515		25	25		0.00	0.00
2038							-	-	-		-	-		-	-
2039							-	-	-		-	-		-	-
2040							-	-	-		-	-		-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)										Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
	Net Peak Demand (kW)									Net kWh/Participant			Net kW/Participant		
		VA Lifetime					NC Lifetime		System Lifetime	VA	NC	System	VA	NC	System
2017							721		721		1	1		0.00	0.00
2018							721		721		14	14		0.00	0.00
2019							721		721		35	35		0.00	0.00
2020							721		721		55	55		0.00	0.00
2021							721		721		76	76		0.00	0.00
2022							721		721		97	97		0.00	0.00
2023							721		721		117	117		0.00	0.00
2024							721		721		138	138		0.00	0.00
2025							721		721		159	159		0.00	0.00
2026							721		721		179	179		0.00	0.00
2027							721		721		200	200		0.00	0.00
2028							721		721		221	221		0.00	0.00
2029							721		721		241	241		0.00	0.00
2030							721		721		262	262		0.00	0.00
2031							721		721		283	283		0.00	0.00
2032							721		721		303	303		0.00	0.00
2033							721		721		324	324		0.00	0.00
2034							721		721		345	345		0.00	0.00
2034							721		721		365	365		0.00	0.00
2034							721		721		386	386		0.00	0.00
2034							721		721		406	406		0.00	0.00
2034							721		721		413	413		0.00	0.00
2034							721		721		413	413		0.00	0.00
2034							721		721		413	413		0.00	0.00

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

PROGRAM: Residential Appliance Recycling Program
DSM Phase VII Program
Type: Energy Efficiency
Program Measure Life: 8 years (8 years, 0 months) 8.0 years
Current Year: 2019

Table 1		Participation Program Participants											
Month	Year	VA				NC				System			
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP E+G	
Jan	2019	0		0		0	0	0		0	0	0	
Feb	2019	0		0		0	0	0		0	0	0	
Mar	2019	0		0		0	0	0		0	0	0	
Apr	2019	0		0		0	0	0		0	0	0	
May	2019	0		0		0	0	0		0	0	0	
June	2019	0		0		0	0	0		0	0	0	
Jul	2019	0		0		0	0	0	0	0	0	0	
Aug	2019	0		0		0	0	0	0	0	0	0	
Sept	2019	252		252		252	0	0		0	0	252	
Oct	2019	656		908		908	0	0		0	0	908	
Nov	2019	424		1,332		1,332	0	0	0	0	0	1,332	
Dec	2019	247		1,579		1,579	0	0	0	0	0	1,579	
Jan	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Feb	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Mar	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Apr	2020	0		1,579		1,579	0	0	0	0	0	1,579	
May	2020	0		1,579		1,579	0	0	0	0	0	1,579	
June	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Jul	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Aug	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Sept	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Oct	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Nov	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Dec	2020	0		1,579		1,579	0	0	0	0	0	1,579	
Jan	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Feb	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Mar	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Apr	2021	0		1,579		1,579	0	0	0	0	0	1,579	
May	2021	0		1,579		1,579	0	0	0	0	0	1,579	
June	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Jul	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Aug	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Sept	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Oct	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Nov	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Dec	2021	0		1,579		1,579	0	0	0	0	0	1,579	
Jan	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Feb	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Mar	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Apr	2022	0		1,579		1,579	0	0	0	0	0	1,579	
May	2022	0		1,579		1,579	0	0	0	0	0	1,579	
June	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Jul	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Aug	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Sept	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Oct	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Nov	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Dec	2022	0		1,579		1,579	0	0	0	0	0	1,579	
Jan	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Feb	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Mar	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Apr	2023	0		1,579		1,579	0	0	0	0	0	1,579	
May	2023	0		1,579		1,579	0	0	0	0	0	1,579	
June	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Jul	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Aug	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Sept	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Oct	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Nov	2023	0		1,579		1,579	0	0	0	0	0	1,579	
Dec	2023	0		1,579		1,579	0	0	0	0	0	1,579	

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
Jan	2019	0		0		0	0		0		0	0
Feb	2019	0		0		0	0		0		0	0
Mar	2019	0		0		0	0		0		0	0
Apr	2019	0		0		0	0		0		0	0
May	2019	0		0		0	0		0		0	0
June	2019	0		0		0	0		0		0	0
Jul	2019	0		0		0	0		0	0	0	0
Aug	2019	0		0		0	0		0	0	0	0
Sept	2019	9,274		9,274		9,274	0		0	0	9,274	9,274
Oct	2019	24,236		33,510		33,510	0		0	0	33,510	33,510
Nov	2019	18,795		52,305		52,305	0		0	0	52,305	52,305
Dec	2019	10,470		62,776		62,776	0		0	0	62,776	62,776
Jan	2020	0		62,776		62,776	0		0	0	62,776	62,776
Feb	2020	0		62,776		62,776	0		0	0	62,776	62,776
Mar	2020	0		62,776		62,776	0		0	0	62,776	62,776
Apr	2020	0		62,776		62,776	0		0	0	62,776	62,776
May	2020	0		62,776		62,776	0		0	0	62,776	62,776
June	2020	0		62,776		62,776	0		0	0	62,776	62,776
Jul	2020	0		62,776		62,776	0		0	0	62,776	62,776
Aug	2020	0		62,776		62,776	0		0	0	62,776	62,776
Sept	2020	0		62,776		62,776	0		0	0	62,776	62,776
Oct	2020	0		62,776		62,776	0		0	0	62,776	62,776
Nov	2020	0		62,776		62,776	0		0	0	62,776	62,776
Dec	2020	0		62,776		62,776	0		0	0	62,776	62,776
Jan	2021	0		62,776		62,776	0		0	0	62,776	62,776
Feb	2021	0		62,776		62,776	0		0	0	62,776	62,776
Mar	2021	0		62,776		62,776	0		0	0	62,776	62,776
Apr	2021	0		62,776		62,776	0		0	0	62,776	62,776
May	2021	0		62,776		62,776	0		0	0	62,776	62,776
June	2021	0		62,776		62,776	0		0	0	62,776	62,776
Jul	2021	0		62,776		62,776	0		0	0	62,776	62,776
Aug	2021	0		62,776		62,776	0		0	0	62,776	62,776
Sept	2021	0		62,776		62,776	0		0	0	62,776	62,776
Oct	2021	0		62,776		62,776	0		0	0	62,776	62,776
Nov	2021	0		62,776		62,776	0		0	0	62,776	62,776
Dec	2021	0		62,776		62,776	0		0	0	62,776	62,776
Jan	2022	0		62,776		62,776	0		0	0	62,776	62,776
Feb	2022	0		62,776		62,776	0		0	0	62,776	62,776
Mar	2022	0		62,776		62,776	0		0	0	62,776	62,776
Apr	2022	0		62,776		62,776	0		0	0	62,776	62,776
May	2022	0		62,776		62,776	0		0	0	62,776	62,776
June	2022	0		62,776		62,776	0		0	0	62,776	62,776
Jul	2022	0		62,776		62,776	0		0	0	62,776	62,776
Aug	2022	0		62,776		62,776	0		0	0	62,776	62,776
Sept	2022	0		62,776		62,776	0		0	0	62,776	62,776
Oct	2022	0		62,776		62,776	0		0	0	62,776	62,776
Nov	2022	0		62,776		62,776	0		0	0	62,776	62,776
Dec	2022	0		62,776		62,776	0		0	0	62,776	62,776
Jan	2023	0		62,776		62,776	0		0	0	62,776	62,776
Feb	2023	0		62,776		62,776	0		0	0	62,776	62,776
Mar	2023	0		62,776		62,776	0		0	0	62,776	62,776
Apr	2023	0		62,776		62,776	0		0	0	62,776	62,776
May	2023	0		62,776		62,776	0		0	0	62,776	62,776
June	2023	0		62,776		62,776	0		0	0	62,776	62,776
Jul	2023	0		62,776		62,776	0		0	0	62,776	62,776
Aug	2023	0		62,776		62,776	0		0	0	62,776	62,776
Sept	2023	0		62,776		62,776	0		0	0	62,776	62,776
Oct	2023	0		62,776		62,776	0		0	0	62,776	62,776
Nov	2023	0		62,776		62,776	0		0	0	62,776	62,776
Dec	2023	0		62,776		62,776	0		0	0	62,776	62,776

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
Jan	2019	0		0		0	0		0		0	0	-	-	-	-	-	-
Feb	2019	0		0		0	0		0		0	0	-	-	-	-	-	-
Mar	2019	0		0		0	0		0		0	0	-	-	-	-	-	-
Apr	2019	0		0		0	0		0		0	0	-	-	-	-	-	-
May	2019	0		0		0	0		0		0	0	-	-	-	-	-	-
June	2019	0		0		0	0		0		0	0	-	-	-	-	-	-
Jul	2019	0		0		0	0		0		0	0	-	-	-	-	-	-
Aug	2019	0		0		0	0		0		0	0	-	-	-	-	-	-
Sept	2019	17		17		17	0		0		0	17	37	-	-	37	0.07	-
Oct	2019	44		60		60	0		0		0	60	37	-	-	37	0.07	-
Nov	2019	34		94		94	0		0		0	94	39	-	-	39	0.07	-
Dec	2019	19		113		113	0		0		0	113	40	-	-	40	0.07	-
Jan	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Feb	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Mar	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Apr	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
May	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
June	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Jul	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Aug	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Sept	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Oct	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Nov	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Dec	2020	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Jan	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Feb	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Mar	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Apr	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
May	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
June	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Jul	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Aug	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Sept	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Oct	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Nov	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Dec	2021	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Jan	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Feb	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Mar	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Apr	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
May	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
June	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Jul	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Aug	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Sept	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Oct	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Nov	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Dec	2022	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Jan	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Feb	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Mar	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Apr	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
May	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
June	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Jul	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Aug	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Sept	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Oct	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Nov	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-
Dec	2023	0		113		113	0		0		0	113	40	-	-	40	0.07	-

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 1		Participation Program Participants										
Month	Year	VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
Jan	2024	0		1,579		1,579	0		0		0	1,579
Feb	2024	0		1,579		1,579	0		0		0	1,579
Mar	2024	0		1,579		1,579	0		0		0	1,579
Apr	2024	0		1,579		1,579	0		0		0	1,579
May	2024	0		1,579		1,579	0		0		0	1,579
June	2024	0		1,579		1,579	0		0		0	1,579
Jul	2024	0		1,579		1,579	0		0		0	1,579
Aug	2024	0		1,579		1,579	0		0		0	1,579
Sept	2024	0		1,579		1,579	0		0		0	1,579
Oct	2024	0		1,579		1,579	0		0		0	1,579
Nov	2024	0		1,579		1,579	0		0		0	1,579
Dec	2024	0		1,579		1,579	0		0		0	1,579
Jan	2025			1,579		1,579			0		0	1,579
Feb	2025			1,579		1,579			0		0	1,579
Mar	2025			1,579		1,579			0		0	1,579
Apr	2025			1,579		1,579			0		0	1,579
May	2025			1,579		1,579			0		0	1,579
June	2025			1,579		1,579			0		0	1,579
Jul	2025			1,579		1,579			0		0	1,579
Aug	2025			1,579		1,579			0		0	1,579
Sept	2025			1,579		1,579			0		0	1,579
Oct	2025			1,579		1,579			0		0	1,579
Nov	2025			1,579		1,579			0		0	1,579
Dec	2025			1,579		1,579			0		0	1,579
Jan	2026			1,579		1,579			0		0	1,579
Feb	2026			1,579		1,579			0		0	1,579
Mar	2026			1,579		1,579			0		0	1,579
Apr	2026			1,579		1,579			0		0	1,579
May	2026			1,579		1,579			0		0	1,579
June	2026			1,579		1,579			0		0	1,579
Jul	2026			1,579		1,579			0		0	1,579
Aug	2026			1,579		1,579			0		0	1,579
Sept	2026			1,579		1,579			0		0	1,579
Oct	2026			1,579		1,579			0		0	1,579
Nov	2026			1,579		1,579			0		0	1,579
Dec	2026			1,579		1,579			0		0	1,579
Jan	2027			1,579		1,579			0		0	1,579
Feb	2027			1,579		1,579			0		0	1,579
Mar	2027			1,579		1,579			0		0	1,579
Apr	2027			1,579		1,579			0		0	1,579
May	2027			1,579		1,579			0		0	1,579
June	2027			1,579		1,579			0		0	1,579
Jul	2027		0	1,579		1,579			0		0	1,579
Aug	2027		0	1,579		1,579			0		0	1,579
Sept	2027		-252	1,327		1,327			0		0	1,327
Oct	2027		-656	671		671			0		0	671
Nov	2027		-424	247		247			0		0	247
Dec	2027		-247	0		0			0		0	0
Jan	2028		0	0		0		0	0		0	0
Feb	2028		0	0		0		0	0		0	0
Mar	2028		0	0		0		0	0		0	0
Apr	2028		0	0		0		0	0		0	0
May	2028		0	0		0		0	0		0	0
June	2028		0	0		0		0	0		0	0
Jul	2028		0	0		0		0	0		0	0
Aug	2028		0	0		0		0	0		0	0
Sept	2028		0	0		0		0	0		0	0
Oct	2028		0	0		0		0	0		0	0
Nov	2028		0	0		0		0	0		0	0
Dec	2028		0	0		0		0	0		0	0

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 1		Energy Savings										
Month	Year	Net kWh										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
Jan	2024	0		62,776		62,776	0		0		0	62,776
Feb	2024	0		62,776		62,776	0		0		0	62,776
Mar	2024	0		62,776		62,776	0		0		0	62,776
Apr	2024	0		62,776		62,776	0		0		0	62,776
May	2024	0		62,776		62,776	0		0		0	62,776
June	2024	0		62,776		62,776	0		0		0	62,776
Jul	2024	0		62,776		62,776	0		0		0	62,776
Aug	2024	0		62,776		62,776	0		0		0	62,776
Sept	2024	0		62,776		62,776	0		0		0	62,776
Oct	2024	0		62,776		62,776	0		0		0	62,776
Nov	2024	0		62,776		62,776	0		0		0	62,776
Dec	2024	0		62,776		62,776	0		0		0	62,776
Jan	2025			62,776		62,776			0		0	62,776
Feb	2025			62,776		62,776			0		0	62,776
Mar	2025			62,776		62,776			0		0	62,776
Apr	2025			62,776		62,776			0		0	62,776
May	2025			62,776		62,776			0		0	62,776
June	2025			62,776		62,776			0		0	62,776
Jul	2025			62,776		62,776			0		0	62,776
Aug	2025			62,776		62,776			0		0	62,776
Sept	2025			62,776		62,776			0		0	62,776
Oct	2025			62,776		62,776			0		0	62,776
Nov	2025			62,776		62,776			0		0	62,776
Dec	2025			62,776		62,776			0		0	62,776
Jan	2026			62,776		62,776			0		0	62,776
Feb	2026			62,776		62,776			0		0	62,776
Mar	2026			62,776		62,776			0		0	62,776
Apr	2026			62,776		62,776			0		0	62,776
May	2026			62,776		62,776			0		0	62,776
June	2026			62,776		62,776			0		0	62,776
Jul	2026			62,776		62,776			0		0	62,776
Aug	2026			62,776		62,776			0		0	62,776
Sept	2026			62,776		62,776			0		0	62,776
Oct	2026			62,776		62,776			0		0	62,776
Nov	2026			62,776		62,776			0		0	62,776
Dec	2026			62,776		62,776			0		0	62,776
Jan	2027			62,776		62,776			0		0	62,776
Feb	2027			62,776		62,776			0		0	62,776
Mar	2027			62,776		62,776			0		0	62,776
Apr	2027			62,776		62,776			0		0	62,776
May	2027			62,776		62,776			0		0	62,776
June	2027			62,776		62,776			0		0	62,776
Jul	2027		0	62,776		62,776			0		0	62,776
Aug	2027		0	62,776		62,776			0		0	62,776
Sept	2027		-9,274	53,502		53,502			0		0	53,502
Oct	2027		-24,236	29,265		29,265			0		0	29,265
Nov	2027		-18,795	10,470		10,470			0		0	10,470
Dec	2027		-10,470	0		0			0		0	0
Jan	2028		0	0		0		0		0	0	0
Feb	2028		0	0		0		0		0	0	0
Mar	2028		0	0		0		0		0	0	0
Apr	2028		0	0		0		0		0	0	0
May	2028		0	0		0		0		0	0	0
June	2028		0	0		0		0		0	0	0
Jul	2028		0	0		0		0		0	0	0
Aug	2028		0	0		0		0		0	0	0
Sept	2028		0	0		0		0		0	0	0
Oct	2028		0	0		0		0		0	0	0
Nov	2028		0	0		0		0		0	0	0
Dec	2028		0	0		0		0		0	0	0

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC					System Cum for IRP	VA	NC	System	VA	NC	System
VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System	VA							
Jan	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Feb	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Mar	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Apr	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
May	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
June	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Jul	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Aug	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Sept	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Oct	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Nov	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Dec	2024	0		113		113	0		0		0	113	40	-	40	0.07	-	0.07
Jan	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Feb	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Mar	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Apr	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
May	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
June	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Jul	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Aug	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Sept	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Oct	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Nov	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Dec	2025			113		113			0		0	113	40	-	40	0.07	-	0.07
Jan	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Feb	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Mar	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Apr	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
May	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
June	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Jul	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Aug	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Sept	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Oct	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Nov	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Dec	2026			113		113			0		0	113	40	-	40	0.07	-	0.07
Jan	2027			113		113			0		0	113	40	-	40	0.07	-	0.07
Feb	2027			113		113			0		0	113	40	-	40	0.07	-	0.07
Mar	2027			113		113			0		0	113	40	-	40	0.07	-	0.07
Apr	2027			113		113			0		0	113	40	-	40	0.07	-	0.07
May	2027			113		113			0		0	113	40	-	40	0.07	-	0.07
June	2027			113		113			0		0	113	40	-	40	0.07	-	0.07
Jul	2027		0	113		113			0		0	113	40	-	40	0.07	-	0.07
Aug	2027		0	113		113			0		0	113	40	-	40	0.07	-	0.07
Sept	2027		-17	96		96			0		0	96	40	-	40	0.07	-	0.07
Oct	2027		-44	53		53			0		0	53	44	-	44	0.08	-	0.08
Nov	2027		-34	19		19			0		0	19	42	-	42	0.08	-	0.08
Dec	2027		-19	0		0			0		0	0	-	-	-	-	-	-
Jan	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Feb	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Mar	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Apr	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
May	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
June	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Jul	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Aug	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Sept	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Oct	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Nov	2028		0	0		0		0		0	0	0	-	-	-	-	-	-
Dec	2028		0	0		0		0		0	0	0	-	-	-	-	-	-

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 1		Participation										
Month	Year	Program Participants										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
Jan	2029		0	0		0		0	0	0	0	0
Feb	2029		0	0		0		0	0	0	0	0
Mar	2029		0	0		0		0	0	0	0	0
Apr	2029		0	0		0		0	0	0	0	0
May	2029		0	0		0		0	0	0	0	0
June	2029		0	0		0		0	0	0	0	0
Jul	2029		0	0		0		0	0	0	0	0
Aug	2029		0	0		0		0	0	0	0	0
Sept	2029		0	0		0		0	0	0	0	0
Oct	2029		0	0		0		0	0	0	0	0
Nov	2029		0	0		0		0	0	0	0	0
Dec	2029		0	0		0		0	0	0	0	0
Jan	2030		0	0		0		0	0	0	0	0
Feb	2030		0	0		0		0	0	0	0	0
Mar	2030		0	0		0		0	0	0	0	0
Apr	2030		0	0		0		0	0	0	0	0
May	2030		0	0		0		0	0	0	0	0
June	2030		0	0		0		0	0	0	0	0
Jul	2030		0	0		0		0	0	0	0	0
Aug	2030		0	0		0		0	0	0	0	0
Sept	2030		0	0		0		0	0	0	0	0
Oct	2030		0	0		0		0	0	0	0	0
Nov	2030		0	0		0		0	0	0	0	0
Dec	2030		0	0		0		0	0	0	0	0
Jan	2031		0	0		0		0	0	0	0	0
Feb	2031		0	0		0		0	0	0	0	0
Mar	2031		0	0		0		0	0	0	0	0
Apr	2031		0	0		0		0	0	0	0	0
May	2031		0	0		0		0	0	0	0	0
June	2031		0	0		0		0	0	0	0	0
Jul	2031		0	0		0		0	0	0	0	0
Aug	2031		0	0		0		0	0	0	0	0
Sept	2031		0	0		0		0	0	0	0	0
Oct	2031		0	0		0		0	0	0	0	0
Nov	2031		0	0		0		0	0	0	0	0
Dec	2031		0	0		0		0	0	0	0	0
Jan	2032		0	0		0		0	0	0	0	0
Feb	2032		0	0		0		0	0	0	0	0
Mar	2032		0	0		0		0	0	0	0	0
Apr	2032		0	0		0		0	0	0	0	0
May	2032		0	0		0		0	0	0	0	0
June	2032		0	0		0		0	0	0	0	0
Jul	2032		0	0		0		0	0	0	0	0
Aug	2032		0	0		0		0	0	0	0	0
Sept	2032		0	0		0		0	0	0	0	0
Oct	2032		0	0		0		0	0	0	0	0
Nov	2032		0	0		0		0	0	0	0	0
Dec	2032		0	0		0		0	0	0	0	0

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 1		Energy Savings										System	
Month	Year	VA					NC					System Cum for IRP	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
Jan	2029		0	0		0		0		0		0	0
Feb	2029		0	0		0		0		0		0	0
Mar	2029		0	0		0		0		0		0	0
Apr	2029		0	0		0		0		0		0	0
May	2029		0	0		0		0		0		0	0
June	2029		0	0		0		0		0		0	0
Jul	2029		0	0		0		0		0		0	0
Aug	2029		0	0		0		0		0		0	0
Sept	2029		0	0		0		0		0		0	0
Oct	2029		0	0		0		0		0		0	0
Nov	2029		0	0		0		0		0		0	0
Dec	2029		0	0		0		0		0		0	0
Jan	2030		0	0		0		0		0		0	0
Feb	2030		0	0		0		0		0		0	0
Mar	2030		0	0		0		0		0		0	0
Apr	2030		0	0		0		0		0		0	0
May	2030		0	0		0		0		0		0	0
June	2030		0	0		0		0		0		0	0
Jul	2030		0	0		0		0		0		0	0
Aug	2030		0	0		0		0		0		0	0
Sept	2030		0	0		0		0		0		0	0
Oct	2030		0	0		0		0		0		0	0
Nov	2030		0	0		0		0		0		0	0
Dec	2030		0	0		0		0		0		0	0
Jan	2031		0	0		0		0		0		0	0
Feb	2031		0	0		0		0		0		0	0
Mar	2031		0	0		0		0		0		0	0
Apr	2031		0	0		0		0		0		0	0
May	2031		0	0		0		0		0		0	0
June	2031		0	0		0		0		0		0	0
Jul	2031		0	0		0		0		0		0	0
Aug	2031		0	0		0		0		0		0	0
Sept	2031		0	0		0		0		0		0	0
Oct	2031		0	0		0		0		0		0	0
Nov	2031		0	0		0		0		0		0	0
Dec	2031		0	0		0		0		0		0	0
Jan	2032		0	0		0		0		0		0	0
Feb	2032		0	0		0		0		0		0	0
Mar	2032		0	0		0		0		0		0	0
Apr	2032		0	0		0		0		0		0	0
May	2032		0	0		0		0		0		0	0
June	2032		0	0		0		0		0		0	0
Jul	2032		0	0		0		0		0		0	0
Aug	2032		0	0		0		0		0		0	0
Sept	2032		0	0		0		0		0		0	0
Oct	2032		0	0		0		0		0		0	0
Nov	2032		0	0		0		0		0		0	0
Dec	2032		0	0		0		0		0		0	0

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
Jan	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Feb	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Mar	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Apr	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
May	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
June	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Jul	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Aug	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Sept	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Oct	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Nov	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Dec	2029		0	0		0		0	0		0	0	-	-	-	-	-	-
Jan	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Feb	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Mar	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Apr	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
May	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
June	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Jul	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Aug	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Sept	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Oct	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Nov	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Dec	2030		0	0		0		0	0		0	0	-	-	-	-	-	-
Jan	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Feb	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Mar	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Apr	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
May	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
June	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Jul	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Aug	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Sept	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Oct	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Nov	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Dec	2031		0	0		0		0	0		0	0	-	-	-	-	-	-
Jan	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Feb	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Mar	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Apr	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
May	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
June	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Jul	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Aug	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Sept	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Oct	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Nov	2032		0	0		0		0	0		0	0	-	-	-	-	-	-
Dec	2032		0	0		0		0	0		0	0	-	-	-	-	-	-

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 2. EM&V Data Incremental by Vintage Year

	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			1,579		1,579			-		-	1,579

Table 3. EM&V Data Annualized by Vintage Year

	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			1,579		1,579			-		-	1,579

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Program Participants										
	VA							NC PPI			System
2019								-			
2020								-			
2021								-			
2022								-			
2023								-			
2024								-			
2025								-			

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			157,865		157,865			-		-	157,865

Table 3. EM&V Data Annualized by Vintage Year											
	Net Annualized Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			753,308		753,308			-		-	753,308

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
	Net Energy (kWh) for PPI										
	VA							NC PPI			System
2019								-			
2020								-			
2021								-			
2022								-			
2023								-			
2024								-			
2025								-			

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2019	113	113	-	-	113	100	-	100	0.07	-	0.07					

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2019	113	113	-	-	113	477	-	477	0.07	-	0.07					

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA	VA NLR	NC PPI	NC NLR	System	VA	NC	System	VA	NC	System					
2019			-	-			-			-						
2020			-	-			-			-						
2021			-	-			-			-						
2022			-	-			-			-						
2023			-	-			-			-						
2024			-	-			-			-						
2025			-	-			-			-						

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			1,579		1,579			-		-	1,579
2020			1,579		1,579			-		-	1,579
2021			1,579		1,579			-		-	1,579
2022			1,579		1,579			-		-	1,579
2023			1,579		1,579			-		-	1,579
2024			1,579		1,579			-		-	1,579
2025			1,579		1,579			-		-	1,579
2026			1,579		1,579			-		-	1,579
2027			-		-			-		-	-
2028			-		-			-		-	-
2029			-		-			-		-	-
2030			-		-			-		-	-
2031			-		-			-		-	-
2032			-		-			-		-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

	Program Participants										
			VA Lifetime					NC Lifetime			System Lifetime
2019			1,579					-			1,579
2020			1,579					-			1,579
2021			1,579					-			1,579
2022			1,579					-			1,579
2023			1,579					-			1,579
2024			1,579					-			1,579
2025			1,579					-			1,579
2026			1,579					-			1,579
2027			1,579					-			1,579
2028			1,579					-			1,579
2029			1,579					-			1,579
2030			1,579					-			1,579
2031			1,579					-			1,579
2032			1,579					-			1,579

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			62,776		62,776			-		-	62,776
2020			753,308		753,308			-		-	753,308
2021			753,308		753,308			-		-	753,308
2022			753,308		753,308			-		-	753,308
2023			753,308		753,308			-		-	753,308
2024			753,308		753,308			-		-	753,308
2025			753,308		753,308			-		-	753,308
2026			753,308		753,308			-		-	753,308
2027			595,443		595,443			-		-	595,443
2028			-		-			-		-	-
2029			-		-			-		-	-
2030			-		-			-		-	-
2031			-		-			-		-	-
2032			-		-			-		-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA Lifetime					NC Lifetime			System Lifetime
2019			62,776					-			62,776
2020			816,083					-			816,083
2021			1,569,391					-			1,569,391
2022			2,322,699					-			2,322,699
2023			3,076,007					-			3,076,007
2024			3,829,315					-			3,829,315
2025			4,582,622					-			4,582,622
2026			5,335,930					-			5,335,930
2027			5,931,373					-			5,931,373
2028			5,931,373					-			5,931,373
2029			5,931,373					-			5,931,373
2030			5,931,373					-			5,931,373
2031			5,931,373					-			5,931,373
2032			5,931,373					-			5,931,373

Appendix D.3 Residential Appliance Recycling Program (DSM Phase VII) 2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2019			113		113			-		-	113	40	-	40	0.07	-	0.07
2020			113		113			-		-	113	477	-	477	0.07	-	0.07
2021			113		113			-		-	113	477	-	477	0.07	-	0.07
2022			113		113			-		-	113	477	-	477	0.07	-	0.07
2023			113		113			-		-	113	477	-	477	0.07	-	0.07
2024			113		113			-		-	113	477	-	477	0.07	-	0.07
2025			113		113			-		-	113	477	-	477	0.07	-	0.07
2026			113		113			-		-	113	477	-	477	0.07	-	0.07
2027			-		-			-		-	-	-	-	-	-	-	-
2028			-		-			-		-	-	-	-	-	-	-	-
2029			-		-			-		-	-	-	-	-	-	-	-
2030			-		-			-		-	-	-	-	-	-	-	-
2031			-		-			-		-	-	-	-	-	-	-	-
2032			-		-			-		-	-	-	-	-	-	-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)											Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant			
			VA Lifetime					NC Lifetime			System Lifetime	VA	NC	System	VA	NC	System
2019			113					-		-	113	40	-	40	0.07	-	0.07
2020			113					-		-	113	517	-	517	0.07	-	0.07
2021			113					-		-	113	994	-	994	0.07	-	0.07
2022			113					-		-	113	1,471	-	1,471	0.07	-	0.07
2023			113					-		-	113	1,948	-	1,948	0.07	-	0.07
2024			113					-		-	113	2,425	-	2,425	0.07	-	0.07
2025			113					-		-	113	2,902	-	2,902	0.07	-	0.07
2026			113					-		-	113	3,379	-	3,379	0.07	-	0.07
2027			113					-		-	113	3,756	-	3,756	0.07	-	0.07
2028			113					-		-	113	3,756	-	3,756	0.07	-	0.07
2029			113					-		-	113	3,756	-	3,756	0.07	-	0.07
2030			113					-		-	113	3,756	-	3,756	0.07	-	0.07
2031			113					-		-	113	3,756	-	3,756	0.07	-	0.07
2032			113					-		-	113	3,756	-	3,756	0.07	-	0.07

Appendix D.4 Residential Efficient Products Marketplace Program 2019

PROGRAM: Residential Efficient Products Marketplace
DSM Phase VII Program
Type: Energy Efficiency
Program Measure Life: 16.5 years (16 years, 6 months)
Current Year: 2019

Table 1		Participation Program Participants												
Month	Year	VA					NC					System		
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. For IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. For Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. For IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. For Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum For IRP E+G		
Jan	2019	0		0		0	0	0		0		0	0	
Feb	2019	0		0		0	0	0		0		0	0	
Mar	2019	0		0		0	0	0		0		0	0	
Apr	2019	0		0		0	0	0		0		0	0	
May	2019	0		0		0	0	0		0		0	0	
June	2019	0		0		0	0	0		0		0	0	
Jul	2019	0		0		0	0	0		0		0	0	
Aug	2019	145,184		145,184		145,184	0	0		0		0	145,184	
Sept	2019	484,071		629,255		629,255	0	0		0		0	629,255	
Oct	2019	593,243		1,222,498		1,222,498	0	0		0		0	1,222,498	
Nov	2019	640,871		1,863,369		1,863,369	0	0		0		0	1,863,369	
Dec	2019	643,896		2,507,265		2,507,265	0	0		0		0	2,507,265	
Jan	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Feb	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Mar	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Apr	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
May	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
June	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Jul	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Aug	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Sept	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Oct	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Nov	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Dec	2020	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Jan	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Feb	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Mar	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Apr	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
May	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
June	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Jul	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Aug	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Sept	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Oct	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Nov	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Dec	2021	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Jan	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Feb	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Mar	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Apr	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
May	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
June	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Jul	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Aug	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Sept	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Oct	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Nov	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Dec	2022	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Jan	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Feb	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Mar	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Apr	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
May	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
June	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Jul	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Aug	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Sept	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Oct	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Nov	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	
Dec	2023	0		2,507,265		2,507,265	0	0		0		0	2,507,265	

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. For IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. For Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. For IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. For Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum For IRP
Jan	2019	0		0		0	0		0		0	0
Feb	2019	0		0		0	0		0		0	0
Mar	2019	0		0		0	0		0		0	0
Apr	2019	0		0		0	0		0		0	0
May	2019	0		0		0	0		0		0	0
June	2019	0		0		0	0		0		0	0
Jul	2019	0		0		0	0		0	0	0	0
Aug	2019	256,820		256,820		256,820	0		0	0	256,820	0
Sept	2019	851,183		1,108,003		1,108,003	0		0	0	1,108,003	0
Oct	2019	981,761		2,089,764		2,089,764	0		0	0	2,089,764	0
Nov	2019	1,080,285		3,170,049		3,170,049	0		0	0	3,170,049	0
Dec	2019	1,088,725		4,258,774		4,258,774	0		0	0	4,258,774	0
Jan	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Feb	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Mar	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Apr	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
May	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
June	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Jul	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Aug	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Sept	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Oct	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Nov	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Dec	2020	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Jan	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Feb	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Mar	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Apr	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
May	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
June	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Jul	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Aug	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Sept	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Oct	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Nov	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Dec	2021	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Jan	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Feb	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Mar	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Apr	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
May	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
June	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Jul	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Aug	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Sept	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Oct	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Nov	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Dec	2022	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Jan	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Feb	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Mar	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Apr	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
May	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
June	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Jul	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Aug	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Sept	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Oct	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Nov	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0
Dec	2023	0		4,258,774		4,258,774	0		0	0	4,258,774	0

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant For IRP			Net kW/Participant For IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. For IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. For Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. For IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. For Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum For IRP						
Jan	2019	0		0		0	0			0	0	0	-	-	-	-	-	-
Feb	2019	0		0		0	0			0	0	0	-	-	-	-	-	-
Mar	2019	0		0		0	0			0	0	0	-	-	-	-	-	-
Apr	2019	0		0		0	0			0	0	0	-	-	-	-	-	-
May	2019	0		0		0	0			0	0	0	-	-	-	-	-	-
June	2019	0		0		0	0			0	0	0	-	-	-	-	-	-
Jul	2019	0		0		0	0			0	0	0	-	-	-	-	-	-
Aug	2019	282		282		282	0			0	0	282	2	-	-	2	0.00	-
Sept	2019	934		1,216		1,216	0			0	0	1,216	2	-	-	2	0.00	-
Oct	2019	1,078		2,294		2,294	0			0	0	2,294	2	-	-	2	0.00	-
Nov	2019	1,186		3,480		3,480	0			0	0	3,480	2	-	-	2	0.00	-
Dec	2019	1,195		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Jan	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Feb	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Mar	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Apr	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
May	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
June	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Jul	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Aug	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Sept	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Oct	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Nov	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Dec	2020	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Jan	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Feb	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Mar	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Apr	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
May	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
June	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Jul	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Aug	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Sept	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Oct	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Nov	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Dec	2021	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Jan	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Feb	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Mar	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Apr	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
May	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
June	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Jul	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Aug	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Sept	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Oct	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Nov	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Dec	2022	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Jan	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Feb	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Mar	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Apr	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
May	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
June	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Jul	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Aug	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Sept	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Oct	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Nov	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-
Dec	2023	0		4,675		4,675	0			0	0	4,675	2	-	-	2	0.00	-

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Participation										
Month	Year	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
Jan	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Feb	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Mar	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Apr	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
May	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
June	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Jul	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Aug	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Sept	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Oct	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Nov	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Dec	2024	0		2,507,265		2,507,265	0		0		0	2,507,265
Jan	2025			2,507,265		2,507,265			0		0	2,507,265
Feb	2025			2,507,265		2,507,265			0		0	2,507,265
Mar	2025			2,507,265		2,507,265			0		0	2,507,265
Apr	2025			2,507,265		2,507,265			0		0	2,507,265
May	2025			2,507,265		2,507,265			0		0	2,507,265
June	2025			2,507,265		2,507,265			0		0	2,507,265
Jul	2025			2,507,265		2,507,265			0		0	2,507,265
Aug	2025			2,507,265		2,507,265			0		0	2,507,265
Sept	2025			2,507,265		2,507,265			0		0	2,507,265
Oct	2025			2,507,265		2,507,265			0		0	2,507,265
Nov	2025			2,507,265		2,507,265			0		0	2,507,265
Dec	2025			2,507,265		2,507,265			0		0	2,507,265
Jan	2026			2,507,265		2,507,265			0		0	2,507,265
Feb	2026			2,507,265		2,507,265			0		0	2,507,265
Mar	2026			2,507,265		2,507,265			0		0	2,507,265
Apr	2026			2,507,265		2,507,265			0		0	2,507,265
May	2026			2,507,265		2,507,265			0		0	2,507,265
June	2026			2,507,265		2,507,265			0		0	2,507,265
Jul	2026			2,507,265		2,507,265			0		0	2,507,265
Aug	2026			2,507,265		2,507,265			0		0	2,507,265
Sept	2026			2,507,265		2,507,265			0		0	2,507,265
Oct	2026			2,507,265		2,507,265			0		0	2,507,265
Nov	2026			2,507,265		2,507,265			0		0	2,507,265
Dec	2026			2,507,265		2,507,265			0		0	2,507,265
Jan	2027			2,507,265		2,507,265			0		0	2,507,265
Feb	2027			2,507,265		2,507,265			0		0	2,507,265
Mar	2027			2,507,265		2,507,265			0		0	2,507,265
Apr	2027			2,507,265		2,507,265			0		0	2,507,265
May	2027			2,507,265		2,507,265			0		0	2,507,265
June	2027			2,507,265		2,507,265			0		0	2,507,265
Jul	2027			2,507,265		2,507,265			0		0	2,507,265
Aug	2027			2,507,265		2,507,265			0		0	2,507,265
Sept	2027			2,507,265		2,507,265			0		0	2,507,265
Oct	2027			2,507,265		2,507,265			0		0	2,507,265
Nov	2027			2,507,265		2,507,265			0		0	2,507,265
Dec	2027			2,507,265		2,507,265			0		0	2,507,265
Jan	2028			2,507,265		2,507,265			0		0	2,507,265
Feb	2028			2,507,265		2,507,265			0		0	2,507,265
Mar	2028			2,507,265		2,507,265			0		0	2,507,265
Apr	2028			2,507,265		2,507,265			0		0	2,507,265
May	2028			2,507,265		2,507,265			0		0	2,507,265
June	2028			2,507,265		2,507,265			0		0	2,507,265
Jul	2028			2,507,265		2,507,265			0		0	2,507,265
Aug	2028			2,507,265		2,507,265			0		0	2,507,265
Sept	2028			2,507,265		2,507,265			0		0	2,507,265
Oct	2028			2,507,265		2,507,265			0		0	2,507,265
Nov	2028			2,507,265		2,507,265			0		0	2,507,265
Dec	2028			2,507,265		2,507,265			0		0	2,507,265

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
Jan	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Feb	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Mar	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Apr	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
May	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
June	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Jul	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Aug	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Sept	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Oct	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Nov	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Dec	2024	0		4,258,774		4,258,774	0		0		0	4,258,774
Jan	2025			4,258,774		4,258,774			0		0	4,258,774
Feb	2025			4,258,774		4,258,774			0		0	4,258,774
Mar	2025			4,258,774		4,258,774			0		0	4,258,774
Apr	2025			4,258,774		4,258,774			0		0	4,258,774
May	2025			4,258,774		4,258,774			0		0	4,258,774
June	2025			4,258,774		4,258,774			0		0	4,258,774
Jul	2025			4,258,774		4,258,774			0		0	4,258,774
Aug	2025			4,258,774		4,258,774			0		0	4,258,774
Sept	2025			4,258,774		4,258,774			0		0	4,258,774
Oct	2025			4,258,774		4,258,774			0		0	4,258,774
Nov	2025			4,258,774		4,258,774			0		0	4,258,774
Dec	2025			4,258,774		4,258,774			0		0	4,258,774
Jan	2026			4,258,774		4,258,774			0		0	4,258,774
Feb	2026			4,258,774		4,258,774			0		0	4,258,774
Mar	2026			4,258,774		4,258,774			0		0	4,258,774
Apr	2026			4,258,774		4,258,774			0		0	4,258,774
May	2026			4,258,774		4,258,774			0		0	4,258,774
June	2026			4,258,774		4,258,774			0		0	4,258,774
Jul	2026			4,258,774		4,258,774			0		0	4,258,774
Aug	2026			4,258,774		4,258,774			0		0	4,258,774
Sept	2026			4,258,774		4,258,774			0		0	4,258,774
Oct	2026			4,258,774		4,258,774			0		0	4,258,774
Nov	2026			4,258,774		4,258,774			0		0	4,258,774
Dec	2026			4,258,774		4,258,774			0		0	4,258,774
Jan	2027			4,258,774		4,258,774			0		0	4,258,774
Feb	2027			4,258,774		4,258,774			0		0	4,258,774
Mar	2027			4,258,774		4,258,774			0		0	4,258,774
Apr	2027			4,258,774		4,258,774			0		0	4,258,774
May	2027			4,258,774		4,258,774			0		0	4,258,774
June	2027			4,258,774		4,258,774			0		0	4,258,774
Jul	2027			4,258,774		4,258,774			0		0	4,258,774
Aug	2027			4,258,774		4,258,774			0		0	4,258,774
Sept	2027			4,258,774		4,258,774			0		0	4,258,774
Oct	2027			4,258,774		4,258,774			0		0	4,258,774
Nov	2027			4,258,774		4,258,774			0		0	4,258,774
Dec	2027			4,258,774		4,258,774			0		0	4,258,774
Jan	2028			4,258,774		4,258,774			0		0	4,258,774
Feb	2028			4,258,774		4,258,774			0		0	4,258,774
Mar	2028			4,258,774		4,258,774			0		0	4,258,774
Apr	2028			4,258,774		4,258,774			0		0	4,258,774
May	2028			4,258,774		4,258,774			0		0	4,258,774
June	2028			4,258,774		4,258,774			0		0	4,258,774
Jul	2028			4,258,774		4,258,774			0		0	4,258,774
Aug	2028			4,258,774		4,258,774			0		0	4,258,774
Sept	2028			4,258,774		4,258,774			0		0	4,258,774
Oct	2028			4,258,774		4,258,774			0		0	4,258,774
Nov	2028			4,258,774		4,258,774			0		0	4,258,774
Dec	2028			4,258,774		4,258,774			0		0	4,258,774

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC				System		VA	NC	System	VA	NC	System	
VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP								
Jan	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Feb	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Mar	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Apr	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
May	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
June	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Jul	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Aug	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Sept	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Oct	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Nov	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Dec	2024	0		4,675		4,675	0		0		0	4,675	2	-	2	0.00	-	0.00
Jan	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2025			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2026			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2027			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2028			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Participation										
Month	Year	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
Jan	2029			2,507,265		2,507,265				0	0	2,507,265
Feb	2029			2,507,265		2,507,265				0	0	2,507,265
Mar	2029			2,507,265		2,507,265				0	0	2,507,265
Apr	2029			2,507,265		2,507,265				0	0	2,507,265
May	2029			2,507,265		2,507,265				0	0	2,507,265
June	2029			2,507,265		2,507,265				0	0	2,507,265
Jul	2029			2,507,265		2,507,265				0	0	2,507,265
Aug	2029			2,507,265		2,507,265				0	0	2,507,265
Sept	2029			2,507,265		2,507,265				0	0	2,507,265
Oct	2029			2,507,265		2,507,265				0	0	2,507,265
Nov	2029			2,507,265		2,507,265				0	0	2,507,265
Dec	2029			2,507,265		2,507,265				0	0	2,507,265
Jan	2030			2,507,265		2,507,265				0	0	2,507,265
Feb	2030			2,507,265		2,507,265				0	0	2,507,265
Mar	2030			2,507,265		2,507,265				0	0	2,507,265
Apr	2030			2,507,265		2,507,265				0	0	2,507,265
May	2030			2,507,265		2,507,265				0	0	2,507,265
June	2030			2,507,265		2,507,265				0	0	2,507,265
Jul	2030			2,507,265		2,507,265				0	0	2,507,265
Aug	2030			2,507,265		2,507,265				0	0	2,507,265
Sept	2030			2,507,265		2,507,265				0	0	2,507,265
Oct	2030			2,507,265		2,507,265				0	0	2,507,265
Nov	2030			2,507,265		2,507,265				0	0	2,507,265
Dec	2030			2,507,265		2,507,265				0	0	2,507,265
Jan	2031			2,507,265		2,507,265				0	0	2,507,265
Feb	2031			2,507,265		2,507,265				0	0	2,507,265
Mar	2031			2,507,265		2,507,265				0	0	2,507,265
Apr	2031			2,507,265		2,507,265				0	0	2,507,265
May	2031			2,507,265		2,507,265				0	0	2,507,265
June	2031			2,507,265		2,507,265				0	0	2,507,265
Jul	2031			2,507,265		2,507,265				0	0	2,507,265
Aug	2031			2,507,265		2,507,265				0	0	2,507,265
Sept	2031			2,507,265		2,507,265				0	0	2,507,265
Oct	2031			2,507,265		2,507,265				0	0	2,507,265
Nov	2031			2,507,265		2,507,265				0	0	2,507,265
Dec	2031			2,507,265		2,507,265				0	0	2,507,265
Jan	2032			2,507,265		2,507,265				0	0	2,507,265
Feb	2032			2,507,265		2,507,265				0	0	2,507,265
Mar	2032			2,507,265		2,507,265				0	0	2,507,265
Apr	2032			2,507,265		2,507,265				0	0	2,507,265
May	2032			2,507,265		2,507,265				0	0	2,507,265
June	2032			2,507,265		2,507,265				0	0	2,507,265
Jul	2032			2,507,265		2,507,265				0	0	2,507,265
Aug	2032			2,507,265		2,507,265				0	0	2,507,265
Sept	2032			2,507,265		2,507,265				0	0	2,507,265
Oct	2032			2,507,265		2,507,265				0	0	2,507,265
Nov	2032			2,507,265		2,507,265				0	0	2,507,265
Dec	2032			2,507,265		2,507,265				0	0	2,507,265
Jan	2033			2,507,265		2,507,265				0	0	2,507,265
Feb	2033			2,507,265		2,507,265				0	0	2,507,265
Mar	2033			2,507,265		2,507,265				0	0	2,507,265
Apr	2033			2,507,265		2,507,265				0	0	2,507,265
May	2033			2,507,265		2,507,265				0	0	2,507,265
June	2033			2,507,265		2,507,265				0	0	2,507,265
Jul	2033			2,507,265		2,507,265				0	0	2,507,265
Aug	2033			2,507,265		2,507,265				0	0	2,507,265
Sept	2033			2,507,265		2,507,265				0	0	2,507,265
Oct	2033			2,507,265		2,507,265				0	0	2,507,265
Nov	2033			2,507,265		2,507,265				0	0	2,507,265
Dec	2033			2,507,265		2,507,265				0	0	2,507,265

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
Jan	2029			4,258,774		4,258,774			0		0	4,258,774
Feb	2029			4,258,774		4,258,774			0		0	4,258,774
Mar	2029			4,258,774		4,258,774			0		0	4,258,774
Apr	2029			4,258,774		4,258,774			0		0	4,258,774
May	2029			4,258,774		4,258,774			0		0	4,258,774
June	2029			4,258,774		4,258,774			0		0	4,258,774
Jul	2029			4,258,774		4,258,774			0		0	4,258,774
Aug	2029			4,258,774		4,258,774			0		0	4,258,774
Sept	2029			4,258,774		4,258,774			0		0	4,258,774
Oct	2029			4,258,774		4,258,774			0		0	4,258,774
Nov	2029			4,258,774		4,258,774			0		0	4,258,774
Dec	2029			4,258,774		4,258,774			0		0	4,258,774
Jan	2030			4,258,774		4,258,774			0		0	4,258,774
Feb	2030			4,258,774		4,258,774			0		0	4,258,774
Mar	2030			4,258,774		4,258,774			0		0	4,258,774
Apr	2030			4,258,774		4,258,774			0		0	4,258,774
May	2030			4,258,774		4,258,774			0		0	4,258,774
June	2030			4,258,774		4,258,774			0		0	4,258,774
Jul	2030			4,258,774		4,258,774			0		0	4,258,774
Aug	2030			4,258,774		4,258,774			0		0	4,258,774
Sept	2030			4,258,774		4,258,774			0		0	4,258,774
Oct	2030			4,258,774		4,258,774			0		0	4,258,774
Nov	2030			4,258,774		4,258,774			0		0	4,258,774
Dec	2030			4,258,774		4,258,774			0		0	4,258,774
Jan	2031			4,258,774		4,258,774			0		0	4,258,774
Feb	2031			4,258,774		4,258,774			0		0	4,258,774
Mar	2031			4,258,774		4,258,774			0		0	4,258,774
Apr	2031			4,258,774		4,258,774			0		0	4,258,774
May	2031			4,258,774		4,258,774			0		0	4,258,774
June	2031			4,258,774		4,258,774			0		0	4,258,774
Jul	2031			4,258,774		4,258,774			0		0	4,258,774
Aug	2031			4,258,774		4,258,774			0		0	4,258,774
Sept	2031			4,258,774		4,258,774			0		0	4,258,774
Oct	2031			4,258,774		4,258,774			0		0	4,258,774
Nov	2031			4,258,774		4,258,774			0		0	4,258,774
Dec	2031			4,258,774		4,258,774			0		0	4,258,774
Jan	2032			4,258,774		4,258,774			0		0	4,258,774
Feb	2032			4,258,774		4,258,774			0		0	4,258,774
Mar	2032			4,258,774		4,258,774			0		0	4,258,774
Apr	2032			4,258,774		4,258,774			0		0	4,258,774
May	2032			4,258,774		4,258,774			0		0	4,258,774
June	2032			4,258,774		4,258,774			0		0	4,258,774
Jul	2032			4,258,774		4,258,774			0		0	4,258,774
Aug	2032			4,258,774		4,258,774			0		0	4,258,774
Sept	2032			4,258,774		4,258,774			0		0	4,258,774
Oct	2032			4,258,774		4,258,774			0		0	4,258,774
Nov	2032			4,258,774		4,258,774			0		0	4,258,774
Dec	2032			4,258,774		4,258,774			0		0	4,258,774
Jan	2033			4,258,774		4,258,774			0		0	4,258,774
Feb	2033			4,258,774		4,258,774			0		0	4,258,774
Mar	2033			4,258,774		4,258,774			0		0	4,258,774
Apr	2033			4,258,774		4,258,774			0		0	4,258,774
May	2033			4,258,774		4,258,774			0		0	4,258,774
June	2033			4,258,774		4,258,774			0		0	4,258,774
Jul	2033			4,258,774		4,258,774			0		0	4,258,774
Aug	2033			4,258,774		4,258,774			0		0	4,258,774
Sept	2033			4,258,774		4,258,774			0		0	4,258,774
Oct	2033			4,258,774		4,258,774			0		0	4,258,774
Nov	2033			4,258,774		4,258,774			0		0	4,258,774
Dec	2033			4,258,774		4,258,774			0		0	4,258,774

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC				System		VA	NC	System	VA	NC	System	
VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP								
Jan	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2029			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2030			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2031			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2032			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2033			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
Jan	2034			2,507,265		2,507,265			0		0	2,507,265
Feb	2034			2,507,265		2,507,265			0		0	2,507,265
Mar	2034			2,507,265		2,507,265			0		0	2,507,265
Apr	2034			2,507,265		2,507,265			0		0	2,507,265
May	2034			2,507,265		2,507,265			0		0	2,507,265
June	2034			2,507,265		2,507,265			0		0	2,507,265
Jul	2034			2,507,265		2,507,265			0		0	2,507,265
Aug	2034			2,507,265		2,507,265			0		0	2,507,265
Sept	2034			2,507,265		2,507,265			0		0	2,507,265
Oct	2034			2,507,265		2,507,265			0		0	2,507,265
Nov	2034			2,507,265		2,507,265			0		0	2,507,265
Dec	2034			2,507,265		2,507,265			0		0	2,507,265
Jan	2035			2,507,265		2,507,265			0		0	2,507,265
Feb	2035			2,507,265		2,507,265			0		0	2,507,265
Mar	2035			2,507,265		2,507,265			0		0	2,507,265
Apr	2035			2,507,265		2,507,265			0		0	2,507,265
May	2035			2,507,265		2,507,265			0		0	2,507,265
June	2035			2,507,265		2,507,265			0		0	2,507,265
Jul	2035			2,507,265		2,507,265			0		0	2,507,265
Aug	2035			2,507,265		2,507,265			0		0	2,507,265
Sept	2035			2,507,265		2,507,265			0		0	2,507,265
Oct	2035			2,507,265		2,507,265			0		0	2,507,265
Nov	2035			2,507,265		2,507,265			0		0	2,507,265
Dec	2035			2,507,265		2,507,265			0		0	2,507,265
Jan	2036		0	2,507,265		2,507,265			0		0	2,507,265
Feb	2036		-145,184	2,362,080		2,362,080			0		0	2,362,080
Mar	2036		-484,071	1,878,010		1,878,010			0		0	1,878,010
Apr	2036		-593,243	1,284,767		1,284,767			0		0	1,284,767
May	2036		-640,871	643,896		643,896			0		0	643,896
June	2036		-643,896	0		0			0		0	0
Jul	2036		0	0		0		0		0	0	0
Aug	2036		0	0		0		0		0	0	0
Sept	2036		0	0		0		0		0	0	0
Oct	2036		0	0		0		0		0	0	0
Nov	2036		0	0		0		0		0	0	0
Dec	2036		0	0		0		0		0	0	0
Jan	2037		0	0		0		0		0	0	0
Feb	2037		0	0		0		0		0	0	0
Mar	2037		0	0		0		0		0	0	0
Apr	2037		0	0		0		0		0	0	0
May	2037		0	0		0		0		0	0	0
June	2037		0	0		0		0		0	0	0
Jul	2037		0	0		0		0		0	0	0
Aug	2037		0	0		0		0		0	0	0
Sept	2037		0	0		0		0		0	0	0
Oct	2037		0	0		0		0		0	0	0
Nov	2037		0	0		0		0		0	0	0
Dec	2037		0	0		0		0		0	0	0
Jan	2038		0	0		0		0		0	0	0
Feb	2038		0	0		0		0		0	0	0
Mar	2038		0	0		0		0		0	0	0
Apr	2038		0	0		0		0		0	0	0
May	2038		0	0		0		0		0	0	0
June	2038		0	0		0		0		0	0	0
Jul	2038		0	0		0		0		0	0	0
Aug	2038		0	0		0		0		0	0	0
Sept	2038		0	0		0		0		0	0	0
Oct	2038		0	0		0		0		0	0	0
Nov	2038		0	0		0		0		0	0	0
Dec	2038		0	0		0		0		0	0	0

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Energy Savings											
Month	Year	Net kWh											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
Jan	2034			4,258,774		4,258,774				0		0	4,258,774
Feb	2034			4,258,774		4,258,774				0		0	4,258,774
Mar	2034			4,258,774		4,258,774				0		0	4,258,774
Apr	2034			4,258,774		4,258,774				0		0	4,258,774
May	2034			4,258,774		4,258,774				0		0	4,258,774
June	2034			4,258,774		4,258,774				0		0	4,258,774
Jul	2034			4,258,774		4,258,774				0		0	4,258,774
Aug	2034			4,258,774		4,258,774				0		0	4,258,774
Sept	2034			4,258,774		4,258,774				0		0	4,258,774
Oct	2034			4,258,774		4,258,774				0		0	4,258,774
Nov	2034			4,258,774		4,258,774				0		0	4,258,774
Dec	2034			4,258,774		4,258,774				0		0	4,258,774
Jan	2035			4,258,774		4,258,774				0		0	4,258,774
Feb	2035			4,258,774		4,258,774				0		0	4,258,774
Mar	2035			4,258,774		4,258,774				0		0	4,258,774
Apr	2035			4,258,774		4,258,774				0		0	4,258,774
May	2035			4,258,774		4,258,774				0		0	4,258,774
June	2035			4,258,774		4,258,774				0		0	4,258,774
Jul	2035			4,258,774		4,258,774				0		0	4,258,774
Aug	2035			4,258,774		4,258,774				0		0	4,258,774
Sept	2035			4,258,774		4,258,774				0		0	4,258,774
Oct	2035			4,258,774		4,258,774				0		0	4,258,774
Nov	2035			4,258,774		4,258,774				0		0	4,258,774
Dec	2035			4,258,774		4,258,774				0		0	4,258,774
Jan	2036		0	4,258,774		4,258,774				0		0	4,258,774
Feb	2036		-256,820	4,001,954		4,001,954				0		0	4,001,954
Mar	2036		-851,183	3,150,771		3,150,771				0		0	3,150,771
Apr	2036		-981,761	2,169,010		2,169,010				0		0	2,169,010
May	2036		-1,080,285	1,088,725		1,088,725				0		0	1,088,725
June	2036		-1,088,725	0		0				0		0	0
Jul	2036		0	0		0		0		0		0	0
Aug	2036		0	0		0		0		0		0	0
Sept	2036		0	0		0		0		0		0	0
Oct	2036		0	0		0		0		0		0	0
Nov	2036		0	0		0		0		0		0	0
Dec	2036		0	0		0		0		0		0	0
Jan	2037		0	0		0		0		0		0	0
Feb	2037		0	0		0		0		0		0	0
Mar	2037		0	0		0		0		0		0	0
Apr	2037		0	0		0		0		0		0	0
May	2037		0	0		0		0		0		0	0
June	2037		0	0		0		0		0		0	0
Jul	2037		0	0		0		0		0		0	0
Aug	2037		0	0		0		0		0		0	0
Sept	2037		0	0		0		0		0		0	0
Oct	2037		0	0		0		0		0		0	0
Nov	2037		0	0		0		0		0		0	0
Dec	2037		0	0		0		0		0		0	0
Jan	2038		0	0		0		0		0		0	0
Feb	2038		0	0		0		0		0		0	0
Mar	2038		0	0		0		0		0		0	0
Apr	2038		0	0		0		0		0		0	0
May	2038		0	0		0		0		0		0	0
June	2038		0	0		0		0		0		0	0
Jul	2038		0	0		0		0		0		0	0
Aug	2038		0	0		0		0		0		0	0
Sept	2038		0	0		0		0		0		0	0
Oct	2038		0	0		0		0		0		0	0
Nov	2038		0	0		0		0		0		0	0
Dec	2038		0	0		0		0		0		0	0

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC				System		VA	NC	System	VA	NC	System	
VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP								
Jan	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2034			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Mar	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Apr	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
May	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
June	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jul	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Aug	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Sept	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Oct	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Nov	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Dec	2035			4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Jan	2036		0	4,675		4,675			0		0	4,675	2	-	2	0.00	-	0.00
Feb	2036		-282	4,393		4,393			0		0	4,393	2	-	2	0.00	-	0.00
Mar	2036		-934	3,459		3,459			0		0	3,459	2	-	2	0.00	-	0.00
Apr	2036		-1,078	2,381		2,381			0		0	2,381	2	-	2	0.00	-	0.00
May	2036		-1,186	1,195		1,195			0		0	1,195	2	-	2	0.00	-	0.00
June	2036		-1,195	0		0			0		0	0	-	-	-	-	-	-
Jul	2036		0	0		0		0	0		0	0	-	-	-	-	-	-
Aug	2036		0	0		0		0	0		0	0	-	-	-	-	-	-
Sept	2036		0	0		0		0	0		0	0	-	-	-	-	-	-
Oct	2036		0	0		0		0	0		0	0	-	-	-	-	-	-
Nov	2036		0	0		0		0	0		0	0	-	-	-	-	-	-
Dec	2036		0	0		0		0	0		0	0	-	-	-	-	-	-
Jan	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Feb	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Mar	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Apr	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
May	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
June	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Jul	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Aug	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Sept	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Oct	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Nov	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Dec	2037		0	0		0		0	0		0	0	-	-	-	-	-	-
Jan	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Feb	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Mar	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Apr	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
May	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
June	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Jul	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Aug	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Sept	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Oct	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Nov	2038		0	0		0		0	0		0	0	-	-	-	-	-	-
Dec	2038		0	0		0		0	0		0	0	-	-	-	-	-	-

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Participation											
Month	Year	Program Participants											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
Jan	2039		0	0		0		0		0		0	0
Feb	2039		0	0		0		0		0		0	0
Mar	2039		0	0		0		0		0		0	0
Apr	2039		0	0		0		0		0		0	0
May	2039		0	0		0		0		0		0	0
June	2039		0	0		0		0		0		0	0
Jul	2039		0	0		0		0		0		0	0
Aug	2039		0	0		0		0		0		0	0
Sept	2039		0	0		0		0		0		0	0
Oct	2039		0	0		0		0		0		0	0
Nov	2039		0	0		0		0		0		0	0
Dec	2039		0	0		0		0		0		0	0
Jan	2040			0		0		0		0		0	0
Feb	2040			0		0		0		0		0	0
Mar	2040			0		0		0		0		0	0
Apr	2040			0		0		0		0		0	0
May	2040			0		0		0		0		0	0
June	2040			0		0		0		0		0	0
Jul	2040			0		0		0		0		0	0
Aug	2040			0		0		0		0		0	0
Sept	2040			0		0		0		0		0	0
Oct	2040			0		0		0		0		0	0
Nov	2040			0		0		0		0		0	0
Dec	2040			0		0		0		0		0	0

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Energy Savings											
Month	Year	Net kWh											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
Jan	2039		0	0		0		0		0		0	0
Feb	2039		0	0		0		0		0		0	0
Mar	2039		0	0		0		0		0		0	0
Apr	2039		0	0		0		0		0		0	0
May	2039		0	0		0		0		0		0	0
June	2039		0	0		0		0		0		0	0
Jul	2039		0	0		0		0		0		0	0
Aug	2039		0	0		0		0		0		0	0
Sept	2039		0	0		0		0		0		0	0
Oct	2039		0	0		0		0		0		0	0
Nov	2039		0	0		0		0		0		0	0
Dec	2039		0	0		0		0		0		0	0
Jan	2040		0	0		0		0		0		0	0
Feb	2040		0	0		0		0		0		0	0
Mar	2040		0	0		0		0		0		0	0
Apr	2040		0	0		0		0		0		0	0
May	2040		0	0		0		0		0		0	0
June	2040		0	0		0		0		0		0	0
Jul	2040		0	0		0		0		0		0	0
Aug	2040		0	0		0		0		0		0	0
Sept	2040		0	0		0		0		0		0	0
Oct	2040		0	0		0		0		0		0	0
Nov	2040		0	0		0		0		0		0	0
Dec	2040		0	0		0		0		0		0	0

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant						
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP						
		VA				NC				System			VA	NC	System	VA	NC	System				
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP										
Jan	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Feb	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Mar	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Apr	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
May	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
June	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Jul	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Aug	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Sept	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Oct	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Nov	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Dec	2039		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Jan	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Feb	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Mar	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Apr	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
May	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
June	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Jul	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Aug	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Sept	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Oct	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Nov	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-
Dec	2040		0	0		0		0		0		0		0		0	-	-	-	-	-	-

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 2. EM&V Data Incremental by Vintage Year

	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			2,507,265		2,507,265			-		-	2,507,265

Table 3. EM&V Data Annualized by Vintage Year

	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			2,507,265		2,507,265			-		-	2,507,265

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Program Participants										
	VA							NC PPI			System
2019								-			
2020								-			
2021								-			
2022								-			
2023								-			
2024								-			
2025								-			

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 2. EM&V Data Incremental by Vintage Year

Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			10,883,411		10,883,411.42			-		-	10,883,411

Table 3. EM&V Data Annualized by Vintage Year

Net Annualized Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			51,105,293		51,105,293			-		-	51,105,293

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

Net Energy (kWh) for PPI											
	VA							NC PPI			System
2019								-			
2020								-			
2021								-			
2022								-			
2023								-			
2024								-			
2025								-			

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2019	4,675	4,675	-	-	4,675	4	-	4	0.00	-	0.00					

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2019	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA	VA NLR	NC PPI	NC NLR	System	VA	NC	System	VA	NC	System					
2019			-	-			-			-						
2020			-	-			-			-						
2021			-	-			-			-						
2022			-	-			-			-						
2023			-	-			-			-						
2024			-	-			-			-						
2025			-	-			-			-						

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			2,507,265		2,507,265			-		-	2,507,265
2020			2,507,265		2,507,265			-		-	2,507,265
2021			2,507,265		2,507,265			-		-	2,507,265
2022			2,507,265		2,507,265			-		-	2,507,265
2023			2,507,265		2,507,265			-		-	2,507,265
2024			2,507,265		2,507,265			-		-	2,507,265
2025			2,507,265		2,507,265			-		-	2,507,265
2026			2,507,265		2,507,265			-		-	2,507,265
2027			2,507,265		2,507,265			-		-	2,507,265
2028			2,507,265		2,507,265			-		-	2,507,265
2029			2,507,265		2,507,265			-		-	2,507,265
2030			2,507,265		2,507,265			-		-	2,507,265
2031			2,507,265		2,507,265			-		-	2,507,265
2032			2,507,265		2,507,265			-		-	2,507,265
2033			2,507,265		2,507,265			-		-	2,507,265
2034			2,507,265		2,507,265			-		-	2,507,265
2035			2,507,265		2,507,265			-		-	2,507,265
2036			-		-			-		-	-
2037			-		-			-		-	-
2038			-		-			-		-	-
2039			-		-			-		-	-
2040			-		-			-		-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

	Program Participants										
			VA Lifetime					NC Lifetime			System Lifetime
2019			2,507,265					-			2,507,265
2020			2,507,265					-			2,507,265
2021			2,507,265					-			2,507,265
2022			2,507,265					-			2,507,265
2023			2,507,265					-			2,507,265
2024			2,507,265					-			2,507,265
2025			2,507,265					-			2,507,265
2026			2,507,265					-			2,507,265
2027			2,507,265					-			2,507,265
2028			2,507,265					-			2,507,265
2029			2,507,265					-			2,507,265
2030			2,507,265					-			2,507,265
2031			2,507,265					-			2,507,265
2032			2,507,265					-			2,507,265
2033			2,507,265					-			2,507,265
2034			2,507,265					-			2,507,265
2035			2,507,265					-			2,507,265
2036			2,507,265					-			2,507,265
2037			2,507,265					-			2,507,265
2038			2,507,265					-			2,507,265
2039			2,507,265					-			2,507,265
2040			2,507,265					-			2,507,265

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			4,258,774		4,258,774			-		-	4,258,774
2020			51,105,293		51,105,293			-		-	51,105,293
2021			51,105,293		51,105,293			-		-	51,105,293
2022			51,105,293		51,105,293			-		-	51,105,293
2023			51,105,293		51,105,293			-		-	51,105,293
2024			51,105,293		51,105,293			-		-	51,105,293
2025			51,105,293		51,105,293			-		-	51,105,293
2026			51,105,293		51,105,293			-		-	51,105,293
2027			51,105,293		51,105,293			-		-	51,105,293
2028			51,105,293		51,105,293			-		-	51,105,293
2029			51,105,293		51,105,293			-		-	51,105,293
2030			51,105,293		51,105,293			-		-	51,105,293
2031			51,105,293		51,105,293			-		-	51,105,293
2032			51,105,293		51,105,293			-		-	51,105,293
2033			51,105,293		51,105,293			-		-	51,105,293
2034			51,105,293		51,105,293			-		-	51,105,293
2035			51,105,293		51,105,293			-		-	51,105,293
2036			14,669,235		14,669,235			-		-	14,669,235
2037			-		-			-		-	-
2038			-		-			-		-	-
2039			-		-			-		-	-
2040			-		-			-		-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

	Net Energy (kWh)										
			VA Lifetime					NC Lifetime			System Lifetime
2019			4,258,774					-			4,258,774
2020			55,364,067					-			55,364,067
2021			106,469,360					-			106,469,360
2022			157,574,653					-			157,574,653
2023			208,679,946					-			208,679,946
2024			259,785,238					-			259,785,238
2025			310,890,531					-			310,890,531
2026			361,995,824					-			361,995,824
2027			413,101,117					-			413,101,117
2028			464,206,409					-			464,206,409
2029			515,311,702					-			515,311,702
2030			566,416,995					-			566,416,995
2031			617,522,288					-			617,522,288
2032			668,627,581					-			668,627,581
2033			719,732,873					-			719,732,873
2034			770,838,166					-			770,838,166
2035			821,943,459					-			821,943,459
2036			836,612,694					-			836,612,694
2037			836,612,694					-			836,612,694
2038			836,612,694					-			836,612,694
2039			836,612,694					-			836,612,694
2040			836,612,694					-			836,612,694

Appendix D.4 Residential Efficient Products Marketplace Program 2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Year	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2019	4,675	4,675	-	-	4,675	2	-	2	0.00	-	0.00					
2020	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2021	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2022	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2023	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2024	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2025	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2026	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2027	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2028	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2029	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2030	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2031	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2032	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2033	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2034	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2035	4,675	4,675	-	-	4,675	20	-	20	0.00	-	0.00					
2036	-	-	-	-	-	-	-	-	-	-	-					
2037	-	-	-	-	-	-	-	-	-	-	-					
2038	-	-	-	-	-	-	-	-	-	-	-					
2039	-	-	-	-	-	-	-	-	-	-	-					
2040	-	-	-	-	-	-	-	-	-	-	-					

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)											Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
Year	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA Lifetime	VA NLR	NC Lifetime	NC NLR	System Lifetime	VA	NC	System	VA	NC	System					
2019	4,675	4,675	-	-	4,675	2	-	2	0.00	-	0.00					
2020	4,675	4,675	-	-	4,675	22	-	22	0.00	-	0.00					
2021	4,675	4,675	-	-	4,675	42	-	42	0.00	-	0.00					
2022	4,675	4,675	-	-	4,675	63	-	63	0.00	-	0.00					
2023	4,675	4,675	-	-	4,675	83	-	83	0.00	-	0.00					
2024	4,675	4,675	-	-	4,675	104	-	104	0.00	-	0.00					
2025	4,675	4,675	-	-	4,675	124	-	124	0.00	-	0.00					
2026	4,675	4,675	-	-	4,675	144	-	144	0.00	-	0.00					
2027	4,675	4,675	-	-	4,675	165	-	165	0.00	-	0.00					
2028	4,675	4,675	-	-	4,675	185	-	185	0.00	-	0.00					
2029	4,675	4,675	-	-	4,675	206	-	206	0.00	-	0.00					
2030	4,675	4,675	-	-	4,675	226	-	226	0.00	-	0.00					
2031	4,675	4,675	-	-	4,675	246	-	246	0.00	-	0.00					
2032	4,675	4,675	-	-	4,675	267	-	267	0.00	-	0.00					
2033	4,675	4,675	-	-	4,675	287	-	287	0.00	-	0.00					
2034	4,675	4,675	-	-	4,675	307	-	307	0.00	-	0.00					
2035	4,675	4,675	-	-	4,675	328	-	328	0.00	-	0.00					
2036	4,675	4,675	-	-	4,675	334	-	334	0.00	-	0.00					
2037	4,675	4,675	-	-	4,675	334	-	334	0.00	-	0.00					
2038	4,675	4,675	-	-	4,675	334	-	334	0.00	-	0.00					
2039	4,675	4,675	-	-	4,675	334	-	334	0.00	-	0.00					
2040	4,675	4,675	-	-	4,675	334	-	334	0.00	-	0.00					

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2014	0		0		0					0		-			-		-
February	2014	0		0		0					0		-			-		-
March	2014	0		0		0					0		-			-		-
April	2014	0		0		0					0		-			-		-
May	2014	0		0		0					0		-			-		-
June	2014	0		0		0					0		-			-		-
July	2014	0		0		0					0		-			-		-
August	2014	0		0		0					0		-			-		-
September	2014	0		0		0					0		-			-		-
October	2014	41		41		41					41		1,149		1,149		2.95	2.95
November	2014	295		336		336					336		1,733		1,733		4.36	4.36
December	2014	363		699		699					699		2,348		2,348		5.92	5.92
January	2015	137		836		836	0	0			0	836	1,984	-	1,984	4.98	-	4.98
February	2015	266		1,102		1,102	0	0			0	1,102	2,017	-	2,017	5.10	-	5.10
March	2015	657		1,759		1,759	0	0			0	1,759	2,336	-	2,336	6.19	-	6.19
April	2015	499		2,257		2,257	5	5			5	2,262	2,441	1,886	2,439	6.36	4.99	6.35
May	2015	841		3,098		3,098	0	0			5	3,103	2,578	1,886	2,577	6.63	4.99	6.63
June	2015	1,517		4,615		4,615	0	0			5	4,620	3,119	943	3,111	8.00	2.49	7.98
July	2015	394		5,009		5,009	0	0			5	5,014	2,990	943	2,984	7.65	2.49	7.63
August	2015	462		5,471		5,471	0	0			5	5,476	2,760	943	2,755	7.00	2.49	6.98
September	2015	673		6,143		6,143	15	20			20	6,164	2,311	1,761	2,308	5.80	4.08	5.79
October	2015	1,114		7,257		7,257	45	66			66	7,323	2,371	2,971	2,376	5.94	6.59	5.94
November	2015	294		7,551		7,551	2	68			68	7,619	2,354	2,777	2,358	5.88	6.16	5.88
December	2015	620		8,171		8,171	5	73			73	8,244	2,386	2,532	2,387	6.01	5.63	6.01
January	2016	741		8,912		8,912	2	75			75	8,987	2,389	2,401	2,389	6.09	5.37	6.08
February	2016	538		9,450		9,450	6	81			81	9,531	2,419	2,388	2,419	6.23	5.43	6.23
March	2016	804		10,253		10,253	157	238			238	10,492	2,429	5,231	2,458	6.29	14.02	6.37
April	2016	525		10,779		10,779	43	281			281	11,060	2,439	5,740	2,474	6.34	15.61	6.44
May	2016	758		11,537		11,537	0	281			281	11,818	2,422	5,740	2,455	6.32	15.61	6.42
June	2016	1,488		13,024		13,024	36	317			317	13,341	2,499	4,238	2,523	6.56	11.32	6.63
July	2016	1,221		14,246		14,246	14	331	14		331	14,577	2,531	4,263	2,554	6.70	11.41	6.77
August	2016	1,322		15,568		15,568	113	443	127		443	16,011	2,593	3,866	2,617	6.88	9.85	6.93
September	2016	785		16,353		16,353	9	452	135		452	16,805	2,637	3,854	2,660	7.02	9.83	7.07
October	2016	694		17,047		17,047	57	510	193		510	17,557	2,663	3,855	2,688	7.09	9.99	7.15
November	2016	1,309		18,356		18,356	28	538	221		538	18,894	2,754	3,871	2,777	7.35	10.15	7.41
December	2016	581		18,937		18,937	56	593			593	19,530	2,765	4,060	2,793	7.39	10.60	7.46
January	2017	779		19,716		19,716	0	593			593	20,309	2,831	4,065	2,857	7.46	10.41	7.52
February	2017	564		20,279		20,279	0	593			593	20,873	2,851	4,044	2,875	7.45	10.23	7.51
March	2017	832		21,112		21,112	25	619			619	21,730	2,917	4,068	2,942	7.52	10.31	7.58
April	2017	664		21,775		21,775	39	657			657	22,433	2,954	4,008	2,977	7.54	10.11	7.60
May	2017	611		22,387		22,387	81	739			739	23,125	2,970	4,092	2,996	7.52	10.40	7.59
June	2017	353		22,740		22,740	0	739			739	23,479	2,968	4,092	2,993	7.45	10.40	7.52
July	2017	323		23,063		23,063	0	739			739	23,802	2,963	4,092	2,988	7.39	10.40	7.46
August	2017	675		23,738		23,738	15	754			754	24,492	3,011	4,140	3,035	7.43	10.48	7.49
September	2017	857		24,595		24,595	66	820			820	25,415	3,077	4,349	3,105	7.54	10.93	7.62
October	2017	1,154		25,749		25,749	5	825			825	26,574	3,172	4,200	3,195	7.71	10.58	7.78
November	2017	1,076		26,826		26,826	3	828			828	27,653	3,251	4,161	3,271	7.90	10.48	7.96
December	2017	482		27,308		27,308	0	828			828	28,135	3,273	4,162	3,293	7.96	10.48	8.02
January	2018	93		27,401		27,401	0	828			828	28,229	3,277	4,162	3,297	7.96	10.48	8.01
February	2018	438		27,839		27,839	64	892			892	28,731	3,288	4,396	3,313	7.95	11.01	8.02
March	2018	190		28,029		28,029	44	936			936	28,965	3,304	3,972	3,321	7.93	9.96	7.98
April	2018	101		28,130		28,130	3	939			939	29,069	3,303	3,791	3,317	7.91	9.49	7.95
May	2018	666		28,796		28,796	3	942			942	29,738	3,349	3,628	3,357	8.01	9.06	8.04
June	2018	349		29,145		29,145	5	947			947	30,092	3,362	3,469	3,366	8.00	8.61	8.02
July	2018	386		29,531		29,531	111	1,058			1,058	30,589	3,377	3,776	3,389	8.00	9.36	8.04
August	2018	309		29,841		29,841	0	1,058			1,058	30,899	3,362	3,776	3,374	7.94	9.36	7.99
September	2018	425		30,266		30,266	0	1,058			1,058	31,324	3,359	3,776	3,371	7.92	9.36	7.96
October	2018	930		31,196		31,196	14	1,072			1,072	32,268	3,353	3,715	3,363	7.89	9.16	7.92
November	2018	357		31,553		31,553	0	1,072			1,072	32,625	3,367	3,715	3,377	7.88	9.16	7.92
December	2018	810		32,363		32,363	532	1,605			1,605	33,968	3,398	5,168	3,450	7.93	13.15	8.09

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

January	2019	161	4,240	4,240	0	122	94	4,362
February	2019	176	4,416	4,416	12	134	106	4,550
March	2019	85	4,501	4,501	14	148	120	4,649
April	2019	0	4,501	4,501	5	153	125	4,654
May	2019	0	4,501	4,501	7	160	132	4,661
June	2019	0	4,501	4,501	2	162	134	4,663
July	2019	0	4,501	4,501	4	166	138	4,667
August	2019	0	4,501	4,501	0	166	138	4,667
September	2019	0	4,501	4,501	4	170	142	4,671
October	2019	0	4,501	4,501	3	173	145	4,674
November	2019	0	4,501	4,501	10	183	21	4,684
December	2019	0	4,501	4,501	1	184	22	4,685
January	2020		4,501	4,501		184	22	4,685
February	2020		4,501	4,501		184	22	4,685
March	2020		4,501	4,501		184	22	4,685
April	2020		4,501	4,501		184	22	4,685
May	2020		4,501	4,501		184	22	4,685
June	2020		4,501	4,501		184	22	4,685
July	2020		4,501	4,501		184	22	4,685
August	2020		4,501	4,501		184	22	4,685
September	2020		4,501	4,501		184	22	4,685
October	2020		4,501	4,501		184	22	4,685
November	2020		4,501	4,501		184	22	4,685
December	2020		4,501	4,501		184	22	4,685
January	2021		4,501	4,501		184	22	4,685
February	2021		4,501	4,501		184	22	4,685
March	2021		4,501	4,501		184	22	4,685
April	2021		4,501	4,501		184	22	4,685
May	2021		4,501	4,501		184	22	4,685
June	2021		4,501	4,501		184	22	4,685
July	2021		4,501	4,501		184	22	4,685
August	2021		4,501	4,501		184	22	4,685
September	2021		4,501	4,501		184	22	4,685
October	2021		4,501	4,501		184	22	4,685
November	2021		4,501	4,501		184	22	4,685
December	2021		4,501	4,501		184	22	4,685
January	2022		4,501	4,501		184	22	4,685
February	2022		4,501	4,501		184	22	4,685
March	2022		4,501	4,501		184	22	4,685
April	2022		4,501	4,501		184	22	4,685
May	2022		4,501	4,501		184	22	4,685
June	2022		4,501	4,501		184	22	4,685
July	2022		4,501	4,501		184	22	4,685
August	2022		4,501	4,501		184	22	4,685
September	2022		4,501	4,501		184	22	4,685
October	2022		4,501	4,501		184	22	4,685
November	2022		4,501	4,501		184	22	4,685
December	2022		4,501	4,501		184	22	4,685
January	2023		4,501	4,501		184	22	4,685
February	2023		4,501	4,501		184	22	4,685
March	2023		4,501	4,501		184	22	4,685
April	2023		4,501	4,501		184	22	4,685
May	2023		4,501	4,501		184	22	4,685
June	2023		4,501	4,501		184	22	4,685
July	2023		4,501	4,501		184	22	4,685
August	2023		4,501	4,501		184	22	4,685
September	2023		4,501	4,501		184	22	4,685
October	2023	-14	4,487	4,487		184	22	4,671
November	2023	-63	4,424	4,424		184	22	4,608
December	2023	-41	4,383	4,383		184	22	4,567

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

January	2019	704,467		14,566,618		14,566,618	0		630,470		511,807	15,197,088
February	2019	1,183,691		15,750,310		15,750,310	25,689		656,158		537,496	16,406,468
March	2019	561,195		16,311,505		16,311,505	44,723		700,881		582,218	17,012,385
April	2019	0		16,311,505		16,311,505	45,990		746,871		628,208	17,058,375
May	2019	0		16,311,505		16,311,505	19,312		766,183		647,521	17,077,688
June	2019	0		16,311,505		16,311,505	5,595		771,778		653,115	17,083,283
July	2019	0		16,311,505		16,311,505	16,419		788,197	16,419	669,534	17,099,701
August	2019	0		16,311,505		16,311,505	351		788,547	16,769	669,885	17,100,052
September	2019	0		16,311,505		16,311,505	3,738		792,285	20,507	673,622	17,103,789
October	2019	0		16,311,505		16,311,505	8,134		800,419	28,641	681,756	17,111,923
November	2019	0		16,311,505		16,311,505	4,481		804,900	33,122	33,122	17,116,404
December	2019	0		16,311,505		16,311,505	2,322		807,221		35,444	17,118,726
January	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
February	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
March	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
April	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
May	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
June	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
July	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
August	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
September	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
October	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
November	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
December	2020			16,311,505		16,311,505			807,221		35,444	17,118,726
January	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
February	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
March	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
April	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
May	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
June	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
July	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
August	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
September	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
October	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
November	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
December	2021			16,311,505		16,311,505			807,221		35,444	17,118,726
January	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
February	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
March	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
April	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
May	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
June	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
July	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
August	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
September	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
October	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
November	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
December	2022			16,311,505		16,311,505			807,221		35,444	17,118,726
January	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
February	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
March	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
April	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
May	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
June	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
July	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
August	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
September	2023			16,311,505		16,311,505			807,221		35,444	17,118,726
October	2023		-16,087	16,295,418		16,295,418			807,221		35,444	17,102,640
November	2023		-117,366	16,178,052		16,178,052			807,221		35,444	16,985,274
December	2023		-143,613	16,034,439		16,034,439			807,221		35,444	16,841,661

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 1		Participation Program Participants											
Month	Year	VA				NC					System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
January	2024		-50	4,333		4,333				184		22	4,517
February	2024		-48	4,285		4,285				184		22	4,469
March	2024		-68	4,217		4,217				184		22	4,401
April	2024		-71	4,146		4,146		-1		183		21	4,329
May	2024		-112	4,034		4,034		0		183		21	4,217
June	2024		-110	3,924		3,924		-1		182		20	4,106
July	2024		-78	3,846		3,846		0		182		20	4,028
August	2024		-127	3,719		3,719		0		182		20	3,901
September	2024		-278	3,441		3,441		-3		179		17	3,620
October	2024		-162	3,279		3,279		-5		174		12	3,453
November	2024		-62	3,217		3,217		-1		173		11	3,390
December	2024		-75	3,142		3,142		-2		171		9	3,313
January	2025		-104	3,038		3,038		-1		170		8	3,208
February	2025		-53	2,985		2,985		-1		169		7	3,154
March	2025		-113	2,872		2,872		-2		167		5	3,039
April	2025		-71	2,801		2,801		-1		166		4	2,967
May	2025		-124	2,677		2,677		0		166		4	2,843
June	2025		-160	2,517		2,517		-10		156		-6	2,673
July	2025		-141	2,376		2,376		-1		155		-7	2,531
August	2025		-139	2,237		2,237		-16		139		-23	2,376
September	2025		-66	2,171		2,171		-1		138		-24	2,309
October	2025		-74	2,097		2,097		-5		133		-29	2,230
November	2025		-92	2,005		2,005		-2		131		-31	2,136
December	2025		-66	1,939		1,939		-3		128		-34	2,067
January	2026		-81	1,858		1,858		-1		127		-35	1,985
February	2026		-78	1,780		1,780		-1		126		-36	1,906
March	2026		-86	1,694		1,694		-2		124		-38	1,818
April	2026		-81	1,613		1,613		-5		119		-43	1,732
May	2026		-87	1,526		1,526		-6		113		-49	1,639
June	2026		-78	1,448		1,448		0		113		-49	1,561
July	2026		-66	1,382		1,382		0		113		-49	1,495
August	2026		-77	1,305		1,305		-1		112		-50	1,417
September	2026		-64	1,241		1,241		-3		109		-53	1,350
October	2026		-78	1,163		1,163		-3		106		-56	1,269
November	2026		-57	1,106		1,106		-1		105		-57	1,211
December	2026		-35	1,071		1,071		0		105		-57	1,176
January	2027		-13	1,058		1,058		0		105		-57	1,163
February	2027		-60	998		998		-2		103		-59	1,101
March	2027		-32	966		966		-13		90		-72	1,056
April	2027		-22	944		944		-5		85		-77	1,029
May	2027		-40	904		904		-5		80		-82	984
June	2027		-47	857		857		-6		74		-88	931
July	2027		-48	809		809		-3		71		-91	880
August	2027		-64	745		745		0		71		-91	816
September	2027		-66	679		679		0		71		-91	750
October	2027		-134	545		545		-4		67		-95	612
November	2027		-47	498		498		0		67		-95	565
December	2027		-76	422		422		-5		62		-100	484
January	2028		-161	261		261		0		62		-100	323
February	2028		-176	85		85		-12		50		-112	135
March	2028		-85	0		0		-14		36		-126	36
April	2028		0	0		0		-5		31		-131	31
May	2028		0	0		0		-7		24		-138	24
June	2028		0	0		0		-2		22		-140	22
July	2028		0	0		0		-4		18		-144	18
August	2028		0	0		0		0		18		-144	18
September	2028		0	0		0		-4		14		-148	14
October	2028		0	0		0		-3		11		-151	11
November	2028		0	0		0		-10		1		-161	1
December	2028		0	0		0		-1		0		-162	0

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 1		Energy Savings											
Month	Year	Net kWh											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
January	2024		-56,266	15,978,174		15,978,174				807,221		35,444	16,785,395
February	2024		-102,277	15,875,897		15,875,897				807,221		35,444	16,683,118
March	2024		-227,785	15,648,112		15,648,112				807,221		35,444	16,455,333
April	2024		-203,103	15,445,008		15,445,008		-1,886		805,335		33,558	16,250,344
May	2024		-337,569	15,107,439		15,107,439		0		805,335		33,558	15,912,775
June	2024		-595,390	14,512,049		14,512,049		0		805,335		33,558	15,317,384
July	2024		-158,951	14,353,098		14,353,098		0		805,335		33,558	15,158,433
August	2024		-199,910	14,153,188		14,153,188		0		805,335		33,558	14,958,523
September	2024		-290,990	13,862,198		13,862,198		-6,919		798,417		26,639	14,660,615
October	2024		-448,610	13,413,588		13,413,588		-20,902		777,515		5,737	14,191,102
November	2024		-124,664	13,288,924		13,288,924		-840		776,675		4,897	14,065,599
December	2024		-219,455	13,069,469		13,069,469		-2,372		774,302		2,525	13,843,771
January	2025		-253,371	12,816,098		12,816,098		-698		773,604		1,826	13,589,702
February	2025		-172,025	12,644,072		12,644,072		-2,198		771,406		-371	13,415,479
March	2025		-289,450	12,354,623		12,354,623		-53,113		718,293		-53,485	13,072,916
April	2025		-189,306	12,165,317		12,165,317		-14,388		703,905		-67,873	12,869,222
May	2025		-271,746	11,893,571		11,893,571		0		703,905		-67,873	12,597,476
June	2025		-540,509	11,353,062		11,353,062		-15,346		688,559		-83,219	12,041,621
July	2025		-419,112	10,933,950		10,933,950		-4,953		683,606		-88,172	11,617,556
August	2025		-492,090	10,441,860		10,441,860		-50,346		633,260		-138,518	11,075,120
September	2025		-273,973	10,167,887		10,167,887		-3,323		629,937		-141,841	10,797,824
October	2025		-259,413	9,908,474		9,908,474		-19,306		610,631		-161,147	10,519,105
November	2025		-471,215	9,437,259		9,437,259		-8,575		602,056		-169,721	10,039,315
December	2025		-210,614	9,226,645		9,226,645		-22,210		579,847		-191,931	9,806,492
January	2026		-397,897	8,828,748		8,828,748		-4,332		575,515		-196,263	9,404,263
February	2026		-273,625	8,555,123		8,555,123		-2,872		572,642		-199,136	9,127,766
March	2026		-432,898	8,122,225		8,122,225		-9,476		563,166		-208,612	8,685,391
April	2026		-341,740	7,780,485		7,780,485		-16,494		546,672		-225,106	8,327,157
May	2026		-304,194	7,476,291		7,476,291		-30,000		516,672		-255,106	7,992,963
June	2026		-225,040	7,251,251		7,251,251		0		516,672		-255,106	7,767,923
July	2026		-182,221	7,069,030		7,069,030		0		516,672		-255,106	7,585,702
August	2026		-379,332	6,689,698		6,689,698		-7,559		509,113		-262,665	7,198,810
September	2026		-407,718	6,281,980		6,281,980		-28,033		481,080		-290,698	6,763,060
October	2026		-557,435	5,724,544		5,724,544		-1,473		479,607		-292,171	6,204,151
November	2026		-448,585	5,275,959		5,275,959		-1,107		478,499		-293,278	5,754,458
December	2026		-192,416	5,083,543		5,083,543		-43		478,456		-293,322	5,561,999
January	2027		-54,229	5,029,313		5,029,313		0		478,456		-293,322	5,507,770
February	2027		-234,156	4,795,157		4,795,157		-27,318		451,138		-320,640	5,246,295
March	2027		-163,120	4,632,038		4,632,038		-17,262		433,876		-337,902	5,065,913
April	2027		-70,803	4,561,234		4,561,234		-1,932		431,944		-339,834	4,993,178
May	2027		-295,086	4,266,148		4,266,148		-2,077		429,866		-341,912	4,696,014
June	2027		-207,463	4,058,685		4,058,685		-4,240		425,626		-346,152	4,484,311
July	2027		-216,181	3,842,504		3,842,504		-45,099		380,527		-391,251	4,223,031
August	2027		-158,671	3,683,833		3,683,833		0		380,527		-391,251	4,064,360
September	2027		-210,809	3,473,024		3,473,024		0		380,527		-391,251	3,853,551
October	2027		-424,905	3,048,119		3,048,119		-7,929		372,598		-399,180	3,420,718
November	2027		-215,586	2,832,534		2,832,534		0		372,598		-399,180	3,205,132
December	2027		-383,181	2,449,353		2,449,353		-195,846		176,752		-595,026	2,626,105
January	2028		-704,467	1,744,886		1,744,886		0		176,752		-595,026	1,921,638
February	2028		-1,183,691	561,195		561,195		-25,689		151,063		-620,714	712,258
March	2028		-561,195	0		0		-44,723		106,341		-665,437	106,341
April	2028		0	0		0		-45,990		60,351		-711,427	60,351
May	2028		0	0		0		-19,312		41,038		-730,739	41,038
June	2028		0	0		0		-5,595		35,444		-736,334	35,444
July	2028		0	0		0		-16,419		19,025		-752,753	19,025
August	2028		0	0		0		-351		18,674		-753,103	18,674
September	2028		0	0		0		-3,738		14,937		-756,841	14,937
October	2028		0	0		0		-8,134		6,803		-764,975	6,803
November	2028		0	0		0		-4,481		2,322		-769,456	2,322
December	2028		0	0		0		-2,322		0		-771,778	0

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 1		Participation											
Month	Year	Program Participants					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
January	2029		0	0		0		0		0		-162	0
February	2029		0	0		0		0		0		-162	0
March	2029		0	0		0		0		0		-162	0
April	2029		0	0		0		0		0		-162	0
May	2029		0	0		0		0		0		-162	0
June	2029		0	0		0		0		0		-162	0
July	2029		0	0		0		0		0		-162	0
August	2029		0	0		0		0		0		-162	0
September	2029		0	0		0		0		0		-162	0
October	2029		0	0		0		0		0		-162	0
November	2029		0	0		0		0		0		-162	0
December	2029		0	0		0		0		0		-162	0

Table 2. EM&V Data Incremental by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	118	118	-	-	118					
2015	1,241	1,241	13	13	1,254					
2016	1,203	1,203	43	28	1,246					
2017	868	868	23	23	891					
2018	649	649	43	43	692					
2019	422	422	62	22	484					

Table 3. EM&V Data Annualized by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	118	118	-	-	118					
2015	1,241	1,241	13	13	1,254					
2016	1,203	1,203	43	28	1,246					
2017	868	868	23	23	891					
2018	649	649	43	43	692					
2019	422	422	62	22	484					

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants									
	VA	NC PPI	System							
2014		-								
2015		13								
2016		56								
2017		79								
2018		109								
2019		128								

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 1		Energy Savings											
Month	Year	Net kWh											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
January	2029		0	0		0		0		0		-771,778	0
February	2029		0	0		0		0		0		-771,778	0
March	2029		0	0		0		0		0		-771,778	0
April	2029		0	0		0		0		0		-771,778	0
May	2029		0	0		0		0		0		-771,778	0
June	2029		0	0		0		0		0		-771,778	0
July	2029		0	0		0		0		0		-771,778	0
August	2029		0	0		0		0		0		-771,778	0
September	2029		0	0		0		0		0		-771,778	0
October	2029		0	0		0		0		0		-771,778	0
November	2029		0	0		0		0		0		-771,778	0
December	2029		0	0		0		0		0		-771,778	0

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			426,605		426,605			-		-	426,605
2015			17,706,128		17,706,128			111,408		111,408	17,817,536
2016			23,490,812		23,490,812			1,192,620		1,021,133	24,683,432
2017			26,580,861		26,580,861			723,396		723,396	27,304,257
2018			14,330,571		14,330,571			1,027,040		1,027,040	15,357,611
2019			27,086,154		27,086,154			1,488,273		1,205,657	28,574,427

Table 3. EM&V Data Annualized by Vintage Year											
Net Annualized Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			3,324,785		3,324,785			-		-	3,324,785
2015			35,579,643		35,579,643			395,028		395,028	35,974,671
2016			46,113,890		46,113,890			2,333,469		1,304,549	48,447,359
2017			49,717,225		49,717,225			1,216,685		1,216,685	50,933,910
2018			31,610,279		31,610,279			3,620,453		3,620,453	35,230,732
2019			29,392,235		29,392,235			2,121,023		425,323	31,513,258

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Net Energy (kWh) for PPI											
								NC PPI			System
2014								-			
2015								111,408			
2016								1,587,648			
2017								3,451,893			
2018								4,577,194			
2019								6,325,411			

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC						System			System			
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
January	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
February	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
March	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
April	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
May	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
June	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
July	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
August	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
September	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
October	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
November	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	
December	2029		0	0		3,101,604		0	0	169,983	0	-	-	-	-	-	-	

Table 2. EM&V Data Incremental by Vintage Year										Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant				
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP				
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			699		699			-		-	699	3,615	-	3,615	5.92	-	5.92
2015			7,472		7,472			73		73	7,545	14,268	8,570	14,209	6.02	5.63	6.02
2016			10,766		10,766			520		277	11,286	19,527	27,735	19,810	8.95	12.10	9.06
2017			8,371		8,371			234		234	8,605	30,623	31,452	30,645	9.64	10.18	9.66
2018			5,056		5,056			777		777	5,833	22,081	23,885	22,193	7.79	18.07	8.43
2019			3,946		432,233			416		80	4,362	64,185	24,004	59,038	9.35	6.71	9.01

Table 3. EM&V Data Annualized by Vintage Year										Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant				
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP				
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			699		699			-		-	699	28,176	-	28,176	5.92	-	5.92
2015			7,472		7,472			73		73	7,545	28,670	30,387	28,688	6.02	5.63	6.02
2016			10,766		10,766			520		277	11,286	38,332	54,267	38,882	8.95	12.10	9.06
2017			8,371		8,371			234		234	8,605	57,278	52,899	57,165	9.64	10.18	9.66
2018			5,056		5,056			777		777	5,833	48,706	84,197	50,911	7.79	18.07	8.43
2019			3,946		432,233			416		80	4,362	69,650	34,210	65,110	9.35	6.71	9.01

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										PPI Energy Savings/Participant			PPI Capacity Savings/Participant			
Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant			
								NC PPI		System	VA	NC	System	VA	NC	System
2014								-								
2015								73				8,570			5.63	
2016								593				28,351			10.60	
2017								828				43,695			10.48	
2018								1,531				41,993			14.05	
2019								1,427				49,417			11.15	

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Year	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	118	118	-	-	118					
2015	1,359	1,359	13	13	1,372					
2016	2,562	2,562	56	28	2,618					
2017	3,430	3,430	79	51	3,509					
2018	4,079	4,079	122	94	4,201					
2019	4,501	4,501	184	22	4,685					
2020	4,501	4,501	184	22	4,685					
2021	4,501	4,501	184	22	4,685					
2022	4,501	4,501	184	22	4,685					
2023	4,383	4,383	184	22	4,567					
2024	3,142	3,142	171	9	3,313					
2025	1,939	1,939	128	-	2,067					
2026	1,071	1,071	105	-	1,176					
2027	422	422	62	-	484					
2028	-	-	-	-	-					
2029	-	-	-	-	-					

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

Year	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	118	118	-	-	118					
2015	1,359	1,359	13	13	1,372					
2016	2,562	2,562	56	28	2,618					
2017	3,430	3,430	79	51	3,509					
2018	4,079	4,079	122	94	4,201					
2019	4,501	4,501	184	22	4,685					
2020	4,501	4,501	184	22	4,685					
2021	4,501	4,501	184	22	4,685					
2022	4,501	4,501	184	22	4,685					
2023	4,501	4,501	184	22	4,685					
2024	4,501	4,501	184	22	4,685					
2025	4,501	4,501	184	22	4,685					
2026	4,501	4,501	184	22	4,685					
2027	4,501	4,501	184	22	4,685					
2028	4,501	4,501	184	22	4,685					
2029	4,501	4,501	184	22	4,685					

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Net Energy (kWh)									
		VA IRP		VA NLR		NC IRP		NC NLR	System IRP
2014		426,605		426,605		-		-	426,605
2015		21,030,913		21,030,913		111,408		111,408	21,142,321
2016		62,395,240		62,395,240		1,587,648		1,350,323	63,982,888
2017		111,599,179		111,599,179		3,451,893		2,027,944	115,051,071
2018		149,066,114		149,066,114		4,972,222		3,548,273	154,038,336
2019		193,431,975		193,431,975		9,053,908		6,323,729	202,485,883
2020		195,738,057		195,738,057		9,686,657		425,323	205,424,714
2021		195,738,057		195,738,057		9,686,657		425,323	205,424,714
2022		195,738,057		195,738,057		9,686,657		425,323	205,424,714
2023		195,311,452		195,311,452		9,686,657		425,323	204,998,109
2024		174,707,143		174,707,143		9,575,250		313,916	184,282,393
2025		133,342,817		133,342,817		8,099,009		-	141,441,826
2026		84,138,878		84,138,878		6,234,765		-	90,373,643
2027		46,671,943		46,671,943		4,714,436		-	51,386,378
2028		2,306,081		2,306,081		632,750		-	2,938,831
2029		-		-		-		-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

Net Energy (kWh)									
		VA IRP				NC IRP			System IRP
2014		426,605				-			426,605
2015		21,457,518				111,408			21,568,925
2016		83,852,758				1,699,056			85,551,813
2017		195,451,936				5,150,948			200,602,885
2018		344,518,050				10,123,170			354,641,220
2019		537,950,026				19,177,078			557,127,104
2020		733,688,082				28,863,735			762,551,818
2021		929,426,139				38,550,393			967,976,532
2022		1,125,164,195				48,237,050			#####
2023		1,320,475,647				57,923,708			#####
2024		1,495,182,791				67,498,957			#####
2025		1,628,525,608				75,597,967			#####
2026		1,712,664,485				81,832,732			#####
2027		1,759,336,428				86,547,167			#####
2028		1,761,642,509				87,179,917			#####
2029		1,761,642,509				87,179,917			#####

Appendix D.5 Non-residential Lighting Systems and Controls Program 2014-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										IRP Energy Savings/Participant			IRP Capacity		
Year	Net Peak Demand (kW)									Net kWh/Participant			Net kW/Participant		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System				
2014	699	699	-	-	699	3,615	-	3,615	5.92	-	5.92				
2015	8,171	8,171	73	-	8,244	15,475	8,570	15,410	6.01	5.63	6.01				
2016	18,937	18,937	593	-	19,530	24,354	28,351	24,440	7.39	10.60	7.46				
2017	27,308	27,308	828	-	28,135	32,536	43,695	32,787	7.96	10.48	8.02				
2018	32,363	32,363	1,605	-	33,968	36,545	40,756	36,667	7.93	13.15	8.09				
2019	36,309	464,596	2,021	-	38,330	42,975	49,206	43,220	8.07	10.98	8.18				
2020	36,309	900,310	2,021	-	38,330	43,488	52,645	43,847	8.07	10.98	8.18				
2021	36,309	1,336,024	2,021	-	38,330	43,488	52,645	43,847	8.07	10.98	8.18				
2022	36,309	1,771,738	2,021	-	38,330	43,488	52,645	43,847	8.07	10.98	8.18				
2023	35,611	2,206,376	2,021	-	37,631	44,561	52,645	44,887	8.12	10.98	8.24				
2024	28,139	2,588,821	1,947	-	30,086	55,604	55,996	55,624	8.96	11.39	9.08				
2025	17,373	2,860,073	1,427	-	141,169	18,800	68,274	68,429	8.96	11.15	9.10				
2026	9,002	3,016,499	1,193	-	156,683	10,195	78,561	76,848	8.41	11.36	8.67				
2027	3,946	3,098,124	416	-	168,522	4,362	110,597	106,170	9.35	6.71	9.01				
2028	-	3,101,604	-	-	169,983	-	-	-	-	-	-				
2029	-	3,101,604	-	-	169,983	-	-	-	-	-	-				

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										Lifetime Energy			Lifetime Capacity		
Year	Net Peak Demand (kW)									Net kWh/Participant			Net kW/Participant		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System				
2014	699	699	-	-	699	3,615	-	3,615	5.92	-	5.92				
2015	8,171	8,171	73	-	8,244	15,789	8,570	15,721	6.01	5.63	6.01				
2016	18,937	18,937	593	-	19,530	32,729	30,340	32,678	7.39	10.60	7.46				
2017	27,308	27,308	828	-	28,135	56,983	65,202	57,168	7.96	10.48	8.02				
2018	32,363	32,363	1,605	-	33,968	84,461	82,977	84,418	7.93	13.15	8.09				
2019	36,309	464,596	2,021	-	38,330	119,518	104,223	118,917	8.07	10.98	8.18				
2020	36,309	900,310	2,021	-	38,330	163,006	156,868	162,765	8.07	10.98	8.18				
2021	36,309	1,336,024	2,021	-	38,330	206,493	209,513	206,612	8.07	10.98	8.18				
2022	36,309	1,771,738	2,021	-	38,330	249,981	262,158	250,459	8.07	10.98	8.18				
2023	35,611	2,206,376	2,021	-	38,330	293,374	314,803	294,215	8.07	10.98	8.18				
2024	28,139	2,588,821	1,947	-	38,330	332,189	366,842	333,550	8.07	10.98	8.18				
2025	17,373	2,860,073	1,427	-	38,330	361,814	410,859	363,740	8.07	10.98	8.18				
2026	9,002	3,016,499	1,193	-	38,330	380,508	444,743	383,030	8.07	10.98	8.18				
2027	3,946	3,098,124	416	-	38,330	390,877	470,365	393,999	8.07	10.98	8.18				
2028	-	3,101,604	-	-	38,330	391,389	473,804	394,626	8.07	10.98	8.18				
2029	-	3,101,604	-	-	38,330	391,389	473,804	394,626	8.07	10.98	8.18				

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

PROGRAM: Non-Residential Heating and Cooling Efficiency
DSM Phase III Program
Type: Energy Efficiency
Program Measure Life: 15.0 years

Table 1		Participation											
Month	Year	VA Participants					NC					System	
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP E+G	
January	2014	0		0		0							0
February	2014	0		0		0							0
March	2014	0		0		0							0
April	2014	0		0		0							0
May	2014	0		0		0							0
June	2014	0		0		0							0
July	2014	0		0		0							0
August	2014	0		0		0							0
September	2014	0		0		0							0
October	2014	0		0		0							0
November	2014	1		1		1							1
December	2014	5		6		6							6
January	2015	0		6		6	0			0			6
February	2015	1		7		7	0			0			7
March	2015	0		7		7	0			0			7
April	2015	16		23		23	2			2			25
May	2015	34		57		57	1			3			60
June	2015	16		73		73	0			3			76
July	2015	26		99		99	0			3			102
August	2015	2		101		101	0			3			104
September	2015	7		108		108	0			3			111
October	2015	5		113		113	0			3			116
November	2015	2		115		115	0			3			118
December	2015	5		120		120	0			3			123
January	2016	7		127		127	0			3			130
February	2016	9		136		136	0			3			139
March	2016	4		140		140	0			3			143
April	2016	6		146		146	1			4			150
May	2016	6		152		152	1			5			157
June	2016	12		164		164	2			7			171
July	2016	7		171		171	0			7	0		178
August	2016	12		183		183	1			8	1		191
September	2016	7		190		190	0			8	1		198
October	2016	6		196		196	0			8	1		204
November	2016	6		202		202	1			9	2		211
December	2016	7		209		209	0			9			218
January	2017	9		218		218	0			9			227
February	2017	9		227		227	0			9			236
March	2017	1		228		228	0			9			237
April	2017	2		230		230	0			9			239
May	2017	13		243		243	1			10			253
June	2017	23		266		266	1			11			277
July	2017	12		278		278	0			11			289
August	2017	10		288		288	0			11			299
September	2017	8		296		296	1			12			308
October	2017	5		301		301	0			12			313
November	2017	10		311		311	0			12			323
December	2017	1		312		312	0			12			324
January	2018	0		312		312	0			12			324
February	2018	10		322		322	0			12			334
March	2018	3		325		325	1			13			338
April	2018	7		332		332	2			15			347
May	2018	5		337		337	0			15			352
June	2018	4		341		341	0			15			356
July	2018	10		351		351	0			15			366
August	2018	10		361		361	0			15			376
September	2018	10		371		371	0			15			386
October	2018	10		381		381	0			15			396
November	2018	4		385		385	0			15			400
December	2018	4		389		389	0			15			404

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Energy Savings												
Month	Year	Net kWh										System Cum for IRP		
		VA					NC							
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
January	2014	0		0		0								0
February	2014	0		0		0								0
March	2014	0		0		0								0
April	2014	0		0		0								0
May	2014	0		0		0								0
June	2014	0		0		0								0
July	2014	0		0		0								0
August	2014	0		0		0								0
September	2014	0		0		0								0
October	2014	0		0		0								0
November	2014	50,347		50,347		50,347								50,347
December	2014	34,644		84,991		84,991								84,991
January	2015	0		84,991		84,991	0			0		0		84,991
February	2015	1,891		86,882		86,882	0			0		0		86,882
March	2015	0		86,882		86,882	0			0		0		86,882
April	2015	172,470		259,352		259,352	2,214			2,214		2,214		261,566
May	2015	83,052		342,404		342,404	3,103			5,317		5,317		347,721
June	2015	24,256		366,660		366,660	0			5,317		5,317		371,977
July	2015	117,432		484,092		484,092	0			5,317		5,317		489,409
August	2015	797		484,890		484,890	0			5,317		5,317		490,206
September	2015	133,376		618,266		618,266	0			5,317		5,317		623,583
October	2015	49,146		667,412		667,412	0			5,317		5,317		672,728
November	2015	36,808		704,220		704,220	0			5,317		5,317		709,537
December	2015	30,012		734,232		734,232	0			5,317		5,317		739,548
January	2016	20,785		755,017		755,017	0			5,317		5,317		760,333
February	2016	19,914		774,931		774,931	0			5,317		5,317		780,247
March	2016	17,139		792,070		792,070	0			5,317		5,317		797,386
April	2016	141,968		934,037		934,037	640			5,957		5,957		939,994
May	2016	53,218		987,255		987,255	3,590			9,547		9,547		996,802
June	2016	56,304		1,043,559		1,043,559	12,212			21,759		21,759		1,065,318
July	2016	25,740		1,069,299		1,069,299	0			21,759	0	21,759		1,091,058
August	2016	148,579		1,217,878		1,217,878	374			22,132	374	22,132		1,240,010
September	2016	178,828		1,396,706		1,396,706	0			22,132	374	22,132		1,418,838
October	2016	41,980		1,438,685		1,438,685	0			22,132	374	22,132		1,460,818
November	2016	42,293		1,480,978		1,480,978	72			22,204	445	22,204		1,503,183
December	2016	49,346		1,530,325		1,530,325	0			22,204	445	22,204		1,552,529
January	2017	7,215		1,537,540		1,537,540	0			22,204	445	22,204		1,559,744
February	2017	33,247		1,570,787		1,570,787	0			22,204	445	22,204		1,592,991
March	2017	5,038		1,575,825		1,575,825	0			22,204	445	22,204		1,598,029
April	2017	11,998		1,587,823		1,587,823	0			22,204	445	22,204		1,610,027
May	2017	139,193		1,727,016		1,727,016	4,318			26,523	4,764	26,523		1,753,539
June	2017	39,301		1,766,318		1,766,318	25			26,547	4,788	26,547		1,792,865
July	2017	58,370		1,824,688		1,824,688	0			26,547	4,788	26,547		1,851,235
August	2017	9,039		1,833,727		1,833,727	0			26,547	4,788	26,547		1,860,274
September	2017	58,800		1,892,527		1,892,527	497			27,044	5,285	27,044		1,919,571
October	2017	24,408		1,916,935		1,916,935	0			27,044	5,285	27,044		1,943,980
November	2017	31,487		1,948,423		1,948,423	0			27,044	5,285	27,044		1,975,467
December	2017	20,970		1,969,392		1,969,392	0			27,044	5,285	27,044		1,996,436
January	2018	0		1,969,392		1,969,392	0			27,044	5,285	27,044		1,996,436
February	2018	42,248		2,011,640		2,011,640	0			27,044	5,285	27,044		2,038,684
March	2018	10,931		2,022,571		2,022,571	4,435			31,479	9,721	31,479		2,054,051
April	2018	27,965		2,050,536		2,050,536	8,735			40,214	18,456	40,214		2,090,751
May	2018	28,149		2,078,686		2,078,686	0			40,214	18,456	40,214		2,118,900
June	2018	23,781		2,102,467		2,102,467	0			40,214	18,456	40,214		2,142,681
July	2018	59,309		2,161,776		2,161,776	0			40,214	18,456	40,214		2,201,990
August	2018	237,839		2,399,615		2,399,615	0			40,214	18,456	40,214		2,439,829
September	2018	56,720		2,456,335		2,456,335	0			40,214	18,456	40,214		2,496,549
October	2018	45,598		2,501,932		2,501,932	0			40,214	18,456	40,214		2,542,147
November	2018	7,639		2,509,572		2,509,572	0			40,214	18,456	40,214		2,549,786
December	2018	32,584		2,542,155		2,542,155	0			40,214	18,456	40,214		2,582,370

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC				System			VA	NC	System	VA	NC	System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP							
January	2014	0		0		0							0	-	-	-	-	-	-
February	2014	0		0		0							0	-	-	-	-	-	-
March	2014	0		0		0							0	-	-	-	-	-	-
April	2014	0		0		0							0	-	-	-	-	-	-
May	2014	0		0		0							0	-	-	-	-	-	-
June	2014	0		0		0							0	-	-	-	-	-	-
July	2014	0		0		0							0	-	-	-	-	-	-
August	2014	0		0		0							0	-	-	-	-	-	-
September	2014	0		0		0							0	-	-	-	-	-	-
October	2014	0		0		0							0	-	-	-	-	-	-
November	2014	237		237		237							237	50,347		50,347	236.82		236.82
December	2014	120		357		357							357	14,165		14,165	59.51		59.51
January	2015	0		357		357	0			0			357	14,165	-	14,165	59.51	-	59.51
February	2015	1		359		359	0			0			359	12,412	-	12,412	51.22	-	51.22
March	2015	0		359		359	0			0			359	12,412	-	12,412	51.22	-	51.22
April	2015	435		794		794	16			16			810	11,276	1,107	10,463	34.51	8.24	32.41
May	2015	270		1,064		1,064	2			19			1,083	6,007	1,772	5,795	18.67	6.28	18.05
June	2015	206		1,270		1,270	0			19			1,289	5,023	1,772	4,894	17.40	6.28	16.96
July	2015	292		1,562		1,562	0			19			1,581	4,890	1,772	4,798	15.78	6.28	15.50
August	2015	10		1,572		1,572	0			19			1,591	4,801	1,772	4,714	15.57	6.28	15.30
September	2015	390		1,963		1,963	0			19			1,982	5,725	1,772	5,618	18.17	6.28	17.85
October	2015	189		2,152		2,152	0			19			2,171	5,906	1,772	5,799	19.04	6.28	18.71
November	2015	45		2,196		2,196	0			19			2,215	6,124	1,772	6,013	19.10	6.28	18.77
December	2015	105		2,301		2,301	0			19			2,320	6,119	1,772	6,013	19.17	6.28	18.86
January	2016	58		2,359		2,359	0			19			2,378	5,945	1,772	5,849	18.57	6.28	18.29
February	2016	153		2,512		2,512	0			19			2,531	5,698	1,772	5,613	18.47	6.28	18.21
March	2016	54		2,566		2,566	0			19			2,585	5,658	1,772	5,576	18.33	6.28	18.07
April	2016	189		2,755		2,755	0			19			2,774	6,398	1,489	6,267	18.87	4.80	18.49
May	2016	35		2,789		2,789	55			74			2,863	6,495	1,909	6,349	18.35	14.78	18.24
June	2016	188		2,977		2,977	10			83			3,060	6,363	3,108	6,230	18.15	11.92	17.90
July	2016	96		3,073		3,073	0			83	0		3,156	6,253	3,108	6,130	17.97	11.92	17.73
August	2016	204		3,277		3,277	0			84	0		3,361	6,655	2,767	6,492	17.91	10.48	17.60
September	2016	127		3,404		3,404	0			84	0		3,488	7,351	2,767	7,166	17.92	10.48	17.62
October	2016	102		3,506		3,506	0			84	0		3,590	7,340	2,767	7,161	17.89	10.48	17.60
November	2016	122		3,628		3,628	0			84	1		3,712	7,332	2,467	7,124	17.96	9.34	17.59
December	2016	132		3,760		3,760	0			84	1		3,844	7,322	2,467	7,122	17.99	9.34	17.63
January	2017	18		3,778		3,778	0			84	1		3,862	7,053	2,467	6,871	17.33	9.34	17.01
February	2017	47		3,825		3,825	0			84	1		3,909	6,920	2,467	6,750	16.85	9.34	16.56
March	2017	8		3,833		3,833	0			84	1		3,917	6,912	2,467	6,743	16.81	9.34	16.53
April	2017	5		3,838		3,838	0			84	1		3,922	6,904	2,467	6,737	16.69	9.34	16.41
May	2017	1,029		4,868		4,868	-27			57	-27		4,924	7,107	2,652	6,931	20.03	5.69	19.46
June	2017	25		4,892		4,892	0			57	-27		4,949	6,640	2,413	6,472	18.39	5.17	17.87
July	2017	59		4,952		4,952	0			57	-27		5,009	6,564	2,413	6,406	17.81	5.17	17.33
August	2017	5		4,957		4,957	0			57	-27		5,014	6,367	2,413	6,222	17.21	5.17	16.77
September	2017	93		5,051		5,051	-1			56	-28		5,106	6,394	2,254	6,232	17.06	4.66	16.58
October	2017	34		5,084		5,084	0			56	-28		5,140	6,369	2,254	6,211	16.89	4.66	16.42
November	2017	28		5,113		5,113	0			56	-28		5,169	6,265	2,254	6,116	16.44	4.66	16.00
December	2017	10		5,123		5,123	0			56	-28		5,179	6,312	2,254	6,162	16.42	4.66	15.98
January	2018	0		5,123		5,123	0			56	-28		5,179	6,312	2,254	6,162	16.42	4.66	15.98
February	2018	20		5,143		5,143	0			56	-28		5,199	6,247	2,254	6,104	15.97	4.66	15.56
March	2018	14		5,157		5,157	4			60	-24		5,217	6,223	2,421	6,077	15.87	4.59	15.43
April	2018	11		5,168		5,168	55			115	32		5,283	6,176	2,681	6,025	15.57	7.68	15.23
May	2018	19		5,187		5,187	0			115	32		5,302	6,168	2,681	6,020	15.39	7.68	15.06
June	2018	62		5,249		5,249	0			115	32		5,365	6,166	2,681	6,019	15.39	7.68	15.07
July	2018	47		5,297		5,297	0			115	32		5,412	6,159	2,681	6,016	15.09	7.68	14.79
August	2018	151		5,448		5,448	0			115	32		5,563	6,647	2,681	6,489	15.09	7.68	14.79
September	2018	42		5,490		5,490	0			115	32		5,605	6,621	2,681	6,468	14.80	7.68	14.52
October	2018	45		5,534		5,534	0			115	32		5,649	6,567	2,681	6,420	14.53	7.68	14.27
November	2018	-30		5,504		5,504	0			115	32		5,619	6,518	2,681	6,374	14.30	7.68	14.05
December	2018	17		5,521		5,521	0			115	32		5,636	6,535	2,681	6,392	14.19	7.68	13.95

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Participation										
Month	Year	Program Participants					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2019	4		393		393	0		15		8	408
February	2019	10		403		403	0		15		8	418
March	2019	3		406		406	1		16		9	422
April	2019	0		406		406	0		16		9	422
May	2019	0		406		406	0		16		9	422
June	2019	0		406		406	0		16		9	422
July	2019	0		406		406	0		16	0	9	422
August	2019	0		406		406	0		16	0	9	422
September	2019	0		406		406	0		16	0	9	422
October	2019	0		406		406	0		16	0	9	422
November	2019	0		406		406	0		16	0	9	422
December	2019	0		406		406	0		16	0	0	422
January	2020	0		406		406	0		16		0	422
February	2020	0		406		406	0		16		0	422
March	2020	0		406		406	0		16		0	422
April	2020	0		406		406	0		16		0	422
May	2020	0		406		406	0		16		0	422
June	2020	0		406		406	0		16		0	422
July	2020	0		406		406	0		16		0	422
August	2020	0		406		406	0		16		0	422
September	2020	0		406		406	0		16		0	422
October	2020	0		406		406	0		16		0	422
November	2020	0		406		406	0		16		0	422
December	2020	0		406		406	0		16		0	422
January	2021	0		406		406	0		16		0	422
February	2021	0		406		406	0		16		0	422
March	2021	0		406		406	0		16		0	422
April	2021	0		406		406	0		16		0	422
May	2021	0		406		406	0		16		0	422
June	2021	0		406		406	0		16		0	422
July	2021	0		406		406	0		16		0	422
August	2021	0		406		406	0		16		0	422
September	2021	0		406		406	0		16		0	422
October	2021	0		406		406	0		16		0	422
November	2021	0		406		406	0		16		0	422
December	2021	0		406		406	0		16		0	422
January	2022	0		406		406	0		16		0	422
February	2022	0		406		406	0		16		0	422
March	2022	0		406		406	0		16		0	422
April	2022	0		406		406	0		16		0	422
May	2022	0		406		406	0		16		0	422
June	2022	0		406		406	0		16		0	422
July	2022	0		406		406	0		16		0	422
August	2022	0		406		406	0		16		0	422
September	2022	0		406		406	0		16		0	422
October	2022	0		406		406	0		16		0	422
November	2022	0		406		406	0		16		0	422
December	2022	0		406		406	0		16		0	422
January	2023	0		406		406	0		16		0	422
February	2023	0		406		406	0		16		0	422
March	2023	0		406		406	0		16		0	422
April	2023	0		406		406	0		16		0	422
May	2023	0		406		406	0		16		0	422
June	2023	0		406		406	0		16		0	422
July	2023	0		406		406	0		16		0	422
August	2023	0		406		406	0		16		0	422
September	2023	0		406		406	0		16		0	422
October	2023	0		406		406	0		16		0	422
November	2023	0		406		406	0		16		0	422
December	2023	0		406		406	0		16		0	422

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Energy Savings										
Month	Year	Net kWh										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2019	10,619		2,552,774		2,552,774	0		40,214		18,456	2,592,988
February	2019	37,678		2,590,452		2,590,452	0		40,214		18,456	2,630,667
March	2019	145,843		2,736,296		2,736,296	10		40,225		18,466	2,776,521
April	2019	0		2,736,296		2,736,296	3,575		43,799		22,041	2,780,095
May	2019	0		2,736,296		2,736,296	0		43,799		22,041	2,780,095
June	2019	0		2,736,296		2,736,296	0		43,799		22,041	2,780,095
July	2019	0		2,736,296		2,736,296	0		43,799	0	22,041	2,780,095
August	2019	0		2,736,296		2,736,296	0		43,799	0	22,041	2,780,095
September	2019	0		2,736,296		2,736,296	1,262		45,062	1,262	23,303	2,781,358
October	2019	0		2,736,296		2,736,296	0		45,062	1,262	23,303	2,781,358
November	2019	0		2,736,296		2,736,296	0		45,062	1,262	1,262	2,781,358
December	2019	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
January	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2020	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
January	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2021	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
January	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2022	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
January	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2023	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2019	25		5,546		5,546	0		115	32	5,661	6,496	2,681	6,355	14.11	7.68	13.88	
February	2019	29		5,575		5,575	0		115	32	5,690	6,428	2,681	6,293	13.83	7.68	13.61	
March	2019	85		5,660		5,660	0		115	32	5,775	6,740	2,514	6,579	13.94	7.20	13.69	
April	2019	0		5,660		5,660	8		123	40	5,783	6,740	2,737	6,588	13.94	7.70	13.70	
May	2019	0		5,660		5,660	0		123	40	5,783	6,740	2,737	6,588	13.94	7.70	13.70	
June	2019	0		5,660		5,660	0		123	40	5,783	6,740	2,737	6,588	13.94	7.70	13.70	
July	2019	0		5,660		5,660	0		123	0	5,783	6,740	2,737	6,588	13.94	7.70	13.70	
August	2019	0		5,660		5,660	0		123	0	5,783	6,740	2,737	6,588	13.94	7.70	13.70	
September	2019	0		5,660		5,660	1		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
October	2019	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
November	2019	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
December	2019	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
January	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
February	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
March	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
April	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
May	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
June	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
July	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
August	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
September	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
October	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
November	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
December	2020	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
January	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
February	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
March	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
April	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
May	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
June	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
July	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
August	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
September	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
October	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
November	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
December	2021	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
January	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
February	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
March	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
April	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
May	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
June	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
July	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
August	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
September	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
October	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
November	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
December	2022	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
January	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
February	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
March	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
April	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
May	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
June	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
July	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
August	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
September	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
October	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
November	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
December	2023	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2024	0		406		406	0		16		0	422
February	2024	0		406		406	0		16		0	422
March	2024	0		406		406	0		16		0	422
April	2024	0		406		406	0		16		0	422
May	2024	0		406		406	0		16		0	422
June	2024	0		406		406	0		16		0	422
July	2024	0		406		406	0		16		0	422
August	2024	0		406		406	0		16		0	422
September	2024	0		406		406	0		16		0	422
October	2024	0		406		406	0		16		0	422
November	2024	0		406		406	0		16		0	422
December	2024	0		406		406	0		16		0	422
January	2025	0		406		406	0		16		0	422
February	2025	0		406		406	0		16		0	422
March	2025	0		406		406	0		16		0	422
April	2025	0		406		406	0		16		0	422
May	2025	0		406		406	0		16		0	422
June	2025	0		406		406	0		16		0	422
July	2025	0		406		406	0		16		0	422
August	2025	0		406		406	0		16		0	422
September	2025	0		406		406	0		16		0	422
October	2025	0		406		406	0		16		0	422
November	2025	0		406		406	0		16		0	422
December	2025	0		406		406	0		16		0	422
January	2026	0		406		406	0		16		0	422
February	2026	0		406		406	0		16		0	422
March	2026	0		406		406	0		16		0	422
April	2026	0		406		406	0		16		0	422
May	2026	0		406		406	0		16		0	422
June	2026	0		406		406	0		16		0	422
July	2026	0		406		406	0		16		0	422
August	2026	0		406		406	0		16		0	422
September	2026	0		406		406	0		16		0	422
October	2026	0		406		406	0		16		0	422
November	2026	0		406		406	0		16		0	422
December	2026	0		406		406	0		16		0	422
January	2027	0		406		406	0		16		0	422
February	2027	0		406		406	0		16		0	422
March	2027	0		406		406	0		16		0	422
April	2027	0		406		406	0		16		0	422
May	2027	0		406		406	0		16		0	422
June	2027	0		406		406	0		16		0	422
July	2027	0		406		406	0		16		0	422
August	2027	0		406		406	0		16		0	422
September	2027	0		406		406	0		16		0	422
October	2027	0		406		406	0		16		0	422
November	2027	0		406		406	0		16		0	422
December	2027	0		406		406	0		16		0	422
January	2028	0		406		406	0		16		0	422
February	2028	0		406		406	0		16		0	422
March	2028	0		406		406	0		16		0	422
April	2028	0		406		406	0		16		0	422
May	2028	0		406		406	0		16		0	422
June	2028	0		406		406	0		16		0	422
July	2028	0		406		406	0		16		0	422
August	2028	0		406		406	0		16		0	422
September	2028	0		406		406	0		16		0	422
October	2028	0		406		406	0		16		0	422
November	2028	0		406		406	0		16		0	422
December	2028	0		406		406	0		16		0	422

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2024	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
January	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2025	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
January	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2026	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
January	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2027	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
January	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
December	2028	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		VA	NC	System	VA	NC	System
January	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
February	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
March	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
April	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
May	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
June	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
July	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
August	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
September	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
October	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
November	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
December	2024	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
January	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
February	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
March	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
April	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
May	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
June	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
July	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
August	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
September	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
October	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
November	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
December	2025	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
January	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
February	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
March	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
April	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
May	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
June	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
July	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
August	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
September	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
October	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
November	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
December	2026	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
January	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
February	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
March	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
April	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
May	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
June	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
July	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
August	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
September	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
October	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
November	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
December	2027	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
January	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
February	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
March	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
April	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
May	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
June	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
July	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
August	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
September	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
October	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
November	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
December	2028	0		5,660		5,660	0		125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2029	0		406		406	0		16		0	422
February	2029	0		406		406	0		16		0	422
March	2029	0		406		406	0		16		0	422
April	2029	0		406		406	0		16		0	422
May	2029	0		406		406	0		16		0	422
June	2029	0		406		406	0		16		0	422
July	2029	0		406		406	0		16		0	422
August	2029	0		406		406	0		16		0	422
September	2029	0		406		406	0		16		0	422
October	2029	0		406		406	0		16		0	422
November	2029	0	-1	405		405	0		16		0	421
December	2029	0	-5	400		400	0		16		0	416
January	2030	0	0	400		400	0		16		0	416
February	2030	0	-1	399		399	0		16		0	415
March	2030	0	0	399		399	0		16		0	415
April	2030	0	-16	383		383	0	-2	14		-2	397
May	2030	0	-34	349		349	0	-1	13		-3	362
June	2030	0	-16	333		333	0	0	13		-3	346
July	2030	0	-26	307		307	0	0	13		-3	320
August	2030	0	-2	305		305	0	0	13		-3	318
September	2030	0	-7	298		298	0	0	13		-3	311
October	2030	0	-5	293		293	0	0	13		-3	306
November	2030	0	-2	291		291	0	0	13		-3	304
December	2030	0	-5	286		286	0	0	13		-3	299
January	2031	0	-7	279		279	0	0	13		-3	292
February	2031	0	-9	270		270	0	0	13		-3	283
March	2031	0	-4	266		266	0	0	13		-3	279
April	2031	0	-6	260		260	0	-1	12		-4	272
May	2031	0	-6	254		254	0	-1	11		-5	265
June	2031	0	-12	242		242	0	-2	9		-7	251
July	2031	0	-7	235		235	0	0	9		-7	244
August	2031	0	-12	223		223	0	-1	8		-8	231
September	2031	0	-7	216		216	0	0	8		-8	224
October	2031	0	-6	210		210	0	0	8		-8	218
November	2031	0	-6	204		204	0	-1	7		-9	211
December	2031	0	-7	197		197	0	0	7		-9	204
January	2032	0	-9	188		188	0	0	7		-9	195
February	2032	0	-9	179		179	0	0	7		-9	186
March	2032	0	-1	178		178	0	0	7		-9	185
April	2032	0	-2	176		176	0	0	7		-9	183
May	2032	0	-13	163		163	0	-1	6		-10	169
June	2032	0	-23	140		140	0	-1	5		-11	145
July	2032	0	-12	128		128	0	0	5		-11	133
August	2032	0	-10	118		118	0	0	5		-11	123
September	2032	0	-8	110		110	0	-1	4		-12	114
October	2032	0	-5	105		105	0	0	4		-12	109
November	2032	0	-10	95		95	0	0	4		-12	99
December	2032	0	-1	94		94	0	0	4		-12	98
January	2033	0	0	94		94	0	0	4		-12	98
February	2033	0	-10	84		84	0	0	4		-12	88
March	2033	0	-3	81		81	0	-1	3		-13	84
April	2033	0	-7	74		74	0	-2	1		-15	75
May	2033	0	-5	69		69	0	0	1		-15	70
June	2033	0	-4	65		65	0	0	1		-15	66
July	2033	0	-10	55		55	0	0	1		-15	56
August	2033	0	-10	45		45	0	0	1		-15	46
September	2033	0	-10	35		35	0	0	1		-15	36
October	2033	0	-10	25		25	0	0	1		-15	26
November	2033	0	-4	21		21	0	0	1		-15	22
December	2033	0	-4	17		17	0	0	1		-15	18

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Energy Savings										
Month	Year	Net kWh										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
February	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
March	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
April	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
May	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
June	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
July	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
August	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
September	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
October	2029	0		2,736,296		2,736,296	0		45,062		1,262	2,781,358
November	2029	0	-50,347	2,685,949		2,685,949	0		45,062		1,262	2,731,011
December	2029	0	-34,644	2,651,305		2,651,305	0		45,062		1,262	2,696,367
January	2030	0	0	2,651,305		2,651,305	0		45,062		1,262	2,696,367
February	2030	0	-1,891	2,649,413		2,649,413	0		45,062		1,262	2,694,475
March	2030	0	0	2,649,413		2,649,413	0		45,062		1,262	2,694,475
April	2030	0	-172,470	2,476,943		2,476,943	0	-2,214	42,848		-952	2,519,791
May	2030	0	-83,052	2,393,891		2,393,891	0	-3,103	39,745		-4,054	2,433,636
June	2030	0	-24,256	2,369,636		2,369,636	0	0	39,745		-4,054	2,409,381
July	2030	0	-117,432	2,252,204		2,252,204	0	0	39,745		-4,054	2,291,949
August	2030	0	-797	2,251,406		2,251,406	0	0	39,745		-4,054	2,291,151
September	2030	0	-133,376	2,118,030		2,118,030	0	0	39,745		-4,054	2,157,775
October	2030	0	-49,146	2,068,884		2,068,884	0	0	39,745		-4,054	2,108,629
November	2030	0	-36,808	2,032,076		2,032,076	0	0	39,745		-4,054	2,071,821
December	2030	0	-30,012	2,002,064		2,002,064	0	0	39,745		-4,054	2,041,809
January	2031	0	-20,785	1,981,279		1,981,279	0	0	39,745		-4,054	2,021,024
February	2031	0	-19,914	1,961,365		1,961,365	0	0	39,745		-4,054	2,001,110
March	2031	0	-17,139	1,944,226		1,944,226	0	0	39,745		-4,054	1,983,971
April	2031	0	-141,968	1,802,259		1,802,259	0	-640	39,105		-4,695	1,841,364
May	2031	0	-53,218	1,749,041		1,749,041	0	-3,590	35,515		-8,284	1,784,556
June	2031	0	-56,304	1,692,737		1,692,737	0	-12,212	23,303		-20,497	1,716,040
July	2031	0	-25,740	1,666,997		1,666,997	0	0	23,303		-20,497	1,690,300
August	2031	0	-148,579	1,518,418		1,518,418	0	-374	22,929		-20,870	1,541,348
September	2031	0	-178,828	1,339,590		1,339,590	0	0	22,929		-20,870	1,362,520
October	2031	0	-41,980	1,297,611		1,297,611	0	0	22,929		-20,870	1,320,540
November	2031	0	-42,293	1,255,318		1,255,318	0	-72	22,858		-20,942	1,278,175
December	2031	0	-49,346	1,205,971		1,205,971	0	0	22,858		-20,942	1,228,829
January	2032	0	-7,215	1,198,756		1,198,756	0	0	22,858		-20,942	1,221,613
February	2032	0	-33,247	1,165,509		1,165,509	0	0	22,858		-20,942	1,188,367
March	2032	0	-5,038	1,160,471		1,160,471	0	0	22,858		-20,942	1,183,329
April	2032	0	-11,998	1,148,473		1,148,473	0	0	22,858		-20,942	1,171,331
May	2032	0	-139,193	1,009,280		1,009,280	0	-4,318	18,539		-25,260	1,027,819
June	2032	0	-39,301	969,978		969,978	0	-25	18,515		-25,285	988,493
July	2032	0	-58,370	911,608		911,608	0	0	18,515		-25,285	930,123
August	2032	0	-9,039	902,569		902,569	0	0	18,515		-25,285	921,084
September	2032	0	-58,800	843,769		843,769	0	-497	18,018		-25,782	861,786
October	2032	0	-24,408	819,360		819,360	0	0	18,018		-25,782	837,378
November	2032	0	-31,487	787,873		787,873	0	0	18,018		-25,782	805,891
December	2032	0	-20,970	766,904		766,904	0	0	18,018		-25,782	784,921
January	2033	0	0	766,904		766,904	0	0	18,018		-25,782	784,921
February	2033	0	-42,248	724,656		724,656	0	0	18,018		-25,782	742,673
March	2033	0	-10,931	713,725		713,725	0	-4,435	13,582		-30,217	727,307
April	2033	0	-27,965	685,759		685,759	0	-8,735	4,847		-38,952	690,607
May	2033	0	-28,149	657,610		657,610	0	0	4,847		-38,952	662,458
June	2033	0	-23,781	633,829		633,829	0	0	4,847		-38,952	638,677
July	2033	0	-59,309	574,520		574,520	0	0	4,847		-38,952	579,368
August	2033	0	-237,839	336,681		336,681	0	0	4,847		-38,952	341,529
September	2033	0	-56,720	279,961		279,961	0	0	4,847		-38,952	284,809
October	2033	0	-45,598	234,364		234,364	0	0	4,847		-38,952	239,211
November	2033	0	-7,639	226,724		226,724	0	0	4,847		-38,952	231,572
December	2033	0	-32,584	194,141		194,141	0	0	4,847		-38,952	198,988

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
February	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
March	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
April	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
May	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
June	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
July	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
August	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
September	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
October	2029	0		5,660		5,660	0		125	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71	
November	2029	0	-237	5,423		5,423	0		125	1	5,548	6,632	2,816	6,487	13.39	7.78	13.18	
December	2029	0	-120	5,303		5,303	0		125	1	5,427	6,628	2,816	6,482	13.26	7.78	13.05	
January	2030	0	0	5,303		5,303	0		125	1	5,427	6,628	2,816	6,482	13.26	7.78	13.05	
February	2030	0	-1	5,301		5,301	0		125	1	5,426	6,640	2,816	6,493	13.29	7.78	13.07	
March	2030	0	0	5,301		5,301	0		125	1	5,426	6,640	2,816	6,493	13.29	7.78	13.07	
April	2030	0	-435	4,866		4,866	0	-16	108	-15	4,974	6,467	3,061	6,347	12.71	7.72	12.53	
May	2030	0	-270	4,596		4,596	0	-2	106	-18	4,702	6,859	3,057	6,723	13.17	8.13	12.99	
June	2030	0	-206	4,390		4,390	0	0	106	-18	4,496	7,116	3,057	6,964	13.18	8.13	12.99	
July	2030	0	-292	4,098		4,098	0	0	106	-18	4,204	7,336	3,057	7,162	13.35	8.13	13.14	
August	2030	0	-10	4,088		4,088	0	0	106	-18	4,193	7,382	3,057	7,205	13.40	8.13	13.19	
September	2030	0	-390	3,697		3,697	0	0	106	-18	3,803	7,107	3,057	6,938	12.41	8.13	12.23	
October	2030	0	-189	3,508		3,508	0	0	106	-18	3,614	7,061	3,057	6,891	11.97	8.13	11.81	
November	2030	0	-45	3,464		3,464	0	0	106	-18	3,569	6,983	3,057	6,815	11.90	8.13	11.74	
December	2030	0	-105	3,359		3,359	0	0	106	-18	3,465	7,000	3,057	6,829	11.74	8.13	11.59	
January	2031	0	-58	3,301		3,301	0	0	106	-18	3,407	7,101	3,057	6,921	11.83	8.13	11.67	
February	2031	0	-153	3,148		3,148	0	0	106	-18	3,253	7,264	3,057	7,071	11.66	8.13	11.50	
March	2031	0	-54	3,094		3,094	0	0	106	-18	3,200	7,309	3,057	7,111	11.63	8.13	11.47	
April	2031	0	-189	2,905		2,905	0	0	105	-18	3,011	6,932	3,259	6,770	11.17	8.77	11.07	
May	2031	0	-35	2,871		2,871	0	-55	51	-73	2,921	6,886	3,229	6,734	11.30	4.60	11.02	
June	2031	0	-188	2,683		2,683	0	-10	41	-82	2,724	6,995	2,589	6,837	11.09	4.56	10.85	
July	2031	0	-96	2,587		2,587	0	0	41	-82	2,628	7,094	2,589	6,927	11.01	4.56	10.77	
August	2031	0	-204	2,383		2,383	0	0	41	-83	2,424	6,809	2,866	6,673	10.69	5.08	10.49	
September	2031	0	-127	2,256		2,256	0	0	41	-83	2,296	6,202	2,866	6,083	10.44	5.08	10.25	
October	2031	0	-102	2,154		2,154	0	0	41	-83	2,195	6,179	2,866	6,058	10.26	5.08	10.07	
November	2031	0	-122	2,032		2,032	0	0	40	-83	2,072	6,154	3,265	6,058	9.96	5.77	9.82	
December	2031	0	-132	1,900		1,900	0	0	40	-83	1,940	6,122	3,265	6,024	9.64	5.77	9.51	
January	2032	0	-18	1,882		1,882	0	0	40	-83	1,923	6,376	3,265	6,265	10.01	5.77	9.86	
February	2032	0	-47	1,835		1,835	0	0	40	-83	1,876	6,511	3,265	6,389	10.25	5.77	10.08	
March	2032	0	-8	1,827		1,827	0	0	40	-83	1,867	6,520	3,265	6,396	10.26	5.77	10.09	
April	2032	0	-5	1,822		1,822	0	0	40	-83	1,862	6,525	3,265	6,401	10.35	5.77	10.18	
May	2032	0	-1,029	792		792	0	27	68	-56	860	6,192	3,090	6,082	4.86	11.27	5.09	
June	2032	0	-25	767		767	0	0	68	-56	835	6,928	3,703	6,817	5.48	13.52	5.76	
July	2032	0	-59	708		708	0	0	68	-56	776	7,122	3,703	6,993	5.53	13.52	5.83	
August	2032	0	-5	703		703	0	0	68	-56	770	7,649	3,703	7,488	5.95	13.52	6.26	
September	2032	0	-93	609		609	0	1	69	-55	678	7,671	4,504	7,560	5.54	17.15	5.95	
October	2032	0	-34	576		576	0	0	69	-55	644	7,803	4,504	7,682	5.48	17.15	5.91	
November	2032	0	-28	547		547	0	0	69	-55	616	8,293	4,504	8,140	5.76	17.15	6.22	
December	2032	0	-10	537		537	0	0	69	-55	606	8,159	4,504	8,009	5.72	17.15	6.18	
January	2033	0	0	537		537	0	0	69	-55	606	8,159	4,504	8,009	5.72	17.15	6.18	
February	2033	0	-20	517		517	0	0	69	-55	586	8,627	4,504	8,439	6.16	17.15	6.66	
March	2033	0	-14	503		503	0	-4	65	-58	568	8,811	4,527	8,658	6.21	21.60	6.76	
April	2033	0	-11	492		492	0	-55	9	-114	501	9,267	4,847	9,208	6.65	9.33	6.68	
May	2033	0	-19	473		473	0	0	9	-114	482	9,531	4,847	9,464	6.85	9.33	6.89	
June	2033	0	-62	410		410	0	0	9	-114	420	9,751	4,847	9,677	6.31	9.33	6.36	
July	2033	0	-47	363		363	0	0	9	-114	372	10,446	4,847	10,346	6.60	9.33	6.65	
August	2033	0	-151	212		212	0	0	9	-114	222	7,482	4,847	7,425	4.72	9.33	4.82	
September	2033	0	-42	170		170	0	0	9	-114	180	7,999	4,847	7,911	4.87	9.33	4.99	
October	2033	0	-45	126		126	0	0	9	-114	135	9,375	4,847	9,200	5.03	9.33	5.20	
November	2033	0	30	156		156	0	0	9	-114	165	10,796	4,847	10,526	7.43	9.33	7.51	
December	2033	0	-17	139		139	0	0	9	-114	148	11,420	4,847	11,055	8.19	9.33	8.25	

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Participation										
Month	Year	Program Participants					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2034	0	-4	13		13	0	0	1		-15	14
February	2034	0	-10	3		3	0	0	1		-15	4
March	2034	0	-3	0		0	0	-1	0		-16	0
April	2034	0	0	0		0	0	0	0		-16	0
May	2034	0	0	0		0	0	0	0		-16	0
June	2034	0	0	0		0	0	0	0		-16	0
July	2034	0	0	0		0	0	0	0		-16	0
August	2034	0	0	0		0	0	0	0		-16	0
September	2034	0	0	0		0	0	0	0		-16	0
October	2034	0	0	0		0	0	0	0		-16	0
November	2034	0	0	0		0	0	0	0		-16	0
December	2034	0	0	0		0	0	0	0		-16	0
January	2035	0	0	0		0	0	0	0		-16	0
February	2035	0	0	0		0	0	0	0		-16	0
March	2035	0	0	0		0	0	0	0		-16	0
April	2035	0	0	0		0	0	0	0		-16	0
May	2035	0	0	0		0	0	0	0		-16	0
June	2035	0	0	0		0	0	0	0		-16	0
July	2035	0	0	0		0	0	0	0		-16	0
August	2035	0	0	0		0	0	0	0		-16	0
September	2035	0	0	0		0	0	0	0		-16	0
October	2035	0	0	0		0	0	0	0		-16	0
November	2035	0	0	0		0	0	0	0		-16	0
December	2035	0	0	0		0	0	0	0		-16	0

Table 2. EM&V Data Incremental by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	6	6	-	-	6					
2015	114	114	3	3	117					
2016	89	89	6	2	95					
2017	103	103	3	3	106					
2018	77	77	3	3	80					
2019	17	17	1	-	18					

Table 3. EM&V Data Annualized by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	6	6	-	-	6					
2015	114	114	3	3	117					
2016	89	89	6	2	95					
2017	103	103	3	3	106					
2018	77	77	3	3	80					
2019	17	17	1	-	18					

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants									
	VA	NC PPI	System							
2014		-								
2015		3								
2016		9								
2017		12								
2018		12								
2019		7								

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Energy Savings										
Month	Year	Net kWh					NC					System
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
VA Monthly New	VA Monthly Retired											
January	2034	0	-10,619	183,522		183,522	0	0	4,847		-38,952	188,369
February	2034	0	-37,678	145,843		145,843	0	0	4,847		-38,952	150,691
March	2034	0	-145,843	0		0	0	-10	4,837		-38,962	4,837
April	2034	0	0	0		0	0	-3,575	1,262		-42,537	1,262
May	2034	0	0	0		0	0	0	1,262		-42,537	1,262
June	2034	0	0	0		0	0	0	1,262		-42,537	1,262
July	2034	0	0	0		0	0	0	1,262		-42,537	1,262
August	2034	0	0	0		0	0	0	1,262		-42,537	1,262
September	2034	0	0	0		0	0	-1,262	0		-43,799	0
October	2034	0	0	0		0	0	0	0		-43,799	0
November	2034	0	0	0		0	0	0	0		-43,799	0
December	2034	0	0	0		0	0	0	0		-43,799	0
January	2035	0	0	0		0	0	0	0		-43,799	0
February	2035	0	0	0		0	0	0	0		-43,799	0
March	2035	0	0	0		0	0	0	0		-43,799	0
April	2035	0	0	0		0	0	0	0		-43,799	0
May	2035	0	0	0		0	0	0	0		-43,799	0
June	2035	0	0	0		0	0	0	0		-43,799	0
July	2035	0	0	0		0	0	0	0		-43,799	0
August	2035	0	0	0		0	0	0	0		-43,799	0
September	2035	0	0	0		0	0	0	0		-43,799	0
October	2035	0	0	0		0	0	0	0		-43,799	0
November	2035	0	0	0		0	0	0	0		-43,799	0
December	2035	0	0	0		0	0	0	0		-43,799	0

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			135,338		135,338			-		-	135,338
2015			3,900,391		3,900,391			44,748		44,748	3,945,139
2016			4,609,959		4,609,959			121,977		89,092	4,731,936
2017			2,787,106		2,787,106			36,707		36,707	2,823,813
2018			3,173,969		3,173,969			122,967		122,967	3,296,936
2019			2,000,321		2,000,321			37,326		30,155	2,037,647

Table 3. EM&V Data Annualized by Vintage Year											
Net Annualized Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			1,019,894		1,019,894			-		-	1,019,894
2015			7,790,886		7,790,886			63,801		63,801	7,854,687
2016			9,553,114		9,553,114			202,650		5,344	9,755,764
2017			5,268,813		5,268,813			58,080		58,080	5,326,893
2018			6,873,157		6,873,157			158,042		158,042	7,031,199
2019			2,329,686		2,329,686			58,170		15,149	2,387,856

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Net Energy (kWh) for PPI											
								NC PPI			System
2014								-			
2015								44,748			
2016								185,778			
2017								303,158			
2018								383,696			
2019								253,447			

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2034		-25	114		114		0	9	-114	123	14,117	4,847	13,455	8.76	9.33	8.80	
February	2034		-29	85		85		0	9	-114	95	48,614	4,847	37,673	28.42	9.33	23.65	
March	2034		-85	0		0		0	9	-114	9	-	-	-	-	-	-	
April	2034		0	0		0		-8	1	-122	1	-	-	-	-	-	-	
May	2034		0	0		0		0	1	-122	1	-	-	-	-	-	-	
June	2034		0	0		0		0	1	-122	1	-	-	-	-	-	-	
July	2034		0	0		0		0	1	-122	1	-	-	-	-	-	-	
August	2034		0	0		0		0	1	-122	1	-	-	-	-	-	-	
September	2034		0	0		0		-1	0	-123	0	-	-	-	-	-	-	
October	2034		0	0		0		0	0	-123	0	-	-	-	-	-	-	
November	2034		0	0		0		0	0	-123	0	-	-	-	-	-	-	
December	2034		0	0		0		0	0	-123	0	-	-	-	-	-	-	
January	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
February	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
March	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
April	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
May	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
June	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
July	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
August	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
September	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
October	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
November	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	
December	2035		0	0		0		0	0	-123	0	-	-	-	-	-	-	

Table 2. EM&V Data Incremental by Vintage Year										Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System	VA	NC	System
2014		357	357	-	-	357	22,556	-	22,556	59.51	-	59.51			
2015		1,944	1,944	19	19	1,963	34,214	14,916	33,719	17.05	6.28	16.78			
2016		1,459	1,459	65	1	1,524	51,797	20,329	49,810	16.39	10.88	16.04			
2017		1,363	1,363	-28	-28	1,334	27,059	12,236	26,640	13.23	-9.40	12.59			
2018		398	398	59	59	457	41,220	40,989	41,212	5.17	19.76	5.72			
2019		139	139	9	1	148	117,666	37,326	113,203	8.19	9.33	8.25			

Table 3. EM&V Data Annualized by Vintage Year										Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System	VA	NC	System
2014		357	357	-	-	357	169,982	-	169,982	59.51	-	59.51			
2015		1,944	1,944	19	19	1,963	68,341	21,267	67,134	17.05	6.28	16.78			
2016		1,459	1,459	65	1	1,524	107,338	33,775	102,692	16.39	10.88	16.04			
2017		1,363	1,363	-28	-28	1,334	51,154	19,360	50,254	13.23	-9.40	12.59			
2018		398	398	59	59	457	89,262	52,681	87,890	5.17	19.76	5.72			
2019		139	139	9	1	148	137,040	58,170	132,659	8.19	9.33	8.25			

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
		VA	NC PPI	System	VA	NC	System	VA	NC	System	VA	NC	System		
2014			-												
2015			19			14,916						6.28			
2016			84			20,642						9.34			
2017			56			25,263						4.66			
2018			96			31,975						8			
2019			69			36,207						10			

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Year	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	6	6	-	-	6					
2015	120	120	3	3	123					
2016	209	209	9	2	218					
2017	312	312	12	5	324					
2018	389	389	15	8	404					
2019	406	406	16	-	422					
2020	406	406	16	-	422					
2021	406	406	16	-	422					
2022	406	406	16	-	422					
2023	406	406	16	-	422					
2024	406	406	16	-	422					
2025	406	406	16	-	422					
2026	406	406	16	-	422					
2027	406	406	16	-	422					
2028	406	406	16	-	422					
2029	400	400	16	-	416					
2030	286	286	13	-	299					
2031	197	197	7	-	204					
2032	94	94	4	-	98					
2033	17	17	1	-	18					
2034	-	-	-	-	-					
2035	-	-	-	-	-					

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

Year	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	6		-		6					
2015	120		3		123					
2016	209		9		218					
2017	312		12		324					
2018	389		15		404					
2019	406		16		422					
2020	406		16		422					
2021	406		16		422					
2022	406		16		422					
2023	406		16		422					
2024	406		16		422					
2025	406		16		422					
2026	406		16		422					
2027	406		16		422					
2028	406		16		422					
2029	406		16		422					
2030	406		16		422					
2031	406		16		422					
2032	406		16		422					
2033	406		16		422					
2034	406		16		422					
2035	406		16		422					

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Net Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			135,338		135,338			-		-	135,338
2015			4,920,284		4,920,284			44,748		44,748	4,965,032
2016			13,420,739		13,420,739			185,778		142,260	13,606,517
2017			21,151,000		21,151,000			303,158		42,051	21,454,158
2018			26,806,677		26,806,677			447,498		186,391	27,254,174
2019			32,506,185		32,506,185			519,898		214,711	33,026,084
2020			32,835,550		32,835,550			540,742		15,149	33,376,293
2021			32,835,550		32,835,550			540,742		15,149	33,376,293
2022			32,835,550		32,835,550			540,742		15,149	33,376,293
2023			32,835,550		32,835,550			540,742		15,149	33,376,293
2024			32,835,550		32,835,550			540,742		15,149	33,376,293
2025			32,835,550		32,835,550			540,742		15,149	33,376,293
2026			32,835,550		32,835,550			540,742		15,149	33,376,293
2027			32,835,550		32,835,550			540,742		15,149	33,376,293
2028			32,835,550		32,835,550			540,742		15,149	33,376,293
2029			32,700,212		32,700,212			540,742		15,149	33,240,955
2030			27,915,266		27,915,266			495,994		-	28,411,260
2031			19,414,811		19,414,811			354,965		-	19,769,776
2032			11,684,550		11,684,550			237,584		-	11,922,135
2033			6,028,874		6,028,874			93,245		-	6,122,119
2034			329,365		329,365			20,844		-	350,209
2035			-		-			-		-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

Net Energy (kWh)											
			VA IRP					NC IRP			System IRP
2014			135,338					-			135,338
2015			5,055,623					44,748			5,100,371
2016			18,476,362					230,526			18,706,887
2017			39,627,362					533,684			40,161,045
2018			66,434,038					981,181			67,415,219
2019			98,940,223					1,501,080			100,441,303
2020			131,775,774					2,041,822			133,817,596
2021			164,611,324					2,582,564			167,193,888
2022			197,446,874					3,123,307			200,570,181
2023			230,282,424					3,664,049			233,946,474
2024			263,117,975					4,204,792			267,322,766
2025			295,953,525					4,745,534			300,699,059
2026			328,789,075					5,286,276			334,075,352
2027			361,624,625					5,827,019			367,451,644
2028			394,460,176					6,367,761			400,827,937
2029			427,160,388					6,908,504			434,068,892
2030			455,075,654					7,404,498			462,480,152
2031			474,490,465					7,759,463			482,249,928
2032			486,175,015					7,997,047			494,172,062
2033			492,203,889					8,090,292			500,294,181
2034			492,533,254					8,111,136			500,644,390
2035			492,533,254					8,111,136			500,644,390

Appendix D.6 Non-residential Heating and Cooling Efficiency Program 2014-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity		
Year	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2014	357	357	-	-	357	22,556	-	22,556	59.51	-	59.51					
2015	2,301	2,301	19	19	2,320	41,002	14,916	40,366	19.17	6.28	18.86					
2016	3,760	3,760	84	84	3,844	64,214	20,642	62,415	17.99	9.34	17.63					
2017	5,123	5,123	56	-	5,179	67,792	25,263	66,217	16.42	4.66	15.98					
2018	5,521	5,521	115	32	5,636	68,912	29,833	67,461	14.19	7.68	13.95					
2019	5,660	5,660	125	1	5,784	80,064	32,494	78,261	13.94	7.78	13.71					
2020	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2021	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2022	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2023	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2024	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2025	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2026	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2027	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2028	5,660	5,660	125	1	5,784	80,876	33,796	79,091	13.94	7.78	13.71					
2029	5,303	5,303	125	1	5,427	81,751	33,796	79,906	13.26	7.78	13.05					
2030	3,359	3,359	106	-	3,465	97,606	38,153	95,021	11.74	8.13	11.59					
2031	1,900	1,900	40	-	1,940	98,552	50,709	96,911	9.64	5.77	9.51					
2032	537	537	69	-	606	124,304	59,396	121,654	5.72	17.15	6.18					
2033	139	139	9	-	148	354,640	93,245	340,118	8.19	9.33	8.25					
2034	-	-	-	-	-	-	-	-	-	-	-					
2035	-	-	-	-	-	-	-	-	-	-	-					

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											Lifetime Energy			Lifetime Capacity		
Year	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2014	357	357	-	-	357	22,556	-	22,556	59.51	-	59.51					
2015	2,301	2,301	19	19	2,320	42,130	14,916	41,466	19.17	6.28	18.86					
2016	3,760	3,760	84	84	3,844	88,404	25,614	85,811	17.99	9.34	17.63					
2017	5,123	5,123	84	-	5,207	127,011	44,474	123,954	16.42	7.01	16.07					
2018	5,521	5,521	115	32	5,636	170,782	65,412	166,869	14.19	7.68	13.95					
2019	5,660	5,660	125	1	5,784	243,695	93,817	238,013	13.94	7.78	13.71					
2020	5,660	5,660	125	1	5,784	324,571	127,614	317,103	13.94	7.78	13.71					
2021	5,660	5,660	125	1	5,784	405,447	161,410	396,194	13.94	7.78	13.71					
2022	5,660	5,660	125	1	5,784	486,322	195,207	475,285	13.94	7.78	13.71					
2023	5,660	5,660	125	1	5,784	567,198	229,003	554,376	13.94	7.78	13.71					
2024	5,660	5,660	125	1	5,784	648,074	262,799	633,466	13.94	7.78	13.71					
2025	5,660	5,660	125	1	5,784	728,950	296,596	712,557	13.94	7.78	13.71					
2026	5,660	5,660	125	1	5,784	809,825	330,392	791,648	13.94	7.78	13.71					
2027	5,660	5,660	125	1	5,784	890,701	364,189	870,738	13.94	7.78	13.71					
2028	5,660	5,660	125	1	5,784	971,577	397,985	949,829	13.94	7.78	13.71					
2029	5,660	5,660	125	1	5,784	1,052,119	431,781	1,028,599	13.94	7.78	13.71					
2030	5,660	5,660	125	1	5,784	1,120,876	462,781	1,095,925	13.94	7.78	13.71					
2031	5,660	5,660	125	1	5,784	1,168,696	484,966	1,142,772	13.94	7.78	13.71					
2032	5,660	5,660	125	1	5,784	1,197,475	499,815	1,171,024	13.94	7.78	13.71					
2033	5,660	5,660	125	1	5,784	1,212,325	505,643	1,185,531	13.94	7.78	13.71					
2034	5,660	5,660	125	1	5,784	1,213,136	506,946	1,186,361	13.94	7.78	13.71					
2035	5,660	5,660	125	1	5,784	1,213,136	506,946	1,186,361	13.94	7.78	13.71					

Appendix D.7 Non-residential Window Film Program 2014-2019

PROGRAM: Non-residential Window Film
DSM Phase III Program
Type: Energy Efficiency
Program Measure Life: 10.0 years

Table 1		Participation										
		Program Participants										System
Month	Year	VA				NC				System		
		VA Monthly New [A]	VA Monthly Retired [-A]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A]	NC Monthly New [C]	NC Monthly Retired [-C]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C]	System Cum for IRP E+G
January	2014	0		0		0		0		0		0
February	2014	0		0		0		0		0		0
March	2014	0		0		0		0		0		0
April	2014	0		0		0		0		0		0
May	2014	0		0		0		0		0		0
June	2014	0		0		0		0		0		0
July	2014	0		0		0		0		0		0
August	2014	0		0		0		0		0		0
September	2014	0		0		0		0		0		0
October	2014	1		1		1		1		1		1
November	2014	0		1		1		1		1		1
December	2014	2		3		3		3		3		3
January	2015	2		5		5		5		5		5
February	2015	3		8		8		8		8		8
March	2015	1		9		9		9		9		9
April	2015	2		11		11		11		11		11
May	2015	2		13		13		13		13		13
June	2015	3		16		16		16		16		16
July	2015	1		17		17		17		17		17
August	2015	2		19		19		19		19		19
September	2015	1		20		20		20		20		20
October	2015	2		22		22		22		22		22
November	2015	1		23		23		23		23		23
December	2015	2		25		25		25		25		25
January	2016	4		29		29	0	29	0	29	0	29
February	2016	4		33		33	0	33	0	33	0	33
March	2016	7		40		40	0	40	0	40	0	40
April	2016	7		47		47	0	47	0	47	0	47
May	2016	6		53		53	0	53	0	53	0	53
June	2016	4		57		57	0	57	0	57	0	57
July	2016	3		60		60	0	60	0	60	0	60
August	2016	11		71		71	0	71	0	71	0	71
September	2016	10		81		81	0	81	0	81	0	81
October	2016	7		88		88	0	88	0	88	0	88
November	2016	6		94		94	0	94	0	94	0	94
December	2016	1		95		95	0	95	0	95	0	95
January	2017	4		99		99	0	99	0	99	0	99
February	2017	3		102		102	0	102	0	102	0	102
March	2017	4		106		106	0	106	0	106	0	106
April	2017	1		107		107	0	107	0	107	0	107
May	2017	7		114		114	0	114	0	114	0	114
June	2017	1		115		115	0	115	0	115	0	115
July	2017	3		118		118	0	118	0	118	0	118
August	2017	15		133		133	0	133	0	133	0	133
September	2017	7		140		140	0	140	0	140	0	140
October	2017	8		148		148	0	148	0	148	0	148
November	2017	6		154		154	0	154	0	154	0	154
December	2017	0		154		154	0	154	0	154	0	154
January	2018	3		157		157	0	157	0	157	0	157
February	2018	10		167		167	0	167	0	167	0	167
March	2018	2		169		169	0	169	0	169	0	169
April	2018	4		173		173	0	173	0	173	0	173
May	2018	12		185		185	0	185	0	185	0	185
June	2018	6		191		191	0	191	0	191	0	191
July	2018	3		194		194	0	194	0	194	0	194
August	2018	9		203		203	1	203	1	203	1	204
September	2018	10		213		213	0	213	1	213	1	214
October	2018	12		225		225	0	225	1	225	1	226
November	2018	6		231		231	0	231	1	231	1	232
December	2018	14		245		245	0	245	1	245	1	246

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Energy Savings										
		Net kWh										
Month	Year	VA				NC				System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2014	0		0		0						0
February	2014	0		0		0						0
March	2014	0		0		0						0
April	2014	0		0		0						0
May	2014	0		0		0						0
June	2014	0		0		0						0
July	2014	0		0		0						0
August	2014	0		0		0						0
September	2014	0		0		0						0
October	2014	177		177		177						177
November	2014	0		177		177						177
December	2014	76,654		76,832		76,832						76,832
January	2015	8		76,840		76,840						76,840
February	2015	145		76,985		76,985						76,985
March	2015	35		77,020		77,020						77,020
April	2015	204,145		281,165		281,165						281,165
May	2015	24		281,189		281,189						281,189
June	2015	264		281,453		281,453						281,453
July	2015	-2		281,452		281,452						281,452
August	2015	113		281,564		281,564						281,564
September	2015	0		281,564		281,564						281,564
October	2015	294		281,858		281,858						281,858
November	2015	132		281,990		281,990						281,990
December	2015	30		282,019		282,019						282,019
January	2016	11,318		293,337		293,337	0		0		0	293,337
February	2016	612		293,949		293,949	0		0		0	293,949
March	2016	1,908		295,857		295,857	0		0		0	295,857
April	2016	1,688		297,545		297,545	0		0		0	297,545
May	2016	358		297,903		297,903	0		0		0	297,903
June	2016	283		298,185		298,185	0		0		0	298,185
July	2016	2,429		300,614		300,614	0		0	0	0	300,614
August	2016	1,315		301,929		301,929	0		0	0	0	301,929
September	2016	3,332		305,261		305,261	0		0	0	0	305,261
October	2016	1,670		306,931		306,931	0		0	0	0	306,931
November	2016	6,062		312,992		312,992	0		0	0	0	312,992
December	2016	14		313,006		313,006	0		0	0	0	313,006
January	2017	1,721		314,727		314,727	0		0		0	314,727
February	2017	12,469		327,196		327,196	0		0		0	327,196
March	2017	7,936		335,132		335,132	0		0		0	335,132
April	2017	10,276		345,408		345,408	0		0		0	345,408
May	2017	797		346,205		346,205	0		0		0	346,205
June	2017	2,600		348,805		348,805	0		0		0	348,805
July	2017	12,911		361,716		361,716	0		0		0	361,716
August	2017	32,299		394,015		394,015	0		0		0	394,015
September	2017	1,253		395,268		395,268	0		0		0	395,268
October	2017	5,118		400,386		400,386	0		0		0	400,386
November	2017	28,160		428,546		428,546	0		0		0	428,546
December	2017	104		428,650		428,650	0		0		0	428,650
January	2018	4,014		432,664		432,664	0		0		0	432,664
February	2018	-25		432,639		432,639	0		0		0	432,639
March	2018	343		432,982		432,982	0		0		0	432,982
April	2018	725		433,707		433,707	0		0		0	433,707
May	2018	266		433,974		433,974	0		0		0	433,974
June	2018	589		434,562		434,562	0		0		0	434,562
July	2018	219		434,781		434,781	0		0		0	434,781
August	2018	1,467		436,248		436,248	301		301		301	436,549
September	2018	1,146		437,394		437,394	0		301		301	437,695
October	2018	790		438,184		438,184	0		301		301	438,486
November	2018	632		438,816		438,816	0		301		301	439,117
December	2018	1,231		440,047		440,047	0		301		301	440,348

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC				System		VA	NC	System	VA	NC	System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2014	0		0		0					0		-		-	-	-	-
February	2014	0		0		0					0		-		-	-	-	-
March	2014	0		0		0					0		-		-	-	-	-
April	2014	0		0		0					0		-		-	-	-	-
May	2014	0		0		0					0		-		-	-	-	-
June	2014	0		0		0					0		-		-	-	-	-
July	2014	0		0		0					0		-		-	-	-	-
August	2014	0		0		0					0		-		-	-	-	-
September	2014	0		0		0					0		-		-	-	-	-
October	2014	1		1		1					1		177		177	0.64		0.64
November	2014	0		1		1					1		177		177	0.64		0.64
December	2014	186		187		187					187		25,611		25,611	62.17		62.17
January	2015	0		187		187					187		15,368		15,368	37.32		37.32
February	2015	1		187		187					187		9,623		9,623	23.43		23.43
March	2015	0		188		188					188		8,558		8,558	20.84		20.84
April	2015	497		684		684					684		25,560		25,560	62.20		62.20
May	2015	0		684		684					684		21,630		21,630	52.65		52.65
June	2015	1		685		685					685		17,591		17,591	42.84		42.84
July	2015	0		686		686					686		16,556		16,556	40.32		40.32
August	2015	0		686		686					686		14,819		14,819	36.10		36.10
September	2015	0		686		686					686		14,078		14,078	34.30		34.30
October	2015	1		687		687					687		12,812		12,812	31.24		31.24
November	2015	0		688		688					688		12,260		12,260	29.90		29.90
December	2015	0		688		688					688		11,281		11,281	27.51		27.51
January	2016	46		733		733	0		0		733		10,115		10,115	25.29		25.29
February	2016	2		736		736	0		0		736		8,908		8,908	22.29		22.29
March	2016	10		746		746	0		0		746		7,396		7,396	18.65		18.65
April	2016	6		752		752	0		0		752		6,331		6,331	16.00		16.00
May	2016	1		753		753	0		0		753		5,621		5,621	14.21		14.21
June	2016	1		754		754	0		0		754		5,231		5,231	13.23		13.23
July	2016	7		761		761	0		0		761		5,010		5,010	12.68		12.68
August	2016	4		765		765	0		0		765		4,253		4,253	10.78		10.78
September	2016	9		775		775	0		0		775		3,769		3,769	9.56		9.56
October	2016	6		781		781	0		0		781		3,488		3,488	8.87		8.87
November	2016	19		799		799	0		0		799		3,330		3,330	8.50		8.50
December	2016	0		800		800	0		0		800		3,295		3,295	8.42		8.42
January	2017	7		807		807	0		0		807		3,179		3,179	8.15		8.15
February	2017	43		850		850	0		0		850		3,208		3,208	8.33		8.33
March	2017	25		875		875	0		0		875		3,162		3,162	8.26		8.26
April	2017	34		909		909	0		0		909		3,228		3,228	8.49		8.49
May	2017	3		912		912	0		0		912		3,037		3,037	8.00		8.00
June	2017	13		925		925	0		0		925		3,033		3,033	8.04		8.04
July	2017	44		968		968	0		0		968		3,065		3,065	8.20		8.20
August	2017	93		1,061		1,061	0		0		1,061		2,963		2,963	7.98		7.98
September	2017	5		1,066		1,066	0		0		1,066		2,823		2,823	7.62		7.62
October	2017	23		1,089		1,089	0		0		1,089		2,705		2,705	7.36		7.36
November	2017	87		1,176		1,176	0		0		1,176		2,783		2,783	7.64		7.64
December	2017	0		1,177		1,177	0		0		1,177		2,783		2,783	7.64		7.64
January	2018	15		1,192		1,192	0		0		1,192		2,756		2,756	7.59		7.59
February	2018	1		1,193		1,193	0		0		1,193		2,591		2,591	7.14		7.14
March	2018	1		1,194		1,194	0		0		1,194		2,562		2,562	7.06		7.06
April	2018	2		1,196		1,196	0		0		1,196		2,507		2,507	6.91		6.91
May	2018	2		1,198		1,198	0		0		1,198		2,346		2,346	6.48		6.48
June	2018	2		1,201		1,201	0		0		1,201		2,275		2,275	6.29		6.29
July	2018	1		1,202		1,202	0		0		1,202		2,241		2,241	6.20		6.20
August	2018	6		1,208		1,208	1		1		1,208		2,149	301	2,140	5.95	0.59	5.92
September	2018	6		1,214		1,214	0		1		1,214		2,053	301	2,045	5.70	0.59	5.67
October	2018	3		1,216		1,216	0		1		1,217		1,947	301	1,940	5.41	0.59	5.39
November	2018	3		1,219		1,219	0		1		1,220		1,900	301	1,893	5.28	0.59	5.26
December	2018	4		1,223		1,223	0		1		1,223		1,796	301	1,790	4.99	0.59	4.97

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Participation											
Month	Year	Program Participants										System Cum for IRP	
		VA					NC						System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
January	2019	4		249		249	0		1		1	250	
February	2019	4		253		253	0		1		1	254	
March	2019	0		253		253	0		1		1	254	
April	2019	0		253		253	0		1		1	254	
May	2019	0		253		253	0		1		1	254	
June	2019	0		253		253	0		1		1	254	
July	2019	0		253		253	0		1	0	1	254	
August	2019	0		253		253	0		1	0	1	254	
September	2019	0		253		253	0		1	0	1	254	
October	2019	0		253		253	0		1	0	1	254	
November	2019	0		253		253	0		1	0	1	254	
December	2019	0		253		253	0		1	0	1	254	
January	2020	0		253		253	0		1		0	254	
February	2020	0		253		253	0		1		0	254	
March	2020	0		253		253	0		1		0	254	
April	2020	0		253		253	0		1		0	254	
May	2020	0		253		253	0		1		0	254	
June	2020	0		253		253	0		1		0	254	
July	2020	0		253		253	0		1		0	254	
August	2020	0		253		253	0		1		0	254	
September	2020	0		253		253	0		1		0	254	
October	2020	0		253		253	0		1		0	254	
November	2020	0		253		253	0		1		0	254	
December	2020	0		253		253	0		1		0	254	
January	2021	0		253		253	0		1		0	254	
February	2021	0		253		253	0		1		0	254	
March	2021	0		253		253	0		1		0	254	
April	2021	0		253		253	0		1		0	254	
May	2021	0		253		253	0		1		0	254	
June	2021	0		253		253	0		1		0	254	
July	2021	0		253		253	0		1		0	254	
August	2021	0		253		253	0		1		0	254	
September	2021	0		253		253	0		1		0	254	
October	2021	0		253		253	0		1		0	254	
November	2021	0		253		253	0		1		0	254	
December	2021	0		253		253	0		1		0	254	
January	2022	0		253		253	0		1		0	254	
February	2022	0		253		253	0		1		0	254	
March	2022	0		253		253	0		1		0	254	
April	2022	0		253		253	0		1		0	254	
May	2022	0		253		253	0		1		0	254	
June	2022	0		253		253	0		1		0	254	
July	2022	0		253		253	0		1		0	254	
August	2022	0		253		253	0		1		0	254	
September	2022	0		253		253	0		1		0	254	
October	2022	0		253		253	0		1		0	254	
November	2022	0		253		253	0		1		0	254	
December	2022	0		253		253	0		1		0	254	
January	2023	0		253		253	0		1		0	254	
February	2023	0		253		253	0		1		0	254	
March	2023	0		253		253	0		1		0	254	
April	2023	0		253		253	0		1		0	254	
May	2023	0		253		253	0		1		0	254	
June	2023	0		253		253	0		1		0	254	
July	2023	0		253		253	0		1		0	254	
August	2023	0		253		253	0		1		0	254	
September	2023	0		253		253	0		1		0	254	
October	2023	0		253		253	0		1		0	254	
November	2023	0		253		253	0		1		0	254	
December	2023	0		253		253	0		1		0	254	

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2019	208		440,255		440,255	0		301		301	440,556
February	2019	389		440,644		440,644	0		301		301	440,945
March	2019	0		440,644		440,644	0		301		301	440,945
April	2019	0		440,644		440,644	0		301		301	440,945
May	2019	0		440,644		440,644	0		301		301	440,945
June	2019	0		440,644		440,644	0		301		301	440,945
July	2019	0		440,644		440,644	0		301	0	301	440,945
August	2019	0		440,644		440,644	0		301	0	301	440,945
September	2019	0		440,644		440,644	0		301	0	301	440,945
October	2019	0		440,644		440,644	0		301	0	301	440,945
November	2019	0		440,644		440,644	0		301	0	0	440,945
December	2019	0		440,644		440,644	0		301		0	440,945
January	2020	0		440,644		440,644			301		0	440,945
February	2020	0		440,644		440,644			301		0	440,945
March	2020	0		440,644		440,644			301		0	440,945
April	2020	0		440,644		440,644			301		0	440,945
May	2020	0		440,644		440,644			301		0	440,945
June	2020	0		440,644		440,644			301		0	440,945
July	2020	0		440,644		440,644			301		0	440,945
August	2020	0		440,644		440,644			301		0	440,945
September	2020	0		440,644		440,644			301		0	440,945
October	2020	0		440,644		440,644			301		0	440,945
November	2020	0		440,644		440,644			301		0	440,945
December	2020	0		440,644		440,644			301		0	440,945
January	2021	0		440,644		440,644			301		0	440,945
February	2021	0		440,644		440,644			301		0	440,945
March	2021	0		440,644		440,644			301		0	440,945
April	2021	0		440,644		440,644			301		0	440,945
May	2021	0		440,644		440,644			301		0	440,945
June	2021	0		440,644		440,644			301		0	440,945
July	2021	0		440,644		440,644			301		0	440,945
August	2021	0		440,644		440,644			301		0	440,945
September	2021	0		440,644		440,644			301		0	440,945
October	2021	0		440,644		440,644			301		0	440,945
November	2021	0		440,644		440,644			301		0	440,945
December	2021	0		440,644		440,644			301		0	440,945
January	2022	0		440,644		440,644			301		0	440,945
February	2022	0		440,644		440,644			301		0	440,945
March	2022	0		440,644		440,644			301		0	440,945
April	2022	0		440,644		440,644			301		0	440,945
May	2022	0		440,644		440,644			301		0	440,945
June	2022	0		440,644		440,644			301		0	440,945
July	2022	0		440,644		440,644			301		0	440,945
August	2022	0		440,644		440,644			301		0	440,945
September	2022	0		440,644		440,644			301		0	440,945
October	2022	0		440,644		440,644			301		0	440,945
November	2022	0		440,644		440,644			301		0	440,945
December	2022	0		440,644		440,644			301		0	440,945
January	2023	0		440,644		440,644			301		0	440,945
February	2023	0		440,644		440,644			301		0	440,945
March	2023	0		440,644		440,644			301		0	440,945
April	2023	0		440,644		440,644			301		0	440,945
May	2023	0		440,644		440,644			301		0	440,945
June	2023	0		440,644		440,644			301		0	440,945
July	2023	0		440,644		440,644			301		0	440,945
August	2023	0		440,644		440,644			301		0	440,945
September	2023	0		440,644		440,644			301		0	440,945
October	2023	0		440,644		440,644			301		0	440,945
November	2023	0		440,644		440,644			301		0	440,945
December	2023	0		440,644		440,644			301		0	440,945

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC					System			VA	NC	System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
January	2019	1		1,224		1,224	0		1		1	1,224	1,768	301	1,762	4.91	0.59	4.90
February	2019	1		1,225		1,225	0		1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
March	2019	0		1,225		1,225	0		1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
April	2019	0		1,225		1,225	0		1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
May	2019	0		1,225		1,225	0		1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
June	2019	0		1,225		1,225	0		1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
July	2019	0		1,225		1,225	0		1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
August	2019	0		1,225		1,225	0		1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
September	2019	0		1,225		1,225	0		1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
October	2019	0		1,225		1,225	0		1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
November	2019	0		1,225		1,225	0		1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
December	2019	0		1,225		1,225	0		1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
January	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
February	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
March	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
April	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
May	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
June	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
July	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
August	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
September	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
October	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
November	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
December	2020	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
January	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
February	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
March	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
April	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
May	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
June	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
July	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
August	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
September	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
October	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
November	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
December	2021	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
January	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
February	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
March	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
April	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
May	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
June	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
July	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
August	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
September	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
October	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
November	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
December	2022	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
January	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
February	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
March	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
April	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
May	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
June	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
July	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
August	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
September	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
October	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
November	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
December	2023	0		1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Participation											
Month	Year	Program Participants										System Cum for IRP	
		VA				NC							System Cum for IRP
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
January	2024	0		253		253	0		1		0	254	
February	2024	0		253		253	0		1		0	254	
March	2024	0		253		253	0		1		0	254	
April	2024	0		253		253	0		1		0	254	
May	2024	0		253		253	0		1		0	254	
June	2024	0		253		253	0		1		0	254	
July	2024	0		253		253	0		1		0	254	
August	2024	0		253		253	0		1		0	254	
September	2024	0		253		253	0		1		0	254	
October	2024	0	-1	252		252	0		1		0	253	
November	2024	0	0	252		252	0		1		0	253	
December	2024	0	-2	250		250	0		1		0	251	
January	2025	0	-2	248		248	0		1		0	249	
February	2025	0	-3	245		245	0		1		0	246	
March	2025	0	-1	244		244	0		1		0	245	
April	2025	0	-2	242		242	0		1		0	243	
May	2025	0	-2	240		240	0		1		0	241	
June	2025	0	-3	237		237	0		1		0	238	
July	2025	0	-1	236		236	0		1		0	237	
August	2025	0	-2	234		234	0		1		0	235	
September	2025	0	-1	233		233	0		1		0	234	
October	2025	0	-2	231		231	0		1		0	232	
November	2025	0	-1	230		230	0		1		0	231	
December	2025	0	-2	228		228	0		1		0	229	
January	2026	0	-4	224		224	0		1		0	225	
February	2026	0	-4	220		220	0		1		0	221	
March	2026	0	-7	213		213	0		1		0	214	
April	2026	0	-7	206		206	0		1		0	207	
May	2026	0	-6	200		200	0		1		0	201	
June	2026	0	-4	196		196	0		1		0	197	
July	2026	0	-3	193		193	0		1		0	194	
August	2026	0	-11	182		182	0		1		0	183	
September	2026	0	-10	172		172	0		1		0	173	
October	2026	0	-7	165		165	0		1		0	166	
November	2026	0	-6	159		159	0		1		0	160	
December	2026	0	-1	158		158	0		1		0	159	
January	2027	0	-4	154		154	0		1		0	155	
February	2027	0	-3	151		151	0		1		0	152	
March	2027	0	-4	147		147	0		1		0	148	
April	2027	0	-1	146		146	0		1		0	147	
May	2027	0	-7	139		139	0		1		0	140	
June	2027	0	-1	138		138	0		1		0	139	
July	2027	0	-3	135		135	0		1		0	136	
August	2027	0	-15	120		120	0		1		0	121	
September	2027	0	-7	113		113	0		1		0	114	
October	2027	0	-8	105		105	0		1		0	106	
November	2027	0	-6	99		99	0		1		0	100	
December	2027	0	0	99		99	0		1		0	100	
January	2028	0	-3	96		96	0		1		0	97	
February	2028	0	-10	86		86	0		1		0	87	
March	2028	0	-2	84		84	0		1		0	85	
April	2028	0	-4	80		80	0		1		0	81	
May	2028	0	-12	68		68	0		1		0	69	
June	2028	0	-6	62		62	0		1		0	63	
July	2028	0	-3	59		59	0		1		0	60	
August	2028	0	-9	50		50	0	-1	0		-1	50	
September	2028	0	-10	40		40	0		0		-1	40	
October	2028	0	-12	28		28	0		0		-1	28	
November	2028	0	-6	22		22	0		0		-1	22	
December	2028	0	-14	8		8	0		0		-1	8	

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2024	0		440,644		440,644			301		0	440,945
February	2024	0		440,644		440,644			301		0	440,945
March	2024	0		440,644		440,644			301		0	440,945
April	2024	0		440,644		440,644			301		0	440,945
May	2024	0		440,644		440,644			301		0	440,945
June	2024	0		440,644		440,644			301		0	440,945
July	2024	0		440,644		440,644			301		0	440,945
August	2024	0		440,644		440,644			301		0	440,945
September	2024	0		440,644		440,644			301		0	440,945
October	2024	0	-177	440,467		440,467			301		0	440,768
November	2024	0	0	440,467		440,467			301		0	440,768
December	2024	0	-76,654	363,812		363,812			301		0	364,113
January	2025	0	-8	363,804		363,804			301		0	364,105
February	2025	0	-145	363,659		363,659			301		0	363,960
March	2025	0	-35	363,624		363,624			301		0	363,925
April	2025	0	-204,145	159,479		159,479			301		0	159,780
May	2025	0	-24	159,455		159,455			301		0	159,756
June	2025	0	-264	159,191		159,191			301		0	159,492
July	2025	0	2	159,192		159,192			301		0	159,493
August	2025	0	-113	159,080		159,080			301		0	159,381
September	2025	0	0	159,080		159,080			301		0	159,381
October	2025	0	-294	158,786		158,786			301		0	159,087
November	2025	0	-132	158,654		158,654			301		0	158,955
December	2025	0	-30	158,625		158,625			301		0	158,926
January	2026	0	-11,318	147,307		147,307			301		0	147,608
February	2026	0	-612	146,695		146,695			301		0	146,996
March	2026	0	-1,908	144,787		144,787			301		0	145,088
April	2026	0	-1,688	143,099		143,099			301		0	143,400
May	2026	0	-358	142,741		142,741			301		0	143,042
June	2026	0	-283	142,459		142,459			301		0	142,760
July	2026	0	-2,429	140,030		140,030			301		0	140,331
August	2026	0	-1,315	138,715		138,715			301		0	139,016
September	2026	0	-3,332	135,383		135,383			301		0	135,684
October	2026	0	-1,670	133,713		133,713			301		0	134,015
November	2026	0	-6,062	127,652		127,652			301		0	127,953
December	2026	0	-14	127,638		127,638			301		0	127,939
January	2027	0	-1,721	125,917		125,917			301		0	126,218
February	2027	0	-12,469	113,448		113,448			301		0	113,749
March	2027	0	-7,936	105,512		105,512			301		0	105,813
April	2027	0	-10,276	95,236		95,236			301		0	95,537
May	2027	0	-797	94,439		94,439			301		0	94,740
June	2027	0	-2,600	91,839		91,839			301		0	92,140
July	2027	0	-12,911	78,928		78,928			301		0	79,229
August	2027	0	-32,299	46,629		46,629			301		0	46,930
September	2027	0	-1,253	45,376		45,376			301		0	45,678
October	2027	0	-5,118	40,258		40,258			301		0	40,559
November	2027	0	-28,160	12,098		12,098			301		0	12,399
December	2027	0	-104	11,994		11,994			301		0	12,295
January	2028	0	-4,014	7,980		7,980			301		0	8,281
February	2028	0	25	8,005		8,005			301		0	8,306
March	2028	0	-343	7,662		7,662			301		0	7,963
April	2028	0	-725	6,937		6,937			301		0	7,238
May	2028	0	-266	6,670		6,670			301		0	6,971
June	2028	0	-589	6,082		6,082			301		0	6,383
July	2028	0	-219	5,863		5,863			301		0	6,164
August	2028	0	-1,467	4,396		4,396		-301	0		-301	4,396
September	2028	0	-1,146	3,250		3,250			0		-301	3,250
October	2028	0	-790	2,460		2,460			0		-301	2,460
November	2028	0	-632	1,828		1,828			0		-301	1,828
December	2028	0	-1,231	597		597			0		-301	597

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
February	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
March	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
April	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
May	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
June	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
July	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
August	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
September	2024	0		1,225		1,225			1	0	1,225	1,742	301	1,736	4.84	0.59	4.82	
October	2024	0	-1	1,224		1,224			1	0	1,225	1,748	301	1,742	4.86	0.59	4.84	
November	2024	0	0	1,224		1,224			1	0	1,225	1,748	301	1,742	4.86	0.59	4.84	
December	2024	0	-186	1,038		1,038			1	0	1,039	1,455	301	1,451	4.15	0.59	4.14	
January	2025	0	0	1,038		1,038			1	0	1,039	1,467	301	1,462	4.19	0.59	4.17	
February	2025	0	-1	1,037		1,037			1	0	1,038	1,484	301	1,480	4.23	0.59	4.22	
March	2025	0	0	1,037		1,037			1	0	1,038	1,490	301	1,485	4.25	0.59	4.24	
April	2025	0	-497	541		541			1	0	541	659	301	658	2.23	0.59	2.23	
May	2025	0	0	540		540			1	0	541	664	301	663	2.25	0.59	2.24	
June	2025	0	-1	539		539			1	0	540	672	301	670	2.28	0.59	2.27	
July	2025	0	0	539		539			1	0	540	675	301	673	2.28	0.59	2.28	
August	2025	0	0	539		539			1	0	539	680	301	678	2.30	0.59	2.30	
September	2025	0	0	539		539			1	0	539	683	301	681	2.31	0.59	2.31	
October	2025	0	-1	537		537			1	0	538	687	301	686	2.33	0.59	2.32	
November	2025	0	0	537		537			1	0	538	690	301	688	2.34	0.59	2.33	
December	2025	0	0	537		537			1	0	538	696	301	694	2.36	0.59	2.35	
January	2026	0	-46	491		491			1	0	492	658	301	656	2.19	0.59	2.19	
February	2026	0	-2	489		489			1	0	490	667	301	665	2.22	0.59	2.22	
March	2026	0	-10	479		479			1	0	479	680	301	678	2.25	0.59	2.24	
April	2026	0	-6	473		473			1	0	473	695	301	693	2.30	0.59	2.29	
May	2026	0	-1	471		471			1	0	472	714	301	712	2.36	0.59	2.35	
June	2026	0	-1	471		471			1	0	471	727	301	725	2.40	0.59	2.39	
July	2026	0	-7	464		464			1	0	464	726	301	723	2.40	0.59	2.39	
August	2026	0	-4	459		459			1	0	460	762	301	760	2.52	0.59	2.51	
September	2026	0	-9	450		450			1	0	451	787	301	784	2.62	0.59	2.61	
October	2026	0	-6	444		444			1	0	445	810	301	807	2.69	0.59	2.68	
November	2026	0	-19	425		425			1	0	426	803	301	800	2.67	0.59	2.66	
December	2026	0	0	425		425			1	0	426	808	301	805	2.69	0.59	2.68	
January	2027	0	-7	418		418			1	0	419	818	301	814	2.71	0.59	2.70	
February	2027	0	-43	375		375			1	0	376	751	301	748	2.48	0.59	2.47	
March	2027	0	-25	350		350			1	0	350	718	301	715	2.38	0.59	2.37	
April	2027	0	-34	316		316			1	0	316	652	301	650	2.16	0.59	2.15	
May	2027	0	-3	313		313			1	0	314	679	301	677	2.25	0.59	2.24	
June	2027	0	-13	300		300			1	0	301	666	301	663	2.18	0.59	2.16	
July	2027	0	-44	257		257			1	0	257	585	301	583	1.90	0.59	1.89	
August	2027	0	-93	164		164			1	0	165	389	301	388	1.37	0.59	1.36	
September	2027	0	-5	159		159			1	0	159	402	301	401	1.40	0.59	1.40	
October	2027	0	-23	135		135			1	0	136	383	301	383	1.29	0.59	1.28	
November	2027	0	-87	49		49			1	0	49	122	301	124	0.49	0.59	0.49	
December	2027	0	0	48		48			1	0	49	121	301	123	0.49	0.59	0.49	
January	2028	0	-15	33		33			1	0	34	83	301	85	0.35	0.59	0.35	
February	2028	0	-1	32		32			1	0	33	93	301	95	0.37	0.59	0.38	
March	2028	0	-1	31		31			1	0	32	91	301	94	0.37	0.59	0.37	
April	2028	0	-2	29		29			1	0	29	87	301	89	0.36	0.59	0.36	
May	2028	0	-2	26		26			1	0	27	98	301	101	0.39	0.59	0.39	
June	2028	0	-2	24		24			1	0	25	98	301	101	0.39	0.59	0.39	
July	2028	0	-1	23		23			1	0	23	99	301	103	0.39	0.59	0.39	
August	2028	0	-6	17		17			0	-1	17	88	-	88	0.34	-	0.34	
September	2028	0	-6	11		11			0	-1	11	81	-	81	0.28	-	0.28	
October	2028	0	-3	8		8			0	-1	8	88	-	88	0.30	-	0.30	
November	2028	0	-3	6		6			0	-1	6	83	-	83	0.25	-	0.25	
December	2028	0	-4	2		2			0	-1	2	75	-	75	0.25	-	0.25	

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Participation										
Month	Year	Program Participants					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2029	0	-4	4	[B]	4	0	0	0	0	-1	4
February	2029	0	-4	0		0	0	0	0	0	-1	0
March	2029	0	0	0		0	0	0	0	0	-1	0
April	2029	0	0	0		0	0	0	0	0	-1	0
May	2029	0	0	0		0	0	0	0	0	-1	0
June	2029	0	0	0		0	0	0	0	0	-1	0
July	2029	0	0	0		0	0	0	0	0	-1	0
August	2029	0	0	0		0	0	0	0	0	-1	0
September	2029	0	0	0		0	0	0	0	0	-1	0
October	2029	0	0	0		0	0	0	0	0	-1	0
November	2029	0	0	0		0	0	0	0	0	-1	0
December	2029	0	0	0		0	0	0	0	0	-1	0
January	2030	0	0	0		0	0	0	0	0	-1	0
February	2030	0	0	0		0	0	0	0	0	-1	0
March	2030	0	0	0		0	0	0	0	0	-1	0
April	2030	0	0	0		0	0	0	0	0	-1	0
May	2030	0	0	0		0	0	0	0	0	-1	0
June	2030	0	0	0		0	0	0	0	0	-1	0
July	2030	0	0	0		0	0	0	0	0	-1	0
August	2030	0	0	0		0	0	0	0	0	-1	0
September	2030	0	0	0		0	0	0	0	0	-1	0
October	2030	0	0	0		0	0	0	0	0	-1	0
November	2030	0	0	0		0	0	0	0	0	-1	0
December	2030	0	0	0		0	0	0	0	0	-1	0

Table 2. EM&V Data Incremental by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	3	3	-	-	3					
2015	22	22	-	-	22					
2016	70	70	-	-	70					
2017	59	59	-	-	59					
2018	91	91	1	1	92					
2019	8	8	-	-	8					

Table 3. EM&V Data Annualized by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	3	3	-	-	3					
2015	22	22	-	-	22					
2016	70	70	-	-	70					
2017	59	59	-	-	59					
2018	91	91	1	1	92					
2019	8	8	-	-	8					

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants									
	VA	NC PPI	System							
2014		-								
2015		-								
2016		-								
2017		-								
2018		1								
2019		1								

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2029	0	-208	389		389			0		-301	389
February	2029	0	-389	0		0			0		-301	0
March	2029	0	0	0		0			0		-301	0
April	2029	0	0	0		0			0		-301	0
May	2029	0	0	0		0			0		-301	0
June	2029	0	0	0		0			0		-301	0
July	2029	0	0	0		0			0		-301	0
August	2029	0	0	0		0			0		-301	0
September	2029	0	0	0		0			0		-301	0
October	2029	0	0	0		0			0		-301	0
November	2029	0	0	0		0			0		-301	0
December	2029	0	0	0		0			0		-301	0
January	2030	0	0	0		0			0		-301	0
February	2030	0	0	0		0			0		-301	0
March	2030	0	0	0		0			0		-301	0
April	2030	0	0	0		0			0		-301	0
May	2030	0	0	0		0			0		-301	0
June	2030	0	0	0		0			0		-301	0
July	2030	0	0	0		0			0		-301	0
August	2030	0	0	0		0			0		-301	0
September	2030	0	0	0		0			0		-301	0
October	2030	0	0	0		0			0		-301	0
November	2030	0	0	0		0			0		-301	0
December	2030	0	0	0		0			0		-301	0

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			77,187		77,187			-		-	77,187
2015			1,843,118		1,843,118			-		-	1,843,118
2016			233,275		233,275			-		-	233,275
2017			669,985		669,985			-		-	669,985
2018			82,201		82,201			1,505		1,505	83,706
2019			6,775		6,775			-		-	6,775

Table 3. EM&V Data Annualized by Vintage Year											
Net Annualized Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			921,980		921,980			-		-	921,980
2015			2,462,252		2,462,252			-		-	2,462,252
2016			371,835		371,835			-		-	371,835
2017			1,387,732		1,387,732			-		-	1,387,732
2018			136,764		136,764			3,613		3,613	140,376
2019			7,165		7,165			-		-	7,165

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Net Energy (kWh) for PPI										
								NC PPI		System
2014								-		-
2015								-		-
2016								-		-
2017								-		-
2018								1,505		1,505
2019								3,613		3,613

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2029	0	-1	1		1		0		-1	1	97	-	97	0.28	-	0.28	
February	2029	0	-1	0		0		0		-1	0	-	-	-	-	-	-	
March	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
April	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
May	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
June	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
July	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
August	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
September	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
October	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
November	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
December	2029	0	0	0		0		0		-1	0	-	-	-	-	-	-	
January	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
February	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
March	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
April	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
May	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
June	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
July	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
August	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
September	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
October	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
November	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	
December	2030	0	0	0		0		0		-1	0	-	-	-	-	-	-	

Table 2. EM&V Data Incremental by Vintage Year										Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant				
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP				
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			187		187			-		-	187	25,729	-	25,729	62.17	-	62.17
2015			501		501			-		-	501	83,778	-	83,778	22.78	-	22.78
2016			112		112			-		-	112	3,332	-	3,332	1.60	-	1.60
2017			377		377			-		-	377	11,356	-	11,356	6.39	-	6.39
2018			46		46			1		1	47	903	1,505	910	0.51	0.59	0.51
2019			2		2			-		-	2	847	-	847	0.25	-	0.25

Table 3. EM&V Data Annualized by Vintage Year										Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant				
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP				
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			187		187			-		-	187	307,327	-	307,327	62.17	-	62.17
2015			501		501			-		-	501	111,921	-	111,921	22.78	-	22.78
2016			112		112			-		-	112	5,312	-	5,312	1.60	-	1.60
2017			377		377			-		-	377	23,521	-	23,521	6.39	-	6.39
2018			46		46			1		1	47	1,503	3,613	1,526	0.51	0.59	0.51
2019			2		2			-		-	2	896	-	896	0.25	-	0.25

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										PPI Energy Savings/Participant			PPI Capacity Savings/Participant				
Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant				
								NC PPI			System	VA	NC	System	VA	NC	System
2014								-									
2015								-									
2016								-									
2017								-									
2018								1					1,505			0.59	
2019								1					3,613			0.59	

Appendix D.7 Non-residential Window Film Program 2014-2019

Year	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	3	3	-	-	3					
2015	25	25	-	-	25					
2016	95	95	-	-	95					
2017	154	154	-	-	154					
2018	245	245	1	1	246					
2019	253	253	1	-	254					
2020	253	253	1	-	254					
2021	253	253	1	-	254					
2022	253	253	1	-	254					
2023	253	253	1	-	254					
2024	250	250	1	-	251					
2025	228	228	1	-	229					
2026	158	158	1	-	159					
2027	99	99	1	-	100					
2028	8	8	-	-	8					
2029	-	-	-	-	-					
2030	-	-	-	-	-					

Year	Program Participants									
	VA Lifetime	NC Lifetime	System Lifetime							
2014	3	-	3							
2015	25	-	25							
2016	95	-	95							
2017	154	-	154							
2018	245	1	246							
2019	253	1	254							
2020	253	1	254							
2021	253	1	254							
2022	253	1	254							
2023	253	1	254							
2024	253	1	254							
2025	253	1	254							
2026	253	1	254							
2027	253	1	254							
2028	253	1	254							
2029	253	1	254							
2030	253	1	254							

Appendix D.7 Non-residential Window Film Program 2014-2019

Year	Net Energy (kWh)									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2014	77,187	77,187	-	-	77,187					
2015	2,765,099	2,765,099	-	-	2,765,099					
2016	3,617,507	3,617,507	-	-	3,617,507					
2017	4,426,053	4,426,053	-	-	4,426,053					
2018	5,226,001	5,226,001	1,505	1,505	5,227,506					
2019	5,287,338	5,287,338	3,613	3,011	5,290,951					
2020	5,287,728	5,287,728	3,613	-	5,291,341					
2021	5,287,728	5,287,728	3,613	-	5,291,341					
2022	5,287,728	5,287,728	3,613	-	5,291,341					
2023	5,287,728	5,287,728	3,613	-	5,291,341					
2024	5,210,541	5,210,541	3,613	-	5,214,154					
2025	2,522,629	2,522,629	3,613	-	2,526,242					
2026	1,670,221	1,670,221	3,613	-	1,673,833					
2027	861,675	861,675	3,613	-	865,288					
2028	61,727	61,727	2,107	-	63,835					
2029	389	389	-	-	389					
2030	-	-	-	-	-					

Year	Net Energy (kWh)									
	VA Lifetime	NC Lifetime	System Lifetime							
2014	77,187	-	77,187							
2015	2,842,285	-	2,842,285							
2016	6,459,793	-	6,459,793							
2017	10,885,846	-	10,885,846							
2018	16,111,846	1,505	16,113,352							
2019	21,399,185	5,118	21,404,303							
2020	26,686,913	8,731	26,695,644							
2021	31,974,641	12,344	31,986,984							
2022	37,262,369	15,956	37,278,325							
2023	42,550,096	19,569	42,569,666							
2024	47,760,638	23,182	47,783,820							
2025	50,283,267	26,795	50,310,062							
2026	51,953,487	30,407	51,983,895							
2027	52,815,162	34,020	52,849,183							
2028	52,876,890	36,128	52,913,017							
2029	52,877,279	36,128	52,913,407							
2030	52,877,279	36,128	52,913,407							

Appendix D.7 Non-residential Window Film Program 2014-2019

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										IRP Energy Savings/Participant			IRP Capacity		
Year	Net Peak Demand (kW)									Net kWh/Participant			Net kW/Participant		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System				
2014	187	187	-	-	187	25,729	-	25,729	62.17	-	62.17				
2015	688	688	-	-	688	110,604	-	110,604	27.51	-	27.51				
2016	800	800	-	-	800	38,079	-	38,079	8.42	-	8.42				
2017	1,177	1,177	-	-	1,177	28,741	-	28,741	7.64	-	7.64				
2018	1,223	1,223	1	1	1,223	21,331	1,505	21,250	4.99	0.59	4.97				
2019	1,225	1,225	1	1	1,225	20,899	3,613	20,831	4.84	0.59	4.82				
2020	1,225	1,225	1	1	1,225	20,900	3,613	20,832	4.84	0.59	4.82				
2021	1,225	1,225	1	1	1,225	20,900	3,613	20,832	4.84	0.59	4.82				
2022	1,225	1,225	1	1	1,225	20,900	3,613	20,832	4.84	0.59	4.82				
2023	1,225	1,225	1	1	1,225	20,900	3,613	20,832	4.84	0.59	4.82				
2024	1,038	1,038	1	1	1,039	20,842	3,613	20,774	4.15	0.59	4.14				
2025	537	537	1	1	538	11,064	3,613	11,032	2.36	0.59	2.35				
2026	425	425	1	1	426	10,571	3,613	10,527	2.69	0.59	2.68				
2027	48	48	1	1	49	8,704	3,613	8,653	0.49	0.59	0.49				
2028	2	2	-	-	2	7,716	-	7,979	0.25	-	0.25				
2029	-	-	-	-	-	-	-	-	-	-	-				
2030	-	-	-	-	-	-	-	-	-	-	-				

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										Lifetime Energy			Lifetime Capacity		
Year	Net Peak Demand (kW)									Net kWh/Participant			Net kW/Participant		
	VA Lifetime	NC Lifetime	System Lifetime	VA	NC	System	VA	NC	System	VA	NC	System			
2014	187	-	187	25,729	-	25,729	62.17	-	62.17						
2015	688	-	688	113,691	-	113,691	27.51	-	27.51						
2016	800	-	800	67,998	-	67,998	8.42	-	8.42						
2017	1,177	-	1,177	70,687	-	70,687	7.64	-	7.64						
2018	1,223	1	1,223	65,763	1,505	65,501	4.99	0.59	4.97						
2019	1,225	1	1,225	84,582	5,118	84,269	4.84	0.59	4.82						
2020	1,225	1	1,225	105,482	8,731	105,101	4.84	0.59	4.82						
2021	1,225	1	1,225	126,382	12,344	125,933	4.84	0.59	4.82						
2022	1,225	1	1,225	147,282	15,956	146,765	4.84	0.59	4.82						
2023	1,225	1	1,225	168,182	19,569	167,597	4.84	0.59	4.82						
2024	1,225	1	1,225	188,777	23,182	188,125	4.84	0.59	4.82						
2025	1,225	1	1,225	198,748	26,795	198,071	4.84	0.59	4.82						
2026	1,225	1	1,225	205,350	30,407	204,661	4.84	0.59	4.82						
2027	1,225	1	1,225	208,756	34,020	208,068	4.84	0.59	4.82						
2028	1,225	1	1,225	209,000	36,128	208,319	4.84	0.59	4.82						
2029	1,225	1	1,225	209,001	36,128	208,320	4.84	0.59	4.82						
2030	1,225	1	1,225	209,001	36,128	208,320	4.84	0.59	4.82						

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

PROGRAM: Small Business Improvement Program
DSM Phase V Program
Type: Energy Efficiency
Program Measure Life: 14.0 years

Table 1		Participation										
Month	Year	VA					NC				System	
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP
December	2015											
January	2016	0		0		0	0			0		0
February	2016	0		0		0	0			0		0
March	2016	0		0		0	0			0		0
April	2016	0		0		0	0			0		0
May	2016	0		0		0	0			0		0
June	2016	0		0		0	0			0		0
July	2016	0		0		0	0		0	0		0
August	2016	0		0		0	0		0	0		0
September	2016	0		0		0	0		0	0		0
October	2016	4		4		4	0		0	0		4
November	2016	34		38		38	0		0	0		38
December	2016	29		67		67	0		0	0		67
January	2017	73		140		140	0		0	0		140
February	2017	37		177		177	0		0	0		177
March	2017	92		269		269	0		0	0		269
April	2017	101		370		370	0		0	0		370
May	2017	165		535		535	0		0	0		535
June	2017	101		636		636	1		1	1		637
July	2017	89		725		725	1		2	2		727
August	2017	89		814		814	0		2	2		816
September	2017	40		854		854	0		2	2		856
October	2017	74		928		928	0		2	2		930
November	2017	38		966		966	0		2	2		968
December	2017	38		1,004		1,004	5		7	7		1,011
January	2018	28		1,032		1,032	0		7	7		1,039
February	2018	77		1,109		1,109	1		8	8		1,117
March	2018	36		1,145		1,145	1		9	9		1,154
April	2018	37		1,182		1,182	1		10	10		1,192
May	2018	38		1,220		1,220	3		13	13		1,233
June	2018	65		1,285		1,285	9		22	22		1,307
July	2018	36		1,321		1,321	9		31	31		1,352
August	2018	47		1,368		1,368	0		31	31		1,399
September	2018	33		1,401		1,401	0		31	31		1,432
October	2018	54		1,455		1,455	11		42	42		1,497
November	2018	35		1,490		1,490	0		42	42		1,532
December	2018	24		1,514		1,514	1		43	43		1,557
January	2019	36		1,550		1,550	3		46	46		1,596
February	2019	31		1,581		1,581	2		48	48		1,629
March	2019	55		1,636		1,636	1		49	49		1,685
April	2019	48		1,684		1,684	6		55	55		1,739
May	2019	32		1,716		1,716	0		55	55		1,771
June	2019	30		1,746		1,746	4		59	59		1,805
July	2019	55		1,801		1,801	3		62	3		1,863
August	2019	44		1,845		1,845	0		62	3		1,907
September	2019	44		1,889		1,889	4		66	7		1,955
October	2019	53		1,942		1,942	0		66	7		2,008
November	2019	36		1,978		1,978	3		69	10		2,047
December	2019	39		2,017		2,017	1		70			2,087
January	2020			2,017		2,017			70			2,087
February	2020			2,017		2,017			70			2,087
March	2020			2,017		2,017			70			2,087
April	2020			2,017		2,017			70			2,087
May	2020			2,017		2,017			70			2,087
June	2020			2,017		2,017			70			2,087
July	2020			2,017		2,017			70			2,087
August	2020			2,017		2,017			70			2,087
September	2020			2,017		2,017			70			2,087
October	2020			2,017		2,017			70			2,087
November	2020			2,017		2,017			70			2,087
December	2020			2,017		2,017			70			2,087

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Energy Savings										
Month	Year	VA					NC				System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
December	2015											
January	2016	0		0		0	0			0		0
February	2016	0		0		0	0			0		0
March	2016	0		0		0	0			0		0
April	2016	0		0		0	0			0		0
May	2016	0		0		0	0			0		0
June	2016	0		0		0	0			0		0
July	2016	0		0		0	0			0		0
August	2016	0		0		0	0			0		0
September	2016	0		0		0	0			0		0
October	2016	3,202		3,202		3,202	0			0		3,202
November	2016	10,951		14,153		14,153	0			0		14,153
December	2016	36,750		50,902		50,902	0			0		50,902
January	2017	66,459		117,361		117,361	0			0		117,361
February	2017	24,535		141,896		141,896	0			0		141,896
March	2017	98,470		240,365		240,365	0			0		240,365
April	2017	69,281		309,646		309,646	0			0		309,646
May	2017	133,180		442,826		442,826	0			0		442,826
June	2017	97,421		540,247		540,247	1,049		1,049	1,049		541,296
July	2017	117,803		658,050		658,050	3,982		5,031	5,031		663,081
August	2017	104,019		762,069		762,069	0		5,031	5,031		767,100
September	2017	93,147		855,216		855,216	0		5,031	5,031		860,248
October	2017	167,604		1,022,821		1,022,821	0		5,031	5,031		1,027,852
November	2017	99,941		1,122,762		1,122,762	0		5,031	5,031		1,127,793
December	2017	67,313		1,190,075		1,190,075	7,873		12,904	12,904		1,202,979
January	2018	64,722		1,254,797		1,254,797	0		12,904	12,904		1,267,701
February	2018	144,592		1,399,389		1,399,389	2,963		15,867	15,867		1,415,256
March	2018	80,223		1,479,612		1,479,612	1,746		17,613	17,613		1,497,225
April	2018	86,331		1,565,943		1,565,943	2,643		20,256	20,256		1,586,200
May	2018	52,809		1,618,753		1,618,753	17,548		37,805	37,805		1,656,557
June	2018	431,732		2,050,485		2,050,485	17,101		54,905	54,905		2,105,390
July	2018	51,128		2,101,613		2,101,613	8,161		63,066	63,066		2,164,679
August	2018	50,638		2,152,251		2,152,251	0		63,066	63,066		2,215,317
September	2018	55,251		2,207,502		2,207,502	0		63,066	63,066		2,270,568
October	2018	101,831		2,309,334		2,309,334	25,309		88,375	88,375		2,397,709
November	2018	70,766		2,380,100		2,380,100	0		88,375	88,375		2,468,475
December	2018	49,891		2,429,991		2,429,991	2,085		90,460	90,460		2,520,451
January	2019	77,134		2,507,125		2,507,125	7,171		97,631	97,631		2,604,756
February	2019	113,173		2,620,298		2,620,298	12,572		110,203	110,203		2,730,501
March	2019	87,734		2,708,032		2,708,032	92		110,295	110,295		2,818,327
April	2019	42,958		2,750,990		2,750,990	8,307		118,603	118,603		2,869,593
May	2019	74,452		2,825,442		2,825,442	0		118,603	118,603		2,944,044
June	2019	45,412		2,870,854		2,870,854	6,478		125,081	125,081		2,995,935
July	2019	74,960		2,945,814		2,945,814	2,804		127,885	127,885	2,804	3,073,698
August	2019	93,582		3,039,395		3,039,395	0		127,885	127,885	2,804	3,167,280
September	2019	79,310		3,118,705		3,118,705	9,479		137,364	137,364	12,283	3,256,069
October	2019	70,905		3,189,610		3,189,610	321		137,685	137,685	12,604	3,327,295
November	2019	87,752		3,277,362		3,277,362	6,180		143,865	143,865	18,784	3,421,226
December	2019	55,175		3,332,537		3,332,537	493		144,357	144,357		3,476,894
January	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
February	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
March	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
April	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
May	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
June	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
July	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
August	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
September	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
October	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
November	2020			3,332,537		3,332,537			144,357	144,357		3,476,894
December	2020			3,332,537		3,332,537			144,357	144,357		3,476,894

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
December	2015																	
January	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
February	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
March	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
April	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
May	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
June	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
July	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
August	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
September	2016	0		0		0	0	0		0	0	0	-	-	-	-	-	-
October	2016	6		6		6	0	0		0	6	6	800	-	800	1.58	-	1.58
November	2016	17		24		24	0	0		0	24	24	372	-	372	0.62	-	0.62
December	2016	99		122		122	0	0		0	122	122	760	-	760	1.83	-	1.83
January	2017	162		285		285	0	0		0	285	285	838	-	838	2.03	-	2.03
February	2017	61		346		346	0	0		0	346	346	802	-	802	1.95	-	1.95
March	2017	262		608		608	0	0		0	608	608	894	-	894	2.26	-	2.26
April	2017	186		794		794	0	0		0	794	794	837	-	837	2.14	-	2.14
May	2017	302		1,095		1,095	0	0		0	1,095	1,095	828	-	828	2.05	-	2.05
June	2017	252		1,347		1,347	0	0		0	1,347	1,347	849	1,049	850	2.12	0.00	2.12
July	2017	298		1,645		1,645	7	7		7	1,652	1,652	908	2,516	912	2.27	3.36	2.27
August	2017	280		1,925		1,925	0	0		0	1,932	1,932	936	2,516	940	2.37	3.36	2.37
September	2017	248		2,173		2,173	0	0		0	2,180	2,180	1,001	2,516	1,005	2.54	3.36	2.55
October	2017	388		2,561		2,561	0	0		0	2,567	2,567	1,102	2,516	1,105	2.76	3.36	2.76
November	2017	260		2,821		2,821	0	0		0	2,828	2,828	1,162	2,516	1,165	2.92	3.36	2.92
December	2017	183		3,004		3,004	24	30		30	3,034	3,034	1,185	1,843	1,190	2.99	4.33	3.00
January	2018	178		3,182		3,182	0	0		0	3,212	3,212	1,216	1,843	1,220	3.08	4.33	3.09
February	2018	357		3,538		3,538	4	34		34	3,573	3,573	1,262	1,983	1,267	3.19	4.27	3.20
March	2018	193		3,731		3,731	7	41		41	3,772	3,772	1,292	1,957	1,297	3.26	4.56	3.27
April	2018	208		3,939		3,939	7	48		48	3,987	3,987	1,325	2,026	1,331	3.33	4.84	3.35
May	2018	131		4,070		4,070	49	98		98	4,168	4,168	1,327	2,908	1,344	3.34	7.53	3.38
June	2018	1,154		5,224		5,224	45	143		143	5,367	5,367	1,596	2,496	1,611	4.07	6.50	4.11
July	2018	136		5,360		5,360	19	162		162	5,522	5,522	1,591	2,034	1,601	4.06	5.24	4.08
August	2018	140		5,500		5,500	0	162		162	5,662	5,662	1,573	2,034	1,584	4.02	5.24	4.05
September	2018	127		5,627		5,627	0	162		162	5,789	5,789	1,576	2,034	1,586	4.02	5.24	4.04
October	2018	269		5,896		5,896	67	230		230	6,126	6,126	1,587	2,104	1,602	4.05	5.47	4.09
November	2018	190		6,087		6,087	0	230		230	6,316	6,316	1,597	2,104	1,611	4.08	5.47	4.12
December	2018	149		6,236		6,236	5	234		234	6,470	6,470	1,605	2,104	1,619	4.12	5.44	4.16
January	2019	212		6,448		6,448	19	253		253	6,702	6,702	1,617	2,122	1,632	4.16	5.51	4.20
February	2019	314		6,762		6,762	35	288		288	7,050	7,050	1,657	2,296	1,676	4.28	6.01	4.33
March	2019	248		7,010		7,010	0	289		289	7,299	7,299	1,655	2,251	1,673	4.29	5.89	4.33
April	2019	146		7,156		7,156	18	306		306	7,462	7,462	1,634	2,156	1,650	4.25	5.57	4.29
May	2019	189		7,345		7,345	0	306		306	7,651	7,651	1,647	2,156	1,662	4.28	5.57	4.32
June	2019	213		7,558		7,558	16	322		322	7,879	7,879	1,644	2,120	1,660	4.33	5.46	4.37
July	2019	187		7,745		7,745	6	328		328	8,073	8,073	1,636	2,063	1,650	4.30	5.29	4.33
August	2019	187		7,932		7,932	0	328		328	8,260	8,260	1,647	2,063	1,661	4.30	5.29	4.33
September	2019	212		8,144		8,144	20	348		348	8,492	8,492	1,651	2,081	1,666	4.31	5.28	4.34
October	2019	212		8,356		8,356	1	349		349	8,705	8,705	1,642	2,086	1,657	4.30	5.29	4.34
November	2019	212		8,569		8,569	14	363		363	8,932	8,932	1,657	2,085	1,671	4.33	5.26	4.36
December	2019	212		8,781		8,781	1	364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2020			8,781		8,781		364		364	9,146	9,146	1,652	2,062	1,666	4.35	5.21	4.38

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2021			2,017		2,017			70		11	2,087
February	2021			2,017		2,017			70		11	2,087
March	2021			2,017		2,017			70		11	2,087
April	2021			2,017		2,017			70		11	2,087
May	2021			2,017		2,017			70		11	2,087
June	2021			2,017		2,017			70		11	2,087
July	2021			2,017		2,017			70		11	2,087
August	2021			2,017		2,017			70		11	2,087
September	2021			2,017		2,017			70		11	2,087
October	2021			2,017		2,017			70		11	2,087
November	2021			2,017		2,017			70		11	2,087
December	2021			2,017		2,017			70		11	2,087
January	2022			2,017		2,017			70		11	2,087
February	2022			2,017		2,017			70		11	2,087
March	2022			2,017		2,017			70		11	2,087
April	2022			2,017		2,017			70		11	2,087
May	2022			2,017		2,017			70		11	2,087
June	2022			2,017		2,017			70		11	2,087
July	2022			2,017		2,017			70		11	2,087
August	2022			2,017		2,017			70		11	2,087
September	2022			2,017		2,017			70		11	2,087
October	2022			2,017		2,017			70		11	2,087
November	2022			2,017		2,017			70		11	2,087
December	2022			2,017		2,017			70		11	2,087
January	2023			2,017		2,017			70		11	2,087
February	2023			2,017		2,017			70		11	2,087
March	2023			2,017		2,017			70		11	2,087
April	2023			2,017		2,017			70		11	2,087
May	2023			2,017		2,017			70		11	2,087
June	2023			2,017		2,017			70		11	2,087
July	2023			2,017		2,017			70		11	2,087
August	2023			2,017		2,017			70		11	2,087
September	2023			2,017		2,017			70		11	2,087
October	2023			2,017		2,017			70		11	2,087
November	2023			2,017		2,017			70		11	2,087
December	2023			2,017		2,017			70		11	2,087
January	2024			2,017		2,017			70		11	2,087
February	2024			2,017		2,017			70		11	2,087
March	2024			2,017		2,017			70		11	2,087
April	2024			2,017		2,017			70		11	2,087
May	2024			2,017		2,017			70		11	2,087
June	2024			2,017		2,017			70		11	2,087
July	2024			2,017		2,017			70		11	2,087
August	2024			2,017		2,017			70		11	2,087
September	2024			2,017		2,017			70		11	2,087
October	2024			2,017		2,017			70		11	2,087
November	2024			2,017		2,017			70		11	2,087
December	2024			2,017		2,017			70		11	2,087
January	2025			2,017		2,017			70		11	2,087
February	2025			2,017		2,017			70		11	2,087
March	2025			2,017		2,017			70		11	2,087
April	2025			2,017		2,017			70		11	2,087
May	2025			2,017		2,017			70		11	2,087
June	2025			2,017		2,017			70		11	2,087
July	2025			2,017		2,017			70		11	2,087
August	2025			2,017		2,017			70		11	2,087
September	2025			2,017		2,017			70		11	2,087
October	2025			2,017		2,017			70		11	2,087
November	2025			2,017		2,017			70		11	2,087
December	2025			2,017		2,017			70		11	2,087

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2021			3,332,537		3,332,537			144,357		19,277	3,476,894
January	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2022			3,332,537		3,332,537			144,357		19,277	3,476,894
January	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2023			3,332,537		3,332,537			144,357		19,277	3,476,894
January	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2024			3,332,537		3,332,537			144,357		19,277	3,476,894
January	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2025			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2025			3,332,537		3,332,537			144,357		19,277	3,476,894

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC						System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2021			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2022			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2023			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2024			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2025			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] =Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2026			2,017		2,017			70		11	2,087
February	2026			2,017		2,017			70		11	2,087
March	2026			2,017		2,017			70		11	2,087
April	2026			2,017		2,017			70		11	2,087
May	2026			2,017		2,017			70		11	2,087
June	2026			2,017		2,017			70		11	2,087
July	2026			2,017		2,017			70		11	2,087
August	2026			2,017		2,017			70		11	2,087
September	2026			2,017		2,017			70		11	2,087
October	2026			2,017		2,017			70		11	2,087
November	2026			2,017		2,017			70		11	2,087
December	2026			2,017		2,017			70		11	2,087
January	2027			2,017		2,017			70		11	2,087
February	2027			2,017		2,017			70		11	2,087
March	2027			2,017		2,017			70		11	2,087
April	2027			2,017		2,017			70		11	2,087
May	2027			2,017		2,017			70		11	2,087
June	2027			2,017		2,017			70		11	2,087
July	2027			2,017		2,017			70		11	2,087
August	2027			2,017		2,017			70		11	2,087
September	2027			2,017		2,017			70		11	2,087
October	2027			2,017		2,017			70		11	2,087
November	2027			2,017		2,017			70		11	2,087
December	2027			2,017		2,017			70		11	2,087
January	2028			2,017		2,017			70		11	2,087
February	2028			2,017		2,017			70		11	2,087
March	2028			2,017		2,017			70		11	2,087
April	2028			2,017		2,017			70		11	2,087
May	2028			2,017		2,017			70		11	2,087
June	2028			2,017		2,017			70		11	2,087
July	2028			2,017		2,017			70		11	2,087
August	2028			2,017		2,017			70		11	2,087
September	2028			2,017		2,017			70		11	2,087
October	2028			2,017		2,017			70		11	2,087
November	2028			2,017		2,017			70		11	2,087
December	2028			2,017		2,017			70		11	2,087
January	2029			2,017		2,017			70		11	2,087
February	2029			2,017		2,017			70		11	2,087
March	2029			2,017		2,017			70		11	2,087
April	2029			2,017		2,017			70		11	2,087
May	2029			2,017		2,017			70		11	2,087
June	2029			2,017		2,017			70		11	2,087
July	2029			2,017		2,017			70		11	2,087
August	2029			2,017		2,017			70		11	2,087
September	2029			2,017		2,017			70		11	2,087
October	2029			2,017		2,017			70		11	2,087
November	2029			2,017		2,017			70		11	2,087
December	2029			2,017		2,017			70		11	2,087
January	2030			2,017		2,017			70		11	2,087
February	2030			2,017		2,017			70		11	2,087
March	2030			2,017		2,017			70		11	2,087
April	2030			2,017		2,017			70		11	2,087
May	2030			2,017		2,017			70		11	2,087
June	2030			2,017		2,017			70		11	2,087
July	2030			2,017		2,017			70		11	2,087
August	2030			2,017		2,017			70		11	2,087
September	2030			2,017		2,017			70		11	2,087
October	2030		-4	2,013		2,013			70		11	2,083
November	2030		-34	1,979		1,979			70		11	2,049
December	2030		-29	1,950		1,950			70		11	2,020

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2026			3,332,537		3,332,537			144,357		19,277	3,476,894
January	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2027			3,332,537		3,332,537			144,357		19,277	3,476,894
January	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2028			3,332,537		3,332,537			144,357		19,277	3,476,894
January	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
November	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
December	2029			3,332,537		3,332,537			144,357		19,277	3,476,894
January	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
February	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
March	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
April	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
May	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
June	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
July	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
August	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
September	2030			3,332,537		3,332,537			144,357		19,277	3,476,894
October	2030		-3,202	3,329,335		3,329,335			144,357		19,277	3,473,692
November	2030		-10,951	3,318,384		3,318,384			144,357		19,277	3,462,742
December	2030		-36,750	3,281,635		3,281,635			144,357		19,277	3,425,992

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC						System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2026			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2027			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2028			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
November	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
December	2029			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
January	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
February	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
March	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
April	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
May	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
June	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
July	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
August	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
September	2030			8,781		8,781				364	57	9,146	1,652	2,062	1,666	4.35	5.21	4.38
October	2030			8,775		8,775				364	57	9,139	1,654	2,062	1,668	4.36	5.21	4.39
November	2030			8,758		8,758				364	57	9,122	1,677	2,062	1,690	4.43	5.21	4.45
December	2030			8,659		8,659				364	57	9,023	1,683	2,062	1,696	4.44	5.21	4.47

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2031		-73	1,877		1,877			70		11	1,947
February	2031		-37	1,840		1,840			70		11	1,910
March	2031		-92	1,748		1,748			70		11	1,818
April	2031		-101	1,647		1,647			70		11	1,717
May	2031		-165	1,482		1,482			70		11	1,552
June	2031		-101	1,381		1,381		-1	69		10	1,450
July	2031		-89	1,292		1,292		-1	68		9	1,360
August	2031		-89	1,203		1,203		0	68		9	1,271
September	2031		-40	1,163		1,163		0	68		9	1,231
October	2031		-74	1,089		1,089		0	68		9	1,157
November	2031		-38	1,051		1,051		0	68		9	1,119
December	2031		-38	1,013		1,013		-5	63		4	1,076
January	2032		-28	985		985		0	63		4	1,048
February	2032		-77	908		908		-1	62		3	970
March	2032		-36	872		872		-1	61		2	933
April	2032		-37	835		835		-1	60		1	895
May	2032		-38	797		797		-3	57		-2	854
June	2032		-65	732		732		-9	48		-11	780
July	2032		-36	696		696		-9	39		-20	735
August	2032		-47	649		649		0	39		-20	688
September	2032		-33	616		616		0	39		-20	655
October	2032		-54	562		562		-11	28		-31	590
November	2032		-35	527		527		0	28		-31	555
December	2032		-24	503		503		-1	27		-32	530
January	2033		-36	467		467		-3	24		-35	491
February	2033		-31	436		436		-2	22		-37	458
March	2033		-55	381		381		-1	21		-38	402
April	2033		-48	333		333		-6	15		-44	348
May	2033		-32	301		301		0	15		-44	316
June	2033		-30	271		271		-4	11		-48	282
July	2033		-55	216		216		-3	8		-51	224
August	2033		-44	172		172		0	8		-51	180
September	2033		-44	128		128		-4	4		-55	132
October	2033		-53	75		75		0	4		-55	79
November	2033		-36	39		39		-3	1		-58	40
December	2033		-39	0		0		-1	0		-59	0
January	2034		0	0		0		0	0		-59	0
February	2034		0	0		0		0	0		-59	0
March	2034		0	0		0		0	0		-59	0
April	2034		0	0		0		0	0		-59	0
May	2034		0	0		0		0	0		-59	0
June	2034		0	0		0		0	0		-59	0
July	2034		0	0		0		0	0		-59	0
August	2034		0	0		0		0	0		-59	0
September	2034		0	0		0		0	0		-59	0
October	2034		0	0		0		0	0		-59	0
November	2034		0	0		0		0	0		-59	0
December	2034		0	0		0		0	0		-59	0

Table 2. EM&V Data Incremental by Vintage Year		Program Participants									
		VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2016		67	67	-	-	67					
2017		937	937	7	7	944					
2018		510	510	36	36	546					
2019		503	503	27	11	530					

Table 3. EM&V Data Annualized by Vintage Year		Program Participants									
		VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2016		67	67	-	-	67					
2017		937	937	7	7	944					
2018		510	510	36	36	546					
2019		503	503	27	11	530					

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2031		-66,459	3,215,176		3,215,176			144,357		19,277	3,359,533
February	2031		-24,535	3,190,641		3,190,641			144,357		19,277	3,334,998
March	2031		-98,470	3,092,172		3,092,172			144,357		19,277	3,236,529
April	2031		-69,281	3,022,891		3,022,891			144,357		19,277	3,167,248
May	2031		-133,180	2,889,711		2,889,711			144,357		19,277	3,034,068
June	2031		-97,421	2,792,290		2,792,290		-1,049	143,308		18,227	2,935,598
July	2031		-117,803	2,674,487		2,674,487		-3,982	139,326		14,245	2,813,813
August	2031		-104,019	2,570,468		2,570,468		0	139,326		14,245	2,709,794
September	2031		-93,147	2,477,320		2,477,320		0	139,326		14,245	2,616,647
October	2031		-167,604	2,309,716		2,309,716		0	139,326		14,245	2,449,042
November	2031		-99,941	2,209,775		2,209,775		0	139,326		14,245	2,349,101
December	2031		-67,313	2,142,462		2,142,462		-7,873	131,453		6,372	2,273,915
January	2032		-64,722	2,077,740		2,077,740		0	131,453		6,372	2,209,193
February	2032		-144,592	1,933,148		1,933,148		-2,963	128,490		3,409	2,061,638
March	2032		-80,223	1,852,925		1,852,925		-1,746	126,744		1,664	1,979,669
April	2032		-86,331	1,766,594		1,766,594		-2,643	124,101		-980	1,890,695
May	2032		-52,809	1,713,784		1,713,784		-17,548	106,553		-18,528	1,820,337
June	2032		-431,732	1,282,052		1,282,052		-17,101	89,452		-35,628	1,371,505
July	2032		-51,128	1,230,924		1,230,924		-8,161	81,291		-43,789	1,312,215
August	2032		-50,638	1,180,286		1,180,286		0	81,291		-43,789	1,261,577
September	2032		-55,251	1,125,035		1,125,035		0	81,291		-43,789	1,206,326
October	2032		-101,831	1,023,203		1,023,203		-25,309	55,982		-69,098	1,079,186
November	2032		-70,766	952,437		952,437		0	55,982		-69,098	1,008,419
December	2032		-49,891	902,546		902,546		-2,085	53,897		-71,183	956,444
January	2033		-77,134	825,412		825,412		-7,171	46,726		-78,354	872,138
February	2033		-113,173	712,239		712,239		-12,572	34,154		-90,926	746,393
March	2033		-87,734	624,505		624,505		-92	34,062		-91,019	658,567
April	2033		-42,958	581,547		581,547		-8,307	25,755		-99,326	607,301
May	2033		-74,452	507,095		507,095		0	25,755		-99,326	532,850
June	2033		-45,412	461,683		461,683		-6,478	19,277		-105,804	480,960
July	2033		-74,960	386,723		386,723		-2,804	16,472		-108,608	403,196
August	2033		-93,582	293,142		293,142		0	16,472		-108,608	309,614
September	2033		-79,310	213,832		213,832		-9,479	6,993		-118,087	220,825
October	2033		-70,905	142,927		142,927		-321	6,672		-118,408	149,599
November	2033		-87,752	55,175		55,175		-6,180	493		-124,588	55,668
December	2033		-55,175	0		0		-493	0		-125,081	0
January	2034		0	0		0		0	0		-125,081	0
February	2034		0	0		0		0	0		-125,081	0
March	2034		0	0		0		0	0		-125,081	0
April	2034		0	0		0		0	0		-125,081	0
May	2034		0	0		0		0	0		-125,081	0
June	2034		0	0		0		0	0		-125,081	0
July	2034		0	0		0		0	0		-125,081	0
August	2034		0	0		0		0	0		-125,081	0
September	2034		0	0		0		0	0		-125,081	0
October	2034		0	0		0		0	0		-125,081	0
November	2034		0	0		0		0	0		-125,081	0
December	2034		0	0		0		0	0		-125,081	0

Table 2. EM&V Data Incremental by Vintage Year		Net Incremental Energy (kWh)									
Year	VA IRP	VA NLR	NC IRP	NC NLR	System IRP						
2016	68,256	68,256	-	-	68,256						
2017	6,792,509	6,792,509	39,109	39,109	6,831,618						
2018	8,668,870	8,668,870	460,906	460,906	9,129,776						
2019	6,026,274	6,026,274	413,938	344,696	6,440,212						

Table 3. EM&V Data Annualized by Vintage Year		Net Annualized Energy (kWh)									
Year	VA IRP	VA NLR	NC IRP	NC NLR	System IRP						
2016	610,825	610,825	-	-	610,825						
2017	13,670,074	13,670,074	154,851	154,851	13,824,925						
2018	14,878,990	14,878,990	930,665	930,665	15,809,655						
2019	10,830,554	10,830,554	646,770	-854,198	11,477,324						

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC					System			VA	NC	System	VA
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
January	2031		-162	8,496		8,496				364	57	8,861	1,713	2,062	1,725	4.53	5.21	4.55
February	2031		-61	8,435		8,435				364	57	8,800	1,734	2,062	1,746	4.58	5.21	4.61
March	2031		-262	8,173		8,173				364	57	8,538	1,769	2,062	1,780	4.68	5.21	4.70
April	2031		-186	7,988		7,988				364	57	8,352	1,835	2,062	1,845	4.85	5.21	4.86
May	2031		-302	7,686		7,686				364	57	8,050	1,950	2,062	1,955	5.19	5.21	5.19
June	2031		-252	7,434		7,434		0		364	57	7,798	2,022	2,077	2,025	5.38	5.28	5.38
July	2031		-298	7,136		7,136		-7		358	50	7,494	2,070	2,049	2,069	5.52	5.26	5.51
August	2031		-280	6,856		6,856		0		358	50	7,214	2,137	2,049	2,132	5.70	5.26	5.68
September	2031		-248	6,608		6,608		0		358	50	6,966	2,130	2,049	2,126	5.68	5.26	5.66
October	2031		-388	6,221		6,221		0		358	50	6,578	2,121	2,049	2,117	5.71	5.26	5.69
November	2031		-260	5,960		5,960		0		358	50	6,318	2,103	2,049	2,099	5.67	5.26	5.65
December	2031		-183	5,778		5,778		-24		334	26	6,112	2,115	2,087	2,113	5.70	5.30	5.68
January	2032		-178	5,600		5,600		0		334	26	5,934	2,109	2,087	2,108	5.68	5.30	5.66
February	2032		-357	5,243		5,243		-4		330	23	5,573	2,129	2,072	2,125	5.77	5.33	5.75
March	2032		-193	5,050		5,050		-7		323	16	5,373	2,125	2,078	2,122	5.79	5.30	5.76
April	2032		-208	4,842		4,842		-7		316	8	5,158	2,116	2,068	2,113	5.80	5.27	5.76
May	2032		-131	4,711		4,711		-49		267	-41	4,978	2,150	1,869	2,132	5.91	4.68	5.83
June	2032		-1,154	3,557		3,557		-45		221	-86	3,778	1,751	1,864	1,758	4.86	4.61	4.84
July	2032		-136	3,421		3,421		-19		202	-106	3,623	1,769	2,084	1,785	4.92	5.18	4.93
August	2032		-140	3,282		3,282		0		202	-106	3,484	1,819	2,084	1,834	5.06	5.18	5.06
September	2032		-127	3,154		3,154		0		202	-106	3,356	1,826	2,084	1,842	5.12	5.18	5.12
October	2032		-269	2,885		2,885		-67		135	-173	3,020	1,821	1,999	1,829	5.13	4.82	5.12
November	2032		-190	2,695		2,695		0		135	-173	2,830	1,807	1,999	1,817	5.11	4.82	5.10
December	2032		-149	2,545		2,545		-5		130	-177	2,676	1,794	1,996	1,805	5.06	4.83	5.05
January	2033		-212	2,333		2,333		-19		111	-197	2,444	1,767	1,947	1,776	5.00	4.63	4.98
February	2033		-314	2,019		2,019		-35		76	-232	2,095	1,634	1,552	1,630	4.63	3.46	4.58
March	2033		-248	1,771		1,771		0		76	-232	1,847	1,639	1,622	1,638	4.65	3.61	4.59
April	2033		-146	1,625		1,625		-18		58	-250	1,683	1,746	1,717	1,745	4.88	3.88	4.84
May	2033		-189	1,436		1,436		0		58	-250	1,495	1,685	1,717	1,686	4.77	3.88	4.73
June	2033		-213	1,224		1,224		-16		43	-265	1,266	1,704	1,752	1,706	4.52	3.87	4.49
July	2033		-187	1,037		1,037		-6		37	-271	1,073	1,790	2,059	1,800	4.80	4.57	4.79
August	2033		-187	850		850		0		37	-271	886	1,704	2,059	1,720	4.94	4.57	4.92
September	2033		-212	637		637		-20		16	-292	653	1,671	1,748	1,673	4.98	4.03	4.95
October	2033		-212	425		425		-1		16	-292	440	1,906	1,668	1,894	5.66	3.89	5.57
November	2033		-212	212		212		-14		1	-306	214	1,415	493	1,392	5.45	1.32	5.34
December	2033		-212	0		0		-1		0	-308	0	-	-	-	-	-	-
January	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
February	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
March	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
April	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
May	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
June	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
July	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
August	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
September	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
October	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
November	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-
December	2034		0	0		0		0		0	-308	0	-	-	-	-	-	-

Table 2. EM&V Data Incremental by Vintage Year		Net Peak Demand (kW)										Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
		VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System	VA	NC	System		
2016		122	122	-	-	122	1,019	-	1,019	1.83	-	1.83					
2017		2,881	2,881	30	30	2,912	7,249	5,587	7,237	3.07	4.33	3.08					
2018		3,232	3,232	204	204	3,436	16,998	12,803	16,721	6.34	5.66	6.29					
2019		2,545	2,545	130	57	2,676	11,981	15,331	12,151	5.06	4.83	5.05					

Table 3. EM&V Data Annualized by Vintage Year		Net Peak Demand (kW)										Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
		VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System	VA	NC	System		
2016		122	122	-	-	122	9,117	-	9,117	1.83	-	1.83					
2017		2,881	2,881	30	30	2,912	14,589	22,122	14,645	3.07	4.33	3.08					
2018		3,232	3,232	204	204	3,436	29,174	25,852	28,955	6.34	5.66	6.29					
2019		2,545	2,545	130	57	2,676	21,532	23,954	21,655	5.06	4.83	5.05					

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)	Program Participants									
	VA							NC PPI		System
2016								-		
2017								7		
2018								43		
2019								70		
2020								63		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2016			67		67			-		-	67
2017			1,004		1,004			7		7	1,011
2018			1,514		1,514			43		43	1,557
2019			2,017		2,017			70		11	2,087
2020			2,017		2,017			70		11	2,087
2021			2,017		2,017			70		11	2,087
2022			2,017		2,017			70		11	2,087
2023			2,017		2,017			70		11	2,087
2024			2,017		2,017			70		11	2,087
2025			2,017		2,017			70		11	2,087
2026			2,017		2,017			70		11	2,087
2027			2,017		2,017			70		11	2,087
2028			2,017		2,017			70		11	2,087
2029			2,017		2,017			70		11	2,087
2030			1,950		1,950			70		11	2,020
2031			1,013		1,013			63		4	1,076
2032			503		503			27		-	530
2033			-		-			-		-	-
2034			-		-			-		-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)										
	Program Participants									
			VA Lifetime					NC Lifetime		System Lifetime
2016			67					-		67
2017			1,004					7		1,011
2018			1,514					43		1,557
2019			2,017					70		2,087
2020			2,017					70		2,087
2021			2,017					70		2,087
2022			2,017					70		2,087
2023			2,017					70		2,087
2024			2,017					70		2,087
2025			2,017					70		2,087
2026			2,017					70		2,087
2027			2,017					70		2,087
2028			2,017					70		2,087
2029			2,017					70		2,087
2030			2,017					70		2,087
2031			2,017					70		2,087
2032			2,017					70		2,087
2033			2,017					70		2,087
2034			2,017					70		2,087

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Year	Net Energy (kWh) for PPI									
	VA							NC PPI		System
2016								-		
2017								39,109		
2018								615,758		
2019								1,499,455		
2020								1,577,435		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Year	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2016			68,256		68,256			-		-	68,256
2017			7,403,334		7,403,334			39,109		39,109	7,442,443
2018			22,949,769		22,949,769			615,758		615,758	23,565,527
2019			35,186,163		35,186,163			1,499,455		1,249,294	36,685,618
2020			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2021			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2022			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2023			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2024			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2025			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2026			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2027			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2028			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2029			39,990,444		39,990,444			1,732,286		231,319	41,722,730
2030			39,922,187		39,922,187			1,732,286		231,319	41,654,473
2031			32,587,110		32,587,110			1,693,177		192,210	34,280,287
2032			17,040,674		17,040,674			1,116,529		-	18,157,203
2033			4,804,280		4,804,280			232,831		-	5,037,111
2034			-		-			-		-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)										
Year	Net Energy (kWh)									
			VA Lifetime					NC Lifetime		System Lifetime
2016			68,256					-		68,256
2017			7,471,590					39,109		7,510,699
2018			30,421,359					654,867		31,076,226
2019			65,607,523					2,154,321		67,761,844
2020			105,597,966					3,886,608		109,484,574
2021			145,588,410					5,618,894		151,207,304
2022			185,578,853					7,351,180		192,930,033
2023			225,569,297					9,083,466		234,652,763
2024			265,559,740					10,815,752		276,375,493
2025			305,550,184					12,548,039		318,098,222
2026			345,540,627					14,280,325		359,820,952
2027			385,531,071					16,012,611		401,543,682
2028			425,521,514					17,744,897		443,266,412
2029			465,511,958					19,477,183		484,989,141
2030			505,434,145					21,209,470		526,643,614
2031			538,021,255					22,902,647		560,923,901
2032			555,061,929					24,019,175		579,081,104
2033			559,866,209					24,252,007		584,118,216
2034			559,866,209					24,252,007		584,118,216

Appendix D.8 Non-residential Small Business Improvement Program 2016-2019

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)	Net Peak Demand (kW)										PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
											Net kWh/Participant			Net kW/Participant		
	VA							NC PPI		System	VA	NC	System	VA	NC	System
2016								-								
2017								30								
2018								234								
2019								364								
2020								334								

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)	Net Peak Demand (kW)										IRP Energy Savings/Participant			IRP Capacity Savings/Participant				
											Net kWh/Participant			Net kW/Participant				
	VA IRP							VA NLR		NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC
2016	122						122		-		-	122	1,019	-	1,019	1.83	-	1.83
2017	3,004						3,004		30		30	3,034	7,374	5,587	7,361	2.99	4.33	3.00
2018	6,236						6,236		234		234	6,470	15,158	14,320	15,135	4.12	5.44	4.16
2019	8,781						8,781		364		364	9,146	17,445	21,421	17,578	4.35	5.21	4.38
2020	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2021	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2022	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2023	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2024	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2025	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2026	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2027	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2028	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2029	8,781						8,781		364		364	9,146	19,827	24,747	19,992	4.35	5.21	4.38
2030	8,659						8,659		364		364	9,023	20,473	24,747	20,621	4.44	5.21	4.47
2031	5,778						5,778		334		334	6,112	32,169	26,876	31,859	5.70	5.30	5.68
2032	2,545						2,545		130		130	2,676	33,878	41,353	34,259	5.06	4.83	5.05
2033	-						-		-		-	-	-	-	-	-	-	-
2034	-						-		-		-	-	-	-	-	-	-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)	Net Peak Demand (kW)										Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant			
											Net kWh/Participant			Net kW/Participant			
	VA Lifetime							NC Lifetime		System Lifetime	VA	NC	System	VA	NC	System	
2016	122						122		-		122	1,019	-	1,019	1.83	-	1.83
2017	3,004						3,004		30		3,034	7,442	5,587	7,429	2.99	4.33	3.00
2018	6,236						6,236		234		6,470	20,093	15,229	19,959	4.12	5.44	4.16
2019	8,781						8,781		364		9,146	32,527	30,776	32,469	4.35	5.21	4.38
2020	8,781						8,781		364		9,146	52,354	55,523	52,460	4.35	5.21	4.38
2021	8,781						8,781		364		9,146	72,181	80,270	72,452	4.35	5.21	4.38
2022	8,781						8,781		364		9,146	92,007	105,017	92,444	4.35	5.21	4.38
2023	8,781						8,781		364		9,146	111,834	129,764	112,435	4.35	5.21	4.38
2024	8,781						8,781		364		9,146	131,661	154,511	132,427	4.35	5.21	4.38
2025	8,781						8,781		364		9,146	151,487	179,258	152,419	4.35	5.21	4.38
2026	8,781						8,781		364		9,146	171,314	204,005	172,411	4.35	5.21	4.38
2027	8,781						8,781		364		9,146	191,141	228,752	192,402	4.35	5.21	4.38
2028	8,781						8,781		364		9,146	210,968	253,499	212,394	4.35	5.21	4.38
2029	8,781						8,781		364		9,146	230,794	278,245	232,386	4.35	5.21	4.38
2030	8,781						8,781		364		9,146	250,587	302,992	252,345	4.35	5.21	4.38
2031	8,781						8,781		364		9,146	266,743	327,181	268,770	4.35	5.21	4.38
2032	8,781						8,781		364		9,146	275,192	343,131	277,471	4.35	5.21	4.38
2033	8,781						8,781		364		9,146	277,574	346,457	279,884	4.35	5.21	4.38
2034	8,781						8,781		364		9,146	277,574	346,457	279,884	4.35	5.21	4.38

Appendix D.9 Non-residential Prescriptive Program 2017-2019

PROGRAM: Nonresidential Prescriptive Program
DSM Phase VI Program
Type: Energy Efficiency
Program Measure Life: 6.3 years (6 years, 4 months)

Table 1		Participation Program Participants												
Month	Year	VA					NC					System		
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP E+G		
December	2015													
January	2016													
February	2016													
March	2016													
April	2016													
May	2016													
June	2016													
July	2016													
August	2016													
September	2016													
October	2016													
November	2016													
December	2016													
January	2017	0		0		0	0	0	0	0	0	0	0	
February	2017	0		0		0	0	0	0	0	0	0	0	
March	2017	0		0		0	0	0	0	0	0	0	0	
April	2017	0		0		0	0	0	0	0	0	0	0	
May	2017	0		0		0	0	0	0	0	0	0	0	
June	2017	0		0		0	0	0	0	0	0	0	0	
July	2017	0		0		0	0	0	0	0	0	0	0	
August	2017	0		0		0	0	0	0	0	0	0	0	
September	2017	0		0		0	0	0	0	0	0	0	0	
October	2017	0		0		0	0	0	0	0	0	0	0	
November	2017	0		0		0	0	0	0	0	0	0	0	
December	2017	4		4		4	0	0	0	0	0	0	4	
January	2018	49		53		53	0	0	0	0	0	0	53	
February	2018	181		234		234	0	0	0	0	0	0	234	
March	2018	115		349		349	0	0	0	0	0	0	349	
April	2018	56		405		405	0	0	0	0	0	0	405	
May	2018	123		528		528	0	0	0	0	0	0	528	
June	2018	100		628		628	0	0	0	0	0	0	628	
July	2018	64		692		692	0	0	0	0	0	0	692	
August	2018	47		739		739	0	0	0	0	0	0	739	
September	2018	83		822		822	0	0	0	0	0	0	822	
October	2018	11		833		833	0	0	0	0	0	0	833	
November	2018	21		854		854	11	0	11	0	11	0	865	
December	2018	15		869		869	10	0	21	0	21	0	890	
January	2019	5		874		874	3	0	24	0	24	0	898	
February	2019	36		910		910	16	0	40	0	40	0	950	
March	2019	73		983		983	6	0	46	0	46	0	1,029	
April	2019	60		1,043		1,043	7	0	53	0	53	0	1,096	
May	2019	66		1,109		1,109	1	0	54	0	54	0	1,163	
June	2019	39		1,148		1,148	0	0	54	0	54	0	1,202	
July	2019	40		1,188		1,188	0	0	54	0	54	0	1,242	
August	2019	39		1,227		1,227	0	0	54	0	54	0	1,281	
September	2019	38		1,265		1,265	0	0	54	0	54	0	1,319	
October	2019	103		1,368		1,368	2	0	56	2	56	2	1,424	
November	2019	108		1,476		1,476	1	0	57	3	57	3	1,533	
December	2019	59		1,535		1,535	0	0	57	0	57	0	1,592	
January	2020			1,535		1,535			57		57		1,592	
February	2020			1,535		1,535			57		57		1,592	
March	2020			1,535		1,535			57		57		1,592	
April	2020			1,535		1,535			57		57		1,592	
May	2020			1,535		1,535			57		57		1,592	
June	2020			1,535		1,535			57		57		1,592	
July	2020			1,535		1,535			57		57		1,592	
August	2020			1,535		1,535			57		57		1,592	
September	2020			1,535		1,535			57		57		1,592	
October	2020			1,535		1,535			57		57		1,592	
November	2020			1,535		1,535			57		57		1,592	
December	2020			1,535		1,535			57		57		1,592	

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 1		Energy Savings Net kWh											
Month	Year	VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
December	2015												
January	2016												
February	2016												
March	2016												
April	2016												
May	2016												
June	2016												
July	2016												
August	2016												
September	2016												
October	2016												
November	2016												
December	2016												
January	2017	0		0		0	0	0		0		0	0
February	2017	0		0		0	0	0		0		0	0
March	2017	0		0		0	0	0		0		0	0
April	2017	0		0		0	0	0		0		0	0
May	2017	0		0		0	0	0		0		0	0
June	2017	0		0		0	0	0		0		0	0
July	2017	0		0		0	0	0		0		0	0
August	2017	0		0		0	0	0		0		0	0
September	2017	0		0		0	0	0		0		0	0
October	2017	0		0		0	0	0		0		0	0
November	2017	0		0		0	0	0		0		0	0
December	2017	50		50		50	0	0		0		50	50
January	2018	10,907		10,957		10,957	0	0		0		0	10,957
February	2018	102,892		113,849		113,849	0	0		0		0	113,849
March	2018	47,362		161,211		161,211	0	0		0		0	161,211
April	2018	29,467		190,678		190,678	0	0		0		0	190,678
May	2018	69,743		260,421		260,421	0	0		0		0	260,421
June	2018	56,509		316,930		316,930	0	0		0		0	316,930
July	2018	78,205		395,134		395,134	0	0		0		0	395,134
August	2018	29,223		424,358		424,358	0	0		0		0	424,358
September	2018	54,447		478,805		478,805	0	0		0		0	478,805
October	2018	8,846		487,650		487,650	0	0		0		0	487,650
November	2018	2,785		490,435		490,435	11,360	0		11,360		11,360	501,796
December	2018	7,089		497,524		497,524	4,349	0		15,709		15,709	513,233
January	2019	410		497,934		497,934	5,578	0		21,288		21,288	519,222
February	2019	26,844		524,778		524,778	5,157	0		26,445		26,445	551,223
March	2019	60,602		585,380		585,380	2,818	0		29,263		29,263	614,643
April	2019	17,602		602,982		602,982	1,764	0		31,026		31,026	634,008
May	2019	32,997		635,978		635,978	33	0		31,059		31,059	667,037
June	2019	12,091		648,070		648,070	0	0		31,059		31,059	679,129
July	2019	31,427		679,497		679,497	0	0		31,059	0	31,059	710,556
August	2019	32,178		711,675		711,675	0	0		31,059	0	31,059	742,734
September	2019	21,243		732,918		732,918	0	0		31,059	0	31,059	763,977
October	2019	29,336		762,254		762,254	725	0		31,784	725	31,784	794,038
November	2019	34,727		796,980		796,980	60	0		31,844	785	31,844	828,825
December	2019	12,490		809,470		809,470	0	0		31,844	785	31,844	841,315
January	2020			809,470		809,470				31,844		31,844	841,315
February	2020			809,470		809,470				31,844		31,844	841,315
March	2020			809,470		809,470				31,844		31,844	841,315
April	2020			809,470		809,470				31,844		31,844	841,315
May	2020			809,470		809,470				31,844		31,844	841,315
June	2020			809,470		809,470				31,844		31,844	841,315
July	2020			809,470		809,470				31,844		31,844	841,315
August	2020			809,470		809,470				31,844		31,844	841,315
September	2020			809,470		809,470				31,844		31,844	841,315
October	2020			809,470		809,470				31,844		31,844	841,315
November	2020			809,470		809,470				31,844		31,844	841,315
December	2020			809,470		809,470				31,844		31,844	841,315

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
December	2015																	
January	2016																	
February	2016																	
March	2016																	
April	2016																	
May	2016																	
June	2016																	
July	2016																	
August	2016																	
September	2016																	
October	2016																	
November	2016																	
December	2016																	
January	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
February	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
March	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
April	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
May	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
June	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
July	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
August	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
September	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
October	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
November	2017	0.00		0.00		0.00	0.00	0.00	0	0	0	0	-	-	-	-	-	-
December	2017	0.07		0.07		0.07	0.00	0.00	0	0	0	0	12	-	12	0.02	-	0.02
January	2018	20		20		20	0.00	0.00	0	0	0	20	207	-	207	0.37	-	0.37
February	2018	353		372		372	0.00	0.00	0	0	0	372	487	-	487	1.59	-	1.59
March	2018	189		561		561	0.00	0.00	0	0	0	561	462	-	462	1.61	-	1.61
April	2018	119		680		680	0.00	0.00	0	0	0	680	471	-	471	1.68	-	1.68
May	2018	175		855		855	0.00	0.00	0	0	0	855	493	-	493	1.62	-	1.62
June	2018	122		976		976	0.00	0.00	0	0	0	976	505	-	505	1.55	-	1.55
July	2018	253		1,229		1,229	0.00	0.00	0	0	0	1,229	571	-	571	1.78	-	1.78
August	2018	1,416		2,645		2,645	0.00	0.00	0	0	0	2,645	574	-	574	3.58	-	3.58
September	2018	146		2,791		2,791	0.00	0.00	0	0	0	2,791	582	-	582	3.40	-	3.40
October	2018	49		2,840		2,840	0.00	0.00	0	0	0	2,840	585	-	585	3.41	-	3.41
November	2018	3		2,843		2,843	15.52	15.52	16	16	16	2,859	574	1,033	580	3.33	1.41	3.30
December	2018	18		2,861		2,861	5.95	5.95	21	21	21	2,883	573	748	577	3.29	1.02	3.24
January	2019	2		2,863		2,863	7.57	7.57	29	29	29	2,892	570	887	578	3.28	1.21	3.22
February	2019	147		3,011		3,011	7.10	7.10	36	36	36	3,047	577	661	580	3.31	0.90	3.21
March	2019	1,250		4,261		4,261	3.86	3.86	40	40	40	4,300	596	636	597	4.33	0.87	4.18
April	2019	133		4,393		4,393	2.42	2.42	42	42	42	4,436	578	585	578	4.21	0.80	4.05
May	2019	321		4,714		4,714	0.05	0.05	42	42	42	4,757	573	575	574	4.25	0.79	4.09
June	2019	118		4,832		4,832	0.00	0.00	42	42	42	4,874	565	575	565	4.21	0.79	4.06
July	2019	147		4,979		4,979	0.00	0.00	42	42	42	5,021	572	575	572	4.19	0.79	4.04
August	2019	139		5,118		5,118	0.00	0.00	42	42	42	5,160	580	575	580	4.17	0.79	4.03
September	2019	68		5,186		5,186	0.00	0.00	42	42	42	5,228	579	575	579	4.10	0.79	3.96
October	2019	166		5,352		5,352	3.86	3.86	46	46	46	5,398	557	568	558	3.91	0.83	3.79
November	2019	292		5,643		5,643	0.96	0.96	47	47	47	5,691	540	559	541	3.82	0.83	3.71
December	2019	96		5,739		5,739	0.00	0.00	47	47	47	5,786	527	559	528	3.74	0.83	3.63
January	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
February	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
March	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
April	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
May	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
June	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
July	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
August	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
September	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
October	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
November	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63
December	2020			5,739		5,739			47	47	47	5,786	527	559	528	3.74	0.83	3.63

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 1		Participation										
Month	Year	Program Participants					System					
		VA		VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			NC		NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			System Cum for IRP
		VA Monthly New	VA Monthly Retired	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2021				1,535				57		3	1,592
February	2021				1,535				57		3	1,592
March	2021				1,535				57		3	1,592
April	2021				1,535				57		3	1,592
May	2021				1,535				57		3	1,592
June	2021				1,535				57		3	1,592
July	2021				1,535				57		3	1,592
August	2021				1,535				57		3	1,592
September	2021				1,535				57		3	1,592
October	2021				1,535				57		3	1,592
November	2021				1,535				57		3	1,592
December	2021				1,535				57		3	1,592
January	2022				1,535				57		3	1,592
February	2022				1,535				57		3	1,592
March	2022				1,535				57		3	1,592
April	2022				1,535				57		3	1,592
May	2022				1,535				57		3	1,592
June	2022				1,535				57		3	1,592
July	2022				1,535				57		3	1,592
August	2022				1,535				57		3	1,592
September	2022				1,535				57		3	1,592
October	2022				1,535				57		3	1,592
November	2022				1,535				57		3	1,592
December	2022				1,535				57		3	1,592
January	2023				1,535				57		3	1,592
February	2023				1,535				57		3	1,592
March	2023				1,535				57		3	1,592
April	2023				1,535				57		3	1,592
May	2023				1,535				57		3	1,592
June	2023				1,535				57		3	1,592
July	2023				1,535				57		3	1,592
August	2023				1,535				57		3	1,592
September	2023				1,535				57		3	1,592
October	2023				1,535				57		3	1,592
November	2023				1,535				57		3	1,592
December	2023				1,535				57		3	1,592
January	2024				1,535				57		3	1,592
February	2024				1,535				57		3	1,592
March	2024		-4		1,531				57		3	1,588
April	2024		-49		1,482				57		3	1,539
May	2024		-181		1,301				57		3	1,358
June	2024		-115		1,186				57		3	1,243
July	2024		-56		1,130				57		3	1,187
August	2024		-123		1,007				57		3	1,064
September	2024		-100		907				57		3	964
October	2024		-64		843				57		3	900
November	2024		-47		796				57		3	853
December	2024		-83		713				57		3	770
January	2025		-11		702				57		3	759
February	2025		-21		681			-11	46		-8	727
March	2025		-15		666			-10	36		-18	702
April	2025		-5		661			-3	33		-21	694
May	2025		-36		625			-16	17		-37	642
June	2025		-73		552			-6	11		-43	563
July	2025		-60		492			-7	4		-50	496
August	2025		-66		426			-1	3		-51	429
September	2025		-39		387			0	3		-51	390
October	2025		-40		347			0	3		-51	350
November	2025		-39		308			0	3		-51	311
December	2025		-38		270			0	3		-51	273

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 1		Energy Savings										
Month	Year	Net kWh					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2021			809,470		809,470			31,844		785	841,315
February	2021			809,470		809,470			31,844		785	841,315
March	2021			809,470		809,470			31,844		785	841,315
April	2021			809,470		809,470			31,844		785	841,315
May	2021			809,470		809,470			31,844		785	841,315
June	2021			809,470		809,470			31,844		785	841,315
July	2021			809,470		809,470			31,844		785	841,315
August	2021			809,470		809,470			31,844		785	841,315
September	2021			809,470		809,470			31,844		785	841,315
October	2021			809,470		809,470			31,844		785	841,315
November	2021			809,470		809,470			31,844		785	841,315
December	2021			809,470		809,470			31,844		785	841,315
January	2022			809,470		809,470			31,844		785	841,315
February	2022			809,470		809,470			31,844		785	841,315
March	2022			809,470		809,470			31,844		785	841,315
April	2022			809,470		809,470			31,844		785	841,315
May	2022			809,470		809,470			31,844		785	841,315
June	2022			809,470		809,470			31,844		785	841,315
July	2022			809,470		809,470			31,844		785	841,315
August	2022			809,470		809,470			31,844		785	841,315
September	2022			809,470		809,470			31,844		785	841,315
October	2022			809,470		809,470			31,844		785	841,315
November	2022			809,470		809,470			31,844		785	841,315
December	2022			809,470		809,470			31,844		785	841,315
January	2023			809,470		809,470			31,844		785	841,315
February	2023			809,470		809,470			31,844		785	841,315
March	2023			809,470		809,470			31,844		785	841,315
April	2023			809,470		809,470			31,844		785	841,315
May	2023			809,470		809,470			31,844		785	841,315
June	2023			809,470		809,470			31,844		785	841,315
July	2023			809,470		809,470			31,844		785	841,315
August	2023			809,470		809,470			31,844		785	841,315
September	2023			809,470		809,470			31,844		785	841,315
October	2023			809,470		809,470			31,844		785	841,315
November	2023			809,470		809,470			31,844		785	841,315
December	2023			809,470		809,470			31,844		785	841,315
January	2024			809,470		809,470			31,844		785	841,315
February	2024			809,470		809,470			31,844		785	841,315
March	2024		-50	809,421		809,421			31,844		785	841,265
April	2024		-10,907	798,514		798,514			31,844		785	830,358
May	2024		-102,892	695,622		695,622			31,844		785	727,466
June	2024		-47,362	648,259		648,259			31,844		785	680,104
July	2024		-29,467	618,793		618,793			31,844		785	650,637
August	2024		-69,743	549,049		549,049			31,844		785	580,894
September	2024		-56,509	492,541		492,541			31,844		785	524,385
October	2024		-78,205	414,336		414,336			31,844		785	446,180
November	2024		-29,223	385,113		385,113			31,844		785	416,957
December	2024		-54,447	330,666		330,666			31,844		785	362,510
January	2025		-8,846	321,820		321,820			31,844		785	353,665
February	2025		-2,785	319,035		319,035		-11,360	20,484		-10,575	339,519
March	2025		-7,089	311,946		311,946		-4,349	16,135		-14,924	328,081
April	2025		-410	311,536		311,536		-5,578	10,557		-20,502	322,093
May	2025		-26,844	284,693		284,693		-5,157	5,399		-25,660	290,092
June	2025		-60,602	224,090		224,090		-2,818	2,582		-28,477	226,672
July	2025		-17,602	206,488		206,488		-1,764	818		-30,241	207,306
August	2025		-32,997	173,492		173,492		-33	785		-30,274	174,277
September	2025		-12,091	161,400		161,400		0	785		-30,274	162,186
October	2025		-31,427	129,973		129,973		0	785		-30,274	130,758
November	2025		-32,178	97,795		97,795		0	785		-30,274	98,580
December	2025		-21,243	76,552		76,552		0	785		-30,274	77,337

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA		VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2021						5,739					5,739					47	5
February	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
March	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
April	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
May	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
June	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
July	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
August	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
September	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
October	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
November	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
December	2021			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
January	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
February	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
March	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
April	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
May	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
June	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
July	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
August	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
September	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
October	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
November	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
December	2022			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
January	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
February	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
March	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
April	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
May	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
June	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
July	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
August	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
September	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
October	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
November	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
December	2023			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
January	2024			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
February	2024			5,739		5,739				47	5	5,786	527	559	528	3.74	0.83	3.63
March	2024		-0.07	5,739		5,739				47	5	5,786	529	559	530	3.75	0.83	3.64
April	2024		-20	5,719		5,719				47	5	5,766	539	559	540	3.86	0.83	3.75
May	2024		-353	5,366		5,366				47	5	5,414	535	559	536	4.12	0.83	3.99
June	2024		-189	5,178		5,178				47	5	5,225	547	559	547	4.37	0.83	4.20
July	2024		-119	5,059		5,059				47	5	5,106	548	559	548	4.48	0.83	4.30
August	2024		-175	4,884		4,884				47	5	4,932	545	559	546	4.85	0.83	4.64
September	2024		-122	4,763		4,763				47	5	4,810	543	559	544	5.25	0.83	4.99
October	2024		-253	4,510		4,510				47	5	4,557	492	559	496	5.35	0.83	5.06
November	2024		-1,416	3,094		3,094				47	5	3,141	484	559	489	3.89	0.83	3.68
December	2024		-146	2,948		2,948				47	5	2,995	464	559	471	4.13	0.83	3.89
January	2025		-49	2,899		2,899				47	5	2,946	458	559	466	4.13	0.83	3.88
February	2025		-3	2,896		2,896				32	-11	2,927	468	445	467	4.25	0.69	4.03
March	2025		-18	2,877		2,877		-15.52		26	-17	2,903	468	448	467	4.32	0.72	4.14
April	2025		-2	2,876		2,876		-5.95		18	-24	2,894	471	320	464	4.35	0.55	4.17
May	2025		-147	2,728		2,728		-7.57		11	-31	2,739	456	318	452	4.37	0.66	4.27
June	2025		-1,250	1,478		1,478		-7.10		7	-35	1,486	406	235	403	2.68	0.66	2.64
July	2025		-133	1,346		1,346		-3.86		5	-38	1,350	420	204	418	2.73	1.22	2.72
August	2025		-321	1,025		1,025		-2.42		5	-38	1,030	407	262	406	2.41	1.61	2.40
September	2025		-118	907		907		-0.05		5	-38	912	417	262	416	2.34	1.61	2.34
October	2025		-147	760		760		0.00		5	-38	765	375	262	374	2.19	1.61	2.19
November	2025		-139	621		621		0.00		5	-38	626	318	262	317	2.02	1.61	2.01
December	2025		-68	553		553		0.00		5	-38	558	284	262	283	2.05	1.61	2.04

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 1		Participation										
Month	Year	Program Participants										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2026		-103	167		167		-2	1		-53	168
February	2026		-108	59		59		-1	0		-54	59
March	2026		-59	0		0		0	0		-54	0
April	2026		0	0		0		0	0		-54	0
May	2026		0	0		0		0	0		-54	0
June	2026		0	0		0		0	0		-54	0
July	2026		0	0		0		0	0		-54	0
August	2026		0	0		0		0	0		-54	0
September	2026		0	0		0		0	0		-54	0
October	2026		0	0		0		0	0		-54	0
November	2026		0	0		0		0	0		-54	0
December	2026		0	0		0		0	0		-54	0
January	2027		0	0		0		0	0		-54	0
February	2027		0	0		0		0	0		-54	0
March	2027		0	0		0		0	0		-54	0
April	2027		0	0		0		0	0		-54	0
May	2027		0	0		0		0	0		-54	0
June	2027		0	0		0		0	0		-54	0
July	2027		0	0		0		0	0		-54	0
August	2027		0	0		0		0	0		-54	0
September	2027		0	0		0		0	0		-54	0
October	2027		0	0		0		0	0		-54	0
November	2027		0	0		0		0	0		-54	0
December	2027		0	0		0		0	0		-54	0
January	2028		0	0		0		0	0		-54	0
February	2028		0	0		0		0	0		-54	0
March	2028		0	0		0		0	0		-54	0
April	2028		0	0		0		0	0		-54	0
May	2028		0	0		0		0	0		-54	0
June	2028		0	0		0		0	0		-54	0
July	2028		0	0		0		0	0		-54	0
August	2028		0	0		0		0	0		-54	0
September	2028		0	0		0		0	0		-54	0
October	2028		0	0		0		0	0		-54	0
November	2028		0	0		0		0	0		-54	0
December	2028		0	0		0		0	0		-54	0

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2016			-		-			-		-	-
2017			4		4			-		-	4
2018			865		865			21		21	886
2019			666		666			36		3	702

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 1		Energy Savings												
Month	Year	Net kWh					System							
		VA		VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			NC		NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			System Cum for IRP		
		VA Monthly New	VA Monthly Retired	VA Rate Reset Adj.	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Rate Reset Adj.	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2026		-29,336		47,217		47,217		-725		60		-30,999	47,277
February	2026		-34,727		12,490		12,490		-60		0		-31,059	12,490
March	2026		-12,490		0		0		0		0		-31,059	0
April	2026		0		0		0		0		0		-31,059	0
May	2026		0		0		0		0		0		-31,059	0
June	2026		0		0		0		0		0		-31,059	0
July	2026		0		0		0		0		0		-31,059	0
August	2026		0		0		0		0		0		-31,059	0
September	2026		0		0		0		0		0		-31,059	0
October	2026		0		0		0		0		0		-31,059	0
November	2026		0		0		0		0		0		-31,059	0
December	2026		0		0		0		0		0		-31,059	0
January	2027		0		0		0		0		0		-31,059	0
February	2027		0		0		0		0		0		-31,059	0
March	2027		0		0		0		0		0		-31,059	0
April	2027		0		0		0		0		0		-31,059	0
May	2027		0		0		0		0		0		-31,059	0
June	2027		0		0		0		0		0		-31,059	0
July	2027		0		0		0		0		0		-31,059	0
August	2027		0		0		0		0		0		-31,059	0
September	2027		0		0		0		0		0		-31,059	0
October	2027		0		0		0		0		0		-31,059	0
November	2027		0		0		0		0		0		-31,059	0
December	2027		0		0		0		0		0		-31,059	0
January	2028		0		0		0		0		0		-31,059	0
February	2028		0		0		0		0		0		-31,059	0
March	2028		0		0		0		0		0		-31,059	0
April	2028		0		0		0		0		0		-31,059	0
May	2028		0		0		0		0		0		-31,059	0
June	2028		0		0		0		0		0		-31,059	0
July	2028		0		0		0		0		0		-31,059	0
August	2028		0		0		0		0		0		-31,059	0
September	2028		0		0		0		0		0		-31,059	0
October	2028		0		0		0		0		0		-31,059	0
November	2028		0		0		0		0		0		-31,059	0
December	2028		0		0		0		0		0		-31,059	0

Table 2. EM&V Data Incremental by Vintage Year										
	Net Incremental Energy (kWh)									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2016	-	-	-	-	-					
2017	50	50	-	-	50					
2018	3,827,356	3,827,356	27,070	27,070	3,854,426					
2019	2,017,629	2,017,629	170,278	139,578	2,187,906					

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC						System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2026		-166	387		387		-3.86		1	-42	388	283	60	281	2.32	0.96	2.31
February	2026		-292	96		96		-0.96		0	-42	96	212	-	212	1.62	-	1.62
March	2026		-96	0		0		0.00		0	-42	0	-	-	-	-	-	-
April	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
May	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
June	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
July	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
August	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
September	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
October	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
November	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
December	2026		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
January	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
February	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
March	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
April	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
May	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
June	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
July	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
August	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
September	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
October	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
November	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
December	2027		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
January	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
February	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
March	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
April	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
May	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
June	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
July	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
August	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
September	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
October	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
November	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-
December	2028		0	0		0		0.00		0	-42	0	-	-	-	-	-	-

Table 2. EM&V Data Incremental by Vintage Year										Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant				
Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP				
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2016			-		-			-		-	-	-	-	-	-	-	-
2017			0.07		0.07			-		-	0.07	12	-	12	0.02	-	0.02
2018			2,861		2,861			21		21	2,883	4,425	1,289.03	4,350	3.31	1.02	3.25
2019			2,877		2,877			26		5	2,903	3,029	4,729.93	3,117	4.32	0.72	4.14

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 3. EM&V Data Annualized by Vintage Year

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2016	-	-	-	-	-	-	-	-	-	-
2017	4	4	-	-	-	-	-	-	-	4
2018	865	865	-	-	21	-	21	-	-	886
2019	666	666	-	-	36	-	3	-	-	702

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Program Participants									
	VA		NC PPI		System					
2016	-	-	-	-	-	-	-	-	-	-
2017	-	-	-	-	-	-	-	-	-	-
2018	-	-	-	-	21	-	-	-	-	-
2019	-	-	-	-	57	-	-	-	-	-
2020	-	-	-	-	57	-	-	-	-	-
2021	-	-	-	-	36	-	-	-	-	-
2022	-	-	-	-	-	-	-	-	-	-

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2016	-	-	-	-	-	-	-	-	-	-
2017	4	4	-	-	21	-	21	-	-	4
2018	869	869	-	-	57	-	3	-	-	890
2019	1,535	1,535	-	-	57	-	3	-	-	1,592
2020	1,535	1,535	-	-	57	-	3	-	-	1,592
2021	1,535	1,535	-	-	57	-	3	-	-	1,592
2022	1,535	1,535	-	-	57	-	3	-	-	1,592
2023	1,535	1,535	-	-	57	-	3	-	-	1,592
2024	713	713	-	-	57	-	3	-	-	770
2025	270	270	-	-	3	-	-	-	-	273
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

	Program Participants									
	VA Lifetime		NC Lifetime		System Lifetime					
2016	-	-	-	-	-	-	-	-	-	-
2017	4	4	-	-	21	-	21	-	-	4
2018	869	869	-	-	57	-	3	-	-	890
2019	1,535	1,535	-	-	57	-	3	-	-	1,592
2020	1,535	1,535	-	-	57	-	3	-	-	1,592
2021	1,535	1,535	-	-	57	-	3	-	-	1,592
2022	1,535	1,535	-	-	57	-	3	-	-	1,592
2023	1,535	1,535	-	-	57	-	3	-	-	1,592
2024	1,535	1,535	-	-	57	-	3	-	-	1,592
2025	1,535	1,535	-	-	57	-	3	-	-	1,592
2026	1,535	1,535	-	-	57	-	3	-	-	1,592
2027	1,535	1,535	-	-	57	-	3	-	-	1,592
2028	1,535	1,535	-	-	57	-	3	-	-	1,592

Appendix D.9 Non-residential Prescriptive Program 2017-2019

Table 3. EM&V Data Annualized by Vintage Year

	Net Annualized Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2016										
2017			594		594					594
2018			5,969,694		5,969,694			188,512	188,512	6,158,206
2019			3,743,355		3,743,355			193,620	-179,089	3,936,975

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Net Energy (kWh) for PPI									
	VA						NC PPI		System	
2016										
2017										
2018								27,070		
2019								358,790		
2020								382,132		
2021								193,620		
2022										

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Net Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2016										
2017			50		50					50
2018			3,827,951		3,827,951			27,070	27,070	3,855,020
2019			7,987,917		7,987,917			358,790	296,671	8,346,706
2020			9,713,643		9,713,643			382,132	9,423	10,095,775
2021			9,713,643		9,713,643			382,132	9,423	10,095,775
2022			9,713,643		9,713,643			382,132	9,423	10,095,775
2023			9,713,643		9,713,643			382,132	9,423	10,095,775
2024			7,361,253		7,361,253			382,132	9,423	7,743,384
2025			2,618,822		2,618,822			91,745		2,710,567
2026			59,706		59,706			60		59,767
2027										
2028										

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

	Net Energy (kWh)									
	VA Lifetime						NC Lifetime		System Lifetime	
2016										
2017			50							50
2018			3,828,000					27,070		3,855,070
2019			11,815,917					385,859		12,201,776
2020			21,529,560					767,991		22,297,551
2021			31,243,204					1,150,122		32,393,326
2022			40,956,847					1,532,254		42,489,101
2023			50,670,490					1,914,385		52,584,876
2024			58,031,743					2,296,517		60,328,260
2025			60,650,564					2,388,262		63,038,826
2026			60,710,271					2,388,322		63,098,593
2027			60,710,271					2,388,322		63,098,593
2028			60,710,271					2,388,322		63,098,593

Appendix D.9 Non-residential Prescriptive Program 2017-2019

	Net Peak Demand (kW)									Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System				
2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2017	0.07	0.07	-	-	0.07	149	-	149	0.02	-	-	0.02	-	-	0.02
2018	2,861	2,861	21	21	2,883	6,901	8,976.76	6,951	3.31	1.02	3.25	3.31	1.02	3.25	
2019	2,877	2,877	26	5	2,903	5,621	5,378.32	5,608	4.32	0.72	4.14	4.32	0.72	4.14	

	Net Peak Demand (kW)									PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
										Net kWh/Participant			Net kW/Participant		
	VA	NC PPI	System	VA	NC	System	VA	NC	System	VA	NC	System			
2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2018	-	21	-	-	-	1,289	-	-	-	-	-	1	-	-	
2019	-	47	-	-	-	6,295	-	-	-	-	-	1	-	-	
2020	-	47	-	-	-	6,704	-	-	-	-	-	1	-	-	
2021	-	26	-	-	-	5,378	-	-	-	-	-	1	-	-	
2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

	Net Peak Demand (kW)									IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
										Net kWh/Participant			Net kW/Participant		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System				
2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2017	0.07	0.07	-	-	0.07	12	-	12	0.02	-	-	0.02	-	-	
2018	2,861	2,861	21	21	2,883	4,405	1,289	4,331	3.29	1.02	3.24	3.29	1.02	3.24	
2019	5,739	5,739	47	5	5,786	5,204	6,295	5,243	3.74	0.83	3.63	3.74	0.83	3.63	
2020	5,739	5,739	47	5	5,786	6,328	6,704	6,342	3.74	0.83	3.63	3.74	0.83	3.63	
2021	5,739	5,739	47	5	5,786	6,328	6,704	6,342	3.74	0.83	3.63	3.74	0.83	3.63	
2022	5,739	5,739	47	5	5,786	6,328	6,704	6,342	3.74	0.83	3.63	3.74	0.83	3.63	
2023	5,739	5,739	47	5	5,786	6,328	6,704	6,342	3.74	0.83	3.63	3.74	0.83	3.63	
2024	2,948	2,948	47	5	2,995	10,324	6,704	10,056	4.13	0.83	3.89	4.13	0.83	3.89	
2025	553	553	5	-	558	9,699	30,582	9,929	2.05	1.61	2.04	2.05	1.61	2.04	
2026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

	Net Peak Demand (kW)									Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
										Net kWh/Participant			Net kW/Participant		
	VA Lifetime	NC Lifetime	System Lifetime	VA	NC	System	VA	NC	System						
2016	-	-	-	-	-	-	-	-	-	-	-	-	-		
2017	0.07	-	0.07	-	-	12	-	12	0.02	-	-	0.02	-		
2018	2,861	21	2,883	4,405	1,289	4,332	3.29	1.02	3.24	3.29	1.02	3.24			
2019	5,739	47	5,786	7,698	6,769	7,664	3.74	0.83	3.63	3.74	0.83	3.63			
2020	5,739	47	5,786	14,026	13,474	14,006	3.74	0.83	3.63	3.74	0.83	3.63			
2021	5,739	47	5,786	20,354	20,178	20,348	3.74	0.83	3.63	3.74	0.83	3.63			
2022	5,739	47	5,786	26,682	26,882	26,689	3.74	0.83	3.63	3.74	0.83	3.63			
2023	5,739	47	5,786	33,010	33,586	33,031	3.74	0.83	3.63	3.74	0.83	3.63			
2024	5,739	47	5,786	37,806	40,290	37,895	3.74	0.83	3.63	3.74	0.83	3.63			
2025	5,739	47	5,786	39,512	41,899	39,597	3.74	0.83	3.63	3.74	0.83	3.63			
2026	5,739	47	5,786	39,551	41,900	39,635	3.74	0.83	3.63	3.74	0.83	3.63			
2027	5,739	47	5,786	39,551	41,900	39,635	3.74	0.83	3.63	3.74	0.83	3.63			
2028	5,739	47	5,786	39,551	41,900	39,635	3.74	0.83	3.63	3.74	0.83	3.63			

Appendix D.10 Residential Air Conditioner Cycling Program 2010-2019

PROGRAM: Residential AC Cycling
DSM Phase I Program
Type: Peak Shaving
Measure Life: N/A

Table 1		Program Participants (Net) ¹			Energy Savings			Peak Capacity Savings			Energy Savings / Participant			Peak Capacity Savings / Participant			
Month	Year	VA	NC	System	Net kWh			Net KW			Net kWh/Participant			Net kW/Participant			
					VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	
May	2010	-		-				-		-							
June	2010	29		29				30		30				1.06		1.06	
July	2010	332		332				351		351				1.06		1.06	
August	2010	1,376		1,376				1,457		1,457				1.06		1.06	
September	2010	3,104		3,104				3,287		3,287				1.06		1.06	
October	2010	6,431		6,431				6,810		6,810				1.06		1.06	
November	2010	8,054		8,054				8,529		8,529				1.06		1.06	
December	2010	10,276		10,276				10,880		10,880				1.06		1.06	
January	2011	11,788		11,788				14,408		14,408				1.22		1.22	
February	2011	13,646		13,646				16,679		16,679				1.22		1.22	
March	2011	16,816		16,816				20,553		20,553				1.22		1.22	
April	2011	19,212		19,212				23,481		23,481				1.22		1.22	
May	2011	21,091		21,091				25,779		25,779				1.22		1.22	
June	2011	22,940		22,940				28,042		28,042				1.22		1.22	
July	2011	24,809		24,809				30,352		30,352				1.22		1.22	
August	2011	25,341	28	25,369				31,041	34	31,075				1.22	1.22	1.22	
September	2011	26,908	28	26,935				32,978	34	33,012				1.23	1.22	1.23	
October	2011	29,100	320	29,419				35,661	390	36,052				1.23	1.22	1.23	
November	2011	31,085	765	31,851				38,092	935	39,027				1.23	1.22	1.23	
December	2011	32,168	953	33,121				39,420	1,164	40,584				1.23	1.22	1.23	
January	2012	35,431	1,334	36,765				38,863	1,459	40,321				1.10	1.09	1.10	
February	2012	38,284	1,763	40,047				41,987	1,926	43,912				1.10	1.09	1.10	
March	2012	40,408	2,357	42,765				44,314	2,575	46,889				1.10	1.09	1.10	
April	2012	44,143	2,627	46,770				48,404	2,870	51,274				1.10	1.09	1.10	
May	2012	47,425	2,634	50,059				51,999	2,876	54,876				1.10	1.09	1.10	
June	2012	49,081	2,638	51,719				53,826	2,874	56,701				1.10	1.09	1.10	
July	2012	50,600	2,596	53,196				55,326	2,843	58,169				1.09	1.09	1.09	
August	2012	51,542	2,469	54,011				56,356	2,709	59,066				1.09	1.10	1.09	
September	2012	52,897	2,464	55,361				57,838	2,704	60,542				1.09	1.10	1.09	
October	2012	54,818	2,465	57,283				59,938	2,706	62,644				1.09	1.10	1.09	
November	2012	57,874	2,471	60,345				63,279	2,714	65,993				1.09	1.10	1.09	
December	2012	58,901	2,478	61,379				64,403	2,721	67,124				1.09	1.10	1.09	
January	2013	60,429	2,506	62,935				51,954	2,155	54,109				0.86	0.86	0.86	
February	2013	61,601	2,474	64,076				52,962	2,127	55,090				0.86	0.86	0.86	
March	2013	63,316	2,450	65,766				54,436	2,107	56,543				0.86	0.86	0.86	
April	2013	65,506	2,475	67,981				56,319	2,128	58,448				0.86	0.86	0.86	
May	2013	67,036	2,543	69,579				57,635	2,187	59,822				0.86	0.86	0.86	
June	2013	68,075	2,558	70,633				58,528	2,199	60,728				0.86	0.86	0.86	
July	2013	68,928	2,532	71,460				59,261	2,177	61,438				0.86	0.86	0.86	
August	2013	69,405	2,710	72,114				59,671	2,330	62,001				0.86	0.86	0.86	
September	2013	70,340	3,053	73,393				60,475	2,330	62,805				0.86	0.76	0.86	
October	2013	71,997	3,401	75,398				61,900	2,924	64,824				0.86	0.86	0.86	
November	2013	74,182	3,397	77,578				63,778	2,920	66,699				0.86	0.86	0.86	
December	2013	75,738	3,394	79,132				65,117	2,918	68,035				0.86	0.86	0.86	
January	2014	77,588	3,376	80,964				61,004	2,654	63,658				0.79	0.79	0.79	
February	2014	79,424	3,366	82,790				61,713	2,615	64,328				0.78	0.78	0.78	
March	2014	81,294	3,359	84,653				61,661	2,548	64,209				0.76	0.76	0.76	
April	2014	83,265	3,347	86,612				63,157	2,539	65,695				0.76	0.76	0.76	
May	2014	83,721	3,286	87,008				61,954	2,432	64,386				0.74	0.74	0.74	
June	2014	84,578	3,339	87,917				61,806	2,440	64,246				0.73	0.73	0.73	
July	2014	84,055	3,553	87,608				59,868	2,531	62,399				0.71	0.71	0.71	
August	2014	84,446	3,737	88,183				58,584	2,593	61,177				0.69	0.69	0.69	
September	2014	85,480	3,930	89,410				57,720	2,654	60,374				0.68	0.68	0.68	
October	2014	86,869	3,902	90,771				57,855	2,598	60,453				0.67	0.67	0.67	
November	2014	87,540	4,005	91,546				57,492	2,630	60,123				0.66	0.66	0.66	
December	2014	88,243	4,010	92,253				57,137	2,597	59,734				0.65	0.65	0.65	

Appendix D.10 Residential Air Conditioner Cycling Program 2010-2019

Table 1					Energy Savings			Peak Capacity Savings			Energy Savings / Participant			Peak Capacity Savings / Participant		
Month	Year	Program Participants (Net) ¹			Net kWh			Net KW			Net kWh/Participant			Net kW/Participant		
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
January	2015	94,241	4,213	98,454				66,911	2,991	69,903				0.71	0.71	0.71
February	2015	95,140	4,195	99,336				67,550	2,979	70,528				0.71	0.71	0.71
March	2015	96,549	4,233	100,782				68,550	3,006	71,555				0.71	0.71	0.71
April	2015	98,027	4,222	102,249				69,599	2,998	72,597				0.71	0.71	0.71
May	2015	99,574	4,215	103,790				70,698	2,993	73,691				0.71	0.71	0.71
June	2015	100,034	4,184	104,218				71,024	2,971	73,995				0.71	0.71	0.71
July	2015	97,475	3,994	101,470				69,207	2,836	72,043				0.71	0.71	0.71
August	2015	97,406	3,939	101,346				69,158	2,797	71,955				0.71	0.71	0.71
September	2015	98,545	3,908	102,454				69,967	2,775	72,742				0.71	0.71	0.71
October	2015	100,082	3,907	103,989				71,058	2,774	73,832				0.71	0.71	0.71
November	2015	101,422	3,914	105,336				72,009	2,779	74,789				0.71	0.71	0.71
December	2015	103,160	3,916	107,077				73,244	2,781	76,024				0.71	0.71	0.71
January	2016	103,679	3,897	107,576				100,207	3,780	103,987				0.97	0.97	0.97
February	2016	103,673	3,884	107,557				100,201	3,767	103,968				0.97	0.97	0.97
March	2016	103,872	3,882	107,754				100,393	3,766	104,159				0.97	0.97	0.97
April	2016	104,165	3,910	108,075				100,676	3,793	104,469				0.97	0.97	0.97
May	2016	104,189	3,899	108,088				100,700	3,782	104,481				0.97	0.97	0.97
June	2016	104,492	3,908	108,400				100,992	3,791	104,783				0.97	0.97	0.97
July	2016	103,807	3,876	107,683				100,330	3,760	104,090				0.97	0.97	0.97
August	2016	101,205	3,761	104,966				97,815	3,649	101,464				0.97	0.97	0.97
September	2016	99,596	3,712	103,308				96,260	3,600	99,861				0.97	0.97	0.97
October	2016	99,274	3,694	102,968				95,949	3,583	99,532				0.97	0.97	0.97
November	2016	98,676	3,728	102,404				95,371	3,616	98,987				0.97	0.97	0.97
December	2016	98,088	3,707	101,795				94,803	3,595	98,398				0.97	0.97	0.97
January	2017	97,959	3,716	101,675				66,589	2,527	69,116				0.68	0.68	0.68
February	2017	97,911	3,713	101,624				66,557	2,525	69,082				0.68	0.68	0.68
March	2017	97,881	3,713	101,594				66,536	2,525	69,061				0.68	0.68	0.68
April	2017	96,947	3,708	100,655				65,902	2,521	68,423				0.68	0.68	0.68
May	2017	95,476	3,697	99,173				64,902	2,514	67,415				0.68	0.68	0.68
June	2017	94,598	3,685	98,283				64,305	2,506	66,810				0.68	0.68	0.68
July	2017	93,399	3,667	97,066				63,490	2,493	65,983				0.68	0.68	0.68
August	2017	92,100	3,605	95,705				62,607	2,451	65,058				0.68	0.68	0.68
September	2017	91,120	3,596	94,716				61,941	2,445	64,386				0.68	0.68	0.68
October	2017	90,505	3,594	94,099				61,522	2,444	63,966				0.68	0.68	0.68
November	2017	89,586	3,593	93,179				60,898	2,443	63,341				0.68	0.68	0.68
December	2017	89,282	3,605	92,887				60,691	2,451	63,142				0.68	0.68	0.68
January	2018	88,935	3,612	92,547				55,778	2,267	58,045				0.63	0.63	0.63
February	2018	88,626	3,613	92,239				55,584	2,267	57,851				0.63	0.63	0.63
March	2018	88,319	3,606	91,925				55,392	2,263	57,655				0.63	0.63	0.63
April	2018	87,121	3,319	90,440				54,640	2,083	56,723				0.63	0.63	0.63
May	2018	86,796	3,316	90,112				54,436	2,081	56,517				0.63	0.63	0.63
June	2018	85,222	3,231	88,453				53,449	2,028	55,477				0.63	0.63	0.63
July	2018	83,955	3,187	87,142				52,655	2,000	54,655				0.63	0.63	0.63
August	2018	83,020	3,162	86,182				52,068	1,984	54,053				0.63	0.63	0.63
September	2018	82,011	3,133	85,144				51,435	1,966	53,402				0.63	0.63	0.63
October	2018	81,469	3,122	84,591				51,095	1,959	53,055				0.63	0.63	0.63
November	2018	80,982	3,082	84,064				50,790	1,934	52,724				0.63	0.63	0.63
December	2018	80,627	3,067	83,694				50,567	1,925	52,492				0.63	0.63	0.63
January	2019	80,205	3,059	83,264				50,191	1,915	52,105				0.63	0.63	0.63
February	2019	79,766	3,043	82,809				49,916	1,905	51,821				0.63	0.63	0.63
March	2019	79,610	3,042	82,652				49,818	1,904	51,722				0.63	0.63	0.63
April	2019	79,381	3,035	82,416				49,675	1,900	51,575				0.63	0.63	0.63
May	2019	79,158	3,052	82,210				49,535	1,911	51,446				0.63	0.63	0.63
June	2019	78,808	3,060	81,868				49,316	1,916	51,232				0.63	0.63	0.63
July	2019	78,270	3,081	81,351				48,980	1,929	50,908				0.63	0.63	0.63
August	2019	77,434	3,084	80,518				48,457	1,931	50,387				0.63	0.63	0.63
September	2019	76,729	3,080	79,809				48,015	1,928	49,943				0.63	0.63	0.63
October	2019	76,238	3,079	79,317				47,708	1,927	49,636				0.63	0.63	0.63
November	2019	75,707	3,077	78,784				47,376	1,926	49,302				0.63	0.63	0.63
December	2019	75,386	3,061	78,447				47,175	1,916	49,091				0.63	0.63	0.63

Appendix D.10 Residential Air Conditioner Cycling Program 2010-2019

Table 2. EM&V Data by Vintage Year	Program Participants (Net) ¹			Energy Savings (Incremental)			Annual Peak Savings			Incremental Energy Savings / Participant			Annual Peak Savings / Participant		
	VA	NC	System	Net kWh			Net kW			Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
2010	10,276	-	10,276				10,880	-	10,880				1.06	-	1.06
2011	32,168	953	33,121				39,420	1,164	40,584				1.23	1.22	1.23
2012	58,901	2,478	61,379				64,403	2,721	67,124				1.09	1.10	1.09
2013	75,738	3,394	79,132				65,117	2,918	68,035				0.86	0.86	0.86
2014	88,243	4,010	92,253				57,137	2,597	59,734				0.65	0.65	0.65
2015	103,160	3,916	107,077				73,244	2,781	76,024				0.71	0.71	0.71
2016	98,088	3,707	101,795				94,803	3,595	98,398				0.97	0.97	0.97
2017	89,282	3,605	92,887				60,691	2,451	63,142				0.68	0.68	0.68
2018	80,627	3,067	83,694				50,567	1,925	52,492				0.63	0.63	0.63
2019	75,386	3,061	78,447				47,175	1,916	49,091				0.63	0.63	0.63

Table 3. EM&V Data Difference by Vintage Year	Program Participant Difference			Energy Savings (Annualized)			Net kW Difference			Annualized Energy Savings / Participant			Net kW Difference / Participant		
	VA	NC	System	Net kWh			Net kW Difference			Net kWh/Participant			Net kW Difference / Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
2010	10,276	0	10,276				10,880	0	10,880				1.06	-	1.06
2011	21,893	953	22,845				28,540	1,164	29,704				1.30	1.22	1.30
2012	26,733	1,525	28,258				24,983	1,557	26,540				0.93	1.02	0.94
2013	16,837	916	17,753				714	197	911				0.04	0.22	0.05
2014	12,504	616	13,121				-7,980	-321	-8,301				-0.64	-0.52	-0.63
2015	14,917	-94	14,824				16,106	184	16,291				1.08	-1.97	1.10
2016	-5,072	-210	-5,282				21,559	815	22,374				-4.25	-3.88	-4.24
2017	-8,806	-102	-8,908				-34,112	-1,144	-35,256				3.87	11.24	3.96
2018	-8,655	-538	-9,193				-10,124	-526	-10,650				1.17	0.98	1.16
2019	-5,241	-6	-5,247				-3,392	-9	-3,401				0.65	1.46	0.65

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)	Program Participants			Energy Savings for Program Performance Incentives (PPI)			Net kW			PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	VA	NC	System	Net kWh			Net kW			Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
2010	10,276	-	10,276				10,880	-	10,880				1.06	-	1.06
2011	32,168	953	43,397				50,300	1,164	51,463				1.56	1.22	1.19
2012	58,901	2,478	61,379				64,403	2,721	67,124				1.09	1.10	1.09
2013	65,463	3,394	68,857				54,237	2,918	57,155				0.83	0.86	0.83
2014	56,074	3,057	59,132				17,717	1,433	19,150				0.32	0.47	0.32
2015	44,259	1,438	45,697				8,841	60	8,901				0.20	0.04	0.19
2016	22,350	313	22,662				29,686	677	30,363				1.33	2.17	1.34
2017	1,039	-405	634				3,554	-145	3,409				3.42	0.36	5.38
2018	-22,533	-850	-23,383				-22,676	-856	-23,532				1.01	1.01	1.01
2019	-22,702	-646	-23,348				-47,628	-1,679	-49,307				2.10	2.60	2.11

Table 5. EM&V Data Accumulated through Vintage Year (for IRP)	Program Participants			Energy Savings for Integrated Resource Planning (IRP)			Net kW			IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	VA	NC	System	Net kWh			Net kW			Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
2010	10,276	-	10,276				10,880	-	10,880				1.06	-	1.06
2011	32,168	953	33,121				39,420	1,164	40,584				1.23	1.22	1.23
2012	58,901	2,478	61,379				64,403	2,721	67,124				1.09	1.10	1.09
2013	75,738	3,394	79,132				65,117	2,918	68,035				0.86	0.86	0.86
2014	88,243	4,010	92,253				57,137	2,597	59,734				0.65	0.65	0.65
2015	103,160	3,916	107,077				73,244	2,781	76,024				0.71	0.71	0.71
2016	98,088	3,707	101,795				94,803	3,595	98,398				0.97	0.97	0.97
2017	89,282	3,605	92,887				60,691	2,451	63,142				0.68	0.68	0.68
2018	80,627	3,067	83,694				50,567	1,925	52,492				0.63	0.63	0.63
2019	75,386	3,061	78,447				47,175	1,916	49,091				0.63	0.63	0.63

Appendix D.11 Non-residential Distributed Generation Program 2012-2019

PROGRAM: Non-Residential Distributed Generation DSM Phase II Program
Type: Peak Shaving
Program Measure Life: N/A

Table 1		Participation			Net Capacity Savings			Net Capacity Savings / Participant		
Month	Year	Program Participants			Net kW			Net kW/participant		
		VA	NC	System	VA	NC	System	VA	NC	System
June	2012	19		19	15,857		15,857	843		843
July	2012	19		19	16,051		16,051	843		843
August	2012	19		19	16,051		16,051	843		843
September	2012	19		19	16,051		16,051	843		843
October	2012	19		19	16,051		16,051	843		843
November	2012	19		19	16,051		16,051	843		843
December	2012	19		19	16,051		16,051	843		843
January	2013	19		19	13,478		13,478	698		698
February	2013	19		19	13,478		13,478	698		698
March	2013	19		19	13,478		13,478	698		698
April	2013	19		19	13,478		13,478	698		698
May	2013	19		19	13,478		13,478	698		698
June	2013	19		19	13,691		13,691	709		709
July	2013	19		19	14,713		14,713	758		758
August	2013	19		19	14,785		14,785	779		779
September	2013	19		19	15,770		15,770	830		830
October	2013	19		19	16,110		16,110	830		830
November	2013	19		19	16,110		16,110	830		830
December	2013	19		19	16,110		16,110	830		830
January	2014	19		19	10,346		10,346	550		550
February	2014	19		19	10,346		10,346	550		550
March	2014	19		19	8,653		8,653	460		460
April	2014	19		19	8,653		8,653	460		460
May	2014	19		19	8,653		8,653	460		460
June	2014	18		18	13,904		13,904	790		790
July	2014	19		19	14,860		14,860	790		790
August	2014	17		17	13,819		13,819	810		810
September	2014	19		19	14,121		14,121	760		760
October	2014	19		19	14,121		14,121	760		760
November	2014	19		19	14,121		14,121	760		760
December	2014	19		19	14,121		14,121	760		760
January	2015	6		6	4,259		4,259	698		698
February	2015	6		6	4,721		4,721	774		774
March	2015	6		6	5,457		5,457	895		895
April	2015	6		6	5,457		5,457	895		895
May	2015	6		6	5,457		5,457	895		895
June	2015	6		6	6,015		6,015	986		986
July	2015	6		6	6,048		6,048	991		991
August	2015	6		6	5,714		5,714	937		937
September	2015	6		6	5,530		5,530	907		907
October	2015	6		6	5,457		5,457	895		895
November	2015	6		6	5,457		5,457	895		895
December	2015	6		6	5,457		5,457	895		895
January	2016	6		6	4,597		4,597	742		742
February	2016	6		6	3,864		3,864	623		623
March	2016	0		0	0		0	-		-
April	2016	0		0	0		0	-		-
May	2016	0		0	0		0	-		-
June	2016	7		7	5,385		5,385	828		828
July	2016	7		7	4,446		4,446	684		684
August	2016	7		7	7,057		7,057	1,086		1,086
September	2016	7		7	7,653		7,653	1,177		1,177
October	2016	0		0	0		0	-		-
November	2016	0		0	0		0	-		-
December	2016	7		7	4,348		4,348	669		669
January	2017	6		6	5,149		5,149	844		844
February	2017	0		0	0		0	-		-
March	2017	0		0	0		0	-		-
April	2017	0		0	0		0	-		-
May	2017	6		6	5,487		5,487	900		900
June	2017	6		6	6,182		6,182	1,048		1,048
July	2017	6		6	6,054		6,054	1,026		1,026
August	2017	6		6	6,409		6,409	1,165		1,165
September	2017	6		6	5,674		5,674	1,013		1,013
October	2017	0		0	0		0	-		-
November	2017	0		0	0		0	-		-
December	2017	6		6	5,272		5,272	864		864

Appendix D.11 Non-residential Distributed Generation Program 2012-2019

Table 1		Participation			Net Capacity Savings			Net Capacity Savings / Participant		
Month	Year	Program Participants			Net kW			Net kW/participant		
		VA	NC	System	VA	NC	System	VA	NC	System
January	2018	6		6	5,946		5,946	970		970
February	2018	6		6	5,946		5,946	970		970
March	2018	6		6	5,946		5,946	970		970
April	2018	6		6	5,946		5,946	970		970
May	2018	6		6	5,946		5,946	970		970
June	2018	6		6	5,946		5,946	970		970
July	2018	6		6	5,946		5,946	970		970
August	2018	6		6	5,946		5,946	970		970
September	2018	6		6	5,946		5,946	970		970
October	2018	6		6	5,946		5,946	970		970
November	2018	6		6	5,946		5,946	970		970
December	2018	6		6	5,946		5,946	970		970
January	2019	6		6	6,130		6,130	1,000		1,000
February	2019	6		6	6,130		6,130	1,000		1,000
March	2019	6		6	6,130		6,130	1,000		1,000
April	2019	6		6	6,130		6,130	1,000		1,000
May	2019	6		6	6,130		6,130	1,000		1,000
June	2019	6		6	6,130		6,130	1,000		1,000
July	2019	6		6	6,130		6,130	1,000		1,000
August	2019	6		6	6,130		6,130	1,000		1,000
September	2019	6		6	6,130		6,130	1,000		1,000
October	2019	6		6	6,130		6,130	1,000		1,000
November	2019	6		6	6,130		6,130	1,000		1,000
December	2019	6		6	6,130		6,130	1,000		1,000

	Table 2. EM&V Data by Vintage Year			Annual Peak Shaving Potential			Annual Peak Shaving Potential/Participant		
	Program Participants			Net kW			Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System
2012	19		19	16,051		16,051	843		843
2013	19		19	16,110		16,110	830		830
2014	19		19	14,121		14,121	760		760
2015	6		6	5,457		5,457	895		895
2016	7		7	4,348		4,348	669		669
2017	6		6	5,272		5,272	864		864
2018	6		6	5,946		5,946	970		970
2019	6		6	6,130		6,130	1,000		1,000

NOTES:

1. Non-Residential DG pilot and Program results are combined prior to 2015

Appendix D.12 Residential Lighting Program

PROGRAM: Residential Lighting
 DSM Phase I Program
 Type: Energy Efficiency
 Measure Life: 9.4 years (9 years, 5 months)

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA		NC			System	VA		NC			System		
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
		Σ[A]	Σ[-A retired]		Σ[C]	Σ[-C retired]		E+G							
May	2010	79,585		79,585	-		-	79,585	188,360		188,360	-		-	188,360
June	2010	150,903		150,903	-		-	150,903	357,525		357,525	-		-	357,525
July	2010	310,255		310,255	-		-	310,255	722,782		722,782	-		-	722,782
August	2010	766,242		766,242	-		-	766,242	1,750,793		1,750,793	-		-	1,750,793
September	2010	1,063,193		1,063,193	-		-	1,063,193	2,426,792		2,426,792	-		-	2,426,792
October	2010	1,375,118		1,375,118	-		-	1,375,118	3,135,716		3,135,716	-		-	3,135,716
November	2010	1,727,724		1,727,724	-		-	1,727,724	3,955,858		3,955,858	-		-	3,955,858
December	2010	2,016,479		2,016,479	-		-	2,016,479	4,624,646		4,624,646	-		-	4,624,646
January	2011	2,432,611		2,432,611	-		-	2,432,611	5,589,074		5,589,074	-		-	5,589,074
February	2011	2,671,657		2,671,657	-		-	2,671,657	6,152,434		6,152,434	-		-	6,152,434
March	2011	2,939,176		2,939,176	-		-	2,939,176	6,799,833		6,799,833	-		-	6,799,833
April	2011	3,127,457		3,127,457	-		-	3,127,457	7,257,765		7,257,765	-		-	7,257,765
May	2011	3,289,065		3,289,065	-		-	3,289,065	7,650,796		7,650,796	-		-	7,650,796
June	2011	3,414,487		3,414,487	276		276	3,414,763	7,957,250		7,957,250	615		615	7,957,865
July	2011	3,587,483		3,587,483	4,242		4,242	3,591,725	8,375,196		8,375,196	9,762		9,762	8,384,958
August	2011	3,745,746		3,745,746	8,737		8,737	3,754,483	8,762,509		8,762,509	20,476		20,476	8,782,984
September	2011	3,867,197		3,867,197	14,764		14,764	3,881,961	9,063,621		9,063,621	34,629		34,629	9,098,250
October	2011	3,979,570		3,979,570	20,183		20,183	3,999,753	9,345,498		9,345,498	47,156		47,156	9,392,653
November	2011	4,124,490		4,124,490	29,498		29,498	4,153,988	9,704,393		9,704,393	68,925		68,925	9,773,318
December	2011	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
January	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
February	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
March	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
April	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
May	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
June	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
July	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
August	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
September	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
October	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
November	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
December	2012	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
January	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
February	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
March	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
April	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
May	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
June	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
July	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
August	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
September	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
October	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
November	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
December	2013	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
January	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
February	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
March	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
April	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
May	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
June	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
July	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
August	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
September	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
October	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
November	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564
December	2014	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895		9,935,895	85,669		85,669	10,021,564

Appendix D.12 Residential Lighting Program

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA			NC				System	VA			NC		
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
		Σ[A]	Σ[-A retired]		Σ[C]	Σ[-C retired]									
January	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
February	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
March	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
April	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
May	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
June	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
July	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
August	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
September	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
October	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
November	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
December	2015	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
January	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
February	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
March	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
April	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
May	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
June	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
July	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
August	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
September	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
October	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
November	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
December	2016	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
January	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
February	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
March	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
April	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
May	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
June	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
July	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
August	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
September	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
October	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
November	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
December	2017	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
January	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
February	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
March	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
April	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
May	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
June	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
July	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
August	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
September	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
October	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
November	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
December	2018	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
January	2019	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
February	2019	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
March	2019	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
April	2019	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
May	2019	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
June	2019	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
July	2019	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
August	2019	4,222,509		4,222,509	37,120		37,120	4,259,629	9,935,895					85,669	10,021,564
September	2019	4,222,509	-79,585	4,142,924	37,120		37,120	4,180,044	9,935,895	-188,360			9,747,535	85,669	9,833,204
October	2019	4,222,509	-150,903	4,071,606	37,120		37,120	4,108,726	9,935,895	-357,525			9,578,371	85,669	9,664,039
November	2019	4,222,509	-310,255	3,912,254	37,120		37,120	3,949,374	9,935,895	-722,782			9,213,114	85,669	9,298,782
December	2019	4,222,509	-766,242	3,456,267	37,120		37,120	3,493,387	9,935,895	-1,750,793			8,185,103	85,669	8,270,771

Appendix D.12 Residential Lighting Program

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA			NC		System	VA			NC		System		
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
		Σ[A]	Σ[-A retired]		Σ[C]	Σ[-C retired]									
January	2020	4,222,509	-1,063,193	3,159,316	37,120		37,120	3,196,436	9,935,895	-2,426,792	7,509,103	85,669		85,669	7,594,772
February	2020	4,222,509	-1,375,118	2,847,391	37,120		37,120	2,884,511	9,935,895	-3,135,716	6,800,180	85,669		85,669	6,885,848
March	2020	4,222,509	-1,727,724	2,494,785	37,120		37,120	2,531,905	9,935,895	-3,955,858	5,980,038	85,669		85,669	6,065,706
April	2020	4,222,509	-2,016,479	2,206,030	37,120		37,120	2,243,150	9,935,895	-4,624,646	5,311,249	85,669		85,669	5,396,918
May	2020	4,222,509	-2,432,611	1,789,898	37,120		37,120	1,827,018	9,935,895	-5,589,074	4,346,821	85,669		85,669	4,432,490
June	2020	4,222,509	-2,671,657	1,550,852	37,120		37,120	1,587,972	9,935,895	-6,152,434	3,783,461	85,669		85,669	3,869,130
July	2020	4,222,509	-2,939,176	1,283,333	37,120		37,120	1,320,453	9,935,895	-6,799,833	3,136,063	85,669		85,669	3,221,731
August	2020	4,222,509	-3,127,457	1,095,052	37,120		37,120	1,132,172	9,935,895	-7,257,765	2,678,130	85,669		85,669	2,763,799
September	2020	4,222,509	-3,289,065	933,444	37,120		37,120	970,564	9,935,895	-7,650,796	2,285,100	85,669		85,669	2,370,768
October	2020	4,222,509	-3,414,487	808,022	37,120	-276	36,844	844,866	9,935,895	-7,957,250	1,978,646	85,669	-615	85,053	2,063,699
November	2020	4,222,509	-3,587,483	635,026	37,120	-4,242	32,878	667,904	9,935,895	-8,375,196	1,560,699	85,669	-9,762	75,907	1,636,606
December	2020	4,222,509	-3,745,746	476,763	37,120	-8,737	28,383	505,146	9,935,895	-8,762,509	1,173,386	85,669	-20,476	65,193	1,238,580
January	2021	4,222,509	-3,867,197	355,312	37,120	-14,764	22,356	377,668	9,935,895	-9,063,621	872,275	85,669	-34,629	51,039	923,314
February	2021	4,222,509	-3,979,570	242,939	37,120	-20,183	16,937	259,876	9,935,895	-9,345,498	590,397	85,669	-47,156	38,513	628,911
March	2021	4,222,509	-4,124,490	98,019	37,120	-29,498	7,622	105,641	9,935,895	-9,704,393	231,503	85,669	-68,925	16,744	248,246
April	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
May	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
June	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
July	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
August	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
September	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
October	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
November	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
December	2021	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
January	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
February	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
March	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
April	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
May	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
June	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
July	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
August	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
September	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
October	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
November	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0
December	2022	4,222,509	-4,222,509	0	37,120	-37,120	0	0	9,935,895	-9,935,895	0	85,669	-85,669	0	0

Table 2. EM&V Data Incremental by Vintage Year	Program Participants (Gross)							Energy Savings (Incremental)						
	VA			NC		System	VA			NC		System		
2010			2,016,479			-	2,016,479			17,162,471			-	17,162,471
2011			2,206,030			37,120	2,243,150			41,098,508			267,232	41,365,739
2012			-			-	-			-			-	-

Table 3. EM&V Data Annualized by Vintage Year	Program Participants (Gross)							Energy Savings (Annualized)						
	VA			NC		System	VA			NC		System		
2010			2,016,479			-	2,016,479			55,495,756			-	55,495,756
2011			2,206,030			37,120	2,243,150			63,734,988			1,028,025	64,763,013
2012			-			-	-			-			-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)	Program Participants (Gross)							Energy Savings for Program Performance Incentives (PPI)						
	VA			NC		System	VA			NC		System		
2010			2,016,479			-	2,016,479			17,162,471			-	17,162,471
2011			4,222,509			37,120	4,259,629			96,594,263			267,232	96,861,495
2012			4,222,509			37,120	4,259,629			119,230,743			1,028,025	120,258,768
2013			2,206,030			37,120	2,243,150			63,734,988			1,028,025	64,763,013
2014			-			-	-			-			-	-
2015			-			-	-			-			-	-
2016			-			-	-			-			-	-
2017			N/A			N/A	N/A			N/A			N/A	N/A

Appendix D.12 Residential Lighting Program

Capacity Savings							Energy Savings / Participant			Capacity Savings / Participant		
Net KW							Net kWh/Participant for IRP			Net kW/Participant for IRP		
VA			NC		System		VA	NC	System	VA	NC	System
VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP	VA	NC	System	VA	NC	System
12,971	-3,167	9,803	112		112	9,915	2.38	2.31	2.38	0.003	0.003	0.001
12,971	-4,093	8,878	112		112	8,990	2.39	2.31	2.39	0.003	0.003	0.001
12,971	-5,164	7,807	112		112	7,919	2.40	2.31	2.40	0.003	0.003	0.001
12,971	-6,037	6,934	112		112	7,046	2.41	2.31	2.41	0.003	0.003	0.001
12,971	-7,296	5,675	112		112	5,787	2.43	2.31	2.43	0.003	0.003	0.001
12,971	-8,031	4,940	112		112	5,052	2.44	2.31	2.44	0.003	0.003	0.001
12,971	-8,876	4,094	112		112	4,206	2.44	2.31	2.44	0.003	0.003	0.001
12,971	-9,474	3,497	112		112	3,608	2.45	2.31	2.44	0.003	0.003	0.001
12,971	-9,987	2,983	112		112	3,095	2.45	2.31	2.44	0.003	0.003	0.001
12,971	-10,388	2,583	112	-1	111	2,694	2.45	2.31	2.44	0.003	0.003	0.001
12,971	-10,933	2,038	112	-13	99	2,137	2.46	2.31	2.45	0.003	0.003	0.001
12,971	-11,439	1,532	112	-27	85	1,617	2.46	2.30	2.45	0.003	0.003	0.001
12,971	-11,832	1,139	112	-45	67	1,206	2.45	2.28	2.44	0.003	0.003	0.001
12,971	-12,200	771	112	-62	50	821	2.43	2.27	2.42	0.003	0.003	0.001
12,971	-12,668	302	112	-90	22	324	2.36	2.20	2.35	0.003	0.003	0.001
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-
12,971	-12,971	0	112	-112	0	0	-	-	-	-	-	-

Net KW						Incremental Energy Savings / Participant Net kWh/Participant			Incremental Capacity Savings / Participant Net kW/Participant		
VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
6,037	-	6,037	9	-	9	0.003	-		0.003	-	0.003
6,934	112	7,046	19	7	18	0.003	0.003		0.003	0.003	0.003
-	-	-	-	-	-	-	-	-	-	-	-

Net KW						Annualized Energy Savings / Participant Net kWh/Participant			Annualized Capacity Savings / Participant Net kW/Participant		
VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
6,037	-	6,037	28	-	28	0.003	-		0.003	-	0.003
6,934	112	7,046	29	28	29	0.003	0.003		0.003	0.003	0.003
-	-	-	-	-	-	-	-	-	-	-	-

Net kW						PPI Energy Savings/Participant Net kWh/Participant			PPI Capacity Savings/Participant Net kW/Participant		
VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
6,037	-	6,037	9	-	9	0.003	-		0.003	-	0.003
12,971	112	13,083	23	7	23	0.003	0.003		0.003	0.003	0.003
12,971	112	13,083	28	28	28	0.003	0.003		0.003	0.003	0.003
6,934	112	7,046	29	28	29	0.003	0.003		0.003	0.003	0.003
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Appendix D.12 Residential Lighting Program

Table 5. EM&V Data Accumulated through Vintage Year (for IRP)	Program Participants (Gross)						Energy Savings for Integrated Resource Planning (IRP)					
							Net kWh					
		VA			NC	System		VA			NC	System
2010		2,016,479			-	2,016,479		17,162,471			-	17,162,471
2011		4,222,509			37,120	4,259,629		96,594,263			267,232	96,861,495
2012		4,222,509			37,120	4,259,629		119,230,743			1,028,025	120,258,768
2013		4,222,509			37,120	4,259,629		119,230,743			1,028,025	120,258,768
2014		4,222,509			37,120	4,259,629		119,230,743			1,028,025	120,258,768
2015		4,222,509			37,120	4,259,629		119,230,743			1,028,025	120,258,768
2016		4,222,509			37,120	4,259,629		119,230,743			1,028,025	120,258,768
2017		4,222,509			37,120	4,259,629		119,230,743			1,028,025	120,258,768
2018		4,222,509			37,120	4,259,629		119,230,743			1,028,025	120,258,768
2019		3,456,267			37,120	3,493,387		116,211,284			1,028,025	117,239,309
2020		476,763			28,383	505,146		46,542,874			997,172	47,540,046
2021		-			-	-		1,694,175			106,296	1,800,471
2022		-			-	-		-			-	-

Table 6. EM&V Data Accumulated through Vintage Year (for NC Lost Revenue)	Program Participants (Gross)						Energy Savings for NC Lost Revenue					
							Net kWh					
		VA			NC	System		VA			NC	System
2010		2,016,479			-	2,016,479		17,162,471			-	17,162,471
2011		4,222,509			37,120	4,259,629		96,594,263			267,232	96,861,495
2012		4,222,509			37,120	4,259,629		119,230,743			1,028,025	120,258,768
2013		4,222,509			37,120	4,259,629		106,692,919			1,028,025	107,720,943
2014		2,206,030			37,120	2,243,150		27,947,729			846,462	28,794,191
2015		-			-	-		-			-	-
2016		-			-	-		-			-	-
2017		N/A			N/A	N/A		N/A			N/A	N/A

Table 7. EM&V Data Cumulative through Vintage Year (Lifetime)	Program Participants (Gross)						Lifetime Energy Savings					
							Net kWh					
		VA			NC	System		VA			NC	System
2010		2,016,479			-	2,016,479		17,162,471			-	17,162,471
2011		4,222,509			37,120	4,259,629		113,756,735			267,232	114,023,966
2012		4,222,509			37,120	4,259,629		232,987,478			1,295,257	234,282,734
2013		4,222,509			37,120	4,259,629		352,218,221			2,323,281	354,541,503
2014		4,222,509			37,120	4,259,629		471,448,965			3,351,306	474,800,271
2015		4,222,509			37,120	4,259,629		590,679,708			4,379,331	595,059,039
2016		4,222,509			37,120	4,259,629		709,910,452			5,407,356	715,317,808
2017		4,222,509			37,120	4,259,629		829,141,195			6,435,381	835,576,576
2018		4,222,509			37,120	4,259,629		948,371,939			7,463,406	955,835,344
2019		4,222,509			37,120	4,259,629		1,064,583,223			8,491,430	1,073,074,653
2020		4,222,509			37,120	4,259,629		1,111,126,097			9,488,602	1,120,614,700
2021		4,222,509			37,120	4,259,629		1,112,820,272			9,594,899	1,122,415,171
2022		4,222,509			37,120	4,259,629		1,112,820,272			9,594,899	1,122,415,171

Appendix D.12 Residential Lighting Program

Net kW						IRP Energy Savings/Participant Net kWh/Participant			IRP Capacity Savings/Participant Net kW/Participant		
	VA		NC	System		VA	NC	System	VA	NC	System
	6,037		-	6,037		9	-	9	0.003	-	0.003
	12,971		112	13,083		23	7	23	0.003	0.003	0.003
	12,971		112	13,083		28	28	28	0.003	0.003	0.003
	12,971		112	13,083		28	28	28	0.003	0.003	0.003
	12,971		112	13,083		28	28	28	0.003	0.003	0.003
	12,971		112	13,083		28	28	28	0.003	0.003	0.003
	12,971		112	13,083		28	28	28	0.003	0.003	0.003
	12,971		112	13,083		28	28	28	0.003	0.003	0.003
	12,971		112	13,083		28	28	28	0.003	0.003	0.003
	10,686		112	10,798		34	28	34	0.003	0.003	0.003
	1,532		85	1,617		98	35	94	0.003	0.003	0.003
	-		-	-		-	-	-	-	-	-
	-		-	-		-	-	-	-	-	-

Net kW						NC Lost Revenue Savings/Participant Net kWh/Participant			NC Lost Revenue Capacity Savings/Participant Net kW/Participant		
VA			NC	System		VA	NC	System	VA	NC	System
						9	-	9			
						23	7	23			
						28	28	28			
						25	28	25			
						13	23	13			
						-	-	-			
						-	-	-			
						N/A	N/A	N/A			

Net kW						Lifetime Energy Savings/Participant Net kWh/Participant			Lifetime Capacity Savings/Participant Net kW/Participant		
	VA		NC	System		VA	NC	System	VA	NC	System
	6,037		-	6,037		9	-	9	0.003	-	0.003
	12,971		112	13,083		27	7	27	0.003	0.003	0.003
	12,971		112	13,083		55	35	55	0.003	0.003	0.003
	12,971		112	13,083		83	63	83	0.003	0.003	0.003
	12,971		112	13,083		112	90	111	0.003	0.003	0.003
	12,971		112	13,083		140	118	140	0.003	0.003	0.003
	12,971		112	13,083		168	146	168	0.003	0.003	0.003
	12,971		112	13,083		196	173	196	0.003	0.003	0.003
	12,971		112	13,083		225	201	224	0.003	0.003	0.003
	12,971		112	13,083		252	229	252	0.003	0.003	0.003
	12,971		112	13,083		263	256	263	0.003	0.003	0.003
	12,971		112	13,083		264	258	264	0.003	0.003	0.003
	12,971		112	13,083		264	258	264	0.003	0.003	0.003

Appendix D.13 Residential Low-income Program

PROGRAM: Residential Low Income
 DSM Phase I Program
 Type: Energy Efficiency
 Measure Life: 13.6 years (13 years, 7 months)

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA			NC		System	VA			NC		System		
		VA Monthly Cum. Σ[A]	VA Monthly Cum. Retired Σ[-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum. Σ[C]	NC Monthly Cum. Retired Σ[-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
April	2010	16		16	-		16	564		564	-		564		
May	2010	130		130	-		130	5,198		5,198	-		5,198		
June	2010	310		310	-		310	12,789		12,789	-		12,789		
July	2010	490		490	-		490	21,891		21,891	-		21,891		
August	2010	684		684	-		684	31,401		31,401	-		31,401		
September	2010	872		872	-		872	39,373		39,373	-		39,373		
October	2010	1,061		1,061	-		1,061	46,774		46,774	-		46,774		
November	2010	1,241		1,241	-		1,241	54,741		54,741	-		54,741		
December	2010	1,431		1,431	-		1,431	63,911		63,911	-		63,911		
January	2011	1,698		1,698	0	0	1,698	73,749		73,749	0	0	73,749		
February	2011	1,979		1,979	0	0	1,979	85,980		85,980	0	0	85,980		
March	2011	2,284		2,284	0	0	2,284	100,256		100,256	0	0	100,256		
April	2011	2,628		2,628	0	0	2,628	117,924		117,924	0	0	117,924		
May	2011	2,976		2,976	0	0	2,976	133,569		133,569	0	0	133,569		
June	2011	3,363		3,363	0	0	3,363	151,652		151,652	0	0	151,652		
July	2011	3,658		3,658	18	18	3,676	161,520		161,520	504	504	162,023		
August	2011	4,000		4,000	52	52	4,052	173,982		173,982	1,449	1,449	175,431		
September	2011	4,344		4,344	73	73	4,417	189,028		189,028	2,099	2,099	191,126		
October	2011	4,743		4,743	96	96	4,839	205,183		205,183	2,849	2,849	208,032		
November	2011	5,101		5,101	119	119	5,220	219,180		219,180	3,734	3,734	222,914		
December	2011	5,344		5,344	207	207	5,551	228,533		228,533	7,349	7,349	235,883		
January	2012	5,689		5,689	262	262	5,951	242,218		242,218	9,859	9,859	252,077		
February	2012	6,029		6,029	308	308	6,337	256,953		256,953	11,961	11,961	268,914		
March	2012	6,445		6,445	343	343	6,788	274,292		274,292	13,396	13,396	287,687		
April	2012	6,830		6,830	363	363	7,193	289,978		289,978	14,064	14,064	304,042		
May	2012	7,173		7,173	363	363	7,536	304,250		304,250	14,064	14,064	318,313		
June	2012	7,360		7,360	363	363	7,723	311,138		311,138	14,064	14,064	325,202		
July	2012	7,471		7,471	363	363	7,834	315,197		315,197	14,064	14,064	329,261		
August	2012	7,531		7,531	363	363	7,894	317,676		317,676	14,064	14,064	331,740		
September	2012	7,580		7,580	363	363	7,943	318,845		318,845	14,064	14,064	332,909		
October	2012	7,629		7,629	363	363	7,992	320,599		320,599	14,064	14,064	334,663		
November	2012	7,700		7,700	363	363	8,063	322,984		322,984	14,064	14,064	337,048		
December	2012	7,724		7,724	363	363	8,087	323,724		323,724	14,064	14,064	337,788		
January	2013	7,860		7,860	376	376	8,236	330,738		330,738	14,809	14,809	345,548		
February	2013	8,028		8,028	389	389	8,417	340,147		340,147	15,439	15,439	355,585		
March	2013	8,216		8,216	402	402	8,618	349,993		349,993	16,123	16,123	366,117		
April	2013	8,428		8,428	405	405	8,833	361,314		361,314	16,211	16,211	377,525		
May	2013	8,617		8,617	408	408	9,025	371,064		371,064	16,403	16,403	387,466		
June	2013	8,764		8,764	408	408	9,172	379,213		379,213	16,403	16,403	395,615		
July	2013	8,954		8,954	409	409	9,363	389,790		389,790	16,428	16,428	406,218		
August	2013	9,126		9,126	434	434	9,560	397,101		397,101	17,488	17,488	414,589		
September	2013	9,268		9,268	449	449	9,717	403,951		403,951	18,078	18,078	422,029		
October	2013	9,449		9,449	463	463	9,912	413,134		413,134	18,886	18,886	432,020		
November	2013	9,565		9,565	474	474	10,039	419,102		419,102	19,682	19,682	438,784		
December	2013	9,607		9,607	483	483	10,090	421,340		421,340	20,317	20,317	441,657		
January	2014	9,765		9,765	492	492	10,257	428,689		428,689	20,713	20,713	449,402		
February	2014	9,915		9,915	504	504	10,419	435,270		435,270	21,252	21,252	456,522		
March	2014	10,075		10,075	514	514	10,589	442,536		442,536	21,484	21,484	464,020		
April	2014	10,227		10,227	525	525	10,752	448,837		448,837	22,028	22,028	470,865		
May	2014	10,387		10,387	535	535	10,922	455,446		455,446	22,388	22,388	477,834		
June	2014	10,547		10,547	547	547	11,094	461,713		461,713	22,786	22,786	484,499		
July	2014	10,707		10,707	561	561	11,268	468,987		468,987	23,418	23,418	492,404		
August	2014	10,869		10,869	572	572	11,441	475,916		475,916	23,903	23,903	499,819		
September	2014	11,033		11,033	584	584	11,617	483,943		483,943	24,488	24,488	508,431		
October	2014	11,186		11,186	596	596	11,782	491,094		491,094	24,997	24,997	516,091		
November	2014	11,376		11,376	603	603	11,979	500,123		500,123	25,279	25,279	525,402		
December	2014	11,487		11,487	603	603	12,090	505,534		505,534	25,279	25,279	530,813		
January	2015	11,487		11,487	649	649	12,136	505,534		505,534	26,796	26,796	532,330		
February	2015	11,487		11,487	699	699	12,186	505,534		505,534	28,797	28,797	534,332		
March	2015	11,487		11,487	764	764	12,186	505,534		505,534	31,243	31,243	536,777		
April	2015	11,487		11,487	831	831	12,251	505,534		505,534	33,850	33,850	539,384		
May	2015	11,487		11,487	881	881	12,318	505,534		505,534	35,730	35,730	541,264		
June	2015	11,487		11,487	928	928	12,368	505,534		505,534	37,709	37,709	543,243		
July	2015	11,487		11,487	978	978	12,415	505,534		505,534	39,667	39,667	545,201		
August	2015	11,487		11,487	1,040	1,040	12,465	505,534		505,534	42,168	42,168	547,702		
September	2015	11,487		11,487	1,100	1,100	12,527	505,534		505,534	45,014	45,014	550,549		
October	2015	11,487		11,487	1,160	1,160	12,587	505,534		505,534	47,454	47,454	552,989		
November	2015	11,487		11,487	1,217	1,217	12,647	505,534		505,534	49,473	49,473	555,007		
December	2015	11,487		11,487	1,256	1,256	12,704	505,534		505,534	51,272	51,272	556,807		

Appendix D.13 Residential Low-income Program

Table 1		Capacity Savings							Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net KW							Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA			NC				System	VA	NC	System	VA	NC	System
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP							
April	2010	2		2	-			102	35	-	35	0.14	-	6.35	
May	2010	23		23	-			143	40	-	40	0.18	-	1.10	
June	2010	61		61	-			184	41	-	41	0.20	-	0.59	
July	2010	102		102	-			226	45	-	45	0.21	-	0.46	
August	2010	143		143	-			266	46	-	46	0.21	-	0.39	
September	2010	184		184	-			304	45	-	45	0.21	-	0.35	
October	2010	226		226	-			304	44	-	44	0.21	-	0.29	
November	2010	266		266	-			347	44	-	44	0.21	-	0.28	
December	2010	304		304	-			407	45	-	45	0.21	-	0.28	
January	2011	304		304	0		0	544	43	-	43	0.18	-	0.32	
February	2011	347		347	0		0	601	43	-	43	0.18	-	0.30	
March	2011	407		407	0		0	671	44	-	44	0.18	-	0.29	
April	2011	544		544	0		0	706	45	-	45	0.21	-	0.27	
May	2011	601		601	0		0	747	45	-	45	0.20	-	0.25	
June	2011	671		671	0		0	795	45	-	45	0.20	-	0.24	
July	2011	706		706	1		1	855	44	28	44	0.19	0.08	0.23	
August	2011	747		747	5		5	914	43	28	43	0.19	0.09	0.23	
September	2011	795		795	8		8	947	44	29	43	0.18	0.11	0.21	
October	2011	854		854	12		12	951	43	30	43	0.18	0.12	0.20	
November	2011	909		909	15		15	990	43	31	43	0.18	0.12	0.19	
December	2011	939		939	27		27	1,038	43	36	42	0.18	0.13	0.19	
January	2012	939		939	33		33	1,118	43	38	42	0.17	0.13	0.19	
February	2012	975		975	38		38	1,157	43	39	42	0.16	0.12	0.18	
March	2012	1,011		1,011	41		41	1,176	43	39	42	0.16	0.12	0.17	
April	2012	1,085		1,085	43		43	1,187	42	39	42	0.16	0.12	0.16	
May	2012	1,118		1,118	43		43	1,192	42	39	42	0.16	0.12	0.16	
June	2012	1,134		1,134	43		43	1,195	42	39	42	0.15	0.12	0.15	
July	2012	1,144		1,144	43		43	1,199	42	39	42	0.15	0.12	0.15	
August	2012	1,150		1,150	43		43	1,203	42	39	42	0.15	0.12	0.15	
September	2012	1,152		1,152	43		43	1,205	42	39	42	0.15	0.12	0.15	
October	2012	1,156		1,156	43		43	1,222	42	39	42	0.15	0.12	0.15	
November	2012	1,161		1,161	43		43	1,222	42	39	42	0.15	0.12	0.15	
December	2012	1,162		1,162	43		43	1,246	42	39	42	0.15	0.12	0.15	
January	2013	1,179		1,179	45		45	1,301	42	39	42	0.15	0.12	0.16	
February	2013	1,179		1,179	47		47	1,326	42	40	42	0.15	0.12	0.16	
March	2013	1,203		1,203	49		49	1,350	43	40	42	0.15	0.12	0.16	
April	2013	1,256		1,256	49		49	1,377	43	40	43	0.15	0.12	0.16	
May	2013	1,279		1,279	50		50	1,393	43	40	43	0.15	0.12	0.15	
June	2013	1,301		1,301	50		50	1,410	43	40	43	0.15	0.12	0.15	
July	2013	1,328		1,328	50		50	1,434	44	40	43	0.15	0.12	0.15	
August	2013	1,344		1,344	53		53	1,452	44	40	43	0.15	0.12	0.15	
September	2013	1,361		1,361	54		54	1,459	44	40	43	0.15	0.12	0.15	
October	2013	1,384		1,384	57		57	1,462	44	41	44	0.15	0.12	0.15	
November	2013	1,399		1,399	60		60	1,482	44	42	44	0.15	0.13	0.15	
December	2013	1,405		1,405	62		62	1,519	44	42	44	0.15	0.13	0.15	
January	2014	1,405		1,405	70		70	1,543	44	42	44	0.14	0.14	0.15	
February	2014	1,422		1,422	72		72	1,560	44	42	44	0.14	0.14	0.15	
March	2014	1,458		1,458	73		73	1,574	44	42	44	0.14	0.14	0.15	
April	2014	1,473		1,473	74		74	1,547	44	42	44	0.14	0.14	0.14	
May	2014	1,488		1,488	75		75	1,563	44	42	44	0.14	0.14	0.14	
June	2014	1,501		1,501	76		76	1,577	44	42	44	0.14	0.14	0.14	
July	2014	1,517		1,517	78		78	1,595	44	42	44	0.14	0.14	0.14	
August	2014	1,533		1,533	79		79	1,612	44	42	44	0.14	0.14	0.14	
September	2014	1,551		1,551	80		80	1,631	44	42	44	0.14	0.14	0.14	
October	2014	1,568		1,568	82		82	1,649	44	42	44	0.14	0.14	0.14	
November	2014	1,588		1,588	82		82	1,670	44	42	44	0.14	0.14	0.14	
December	2014	1,600		1,600	82		82	1,682	44	42	44	0.14	0.14	0.14	
January	2015	1,600		1,600	86		86	1,685	44	41	44	0.14	0.13	0.14	
February	2015	1,600		1,600	91		91	1,690	44	41	44	0.14	0.13	0.14	
March	2015	1,600		1,600	97		97	1,697	44	41	44	0.14	0.13	0.14	
April	2015	1,600		1,600	103		103	1,703	44	41	44	0.14	0.12	0.14	
May	2015	1,600		1,600	108		108	1,708	44	41	44	0.14	0.12	0.14	
June	2015	1,600		1,600	113		113	1,713	44	41	44	0.14	0.12	0.14	
July	2015	1,600		1,600	118		118	1,718	44	41	44	0.14	0.12	0.14	
August	2015	1,600		1,600	125		125	1,725	44	41	44	0.14	0.12	0.14	
September	2015	1,600		1,600	134		134	1,734	44	41	44	0.14	0.12	0.14	
October	2015	1,600		1,600	142		142	1,742	44	41	44	0.14	0.12	0.14	
November	2015	1,600		1,600	148		148	1,747	44	41	44	0.14	0.12	0.14	
December	2015	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14	

Appendix D.13 Residential Low-income Program

Table 1		Participation							Energy Savings								
Month	Year	Program Participants							Net kWh								
		VA			NC				System	VA			NC				System
		VA Monthly Cum. $\Sigma[A]$	VA Monthly Cum. Retired $\Sigma[-A \text{ retired}]$	VA Cum. for IRP (New + Retired) $[E] = \Sigma[A] + \Sigma[-A \text{ retired}]$	NC Monthly Cum. $\Sigma[C]$	NC Monthly Cum. Retired $\Sigma[-C \text{ retired}]$	NC Cum. for IRP (New + Retired) $[G] = \Sigma[C] + \Sigma[-C \text{ retired}]$	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP		
January	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
February	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
March	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
April	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
May	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
June	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
July	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
August	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
September	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
October	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
November	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
December	2016	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
January	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
February	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
March	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
April	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
May	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
June	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
July	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
August	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
September	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
October	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
November	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
December	2017	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
January	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
February	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
March	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
April	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
May	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
June	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
July	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
August	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
September	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
October	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
November	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
December	2018	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
January	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
February	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
March	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
April	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
May	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
June	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
July	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
August	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
September	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
October	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
November	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
December	2019	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
January	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
February	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
March	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
April	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
May	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
June	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
July	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
August	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
September	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
October	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
November	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		
December	2020	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807		

Appendix D.13 Residential Low-income Program

Table 1		Capacity Savings						Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net KW			System			Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP	VA	NC	System	VA	NC	System
January	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
February	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
March	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
April	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
May	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
June	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
July	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
August	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
September	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
October	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
November	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
December	2016	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
January	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
February	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
March	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
April	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
May	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
June	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
July	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
August	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
September	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
October	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
November	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
December	2017	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
January	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
February	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
March	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
April	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
May	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
June	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
July	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
August	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
September	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
October	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
November	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
December	2018	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
January	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
February	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
March	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
April	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
May	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
June	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
July	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
August	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
September	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
October	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
November	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
December	2019	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
January	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
February	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
March	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
April	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
May	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
June	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
July	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
August	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
September	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
October	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
November	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
December	2020	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14

Appendix D.13 Residential Low-income Program

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA		NC			System	VA		NC			System		
		VA Monthly Cum. $\Sigma[A]$	VA Monthly Cum. Retired $\Sigma[-A \text{ retired}]$	VA Cum. for IRP (New + Retired) $[E] = \Sigma[A] + \Sigma[-A \text{ retired}]$	NC Monthly Cum. $\Sigma[C]$	NC Monthly Cum. Retired $\Sigma[-C \text{ retired}]$	NC Cum. for IRP (New + Retired) $[G] = \Sigma[C] + \Sigma[-C \text{ retired}]$	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
January	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
February	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
March	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
April	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
May	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
June	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
July	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
August	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
September	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
October	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
November	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
December	2021	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
January	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
February	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
March	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
April	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
May	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
June	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
July	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
August	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
September	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
October	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
November	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
December	2022	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
January	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
February	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
March	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
April	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
May	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
June	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
July	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
August	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
September	2023	11,487		11,487	1,256		1,256	12,743	505,534		505,534	51,272		51,272	556,807
October	2023	11,487	-16	11,471	1,256		1,256	12,727	505,534	-564	504,970	51,272		51,272	556,243
November	2023	11,487	-130	11,357	1,256		1,256	12,613	505,534	-5,198	500,336	51,272		51,272	551,608
December	2023	11,487	-310	11,177	1,256		1,256	12,433	505,534	-12,789	492,745	51,272		51,272	544,017
January	2024	11,487	-490	10,997	1,256		1,256	12,253	505,534	-21,891	483,643	51,272		51,272	534,916
February	2024	11,487	-684	10,803	1,256		1,256	12,059	505,534	-31,401	474,133	51,272		51,272	525,406
March	2024	11,487	-872	10,615	1,256		1,256	11,871	505,534	-39,373	466,162	51,272		51,272	517,434
April	2024	11,487	-1,061	10,426	1,256		1,256	11,682	505,534	-46,774	458,760	51,272		51,272	510,032
May	2024	11,487	-1,241	10,246	1,256		1,256	11,502	505,534	-54,741	450,793	51,272		51,272	502,065
June	2024	11,487	-1,431	10,056	1,256		1,256	11,312	505,534	-63,911	441,623	51,272		51,272	492,896
July	2024	11,487	-1,698	9,789	1,256		1,256	11,045	505,534	-73,749	431,785	51,272		51,272	483,057
August	2024	11,487	-1,979	9,508	1,256		1,256	10,764	505,534	-85,980	419,554	51,272		51,272	470,827
September	2024	11,487	-2,284	9,203	1,256		1,256	10,459	505,534	-100,256	405,278	51,272		51,272	456,550
October	2024	11,487	-2,628	8,859	1,256		1,256	10,115	505,534	-117,924	387,610	51,272		51,272	438,883
November	2024	11,487	-2,976	8,511	1,256		1,256	9,767	505,534	-133,569	371,965	51,272		51,272	423,237
December	2024	11,487	-3,363	8,124	1,256		1,256	9,380	505,534	-151,652	353,882	51,272		51,272	405,155
January	2025	11,487	-3,658	7,829	1,256		1,238	9,067	505,534	-161,520	344,015	51,272	-504	50,769	394,783
February	2025	11,487	-4,000	7,487	1,256		1,204	8,691	505,534	-173,982	331,552	51,272	-1,449	49,824	381,375
March	2025	11,487	-4,344	7,143	1,256		1,183	8,326	505,534	-189,028	316,506	51,272	-2,099	49,174	365,680
April	2025	11,487	-4,743	6,744	1,256		1,160	7,904	505,534	-205,183	300,351	51,272	-2,849	48,423	348,774
May	2025	11,487	-5,101	6,386	1,256		1,137	7,523	505,534	-219,180	286,354	51,272	-3,734	47,539	333,893
June	2025	11,487	-5,344	6,143	1,256		1,049	7,192	505,534	-228,533	277,001	51,272	-7,349	43,923	320,924
July	2025	11,487	-5,689	5,798	1,256		994	6,792	505,534	-242,218	263,316	51,272	-9,859	41,413	304,729
August	2025	11,487	-6,029	5,458	1,256		948	6,406	505,534	-256,953	248,581	51,272	-11,961	39,311	287,893
September	2025	11,487	-6,445	5,042	1,256		913	5,955	505,534	-274,292	231,242	51,272	-13,396	37,877	269,119
October	2025	11,487	-6,830	4,657	1,256		893	5,550	505,534	-289,978	215,557	51,272	-14,064	37,209	252,765
November	2025	11,487	-7,173	4,314	1,256		893	5,207	505,534	-304,250	201,285	51,272	-14,064	37,209	238,493
December	2025	11,487	-7,360	4,127	1,256		893	5,020	505,534	-311,138	194,396	51,272	-14,064	37,209	231,605

Appendix D.13 Residential Low-income Program

Table 1		Capacity Savings						Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net KW			System			Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP	VA	NC	System	VA	NC	System
January	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
February	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
March	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
April	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
May	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
June	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
July	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
August	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
September	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
October	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
November	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
December	2021	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
January	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
February	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
March	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
April	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
May	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
June	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
July	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
August	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
September	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
October	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
November	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
December	2022	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
January	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
February	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
March	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
April	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
May	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
June	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
July	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
August	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
September	2023	1,600		1,600	154		154	1,754	44	41	44	0.14	0.12	0.14
October	2023	1,600	-2	1,597	154		154	1,751	44	41	44	0.14	0.12	0.14
November	2023	1,600	-23	1,576	154		154	1,730	44	41	44	0.14	0.12	0.14
December	2023	1,600	-61	1,539	154		154	1,693	44	41	44	0.14	0.12	0.14
January	2024	1,600	-102	1,498	154		154	1,652	44	41	44	0.14	0.12	0.13
February	2024	1,600	-143	1,457	154		154	1,610	44	41	44	0.14	0.12	0.13
March	2024	1,600	-184	1,416	154		154	1,570	44	41	44	0.14	0.12	0.13
April	2024	1,600	-226	1,374	154		154	1,528	44	41	44	0.14	0.12	0.13
May	2024	1,600	-266	1,334	154		154	1,488	44	41	44	0.14	0.12	0.13
June	2024	1,600	-304	1,296	154		154	1,449	44	41	44	0.14	0.12	0.13
July	2024	1,600	-304	1,296	154		154	1,449	44	41	44	0.14	0.12	0.13
August	2024	1,600	-347	1,252	154		154	1,406	44	41	44	0.14	0.12	0.13
September	2024	1,600	-407	1,192	154		154	1,346	44	41	44	0.14	0.12	0.13
October	2024	1,600	-544	1,056	154		154	1,210	44	41	43	0.14	0.12	0.12
November	2024	1,600	-601	999	154		154	1,152	44	41	43	0.14	0.12	0.12
December	2024	1,600	-671	928	154		154	1,082	44	41	43	0.14	0.12	0.12
January	2025	1,600	-706	893	154	-1	152	1,046	44	41	44	0.14	0.12	0.12
February	2025	1,600	-747	852	154	-5	149	1,001	44	41	44	0.14	0.12	0.12
March	2025	1,600	-795	804	154	-8	145	950	44	41	44	0.14	0.12	0.11
April	2025	1,600	-854	746	154	-12	142	888	44	41	44	0.14	0.12	0.11
May	2025	1,600	-909	691	154	-15	139	830	44	41	44	0.14	0.12	0.11
June	2025	1,600	-939	661	154	-27	127	788	44	41	45	0.14	0.12	0.11
July	2025	1,600	-939	661	154	-33	121	782	44	41	45	0.14	0.12	0.12
August	2025	1,600	-975	625	154	-38	115	740	44	41	45	0.14	0.12	0.12
September	2025	1,600	-1,011	589	154	-41	112	701	44	41	45	0.14	0.12	0.12
October	2025	1,600	-1,085	515	154	-43	111	626	44	41	46	0.14	0.12	0.11
November	2025	1,600	-1,118	481	154	-43	111	592	44	41	46	0.14	0.12	0.11
December	2025	1,600	-1,134	465	154	-43	111	576	44	41	46	0.14	0.12	0.11

Appendix D.13 Residential Low-income Program

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA		NC			System	VA		NC			System		
		VA Monthly Cum. Σ[A]	VA Monthly Cum. Retired Σ[-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum. Σ[C]	NC Monthly Cum. Retired Σ[-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
January	2026	11,487	-7,471	4,016	1,256	-363	893	4,909	505,534	-315,197	190,337	51,272	-14,064	37,209	227,546
February	2026	11,487	-7,531	3,956	1,256	-363	893	4,849	505,534	-317,676	187,858	51,272	-14,064	37,209	225,066
March	2026	11,487	-7,580	3,907	1,256	-363	893	4,800	505,534	-318,845	186,689	51,272	-14,064	37,209	223,898
April	2026	11,487	-7,629	3,858	1,256	-363	893	4,751	505,534	-320,599	184,935	51,272	-14,064	37,209	222,144
May	2026	11,487	-7,700	3,787	1,256	-363	893	4,680	505,534	-322,984	182,550	51,272	-14,064	37,209	219,759
June	2026	11,487	-7,724	3,763	1,256	-363	893	4,656	505,534	-323,724	181,810	51,272	-14,064	37,208	219,019
July	2026	11,487	-7,860	3,627	1,256	-376	880	4,507	505,534	-330,738	174,796	51,272	-14,809	36,463	211,259
August	2026	11,487	-8,028	3,459	1,256	-389	867	4,326	505,534	-340,147	165,387	51,272	-15,439	35,834	201,221
September	2026	11,487	-8,216	3,271	1,256	-402	854	4,125	505,534	-349,993	155,541	51,272	-16,123	35,149	190,690
October	2026	11,487	-8,428	3,059	1,256	-405	851	3,910	505,534	-361,314	144,220	51,272	-16,211	35,061	179,281
November	2026	11,487	-8,617	2,870	1,256	-408	848	3,718	505,534	-371,064	134,470	51,272	-16,403	34,870	169,340
December	2026	11,487	-8,764	2,723	1,256	-408	848	3,571	505,534	-379,213	126,322	51,272	-16,403	34,870	161,191
January	2027	11,487	-8,954	2,533	1,256	-409	847	3,380	505,534	-389,790	115,744	51,272	-16,428	34,844	150,589
February	2027	11,487	-9,126	2,361	1,256	-434	822	3,183	505,534	-397,101	108,433	51,272	-17,488	33,785	142,217
March	2027	11,487	-9,268	2,219	1,256	-449	807	3,026	505,534	-403,951	101,583	51,272	-18,078	33,194	134,777
April	2027	11,487	-9,449	2,038	1,256	-463	793	2,831	505,534	-413,134	92,401	51,272	-18,886	32,386	124,787
May	2027	11,487	-9,565	1,922	1,256	-474	782	2,704	505,534	-419,102	86,433	51,272	-19,682	31,590	118,023
June	2027	11,487	-9,607	1,880	1,256	-483	773	2,653	505,534	-421,340	84,194	51,272	-20,317	30,955	115,150
July	2027	11,487	-9,765	1,722	1,256	-492	764	2,486	505,534	-428,689	76,845	51,272	-20,713	30,559	107,404
August	2027	11,487	-9,915	1,572	1,256	-504	752	2,324	505,534	-435,270	70,264	51,272	-21,252	30,021	100,285
September	2027	11,487	-10,075	1,412	1,256	-514	742	2,154	505,534	-442,536	62,998	51,272	-21,484	29,788	92,787
October	2027	11,487	-10,227	1,260	1,256	-525	731	1,991	505,534	-448,837	56,698	51,272	-22,028	29,244	85,942
November	2027	11,487	-10,387	1,100	1,256	-535	721	1,821	505,534	-455,446	50,088	51,272	-22,388	28,884	78,972
December	2027	11,487	-10,547	940	1,256	-547	709	1,649	505,534	-461,713	43,821	51,272	-22,786	28,486	72,307
January	2028	11,487	-10,707	780	1,256	-561	695	1,475	505,534	-468,987	36,548	51,272	-23,418	27,855	64,402
February	2028	11,487	-10,869	618	1,256	-572	684	1,302	505,534	-475,916	29,619	51,272	-23,903	27,370	56,988
March	2028	11,487	-11,033	454	1,256	-584	672	1,126	505,534	-483,943	21,591	51,272	-24,488	26,785	48,376
April	2028	11,487	-11,186	301	1,256	-596	660	961	505,534	-491,094	14,440	51,272	-24,997	26,275	40,716
May	2028	11,487	-11,376	111	1,256	-603	653	764	505,534	-500,123	5,411	51,272	-25,279	25,994	31,405
June	2028	11,487	-11,487	0	1,256	-603	653	653	505,534	-505,534	0	51,272	-25,279	25,994	25,994
July	2028	11,487	-11,487	0	1,256	-649	607	607	505,534	-505,534	0	51,272	-26,796	24,476	24,476
August	2028	11,487	-11,487	0	1,256	-699	557	557	505,534	-505,534	0	51,272	-28,797	22,475	22,475
September	2028	11,487	-11,487	0	1,256	-764	492	492	505,534	-505,534	0	51,272	-31,243	20,030	20,030
October	2028	11,487	-11,487	0	1,256	-831	425	425	505,534	-505,534	0	51,272	-33,850	17,422	17,422
November	2028	11,487	-11,487	0	1,256	-881	375	375	505,534	-505,534	0	51,272	-35,730	15,543	15,543
December	2028	11,487	-11,487	0	1,256	-928	328	328	505,534	-505,534	0	51,272	-37,709	13,563	13,563
January	2029	11,487	-11,487	0	1,256	-978	278	278	505,534	-505,534	0	51,272	-39,667	11,606	11,606
February	2029	11,487	-11,487	0	1,256	-1,040	216	216	505,534	-505,534	0	51,272	-42,168	9,104	9,104
March	2029	11,487	-11,487	0	1,256	-1,100	156	156	505,534	-505,534	0	51,272	-45,014	6,258	6,258
April	2029	11,487	-11,487	0	1,256	-1,160	96	96	505,534	-505,534	0	51,272	-47,454	3,818	3,818
May	2029	11,487	-11,487	0	1,256	-1,217	39	39	505,534	-505,534	0	51,272	-49,473	1,800	1,800
June	2029	11,487	-11,487	0	1,256	-1,256	0	0	505,534	-505,534	0	51,272	-51,272	0	0
July	2029	11,487	-11,487	0	1,256	-1,256	0	0	505,534	-505,534	0	51,272	-51,272	0	0
August	2029	11,487	-11,487	0	1,256	-1,256	0	0	505,534	-505,534	0	51,272	-51,272	0	0
September	2029	11,487	-11,487	0	1,256	-1,256	0	0	505,534	-505,534	0	51,272	-51,272	0	0
October	2029	11,487	-11,487	0	1,256	-1,256	0	0	505,534	-505,534	0	51,272	-51,272	0	0
November	2029	11,487	-11,487	0	1,256	-1,256	0	0	505,534	-505,534	0	51,272	-51,272	0	0
December	2029	11,487	-11,487	0	1,256	-1,256	0	0	505,534	-505,534	0	51,272	-51,272	0	0

Table 2. EM&V Data Incremental by Vintage Year	Program Participants (Gross)						Energy Savings (Incremental)							
	VA			NC			System			Net kWh				
	VA	NC	System	VA	NC	System	VA	NC	System					
2010			1,431			-	1,431			276,642			-	276,642
2011			3,913			207	4,120			1,073,623			17,983	1,091,606
2012			2,380			156	2,536			855,451			73,801	929,052
2013			1,883			120	2,003			692,197			37,499	729,697
2014			1,880			120	2,000			542,010			34,207	576,218
2015			-			614	614			-			165,828	165,828
2016			-			-	-			-			-	-

Appendix D.13 Residential Low-income Program

Table 1		Capacity Savings							Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net KW			Net KW			System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA	NC	System	VA	NC	System		VA	NC	System	VA	NC	System
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP	VA	NC	System	VA	NC	System
January	2026	1,600	-1,144	456	154	-43	111	567	44	41	46	0.14	0.12	0.12
February	2026	1,600	-1,150	450	154	-43	111	561	44	41	46	0.14	0.12	0.12
March	2026	1,600	-1,152	448	154	-43	111	559	44	41	47	0.14	0.12	0.12
April	2026	1,600	-1,156	444	154	-43	111	555	44	41	47	0.14	0.12	0.12
May	2026	1,600	-1,161	439	154	-43	111	550	44	41	47	0.14	0.12	0.12
June	2026	1,600	-1,162	437	154	-43	111	548	44	41	47	0.14	0.12	0.12
July	2026	1,600	-1,179	421	154	-45	109	529	44	41	47	0.14	0.12	0.12
August	2026	1,600	-1,179	421	154	-47	107	527	44	41	47	0.14	0.12	0.12
September	2026	1,600	-1,203	396	154	-49	105	501	44	41	46	0.14	0.12	0.12
October	2026	1,600	-1,256	344	154	-49	104	448	44	41	46	0.14	0.12	0.11
November	2026	1,600	-1,279	321	154	-50	104	425	44	41	46	0.14	0.12	0.11
December	2026	1,600	-1,301	299	154	-50	104	403	44	41	45	0.14	0.12	0.11
January	2027	1,600	-1,328	272	154	-50	104	376	44	41	45	0.14	0.12	0.11
February	2027	1,600	-1,344	256	154	-53	101	357	44	41	45	0.14	0.12	0.11
March	2027	1,600	-1,361	239	154	-54	99	339	44	41	45	0.14	0.12	0.11
April	2027	1,600	-1,384	215	154	-57	97	312	44	41	44	0.14	0.12	0.11
May	2027	1,600	-1,399	200	154	-60	94	295	44	41	44	0.14	0.12	0.11
June	2027	1,600	-1,405	195	154	-62	92	287	44	41	43	0.14	0.12	0.11
July	2027	1,600	-1,405	195	154	-70	83	278	44	41	43	0.14	0.12	0.11
August	2027	1,600	-1,422	178	154	-72	82	259	44	41	43	0.14	0.12	0.11
September	2027	1,600	-1,458	142	154	-73	81	223	44	41	43	0.14	0.12	0.10
October	2027	1,600	-1,473	127	154	-74	80	207	44	41	43	0.14	0.12	0.10
November	2027	1,600	-1,488	112	154	-75	78	190	44	41	43	0.14	0.12	0.10
December	2027	1,600	-1,501	99	154	-76	77	176	44	41	44	0.14	0.12	0.11
January	2028	1,600	-1,517	83	154	-78	76	159	44	41	44	0.14	0.12	0.11
February	2028	1,600	-1,533	67	154	-79	75	142	44	41	44	0.14	0.12	0.11
March	2028	1,600	-1,551	49	154	-80	73	122	44	41	43	0.14	0.12	0.11
April	2028	1,600	-1,568	32	154	-82	72	104	44	41	42	0.14	0.12	0.11
May	2028	1,600	-1,588	12	154	-82	71	83	44	41	41	0.14	0.12	0.11
June	2028	1,600	-1,600	0	154	-82	71	71	44	41	40	0.14	0.12	0.11
July	2028	1,600	-1,600	0	154	-86	68	68	44	41	40	0.14	0.12	0.11
August	2028	1,600	-1,600	0	154	-91	63	63	44	41	40	0.14	0.12	0.11
September	2028	1,600	-1,600	0	154	-97	57	57	44	41	41	0.14	0.12	0.12
October	2028	1,600	-1,600	0	154	-103	51	51	44	41	41	0.14	0.12	0.12
November	2028	1,600	-1,600	0	154	-108	46	46	44	41	41	0.14	0.12	0.12
December	2028	1,600	-1,600	0	154	-113	41	41	44	41	41	0.14	0.12	0.12
January	2029	1,600	-1,600	0	154	-118	36	36	44	41	42	0.14	0.12	0.13
February	2029	1,600	-1,600	0	154	-125	29	29	44	41	42	0.14	0.12	0.13
March	2029	1,600	-1,600	0	154	-134	20	20	44	41	40	0.14	0.12	0.13
April	2029	1,600	-1,600	0	154	-142	12	12	44	41	40	0.14	0.12	0.12
May	2029	1,600	-1,600	0	154	-148	6	6	44	41	46	0.14	0.12	0.15
June	2029	1,600	-1,600	0	154	-154	0	0	44	41	-	0.14	0.12	-
July	2029	1,600	-1,600	0	154	-154	0	0	44	41	-	0.14	0.12	-
August	2029	1,600	-1,600	0	154	-154	0	0	44	41	-	0.14	0.12	-
September	2029	1,600	-1,600	0	154	-154	0	0	44	41	-	0.14	0.12	-
October	2029	1,600	-1,600	0	154	-154	0	0	44	41	-	0.14	0.12	-
November	2029	1,600	-1,600	0	154	-154	0	0	44	41	-	0.14	0.12	-
December	2029	1,600	-1,600	0	154	-154	0	0	44	41	-	0.14	0.12	-

Table 2. EM&V Data		Incremental by Vintage Year							Incremental Energy Savings / Participant			Incremental Capacity Savings / Participant			
Year	Vintage	Net KW							Net kWh/Participant			Net kW/Participant			
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System		
2010			304					71	-	193	0.2	-	0.2		
2011			635					662	451	87	265	0.2	0.1	0.2	
2012			223					16	239	454	366	0.1	0.1	0.1	
2013			243					19	261	368	364	0.1	0.2	0.1	
2014			195					21	216	-	285	288	0.1	0.2	0.1
2015			-					71	71	-	270	270	-	0.1	0.1
2016			-					-	-	-	-	-	-	-	-

Appendix D.13 Residential Low-income Program

Table 3. EM&V Data Annualized by Vintage Year	Program Participants (Gross)						Energy Savings (Annualized)					
							Net kWh					
			VA		NC	System			VA		NC	System
2010			1,431		-	1,431			766,934		-	766,934
2011			3,913		207	4,120			1,975,468		88,191	2,063,659
2012			2,380		156	2,536			1,142,287		80,577	1,222,865
2013			1,883		120	2,003			1,171,388		75,040	1,246,427
2014			1,880		120	2,000			1,010,333		59,538	1,069,871
2015			-		653	653			-		311,924	311,924
2016			-		-	-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)	Program Participants (Gross)						Energy Savings for Program Performance Incentives (PPI)					
							Net kWh					
			VA		NC	System			VA		NC	System
2010			1,431		-	1,431			276,642		-	276,642
2011			5,344		207	5,551			1,840,557		17,983	1,858,540
2012			7,724		363	8,087			3,597,853		161,792	3,759,644
2013			8,176		483	8,659			3,809,953		206,268	4,016,220
2014			6,143		396	6,539			2,855,685		189,824	3,045,509
2015			3,763		854	4,617			2,181,721		300,406	2,482,127
2016			-		734	734			1,010,333		371,462	1,381,795
2017			N/A		N/A	N/A			N/A		N/A	N/A

Table 5. EM&V Data Accumulated through Vintage Year (for IRP)	Program Participants (Gross)						Energy Savings for Integrated Resource Planning (IRP)					
							Net kWh					
			VA		NC	System			VA		NC	System
2010			1,431		-	1,431			276,642		-	276,642
2011			5,344		207	5,551			1,840,557		17,983	1,858,540
2012			7,724		363	8,087			3,597,853		161,792	3,759,644
2013			9,607		483	10,090			4,576,887		206,268	4,783,154
2014			11,487		603	12,090			5,598,087		278,015	5,876,102
2015			11,487		1,217	12,704			6,066,410		469,174	6,535,584
2016			11,487		1,256	12,743			6,066,410		615,270	6,681,680
2017			11,487		1,256	12,743			6,066,410		615,270	6,681,680
2018			11,487		1,256	12,743			6,066,410		615,270	6,681,680
2019			11,487		1,256	12,743			6,066,410		615,270	5,914,746
2020			11,487		1,256	12,743			6,066,410		615,270	3,851,087
2021			11,487		1,256	12,743			6,066,410		615,270	2,628,222
2022			11,487		1,256	12,743			6,066,410		615,270	1,381,795
2023			11,177		1,256	12,433			6,047,859		615,270	293,373
2024			8,124		1,256	9,380			5,145,189		615,270	-
2025			4,127		893	5,020			3,210,156		519,879	-
2026			2,723		848	3,571			2,014,916		435,499	-
2027			940		709	1,649			949,502		373,738	-
2028			-		328	328			107,609		273,781	-
2029			-		-	-			-		32,586	-

Appendix D.13 Residential Low-income Program

Table 3. EM&V Data Annualized by Vintage Year	Net KW						Annualized Energy Savings / Participant Net kWh/Participant			Annualized Capacity Savings / Participant Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
	2010	304	-	304	536	-	536	0.21	-	0.21		
2011	635	27	662	505	426	501	0.16	-	0.16			
2012	223	16	239	480	517	482	0.09	-	0.09			
2013	243	19	261	622	625	622	0.13	-	0.13			
2014	195	21	216	537	496	535	0.10	-	0.11			
2015	-	71	71	-	478	478	-	-	0.11			
2016	-	-	-	-	-	-	-	-	-			

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)	Net kW						PPI Energy Savings/Participant Net kWh/Participant			PPI Capacity Savings/Participant Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
	2010	304	-	304	193	-	193	0.21	-	0.21		
2011	939	27	966	344	-	335	0.18	0.13	0.17			
2012	1,162	43	1,205	466	-	465	0.15	0.12	0.15			
2013	1,101	62	1,162	466	-	464	0.13	0.13	0.13			
2014	661	55	716	465	-	466	0.11	0.14	0.11			
2015	437	111	548	580	-	538	0	0.13	0.12			
2016	195	92	287	-	-	1,883	-	0.13	0.39			
2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			

Table 5. EM&V Data Accumulated through Vintage Year (for IRP)	Net kW						IRP Energy Savings/Participant Net kWh/Participant			IRP Capacity Savings/Participant Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
	2010	304	-	304	193	-	193	0.21	-	0.21		
2011	939	27	966	344	87	335	0.18	0.13	0.17			
2012	1,162	43	1,205	466	446	465	0.15	0.12	0.15			
2013	1,405	62	1,466	476	427	474	0.15	0.13	0.15			
2014	1,600	82	1,682	487	461	486	0.14	0.14	0.14			
2015	1,600	154	1,754	528	386	514	0.14	0.13	0.14			
2016	1,600	154	1,754	528	490	524	0.14	0.12	0.14			
2017	1,600	154	1,754	528	490	524	0.14	0.12	0.14			
2018	1,600	154	1,754	528	490	524	0.14	0.12	0.14			
2019	1,600	154	1,754	528	490	464	0.14	0.12	0.14			
2020	1,600	154	1,754	528	490	302	0.14	0.12	0.14			
2021	1,600	154	1,754	528	490	206	0.14	0.12	0.14			
2022	1,600	154	1,754	528	490	108	0.14	0.12	0.14			
2023	1,539	154	1,693	541	490	24	0.14	0.12	0.14			
2024	928	154	1,082	633	490	-	0.11	0.12	0.12			
2025	465	111	576	778	582	-	0.11	0.12	0.11			
2026	299	104	403	740	514	-	0.11	0.12	0.11			
2027	99	77	176	1,010	527	-	0.11	0.11	0.11			
2028	-	41	41	-	835	-	-	0.12	0.12			
2029	-	-	-	-	-	-	-	-	-			

Appendix D.13 Residential Low-income Program

Table 6. EM&V Data Accumulated through Vintage Year (for NC Lost Revenue)	Program Participants (Gross)						Energy Savings for NC Lost Revenue					
							Net kWh					
		VA			NC	System		VA			NC	System
2010		1,431			-	1,431		276,642			-	276,642
2011		5,344			207	5,551		1,840,557		17,983		1,858,540
2012		7,724			363	8,087		3,597,853		161,792		3,759,644
2013		9,607			483	10,090		4,364,156		206,268		4,570,423
2014		10,056			603	10,659		3,922,152		267,381		4,189,534
2015		6,143			1,010	7,153		2,563,748		314,097		2,877,845
2016		3,763			893	4,656		1,587,139		415,256		2,002,395
2017		N/A			N/A	N/A		N/A		N/A		N/A

Table 7. EM&V Data Cumulative through Vintage Year (Lifetime)	Program Participants (Gross)						Lifetime Energy Savings					
							Net kWh					
		VA			NC	System		VA			NC	System
2010		1,431			-	1,431		276,642			-	276,642
2011		5,344			207	5,551		2,117,199		17,983		2,135,182
2012		7,724			363	8,087		5,715,052		179,775		5,894,827
2013		9,607			483	10,090		10,291,938		386,043		10,677,981
2014		11,487			603	12,090		15,890,025		664,058		16,554,083
2015		11,487			1,217	12,704		21,956,435		1,133,232		23,089,667
2016		11,487			1,256	12,743		28,022,845		1,748,502		29,771,347
2017		11,487			1,256	12,743		34,089,255		2,363,772		36,453,027
2018		11,487			1,256	12,743		40,155,665		2,979,042		43,134,707
2019		11,487			1,256	12,743		46,222,075		3,594,312		49,049,453
2020		11,487			1,256	12,743		52,288,485		4,209,582		52,900,540
2021		11,487			1,256	12,743		58,354,895		4,824,852		55,528,763
2022		11,487			1,256	12,743		64,421,305		5,440,122		56,910,558
2023		11,487			1,256	12,743		70,469,164		6,055,392		57,203,930
2024		11,487			1,256	12,743		75,614,353		6,670,662		57,203,930
2025		11,487			1,256	12,743		78,824,508		7,190,541		57,203,930
2026		11,487			1,256	12,743		80,839,424		7,626,039		57,203,930
2027		11,487			1,256	12,743		81,788,926		7,999,777		57,203,930
2028		11,487			1,256	12,743		81,896,535		8,273,559		57,203,930
2029		11,487			1,256	12,743		81,896,535		8,306,145		57,203,930

Appendix D.13 Residential Low-income Program

Table 6. EM&V Data Accumulated through Vintage Year (for NC Lost Revenue)	Net kW						NC Lost Revenue Savings/Participant			NC Lost Revenue Capacity Savings/Participant		
	VA			NC		System	Net kWh/Participant			Net kW/Participant		
							VA	NC	System	VA	NC	System
2010							193	-	193			
2011							344	87	335			
2012							466	446	465			
2013							454	427	453			
2014							390	443	393			
2015							417	311	402			
2016							422	465	430			
2017							N/A	N/A	N/A			

Table 7. EM&V Data Cumulative through Vintage Year (Lifetime)	Net kW						Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
	VA			NC	System		Net kWh/Participant			Net kW/Participant		
							VA	NC	System	VA	NC	System
2010			304		-	304	193	-	193	0.21	-	0.21
2011			939		27	966	396	87	385	0.18	0.13	0.17
2012			1,162		43	1,205	740	495	729	0.15	0.12	0.15
2013			1,405		62	1,466	1,071	799	1,058	0.15	0.13	0.15
2014			1,600		82	1,682	1,383	1,101	1,369	0.14	0.14	0.14
2015			1,600		154	1,754	1,911	931	1,818	0.14	0.13	0.14
2016			1,600		154	1,754	2,440	1,392	2,336	0.14	0.12	0.14
2017			1,600		154	1,754	2,968	1,882	2,861	0.14	0.12	0.14
2018			1,600		154	1,754	3,496	2,372	3,385	0.14	0.12	0.14
2019			1,600		154	1,754	4,024	2,862	3,849	0.14	0.12	0.14
2020			1,600		154	1,754	4,552	3,352	4,151	0.14	0.12	0.14
2021			1,600		154	1,754	5,080	3,841	4,358	0.14	0.12	0.14
2022			1,600		154	1,754	5,608	4,331	4,466	0.14	0.12	0.14
2023			1,600		154	1,754	6,135	4,821	4,489	0.14	0.12	0.14
2024			1,600		154	1,754	6,583	5,311	4,489	0.14	0.12	0.14
2025			1,600		154	1,754	6,862	5,725	4,489	0.14	0.12	0.14
2026			1,600		154	1,754	7,037	6,072	4,489	0.14	0.12	0.14
2027			1,600		154	1,754	7,120	6,369	4,489	0.14	0.12	0.14
2028			1,600		154	1,754	7,129	6,587	4,489	0.14	0.12	0.14
2029			1,600		154	1,754	7,129	6,613	4,489	0.14	0.12	0.14

Appendix D.14 Residential Heat Pump Upgrade Program

PROGRAM: Residential Heat Pump Upgrade
DSM Phase II Program
Type: Energy Efficiency
Program Measure Life: 15.0 years

Table 1		Participation												
Month	Year	Program Participants										System Cum for IRP		
		VA					NC						System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G				
October	2012	16		16		16								16
November	2012	33		49		49								49
December	2012	37		86		86								86
January	2013	34		120		120								120
February	2013	165		285		285								285
March	2013	202		487		487								487
April	2013	149		636		636								636
May	2013	261		897		897								897
June	2013	309		1,206		1,206								1,206
July	2013	465		1,671		1,671								1,671
August	2013	343		2,014		2,014								2,014
September	2013	415		2,429		2,429								2,429
October	2013	452		2,881		2,881								2,881
November	2013	176		3,057		3,057								3,057
December	2013	324		3,381		3,381								3,381
January	2014	284		3,665		3,665	0		0				0	3,665
February	2014	281		3,946		3,946	0		0				0	3,946
March	2014	254		4,200		4,200	0		0				0	4,200
April	2014	298		4,498		4,498	0		0				0	4,498
May	2014	241		4,739		4,739	0		0				0	4,739
June	2014	322		5,061		5,061	1		1				1	5,062
July	2014	586		5,647		5,647	0		1				1	5,648
August	2014	334		5,981		5,981	4		5				5	5,986
September	2014	418		6,399		6,399	5		10				10	6,409
October	2014	243		6,642		6,642	9		19				19	6,661
November	2014	169		6,811		6,811	12		31				31	6,842
December	2014	219		7,030		7,030	13		44				44	7,074
January	2015	301		7,331		7,331	34		78				78	7,409
February	2015	327		7,658		7,658	15		93				93	7,751
March	2015	258		7,916		7,916	20		113				113	8,029
April	2015	335		8,251		8,251	58		171				171	8,422
May	2015	258		8,509		8,509	57		228				228	8,737
June	2015	694		9,203		9,203	99		327				327	9,530
July	2015	459		9,662		9,662	83		410				410	10,072
August	2015	445		10,107		10,107	48		458				458	10,565
September	2015	412		10,519		10,519	103		561				561	11,080
October	2015	322		10,841		10,841	43		604				604	11,445
November	2015	289		11,130		11,130	29		633				633	11,763
December	2015	110		11,240		11,240	8		641				641	11,881
January	2016	420		11,660		11,660	23		664				664	12,324
February	2016	444		12,104		12,104	72		736				736	12,840
March	2016	415		12,519		12,519	48		784				784	13,303
April	2016	418		12,937		12,937	65		849				849	13,786
May	2016	384		13,321		13,321	44		893				893	14,214
June	2016	499		13,820		13,820	88		981				981	14,801
July	2016	598		14,418		14,418	70		1,051	70			1,051	15,469
August	2016	729		15,147		15,147	105		1,156	175			1,156	16,303
September	2016	414		15,561		15,561	37		1,193	212			1,193	16,754
October	2016	392		15,953		15,953	57		1,250	269			1,250	17,203
November	2016	470		16,423		16,423	46		1,296	315			1,296	17,719
December	2016	212		16,635		16,635	10		1,306				325	17,941
January	2017	828		17,463		17,463	76		1,382				401	18,845
February	2017	235		17,698		17,698	36		1,418				437	19,116
March	2017	86		17,784		17,784	6		1,424				443	19,208
April	2017	0		17,784		17,784	0		1,424				443	19,208
May	2017	0		17,784		17,784	0		1,424				443	19,208
June	2017	0		17,784		17,784	0		1,424				443	19,208
July	2017	0		17,784		17,784	0		1,424				443	19,208
August	2017	0		17,784		17,784	0		1,424				443	19,208
September	2017	0		17,784		17,784	0		1,424				443	19,208
October	2017	0		17,784		17,784	0		1,424				443	19,208
November	2017	0		17,784		17,784	0		1,424				443	19,208
December	2017	0		17,784		17,784	0		1,424				443	19,208

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Energy Savings												
Month	Year	Net kWh										System Cum for IRP		
		VA					NC							
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
October	2012	3,099		3,099		3,099								3,099
November	2012	6,191		9,290		9,290								9,290
December	2012	5,784		15,074		15,074								15,074
January	2013	4,407		19,481		19,481								19,481
February	2013	26,135		45,615		45,615								45,615
March	2013	31,240		76,855		76,855								76,855
April	2013	21,926		98,781		98,781								98,781
May	2013	40,740		139,521		139,521								139,521
June	2013	47,820		187,341		187,341								187,341
July	2013	72,945		260,286		260,286								260,286
August	2013	51,353		311,639		311,639								311,639
September	2013	63,936		375,575		375,575								375,575
October	2013	63,368		438,943		438,943								438,943
November	2013	27,915		466,858		466,858								466,858
December	2013	52,004		518,862		518,862								518,862
January	2014	39,921		558,782		558,782	0			0				558,782
February	2014	36,620		595,402		595,402	0			0				595,402
March	2014	35,279		630,682		630,682	0			0				630,682
April	2014	41,917		672,599		672,599	0			0				672,599
May	2014	31,488		704,087		704,087	0			0				704,087
June	2014	44,686		748,772		748,772	299			299				749,072
July	2014	57,993		806,765		806,765	0			299				807,065
August	2014	34,782		841,547		841,547	487			787				842,334
September	2014	41,890		883,437		883,437	759			1,546				884,983
October	2014	25,347		908,785		908,785	696			2,242				911,026
November	2014	16,360		925,144		925,144	1,357			3,598				928,743
December	2014	22,025		947,169		947,169	1,877			5,476				952,645
January	2015	5,700		952,869		952,869	705			6,180				959,049
February	2015	6,142		959,010		959,010	1,146			7,326				966,336
March	2015	4,436		963,447		963,447	150			7,476				970,922
April	2015	4,985		968,432		968,432	922			8,398				976,830
May	2015	4,787		973,219		973,219	875			9,273				982,493
June	2015	11,261		984,480		984,480	1,039			10,313				994,793
July	2015	7,902		992,382		992,382	888			11,200				1,003,582
August	2015	6,741		999,123		999,123	416			11,616				1,010,739
September	2015	6,393		1,005,515		1,005,515	1,058			12,674				1,018,189
October	2015	4,742		1,010,257		1,010,257	578			13,252				1,023,509
November	2015	4,978		1,015,235		1,015,235	345			13,597				1,028,832
December	2015	2,103		1,017,338		1,017,338	108			13,705				1,031,043
January	2016	7,722		1,025,060		1,025,060	286			13,991				1,039,051
February	2016	7,923		1,032,983		1,032,983	1,260			15,251				1,048,234
March	2016	5,986		1,038,970		1,038,970	541			15,792				1,054,761
April	2016	6,274		1,045,243		1,045,243	606			16,398				1,061,641
May	2016	6,607		1,051,851		1,051,851	584			16,981				1,068,832
June	2016	8,018		1,059,869		1,059,869	1,453			18,434				1,078,303
July	2016	9,680		1,069,549		1,069,549	762			19,196	762			1,088,745
August	2016	11,831		1,081,380		1,081,380	1,368			20,564	2,130			1,101,945
September	2016	7,279		1,088,660		1,088,660	483			21,047	2,613			1,109,707
October	2016	6,296		1,094,955		1,094,955	756			21,804	3,370			1,116,759
November	2016	8,651		1,103,607		1,103,607	1,015			22,819	4,385			1,126,426
December	2016	3,332		1,106,939		1,106,939	148			22,967				1,129,906
January	2017	11,769		1,118,707		1,118,707	1,227			24,194				1,142,902
February	2017	3,352		1,122,060		1,122,060	467			24,662				1,146,721
March	2017	1,034		1,123,094		1,123,094	145			24,807				1,147,901
April	2017	0		1,123,094		1,123,094	0			24,807				1,147,901
May	2017	0		1,123,094		1,123,094	0			24,807				1,147,901
June	2017	0		1,123,094		1,123,094	0			24,807				1,147,901
July	2017	0		1,123,094		1,123,094	0			24,807				1,147,901
August	2017	0		1,123,094		1,123,094	0			24,807				1,147,901
September	2017	0		1,123,094		1,123,094	0			24,807				1,147,901
October	2017	0		1,123,094		1,123,094	0			24,807				1,147,901
November	2017	0		1,123,094		1,123,094	0			24,807				1,147,901
December	2017	0		1,123,094		1,123,094	0			24,807				1,147,901

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
October	2012	7		7		7					7	194		194	0.43		0.43	
November	2012	16		23		23					23	190		190	0.47		0.47	
December	2012	19		42		42					42	175		175	0.49		0.49	
January	2013	17		59		59					59	162		162	0.49		0.49	
February	2013	88		147		147					147	160		160	0.51		0.51	
March	2013	107		253		253					253	158		158	0.52		0.52	
April	2013	80		333		333					333	155		155	0.52		0.52	
May	2013	145		478		478					478	156		156	0.53		0.53	
June	2013	165		644		644					644	155		155	0.53		0.53	
July	2013	232		875		875					875	156		156	0.52		0.52	
August	2013	171		1,047		1,047					1,047	155		155	0.52		0.52	
September	2013	210		1,257		1,257					1,257	155		155	0.52		0.52	
October	2013	219		1,475		1,475					1,475	152		152	0.51		0.51	
November	2013	82		1,558		1,558					1,558	153		153	0.51		0.51	
December	2013	175		1,733		1,733					1,733	153		153	0.51		0.51	
January	2014	153		1,886		1,886	0		0		1,886	152		152	0.51		0.51	
February	2014	137		2,023		2,023	0		0		2,023	151		151	0.51		0.51	
March	2014	136		2,158		2,158	0		0		2,158	150		150	0.51		0.51	
April	2014	155		2,313		2,313	0		0		2,313	150		150	0.51		0.51	
May	2014	126		2,439		2,439	0		0		2,439	149		149	0.51		0.51	
June	2014	171		2,610		2,610	1		1		2,610	148	299	148	0.52	0.59	0.52	
July	2014	176		2,785		2,785	0		1		2,786	143	299	143	0.49	0.71	0.49	
August	2014	112		2,897		2,897	1		1		2,899	141	157	141	0.48	0.30	0.48	
September	2014	134		3,031		3,031	0		2		3,033	138	155	138	0.47	0.20	0.47	
October	2014	94		3,125		3,125	3		5		3,130	137	118	137	0.47	0.24	0.47	
November	2014	62		3,187		3,187	1		6		3,193	136	116	136	0.47	0.19	0.47	
December	2014	78		3,265		3,265	8		14		3,278	135	124	135	0.46	0.31	0.46	
January	2015	15		3,280		3,280	2		16		3,296	130	79	129	0.45	0.20	0.44	
February	2015	14		3,294		3,294	2		18		3,312	125	79	125	0.43	0.19	0.43	
March	2015	13		3,307		3,307	1		19		3,326	122	66	121	0.42	0.16	0.41	
April	2015	14		3,321		3,321	2		20		3,342	117	49	116	0.40	0.12	0.40	
May	2015	14		3,335		3,335	2		23		3,358	114	41	112	0.39	0.10	0.38	
June	2015	30		3,365		3,365	3		26		3,391	107	32	104	0.37	0.08	0.36	
July	2015	19		3,385		3,385	3		29		3,413	103	27	100	0.35	0.07	0.34	
August	2015	19		3,403		3,403	1		30		3,434	99	25	96	0.34	0.07	0.32	
September	2015	17		3,420		3,420	3		33		3,454	96	23	92	0.33	0.06	0.31	
October	2015	13		3,434		3,434	2		35		3,469	93	22	89	0.32	0.06	0.30	
November	2015	14		3,448		3,448	1		36		3,484	91	21	87	0.31	0.06	0.30	
December	2015	6		3,454		3,454	0		37		3,491	91	21	87	0.31	0.06	0.29	
January	2016	18		3,472		3,472	1		37		3,510	88	21	84	0.30	0.06	0.28	
February	2016	23		3,495		3,495	4		41		3,536	85	21	82	0.29	0.06	0.28	
March	2016	18		3,514		3,514	2		43		3,557	83	20	79	0.28	0.06	0.27	
April	2016	19		3,532		3,532	3		46		3,578	81	19	77	0.27	0.05	0.26	
May	2016	18		3,550		3,550	2		48		3,597	79	19	75	0.27	0.05	0.25	
June	2016	23		3,573		3,573	4		51		3,625	77	19	73	0.26	0.05	0.24	
July	2016	28		3,601		3,601	2		54	2	3,655	74	18	70	0.25	0.05	0.24	
August	2016	33		3,634		3,634	4		58	7	3,692	71	18	68	0.24	0.05	0.23	
September	2016	19		3,653		3,653	1		59	8	3,712	70	18	66	0.23	0.05	0.22	
October	2016	19		3,671		3,671	2		61	10	3,732	69	17	65	0.23	0.05	0.22	
November	2016	24		3,695		3,695	2		64	12	3,758	67	18	64	0.22	0.05	0.21	
December	2016	9		3,704		3,704	1		64		3,768	67	18	63	0.22	0.05	0.21	
January	2017	38		3,742		3,742	4		68		3,810	64	18	61	0.21	0.05	0.20	
February	2017	10		3,752		3,752	1		70		3,821	63	17	60	0.21	0.05	0.20	
March	2017	4		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
April	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
May	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
June	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
July	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
August	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
September	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
October	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
November	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	
December	2017	0		3,756		3,756	0		70		3,826	63	17	60	0.21	0.05	0.20	

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2018	0		17,784		17,784	0		1,424		443	19,208
February	2018	0		17,784		17,784	0		1,424		443	19,208
March	2018	0		17,784		17,784	0		1,424		443	19,208
April	2018	0		17,784		17,784	0		1,424		443	19,208
May	2018	0		17,784		17,784	0		1,424		443	19,208
June	2018	0		17,784		17,784	0		1,424		443	19,208
July	2018	0		17,784		17,784	0		1,424		443	19,208
August	2018	0		17,784		17,784	0		1,424		443	19,208
September	2018	0		17,784		17,784	0		1,424		443	19,208
October	2018	0		17,784		17,784	0		1,424		443	19,208
November	2018	0		17,784		17,784	0		1,424		443	19,208
December	2018	0		17,784		17,784	0		1,424		443	19,208
January	2019	0		17,784		17,784	0		1,424		443	19,208
February	2019	0		17,784		17,784	0		1,424		443	19,208
March	2019	0		17,784		17,784	0		1,424		443	19,208
April	2019	0		17,784		17,784	0		1,424		443	19,208
May	2019	0		17,784		17,784	0		1,424		443	19,208
June	2019	0		17,784		17,784	0		1,424		443	19,208
July	2019	0		17,784		17,784	0		1,424	0	443	19,208
August	2019	0		17,784		17,784	0		1,424	0	443	19,208
September	2019	0		17,784		17,784	0		1,424	0	443	19,208
October	2019	0		17,784		17,784	0		1,424	0	443	19,208
November	2019	0		17,784		17,784	0		1,424	0	443	19,208
December	2019	0		17,784		17,784	0		1,424	0	443	19,208
January	2020	0		17,784		17,784	0		1,424		0	19,208
February	2020	0		17,784		17,784	0		1,424		0	19,208
March	2020	0		17,784		17,784	0		1,424		0	19,208
April	2020	0		17,784		17,784	0		1,424		0	19,208
May	2020	0		17,784		17,784	0		1,424		0	19,208
June	2020	0		17,784		17,784	0		1,424		0	19,208
July	2020	0		17,784		17,784	0		1,424		0	19,208
August	2020	0		17,784		17,784	0		1,424		0	19,208
September	2020	0		17,784		17,784	0		1,424		0	19,208
October	2020	0		17,784		17,784	0		1,424		0	19,208
November	2020	0		17,784		17,784	0		1,424		0	19,208
December	2020	0		17,784		17,784	0		1,424		0	19,208
January	2021	0		17,784		17,784	0		1,424		0	19,208
February	2021	0		17,784		17,784	0		1,424		0	19,208
March	2021	0		17,784		17,784	0		1,424		0	19,208
April	2021	0		17,784		17,784	0		1,424		0	19,208
May	2021	0		17,784		17,784	0		1,424		0	19,208
June	2021	0		17,784		17,784	0		1,424		0	19,208
July	2021	0		17,784		17,784	0		1,424		0	19,208
August	2021	0		17,784		17,784	0		1,424		0	19,208
September	2021	0		17,784		17,784	0		1,424		0	19,208
October	2021	0		17,784		17,784	0		1,424		0	19,208
November	2021	0		17,784		17,784	0		1,424		0	19,208
December	2021	0		17,784		17,784	0		1,424		0	19,208
January	2022	0		17,784		17,784	0		1,424		0	19,208
February	2022	0		17,784		17,784	0		1,424		0	19,208
March	2022	0		17,784		17,784	0		1,424		0	19,208
April	2022	0		17,784		17,784	0		1,424		0	19,208
May	2022	0		17,784		17,784	0		1,424		0	19,208
June	2022	0		17,784		17,784	0		1,424		0	19,208
July	2022	0		17,784		17,784	0		1,424		0	19,208
August	2022	0		17,784		17,784	0		1,424		0	19,208
September	2022	0		17,784		17,784	0		1,424		0	19,208
October	2022	0		17,784		17,784	0		1,424		0	19,208
November	2022	0		17,784		17,784	0		1,424		0	19,208
December	2022	0		17,784		17,784	0		1,424		0	19,208

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
February	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
March	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
April	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
May	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
June	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
July	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
August	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
September	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
October	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
November	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
December	2018	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
January	2019	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
February	2019	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
March	2019	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
April	2019	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
May	2019	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
June	2019	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
July	2019	0		1,123,094		1,123,094	0		24,807	0	6,373	1,147,901
August	2019	0		1,123,094		1,123,094	0		24,807	0	6,373	1,147,901
September	2019	0		1,123,094		1,123,094	0		24,807	0	6,373	1,147,901
October	2019	0		1,123,094		1,123,094	0		24,807	0	6,373	1,147,901
November	2019	0		1,123,094		1,123,094	0		24,807	0	6,373	1,147,901
December	2019	0		1,123,094		1,123,094	0		24,807	0	6,373	1,147,901
January	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
February	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
March	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
April	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
May	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
June	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
July	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
August	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
September	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
October	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
November	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
December	2020	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
January	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
February	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
March	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
April	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
May	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
June	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
July	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
August	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
September	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
October	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
November	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
December	2021	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
January	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
February	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
March	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
April	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
May	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
June	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
July	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
August	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
September	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
October	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
November	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901
December	2022	0		1,123,094		1,123,094	0		24,807		6,373	1,147,901

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
February	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
March	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
April	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
May	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
June	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
July	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
August	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
September	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
October	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
November	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
December	2018	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
January	2019	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
February	2019	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
March	2019	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
April	2019	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
May	2019	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
June	2019	0		3,756		3,756	0		70		19	3,826	63	17	60	0.21	0.05	0.20
July	2019	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
August	2019	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
September	2019	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
October	2019	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
November	2019	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
December	2019	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
January	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
February	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
March	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
April	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
May	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
June	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
July	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
August	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
September	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
October	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
November	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
December	2020	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
January	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
February	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
March	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
April	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
May	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
June	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
July	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
August	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
September	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
October	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
November	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
December	2021	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
January	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
February	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
March	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
April	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
May	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
June	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
July	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
August	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
September	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
October	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
November	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20
December	2022	0		3,756		3,756	0		70	0	19	3,826	63	17	60	0.21	0.05	0.20

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] =Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2023	0		17,784		17,784	0		1,424		0	19,208
February	2023	0		17,784		17,784	0		1,424		0	19,208
March	2023	0		17,784		17,784	0		1,424		0	19,208
April	2023	0		17,784		17,784	0		1,424		0	19,208
May	2023	0		17,784		17,784	0		1,424		0	19,208
June	2023	0		17,784		17,784	0		1,424		0	19,208
July	2023	0		17,784		17,784	0		1,424		0	19,208
August	2023	0		17,784		17,784	0		1,424		0	19,208
September	2023	0		17,784		17,784	0		1,424		0	19,208
October	2023	0		17,784		17,784	0		1,424		0	19,208
November	2023	0		17,784		17,784	0		1,424		0	19,208
December	2023	0		17,784		17,784	0		1,424		0	19,208
January	2024	0		17,784		17,784	0		1,424		0	19,208
February	2024	0		17,784		17,784	0		1,424		0	19,208
March	2024	0		17,784		17,784	0		1,424		0	19,208
April	2024	0		17,784		17,784	0		1,424		0	19,208
May	2024	0		17,784		17,784	0		1,424		0	19,208
June	2024	0		17,784		17,784	0		1,424		0	19,208
July	2024	0		17,784		17,784	0		1,424		0	19,208
August	2024	0		17,784		17,784	0		1,424		0	19,208
September	2024	0		17,784		17,784	0		1,424		0	19,208
October	2024	0		17,784		17,784	0		1,424		0	19,208
November	2024	0		17,784		17,784	0		1,424		0	19,208
December	2024	0		17,784		17,784	0		1,424		0	19,208
January	2025	0		17,784		17,784	0		1,424		0	19,208
February	2025	0		17,784		17,784	0		1,424		0	19,208
March	2025	0		17,784		17,784	0		1,424		0	19,208
April	2025	0		17,784		17,784	0		1,424		0	19,208
May	2025	0		17,784		17,784	0		1,424		0	19,208
June	2025	0		17,784		17,784	0		1,424		0	19,208
July	2025	0		17,784		17,784	0		1,424		0	19,208
August	2025	0		17,784		17,784	0		1,424		0	19,208
September	2025	0		17,784		17,784	0		1,424		0	19,208
October	2025	0		17,784		17,784	0		1,424		0	19,208
November	2025	0		17,784		17,784	0		1,424		0	19,208
December	2025	0		17,784		17,784	0		1,424		0	19,208
January	2026	0		17,784		17,784	0		1,424		0	19,208
February	2026	0		17,784		17,784	0		1,424		0	19,208
March	2026	0		17,784		17,784	0		1,424		0	19,208
April	2026	0		17,784		17,784	0		1,424		0	19,208
May	2026	0		17,784		17,784	0		1,424		0	19,208
June	2026	0		17,784		17,784	0		1,424		0	19,208
July	2026	0		17,784		17,784	0		1,424		0	19,208
August	2026	0		17,784		17,784	0		1,424		0	19,208
September	2026	0		17,784		17,784	0		1,424		0	19,208
October	2026	0		17,784		17,784	0		1,424		0	19,208
November	2026	0		17,784		17,784	0		1,424		0	19,208
December	2026	0		17,784		17,784	0		1,424		0	19,208
January	2027	0		17,784		17,784	0		1,424		0	19,208
February	2027	0		17,784		17,784	0		1,424		0	19,208
March	2027	0		17,784		17,784	0		1,424		0	19,208
April	2027	0		17,784		17,784	0		1,424		0	19,208
May	2027	0		17,784		17,784	0		1,424		0	19,208
June	2027	0		17,784		17,784	0		1,424		0	19,208
July	2027	0		17,784		17,784	0		1,424		0	19,208
August	2027	0		17,784		17,784	0		1,424		0	19,208
September	2027	0		17,784		17,784	0		1,424		0	19,208
October	2027	0	-16	17,768		17,768	0		1,424		0	19,192
November	2027	0	-33	17,735		17,735	0		1,424		0	19,159
December	2027	0	-37	17,698		17,698	0		1,424		0	19,122

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Energy Savings										
Month	Year	Net kWh										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
February	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
March	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
April	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
May	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
June	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
July	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
August	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
September	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
October	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
November	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
December	2023	0		1,123,094		1,123,094	0		24,807		0	1,147,901
January	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
February	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
March	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
April	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
May	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
June	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
July	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
August	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
September	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
October	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
November	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
December	2024	0		1,123,094		1,123,094	0		24,807		0	1,147,901
January	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
February	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
March	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
April	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
May	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
June	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
July	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
August	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
September	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
October	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
November	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
December	2025	0		1,123,094		1,123,094	0		24,807		0	1,147,901
January	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
February	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
March	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
April	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
May	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
June	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
July	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
August	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
September	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
October	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
November	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
December	2026	0		1,123,094		1,123,094	0		24,807		0	1,147,901
January	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
February	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
March	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
April	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
May	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
June	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
July	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
August	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
September	2027	0		1,123,094		1,123,094	0		24,807		0	1,147,901
October	2027	0	-3,099	1,119,995		1,119,995	0		24,807		0	1,144,802
November	2027	0	-6,191	1,113,804		1,113,804	0		24,807		0	1,138,611
December	2027	0	-5,784	1,108,020		1,108,020	0		24,807		0	1,132,827

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
February	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
March	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
April	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
May	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
June	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
July	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
August	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
September	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
October	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
November	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
December	2023	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
January	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
February	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
March	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
April	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
May	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
June	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
July	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
August	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
September	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
October	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
November	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
December	2024	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
January	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
February	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
March	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
April	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
May	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
June	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
July	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
August	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
September	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
October	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
November	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
December	2025	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
January	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
February	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
March	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
April	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
May	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
June	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
July	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
August	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
September	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
October	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
November	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
December	2026	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
January	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
February	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
March	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
April	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
May	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
June	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
July	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
August	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
September	2027	0		3,756		3,756	0		70		0	3,826	63	17	60	0.21	0.05	0.20
October	2027	0	-7	3,749		3,749	0		70		0	3,819	63	17	60	0.21	0.05	0.20
November	2027	0	-16	3,733		3,733	0		70		0	3,803	63	17	59	0.21	0.05	0.20
December	2027	0	-19	3,714		3,714	0		70		0	3,784	63	17	59	0.21	0.05	0.20

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Participation										
Month	Year	Program Participants					System					
		VA		VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B			NC		NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			System Cum for IRP
		VA Monthly New	VA Monthly Retired	VA Rate Reset Adj. [B]	VA Cum. for IRP (New + Retired)	NC Monthly New	NC Monthly Retired	NC Rate Reset Adj.	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2028	0	-34		17,664				1,424		0	19,088
February	2028	0	-165		17,499				1,424		0	18,923
March	2028	0	-202		17,297				1,424		0	18,721
April	2028	0	-149		17,148				1,424		0	18,572
May	2028	0	-261		16,887				1,424		0	18,311
June	2028	0	-309		16,578				1,424		0	18,002
July	2028	0	-465		16,113				1,424		0	17,537
August	2028	0	-343		15,770				1,424		0	17,194
September	2028	0	-415		15,355				1,424		0	16,779
October	2028	0	-452		14,903				1,424		0	16,327
November	2028	0	-176		14,727				1,424		0	16,151
December	2028	0	-324		14,403				1,424		0	15,827
January	2029	0	-284		14,119				1,424		0	15,543
February	2029	0	-281		13,838				1,424		0	15,262
March	2029	0	-254		13,584				1,424		0	15,008
April	2029	0	-298		13,286				1,424		0	14,710
May	2029	0	-241		13,045				1,424		0	14,469
June	2029	0	-322		12,723				1,423		-1	14,146
July	2029	0	-586		12,137				1,423		-1	13,560
August	2029	0	-334		11,803				1,419		-5	13,222
September	2029	0	-418		11,385				1,414		-10	12,799
October	2029	0	-243		11,142				1,405		-19	12,547
November	2029	0	-169		10,973				1,393		-31	12,366
December	2029	0	-219		10,754				1,380		-44	12,134
January	2030	0	-301		10,453				1,346		-78	11,799
February	2030	0	-327		10,126				1,331		-93	11,457
March	2030	0	-258		9,868				1,311		-113	11,179
April	2030	0	-335		9,533				1,253		-171	10,786
May	2030	0	-258		9,275				1,196		-228	10,471
June	2030	0	-694		8,581				1,097		-327	9,678
July	2030	0	-459		8,122				1,014		-410	9,136
August	2030	0	-445		7,677				966		-458	8,643
September	2030	0	-412		7,265				863		-561	8,128
October	2030	0	-322		6,943				820		-604	7,763
November	2030	0	-289		6,654				791		-633	7,445
December	2030	0	-110		6,544				783		-641	7,327
January	2031	0	-420		6,124				760		-664	6,884
February	2031	0	-444		5,680				688		-736	6,368
March	2031	0	-415		5,265				640		-784	5,905
April	2031	0	-418		4,847				575		-849	5,422
May	2031	0	-384		4,463				531		-893	4,994
June	2031	0	-499		3,964				443		-981	4,407
July	2031	0	-598		3,366				373		-1,051	3,739
August	2031	0	-729		2,637				268		-1,156	2,905
September	2031	0	-414		2,223				231		-1,193	2,454
October	2031	0	-392		1,831				174		-1,250	2,005
November	2031	0	-470		1,361				128		-1,296	1,489
December	2031	0	-212		1,149				118		-1,306	1,267
January	2032	0	-828		321				42		-1,382	363
February	2032	0	-235		86				6		-1,418	92
March	2032	0	-86		0				0		-1,424	0
April	2032	0	0		0				0		-1,424	0
May	2032	0	0		0				0		-1,424	0
June	2032	0	0		0				0		-1,424	0
July	2032	0	0		0				0		-1,424	0
August	2032	0	0		0				0		-1,424	0
September	2032	0	0		0				0		-1,424	0
October	2032	0	0		0				0		-1,424	0
November	2032	0	0		0				0		-1,424	0
December	2032	0	0		0				0		-1,424	0

Table 2. EM&V Data Incremental by Vintage Year									
	Program Participants								
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP				
2012	86	86	-	-	86				
2013	3,295	3,295	-	-	3,295				
2014	3,649	3,649	44	44	3,693				
2015	4,210	4,210	597	597	4,807				
2016	5,395	5,395	665	325	6,060				
2017	1,149	1,149	118	118	1,267				

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Energy Savings										
Month	Year	Net kWh					System					
		VA		VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			NC		NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
		VA Monthly New	VA Monthly Retired	VA Rate Reset Adj.	VA Cum. for IRP (New + Retired)	NC Monthly New	NC Monthly Retired	NC Rate Reset Adj.	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2028	0	-4,407		1,103,613	0			24,807		0	1,128,420
February	2028	0	-26,135		1,077,479	0			24,807		0	1,102,286
March	2028	0	-31,240		1,046,239	0			24,807		0	1,071,046
April	2028	0	-21,926		1,024,313	0			24,807		0	1,049,120
May	2028	0	-40,740		983,573	0			24,807		0	1,008,381
June	2028	0	-47,820		935,753	0			24,807		0	960,560
July	2028	0	-72,945		862,808	0			24,807		0	887,615
August	2028	0	-51,353		811,455	0			24,807		0	836,262
September	2028	0	-63,936		747,519	0			24,807		0	772,326
October	2028	0	-63,368		684,151	0			24,807		0	708,958
November	2028	0	-27,915		656,236	0			24,807		0	681,043
December	2028	0	-52,004		604,232	0			24,807		0	629,039
January	2029	0	-39,921		564,312	0			24,807		0	589,119
February	2029	0	-36,620		527,692	0			24,807		0	552,499
March	2029	0	-35,279		492,412	0			24,807		0	517,219
April	2029	0	-41,917		450,495	0			24,807		0	475,302
May	2029	0	-31,488		419,007	0			24,807		0	443,815
June	2029	0	-44,686		374,322	0	-299		24,508		-299	398,829
July	2029	0	-57,993		316,329	0	0		24,508		-299	340,837
August	2029	0	-34,782		281,547	0	-487		24,020		-787	305,567
September	2029	0	-41,890		239,657	0	-759		23,261		-1,546	262,918
October	2029	0	-25,347		214,309	0	-696		22,565		-2,242	236,875
November	2029	0	-16,360		197,950	0	-1,357		21,209		-3,598	219,158
December	2029	0	-22,025		175,925	0	-1,877		19,331		-5,476	195,256
January	2030	0	-5,700		170,225	0	-705		18,627		-6,180	188,852
February	2030	0	-6,142		164,084	0	-1,146		17,481		-7,326	181,565
March	2030	0	-4,436		159,647	0	-150		17,331		-7,476	176,979
April	2030	0	-4,985		154,662	0	-922		16,409		-8,398	171,071
May	2030	0	-4,787		149,875	0	-875		15,534		-9,273	165,408
June	2030	0	-11,261		138,614	0	-1,039		14,494		-10,313	153,108
July	2030	0	-7,902		130,712	0	-888		13,607		-11,200	144,319
August	2030	0	-6,741		123,971	0	-416		13,191		-11,616	137,162
September	2030	0	-6,393		117,579	0	-1,058		12,133		-12,674	129,712
October	2030	0	-4,742		112,837	0	-578		11,555		-13,252	124,392
November	2030	0	-4,978		107,860	0	-345		11,210		-13,597	119,069
December	2030	0	-2,103		105,756	0	-108		11,102		-13,705	116,858
January	2031	0	-7,722		98,034	0	-286		10,816		-13,991	108,850
February	2031	0	-7,923		90,111	0	-1,260		9,556		-15,251	99,667
March	2031	0	-5,986		84,124	0	-541		9,015		-15,792	93,140
April	2031	0	-6,274		77,851	0	-606		8,409		-16,398	86,260
May	2031	0	-6,607		71,243	0	-584		7,826		-16,981	79,069
June	2031	0	-8,018		63,225	0	-1,453		6,373		-18,434	69,598
July	2031	0	-9,680		53,545	0	-762		5,611		-19,196	59,156
August	2031	0	-11,831		41,714	0	-1,368		4,243		-20,564	45,956
September	2031	0	-7,279		34,434	0	-483		3,760		-21,047	38,194
October	2031	0	-6,296		28,139	0	-756		3,003		-21,804	31,142
November	2031	0	-8,651		19,487	0	-1,015		1,988		-22,819	21,475
December	2031	0	-3,332		16,155	0	-148		1,840		-22,967	17,995
January	2032	0	-11,769		4,387	0	-1,227		613		-24,194	4,999
February	2032	0	-3,352		1,034	0	-467		145		-24,662	1,180
March	2032	0	-1,034		0	0	-145		0		-24,807	0
April	2032	0	0		0	0	0		0		-24,807	0
May	2032	0	0		0	0	0		0		-24,807	0
June	2032	0	0		0	0	0		0		-24,807	0
July	2032	0	0		0	0	0		0		-24,807	0
August	2032	0	0		0	0	0		0		-24,807	0
September	2032	0	0		0	0	0		0		-24,807	0
October	2032	0	0		0	0	0		0		-24,807	0
November	2032	0	0		0	0	0		0		-24,807	0
December	2032	0	0		0	0	0		0		-24,807	0

Table 2. EM&V Data Incremental by Vintage Year									
Net Incremental Energy (kWh)									
			VA IRP	VA NLR		NC IRP	NC NLR		System IRP
2012			27,464	27,464		-	-		27,464
2013			2,758,867	2,758,867		-	-		2,758,867
2014			2,996,832	2,996,832		14,247	14,247		3,011,078
2015			475,277	475,277		59,304	59,304		534,580
2016			591,012	591,012		60,784	51,325		651,795
2017			188,443	188,443		21,323	21,323		209,766

Appendix D.14 Residential Heat Pump Upgrade Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2028	0	-17	3,697		3,697	0			70	0	3,767	62	17	59	0.21	0.05	0.20
February	2028	0	-88	3,609		3,609	0			70	0	3,679	62	17	58	0.21	0.05	0.19
March	2028	0	-107	3,503		3,503	0			70	0	3,573	60	17	57	0.20	0.05	0.19
April	2028	0	-80	3,423		3,423	0			70	0	3,493	60	17	56	0.20	0.05	0.19
May	2028	0	-145	3,278		3,278	0			70	0	3,347	58	17	55	0.19	0.05	0.18
June	2028	0	-165	3,112		3,112	0			70	0	3,182	56	17	53	0.19	0.05	0.18
July	2028	0	-232	2,881		2,881	0			70	0	2,951	54	17	51	0.18	0.05	0.17
August	2028	0	-171	2,709		2,709	0			70	0	2,779	51	17	49	0.17	0.05	0.16
September	2028	0	-210	2,499		2,499	0			70	0	2,569	49	17	46	0.16	0.05	0.15
October	2028	0	-219	2,281		2,281	0			70	0	2,350	46	17	43	0.15	0.05	0.14
November	2028	0	-82	2,198		2,198	0			70	0	2,268	45	17	42	0.15	0.05	0.14
December	2028	0	-175	2,023		2,023	0			70	0	2,093	42	17	40	0.14	0.05	0.13
January	2029	0	-153	1,870		1,870	0			70	0	1,940	40	17	38	0.13	0.05	0.12
February	2029	0	-137	1,733		1,733	0			70	0	1,803	38	17	36	0.13	0.05	0.12
March	2029	0	-136	1,598		1,598	0			70	0	1,668	36	17	34	0.12	0.05	0.11
April	2029	0	-155	1,443		1,443	0			70	0	1,513	34	17	32	0.11	0.05	0.10
May	2029	0	-126	1,317		1,317	0			70	0	1,387	32	17	31	0.10	0.05	0.10
June	2029	0	-171	1,146		1,146	0	-1		69	-1	1,215	29	17	28	0.09	0.05	0.09
July	2029	0	-176	971		971	0	0		69	-1	1,040	26	17	25	0.08	0.05	0.08
August	2029	0	-112	859		859	0	-1		68	-1	927	24	17	23	0.07	0.05	0.07
September	2029	0	-134	725		725	0	0		68	-2	793	21	16	21	0.06	0.05	0.06
October	2029	0	-94	631		631	0	-3		65	-5	696	19	16	19	0.06	0.05	0.06
November	2029	0	-62	569		569	0	-1		64	-6	633	18	15	18	0.05	0.05	0.05
December	2029	0	-78	491		491	0	-8		56	-14	548	16	14	16	0.05	0.04	0.05
January	2030	0	-15	476		476	0	-2		54	-16	530	16	14	16	0.05	0.04	0.04
February	2030	0	-14	462		462	0	-2		52	-18	514	16	13	16	0.05	0.04	0.04
March	2030	0	-13	449		449	0	-1		51	-19	500	16	13	16	0.05	0.04	0.04
April	2030	0	-14	435		435	0	-2		49	-20	484	16	13	16	0.05	0.04	0.04
May	2030	0	-14	421		421	0	-2		47	-23	468	16	13	16	0.05	0.04	0.04
June	2030	0	-30	391		391	0	-3		44	-26	435	16	13	16	0.05	0.04	0.04
July	2030	0	-19	371		371	0	-3		41	-29	412	16	13	16	0.05	0.04	0.05
August	2030	0	-19	353		353	0	-1		40	-30	392	16	14	16	0.05	0.04	0.05
September	2030	0	-17	336		336	0	-3		37	-33	372	16	14	16	0.05	0.04	0.05
October	2030	0	-13	322		322	0	-2		35	-35	357	16	14	16	0.05	0.04	0.05
November	2030	0	-14	308		308	0	-1		34	-36	342	16	14	16	0.05	0.04	0.05
December	2030	0	-6	302		302	0	0		33	-37	325	16	14	16	0.05	0.04	0.05
January	2031	0	-18	284		284	0	-1		32	-37	316	16	14	16	0.05	0.04	0.05
February	2031	0	-23	261		261	0	-4		29	-41	289	16	14	16	0.05	0.04	0.05
March	2031	0	-18	242		242	0	-2		27	-43	269	16	14	16	0.05	0.04	0.05
April	2031	0	-19	224		224	0	-3		24	-46	248	16	15	16	0.05	0.04	0.05
May	2031	0	-18	206		206	0	-2		22	-48	228	16	15	16	0.05	0.04	0.05
June	2031	0	-23	183		183	0	-4		19	-51	201	16	14	16	0.05	0.04	0.05
July	2031	0	-28	155		155	0	-2		16	-54	171	16	15	16	0.05	0.04	0.05
August	2031	0	-33	122		122	0	-4		12	-58	134	16	16	16	0.05	0.04	0.05
September	2031	0	-19	103		103	0	-1		11	-59	114	15	16	16	0.05	0.05	0.05
October	2031	0	-19	85		85	0	-2		9	-61	93	15	17	16	0.05	0.05	0.05
November	2031	0	-24	61		61	0	-2		6	-64	68	14	16	14	0.05	0.05	0.05
December	2031	0	-9	52		52	0	-1		6	-64	58	14	16	14	0.05	0.05	0.05
January	2032	0	-38	14		14	0	-4		2	-68	16	14	15	14	0.04	0.04	0.04
February	2032	0	-10	4		4	0	-1		0	-70	5	12	24	13	0.05	0.04	0.05
March	2032	0	-4	0		0	0	0		0	-70	0	-	-	-	-	-	-
April	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-
May	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-
June	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-
July	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-
August	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-
September	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-
October	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-
November	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-
December	2032	0	0	0		0	0	0		0	-70	0	-	-	-	-	-	-

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR		NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			42		42		-		-	42	319	-	319	0.49	-	0.49
2013			1,691		1,691		-		-	1,691	837	-	837	0.51	-	0.51
2014			1,532		1,532		14		14	1,546	821	324	815	0.42	0.31	0.42
2015			189		189		23		23	212	113	99	111	0.04	0.04	0.04
2016			250		250		27		13	278	110	91	108	0.05	0.04	0.05
2017			52		52		6		6	58	164	181	166	0.05	0.05	0.05

Appendix D.14 Residential Heat Pump Upgrade Program

Table 3. EM&V Data Annualized by Vintage Year

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		86		86		-		-		86
2013		3,295		3,295		-		-		3,295
2014		3,649		3,649		44		44		3,693
2015		4,210		4,210		597		597		4,807
2016		5,395		5,395		665		325		6,060
2017		1,149		1,149		118		118		1,267

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Program Participants									
	NC PPI									
	System									
2012										-
2013										-
2014										44
2015										641
2016										1,306
2017										1,380

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		86		86		-		-		86
2013		3,381		3,381		-		-		3,381
2014		7,030		7,030		44		44		7,074
2015		11,240		11,240		641		641		11,881
2016		16,635		16,635		1,306		325		17,941
2017		17,784		17,784		1,424		443		19,208
2018		17,784		17,784		1,424		443		19,208
2019		17,784		17,784		1,424		-		19,208
2020		17,784		17,784		1,424		-		19,208
2021		17,784		17,784		1,424		-		19,208
2022		17,784		17,784		1,424		-		19,208
2023		17,784		17,784		1,424		-		19,208
2024		17,784		17,784		1,424		-		19,208
2025		17,784		17,784		1,424		-		19,208
2026		17,784		17,784		1,424		-		19,208
2027		17,698		17,698		1,424		-		19,122
2028		14,403		14,403		1,424		-		15,827
2029		10,754		10,754		1,380		-		12,134
2030		6,544		6,544		783		-		7,327
2031		1,149		1,149		118		-		1,267
2032		-		-		-		-		-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		86		86		-		-		86
2013		3,381		3,381		-		-		3,381
2014		7,030		7,030		44		44		7,074
2015		11,240		11,240		641		641		11,881
2016		16,635		16,635		1,306		325		17,941
2017		17,784		17,784		1,424		443		19,208
2018		17,784		17,784		1,424		443		19,208
2019		17,784		17,784		1,424		-		19,208
2020		17,784		17,784		1,424		-		19,208
2021		17,784		17,784		1,424		-		19,208
2022		17,784		17,784		1,424		-		19,208
2023		17,784		17,784		1,424		-		19,208
2024		17,784		17,784		1,424		-		19,208
2025		17,784		17,784		1,424		-		19,208
2026		17,784		17,784		1,424		-		19,208
2027		17,784		17,784		1,424		-		19,208
2028		17,784		17,784		1,424		-		19,208
2029		17,784		17,784		1,424		-		19,208
2030		17,784		17,784		1,424		-		19,208
2031		17,784		17,784		1,424		-		19,208
2032		17,784		17,784		1,424		-		19,208

Appendix D.14 Residential Heat Pump Upgrade Program

Table 3. EM&V Data Annualized by Vintage Year

	Net Annualized Energy (kWh/year)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		180,889		180,889		-		-		180,889
2013		6,045,452		6,045,452		-		-		6,045,452
2014		5,139,687		5,139,687		65,708		65,708		5,205,395
2015		842,026		842,026		98,753		98,753		940,779
2016		1,075,210		1,075,210		111,143		54,394		1,186,354
2017		193,864		193,864		22,081		22,081		215,945

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Net (kWh)									
									NC PPI	System
2012									-	
2013									-	
2014								14,247		
2015								125,011		
2016								225,244		
2017								231,219		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Net Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		27,464		27,464		-		-		27,464
2013		2,939,756		2,939,756		-		-		2,939,756
2014		9,223,172		9,223,172		14,247		14,247		9,237,419
2015		11,841,305		11,841,305		125,011		125,011		11,966,316
2016		12,799,066		12,799,066		225,244		188,376		13,024,310
2017		13,471,707		13,471,707		296,926		75,716		13,768,634
2018		13,477,128		13,477,128		297,685		76,474		13,774,813
2019		13,477,128		13,477,128		297,685		63,729		13,774,813
2020		13,477,128		13,477,128		297,685		-		13,774,813
2021		13,477,128		13,477,128		297,685		-		13,774,813
2022		13,477,128		13,477,128		297,685		-		13,774,813
2023		13,477,128		13,477,128		297,685		-		13,774,813
2024		13,477,128		13,477,128		297,685		-		13,774,813
2025		13,477,128		13,477,128		297,685		-		13,774,813
2026		13,477,128		13,477,128		297,685		-		13,774,813
2027		13,449,664		13,449,664		297,685		-		13,747,349
2028		10,537,373		10,537,373		297,685		-		10,835,057
2029		4,253,956		4,253,956		283,438		-		4,537,394
2030		1,635,823		1,635,823		172,673		-		1,808,497
2031		678,062		678,062		72,440		-		750,503
2032		5,421		5,421		758		-		6,179

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

	Net Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		27,464		27,464		-		-		27,464
2013		2,967,220		2,967,220		-		-		2,967,220
2014		12,190,392		12,190,392		14,247		14,247		12,204,638
2015		24,031,697		24,031,697		139,258		125,011		24,170,955
2016		36,830,763		36,830,763		364,502		188,376		37,195,264
2017		50,302,470		50,302,470		661,428		243,792		50,963,898
2018		63,779,598		63,779,598		959,113		249,976		64,738,711
2019		77,256,726		77,256,726		1,256,798		313,705		78,513,524
2020		90,733,854		90,733,854		1,554,482		380,434		92,288,337
2021		104,210,983		104,210,983		1,852,167		447,163		106,063,149
2022		117,688,111		117,688,111		2,149,851		513,883		119,837,962
2023		131,165,239		131,165,239		2,447,536		580,603		133,612,775
2024		144,642,367		144,642,367		2,745,221		647,323		147,387,588
2025		158,119,495		158,119,495		3,042,905		714,043		161,162,401
2026		171,596,624		171,596,624		3,340,590		780,763		174,937,213
2027		185,046,288		185,046,288		3,638,274		847,483		188,684,562
2028		195,583,661		195,583,661		3,935,959		914,203		199,519,620
2029		199,837,616		199,837,616		4,219,397		980,923		204,057,013
2030		201,473,440		201,473,440		4,392,071		1,047,643		205,865,510
2031		202,151,502		202,151,502		4,464,511		1,114,363		206,616,013
2032		202,156,923		202,156,923		4,465,269		1,181,083		206,622,192

Appendix D.14 Residential Heat Pump Upgrade Program

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			42		42			-		-	42	2,103	-	2,103	0.49	-	0.49
2013			1,691		1,691			-		-	1,691	1,835	-	1,835	0.51	-	0.51
2014			1,532		1,532			14		14	1,546	1,409	1,493	1,410	0.42	0.31	0.42
2015			189		189			23		23	212	200	165	196	0.04	0.04	0.04
2016			250		250			27		27	278	199	167	196	0.05	0.04	0.05
2017			52		52			6		6	58	169	187	170	0.05	0.05	0.05

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
								NC PPI			System	VA	NC	System	VA	NC	System
2012								-									
2013								-									
2014								14					324			0.31	
2015								37					195			0.06	
2016								64					172			0.05	
2017								56					168			0.04	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			42		42			-		-	42	319	-	319	0.49	-	0.49
2013			1,733		1,733			-		-	1,733	869	-	869	0.51	-	0.51
2014			3,265		3,265			14		14	3,278	1,312	324	1,306	0.46	0.31	0.46
2015			3,454		3,454			37		37	3,491	1,053	195	1,007	0.31	0.06	0.29
2016			3,704		3,704			64		13	3,768	769	172	726	0.22	0.05	0.21
2017			3,756		3,756			70		19	3,826	758	209	717	0.21	0.05	0.20
2018			3,756		3,756			70		19	3,826	758	209	717	0.21	0.05	0.20
2019			3,756		3,756			70		-	3,826	758	209	717	0.21	0.05	0.20
2020			3,756		3,756			70		-	3,826	758	209	717	0.21	0.05	0.20
2021			3,756		3,756			70		-	3,826	758	209	717	0.21	0.05	0.20
2022			3,756		3,756			70		-	3,826	758	209	717	0.21	0.05	0.20
2023			3,756		3,756			70		-	3,826	758	209	717	0.21	0.05	0.20
2024			3,756		3,756			70		-	3,826	758	209	717	0.21	0.05	0.20
2025			3,756		3,756			70		-	3,826	758	209	717	0.21	0.05	0.20
2026			3,756		3,756			70		-	3,826	758	209	717	0.21	0.05	0.20
2027			3,714		3,714			70		-	3,784	760	209	719	0.21	0.05	0.20
2028			2,023		2,023			70		-	2,093	732	209	685	0.14	0.05	0.13
2029			491		491			56		-	548	396	205	374	0.05	0.04	0.05
2030			302		302			33		-	335	250	221	247	0.05	0.04	0.05
2031			52		52			6		-	58	590	614	592	0.05	0.05	0.05
2032			(0)		(0)			0		-	(0)	-	-	-	-	-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2012			42					-			42	319	-	319	0.49	-	0.49
2013			1,733					-			1,733	878	-	878	0.51	-	0.51
2014			3,265					14			3,278	1,734	324	1,725	0.46	0.31	0.46
2015			3,454					37			3,491	2,138	217	2,034	0.31	0.06	0.29
2016			3,704					64			3,768	2,214	279	2,073	0.22	0.05	0.21
2017			3,756					70			3,826	2,829	464	2,653	0.21	0.05	0.20
2018			3,756					70			3,826	3,586	674	3,370	0.21	0.05	0.20
2019			3,756					70			3,826	4,344	883	4,088	0.21	0.05	0.20
2020			3,756					70			3,826	5,102	1,092	4,805	0.21	0.05	0.20
2021			3,756					70			3,826	5,860	1,301	5,522	0.21	0.05	0.20
2022			3,756					70			3,826	6,618	1,510	6,239	0.21	0.05	0.20
2023			3,756					70			3,826	7,375	1,719	6,956	0.21	0.05	0.20
2024			3,756					70			3,826	8,133	1,928	7,673	0.21	0.05	0.20
2025			3,756					70			3,826	8,891	2,137	8,390	0.21	0.05	0.20
2026			3,756					70			3,826	9,649	2,346	9,108	0.21	0.05	0.20
2027			3,756					70			3,826	10,405	2,555	9,823	0.21	0.05	0.20
2028			3,756					70			3,826	10,998	2,764	10,387	0.21	0.05	0.20
2029			3,756					70			3,826	11,237	2,963	10,624	0.21	0.05	0.20
2030			3,756					70			3,826	11,329	3,084	10,718	0.21	0.05	0.20
2031			3,756					70			3,826	11,367	3,135	10,757	0.21	0.05	0.20
2032			3,756					70			3,826	11,367	3,136	10,757	0.21	0.05	0.20

Appendix D.15 Residential Heat Pump Tune-Up Program

PROGRAM: Residential Heat Pump Tune-Up
DSM Phase II Program
Type: Energy Efficiency
Program Measure Life: 5.0 years

Table 1		Participation												
Month	Year	Program Participants										System Cum for IRP		
		VA					NC							
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D		E+G	
October	2012	139		139		139								139
November	2012	577		716		716								716
December	2012	493		1,209		1,209								1,209
January	2013	536		1,745		1,745								1,745
February	2013	2,124		3,869		3,869								3,869
March	2013	2,194		6,063		6,063								6,063
April	2013	876		6,939		6,939								6,939
May	2013	1,779		8,718		8,718								8,718
June	2013	1,236		9,954		9,954								9,954
July	2013	891		10,845		10,845								10,845
August	2013	570		11,415		11,415								11,415
September	2013	1,275		12,690		12,690								12,690
October	2013	1,408		14,098		14,098								14,098
November	2013	1,323		15,421		15,421								15,421
December	2013	1,424		16,845		16,845								16,845
January	2014	995		17,840		17,840	0			0			0	17,840
February	2014	1,178		19,018		19,018	0			0			0	19,018
March	2014	949		19,967		19,967	0			0			0	19,967
April	2014	1,865		21,832		21,832	0			0			0	21,832
May	2014	2,465		24,297		24,297	3			3			3	24,300
June	2014	3,699		27,996		27,996	3			6			6	28,002
July	2014	3,427		31,423		31,423	2			8			8	31,431
August	2014	2,727		34,150		34,150	17			25			25	34,175
September	2014	2,248		36,398		36,398	14			39			39	36,437
October	2014	1,621		38,019		38,019	82			121			121	38,140
November	2014	1,833		39,852		39,852	263			384			384	40,236
December	2014	1,680		41,532		41,532	197			581			581	42,113
January	2015	1,968		43,500		43,500	448			1,029			1,029	44,529
February	2015	1,931		45,431		45,431	316			1,345			1,345	46,776
March	2015	1,219		46,650		46,650	254			1,599			1,599	48,249
April	2015	3,141		49,791		49,791	342			1,941			1,941	51,732
May	2015	2,128		51,919		51,919	313			2,254			2,254	54,173
June	2015	2,085		54,004		54,004	523			2,777			2,777	56,781
July	2015	2,133		56,137		56,137	282			3,059			3,059	59,196
August	2015	1,931		58,068		58,068	171			3,230			3,230	61,298
September	2015	1,873		59,941		59,941	336			3,566			3,566	63,507
October	2015	1,900		61,841		61,841	169			3,735			3,735	65,576
November	2015	1,866		63,707		63,707	102			3,837			3,837	67,544
December	2015	1,939		65,646		65,646	51			3,888			3,888	69,534
January	2016	1,761		67,407		67,407	94			3,982			3,982	71,389
February	2016	2,101		69,508		69,508	170			4,152			4,152	73,660
March	2016	1,113		70,621		70,621	117			4,269			4,269	74,890
April	2016	1,726		72,347		72,347	159			4,428			4,428	76,775
May	2016	1,550		73,897		73,897	96			4,524			4,524	78,421
June	2016	1,649		75,546		75,546	179			4,703			4,703	80,249
July	2016	1,259		76,805		76,805	100			4,803	100		4,803	81,608
August	2016	1,754		78,559		78,559	113			4,916	213		4,916	83,475
September	2016	1,313		79,872		79,872	54			4,970	267		4,970	84,842
October	2016	1,644		81,516		81,516	54			5,024	321		5,024	86,540
November	2016	2,249		83,765		83,765	71			5,095	392		5,095	88,860
December	2016	889		84,654		84,654	67			5,162			5,162	89,816
January	2017	2,221		86,875		86,875	80			5,242			5,242	92,117
February	2017	219		87,094		87,094	29			5,271			5,271	92,365
March	2017	32		87,126		87,126	16			5,287			5,287	92,413
April	2017	0		87,126		87,126	0			5,287			5,287	92,413
May	2017	0		87,126		87,126	0			5,287			5,287	92,413
June	2017	0		87,126		87,126	0			5,287			5,287	92,413
July	2017	0		87,126		87,126	0			5,287			5,287	92,413
August	2017	0		87,126		87,126	0			5,287			5,287	92,413
September	2017	0		87,126		87,126	0			5,287			5,287	92,413
October	2017	0	-139	86,987		86,987	0			5,287			5,287	92,274
November	2017	0	-577	86,410		86,410	0			5,287			5,287	91,697
December	2017	0	-493	85,917		85,917	0			5,287			5,287	91,204

Appendix D.15 Residential Heat Pump Tune-Up Program

Table 1		Energy Savings												
Month	Year	Net kWh										System		
		VA					NC							
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	
October	2012	3,189		3,189		3,189								3,189
November	2012	12,957		16,147		16,147								16,147
December	2012	10,999		27,145		27,145								27,145
January	2013	12,127		39,272		39,272								39,272
February	2013	47,924		87,197		87,197								87,197
March	2013	48,133		135,329		135,329								135,329
April	2013	19,345		154,674		154,674								154,674
May	2013	39,019		193,693		193,693								193,693
June	2013	27,616		221,309		221,309								221,309
July	2013	19,673		240,983		240,983								240,983
August	2013	12,476		253,458		253,458								253,458
September	2013	27,894		281,352		281,352								281,352
October	2013	30,686		312,038		312,038								312,038
November	2013	28,180		340,217		340,217								340,217
December	2013	29,600		369,817		369,817								369,817
January	2014	18,599		388,416		388,416	0			0			0	388,416
February	2014	22,592		411,008		411,008	0			0			0	411,008
March	2014	17,780		428,787		428,787	0			0			0	428,787
April	2014	33,914		462,701		462,701	0			0			0	462,701
May	2014	47,076		509,777		509,777	102			102			102	509,879
June	2014	67,857		577,634		577,634	91			192			192	577,827
July	2014	65,372		643,006		643,006	41			234			234	643,240
August	2014	50,683		693,689		693,689	338			572			572	694,260
September	2014	40,462		734,151		734,151	268			840			840	734,991
October	2014	31,759		765,910		765,910	1,576			2,416			2,416	768,327
November	2014	37,238		803,148		803,148	5,058			7,474			7,474	810,622
December	2014	33,156		836,304		836,304	4,047			11,521			11,521	847,825
January	2015	33,289		869,593		869,593	8,491			20,012			20,012	889,605
February	2015	30,500		900,092		900,092	5,792			25,804			25,804	925,896
March	2015	20,185		920,277		920,277	4,915			30,719			30,719	950,996
April	2015	48,505		968,783		968,783	6,677			37,396			37,396	1,006,179
May	2015	33,052		1,001,834		1,001,834	5,895			43,292			43,292	1,045,126
June	2015	31,820		1,033,655		1,033,655	10,037			53,329			53,329	1,086,983
July	2015	30,506		1,064,161		1,064,161	5,362			58,691			58,691	1,122,851
August	2015	28,564		1,092,725		1,092,725	3,187			61,877			61,877	1,154,602
September	2015	29,206		1,121,930		1,121,930	6,309			68,186			68,186	1,190,117
October	2015	31,005		1,152,935		1,152,935	3,252			71,438			71,438	1,224,373
November	2015	29,424		1,182,359		1,182,359	1,934			73,373			73,373	1,255,732
December	2015	30,939		1,213,298		1,213,298	919			74,292			74,292	1,287,590
January	2016	27,673		1,240,971		1,240,971	1,838			76,130			76,130	1,317,100
February	2016	33,849		1,274,820		1,274,820	3,040			79,170			79,170	1,353,989
March	2016	17,552		1,292,372		1,292,372	2,222			81,392			81,392	1,373,764
April	2016	27,594		1,319,966		1,319,966	2,934			84,326			84,326	1,404,292
May	2016	26,473		1,346,439		1,346,439	1,794			86,120			86,120	1,432,559
June	2016	28,151		1,374,590		1,374,590	3,401			89,521			89,521	1,464,111
July	2016	20,517		1,395,107		1,395,107	2,003			91,524	2,003		91,524	1,486,631
August	2016	27,380		1,422,487		1,422,487	2,175			93,699	4,178		93,699	1,516,186
September	2016	19,544		1,442,031		1,442,031	960			94,659	5,138		94,659	1,536,689
October	2016	24,041		1,466,071		1,466,071	1,001			95,660	6,139		95,660	1,561,731
November	2016	33,887		1,499,959		1,499,959	1,423			97,083	7,562		97,083	1,597,041
December	2016	13,569		1,513,527		1,513,527	1,217			98,299			98,299	1,611,826
January	2017	33,076		1,546,603		1,546,603	1,515			99,814			10,293	1,646,417
February	2017	3,615		1,550,218		1,550,218	528			100,342			10,821	1,650,560
March	2017	569		1,550,787		1,550,787	342			100,684			11,163	1,651,470
April	2017	0		1,550,787		1,550,787	0			100,684			11,163	1,651,470
May	2017	0		1,550,787		1,550,787	0			100,684			11,163	1,651,470
June	2017	0		1,550,787		1,550,787	0			100,684			11,163	1,651,470
July	2017	0		1,550,787		1,550,787	0			100,684			11,163	1,651,470
August	2017	0		1,550,787		1,550,787	0			100,684			11,163	1,651,470
September	2017	0		1,550,787		1,550,787	0			100,684			11,163	1,651,470
October	2017	0	-3,189	1,547,597		1,547,597	0			100,684			11,163	1,648,281
November	2017	0	-12,957	1,534,640		1,534,640	0			100,684			11,163	1,635,324
December	2017	0	-10,999	1,523,641		1,523,641	0			100,684			11,163	1,624,325

Appendix D.15 Residential Heat Pump Tune-Up Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
October	2012	26		26		26					26	23		23	0.19		0.19	
November	2012	106		133		133					133	23		23	0.19		0.19	
December	2012	90		223		223					223	22		22	0.18		0.18	
January	2013	99		322		322					322	23		23	0.18		0.18	
February	2013	393		715		715					715	23		23	0.18		0.18	
March	2013	396		1,111		1,111					1,111	22		22	0.18		0.18	
April	2013	160		1,271		1,271					1,271	22		22	0.18		0.18	
May	2013	323		1,594		1,594					1,594	22		22	0.18		0.18	
June	2013	229		1,823		1,823					1,823	22		22	0.18		0.18	
July	2013	162		1,985		1,985					1,985	22		22	0.18		0.18	
August	2013	103		2,088		2,088					2,088	22		22	0.18		0.18	
September	2013	229		2,317		2,317					2,317	22		22	0.18		0.18	
October	2013	252		2,569		2,569					2,569	22		22	0.18		0.18	
November	2013	232		2,801		2,801					2,801	22		22	0.18		0.18	
December	2013	244		3,044		3,044					3,044	22		22	0.18		0.18	
January	2014	119		3,163		3,163	0		0		3,163	22	-	22	0.18	-	0.18	
February	2014	143		3,306		3,306	0		0		3,306	22	-	22	0.17	-	0.17	
March	2014	113		3,419		3,419	0		0		3,419	21	-	21	0.17	-	0.17	
April	2014	212		3,631		3,631	0		0		3,631	21	-	21	0.17	-	0.17	
May	2014	290		3,921		3,921	1		1		3,922	21	34	21	0.16	0.21	0.16	
June	2014	423		4,344		4,344	1		1		4,345	21	32	21	0.16	0.20	0.16	
July	2014	398		4,742		4,742	0		1		4,744	20	29	20	0.15	0.18	0.15	
August	2014	310		5,052		5,052	2		3		5,056	20	23	20	0.15	0.14	0.15	
September	2014	252		5,304		5,304	2		5		5,309	20	22	20	0.15	0.13	0.15	
October	2014	187		5,491		5,491	10		15		5,506	20	20	20	0.14	0.12	0.14	
November	2014	213		5,704		5,704	32		47		5,751	20	19	20	0.14	0.12	0.14	
December	2014	196		5,900		5,900	24		71		5,971	20	20	20	0.14	0.12	0.14	
January	2015	1,804		7,704		7,704	75		146		7,851	20	19	20	0.18	0.14	0.18	
February	2015	273		7,977		7,977	52		198		8,175	20	19	20	0.18	0.15	0.17	
March	2015	182		8,159		8,159	44		241		8,400	20	19	20	0.17	0.15	0.17	
April	2015	431		8,590		8,590	59		301		8,891	19	19	19	0.17	0.15	0.17	
May	2015	296		8,886		8,886	53		353		9,239	19	19	19	0.17	0.16	0.17	
June	2015	284		9,170		9,170	89		442		9,613	19	19	19	0.17	0.16	0.17	
July	2015	266		9,437		9,437	47		490		9,926	19	19	19	0.17	0.16	0.17	
August	2015	251		9,688		9,688	29		518		10,207	19	19	19	0.17	0.16	0.17	
September	2015	260		9,948		9,948	56		575		10,523	19	19	19	0.17	0.16	0.17	
October	2015	275		10,223		10,223	29		604		10,827	19	19	19	0.17	0.16	0.17	
November	2015	258		10,481		10,481	17		621		11,102	19	19	19	0.16	0.16	0.16	
December	2015	271		10,752		10,752	8		630		11,382	18	19	19	0.16	0.16	0.16	
January	2016	246		10,998		10,998	16		646		11,644	18	19	18	0.16	0.16	0.16	
February	2016	300		11,298		11,298	27		673		11,971	18	19	18	0.16	0.16	0.16	
March	2016	156		11,454		11,454	20		693		12,147	18	19	18	0.16	0.16	0.16	
April	2016	244		11,698		11,698	26		719		12,417	18	19	18	0.16	0.16	0.16	
May	2016	237		11,936		11,936	16		735		12,671	18	19	18	0.16	0.16	0.16	
June	2016	254		12,190		12,190	31		766		12,955	18	19	18	0.16	0.16	0.16	
July	2016	183		12,373		12,373	18		784	18	13,156	18	19	18	0.16	0.16	0.16	
August	2016	240		12,613		12,613	20		803	38	13,416	18	19	18	0.16	0.16	0.16	
September	2016	175		12,788		12,788	9		812	46	13,600	18	19	18	0.16	0.16	0.16	
October	2016	217		13,005		13,005	9		821	55	13,825	18	19	18	0.16	0.16	0.16	
November	2016	308		13,313		13,313	13		833	68	14,146	18	19	18	0.16	0.16	0.16	
December	2016	120		13,433		13,433	11		844	79	14,277	18	19	18	0.16	0.16	0.16	
January	2017	310		13,743		13,743	14		858	93	14,601	18	19	18	0.16	0.16	0.16	
February	2017	34		13,776		13,776	5		863	98	14,640	18	19	18	0.16	0.16	0.16	
March	2017	5		13,782		13,782	3		867	101	14,648	18	19	18	0.16	0.16	0.16	
April	2017	0		13,782		13,782	0		867	101	14,648	18	19	18	0.16	0.16	0.16	
May	2017	0		13,782		13,782	0		867	101	14,648	18	19	18	0.16	0.16	0.16	
June	2017	0		13,782		13,782	0		867	101	14,648	18	19	18	0.16	0.16	0.16	
July	2017	0		13,782		13,782	0		867	101	14,648	18	19	18	0.16	0.16	0.16	
August	2017	0		13,782		13,782	0		867	101	14,648	18	19	18	0.16	0.16	0.16	
September	2017	0		13,782		13,782	0		867	101	14,648	18	19	18	0.16	0.16	0.16	
October	2017	0	-26	13,756		13,756	0		867	101	14,622	18	19	18	0.16	0.16	0.16	
November	2017	0	-106	13,649		13,649	0		867	101	14,516	18	19	18	0.16	0.16	0.16	
December	2017	0	-90	13,559		13,559	0		867	101	14,425	18	19	18	0.16	0.16	0.16	

Appendix D.15 Residential Heat Pump Tune-Up Program

Table 1		Participation										
Month	Year	Program Participants										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2018	0	-536	85,381		85,381	0		5,287		584	90,668
February	2018	0	-2,124	83,257		83,257	0		5,287		584	88,544
March	2018	0	-2,194	81,063		81,063	0		5,287		584	86,350
April	2018	0	-876	80,187		80,187	0		5,287		584	85,474
May	2018	0	-1,779	78,408		78,408	0		5,287		584	83,695
June	2018	0	-1,236	77,172		77,172	0		5,287		584	82,459
July	2018	0	-891	76,281		76,281	0		5,287		584	81,568
August	2018	0	-570	75,711		75,711	0		5,287		584	80,998
September	2018	0	-1,275	74,436		74,436	0		5,287		584	79,723
October	2018	0	-1,408	73,028		73,028	0		5,287		584	78,315
November	2018	0	-1,323	71,705		71,705	0		5,287		584	76,992
December	2018	0	-1,424	70,281		70,281	0		5,287		584	75,568
January	2019	0	-995	69,286		69,286	0		5,287		584	74,573
February	2019	0	-1,178	68,108		68,108	0		5,287		584	73,395
March	2019	0	-949	67,159		67,159	0		5,287		584	72,446
April	2019	0	-1,865	65,294		65,294	0		5,287		584	70,581
May	2019	0	-2,465	62,829		62,829	0	-3	5,284		581	68,113
June	2019	0	-3,699	59,130		59,130	0	-3	5,281		578	64,411
July	2019	0	-3,427	55,703		55,703	0	-2	5,279	0	576	60,982
August	2019	0	-2,727	52,976		52,976	0	-17	5,262	0	559	58,238
September	2019	0	-2,248	50,728		50,728	0	-14	5,248	0	545	55,976
October	2019	0	-1,621	49,107		49,107	0	-82	5,166	0	463	54,273
November	2019	0	-1,833	47,274		47,274	0	-263	4,903	0	-263	52,177
December	2019	0	-1,680	45,594		45,594	0	-197	4,706		-460	50,300
January	2020	0	-1,968	43,626		43,626	0	-448	4,258		-908	47,884
February	2020	0	-1,931	41,695		41,695	0	-316	3,942		-1,224	45,637
March	2020	0	-1,219	40,476		40,476	0	-254	3,688		-1,478	44,164
April	2020	0	-3,141	37,335		37,335	0	-342	3,346		-1,820	40,681
May	2020	0	-2,128	35,207		35,207	0	-313	3,033		-2,133	38,240
June	2020	0	-2,085	33,122		33,122	0	-523	2,510		-2,656	35,632
July	2020	0	-2,133	30,989		30,989	0	-282	2,228		-2,938	33,217
August	2020	0	-1,931	29,058		29,058	0	-171	2,057		-3,109	31,115
September	2020	0	-1,873	27,185		27,185	0	-336	1,721		-3,445	28,906
October	2020	0	-1,900	25,285		25,285	0	-169	1,552		-3,614	26,837
November	2020	0	-1,866	23,419		23,419	0	-102	1,450		-3,716	24,869
December	2020	0	-1,939	21,480		21,480	0	-51	1,399		-3,767	22,879
January	2021	0	-1,761	19,719		19,719	0	-94	1,305		-3,861	21,024
February	2021	0	-2,101	17,618		17,618	0	-170	1,135		-4,031	18,753
March	2021	0	-1,113	16,505		16,505	0	-117	1,018		-4,148	17,523
April	2021	0	-1,726	14,779		14,779	0	-159	859		-4,307	15,638
May	2021	0	-1,550	13,229		13,229	0	-96	763		-4,403	13,992
June	2021	0	-1,649	11,580		11,580	0	-179	584		-4,582	12,164
July	2021	0	-1,259	10,321		10,321	0	-100	484		-4,682	10,805
August	2021	0	-1,754	8,567		8,567	0	-113	371		-4,795	8,938
September	2021	0	-1,313	7,254		7,254	0	-54	317		-4,849	7,571
October	2021	0	-1,644	5,610		5,610	0	-54	263		-4,903	5,873
November	2021	0	-2,249	3,361		3,361	0	-71	192		-4,974	3,553
December	2021	0	-889	2,472		2,472	0	-67	125		-5,041	2,597
January	2022	0	-2,221	251		251	0	-80	45		-5,121	296
February	2022	0	-219	32		32	0	-29	16		-5,150	48
March	2022	0	-32	0		0	0	-16	0		-5,166	0
April	2022	0	0	0		0	0	0	0		-5,166	0
May	2022	0	0	0		0	0	0	0		-5,166	0
June	2022	0	0	0		0	0	0	0		-5,166	0
July	2022	0	0	0		0	0	0	0		-5,166	0
August	2022	0	0	0		0	0	0	0		-5,166	0
September	2022	0	0	0		0	0	0	0		-5,166	0
October	2022	0	0	0		0	0	0	0		-5,166	0
November	2022	0	0	0		0	0	0	0		-5,166	0
December	2022	0	0	0		0	0	0	0		-5,166	0

Table 2. EM&V Data Incremental by Vintage Year									
	Program Participants								
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP				
2012	1,209	1,209	-	-	1,209				
2013	15,636	15,636	-	-	15,636				
2014	24,687	24,687	581	581	25,268				
2015	24,114	24,114	3,307	3,307	27,421				
2016	19,008	19,008	1,274	459	20,282				
2017	1,263	1,263	125	125	1,388				
2018	(15,636)		-		(15,636)				

Appendix D.15 Residential Heat Pump Tune-Up Program

Table 1		Energy Savings										
Month	Year	Net kWh					System					
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2018	0	-12,127	1,511,514		1,511,514	0		100,684		11,163	1,612,198
February	2018	0	-47,924	1,463,590		1,463,590	0		100,684		11,163	1,564,274
March	2018	0	-48,133	1,415,458		1,415,458	0		100,684		11,163	1,516,141
April	2018	0	-19,345	1,396,112		1,396,112	0		100,684		11,163	1,496,796
May	2018	0	-39,019	1,357,093		1,357,093	0		100,684		11,163	1,457,777
June	2018	0	-27,616	1,329,477		1,329,477	0		100,684		11,163	1,430,161
July	2018	0	-19,673	1,309,804		1,309,804	0		100,684		11,163	1,410,488
August	2018	0	-12,476	1,297,328		1,297,328	0		100,684		11,163	1,398,012
September	2018	0	-27,894	1,269,435		1,269,435	0		100,684		11,163	1,370,119
October	2018	0	-30,686	1,238,749		1,238,749	0		100,684		11,163	1,339,433
November	2018	0	-28,180	1,210,569		1,210,569	0		100,684		11,163	1,311,253
December	2018	0	-29,600	1,180,970		1,180,970	0		100,684		11,163	1,281,654
January	2019	0	-18,599	1,162,371		1,162,371	0		100,684		11,163	1,263,055
February	2019	0	-22,592	1,139,779		1,139,779	0		100,684		11,163	1,240,463
March	2019	0	-17,780	1,121,999		1,121,999	0		100,684		11,163	1,222,683
April	2019	0	-33,914	1,088,086		1,088,086	0		100,684		11,163	1,188,769
May	2019	0	-47,076	1,041,009		1,041,009	0	-102	100,582		11,061	1,141,591
June	2019	0	-67,857	973,153		973,153	0	-91	100,491		10,970	1,073,644
July	2019	0	-65,372	907,780		907,780	0	-41	100,450	0	10,929	1,008,230
August	2019	0	-50,683	857,098		857,098	0	-338	100,112	0	10,591	957,210
September	2019	0	-40,462	816,636		816,636	0	-268	99,844	0	10,323	916,479
October	2019	0	-31,759	784,876		784,876	0	-1,576	98,267	0	8,746	883,144
November	2019	0	-37,238	747,638		747,638	0	-5,058	93,210	0	-5,058	840,848
December	2019	0	-33,156	714,483		714,483	0	-4,047	89,162		-9,105	803,645
January	2020	0	-33,289	681,194		681,194	0	-8,491	80,672		-17,596	761,866
February	2020	0	-30,500	650,694		650,694	0	-5,792	74,880		-23,388	725,574
March	2020	0	-20,185	630,509		630,509	0	-4,915	69,965		-28,303	700,474
April	2020	0	-48,505	582,004		582,004	0	-6,677	63,288		-34,980	645,292
May	2020	0	-33,052	548,952		548,952	0	-5,895	57,392		-40,875	606,344
June	2020	0	-31,820	517,132		517,132	0	-10,037	47,355		-50,912	564,487
July	2020	0	-30,506	486,626		486,626	0	-5,362	41,993		-56,274	528,619
August	2020	0	-28,564	458,062		458,062	0	-3,187	38,807		-59,461	496,868
September	2020	0	-29,206	428,856		428,856	0	-6,309	32,497		-65,770	461,354
October	2020	0	-31,005	397,852		397,852	0	-3,252	29,245		-69,022	427,097
November	2020	0	-29,424	368,427		368,427	0	-1,934	27,311		-70,956	395,738
December	2020	0	-30,939	337,489		337,489	0	-919	26,392		-71,876	363,880
January	2021	0	-27,673	309,816		309,816	0	-1,838	24,554		-73,713	334,370
February	2021	0	-33,849	275,967		275,967	0	-3,040	21,514		-76,753	297,481
March	2021	0	-17,552	258,415		258,415	0	-2,222	19,292		-78,976	277,707
April	2021	0	-27,594	230,821		230,821	0	-2,934	16,357		-81,910	247,178
May	2021	0	-26,473	204,348		204,348	0	-1,794	14,564		-83,704	218,911
June	2021	0	-28,151	176,197		176,197	0	-3,401	11,163		-87,105	187,360
July	2021	0	-20,517	155,680		155,680	0	-2,003	9,160		-89,108	164,840
August	2021	0	-27,380	128,300		128,300	0	-2,175	6,985		-91,283	135,284
September	2021	0	-19,544	108,756		108,756	0	-960	6,025		-92,242	114,781
October	2021	0	-24,041	84,715		84,715	0	-1,001	5,024		-93,243	89,740
November	2021	0	-33,887	50,828		50,828	0	-1,423	3,601		-94,666	54,429
December	2021	0	-13,569	37,259		37,259	0	-1,217	2,385		-95,883	39,644
January	2022	0	-33,076	4,184		4,184	0	-1,515	870		-97,398	5,054
February	2022	0	-3,615	569		569	0	-528	342		-97,926	911
March	2022	0	-569	0		0	0	-342	0		-98,267	0
April	2022	0	0	0		0	0	0	0		-98,267	0
May	2022	0	0	0		0	0	0	0		-98,267	0
June	2022	0	0	0		0	0	0	0		-98,267	0
July	2022	0	0	0		0	0	0	0		-98,267	0
August	2022	0	0	0		0	0	0	0		-98,267	0
September	2022	0	0	0		0	0	0	0		-98,267	0
October	2022	0	0	0		0	0	0	0		-98,267	0
November	2022	0	0	0		0	0	0	0		-98,267	0
December	2022	0	0	0		0	0	0	0		-98,267	0

Table 2. EM&V Data Incremental by Vintage Year									
Net Incremental Energy (kWh)									
			VA IRP	VA NLR		NC IRP	NC NLR		System IRP
2012			46,481	46,481		-	-		46,481
2013			2,303,596	2,303,596		-	-		2,303,596
2014			2,816,729	2,816,729		23,352	23,352		2,840,081
2015			2,485,994	2,485,994		480,153	480,153		2,966,147
2016			2,028,763	2,028,763		176,079	145,620		2,204,841
2017			395,880	395,880		27,402	27,402		423,282
2018			(2,303,596)	(2,303,596)		-	-		(2,303,596)

Appendix D.15 Residential Heat Pump Tune-Up Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant				
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP				
		VA					NC					System			VA	NC	System	VA	NC
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP							
January	2018	0	-99	13,460		13,460	0			867	101	14,326	18	19	18	0.16	0.16	0.16	
February	2018	0	-393	13,067		13,067	0			867	101	13,933	18	19	18	0.16	0.16	0.16	
March	2018	0	-396	12,671		12,671	0			867	101	13,537	17	19	18	0.16	0.16	0.16	
April	2018	0	-160	12,510		12,510	0			867	101	13,377	17	19	18	0.16	0.16	0.16	
May	2018	0	-323	12,188		12,188	0			867	101	13,054	17	19	17	0.16	0.16	0.16	
June	2018	0	-229	11,958		11,958	0			867	101	12,825	17	19	17	0.15	0.16	0.16	
July	2018	0	-162	11,796		11,796	0			867	101	12,663	17	19	17	0.15	0.16	0.16	
August	2018	0	-103	11,694		11,694	0			867	101	12,560	17	19	17	0.15	0.16	0.16	
September	2018	0	-229	11,465		11,465	0			867	101	12,332	17	19	17	0.15	0.16	0.15	
October	2018	0	-252	11,213		11,213	0			867	101	12,079	17	19	17	0.15	0.16	0.15	
November	2018	0	-232	10,981		10,981	0			867	101	11,848	17	19	17	0.15	0.16	0.15	
December	2018	0	-244	10,737		10,737	0			867	101	11,604	17	19	17	0.15	0.16	0.15	
January	2019	0	-119	10,618		10,618	0			867	101	11,485	17	19	17	0.15	0.16	0.15	
February	2019	0	-143	10,476		10,476	0			867	101	11,342	17	19	17	0.15	0.16	0.15	
March	2019	0	-113	10,363		10,363	0			867	101	11,229	17	19	17	0.15	0.16	0.16	
April	2019	0	-212	10,151		10,151	0			867	101	11,018	17	19	17	0.16	0.16	0.16	
May	2019	0	-290	9,861		9,861	0	-1		866	100	10,727	17	19	17	0.16	0.16	0.16	
June	2019	0	-423	9,438		9,438	0	-1		865	100	10,303	16	19	17	0.16	0.16	0.16	
July	2019	0	-398	9,040		9,040	0	0		865	99	9,905	16	19	17	0.16	0.16	0.16	
August	2019	0	-310	8,730		8,730	0	-2		863	97	9,593	16	19	16	0.16	0.16	0.16	
September	2019	0	-252	8,478		8,478	0	-2		861	96	9,339	16	19	16	0.17	0.16	0.17	
October	2019	0	-187	8,291		8,291	0	-10		852	86	9,142	16	19	16	0.17	0.16	0.17	
November	2019	0	-213	8,078		8,078	0	-32		820	54	8,897	16	19	16	0.17	0.17	0.17	
December	2019	0	-196	7,882		7,882	0	-24		795	30	8,677	16	19	16	0.17	0.17	0.17	
January	2020	0	-1,804	6,078		6,078	0	-75		720	-45	6,798	16	19	16	0.14	0.17	0.14	
February	2020	0	-273	5,804		5,804	0	-52		669	-97	6,473	16	19	16	0.14	0.17	0.14	
March	2020	0	-182	5,623		5,623	0	-44		625	-141	6,248	16	19	16	0.14	0.17	0.14	
April	2020	0	-431	5,192		5,192	0	-59		566	-200	5,758	16	19	16	0.14	0.17	0.14	
May	2020	0	-296	4,896		4,896	0	-53		513	-252	5,409	16	19	16	0.14	0.17	0.14	
June	2020	0	-284	4,611		4,611	0	-89		424	-341	5,036	16	19	16	0.14	0.17	0.14	
July	2020	0	-266	4,345		4,345	0	-47		377	-389	4,722	16	19	16	0.14	0.17	0.14	
August	2020	0	-251	4,094		4,094	0	-29		348	-418	4,442	16	19	16	0.14	0.17	0.14	
September	2020	0	-260	3,833		3,833	0	-56		292	-474	4,125	16	19	16	0.14	0.17	0.14	
October	2020	0	-275	3,559		3,559	0	-29		263	-503	3,821	16	19	16	0.14	0.17	0.14	
November	2020	0	-258	3,301		3,301	0	-17		245	-521	3,546	16	19	16	0.14	0.17	0.14	
December	2020	0	-271	3,029		3,029	0	-8		237	-529	3,266	16	19	16	0.14	0.17	0.14	
January	2021	0	-246	2,784		2,784	0	-16		221	-545	3,005	16	19	16	0.14	0.17	0.14	
February	2021	0	-300	2,484		2,484	0	-27		194	-572	2,678	16	19	16	0.14	0.17	0.14	
March	2021	0	-156	2,328		2,328	0	-20		174	-592	2,502	16	19	16	0.14	0.17	0.14	
April	2021	0	-244	2,083		2,083	0	-26		148	-618	2,231	16	19	16	0.14	0.17	0.14	
May	2021	0	-237	1,846		1,846	0	-16		131	-634	1,977	15	19	16	0.14	0.17	0.14	
June	2021	0	-254	1,592		1,592	0	-31		101	-665	1,693	15	19	15	0.14	0.17	0.14	
July	2021	0	-183	1,409		1,409	0	-18		83	-683	1,492	15	19	15	0.14	0.17	0.14	
August	2021	0	-240	1,169		1,169	0	-20		63	-702	1,232	15	19	15	0.14	0.17	0.14	
September	2021	0	-175	994		994	0	-9		55	-711	1,049	15	19	15	0.14	0.17	0.14	
October	2021	0	-217	777		777	0	-9		46	-720	823	15	19	15	0.14	0.17	0.14	
November	2021	0	-308	469		469	0	-13		33	-732	502	15	19	15	0.14	0.17	0.14	
December	2021	0	-120	349		349	0	-11		22	-744	371	15	19	15	0.14	0.18	0.14	
January	2022	0	-310	39		39	0	-14		8	-758	47	17	19	17	0.16	0.18	0.16	
February	2022	0	-34	5		5	0	-5		3	-762	8	18	21	19	0.17	0.20	0.18	
March	2022	0	-5	0		0	0	-3		0	-766	0	-	-	-	-	-	-	
April	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	
May	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	
June	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	
July	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	
August	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	
September	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	
October	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	
November	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	
December	2022	0	0	0		0	0	0		0	-766	0	-	-	-	-	-	-	

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			223		223			-		-	223	38	-	38	0.18	-	0.18
2013			2,822		2,822			-		-	2,822	147	-	147	0.18	-	0.18
2014			2,855		2,855			71		71	2,927	114	40	112	0.12	0.12	0.12
2015			4,852		4,852			558		558	5,411	103	145	108	0.20	0.17	0.20
2016			2,681		2,681			215		79	2,896	107	138	109	0.14	0.17	0.14
2017			126		126			22		22	148	313	219	305	0.10	0.18	0.11
2018			(2,822)					-		-	(2,822)	147	-	147	0.18	-	0.18

Appendix D.15 Residential Heat Pump Tune-Up Program

Table 3. EM&V Data Annualized by Vintage Year

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		1,209		1,209		-		-		1,209
2013		15,636		15,636		-		-		15,636
2014		24,687		24,687		581		581		25,268
2015		24,114		24,114		3,307		3,307		27,421
2016		19,008		19,008		1,274		459		20,282
2017		1,263		1,263		125		125		1,388

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Program Participants									
	NC PPI									
	System									
2012										-
2013										-
2014										581
2015										3,888
2016										5,162
2017										4,706

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		1,209		1,209		-		-		1,209
2013		16,845		16,845		-		-		16,845
2014		41,532		41,532		581		581		42,113
2015		65,646		65,646		3,888		3,888		69,534
2016		84,654		84,654		5,162		459		89,816
2017		85,917		85,917		5,287		584		91,204
2018		70,281		70,281		5,287		584		75,568
2019		45,594		45,594		4,706		-		50,300
2020		21,480		21,480		1,399		-		22,879
2021		2,472		2,472		125		-		2,597
2022		-		-		-		-		-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		1,209		1,209		-		-		1,209
2013		16,845		16,845		-		-		16,845
2014		41,532		41,532		581		581		42,113
2015		65,646		65,646		3,888		3,888		69,534
2016		84,654		84,654		5,162		459		89,816
2017		85,917		85,917		5,287		584		91,204
2018		85,917		85,917		5,287		584		91,204
2019		85,917		85,917		5,287		-		91,204
2020		85,917		85,917		5,287		-		91,204
2021		85,917		85,917		5,287		-		91,204
2022		85,917		85,917		5,287		-		91,204

Appendix D.15 Residential Heat Pump Tune-Up Program

Table 3. EM&V Data Annualized by Vintage Year

	Net Annualized Energy (kWh/year)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		325,743		325,743		-		-		325,743
2013		4,112,059		4,112,059		-		-		4,112,059
2014		5,597,846		5,597,846		138,256		138,256		5,736,102
2015		4,523,928		4,523,928		753,248		753,248		5,277,175
2016		3,602,750		3,602,750		288,088		105,339		3,890,838
2017		121,371		121,371		28,614		28,614		149,985

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Net (kWh)									
									NC PPI	System
2012								-		
2013								-		
2014								23,352		
2015								618,409		
2016								1,067,582		
2017								1,068,738		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Net Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		46,481		46,481		-		-		46,481
2013		2,629,339		2,629,339		-		-		2,629,339
2014		7,254,531		7,254,531		23,352		23,352		7,277,883
2015		12,521,642		12,521,642		618,409		618,409		13,140,051
2016		16,588,339		16,588,339		1,067,582		888,540		17,655,921
2017		18,558,205		18,558,205		1,206,994		132,742		19,765,200
2018		15,980,100		15,980,100		1,208,206		133,953		17,188,306
2019		11,354,908		11,354,908		1,184,854		93,109		12,539,762
2020		6,087,798		6,087,798		589,797		-		6,677,594
2021		2,021,101		2,021,101		140,624		-		2,161,724
2022		4,753		4,753		1,212		-		5,964

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

	Net Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		46,481		46,481		-		-		46,481
2013		2,675,820		2,675,820		-		-		2,675,820
2014		9,930,352		9,930,352		23,352		23,352		9,953,703
2015		22,451,993		22,451,993		641,761		641,761		23,093,754
2016		39,040,332		39,040,332		1,709,343		1,709,343		40,749,675
2017		57,598,537		57,598,537		2,916,337		2,916,337		60,514,875
2018		73,578,638		73,578,638		4,124,543		4,124,543		77,703,181
2019		84,933,546		84,933,546		5,309,397		5,309,397		90,242,943
2020		91,021,343		91,021,343		5,899,194		5,899,194		96,920,537
2021		93,042,444		93,042,444		6,039,818		6,039,818		99,082,261
2022		93,047,197		93,047,197		6,041,029		6,041,029		99,088,226

Appendix D.15 Residential Heat Pump Tune-Up Program

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			223		223			-		-	223	269	-	269	0.18	-	0.18
2013			2,822		2,822			-		-	2,822	263	-	263	0.18	-	0.18
2014			2,855		2,855			71		71	2,927	227	238	227	0.12	0.12	0.12
2015			4,852		4,852			558		558	5,411	188	228	192	0.20	0.17	0.20
2016			2,681		2,681			215		79	2,896	190	226	192	0.14	0.17	0.14
2017			126		126			22		22	148	96	229	108	0.10	0.18	0.11

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
								NC PPI			System	VA	NC	System	VA	NC	System
2012								-									
2013								-									
2014								71					40			0.12	
2015								630					159			0.16	
2016								844					207			0.16	
2017								795					227			0.17	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			223		223			-		-	223	38	-	38	0.18	-	0.18
2013			3,044		3,044			-		-	3,044	156	-	156	0.18	-	0.18
2014			5,900		5,900			71		71	5,971	175	40	173	0.14	0.12	0.14
2015			10,752		10,752			630		630	11,382	191	159	189	0.16	0.16	0.16
2016			13,433		13,433			844		79	14,277	196	207	197	0.16	0.16	0.16
2017			13,559		13,559			867		101	14,425	216	228	217	0.16	0.16	0.16
2018			10,737		10,737			867		101	11,604	227	229	227	0.15	0.16	0.15
2019			7,882		7,882			795		30	8,677	249	252	249	0.17	0.17	0.17
2020			3,029		3,029			237		-	3,266	283	422	292	0.14	0.17	0.14
2021			349		349			22		-	371	818	1,125	832	0.14	0.18	0.14
2022			-		-			-		-	-	-	-	-	-	-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2012			223					-			223	38	-	38	0.18	-	0.18
2013			3,044					-			3,044	159	-	159	0.18	-	0.18
2014			5,900					71			5,971	239	40	236	0.14	0.12	0.14
2015			10,752					630			11,382	342	165	332	0.16	0.16	0.16
2016			13,433					844			14,277	461	331	454	0.16	0.16	0.16
2017			13,559					867			14,425	670	552	664	0.16	0.16	0.16
2018			13,559					867			14,425	856	780	852	0.16	0.16	0.16
2019			13,559					867			14,425	989	1,004	989	0.16	0.16	0.16
2020			13,559					867			14,425	1,059	1,116	1,063	0.16	0.16	0.16
2021			13,559					867			14,425	1,083	1,142	1,086	0.16	0.16	0.16
2022			13,559					867			14,425	1,083	1,143	1,086	0.16	0.16	0.16

Appendix D.16 Residential Duct Sealing Program

PROGRAM: Residential Duct Sealing
DSM Phase II Program
Type: Energy Efficiency
Program Measure Life: 18.0 years

Table 1		Participation										
		Program Participants										System
Month	Year	VA					NC					System Cum for IRP
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	
												E+G
October	2012	2		2		2						2
November	2012	6		8		8						8
December	2012	0		8		8						8
January	2013	0		8		8						8
February	2013	16		24		24						24
March	2013	4		28		28						28
April	2013	23		51		51						51
May	2013	17		68		68						68
June	2013	11		79		79						79
July	2013	4		83		83						83
August	2013	7		90		90						90
September	2013	3		93		93						93
October	2013	10		103		103						103
November	2013	6		109		109						109
December	2013	7		116		116						116
January	2014	15		131		131	0		0		0	131
February	2014	6		137		137	0		0		0	137
March	2014	3		140		140	0		0		0	140
April	2014	9		149		149	0		0		0	149
May	2014	6		155		155	0		0		0	155
June	2014	6		161		161	0		0		0	161
July	2014	9		170		170	0		0		0	170
August	2014	5		175		175	0		0		0	175
September	2014	26		201		201	0		0		0	201
October	2014	82		283		283	0		0		0	283
November	2014	117		400		400	0		0		0	400
December	2014	117		517		517	0		0		0	517
January	2015	106		623		623	1		1		1	624
February	2015	163		786		786	28		29		29	815
March	2015	132		918		918	85		114		114	1,032
April	2015	201		1,119		1,119	60		174		174	1,293
May	2015	233		1,352		1,352	77		251		251	1,603
June	2015	262		1,614		1,614	59		310		310	1,924
July	2015	168		1,782		1,782	12		322		322	2,104
August	2015	185		1,967		1,967	0		322		322	2,289
September	2015	134		2,101		2,101	0		322		322	2,423
October	2015	68		2,169		2,169	1		323		323	2,492
November	2015	59		2,228		2,228	0		323		323	2,551
December	2015	149		2,377		2,377	0		323		323	2,700
January	2016	53		2,430		2,430	1		324		324	2,754
February	2016	96		2,526		2,526	26		350		350	2,876
March	2016	48		2,574		2,574	66		416		416	2,990
April	2016	48		2,622		2,622	49		465		465	3,087
May	2016	40		2,662		2,662	25		490		490	3,152
June	2016	48		2,710		2,710	21		511		511	3,221
July	2016	14		2,724		2,724	19		530	19	530	3,254
August	2016	36		2,760		2,760	6		536	25	536	3,296
September	2016	55		2,815		2,815	1		537	26	537	3,352
October	2016	67		2,882		2,882	3		540	29	540	3,422
November	2016	95		2,977		2,977	0		540	29	540	3,517
December	2016	58		3,035		3,035	0		540		29	3,575
January	2017	101		3,136		3,136	8		548		37	3,684
February	2017	147		3,283		3,283	5		553		42	3,836
March	2017	16		3,299		3,299	1		554		43	3,853
April	2017	0		3,299		3,299	0		554		43	3,853
May	2017	0		3,299		3,299	0		554		43	3,853
June	2017	0		3,299		3,299	0		554		43	3,853
July	2017	0		3,299		3,299	0		554		43	3,853
August	2017	0		3,299		3,299	0		554		43	3,853
September	2017	0		3,299		3,299	0		554		43	3,853
October	2017	0		3,299		3,299	0		554		43	3,853
November	2017	0		3,299		3,299	0		554		43	3,853
December	2017	0		3,299		3,299	0		554		43	3,853

Appendix D.16 Residential Duct Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
October	2012	104		104		104						104
November	2012	228		332		332						332
December	2012	0		332		332						332
January	2013	0		332		332						332
February	2013	1,141		1,474		1,474						1,474
March	2013	67		1,541		1,541						1,541
April	2013	678		2,219		2,219						2,219
May	2013	494		2,713		2,713						2,713
June	2013	464		3,177		3,177						3,177
July	2013	125		3,302		3,302						3,302
August	2013	270		3,572		3,572						3,572
September	2013	128		3,700		3,700						3,700
October	2013	211		3,911		3,911						3,911
November	2013	162		4,073		4,073						4,073
December	2013	237		4,310		4,310						4,310
January	2014	292		4,602		4,602	0		0		0	4,602
February	2014	107		4,709		4,709	0		0		0	4,709
March	2014	67		4,775		4,775	0		0		0	4,775
April	2014	223		4,999		4,999	0		0		0	4,999
May	2014	147		5,146		5,146	0		0		0	5,146
June	2014	189		5,335		5,335	0		0		0	5,335
July	2014	170		5,505		5,505	0		0		0	5,505
August	2014	104		5,609		5,609	0		0		0	5,609
September	2014	1,032		6,642		6,642	0		0		0	6,642
October	2014	1,798		8,440		8,440	0		0		0	8,440
November	2014	2,250		10,689		10,689	0		0		0	10,689
December	2014	2,334		13,023		13,023	0		0		0	13,023
January	2015	2,153		15,176		15,176	23		23		23	15,199
February	2015	3,020		18,196		18,196	652		674		674	18,871
March	2015	2,484		20,681		20,681	1,711		2,386		2,386	23,067
April	2015	3,596		24,276		24,276	1,253		3,639		3,639	27,916
May	2015	4,462		28,739		28,739	1,522		5,161		5,161	33,899
June	2015	4,796		33,535		33,535	1,188		6,348		6,348	39,883
July	2015	2,764		36,299		36,299	268		6,616		6,616	42,915
August	2015	3,383		39,682		39,682	0		6,616		6,616	46,298
September	2015	2,355		42,037		42,037	0		6,616		6,616	48,653
October	2015	1,191		43,228		43,228	20		6,636		6,636	49,864
November	2015	1,086		44,314		44,314	0		6,636		6,636	50,950
December	2015	2,443		46,757		46,757	0		6,636		6,636	53,392
January	2016	1,244		48,000		48,000	16		6,651		6,651	54,652
February	2016	1,851		49,851		49,851	489		7,140		7,140	56,991
March	2016	786		50,637		50,637	1,455		8,595		8,595	59,232
April	2016	859		51,496		51,496	933		9,529		9,529	61,025
May	2016	944		52,440		52,440	494		10,023		10,023	62,463
June	2016	903		53,342		53,342	341		10,365		10,365	63,707
July	2016	242		53,584		53,584	307		10,672	307	10,672	64,256
August	2016	590		54,174		54,174	164		10,836	471	10,836	65,010
September	2016	947		55,121		55,121	16		10,851	486	10,851	65,972
October	2016	1,268		56,389		56,389	38		10,889	524	10,889	67,278
November	2016	1,752		58,141		58,141	0		10,889	524	10,889	69,029
December	2016	779		58,920		58,920	0		10,889	524	10,889	69,808
January	2017	1,904		60,824		60,824	172		11,061		697	71,885
February	2017	2,591		63,415		63,415	76		11,137		773	74,552
March	2017	301		63,716		63,716	15		11,152		788	74,868
April	2017	0		63,716		63,716	0		11,152		788	74,868
May	2017	0		63,716		63,716	0		11,152		788	74,868
June	2017	0		63,716		63,716	0		11,152		788	74,868
July	2017	0		63,716		63,716	0		11,152		788	74,868
August	2017	0		63,716		63,716	0		11,152		788	74,868
September	2017	0		63,716		63,716	0		11,152		788	74,868
October	2017	0		63,716		63,716	0		11,152		788	74,868
November	2017	0		63,716		63,716	0		11,152		788	74,868
December	2017	0		63,716		63,716	0		11,152		788	74,868

Appendix D.16 Residential Duct Sealing Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
October	2012	1		1		1					1	52		52	0.62		0.62	
November	2012	3		4		4					4	42		42	0.49		0.49	
December	2012	0		4		4					4	42		42	0.49		0.49	
January	2013	0		4		4					4	42		42	0.49		0.49	
February	2013	14		17		17					17	61		61	0.73		0.73	
March	2013	1		18		18					18	55		55	0.64		0.64	
April	2013	8		26		26					26	44		44	0.51		0.51	
May	2013	6		32		32					32	40		40	0.47		0.47	
June	2013	6		37		37					37	40		40	0.47		0.47	
July	2013	1		39		39					39	40		40	0.47		0.47	
August	2013	3		42		42					42	40		40	0.47		0.47	
September	2013	2		44		44					44	40		40	0.47		0.47	
October	2013	3		46		46					46	38		38	0.45		0.45	
November	2013	2		48		48					48	37		37	0.44		0.44	
December	2013	3		51		51					51	37		37	0.44		0.44	
January	2014	2		53		53	0		0		53	35	-	35	0.41	-	0.41	
February	2014	1		54		54	0		0		54	34	-	34	0.40	-	0.40	
March	2014	1		55		55	0		0		55	34	-	34	0.39	-	0.39	
April	2014	2		57		57	0		0		57	34	-	34	0.38	-	0.38	
May	2014	1		58		58	0		0		58	33	-	33	0.37	-	0.37	
June	2014	2		59		59	0		0		59	33	-	33	0.37	-	0.37	
July	2014	1		61		61	0		0		61	32	-	32	0.36	-	0.36	
August	2014	1		62		62	0		0		62	32	-	32	0.35	-	0.35	
September	2014	9		70		70	0		0		70	33	-	33	0.35	-	0.35	
October	2014	15		86		86	0		0		86	30	-	30	0.30	-	0.30	
November	2014	19		105		105	0		0		105	27	-	27	0.26	-	0.26	
December	2014	20		124		124	0		0		124	25	-	25	0.24	-	0.24	
January	2015	18		143		143	0		0		143	24	23	24	0.23	0.17	0.23	
February	2015	26		168		168	5		5		173	23	23	23	0.21	0.18	0.21	
March	2015	21		189		189	13		18		207	23	21	22	0.21	0.16	0.20	
April	2015	30		220		220	10		28		247	22	21	22	0.20	0.16	0.19	
May	2015	38		257		257	12		39		297	21	21	21	0.19	0.16	0.19	
June	2015	41		298		298	9		48		346	21	20	21	0.18	0.16	0.18	
July	2015	23		321		321	2		50		372	20	21	20	0.18	0.16	0.18	
August	2015	29		350		350	0		50		400	20	21	20	0.18	0.16	0.17	
September	2015	20		370		370	0		50		420	20	21	20	0.18	0.16	0.17	
October	2015	10		380		380	0		50		430	20	21	20	0.18	0.16	0.17	
November	2015	9		389		389	0		50		440	20	21	20	0.17	0.16	0.17	
December	2015	21		410		410	0		50		460	20	21	20	0.17	0.16	0.17	
January	2016	10		420		420	0		50		471	20	21	20	0.17	0.16	0.17	
February	2016	16		436		436	4		54		490	20	20	20	0.17	0.15	0.17	
March	2016	7		443		443	11		65		508	20	21	20	0.17	0.16	0.17	
April	2016	7		450		450	7		72		522	20	20	20	0.17	0.16	0.17	
May	2016	8		458		458	4		76		534	20	20	20	0.17	0.16	0.17	
June	2016	8		465		465	3		79		544	20	20	20	0.17	0.15	0.17	
July	2016	2		468		468	2		81	2	548	20	20	20	0.17	0.15	0.17	
August	2016	5		473		473	1		82	4	555	20	20	20	0.17	0.15	0.17	
September	2016	8		481		481	0		82	4	563	20	20	20	0.17	0.15	0.17	
October	2016	11		491		491	0		83	4	574	20	20	20	0.17	0.15	0.17	
November	2016	15		506		506	0		83	4	589	20	20	20	0.17	0.15	0.17	
December	2016	7		513		513	0		83	4	595	19	20	20	0.17	0.15	0.17	
January	2017	16		529		529	1		84		613	19	20	20	0.17	0.15	0.17	
February	2017	22		551		551	1		84		635	19	20	19	0.17	0.15	0.17	
March	2017	3		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
April	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
May	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
June	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
July	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
August	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
September	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
October	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
November	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	
December	2017	0		553		553	0		85		638	19	20	19	0.17	0.15	0.17	

Appendix D.16 Residential Duct Sealing Program

Table 1		Participation Program Participants										
Month	Year	VA				NC				System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2018	0		3,299		3,299	0		554		43	3,853
February	2018	0		3,299		3,299	0		554		43	3,853
March	2018	0		3,299		3,299	0		554		43	3,853
April	2018	0		3,299		3,299	0		554		43	3,853
May	2018	0		3,299		3,299	0		554		43	3,853
June	2018	0		3,299		3,299	0		554		43	3,853
July	2018	0		3,299		3,299	0		554		43	3,853
August	2018	0		3,299		3,299	0		554		43	3,853
September	2018	0		3,299		3,299	0		554		43	3,853
October	2018	0		3,299		3,299	0		554		43	3,853
November	2018	0		3,299		3,299	0		554		43	3,853
December	2018	0		3,299		3,299	0		554		43	3,853
January	2019	0		3,299		3,299	0		554		43	3,853
February	2019	0		3,299		3,299	0		554		43	3,853
March	2019	0		3,299		3,299	0		554		43	3,853
April	2019	0		3,299		3,299	0		554		43	3,853
May	2019	0		3,299		3,299	0		554		43	3,853
June	2019	0		3,299		3,299	0		554		43	3,853
July	2019	0		3,299		3,299	0		554	0	43	3,853
August	2019	0		3,299		3,299	0		554	0	43	3,853
September	2019	0		3,299		3,299	0		554	0	43	3,853
October	2019	0		3,299		3,299	0		554	0	43	3,853
November	2019	0		3,299		3,299	0		554	0	0	3,853
December	2019	0		3,299		3,299	0		554	0	0	3,853
January	2020	0		3,299		3,299	0		554		0	3,853
February	2020	0		3,299		3,299	0		554		0	3,853
March	2020	0		3,299		3,299	0		554		0	3,853
April	2020	0		3,299		3,299	0		554		0	3,853
May	2020	0		3,299		3,299	0		554		0	3,853
June	2020	0		3,299		3,299	0		554		0	3,853
July	2020	0		3,299		3,299	0		554		0	3,853
August	2020	0		3,299		3,299	0		554		0	3,853
September	2020	0		3,299		3,299	0		554		0	3,853
October	2020	0		3,299		3,299	0		554		0	3,853
November	2020	0		3,299		3,299	0		554		0	3,853
December	2020	0		3,299		3,299	0		554		0	3,853
January	2021	0		3,299		3,299	0		554		0	3,853
February	2021	0		3,299		3,299	0		554		0	3,853
March	2021	0		3,299		3,299	0		554		0	3,853
April	2021	0		3,299		3,299	0		554		0	3,853
May	2021	0		3,299		3,299	0		554		0	3,853
June	2021	0		3,299		3,299	0		554		0	3,853
July	2021	0		3,299		3,299	0		554		0	3,853
August	2021	0		3,299		3,299	0		554		0	3,853
September	2021	0		3,299		3,299	0		554		0	3,853
October	2021	0		3,299		3,299	0		554		0	3,853
November	2021	0		3,299		3,299	0		554		0	3,853
December	2021	0		3,299		3,299	0		554		0	3,853
January	2022	0		3,299		3,299	0		554		0	3,853
February	2022	0		3,299		3,299	0		554		0	3,853
March	2022	0		3,299		3,299	0		554		0	3,853
April	2022	0		3,299		3,299	0		554		0	3,853
May	2022	0		3,299		3,299	0		554		0	3,853
June	2022	0		3,299		3,299	0		554		0	3,853
July	2022	0		3,299		3,299	0		554		0	3,853
August	2022	0		3,299		3,299	0		554		0	3,853
September	2022	0		3,299		3,299	0		554		0	3,853
October	2022	0		3,299		3,299	0		554		0	3,853
November	2022	0		3,299		3,299	0		554		0	3,853
December	2022	0		3,299		3,299	0		554		0	3,853

Appendix D.16 Residential Duct Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2018	0		63,716		63,716	0		11,152		788	74,868
February	2018	0		63,716		63,716	0		11,152		788	74,868
March	2018	0		63,716		63,716	0		11,152		788	74,868
April	2018	0		63,716		63,716	0		11,152		788	74,868
May	2018	0		63,716		63,716	0		11,152		788	74,868
June	2018	0		63,716		63,716	0		11,152		788	74,868
July	2018	0		63,716		63,716	0		11,152		788	74,868
August	2018	0		63,716		63,716	0		11,152		788	74,868
September	2018	0		63,716		63,716	0		11,152		788	74,868
October	2018	0		63,716		63,716	0		11,152		788	74,868
November	2018	0		63,716		63,716	0		11,152		788	74,868
December	2018	0		63,716		63,716	0		11,152		788	74,868
January	2019	0		63,716		63,716	0		11,152		788	74,868
February	2019	0		63,716		63,716	0		11,152		788	74,868
March	2019	0		63,716		63,716	0		11,152		788	74,868
April	2019	0		63,716		63,716	0		11,152		788	74,868
May	2019	0		63,716		63,716	0		11,152		788	74,868
June	2019	0		63,716		63,716	0		11,152		788	74,868
July	2019	0		63,716		63,716	0		11,152	0	788	74,868
August	2019	0		63,716		63,716	0		11,152	0	788	74,868
September	2019	0		63,716		63,716	0		11,152	0	788	74,868
October	2019	0		63,716		63,716	0		11,152	0	788	74,868
November	2019	0		63,716		63,716	0		11,152	0	788	74,868
December	2019	0		63,716		63,716	0		11,152	0	788	74,868
January	2020	0		63,716		63,716	0		11,152		0	74,868
February	2020	0		63,716		63,716	0		11,152		0	74,868
March	2020	0		63,716		63,716	0		11,152		0	74,868
April	2020	0		63,716		63,716	0		11,152		0	74,868
May	2020	0		63,716		63,716	0		11,152		0	74,868
June	2020	0		63,716		63,716	0		11,152		0	74,868
July	2020	0		63,716		63,716	0		11,152		0	74,868
August	2020	0		63,716		63,716	0		11,152		0	74,868
September	2020	0		63,716		63,716	0		11,152		0	74,868
October	2020	0		63,716		63,716	0		11,152		0	74,868
November	2020	0		63,716		63,716	0		11,152		0	74,868
December	2020	0		63,716		63,716	0		11,152		0	74,868
January	2021	0		63,716		63,716	0		11,152		0	74,868
February	2021	0		63,716		63,716	0		11,152		0	74,868
March	2021	0		63,716		63,716	0		11,152		0	74,868
April	2021	0		63,716		63,716	0		11,152		0	74,868
May	2021	0		63,716		63,716	0		11,152		0	74,868
June	2021	0		63,716		63,716	0		11,152		0	74,868
July	2021	0		63,716		63,716	0		11,152		0	74,868
August	2021	0		63,716		63,716	0		11,152		0	74,868
September	2021	0		63,716		63,716	0		11,152		0	74,868
October	2021	0		63,716		63,716	0		11,152		0	74,868
November	2021	0		63,716		63,716	0		11,152		0	74,868
December	2021	0		63,716		63,716	0		11,152		0	74,868
January	2022	0		63,716		63,716	0		11,152		0	74,868
February	2022	0		63,716		63,716	0		11,152		0	74,868
March	2022	0		63,716		63,716	0		11,152		0	74,868
April	2022	0		63,716		63,716	0		11,152		0	74,868
May	2022	0		63,716		63,716	0		11,152		0	74,868
June	2022	0		63,716		63,716	0		11,152		0	74,868
July	2022	0		63,716		63,716	0		11,152		0	74,868
August	2022	0		63,716		63,716	0		11,152		0	74,868
September	2022	0		63,716		63,716	0		11,152		0	74,868
October	2022	0		63,716		63,716	0		11,152		0	74,868
November	2022	0		63,716		63,716	0		11,152		0	74,868
December	2022	0		63,716		63,716	0		11,152		0	74,868

Appendix D.16 Residential Duct Sealing Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC				System		VA	NC	System	VA	NC	System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
February	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
March	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
April	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
May	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
June	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
July	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
August	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
September	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
October	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
November	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
December	2018	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
January	2019	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
February	2019	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
March	2019	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
April	2019	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
May	2019	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
June	2019	0		553		553	0		85		6	638	19	20	19	0.17	0.15	0.17
July	2019	0		553		553	0		85	0	6	638	19	20	19	0.17	0.15	0.17
August	2019	0		553		553	0		85	0	6	638	19	20	19	0.17	0.15	0.17
September	2019	0		553		553	0		85	0	6	638	19	20	19	0.17	0.15	0.17
October	2019	0		553		553	0		85	0	6	638	19	20	19	0.17	0.15	0.17
November	2019	0		553		553	0		85	0	6	638	19	20	19	0.17	0.15	0.17
December	2019	0		553		553	0		85	0	6	638	19	20	19	0.17	0.15	0.17
January	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
February	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
March	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
April	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
May	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
June	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
July	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
August	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
September	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
October	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
November	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
December	2020	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
January	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
February	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
March	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
April	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
May	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
June	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
July	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
August	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
September	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
October	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
November	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
December	2021	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
January	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
February	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
March	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
April	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
May	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
June	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
July	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
August	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
September	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
October	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
November	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17
December	2022	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17

Appendix D.16 Residential Duct Sealing Program

Table 1		Participation										
Month	Year	Program Participants										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2023	0		3,299		3,299	0		554		0	3,853
February	2023	0		3,299		3,299	0		554		0	3,853
March	2023	0		3,299		3,299	0		554		0	3,853
April	2023	0		3,299		3,299	0		554		0	3,853
May	2023	0		3,299		3,299	0		554		0	3,853
June	2023	0		3,299		3,299	0		554		0	3,853
July	2023	0		3,299		3,299	0		554		0	3,853
August	2023	0		3,299		3,299	0		554		0	3,853
September	2023	0		3,299		3,299	0		554		0	3,853
October	2023	0		3,299		3,299	0		554		0	3,853
November	2023	0		3,299		3,299	0		554		0	3,853
December	2023	0		3,299		3,299	0		554		0	3,853
January	2024	0		3,299		3,299	0		554		0	3,853
February	2024	0		3,299		3,299	0		554		0	3,853
March	2024	0		3,299		3,299	0		554		0	3,853
April	2024	0		3,299		3,299	0		554		0	3,853
May	2024	0		3,299		3,299	0		554		0	3,853
June	2024	0		3,299		3,299	0		554		0	3,853
July	2024	0		3,299		3,299	0		554		0	3,853
August	2024	0		3,299		3,299	0		554		0	3,853
September	2024	0		3,299		3,299	0		554		0	3,853
October	2024	0		3,299		3,299	0		554		0	3,853
November	2024	0		3,299		3,299	0		554		0	3,853
December	2024	0		3,299		3,299	0		554		0	3,853
January	2025	0		3,299		3,299	0		554		0	3,853
February	2025	0		3,299		3,299	0		554		0	3,853
March	2025	0		3,299		3,299	0		554		0	3,853
April	2025	0		3,299		3,299	0		554		0	3,853
May	2025	0		3,299		3,299	0		554		0	3,853
June	2025	0		3,299		3,299	0		554		0	3,853
July	2025	0		3,299		3,299	0		554		0	3,853
August	2025	0		3,299		3,299	0		554		0	3,853
September	2025	0		3,299		3,299	0		554		0	3,853
October	2025	0		3,299		3,299	0		554		0	3,853
November	2025	0		3,299		3,299	0		554		0	3,853
December	2025	0		3,299		3,299	0		554		0	3,853
January	2026	0		3,299		3,299	0		554		0	3,853
February	2026	0		3,299		3,299	0		554		0	3,853
March	2026	0		3,299		3,299	0		554		0	3,853
April	2026	0		3,299		3,299	0		554		0	3,853
May	2026	0		3,299		3,299	0		554		0	3,853
June	2026	0		3,299		3,299	0		554		0	3,853
July	2026	0		3,299		3,299	0		554		0	3,853
August	2026	0		3,299		3,299	0		554		0	3,853
September	2026	0		3,299		3,299	0		554		0	3,853
October	2026	0		3,299		3,299	0		554		0	3,853
November	2026	0		3,299		3,299	0		554		0	3,853
December	2026	0		3,299		3,299	0		554		0	3,853
January	2027	0		3,299		3,299	0		554		0	3,853
February	2027	0		3,299		3,299	0		554		0	3,853
March	2027	0		3,299		3,299	0		554		0	3,853
April	2027	0		3,299		3,299	0		554		0	3,853
May	2027	0		3,299		3,299	0		554		0	3,853
June	2027	0		3,299		3,299	0		554		0	3,853
July	2027	0		3,299		3,299	0		554		0	3,853
August	2027	0		3,299		3,299	0		554		0	3,853
September	2027	0		3,299		3,299	0		554		0	3,853
October	2027	0		3,299		3,299	0		554		0	3,853
November	2027	0		3,299		3,299	0		554		0	3,853
December	2027	0		3,299		3,299	0		554		0	3,853

Appendix D.16 Residential Duct Sealing Program

Table 1		Energy Savings										
		Net kWh										
Month	Year	VA				NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2023	0		63,716		63,716	0		11,152		0	74,868
February	2023	0		63,716		63,716	0		11,152		0	74,868
March	2023	0		63,716		63,716	0		11,152		0	74,868
April	2023	0		63,716		63,716	0		11,152		0	74,868
May	2023	0		63,716		63,716	0		11,152		0	74,868
June	2023	0		63,716		63,716	0		11,152		0	74,868
July	2023	0		63,716		63,716	0		11,152		0	74,868
August	2023	0		63,716		63,716	0		11,152		0	74,868
September	2023	0		63,716		63,716	0		11,152		0	74,868
October	2023	0		63,716		63,716	0		11,152		0	74,868
November	2023	0		63,716		63,716	0		11,152		0	74,868
December	2023	0		63,716		63,716	0		11,152		0	74,868
January	2024	0		63,716		63,716	0		11,152		0	74,868
February	2024	0		63,716		63,716	0		11,152		0	74,868
March	2024	0		63,716		63,716	0		11,152		0	74,868
April	2024	0		63,716		63,716	0		11,152		0	74,868
May	2024	0		63,716		63,716	0		11,152		0	74,868
June	2024	0		63,716		63,716	0		11,152		0	74,868
July	2024	0		63,716		63,716	0		11,152		0	74,868
August	2024	0		63,716		63,716	0		11,152		0	74,868
September	2024	0		63,716		63,716	0		11,152		0	74,868
October	2024	0		63,716		63,716	0		11,152		0	74,868
November	2024	0		63,716		63,716	0		11,152		0	74,868
December	2024	0		63,716		63,716	0		11,152		0	74,868
January	2025	0		63,716		63,716	0		11,152		0	74,868
February	2025	0		63,716		63,716	0		11,152		0	74,868
March	2025	0		63,716		63,716	0		11,152		0	74,868
April	2025	0		63,716		63,716	0		11,152		0	74,868
May	2025	0		63,716		63,716	0		11,152		0	74,868
June	2025	0		63,716		63,716	0		11,152		0	74,868
July	2025	0		63,716		63,716	0		11,152		0	74,868
August	2025	0		63,716		63,716	0		11,152		0	74,868
September	2025	0		63,716		63,716	0		11,152		0	74,868
October	2025	0		63,716		63,716	0		11,152		0	74,868
November	2025	0		63,716		63,716	0		11,152		0	74,868
December	2025	0		63,716		63,716	0		11,152		0	74,868
January	2026	0		63,716		63,716	0		11,152		0	74,868
February	2026	0		63,716		63,716	0		11,152		0	74,868
March	2026	0		63,716		63,716	0		11,152		0	74,868
April	2026	0		63,716		63,716	0		11,152		0	74,868
May	2026	0		63,716		63,716	0		11,152		0	74,868
June	2026	0		63,716		63,716	0		11,152		0	74,868
July	2026	0		63,716		63,716	0		11,152		0	74,868
August	2026	0		63,716		63,716	0		11,152		0	74,868
September	2026	0		63,716		63,716	0		11,152		0	74,868
October	2026	0		63,716		63,716	0		11,152		0	74,868
November	2026	0		63,716		63,716	0		11,152		0	74,868
December	2026	0		63,716		63,716	0		11,152		0	74,868
January	2027	0		63,716		63,716	0		11,152		0	74,868
February	2027	0		63,716		63,716	0		11,152		0	74,868
March	2027	0		63,716		63,716	0		11,152		0	74,868
April	2027	0		63,716		63,716	0		11,152		0	74,868
May	2027	0		63,716		63,716	0		11,152		0	74,868
June	2027	0		63,716		63,716	0		11,152		0	74,868
July	2027	0		63,716		63,716	0		11,152		0	74,868
August	2027	0		63,716		63,716	0		11,152		0	74,868
September	2027	0		63,716		63,716	0		11,152		0	74,868
October	2027	0		63,716		63,716	0		11,152		0	74,868
November	2027	0		63,716		63,716	0		11,152		0	74,868
December	2027	0		63,716		63,716	0		11,152		0	74,868

Appendix D.16 Residential Duct Sealing Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant					
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP					
		VA					NC					System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP								
January	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
February	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
March	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
April	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
May	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
June	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
July	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
August	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
September	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
October	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
November	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
December	2023	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
January	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
February	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
March	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
April	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
May	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
June	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
July	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
August	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
September	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
October	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
November	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
December	2024	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
January	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
February	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
March	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
April	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
May	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
June	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
July	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
August	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
September	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
October	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
November	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
December	2025	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
January	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
February	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
March	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
April	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
May	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
June	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
July	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
August	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
September	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
October	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
November	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
December	2026	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
January	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
February	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
March	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
April	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
May	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
June	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
July	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
August	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
September	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
October	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
November	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		
December	2027	0		553		553	0		85		0	638	19	20	19	0.17	0.15	0.17		

Appendix D.16 Residential Duct Sealing Program

Table 1		Participation										
Month	Year	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2028	0		3,299		3,299	0		554		0	3,853
February	2028	0		3,299		3,299	0		554		0	3,853
March	2028	0		3,299		3,299	0		554		0	3,853
April	2028	0		3,299		3,299	0		554		0	3,853
May	2028	0		3,299		3,299	0		554		0	3,853
June	2028	0		3,299		3,299	0		554		0	3,853
July	2028	0		3,299		3,299	0		554		0	3,853
August	2028	0		3,299		3,299	0		554		0	3,853
September	2028	0		3,299		3,299	0		554		0	3,853
October	2028	0		3,299		3,299	0		554		0	3,853
November	2028	0		3,299		3,299	0		554		0	3,853
December	2028	0		3,299		3,299	0		554		0	3,853
January	2029	0		3,299		3,299	0		554		0	3,853
February	2029	0		3,299		3,299	0		554		0	3,853
March	2029	0		3,299		3,299	0		554		0	3,853
April	2029	0		3,299		3,299	0		554		0	3,853
May	2029	0		3,299		3,299	0		554		0	3,853
June	2029	0		3,299		3,299	0		554		0	3,853
July	2029	0		3,299		3,299	0		554		0	3,853
August	2029	0		3,299		3,299	0		554		0	3,853
September	2029	0		3,299		3,299	0		554		0	3,853
October	2029	0		3,299		3,299	0		554		0	3,853
November	2029	0		3,299		3,299	0		554		0	3,853
December	2029	0		3,299		3,299	0		554		0	3,853
January	2030	0		3,299		3,299	0		554		0	3,853
February	2030	0		3,299		3,299	0		554		0	3,853
March	2030	0		3,299		3,299	0		554		0	3,853
April	2030	0		3,299		3,299	0		554		0	3,853
May	2030	0		3,299		3,299	0		554		0	3,853
June	2030	0		3,299		3,299	0		554		0	3,853
July	2030	0		3,299		3,299	0		554		0	3,853
August	2030	0		3,299		3,299	0		554		0	3,853
September	2030	0		3,299		3,299	0		554		0	3,853
October	2030	0	-2	3,297		3,297	0		554		0	3,851
November	2030	0	-6	3,291		3,291	0		554		0	3,845
December	2030	0	0	3,291		3,291	0		554		0	3,845
January	2031	0	0	3,291		3,291	0		554		0	3,845
February	2031	0	-16	3,275		3,275	0		554		0	3,829
March	2031	0	-4	3,271		3,271	0		554		0	3,825
April	2031	0	-23	3,248		3,248	0		554		0	3,802
May	2031	0	-17	3,231		3,231	0		554		0	3,785
June	2031	0	-11	3,220		3,220	0		554		0	3,774
July	2031	0	-4	3,216		3,216	0		554		0	3,770
August	2031	0	-7	3,209		3,209	0		554		0	3,763
September	2031	0	-3	3,206		3,206	0		554		0	3,760
October	2031	0	-10	3,196		3,196	0		554		0	3,750
November	2031	0	-6	3,190		3,190	0		554		0	3,744
December	2031	0	-7	3,183		3,183	0		554		0	3,737
January	2032	0	-15	3,168		3,168	0		554		0	3,722
February	2032	0	-6	3,162		3,162	0		554		0	3,716
March	2032	0	-3	3,159		3,159	0		554		0	3,713
April	2032	0	-9	3,150		3,150	0		554		0	3,704
May	2032	0	-6	3,144		3,144	0		554		0	3,698
June	2032	0	-6	3,138		3,138	0		554		0	3,692
July	2032	0	-9	3,129		3,129	0		554		0	3,683
August	2032	0	-5	3,124		3,124	0		554		0	3,678
September	2032	0	-26	3,098		3,098	0		554		0	3,652
October	2032	0	-82	3,016		3,016	0		554		0	3,570
November	2032	0	-117	2,899		2,899	0		554		0	3,453
December	2032	0	-117	2,782		2,782	0		554		0	3,336

Appendix D.16 Residential Duct Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2028	0		63,716		63,716	0		11,152		0	74,868
February	2028	0		63,716		63,716	0		11,152		0	74,868
March	2028	0		63,716		63,716	0		11,152		0	74,868
April	2028	0		63,716		63,716	0		11,152		0	74,868
May	2028	0		63,716		63,716	0		11,152		0	74,868
June	2028	0		63,716		63,716	0		11,152		0	74,868
July	2028	0		63,716		63,716	0		11,152		0	74,868
August	2028	0		63,716		63,716	0		11,152		0	74,868
September	2028	0		63,716		63,716	0		11,152		0	74,868
October	2028	0		63,716		63,716	0		11,152		0	74,868
November	2028	0		63,716		63,716	0		11,152		0	74,868
December	2028	0		63,716		63,716	0		11,152		0	74,868
January	2029	0		63,716		63,716	0		11,152		0	74,868
February	2029	0		63,716		63,716	0		11,152		0	74,868
March	2029	0		63,716		63,716	0		11,152		0	74,868
April	2029	0		63,716		63,716	0		11,152		0	74,868
May	2029	0		63,716		63,716	0		11,152		0	74,868
June	2029	0		63,716		63,716	0		11,152		0	74,868
July	2029	0		63,716		63,716	0		11,152		0	74,868
August	2029	0		63,716		63,716	0		11,152		0	74,868
September	2029	0		63,716		63,716	0		11,152		0	74,868
October	2029	0		63,716		63,716	0		11,152		0	74,868
November	2029	0		63,716		63,716	0		11,152		0	74,868
December	2029	0		63,716		63,716	0		11,152		0	74,868
January	2030	0		63,716		63,716	0		11,152		0	74,868
February	2030	0		63,716		63,716	0		11,152		0	74,868
March	2030	0		63,716		63,716	0		11,152		0	74,868
April	2030	0		63,716		63,716	0		11,152		0	74,868
May	2030	0		63,716		63,716	0		11,152		0	74,868
June	2030	0		63,716		63,716	0		11,152		0	74,868
July	2030	0		63,716		63,716	0		11,152		0	74,868
August	2030	0		63,716		63,716	0		11,152		0	74,868
September	2030	0		63,716		63,716	0		11,152		0	74,868
October	2030	0	-104	63,612		63,612	0		11,152		0	74,764
November	2030	0	-228	63,384		63,384	0		11,152		0	74,536
December	2030	0	0	63,384		63,384	0		11,152		0	74,536
January	2031	0	0	63,384		63,384	0		11,152		0	74,536
February	2031	0	-1,141	62,242		62,242	0		11,152		0	73,395
March	2031	0	-67	62,175		62,175	0		11,152		0	73,328
April	2031	0	-678	61,497		61,497	0		11,152		0	72,649
May	2031	0	-494	61,003		61,003	0		11,152		0	72,155
June	2031	0	-464	60,539		60,539	0		11,152		0	71,691
July	2031	0	-125	60,414		60,414	0		11,152		0	71,567
August	2031	0	-270	60,144		60,144	0		11,152		0	71,296
September	2031	0	-128	60,016		60,016	0		11,152		0	71,169
October	2031	0	-211	59,805		59,805	0		11,152		0	70,957
November	2031	0	-162	59,643		59,643	0		11,152		0	70,795
December	2031	0	-237	59,406		59,406	0		11,152		0	70,559
January	2032	0	-292	59,114		59,114	0		11,152		0	70,266
February	2032	0	-107	59,007		59,007	0		11,152		0	70,159
March	2032	0	-67	58,941		58,941	0		11,152		0	70,093
April	2032	0	-223	58,717		58,717	0		11,152		0	69,870
May	2032	0	-147	58,570		58,570	0		11,152		0	69,722
June	2032	0	-189	58,381		58,381	0		11,152		0	69,533
July	2032	0	-170	58,211		58,211	0		11,152		0	69,363
August	2032	0	-104	58,107		58,107	0		11,152		0	69,259
September	2032	0	-1,032	57,074		57,074	0		11,152		0	68,227
October	2032	0	-1,798	55,276		55,276	0		11,152		0	66,429
November	2032	0	-2,250	53,027		53,027	0		11,152		0	64,179
December	2032	0	-2,334	50,693		50,693	0		11,152		0	61,845

Appendix D.16 Residential Duct Sealing Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
February	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
March	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
April	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
May	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
June	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
July	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
August	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
September	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
October	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
November	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
December	2028	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
January	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
February	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
March	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
April	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
May	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
June	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
July	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
August	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
September	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
October	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
November	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
December	2029	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
January	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
February	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
March	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
April	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
May	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
June	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
July	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
August	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
September	2030	0		553		553	0			85	0	638	19	20	19	0.17	0.15	0.17
October	2030	0	-1	552		552	0			85	0	637	19	20	19	0.17	0.15	0.17
November	2030	0	-3	549		549	0			85	0	634	19	20	19	0.17	0.15	0.16
December	2030	0	0	549		549	0			85	0	634	19	20	19	0.17	0.15	0.16
January	2031	0	0	549		549	0			85	0	634	19	20	19	0.17	0.15	0.16
February	2031	0	-14	536		536	0			85	0	620	19	20	19	0.16	0.15	0.16
March	2031	0	-1	535		535	0			85	0	620	19	20	19	0.16	0.15	0.16
April	2031	0	-8	527		527	0			85	0	612	19	20	19	0.16	0.15	0.16
May	2031	0	-6	521		521	0			85	0	606	19	20	19	0.16	0.15	0.16
June	2031	0	-6	516		516	0			85	0	600	19	20	19	0.16	0.15	0.16
July	2031	0	-1	514		514	0			85	0	599	19	20	19	0.16	0.15	0.16
August	2031	0	-3	511		511	0			85	0	596	19	20	19	0.16	0.15	0.16
September	2031	0	-2	510		510	0			85	0	594	19	20	19	0.16	0.15	0.16
October	2031	0	-3	507		507	0			85	0	592	19	20	19	0.16	0.15	0.16
November	2031	0	-2	505		505	0			85	0	590	19	20	19	0.16	0.15	0.16
December	2031	0	-3	502		502	0			85	0	587	19	20	19	0.16	0.15	0.16
January	2032	0	-2	500		500	0			85	0	585	19	20	19	0.16	0.15	0.16
February	2032	0	-1	499		499	0			85	0	584	19	20	19	0.16	0.15	0.16
March	2032	0	-1	499		499	0			85	0	583	19	20	19	0.16	0.15	0.16
April	2032	0	-2	497		497	0			85	0	581	19	20	19	0.16	0.15	0.16
May	2032	0	-1	495		495	0			85	0	580	19	20	19	0.16	0.15	0.16
June	2032	0	-2	494		494	0			85	0	578	19	20	19	0.16	0.15	0.16
July	2032	0	-1	492		492	0			85	0	577	19	20	19	0.16	0.15	0.16
August	2032	0	-1	492		492	0			85	0	576	19	20	19	0.16	0.15	0.16
September	2032	0	-9	483		483	0			85	0	567	18	20	19	0.16	0.15	0.16
October	2032	0	-15	468		468	0			85	0	552	18	20	19	0.16	0.15	0.15
November	2032	0	-19	449		449	0			85	0	533	18	20	19	0.15	0.15	0.15
December	2032	0	-20	429		429	0			85	0	513	18	20	19	0.15	0.15	0.15

Appendix D.16 Residential Duct Sealing Program

Table 1		Participation										
Month	Year	Program Participants										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2033	0	-106	2,676		2,676	0	-1	553		-1	3,229
February	2033	0	-163	2,513		2,513	0	-28	525		-29	3,038
March	2033	0	-132	2,381		2,381	0	-85	440		-114	2,821
April	2033	0	-201	2,180		2,180	0	-60	380		-174	2,560
May	2033	0	-233	1,947		1,947	0	-77	303		-251	2,250
June	2033	0	-262	1,685		1,685	0	-59	244		-310	1,929
July	2033	0	-168	1,517		1,517	0	-12	232		-322	1,749
August	2033	0	-185	1,332		1,332	0	0	232		-322	1,564
September	2033	0	-134	1,198		1,198	0	0	232		-322	1,430
October	2033	0	-68	1,130		1,130	0	-1	231		-323	1,361
November	2033	0	-59	1,071		1,071	0	0	231		-323	1,302
December	2033	0	-149	922		922	0	0	231		-323	1,153
January	2034	0	-53	869		869	0	-1	230		-324	1,099
February	2034	0	-96	773		773	0	-26	204		-350	977
March	2034	0	-48	725		725	0	-66	138		-416	863
April	2034	0	-48	677		677	0	-49	89		-465	766
May	2034	0	-40	637		637	0	-25	64		-490	701
June	2034	0	-48	589		589	0	-21	43		-511	632
July	2034	0	-14	575		575	0	-19	24		-530	599
August	2034	0	-36	539		539	0	-6	18		-536	557
September	2034	0	-55	484		484	0	-1	17		-537	501
October	2034	0	-67	417		417	0	-3	14		-540	431
November	2034	0	-95	322		322	0	0	14		-540	336
December	2034	0	-58	264		264	0	0	14		-540	278
January	2035	0	-101	163		163	0	-8	6		-548	169
February	2035	0	-147	16		16	0	-5	1		-553	17
March	2035	0	-16	0		0	0	-1	0		-554	0
April	2035	0	0	0		0	0	0	0		-554	0
May	2035	0	0	0		0	0	0	0		-554	0
June	2035	0	0	0		0	0	0	0		-554	0
July	2035	0	0	0		0	0	0	0		-554	0
August	2035	0	0	0		0	0	0	0		-554	0
September	2035	0	0	0		0	0	0	0		-554	0
October	2035	0	0	0		0	0	0	0		-554	0
November	2035	0	0	0		0	0	0	0		-554	0
December	2035	0	0	0		0	0	0	0		-554	0

Table 2. EM&V Data Incremental by Vintage Year									
	Program Participants								
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP				
2012	8	8	-	-	8				
2013	108	108	-	-	108				
2014	401	401	-	-	401				
2015	1,860	1,860	323	323	2,183				
2016	658	658	217	29	875				
2017	264	264	14	14	278				
2018	-	-	-	-	-				

Table 3. EM&V Data Annualized by Vintage Year									
	Program Participants								
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP				
2012	8	8	-	-	8				
2013	108	108	-	-	108				
2014	401	401	-	-	401				
2015	1,860	1,860	323	323	2,183				
2016	658	658	217	29	875				
2017	264	264	14	14	278				

Appendix D.16 Residential Duct Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2033	0	-2,153	48,540		48,540	0	-23	11,129		-23	59,669
February	2033	0	-3,020	45,520		45,520	0	-652	10,478		-674	55,998
March	2033	0	-2,484	43,035		43,035	0	-1,711	8,766		-2,386	51,802
April	2033	0	-3,596	39,440		39,440	0	-1,253	7,513		-3,639	46,953
May	2033	0	-4,462	34,977		34,977	0	-1,522	5,992		-5,161	40,969
June	2033	0	-4,796	30,182		30,182	0	-1,188	4,804		-6,348	34,986
July	2033	0	-2,764	27,417		27,417	0	-268	4,536		-6,616	31,953
August	2033	0	-3,383	24,034		24,034	0	0	4,536		-6,616	28,570
September	2033	0	-2,355	21,680		21,680	0	0	4,536		-6,616	26,216
October	2033	0	-1,191	20,488		20,488	0	-20	4,516		-6,636	25,005
November	2033	0	-1,086	19,402		19,402	0	0	4,516		-6,636	23,919
December	2033	0	-2,443	16,959		16,959	0	0	4,516		-6,636	21,476
January	2034	0	-1,244	15,716		15,716	0	-16	4,501		-6,651	20,217
February	2034	0	-1,851	13,865		13,865	0	-489	4,012		-7,140	17,877
March	2034	0	-786	13,079		13,079	0	-1,455	2,557		-8,595	15,636
April	2034	0	-859	12,220		12,220	0	-933	1,624		-9,529	13,844
May	2034	0	-944	11,276		11,276	0	-494	1,129		-10,023	12,405
June	2034	0	-903	10,374		10,374	0	-341	788		-10,365	11,162
July	2034	0	-242	10,132		10,132	0	-307	480		-10,672	10,612
August	2034	0	-590	9,542		9,542	0	-164	317		-10,836	9,858
September	2034	0	-947	8,595		8,595	0	-16	301		-10,851	8,896
October	2034	0	-1,268	7,327		7,327	0	-38	264		-10,889	7,591
November	2034	0	-1,752	5,575		5,575	0	0	264		-10,889	5,839
December	2034	0	-779	4,796		4,796	0	0	264		-10,889	5,060
January	2035	0	-1,904	2,892		2,892	0	-172	91		-11,061	2,984
February	2035	0	-2,591	301		301	0	-76	15		-11,137	316
March	2035	0	-301	0		0	0	-15	0		-11,152	0
April	2035	0	0	0		0	0	0	0		-11,152	0
May	2035	0	0	0		0	0	0	0		-11,152	0
June	2035	0	0	0		0	0	0	0		-11,152	0
July	2035	0	0	0		0	0	0	0		-11,152	0
August	2035	0	0	0		0	0	0	0		-11,152	0
September	2035	0	0	0		0	0	0	0		-11,152	0
October	2035	0	0	0		0	0	0	0		-11,152	0
November	2035	0	0	0		0	0	0	0		-11,152	0
December	2035	0	0	0		0	0	0	0		-11,152	0

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			769		769			-		-	769
2013			30,335		30,335			-		-	30,335
2014			27,757		27,757			-		-	27,757
2015			236,643		236,643			57,988		57,988	294,630
2016			81,016		81,016			37,698		30,240	118,714
2017			54,362		54,362			3,057		3,057	57,419
2018			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
Net Annualized Energy (kWh/year)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			3,989		3,989			-		-	3,989
2013			47,729		47,729			-		-	47,729
2014			104,558		104,558			-		-	104,558
2015			404,803		404,803			79,631		79,631	484,434
2016			145,957		145,957			51,034		6,290	196,992
2017			57,556		57,556			3,163		3,163	60,719

Appendix D.16 Residential Duct Sealing Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2033	0	-18	411		411	0	0		84	0	495	18	20	18	0.15	0.15	0.15
February	2033	0	-26	385		385	0	-5		79	-5	465	18	20	18	0.15	0.15	0.15
March	2033	0	-21	364		364	0	-13		67	-18	431	18	20	18	0.15	0.15	0.15
April	2033	0	-30	334		334	0	-10		57	-28	391	18	20	18	0.15	0.15	0.15
May	2033	0	-38	296		296	0	-12		45	-39	341	18	20	18	0.15	0.15	0.15
June	2033	0	-41	255		255	0	-9		36	-48	292	18	20	18	0.15	0.15	0.15
July	2033	0	-23	232		232	0	-2		34	-50	266	18	20	18	0.15	0.15	0.15
August	2033	0	-29	203		203	0	0		34	-50	238	18	20	18	0.15	0.15	0.15
September	2033	0	-20	183		183	0	0		34	-50	218	18	20	18	0.15	0.15	0.15
October	2033	0	-10	173		173	0	0		34	-50	208	18	20	18	0.15	0.15	0.15
November	2033	0	-9	164		164	0	0		34	-50	198	18	20	18	0.15	0.15	0.15
December	2033	0	-21	143		143	0	0		34	-50	178	18	20	19	0.16	0.15	0.15
January	2034	0	-10	133		133	0	0		34	-50	167	18	20	18	0.15	0.15	0.15
February	2034	0	-16	117		117	0	-4		30	-54	148	18	20	18	0.15	0.15	0.15
March	2034	0	-7	111		111	0	-11		19	-65	130	18	19	18	0.15	0.14	0.15
April	2034	0	-7	103		103	0	-7		12	-72	116	18	18	18	0.15	0.14	0.15
May	2034	0	-8	95		95	0	-4		9	-76	104	18	18	18	0.15	0.13	0.15
June	2034	0	-8	88		88	0	-3		6	-79	94	18	18	18	0.15	0.14	0.15
July	2034	0	-2	86		86	0	-2		4	-81	89	18	20	18	0.15	0.15	0.15
August	2034	0	-5	81		81	0	-1		2	-82	83	18	18	18	0.15	0.13	0.15
September	2034	0	-8	73		73	0	0		2	-82	75	18	18	18	0.15	0.13	0.15
October	2034	0	-11	62		62	0	0		2	-83	64	18	19	18	0.15	0.14	0.15
November	2034	0	-15	47		47	0	0		2	-83	49	17	19	17	0.15	0.14	0.15
December	2034	0	-7	41		41	0	0		2	-83	43	18	19	18	0.15	0.14	0.15
January	2035	0	-16	24		24	0	-1		1	-84	25	18	15	18	0.15	0.12	0.15
February	2035	0	-22	3		3	0	-1		0	-84	3	19	15	19	0.16	0.11	0.16
March	2035	0	-3	0		0	0	0		0	-85	0	-	-	-	-	-	-
April	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-
May	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-
June	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-
July	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-
August	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-
September	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-
October	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-
November	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-
December	2035	0	0	0		0	0	0		0	-85	0	-	-	-	-	-	-

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP		VA NLR		NC IRP		NC NLR	System IRP		VA	NC	System	VA	NC	System
2012		4		4		-		-	4		96	-	96	0.49	-	0.49
2013		47		47		-		-	47		281	-	281	0.43	-	0.43
2014		74		74		-		-	74		69	-	69	0.18	-	0.18
2015		285		285		50		50	336		127	180	135	0.15	0.16	0.15
2016		103		103		32		4	135		123	174	136	0.16	0.15	0.15
2017		41		41		2		2	43		206	218	207	0.15	0.14	0.15
2018		-		-		-		-	-		-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP		VA NLR		NC IRP		NC NLR	System IRP		VA	NC	System	VA	NC	System
2012		4		4		-		-	4		499	-	499	0.49	-	0.49
2013		47		47		-		-	47		442	-	442	0.43	-	0.43
2014		74		74		-		-	74		261	-	261	0.18	-	0.18
2015		285		285		50		50	336		218	247	222	0.15	0.16	0.15
2016		103		103		32		4	135		222	235	225	0.16	0.15	0.15
2017		41		41		2		2	43		218	226	218	0.15	0.14	0.15

Appendix D.16 Residential Duct Sealing Program

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

Year	Program Participants							NC PPI	System
	VA								
2012							-		
2013							-		
2014							-		
2015							323		
2016							540		
2017							554		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Year	Program Participants							NC IRP	NC NLR	System IRP
	VA IRP	VA NLR								
2012	8	8					-	-	8	
2013	116	116					-	-	116	
2014	517	517					-	-	517	
2015	2,377	2,377					323	323	2,700	
2016	3,035	3,035					540	29	3,575	
2017	3,299	3,299					554	43	3,853	
2018	3,299	3,299					554	43	3,853	
2019	3,299	3,299					554	-	3,853	
2020	3,299	3,299					554	-	3,853	
2021	3,299	3,299					554	-	3,853	
2022	3,299	3,299					554	-	3,853	
2023	3,299	3,299					554	-	3,853	
2024	3,299	3,299					554	-	3,853	
2025	3,299	3,299					554	-	3,853	
2026	3,299	3,299					554	-	3,853	
2027	3,299	3,299					554	-	3,853	
2028	3,299	3,299					554	-	3,853	
2029	3,299	3,299					554	-	3,853	
2030	3,291	3,291					554	-	3,845	
2031	3,183	3,183					554	-	3,737	
2032	2,782	2,782					554	-	3,336	
2033	922	922					231	-	1,153	
2034	264	264					14	-	278	
2035	-	-					-	-	-	

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

Year	Program Participants							NC IRP	System IRP
	VA IRP	VA NLR							
2012	8	8					-	8	
2013	116	116					-	116	
2014	517	517					-	517	
2015	2,377	2,377					323	2,700	
2016	3,035	3,035					540	3,575	
2017	3,299	3,299					554	3,853	
2018	3,299	3,299					554	3,853	
2019	3,299	3,299					554	3,853	
2020	3,299	3,299					554	3,853	
2021	3,299	3,299					554	3,853	
2022	3,299	3,299					554	3,853	
2023	3,299	3,299					554	3,853	
2024	3,299	3,299					554	3,853	
2025	3,299	3,299					554	3,853	
2026	3,299	3,299					554	3,853	
2027	3,299	3,299					554	3,853	
2028	3,299	3,299					554	3,853	
2029	3,299	3,299					554	3,853	
2030	3,299	3,299					554	3,853	
2031	3,299	3,299					554	3,853	
2032	3,299	3,299					554	3,853	
2033	3,299	3,299					554	3,853	
2034	3,299	3,299					554	3,853	
2035	3,299	3,299					554	3,853	

Appendix D.16 Residential Duct Sealing Program

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net (kWh)									
	VA							NC PPI		System
2012								-		
2013								-		
2014								-		
2015								57,988		
2016								117,328		
2017								133,722		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			769		769			-		-	769
2013			34,324		34,324			-		-	34,324
2014			79,474		79,474			-		-	79,474
2015			392,918		392,918			57,988		57,988	450,906
2016			642,095		642,095			117,328		96,599	759,424
2017			761,399		761,399			133,722		9,346	895,120
2018			764,592		764,592			133,828		9,452	898,420
2019			764,592		764,592			133,828		7,877	898,420
2020			764,592		764,592			133,828		-	898,420
2021			764,592		764,592			133,828		-	898,420
2022			764,592		764,592			133,828		-	898,420
2023			764,592		764,592			133,828		-	898,420
2024			764,592		764,592			133,828		-	898,420
2025			764,592		764,592			133,828		-	898,420
2026			764,592		764,592			133,828		-	898,420
2027			764,592		764,592			133,828		-	898,420
2028			764,592		764,592			133,828		-	898,420
2029			764,592		764,592			133,828		-	898,420
2030			763,823		763,823			133,828		-	897,651
2031			730,269		730,269			133,828		-	864,096
2032			685,118		685,118			133,828		-	818,946
2033			371,674		371,674			75,840		-	447,515
2034			122,497		122,497			16,499		-	138,997
2035			3,194		3,194			106		-	3,300

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2012			769					-		769
2013			35,093					-		35,093
2014			114,567					-		114,567
2015			507,485					57,988		565,473
2016			1,149,581					175,316		1,324,897
2017			1,910,979					309,038		2,220,017
2018			2,675,572					442,866		3,118,437
2019			3,440,164					576,693		4,016,857
2020			4,204,757					710,521		4,915,278
2021			4,969,349					844,349		5,813,698
2022			5,733,941					978,177		6,712,118
2023			6,498,534					1,112,005		7,610,539
2024			7,263,126					1,245,833		8,508,959
2025			8,027,719					1,379,660		9,407,379
2026			8,792,311					1,513,488		10,305,800
2027			9,556,904					1,647,316		11,204,220
2028			10,321,496					1,781,144		12,102,640
2029			11,086,089					1,914,972		13,001,060
2030			11,849,912					2,048,800		13,898,712
2031			12,580,181					2,182,627		14,762,808
2032			13,265,299					2,316,455		15,581,754
2033			13,636,973					2,392,296		16,029,269
2034			13,759,470					2,408,795		16,168,265
2035			13,762,664					2,408,901		16,171,565

Appendix D.16 Residential Duct Sealing Program

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA						NC PPI		System	VA	NC	System	VA	NC	System
2012							-				-			-	
2013							-				-			-	
2014							-				-			-	
2015							50				180			0.16	
2016							83				217			0.15	
2017							85				241			0.15	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant			
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012		4		4			-		-	4	96	-	96	0.49	-	0.49
2013		51		51			-		-	51	296	-	296	0.44	-	0.44
2014		124		124			-		-	124	154	-	154	0.24	-	0.24
2015		410		410			50		50	460	165	180	167	0.17	0.16	0.17
2016		513		513			83		4	595	212	217	212	0.17	0.15	0.17
2017		553		553			85		6	638	231	241	232	0.17	0.15	0.17
2018		553		553			85		6	638	232	242	233	0.17	0.15	0.17
2019		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2020		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2021		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2022		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2023		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2024		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2025		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2026		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2027		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2028		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2029		553		553			85		-	638	232	242	233	0.17	0.15	0.17
2030		549		549			85		-	634	232	242	233	0.17	0.15	0.16
2031		502		502			85		-	587	229	242	231	0.16	0.15	0.16
2032		429		429			85		-	513	246	242	245	0.15	0.15	0.15
2033		143		143			34		-	178	403	328	388	0.16	0.15	0.15
2034		41		41			2		-	43	464	1,179	500	0.15	0.14	0.15
2035		-		-			0		-	-	-	-	-	-	-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
		VA IRP					NC IRP		System IRP	VA	NC	System	VA	NC	System
2012		4					-		4	96	-	96	0.49	-	0.49
2013		51					-		51	303	-	303	0.44	-	0.44
2014		124					-		124	222	-	222	0.24	-	0.24
2015		410					50		460	213	180	209	0.17	0.16	0.17
2016		513					83		595	379	325	371	0.17	0.15	0.17
2017		553					85		638	579	558	576	0.17	0.15	0.17
2018		553					85		638	811	799	809	0.17	0.15	0.17
2019		553					85		638	1,043	1,041	1,043	0.17	0.15	0.17
2020		553					85		638	1,275	1,283	1,276	0.17	0.15	0.17
2021		553					85		638	1,506	1,524	1,509	0.17	0.15	0.17
2022		553					85		638	1,738	1,766	1,742	0.17	0.15	0.17
2023		553					85		638	1,970	2,007	1,975	0.17	0.15	0.17
2024		553					85		638	2,202	2,249	2,208	0.17	0.15	0.17
2025		553					85		638	2,433	2,490	2,442	0.17	0.15	0.17
2026		553					85		638	2,665	2,732	2,675	0.17	0.15	0.17
2027		553					85		638	2,897	2,973	2,908	0.17	0.15	0.17
2028		553					85		638	3,129	3,215	3,141	0.17	0.15	0.17
2029		553					85		638	3,360	3,457	3,374	0.17	0.15	0.17
2030		553					85		638	3,592	3,698	3,607	0.17	0.15	0.17
2031		553					85		638	3,813	3,940	3,832	0.17	0.15	0.17
2032		553					85		638	4,021	4,181	4,044	0.17	0.15	0.17
2033		553					85		638	4,134	4,318	4,160	0.17	0.15	0.17
2034		553					85		638	4,171	4,348	4,196	0.17	0.15	0.17
2035		553					85		638	4,172	4,348	4,197	0.17	0.15	0.17

Appendix D.17 Residential Home Energy Check-Up Program

PROGRAM: Residential Home Energy Check-Up
DSM Phase II Program
Type: Energy Efficiency
Program Measure Life: 10.0 years

Table 1		Participation											System	
Month	Year	Program Participants										System Cum for IRP E+G		
		VA					NC							
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D			
October	2012	4		4		4								4
November	2012	6		10		10								10
December	2012	21		31		31								31
January	2013	22		53		53								53
February	2013	37		90		90								90
March	2013	14		104		104								104
April	2013	27		131		131								131
May	2013	42		173		173								173
June	2013	15		188		188								188
July	2013	15		203		203								203
August	2013	61		264		264								264
September	2013	75		339		339								339
October	2013	219		558		558								558
November	2013	305		863		863								863
December	2013	737		1,600		1,600								1,600
January	2014	540		2,140		2,140	0		0				0	2,140
February	2014	942		3,082		3,082	0		0				0	3,082
March	2014	877		3,959		3,959	0		0				0	3,959
April	2014	1,372		5,331		5,331	0		0				0	5,331
May	2014	1,247		6,578		6,578	0		0				0	6,578
June	2014	1,751		8,329		8,329	0		0				0	8,329
July	2014	2,023		10,352		10,352	0		0				0	10,352
August	2014	2,079		12,431		12,431	0		0				0	12,431
September	2014	3,222		15,653		15,653	0		0				0	15,653
October	2014	1,739		17,392		17,392	0		0				0	17,392
November	2014	544		17,936		17,936	0		0				0	17,936
December	2014	3,366		21,302		21,302	0		0				0	21,302
January	2015	1,829		23,131		23,131	0		0				0	23,131
February	2015	985		24,116		24,116	152		152				152	24,268
March	2015	957		25,073		25,073	156		308				308	25,381
April	2015	906		25,979		25,979	128		436				436	26,415
May	2015	1,038		27,017		27,017	237		673				673	27,690
June	2015	1,227		28,244		28,244	200		873				873	29,117
July	2015	1,219		29,463		29,463	86		959				959	30,422
August	2015	1,355		30,818		30,818	5		964				964	31,782
September	2015	1,500		32,318		32,318	27		991				991	33,309
October	2015	1,121		33,439		33,439	4		995				995	34,434
November	2015	1,107		34,546		34,546	0		995				995	35,541
December	2015	616		35,162		35,162	1		996				996	36,158
January	2016	737		35,899		35,899	3		999				999	36,898
February	2016	889		36,788		36,788	1		1,000				1,000	37,788
March	2016	1,301		38,089		38,089	0		1,000				1,000	39,089
April	2016	1,804		39,893		39,893	0		1,000				1,000	40,893
May	2016	2,211		42,104		42,104	0		1,000				1,000	43,104
June	2016	1,360		43,464		43,464	0		1,000				1,000	44,464
July	2016	1,348		44,812		44,812	0		1,000	0			1,000	45,812
August	2016	1,913		46,725		46,725	0		1,000	0			1,000	47,725
September	2016	880		47,605		47,605	0		1,000	0			1,000	48,605
October	2016	1,074		48,679		48,679	0		1,000	0			1,000	49,679
November	2016	1,328		50,007		50,007	0		1,000	0			1,000	51,007
December	2016	407		50,414		50,414	0		1,000	0			1,000	51,414
January	2017	1,069		51,483		51,483	5		1,005				5	52,488
February	2017	377		51,860		51,860	39		1,044				44	52,904
March	2017	54		51,914		51,914	5		1,049				49	52,963
April	2017	0		51,914		51,914	0		1,049				49	52,963
May	2017	0		51,914		51,914	0		1,049				49	52,963
June	2017	0		51,914		51,914	0		1,049				49	52,963
July	2017	0		51,914		51,914	0		1,049				49	52,963
August	2017	0		51,914		51,914	0		1,049				49	52,963
September	2017	0		51,914		51,914	0		1,049				49	52,963
October	2017	0		51,914		51,914	0		1,049				49	52,963
November	2017	0		51,914		51,914	0		1,049				49	52,963
December	2017	0		51,914		51,914	0		1,049				49	52,963

Appendix D.17 Residential Home Energy Check-Up Program

Table 1		Energy Savings											
Month	Year	Net kWh										System Cum for IRP	
		VA					NC						
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
October	2012	308		308		308							308
November	2012	529		837		837							837
December	2012	1,669		2,506		2,506							2,506
January	2013	1,540		4,046		4,046							4,046
February	2013	2,624		6,670		6,670							6,670
March	2013	1,112		7,781		7,781							7,781
April	2013	2,009		9,790		9,790							9,790
May	2013	3,305		13,094		13,094							13,094
June	2013	1,109		14,203		14,203							14,203
July	2013	1,264		15,467		15,467							15,467
August	2013	4,763		20,230		20,230							20,230
September	2013	5,745		25,975		25,975							25,975
October	2013	16,391		42,366		42,366							42,366
November	2013	23,114		65,480		65,480							65,480
December	2013	55,414		120,894		120,894							120,894
January	2014	26,685		147,579		147,579	0			0			147,579
February	2014	48,483		196,062		196,062	0			0			196,062
March	2014	42,643		238,705		238,705	0			0			238,705
April	2014	71,333		310,038		310,038	0			0			310,038
May	2014	61,315		371,353		371,353	0			0			371,353
June	2014	83,644		454,997		454,997	0			0			454,997
July	2014	90,716		545,713		545,713	0			0			545,713
August	2014	98,802		644,515		644,515	0			0			644,515
September	2014	203,811		848,325		848,325	0			0			848,325
October	2014	110,865		959,191		959,191	0			0			959,191
November	2014	36,601		995,791		995,791	0			0			995,791
December	2014	207,077		1,202,868		1,202,868	0			0			1,202,868
January	2015	93,614		1,296,482		1,296,482	0			0			1,296,482
February	2015	50,842		1,347,324		1,347,324	12,448			12,448			1,359,773
March	2015	47,532		1,394,857		1,394,857	10,919			23,368			1,418,224
April	2015	41,987		1,436,844		1,436,844	7,814			31,182			1,468,025
May	2015	46,508		1,483,351		1,483,351	13,239			44,421			1,527,772
June	2015	61,752		1,545,104		1,545,104	11,233			55,654			1,600,758
July	2015	61,442		1,606,545		1,606,545	4,218			59,872			1,666,417
August	2015	69,478		1,676,023		1,676,023	275			60,147			1,736,170
September	2015	84,995		1,761,019		1,761,019	1,653			61,799			1,822,818
October	2015	58,808		1,819,826		1,819,826	269			62,068			1,881,895
November	2015	65,301		1,885,127		1,885,127	0			62,068			1,947,196
December	2015	33,697		1,918,824		1,918,824	75			62,143			1,980,967
January	2016	32,522		1,951,346		1,951,346	123			62,266			2,013,612
February	2016	45,183		1,996,529		1,996,529	34			62,300			2,058,828
March	2016	56,223		2,052,752		2,052,752	0			62,300			2,115,052
April	2016	77,067		2,129,819		2,129,819	0			62,300			2,192,119
May	2016	99,043		2,228,863		2,228,863	0			62,300			2,291,162
June	2016	55,345		2,284,208		2,284,208	0			62,300			2,346,507
July	2016	64,950		2,349,158		2,349,158	0			62,300	0		2,411,458
August	2016	94,327		2,443,485		2,443,485	0			62,300	0		2,505,785
September	2016	43,829		2,487,314		2,487,314	0			62,300	0		2,549,614
October	2016	50,238		2,537,552		2,537,552	0			62,300	0		2,599,852
November	2016	72,174		2,609,726		2,609,726	0			62,300	0		2,672,026
December	2016	21,855		2,631,582		2,631,582	0			62,300	0		2,693,881
January	2017	62,893		2,694,475		2,694,475	598			62,897		598	2,757,372
February	2017	20,705		2,715,180		2,715,180	2,583			65,481		3,181	2,780,660
March	2017	3,102		2,718,282		2,718,282	491			65,972		3,672	2,784,253
April	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253
May	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253
June	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253
July	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253
August	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253
September	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253
October	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253
November	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253
December	2017	0		2,718,282		2,718,282	0			65,972		3,672	2,784,253

Appendix D.17 Residential Home Energy Check-Up Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
October	2012	1		1		1					1	77		77	0.13		0.13	
November	2012	1		1		1					1	84		84	0.13		0.13	
December	2012	2		4		4					4	81		81	0.12		0.12	
January	2013	2		6		6					6	76		76	0.12		0.12	
February	2013	4		10		10					10	74		74	0.12		0.12	
March	2013	2		12		12					12	75		75	0.12		0.12	
April	2013	3		15		15					15	75		75	0.12		0.12	
May	2013	5		20		20					20	76		76	0.12		0.12	
June	2013	2		22		22					22	76		76	0.12		0.12	
July	2013	2		24		24					24	76		76	0.12		0.12	
August	2013	7		30		30					30	77		77	0.12		0.12	
September	2013	9		39		39					39	77		77	0.12		0.12	
October	2013	24		63		63					63	76		76	0.11		0.11	
November	2013	34		97		97					97	76		76	0.11		0.11	
December	2013	78		176		176					176	76		76	0.11		0.11	
January	2014	36		211		211	0		0		211	69	-	69	0.10	-	0.10	
February	2014	64		276		276	0		0		276	64	-	64	0.09	-	0.09	
March	2014	58		333		333	0		0		333	60	-	60	0.08	-	0.08	
April	2014	94		427		427	0		0		427	58	-	58	0.08	-	0.08	
May	2014	81		508		508	0		0		508	56	-	56	0.08	-	0.08	
June	2014	116		624		624	0		0		624	55	-	55	0.07	-	0.07	
July	2014	138		761		761	0		0		761	53	-	53	0.07	-	0.07	
August	2014	141		903		903	0		0		903	52	-	52	0.07	-	0.07	
September	2014	236		1,139		1,139	0		0		1,139	54	-	54	0.07	-	0.07	
October	2014	124		1,262		1,262	0		0		1,262	55	-	55	0.07	-	0.07	
November	2014	37		1,299		1,299	0		0		1,299	56	-	56	0.07	-	0.07	
December	2014	234		1,534		1,534	0		0		1,534	56	-	56	0.07	-	0.07	
January	2015	118		1,652		1,652	0		0		1,652	56	-	56	0.07	-	0.07	
February	2015	65		1,717		1,717	13		13		1,729	56	82	56	0.07	0.08	0.07	
March	2015	62		1,779		1,779	11		24		1,803	56	76	56	0.07	0.08	0.07	
April	2015	52		1,831		1,831	8		32		1,864	55	72	56	0.07	0.07	0.07	
May	2015	58		1,890		1,890	14		46		1,936	55	66	55	0.07	0.07	0.07	
June	2015	77		1,967		1,967	12		58		2,025	55	64	55	0.07	0.07	0.07	
July	2015	74		2,040		2,040	5		63		2,103	55	62	55	0.07	0.07	0.07	
August	2015	83		2,123		2,123	0		63		2,187	54	62	55	0.07	0.07	0.07	
September	2015	98		2,221		2,221	2		65		2,286	54	62	55	0.07	0.07	0.07	
October	2015	70		2,291		2,291	0		65		2,356	54	62	55	0.07	0.07	0.07	
November	2015	76		2,367		2,367	0		65		2,432	55	62	55	0.07	0.07	0.07	
December	2015	41		2,407		2,407	0		65		2,473	55	62	55	0.07	0.07	0.07	
January	2016	41		2,448		2,448	0		66		2,514	54	62	55	0.07	0.07	0.07	
February	2016	54		2,503		2,503	0		66		2,568	54	62	54	0.07	0.07	0.07	
March	2016	71		2,573		2,573	0		66		2,639	54	62	54	0.07	0.07	0.07	
April	2016	98		2,671		2,671	0		66		2,736	53	62	54	0.07	0.07	0.07	
May	2016	125		2,796		2,796	0		66		2,862	53	62	53	0.07	0.07	0.07	
June	2016	71		2,867		2,867	0		66		2,933	53	62	53	0.07	0.07	0.07	
July	2016	79		2,946		2,946	0		66	0	3,012	52	62	53	0.07	0.07	0.07	
August	2016	111		3,057		3,057	0		66	0	3,122	52	62	53	0.07	0.07	0.07	
September	2016	52		3,109		3,109	0		66	0	3,175	52	62	52	0.07	0.07	0.07	
October	2016	60		3,169		3,169	0		66	0	3,235	52	62	52	0.07	0.07	0.07	
November	2016	83		3,252		3,252	0		66	0	3,318	52	62	52	0.07	0.07	0.07	
December	2016	26		3,278		3,278	0		66	0	3,344	52	62	52	0.07	0.07	0.07	
January	2017	69		3,348		3,348	0		66	0	3,414	52	63	53	0.07	0.07	0.07	
February	2017	24		3,371		3,371	2		68	3	3,440	52	63	53	0.07	0.07	0.07	
March	2017	3		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
April	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
May	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
June	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
July	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
August	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
September	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
October	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
November	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	
December	2017	0		3,374		3,374	0		69	3	3,443	52	63	53	0.07	0.07	0.07	

Appendix D.17 Residential Home Energy Check-Up Program

Table 1		Participation										
Month	Year	Program Participants					System					
		VA		VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B			NC		NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
		VA Monthly New	VA Monthly Retired	VA Rate Reset Adj. [B]	NC Monthly New	NC Monthly Retired	NC Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP		
January	2018	0		51,914				51,914	0	1,049	49	52,963
February	2018	0		51,914				51,914	0	1,049	49	52,963
March	2018	0		51,914				51,914	0	1,049	49	52,963
April	2018	0		51,914				51,914	0	1,049	49	52,963
May	2018	0		51,914				51,914	0	1,049	49	52,963
June	2018	0		51,914				51,914	0	1,049	49	52,963
July	2018	0		51,914				51,914	0	1,049	49	52,963
August	2018	0		51,914				51,914	0	1,049	49	52,963
September	2018	0		51,914				51,914	0	1,049	49	52,963
October	2018	0		51,914				51,914	0	1,049	49	52,963
November	2018	0		51,914				51,914	0	1,049	49	52,963
December	2018	0		51,914				51,914	0	1,049	49	52,963
January	2019	0		51,914				51,914	0	1,049	49	52,963
February	2019	0		51,914				51,914	0	1,049	49	52,963
March	2019	0		51,914				51,914	0	1,049	49	52,963
April	2019	0		51,914				51,914	0	1,049	49	52,963
May	2019	0		51,914				51,914	0	1,049	49	52,963
June	2019	0		51,914				51,914	0	1,049	49	52,963
July	2019	0		51,914				51,914	0	1,049	49	52,963
August	2019	0		51,914				51,914	0	1,049	49	52,963
September	2019	0		51,914				51,914	0	1,049	49	52,963
October	2019	0		51,914				51,914	0	1,049	49	52,963
November	2019	0		51,914				51,914	0	1,049	0	52,963
December	2019	0		51,914				51,914	0	1,049	0	52,963
January	2020	0		51,914				51,914	0	1,049	0	52,963
February	2020	0		51,914				51,914	0	1,049	0	52,963
March	2020	0		51,914				51,914	0	1,049	0	52,963
April	2020	0		51,914				51,914	0	1,049	0	52,963
May	2020	0		51,914				51,914	0	1,049	0	52,963
June	2020	0		51,914				51,914	0	1,049	0	52,963
July	2020	0		51,914				51,914	0	1,049	0	52,963
August	2020	0		51,914				51,914	0	1,049	0	52,963
September	2020	0		51,914				51,914	0	1,049	0	52,963
October	2020	0		51,914				51,914	0	1,049	0	52,963
November	2020	0		51,914				51,914	0	1,049	0	52,963
December	2020	0		51,914				51,914	0	1,049	0	52,963
January	2021	0		51,914				51,914	0	1,049	0	52,963
February	2021	0		51,914				51,914	0	1,049	0	52,963
March	2021	0		51,914				51,914	0	1,049	0	52,963
April	2021	0		51,914				51,914	0	1,049	0	52,963
May	2021	0		51,914				51,914	0	1,049	0	52,963
June	2021	0		51,914				51,914	0	1,049	0	52,963
July	2021	0		51,914				51,914	0	1,049	0	52,963
August	2021	0		51,914				51,914	0	1,049	0	52,963
September	2021	0		51,914				51,914	0	1,049	0	52,963
October	2021	0		51,914				51,914	0	1,049	0	52,963
November	2021	0		51,914				51,914	0	1,049	0	52,963
December	2021	0		51,914				51,914	0	1,049	0	52,963
January	2022	0		51,914				51,914	0	1,049	0	52,963
February	2022	0		51,914				51,914	0	1,049	0	52,963
March	2022	0		51,914				51,914	0	1,049	0	52,963
April	2022	0		51,914				51,914	0	1,049	0	52,963
May	2022	0		51,914				51,914	0	1,049	0	52,963
June	2022	0		51,914				51,914	0	1,049	0	52,963
July	2022	0		51,914				51,914	0	1,049	0	52,963
August	2022	0		51,914				51,914	0	1,049	0	52,963
September	2022	0		51,914				51,914	0	1,049	0	52,963
October	2022	0		51,914				51,914	0	1,049	0	52,963
November	2022	0	-4	51,910				51,910	0	1,049	0	52,959
December	2022	0	-6	51,904				51,904	0	1,049	0	52,953

Appendix D.17 Residential Home Energy Check-Up Program

Table 1		Energy Savings										
Month	Year	Net kWh										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
February	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
March	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
April	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
May	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
June	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
July	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
August	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
September	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
October	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
November	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
December	2018	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
January	2019	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
February	2019	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
March	2019	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
April	2019	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
May	2019	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
June	2019	0		2,718,282		2,718,282	0		65,972		3,672	2,784,253
July	2019	0		2,718,282		2,718,282	0		65,972	0	3,672	2,784,253
August	2019	0		2,718,282		2,718,282	0		65,972	0	3,672	2,784,253
September	2019	0		2,718,282		2,718,282	0		65,972	0	3,672	2,784,253
October	2019	0		2,718,282		2,718,282	0		65,972	0	3,672	2,784,253
November	2019	0		2,718,282		2,718,282	0		65,972	0	0	2,784,253
December	2019	0		2,718,282		2,718,282	0		65,972		0	2,784,253
January	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
February	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
March	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
April	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
May	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
June	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
July	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
August	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
September	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
October	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
November	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
December	2020	0		2,718,282		2,718,282	0		65,972		0	2,784,253
January	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
February	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
March	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
April	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
May	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
June	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
July	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
August	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
September	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
October	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
November	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
December	2021	0		2,718,282		2,718,282	0		65,972		0	2,784,253
January	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
February	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
March	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
April	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
May	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
June	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
July	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
August	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
September	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
October	2022	0		2,718,282		2,718,282	0		65,972		0	2,784,253
November	2022	0	-308	2,717,974		2,717,974	0		65,972		0	2,783,946
December	2022	0	-529	2,717,445		2,717,445	0		65,972		0	2,783,417

Appendix D.17 Residential Home Energy Check-Up Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
February	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
March	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
April	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
May	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
June	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
July	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
August	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
September	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
October	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
November	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
December	2018	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
January	2019	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
February	2019	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
March	2019	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
April	2019	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
May	2019	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
June	2019	0		3,374		3,374	0		69		3	3,443	52	63	53	0.07	0.07	0.07
July	2019	0		3,374		3,374	0		69	0	3	3,443	52	63	53	0.07	0.07	0.07
August	2019	0		3,374		3,374	0		69	0	3	3,443	52	63	53	0.07	0.07	0.07
September	2019	0		3,374		3,374	0		69	0	3	3,443	52	63	53	0.07	0.07	0.07
October	2019	0		3,374		3,374	0		69	0	3	3,443	52	63	53	0.07	0.07	0.07
November	2019	0		3,374		3,374	0		69	0	3	3,443	52	63	53	0.07	0.07	0.07
December	2019	0		3,374		3,374	0		69	0	3	3,443	52	63	53	0.07	0.07	0.07
January	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
February	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
March	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
April	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
May	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
June	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
July	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
August	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
September	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
October	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
November	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
December	2020	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
January	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
February	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
March	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
April	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
May	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
June	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
July	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
August	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
September	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
October	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
November	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
December	2021	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
January	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
February	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
March	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
April	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
May	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
June	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
July	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
August	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
September	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
October	2022	0		3,374		3,374	0		69		0	3,443	52	63	53	0.07	0.07	0.07
November	2022	0	-1	3,374		3,374	0		69		0	3,443	52	63	53	0.06	0.07	0.07
December	2022	0	-1	3,373		3,373	0		69		0	3,442	52	63	53	0.06	0.07	0.06

Appendix D.17 Residential Home Energy Check-Up Program

Table 1		Participation										
Month	Year	Program Participants					System					
		VA		VA Rate Reset Adj. [B]	Revenue (NLR) (New + Retired + [F] = Σ[A] + Σ[-A retired] + B	NC		NC Rate Reset Adj.	Revenue (NLR) (New + Retired +	System Cum for IRP		
VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	NC Monthly New			NC Monthly Retired	NC Cum. for IRP (New + Retired)				NC Rate Reset Adj.	Revenue (NLR) (New + Retired +
January	2023	0	-21	51,883		51,883	0		1,049		0	52,932
February	2023	0	-22	51,861		51,861	0		1,049		0	52,910
March	2023	0	-37	51,824		51,824	0		1,049		0	52,873
April	2023	0	-14	51,810		51,810	0		1,049		0	52,859
May	2023	0	-27	51,783		51,783	0		1,049		0	52,832
June	2023	0	-42	51,741		51,741	0		1,049		0	52,790
July	2023	0	-15	51,726		51,726	0		1,049		0	52,775
August	2023	0	-15	51,711		51,711	0		1,049		0	52,760
September	2023	0	-61	51,650		51,650	0		1,049		0	52,699
October	2023	0	-75	51,575		51,575	0		1,049		0	52,624
November	2023	0	-219	51,356		51,356	0		1,049		0	52,405
December	2023	0	-305	51,051		51,051	0		1,049		0	52,100
January	2024	0	-737	50,314		50,314	0		1,049		0	51,363
February	2024	0	-540	49,774		49,774	0		1,049		0	50,823
March	2024	0	-942	48,832		48,832	0		1,049		0	49,881
April	2024	0	-877	47,955		47,955	0		1,049		0	49,004
May	2024	0	-1,372	46,583		46,583	0		1,049		0	47,632
June	2024	0	-1,247	45,336		45,336	0		1,049		0	46,385
July	2024	0	-1,751	43,585		43,585	0		1,049		0	44,634
August	2024	0	-2,023	41,562		41,562	0		1,049		0	42,611
September	2024	0	-2,079	39,483		39,483	0		1,049		0	40,532
October	2024	0	-3,222	36,261		36,261	0		1,049		0	37,310
November	2024	0	-1,739	34,522		34,522	0		1,049		0	35,571
December	2024	0	-544	33,978		33,978	0		1,049		0	35,027
January	2025	0	-3,366	30,612		30,612	0		1,049		0	31,661
February	2025	0	-1,829	28,783		28,783	0		1,049		0	29,832
March	2025	0	-985	27,798		27,798	0	-152	897		-152	28,695
April	2025	0	-957	26,841		26,841	0	-156	741		-308	27,582
May	2025	0	-906	25,935		25,935	0	-128	613		-436	26,548
June	2025	0	-1,038	24,897		24,897	0	-237	376		-673	25,273
July	2025	0	-1,227	23,670		23,670	0	-200	176		-873	23,846
August	2025	0	-1,219	22,451		22,451	0	-86	90		-959	22,541
September	2025	0	-1,355	21,096		21,096	0	-5	85		-964	21,181
October	2025	0	-1,500	19,596		19,596	0	-27	58		-991	19,654
November	2025	0	-1,121	18,475		18,475	0	-4	54		-995	18,529
December	2025	0	-1,107	17,368		17,368	0	0	54		-995	17,422
January	2026	0	-616	16,752		16,752	0	-1	53		-996	16,805
February	2026	0	-737	16,015		16,015	0	-3	50		-999	16,065
March	2026	0	-889	15,126		15,126	0	-1	49		-1,000	15,175
April	2026	0	-1,301	13,825		13,825	0	0	49		-1,000	13,874
May	2026	0	-1,804	12,021		12,021	0	0	49		-1,000	12,070
June	2026	0	-2,211	9,810		9,810	0	0	49		-1,000	9,859
July	2026	0	-1,360	8,450		8,450	0	0	49		-1,000	8,499
August	2026	0	-1,348	7,102		7,102	0	0	49		-1,000	7,151
September	2026	0	-1,913	5,189		5,189	0	0	49		-1,000	5,238
October	2026	0	-880	4,309		4,309	0	0	49		-1,000	4,358
November	2026	0	-1,074	3,235		3,235	0	0	49		-1,000	3,284
December	2026	0	-1,328	1,907		1,907	0	0	49		-1,000	1,956
January	2027	0	-407	1,500		1,500	0	0	49		-1,000	1,549
February	2027	0	-1,069	431		431	0	-5	44		-1,005	475
March	2027	0	-377	54		54	0	-39	5		-1,044	59
April	2027	0	-54	0		0	0	-5	0		-1,049	0
May	2027	0	0	0		0	0	0	0		-1,049	0
June	2027	0	0	0		0	0	0	0		-1,049	0
July	2027	0	0	0		0	0	0	0		-1,049	0
August	2027	0	0	0		0	0	0	0		-1,049	0
September	2027	0	0	0		0	0	0	0		-1,049	0
October	2027	0	0	0		0	0	0	0		-1,049	0
November	2027	0	0	0		0	0	0	0		-1,049	0
December	2027	0	0	0		0	0	0	0		-1,049	0

Table 2. EM&V Data Incremental by Vintage Year									
	Program Participants								
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP				
2012	31	31	-	-	31				
2013	1,569	1,569	-	-	1,569				
2014	19,702	19,702	-	-	19,702				
2015	13,860	13,860	996	996	14,856				
2016	15,252	15,252	4	-	15,256				
2017	1,500	1,500	49	49	1,549				

Appendix D.17 Residential Home Energy Check-Up Program

Table 1		Energy Savings										
Month	Year	Net kWh					Revenue (NLR)					System Cum for IRP
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	Revenue (NLR) (New + Retired +	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	Revenue (NLR) (New + Retired +	
VA Monthly New	VA Monthly Retired	NC Monthly New	NC Monthly Retired									
January	2023	0	-1,669	2,715,776		2,715,776	0		65,972		0	2,781,748
February	2023	0	-1,540	2,714,236		2,714,236	0		65,972		0	2,780,208
March	2023	0	-2,624	2,711,612		2,711,612	0		65,972		0	2,777,584
April	2023	0	-1,112	2,710,501		2,710,501	0		65,972		0	2,776,472
May	2023	0	-2,009	2,708,492		2,708,492	0		65,972		0	2,774,464
June	2023	0	-3,305	2,705,187		2,705,187	0		65,972		0	2,771,159
July	2023	0	-1,109	2,704,079		2,704,079	0		65,972		0	2,770,050
August	2023	0	-1,264	2,702,814		2,702,814	0		65,972		0	2,768,786
September	2023	0	-4,763	2,698,052		2,698,052	0		65,972		0	2,764,023
October	2023	0	-5,745	2,692,307		2,692,307	0		65,972		0	2,758,279
November	2023	0	-16,391	2,675,916		2,675,916	0		65,972		0	2,741,888
December	2023	0	-23,114	2,652,802		2,652,802	0		65,972		0	2,718,774
January	2024	0	-55,414	2,597,388		2,597,388	0		65,972		0	2,663,360
February	2024	0	-26,685	2,570,703		2,570,703	0		65,972		0	2,636,675
March	2024	0	-48,483	2,522,220		2,522,220	0		65,972		0	2,588,192
April	2024	0	-42,643	2,479,577		2,479,577	0		65,972		0	2,545,548
May	2024	0	-71,333	2,408,244		2,408,244	0		65,972		0	2,474,215
June	2024	0	-61,315	2,346,929		2,346,929	0		65,972		0	2,412,901
July	2024	0	-83,644	2,263,285		2,263,285	0		65,972		0	2,329,256
August	2024	0	-90,716	2,172,569		2,172,569	0		65,972		0	2,238,540
September	2024	0	-98,802	2,073,767		2,073,767	0		65,972		0	2,139,739
October	2024	0	-203,811	1,869,956		1,869,956	0		65,972		0	1,935,928
November	2024	0	-110,865	1,759,091		1,759,091	0		65,972		0	1,825,063
December	2024	0	-36,601	1,722,490		1,722,490	0		65,972		0	1,788,462
January	2025	0	-207,077	1,515,413		1,515,413	0		65,972		0	1,581,385
February	2025	0	-93,614	1,421,799		1,421,799	0		65,972		0	1,487,771
March	2025	0	-50,842	1,370,957		1,370,957	0	-12,448	53,523		-12,448	1,424,481
April	2025	0	-47,532	1,323,425		1,323,425	0	-10,919	42,604		-23,368	1,366,029
May	2025	0	-41,987	1,281,438		1,281,438	0	-7,814	34,790		-31,182	1,316,228
June	2025	0	-46,508	1,234,931		1,234,931	0	-13,239	21,550		-44,421	1,256,481
July	2025	0	-61,752	1,173,178		1,173,178	0	-11,233	10,318		-55,654	1,183,496
August	2025	0	-61,442	1,111,736		1,111,736	0	-4,218	6,100		-59,872	1,117,836
September	2025	0	-69,478	1,042,259		1,042,259	0	-275	5,825		-60,147	1,048,083
October	2025	0	-84,995	957,263		957,263	0	-1,653	4,172		-61,799	961,435
November	2025	0	-58,808	898,455		898,455	0	-269	3,903		-62,068	902,359
December	2025	0	-65,301	833,155		833,155	0	0	3,903		-62,068	837,058
January	2026	0	-33,697	799,458		799,458	0	-75	3,829		-62,143	803,286
February	2026	0	-32,522	766,935		766,935	0	-123	3,706		-62,266	770,642
March	2026	0	-45,183	721,753		721,753	0	-34	3,672		-62,300	725,425
April	2026	0	-56,223	665,530		665,530	0	0	3,672		-62,300	669,202
May	2026	0	-77,067	588,462		588,462	0	0	3,672		-62,300	592,135
June	2026	0	-99,043	489,419		489,419	0	0	3,672		-62,300	493,091
July	2026	0	-55,345	434,074		434,074	0	0	3,672		-62,300	437,746
August	2026	0	-64,950	369,123		369,123	0	0	3,672		-62,300	372,795
September	2026	0	-94,327	274,797		274,797	0	0	3,672		-62,300	278,469
October	2026	0	-43,829	230,968		230,968	0	0	3,672		-62,300	234,640
November	2026	0	-50,238	180,730		180,730	0	0	3,672		-62,300	184,402
December	2026	0	-72,174	108,555		108,555	0	0	3,672		-62,300	112,227
January	2027	0	-21,855	86,700		86,700	0	0	3,672		-62,300	90,372
February	2027	0	-62,893	23,807		23,807	0	-598	3,074		-62,897	26,881
March	2027	0	-20,705	3,102		3,102	0	-2,583	491		-65,481	3,593
April	2027	0	-3,102	0		0	0	-491	0		-65,972	0
May	2027	0	0	0		0	0	0	0		-65,972	0
June	2027	0	0	0		0	0	0	0		-65,972	0
July	2027	0	0	0		0	0	0	0		-65,972	0
August	2027	0	0	0		0	0	0	0		-65,972	0
September	2027	0	0	0		0	0	0	0		-65,972	0
October	2027	0	0	0		0	0	0	0		-65,972	0
November	2027	0	0	0		0	0	0	0		-65,972	0
December	2027	0	0	0		0	0	0	0		-65,972	0

Table 2. EM&V Data Incremental by Vintage Year										
Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP	NC NLR	System IRP
2012			3,650		3,650			-	-	3,650
2013			315,928		315,928			-	-	315,928
2014			5,464,413		5,464,413			-	-	5,464,413
2015			4,736,906		4,736,906			535,170	535,170	5,272,076
2016			4,676,448		4,676,448			1,845	1,532	4,678,293
2017			1,013,491		1,013,491			40,499	40,499	1,053,991

Appendix D.17 Residential Home Energy Check-Up Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA		VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	Revenue (NLR) (New + Retired +)	System Cum for IRP	VA	NC	System	VA	NC	System
VA Monthly New	VA Monthly Retired	NC Monthly New	NC Monthly Retired				VA	NC					System	VA	NC	System		
January	2023	0	-2	3,371		3,371	0		69	0	3,439	52	63	53	0.06	0.07	0.06	
February	2023	0	-2	3,368		3,368	0		69	0	3,437	52	63	53	0.06	0.07	0.06	
March	2023	0	-4	3,364		3,364	0		69	0	3,433	52	63	53	0.06	0.07	0.06	
April	2023	0	-2	3,362		3,362	0		69	0	3,431	52	63	53	0.06	0.07	0.06	
May	2023	0	-3	3,359		3,359	0		69	0	3,428	52	63	53	0.06	0.07	0.06	
June	2023	0	-5	3,354		3,354	0		69	0	3,423	52	63	52	0.06	0.07	0.06	
July	2023	0	-2	3,353		3,353	0		69	0	3,421	52	63	52	0.06	0.07	0.06	
August	2023	0	-2	3,351		3,351	0		69	0	3,420	52	63	52	0.06	0.07	0.06	
September	2023	0	-7	3,344		3,344	0		69	0	3,413	52	63	52	0.06	0.07	0.06	
October	2023	0	-9	3,335		3,335	0		69	0	3,404	52	63	52	0.06	0.07	0.06	
November	2023	0	-24	3,311		3,311	0		69	0	3,380	52	63	52	0.06	0.07	0.06	
December	2023	0	-34	3,277		3,277	0		69	0	3,346	52	63	52	0.06	0.07	0.06	
January	2024	0	-78	3,199		3,199	0		69	0	3,267	52	63	52	0.06	0.07	0.06	
February	2024	0	-36	3,163		3,163	0		69	0	3,232	52	63	52	0.06	0.07	0.06	
March	2024	0	-64	3,099		3,099	0		69	0	3,167	52	63	52	0.06	0.07	0.06	
April	2024	0	-58	3,041		3,041	0		69	0	3,110	52	63	52	0.06	0.07	0.06	
May	2024	0	-94	2,947		2,947	0		69	0	3,016	52	63	52	0.06	0.07	0.06	
June	2024	0	-81	2,866		2,866	0		69	0	2,935	52	63	52	0.06	0.07	0.06	
July	2024	0	-116	2,751		2,751	0		69	0	2,819	52	63	52	0.06	0.07	0.06	
August	2024	0	-138	2,613		2,613	0		69	0	2,682	52	63	53	0.06	0.07	0.06	
September	2024	0	-141	2,472		2,472	0		69	0	2,541	53	63	53	0.06	0.07	0.06	
October	2024	0	-236	2,236		2,236	0		69	0	2,304	52	63	52	0.06	0.07	0.06	
November	2024	0	-124	2,112		2,112	0		69	0	2,181	51	63	51	0.06	0.07	0.06	
December	2024	0	-37	2,075		2,075	0		69	0	2,144	51	63	51	0.06	0.07	0.06	
January	2025	0	-234	1,841		1,841	0		69	0	1,909	50	63	50	0.06	0.07	0.06	
February	2025	0	-118	1,723		1,723	0		69	0	1,792	49	63	50	0.06	0.07	0.06	
March	2025	0	-65	1,658		1,658	0	-13	56	-13	1,714	49	60	50	0.06	0.06	0.06	
April	2025	0	-62	1,596		1,596	0	-11	45	-24	1,640	49	57	50	0.06	0.06	0.06	
May	2025	0	-52	1,543		1,543	0	-8	36	-32	1,580	49	57	50	0.06	0.06	0.06	
June	2025	0	-58	1,485		1,485	0	-14	22	-46	1,507	50	57	50	0.06	0.06	0.06	
July	2025	0	-77	1,408		1,408	0	-12	10	-58	1,418	50	59	50	0.06	0.06	0.06	
August	2025	0	-74	1,334		1,334	0	-5	6	-63	1,340	50	68	50	0.06	0.06	0.06	
September	2025	0	-83	1,251		1,251	0	0	5	-63	1,257	49	69	49	0.06	0.06	0.06	
October	2025	0	-98	1,153		1,153	0	-2	4	-65	1,157	49	72	49	0.06	0.06	0.06	
November	2025	0	-70	1,084		1,084	0	0	3	-65	1,087	49	72	49	0.06	0.06	0.06	
December	2025	0	-76	1,008		1,008	0	0	3	-65	1,011	48	72	48	0.06	0.06	0.06	
January	2026	0	-41	967		967	0	0	3	-65	970	48	72	48	0.06	0.06	0.06	
February	2026	0	-41	926		926	0	0	3	-66	929	48	74	48	0.06	0.06	0.06	
March	2026	0	-54	872		872	0	0	3	-66	875	48	75	48	0.06	0.06	0.06	
April	2026	0	-71	801		801	0	0	3	-66	804	48	75	48	0.06	0.06	0.06	
May	2026	0	-98	704		704	0	0	3	-66	707	49	75	49	0.06	0.06	0.06	
June	2026	0	-125	578		578	0	0	3	-66	581	50	75	50	0.06	0.06	0.06	
July	2026	0	-71	508		508	0	0	3	-66	511	51	75	52	0.06	0.06	0.06	
August	2026	0	-79	429		429	0	0	3	-66	432	52	75	52	0.06	0.06	0.06	
September	2026	0	-111	318		318	0	0	3	-66	321	53	75	53	0.06	0.06	0.06	
October	2026	0	-52	265		265	0	0	3	-66	268	54	75	54	0.06	0.06	0.06	
November	2026	0	-60	205		205	0	0	3	-66	208	56	75	56	0.06	0.06	0.06	
December	2026	0	-83	122		122	0	0	3	-66	125	57	75	57	0.06	0.06	0.06	
January	2027	0	-26	96		96	0	0	3	-66	99	58	75	58	0.06	0.06	0.06	
February	2027	0	-69	27		27	0	0	3	-66	30	55	70	57	0.06	0.06	0.06	
March	2027	0	-24	3		3	0	-2	0	-68	4	57	98	61	0.06	0.07	0.06	
April	2027	0	-3	0		0	0	0	0	-69	0	-	-	-	-	-	-	
May	2027	0	0	0		0	0	0	0	-69	0	-	-	-	-	-	-	
June	2027	0	0	0		0	0	0	0	-69	0	-	-	-	-	-	-	
July	2027	0	0	0		0	0	0	0	-69	0	-	-	-	-	-	-	
August	2027	0	0	0		0	0	0	0	-69	0	-	-	-	-	-	-	
September	2027	0	0	0		0	0	0	0	-69	0	-	-	-	-	-	-	
October	2027	0	0	0		0	0	0	0	-69	0	-	-	-	-	-	-	
November	2027	0	0	0		0	0	0	0	-69	0	-	-	-	-	-	-	
December	2027	0	0	0		0	0	0	0	-69	0	-	-	-	-	-	-	

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			4		4			-		-	4	118	-	118	0.12	-	0.12
2013			172		172			-		-	172	201	-	201	0.11	-	0.11
2014			1,358		1,358			-		-	1,358	277	-	277	0.07	-	0.07
2015			873		873			65		65	939	342	537	355	0.06	0.07	0.06
2016			871		871			0		-	871	307	461	307	0.06	0.05	0.06
2017			96		96			3		3	99	676	827	680	0.06	0.06	0.06

Appendix D.17 Residential Home Energy Check-Up Program

Table 3. EM&V Data Annualized by Vintage Year

Year	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		31		31		-		-		31
2013		1,569		1,569		-		-		1,569
2014		19,702		19,702		-		-		19,702
2015		13,860		13,860		996		996		14,856
2016		15,252		15,252		4		-		15,256
2017		1,500		1,500		49		49		1,549
2018		-		-		-		-		-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

Year	Program Participants									
					NC PPI				System	
2012						-				
2013						-				
2014						-				
2015						996				
2016						1,000				
2017						1,049				

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Year	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		31		31		-		-		31
2013		1,600		1,600		-		-		1,600
2014		21,302		21,302		-		-		21,302
2015		35,162		35,162		996		996		36,158
2016		50,414		50,414		1,000		-		51,414
2017		51,914		51,914		1,049		49		52,963
2018		51,914		51,914		1,049				52,963
2019		51,914		51,914		1,049				52,963
2020		51,914		51,914		1,049				52,963
2021		51,914		51,914		1,049				52,963
2022		51,904		51,904		1,049				52,953
2023		51,051		51,051		1,049				52,100
2024		33,978		33,978		1,049				35,027
2025		17,368		17,368		54				17,422
2026		1,907		1,907		49				1,956
2027		-		-		-				-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

Year	Program Participants									
	VA IRP				NC IRP				System IRP	
2012		31				-				31
2013		1,600				-				1,600
2014		21,302				-				21,302
2015		35,162				996				36,158
2016		50,414				1,000				51,414
2017		51,914				1,049				52,963
2018		51,914				1,049				52,963
2019		51,914				1,049				52,963
2020		51,914				1,049				52,963
2021		51,914				1,049				52,963
2022		51,914				1,049				52,963
2023		51,914				1,049				52,963
2024		51,914				1,049				52,963
2025		51,914				1,049				52,963
2026		51,914				1,049				52,963
2027		51,914				1,049				52,963

Appendix D.17 Residential Home Energy Check-Up Program

Table 3. EM&V Data Annualized by Vintage Year

	Net Annualized Energy (kWh/year)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		30,066		30,066		-		-		30,066
2013		1,420,658		1,420,658		-		-		1,420,658
2014		12,983,696		12,983,696		-		-		12,983,696
2015		8,591,467		8,591,467		745,716		745,716		9,337,183
2016		8,553,094		8,553,094		1,879		-		8,554,973
2017		1,040,400		1,040,400		44,065		44,065		1,084,465
2018		-		-		-		-		-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Net (kWh)									
					NC PPI				System	
2012						-				
2013						-				
2014						-				
2015						535,170				
2016						747,560				
2017						788,094				

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Net Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2012		3,650		3,650		-		-		3,650
2013		345,994		345,994		-		-		345,994
2014		6,915,137		6,915,137		-		-		6,915,137
2015		19,171,326		19,171,326		535,170		535,170		19,706,496
2016		27,702,335		27,702,335		747,560		622,961		28,449,896
2017		32,592,472		32,592,472		788,094		40,499		33,380,566
2018		32,619,381		32,619,381		791,659		44,065		33,411,041
2019		32,619,381		32,619,381		791,659		36,721		33,411,041
2020		32,619,381		32,619,381		791,659		-		33,411,041
2021		32,619,381		32,619,381		791,659		-		33,411,041
2022		32,618,237		32,618,237		791,659		-		33,409,896
2023		32,391,775		32,391,775		791,659		-		33,183,435
2024		26,786,219		26,786,219		791,659		-		27,577,878
2025		14,164,010		14,164,010		318,632		-		14,482,643
2026		5,629,804		5,629,804		44,256		-		5,674,059
2027		113,609		113,609		7,238		-		120,846

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

	Net Energy (kWh)									
	VA IRP				NC IRP				System IRP	
2012		3,650				-				3,650
2013		349,644				-				349,644
2014		7,264,781				-				7,264,781
2015		26,436,108				535,170				26,971,278
2016		54,138,443				1,282,730				55,421,174
2017		86,730,916				2,070,824				88,801,740
2018		119,350,297				2,862,484				122,212,780
2019		151,969,678				3,654,143				155,623,821
2020		184,589,059				4,445,802				189,034,862
2021		217,208,441				5,237,462				222,445,902
2022		249,826,677				6,029,121				255,855,798
2023		282,218,452				6,820,780				289,039,233
2024		309,004,671				7,612,440				316,617,111
2025		323,168,682				7,931,072				331,099,754
2026		328,798,485				7,975,328				336,773,813
2027		328,912,094				7,982,565				336,894,659

Appendix D.17 Residential Home Energy Check-Up Program

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			4		4			-		-	4	970	-	970	0.12	-	0.12
2013			172		172			-		-	172	905	-	905	0.11	-	0.11
2014			1,358		1,358			-		-	1,358	659	-	659	0.07	-	0.07
2015			873		873			65		65	939	620	749	629	0.06	0.07	0.06
2016			871		871			0		-	871	561	470	561	0.06	0.05	0.06
2017			96		96			3		3	99	694	899	700	0.06	0.06	0.06
2018			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
								NC PPI			System	VA	NC	System	VA	NC	System
2012								-									
2013								-									
2014								-									
2015								65					537			0.07	
2016								66					748			0.07	
2017								69					751			0.07	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			4		4			-		-	4	118	-	118	0.12	-	0.12
2013			176		176			-		-	176	216	-	216	0.11	-	0.11
2014			1,534		1,534			-		-	1,534	325	-	325	0.07	-	0.07
2015			2,407		2,407			65		65	2,473	545	537	545	0.07	0.07	0.07
2016			3,278		3,278			66		-	3,344	549	748	553	0.07	0.07	0.07
2017			3,374		3,374			69		3	3,443	628	751	630	0.07	0.07	0.07
2018			3,374					69			3,443	628	755	631	0.07	0.07	0.07
2019			3,374					69			3,443	628	755	631	0.07	0.07	0.07
2020			3,374					69			3,443	628	755	631	0.07	0.07	0.07
2021			3,374					69			3,443	628	755	631	0.07	0.07	0.07
2022			3,373					69			3,442	628	755	631	0.06	0.07	0.06
2023			3,277					69			3,346	634	755	637	0.06	0.07	0.06
2024			2,075					69			2,144	788	755	787	0.06	0.07	0.06
2025			1,008					3			1,011	816	5,901	831	0.06	0.06	0.06
2026			122					3			125	2,952	903	2,901	0.06	0.06	0.06
2027			0					0			0	-	-	-	-	-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kW/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2012			4					-			4	118	-	118	0.12	-	0.12
2013			176					-			176	219	-	219	0.11	-	0.11
2014			1,534					-			1,534	341	-	341	0.07	-	0.07
2015			2,407					65			2,473	752	537	746	0.07	0.07	0.07
2016			3,278					66			3,344	1,074	1,283	1,078	0.07	0.07	0.07
2017			3,374					69			3,443	1,671	1,974	1,677	0.07	0.07	0.07
2018			3,374					69			3,443	2,299	2,729	2,308	0.07	0.07	0.07
2019			3,374					69			3,443	2,927	3,483	2,938	0.07	0.07	0.07
2020			3,374					69			3,443	3,556	4,238	3,569	0.07	0.07	0.07
2021			3,374					69			3,443	4,184	4,993	4,200	0.07	0.07	0.07
2022			3,374					69			3,443	4,812	5,747	4,831	0.07	0.07	0.07
2023			3,374					69			3,443	5,436	6,502	5,457	0.07	0.07	0.07
2024			3,374					69			3,443	5,952	7,257	5,978	0.07	0.07	0.07
2025			3,374					69			3,443	6,225	7,561	6,252	0.07	0.07	0.07
2026			3,374					69			3,443	6,334	7,603	6,359	0.07	0.07	0.07
2027			3,374					69			3,443	6,336	7,610	6,361	0.07	0.07	0.07

Appendix D.18 Residential Appliance Recycling Program

PROGRAM: Residential Appliance Recycling Program
DSM Phase IV Program
Type: Energy Efficiency
Program Measure Life: 8.0 years

Table 1		Participation														
Month	Year	Program Participants										System				
		VA					NC									
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP			
January	2015	0		0		0		0		0		0		0		0
February	2015	0		0		0		0		0		0		0		0
March	2015	0		0		0		0		0		0		0		0
April	2015	0		0		0		0		0		0		0		0
May	2015	0		0		0		0		0		0		0		0
June	2015	0		0		0		0		0		0		0		0
July	2015	0		0		0		0		0		0		0		0
August	2015	0		0		0		0		0		0		0		0
September	2015	921		921		921		921		0		0		0		921
October	2015	1,008		1,929		1,929		1,929		0		0		0		1,929
November	2015	1,070		2,999		2,999		2,999		0		0		0		2,999
December	2015	207		3,206		3,206		3,206		0		0		0		3,206
January	2016	203		3,409		3,409	0	3,409		0		0		0		3,409
February	2016	4		3,413		3,413	0	3,413		0		0		0		3,413
March	2016	876		4,289		4,289	0	4,289		0		0		0		4,289
April	2016	653		4,942		4,942	0	4,942		0		0		0		4,942
May	2016	525		5,467		5,467	0	5,467		0		0		0		5,467
June	2016	1,204		6,671		6,671	0	6,671		0		0		0		6,671
July	2016	521		7,192		7,192	0	7,192		0		0		0		7,192
August	2016	1,102		8,294		8,294	0	8,294		0		0		0		8,294
September	2016	671		8,965		8,965	0	8,965		0		0		0		8,965
October	2016	615		9,580		9,580	0	9,580		0		0		0		9,580
November	2016	713		10,293		10,293	0	10,293		0		0		0		10,293
December	2016	648		10,941		10,941	0	10,941		0		0		0		10,941
January	2017	816		11,757		11,757	0	11,757		0		0		0		11,757
February	2017	313		12,070		12,070	0	12,070		0		0		0		12,070
March	2017	416		12,486		12,486	0	12,486		0		0		0		12,486
April	2017	511		12,997		12,997	0	12,997		0		0		0		12,997
May	2017	584		13,581		13,581	0	13,581		0		0		0		13,581
June	2017	475		14,056		14,056	0	14,056		0		0		0		14,056
July	2017	16		14,072		14,072	0	14,072		0		0		0		14,072
August	2017	0		14,072		14,072	0	14,072		0		0		0		14,072
September	2017	0		14,072		14,072	0	14,072		0		0		0		14,072
October	2017	0		14,072		14,072	0	14,072		0		0		0		14,072
November	2017	0		14,072		14,072	0	14,072		0		0		0		14,072
December	2017	0		14,072		14,072	0	14,072		0		0		0		14,072
January	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
February	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
March	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
April	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
May	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
June	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
July	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
August	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
September	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
October	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
November	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
December	2018	0		14,072		14,072	0	14,072		0		0		0		14,072
January	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
February	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
March	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
April	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
May	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
June	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
July	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
August	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
September	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
October	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
November	2019	0		14,072		14,072	0	14,072		0		0		0		14,072
December	2019	0		14,072		14,072	0	14,072		0		0		0		14,072

Appendix D.18 Residential Appliance Recycling Program

Table 1		Energy Savings												
Month	Year	Net kWh												
		VA					NC					System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP		
January	2015	0		0		0				0		0		
February	2015	0		0		0				0		0		
March	2015	0		0		0				0		0		0
April	2015	0		0		0				0		0		0
May	2015	0		0		0				0		0		0
June	2015	0		0		0				0		0		0
July	2015	0		0		0				0		0		0
August	2015	0		0		0				0		0		0
September	2015	67,411		67,411		67,411				0		0		67,411
October	2015	75,065		142,476		142,476				0		0		142,476
November	2015	74,711		217,187		217,187				0		0		217,187
December	2015	14,991		232,178		232,178				0		0		232,178
January	2016	3,196		235,374		235,374	0			0		0		235,374
February	2016	322		235,696		235,696	0			0		0		235,696
March	2016	50,764		286,460		286,460	0			0		0		286,460
April	2016	40,391		326,851		326,851	0			0		0		326,851
May	2016	31,450		358,301		358,301	0			0		0		358,301
June	2016	76,064		434,366		434,366	0			0		0		434,366
July	2016	32,906		467,271		467,271	0			0		0		467,271
August	2016	73,947		541,218		541,218	0			0		0		541,218
September	2016	44,800		586,018		586,018	0			0		0		586,018
October	2016	40,735		626,752		626,752	0			0		0		626,752
November	2016	47,437		674,190		674,190	0			0		0		674,190
December	2016	42,582		716,772		716,772	0			0		0		716,772
January	2017	52,108		768,880		768,880	0			0		0		768,880
February	2017	19,757		788,637		788,637	0			0		0		788,637
March	2017	25,379		814,016		814,016	0			0		0		814,016
April	2017	32,073		846,089		846,089	0			0		0		846,089
May	2017	35,762		881,851		881,851	0			0		0		881,851
June	2017	27,777		909,627		909,627	0			0		0		909,627
July	2017	699		910,326		910,326	0			0		0		910,326
August	2017	0		910,326		910,326	0			0		0		910,326
September	2017	0		910,326		910,326	0			0		0		910,326
October	2017	0		910,326		910,326	0			0		0		910,326
November	2017	0		910,326		910,326	0			0		0		910,326
December	2017	0		910,326		910,326	0			0		0		910,326
January	2018	0		910,326		910,326	0			0		0		910,326
February	2018	0		910,326		910,326	0			0		0		910,326
March	2018	0		910,326		910,326	0			0		0		910,326
April	2018	0		910,326		910,326	0			0		0		910,326
May	2018	0		910,326		910,326	0			0		0		910,326
June	2018	0		910,326		910,326	0			0		0		910,326
July	2018	0		910,326		910,326	0			0		0		910,326
August	2018	0		910,326		910,326	0			0		0		910,326
September	2018	0		910,326		910,326	0			0		0		910,326
October	2018	0		910,326		910,326	0			0		0		910,326
November	2018	0		910,326		910,326	0			0		0		910,326
December	2018	0		910,326		910,326	0			0		0		910,326
January	2019	0		910,326		910,326	0			0		0		910,326
February	2019	0		910,326		910,326	0			0		0		910,326
March	2019	0		910,326		910,326	0			0		0		910,326
April	2019	0		910,326		910,326	0			0		0		910,326
May	2019	0		910,326		910,326	0			0		0		910,326
June	2019	0		910,326		910,326	0			0		0		910,326
July	2019	0		910,326		910,326	0			0		0		910,326
August	2019	0		910,326		910,326	0			0		0		910,326
September	2019	0		910,326		910,326	0			0		0		910,326
October	2019	0		910,326		910,326	0			0		0		910,326
November	2019	0		910,326		910,326	0			0		0		910,326
December	2019	0		910,326		910,326	0			0		0		910,326

Appendix D.18 Residential Appliance Recycling Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2015	0		0		0				0		0	-	-	-	-	-	-
February	2015	0		0		0				0		0	-	-	-	-	-	-
March	2015	0		0		0				0		0	-	-	-	-	-	-
April	2015	0		0		0				0		0	-	-	-	-	-	-
May	2015	0		0		0				0		0	-	-	-	-	-	-
June	2015	0		0		0				0		0	-	-	-	-	-	-
July	2015	0		0		0				0		0	-	-	-	-	-	-
August	2015	0		0		0				0		0	-	-	-	-	-	-
September	2015	121		121		121				0		121	73	-	73	0.13	-	0.13
October	2015	135		256		256				0		256	74	-	74	0.13	-	0.13
November	2015	134		390		390				0		390	72	-	72	0.13	-	0.13
December	2015	27		417		417				0		417	72	-	72	0.13	-	0.13
January	2016	6		423		423	0			0		423	69	-	69	0.12	-	0.12
February	2016	1		423		423	0			0		423	69	-	69	0.12	-	0.12
March	2016	91		515		515	0			0		515	67	-	67	0.12	-	0.12
April	2016	73		587		587	0			0		587	66	-	66	0.12	-	0.12
May	2016	56		644		644	0			0		644	66	-	66	0.12	-	0.12
June	2016	137		780		780	0			0		780	65	-	65	0.12	-	0.12
July	2016	59		839		839	0			0		839	65	-	65	0.12	-	0.12
August	2016	133		972		972	0			0		972	65	-	65	0.12	-	0.12
September	2016	80		1,053		1,053	0			0		1,053	65	-	65	0.12	-	0.12
October	2016	73		1,126		1,126	0			0		1,126	65	-	65	0.12	-	0.12
November	2016	85		1,211		1,211	0			0		1,211	65	-	65	0.12	-	0.12
December	2016	76		1,287		1,287	0			0		1,287	66	-	66	0.12	-	0.12
January	2017	94		1,381		1,381	0			0		1,381	65	-	65	0.12	-	0.12
February	2017	35		1,417		1,417	0			0		1,417	65	-	65	0.12	-	0.12
March	2017	46		1,462		1,462	0			0		1,462	65	-	65	0.12	-	0.12
April	2017	58		1,520		1,520	0			0		1,520	65	-	65	0.12	-	0.12
May	2017	64		1,584		1,584	0			0		1,584	65	-	65	0.12	-	0.12
June	2017	50		1,634		1,634	0			0		1,634	65	-	65	0.12	-	0.12
July	2017	1		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
August	2017	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
September	2017	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
October	2017	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
November	2017	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
December	2017	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
January	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
February	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
March	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
April	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
May	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
June	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
July	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
August	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
September	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
October	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
November	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
December	2018	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
January	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
February	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
March	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
April	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
May	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
June	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
July	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
August	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
September	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
October	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
November	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12
December	2019	0		1,635		1,635	0			0		1,635	65	-	65	0.12	-	0.12

Appendix D.18 Residential Appliance Recycling Program

Table 1		Participation											
Month	Year	Program Participants					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
January	2020			14,072		14,072					0	0	14,072
February	2020			14,072		14,072					0	0	14,072
March	2020			14,072		14,072					0	0	14,072
April	2020			14,072		14,072					0	0	14,072
May	2020			14,072		14,072					0	0	14,072
June	2020			14,072		14,072					0	0	14,072
July	2020			14,072		14,072					0	0	14,072
August	2020			14,072		14,072					0	0	14,072
September	2020			14,072		14,072					0	0	14,072
October	2020			14,072		14,072					0	0	14,072
November	2020			14,072		14,072					0	0	14,072
December	2020			14,072		14,072					0	0	14,072
January	2021			14,072		14,072					0	0	14,072
February	2021			14,072		14,072					0	0	14,072
March	2021			14,072		14,072					0	0	14,072
April	2021			14,072		14,072					0	0	14,072
May	2021			14,072		14,072					0	0	14,072
June	2021			14,072		14,072					0	0	14,072
July	2021			14,072		14,072					0	0	14,072
August	2021			14,072		14,072					0	0	14,072
September	2021			14,072		14,072					0	0	14,072
October	2021			14,072		14,072					0	0	14,072
November	2021			14,072		14,072					0	0	14,072
December	2021			14,072		14,072					0	0	14,072
January	2022			14,072		14,072					0	0	14,072
February	2022			14,072		14,072					0	0	14,072
March	2022			14,072		14,072					0	0	14,072
April	2022			14,072		14,072					0	0	14,072
May	2022			14,072		14,072					0	0	14,072
June	2022			14,072		14,072					0	0	14,072
July	2022			14,072		14,072					0	0	14,072
August	2022			14,072		14,072					0	0	14,072
September	2022			14,072		14,072					0	0	14,072
October	2022			14,072		14,072					0	0	14,072
November	2022			14,072		14,072					0	0	14,072
December	2022			14,072		14,072					0	0	14,072
January	2023			14,072		14,072					0	0	14,072
February	2023			14,072		14,072					0	0	14,072
March	2023			14,072		14,072					0	0	14,072
April	2023			14,072		14,072					0	0	14,072
May	2023			14,072		14,072					0	0	14,072
June	2023			14,072		14,072					0	0	14,072
July	2023			14,072		14,072					0	0	14,072
August	2023			14,072		14,072					0	0	14,072
September	2023		-921	13,151		13,151					0	0	13,151
October	2023		-1,008	12,143		12,143					0	0	12,143
November	2023		-1,070	11,073		11,073					0	0	11,073
December	2023		-207	10,866		10,866					0	0	10,866
January	2024		-203	10,663		10,663					0	0	10,663
February	2024		-4	10,659		10,659					0	0	10,659
March	2024		-876	9,783		9,783					0	0	9,783
April	2024		-653	9,130		9,130					0	0	9,130
May	2024		-525	8,605		8,605					0	0	8,605
June	2024		-1,204	7,401		7,401					0	0	7,401
July	2024		-521	6,880		6,880					0	0	6,880
August	2024		-1,102	5,778		5,778					0	0	5,778
September	2024		-671	5,107		5,107					0	0	5,107
October	2024		-615	4,492		4,492					0	0	4,492
November	2024		-713	3,779		3,779					0	0	3,779
December	2024		-648	3,131		3,131					0	0	3,131
January	2025		-816	2,315		2,315					0	0	2,315
February	2025		-313	2,002		2,002					0	0	2,002
March	2025		-416	1,586		1,586					0	0	1,586
April	2025		-511	1,075		1,075					0	0	1,075
May	2025		-584	491		491					0	0	491
June	2025		-475	16		16					0	0	16
July	2025		-16	0		0					0	0	0
August	2025		0	0		0					0	0	0
September	2025		0	0		0					0	0	0
October	2025		0	0		0					0	0	0
November	2025		0	0		0					0	0	0
December	2025		0	0		0					0	0	0

Appendix D.18 Residential Appliance Recycling Program

Table 1		Energy Savings										
Month	Year	Net kWh					NC					System
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
VA Monthly New	VA Monthly Retired											
January	2020			910,326		910,326				0	0	910,326
February	2020			910,326		910,326				0	0	910,326
March	2020			910,326		910,326				0	0	910,326
April	2020			910,326		910,326				0	0	910,326
May	2020			910,326		910,326				0	0	910,326
June	2020			910,326		910,326				0	0	910,326
July	2020			910,326		910,326				0	0	910,326
August	2020			910,326		910,326				0	0	910,326
September	2020			910,326		910,326				0	0	910,326
October	2020			910,326		910,326				0	0	910,326
November	2020			910,326		910,326				0	0	910,326
December	2020			910,326		910,326				0	0	910,326
January	2021			910,326		910,326				0	0	910,326
February	2021			910,326		910,326				0	0	910,326
March	2021			910,326		910,326				0	0	910,326
April	2021			910,326		910,326				0	0	910,326
May	2021			910,326		910,326				0	0	910,326
June	2021			910,326		910,326				0	0	910,326
July	2021			910,326		910,326				0	0	910,326
August	2021			910,326		910,326				0	0	910,326
September	2021			910,326		910,326				0	0	910,326
October	2021			910,326		910,326				0	0	910,326
November	2021			910,326		910,326				0	0	910,326
December	2021			910,326		910,326				0	0	910,326
January	2022			910,326		910,326				0	0	910,326
February	2022			910,326		910,326				0	0	910,326
March	2022			910,326		910,326				0	0	910,326
April	2022			910,326		910,326				0	0	910,326
May	2022			910,326		910,326				0	0	910,326
June	2022			910,326		910,326				0	0	910,326
July	2022			910,326		910,326				0	0	910,326
August	2022			910,326		910,326				0	0	910,326
September	2022			910,326		910,326				0	0	910,326
October	2022			910,326		910,326				0	0	910,326
November	2022			910,326		910,326				0	0	910,326
December	2022			910,326		910,326				0	0	910,326
January	2023			910,326		910,326				0	0	910,326
February	2023			910,326		910,326				0	0	910,326
March	2023			910,326		910,326				0	0	910,326
April	2023			910,326		910,326				0	0	910,326
May	2023			910,326		910,326				0	0	910,326
June	2023			910,326		910,326				0	0	910,326
July	2023			910,326		910,326				0	0	910,326
August	2023			910,326		910,326				0	0	910,326
September	2023		-67,411	842,915		842,915				0	0	842,915
October	2023		-75,065	767,850		767,850				0	0	767,850
November	2023		-74,711	693,139		693,139				0	0	693,139
December	2023		-14,991	678,148		678,148				0	0	678,148
January	2024		-3,196	674,952		674,952				0	0	674,952
February	2024		-322	674,630		674,630				0	0	674,630
March	2024		-50,764	623,866		623,866				0	0	623,866
April	2024		-40,391	583,475		583,475				0	0	583,475
May	2024		-31,450	552,025		552,025				0	0	552,025
June	2024		-76,064	475,960		475,960				0	0	475,960
July	2024		-32,906	443,055		443,055				0	0	443,055
August	2024		-73,947	369,108		369,108				0	0	369,108
September	2024		-44,800	324,308		324,308				0	0	324,308
October	2024		-40,735	283,574		283,574				0	0	283,574
November	2024		-47,437	236,136		236,136				0	0	236,136
December	2024		-42,582	193,554		193,554				0	0	193,554
January	2025		-52,108	141,446		141,446				0	0	141,446
February	2025		-19,757	121,689		121,689				0	0	121,689
March	2025		-25,379	96,310		96,310				0	0	96,310
April	2025		-32,073	64,237		64,237				0	0	64,237
May	2025		-35,762	28,475		28,475				0	0	28,475
June	2025		-27,777	699		699				0	0	699
July	2025		-699	0		0				0	0	0
August	2025		0	0		0				0	0	0
September	2025		0	0		0				0	0	0
October	2025		0	0		0				0	0	0
November	2025		0	0		0				0	0	0
December	2025		0	0		0				0	0	0

Appendix D.18 Residential Appliance Recycling Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
February	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
March	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
April	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
May	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
June	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
July	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
August	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
September	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
October	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
November	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
December	2020			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
January	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
February	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
March	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
April	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
May	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
June	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
July	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
August	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
September	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
October	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
November	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
December	2021			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
January	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
February	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
March	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
April	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
May	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
June	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
July	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
August	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
September	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
October	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
November	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
December	2022			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
January	2023			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
February	2023			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
March	2023			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
April	2023			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
May	2023			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
June	2023			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
July	2023			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
August	2023			1,635		1,635			0	0	1,635	65	-	65	0.12	-	0.12	
September	2023		-121	1,514		1,514			0	0	1,514	64	-	64	0.12	-	0.12	
October	2023		-135	1,379		1,379			0	0	1,379	63	-	63	0.11	-	0.11	
November	2023		-134	1,245		1,245			0	0	1,245	63	-	63	0.11	-	0.11	
December	2023		-27	1,218		1,218			0	0	1,218	62	-	62	0.11	-	0.11	
January	2024		-6	1,212		1,212			0	0	1,212	63	-	63	0.11	-	0.11	
February	2024		-1	1,212		1,212			0	0	1,212	63	-	63	0.11	-	0.11	
March	2024		-91	1,121		1,121			0	0	1,121	64	-	64	0.11	-	0.11	
April	2024		-73	1,048		1,048			0	0	1,048	64	-	64	0.11	-	0.11	
May	2024		-56	992		992			0	0	992	64	-	64	0.12	-	0.12	
June	2024		-137	855		855			0	0	855	64	-	64	0.12	-	0.12	
July	2024		-59	796		796			0	0	796	64	-	64	0.12	-	0.12	
August	2024		-133	663		663			0	0	663	64	-	64	0.11	-	0.11	
September	2024		-80	583		583			0	0	583	64	-	64	0.11	-	0.11	
October	2024		-73	509		509			0	0	509	63	-	63	0.11	-	0.11	
November	2024		-85	424		424			0	0	424	62	-	62	0.11	-	0.11	
December	2024		-76	348		348			0	0	348	62	-	62	0.11	-	0.11	
January	2025		-94	254		254			0	0	254	61	-	61	0.11	-	0.11	
February	2025		-35	219		219			0	0	219	61	-	61	0.11	-	0.11	
March	2025		-46	173		173			0	0	173	61	-	61	0.11	-	0.11	
April	2025		-58	115		115			0	0	115	60	-	60	0.11	-	0.11	
May	2025		-64	51		51			0	0	51	58	-	58	0.10	-	0.10	
June	2025		-50	1		1			0	0	1	44	-	44	0.08	-	0.08	
July	2025		-1	0		0			0	0	0	-	-	-	-	-	-	
August	2025		0	0		0			0	0	0	-	-	-	-	-	-	
September	2025		0	0		0			0	0	0	-	-	-	-	-	-	
October	2025		0	0		0			0	0	0	-	-	-	-	-	-	
November	2025		0	0		0			0	0	0	-	-	-	-	-	-	
December	2025		0	0		0			0	0	0	-	-	-	-	-	-	

Appendix D.18 Residential Appliance Recycling Program

Table 2. EM&V Data Incremental by Vintage Year

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2015		3,206		3,206		-		-		3,206
2016		7,735		7,735		-		-		7,735
2017		3,131		3,131		-		-		3,131
2018		-		-		-		-		-

Table 3. EM&V Data Annualized by Vintage Year

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2015		3,206		3,206		-		-		3,206
2016		7,735		7,735		-		-		7,735
2017		3,131		3,131		-		-		3,131
2018		-		-		-		-		-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Program Participants									
	VA						NC PPI		System	
2015								-		
2016								-		
2017								-		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Program Participants									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2015		3,206		3,206		-		-		3,206
2016		10,941		10,941		-		-		10,941
2017		14,072		14,072		-		-		14,072
2018		14,072		14,072		-		-		14,072
2019		14,072		14,072		-		-		14,072
2020		14,072		14,072		-		-		14,072
2021		14,072		14,072		-		-		14,072
2022		14,072		14,072		-		-		14,072
2023		10,866		10,866		-		-		10,866
2024		3,131		3,131		-		-		3,131
2025		-		-		-		-		-

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

	Program Participants									
	VA Lifetime						NC Lifetime		System Lifetime	
2015		3,206						-		3,206
2016		10,941						-		10,941
2017		14,072						-		14,072
2018		14,072						-		14,072
2019		14,072						-		14,072
2020		14,072						-		14,072
2021		14,072						-		14,072
2022		14,072						-		14,072
2023		14,072						-		14,072
2024		14,072						-		14,072
2025		14,072						-		14,072

Appendix D.18 Residential Appliance Recycling Program

Table 2. EM&V Data Incremental by Vintage Year

	Net Incremental Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2015		659,253		659,253		-		-		659,253
2016		2,703,133		2,703,133		-		-		2,703,133
2017		1,869,797		1,869,797		-		-		1,869,797
2018		-		-		-		-		-

Table 3. EM&V Data Annualized by Vintage Year

	Net Annualized Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2015		2,786,136		2,786,136		-		-		2,786,136
2016		5,815,125		5,815,125		-		-		5,815,125
2017		2,322,653		2,322,653		-		-		2,322,653
2018		-		-		-		-		-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Net Energy (kWh) for PPI									
	VA						NC PPI		System	
2015								-		
2016								0		
2017								0		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

	Net Energy (kWh)									
	VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2015		659,253		659,253		-		-		659,253
2016		5,489,270		5,489,270		-		-		5,489,270
2017		10,471,058		10,471,058		-		-		10,471,058
2018		10,923,914		10,923,914		-		-		10,923,914
2019		10,923,914		10,923,914		-		-		10,923,914
2020		10,923,914		10,923,914		-		-		10,923,914
2021		10,923,914		10,923,914		-		-		10,923,914
2022		10,923,914		10,923,914		-		-		10,923,914
2023		10,264,660		10,264,660		-		-		10,264,660
2024		5,434,644		5,434,644		-		-		5,434,644
2025		452,856		452,856		-		-		452,856

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)

	Net Energy (kWh)									
	VA Lifetime						NC Lifetime		System Lifetime	
2015		659,253						-		659,253
2016		6,148,523						-		6,148,523
2017		16,619,581						-		16,619,581
2018		27,543,494						-		27,543,494
2019		38,467,408						-		38,467,408
2020		49,391,322						-		49,391,322
2021		60,315,235						-		60,315,235
2022		71,239,149						-		71,239,149
2023		81,503,809						-		81,503,809
2024		86,938,453						-		86,938,453
2025		87,391,309						-		87,391,309

Appendix D.18 Residential Appliance Recycling Program

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA	NC	System	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System		
2015				417	417	-	-	417	206	-	206	0.13	-	0.13		
2016				870	870	-	-	870	349	-	349	0.11	-	0.11		
2017				348	348	-	-	348	597	-	597	0.11	-	0.11		
2018				-	-	-	-	-	-	-	-	-	-	-		

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA	NC	System	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System		
2015				417	417	-	-	417	869	-	869	0.13	-	0.13		
2016				870	870	-	-	870	752	-	752	0.11	-	0.11		
2017				348	348	-	-	348	742	-	742	0.11	-	0.11		
2018				-	-	-	-	-	-	-	-	-	-	-		

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System		
2015						-	-									
2016						-	-									
2017						-	-									

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System		
2015				417	417	-	-	417	206	-	206	0.13	-	0.13		
2016				1,287	1,287	-	-	1,287	502	-	502	0.12	-	0.12		
2017				1,635	1,635	-	-	1,635	744	-	744	0.12	-	0.12		
2018				1,635	1,635	-	-	1,635	776	-	776	0.12	-	0.12		
2019				1,635	1,635	-	-	1,635	776	-	776	0.12	-	0.12		
2020				1,635	1,635	-	-	1,635	776	-	776	0.12	-	0.12		
2021				1,635	1,635	-	-	1,635	776	-	776	0.12	-	0.12		
2022				1,635	1,635	-	-	1,635	776	-	776	0.12	-	0.12		
2023				1,218	1,218	-	-	1,218	945	-	945	0.11	-	0.11		
2024				348	348	-	-	348	1,736	-	1,736	0.11	-	0.11		
2025				-	-	-	-	-	-	-	-	-	-	-		

Table 6. Cumulative EM&V Data Accumulated through Vintage Year (Lifetime)											Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA Lifetime	VA NLR	NC Lifetime	NC NLR	System Lifetime	VA	NC	System	VA	NC	System		
2015				417		-		417	206	-	206	0.13	-	0.13		
2016				1,287		-		1,287	562	-	562	0.12	-	0.12		
2017				1,635		-		1,635	1,181	-	1,181	0.12	-	0.12		
2018				1,635		-		1,635	1,957	-	1,957	0.12	-	0.12		
2019				1,635		-		1,635	2,734	-	2,734	0.12	-	0.12		
2020				1,635		-		1,635	3,510	-	3,510	0.12	-	0.12		
2021				1,635		-		1,635	4,286	-	4,286	0.12	-	0.12		
2022				1,635		-		1,635	5,062	-	5,062	0.12	-	0.12		
2023				1,635		-		1,635	5,792	-	5,792	0.12	-	0.12		
2024				1,635		-		1,635	6,178	-	6,178	0.12	-	0.12		
2025				1,635		-		1,635	6,210	-	6,210	0.12	-	0.12		

Appendix D.19 Commercial Lighting Program

PROGRAM: Commercial Lighting
DSM Phase I Program
Type: Energy Efficiency
Measure Life: 10 years

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA			NC		System	VA			NC		System		
		VA Monthly Cum. Σ[A]	VA Monthly Cum. Retired Σ[-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum. Σ[C]	NC Monthly Cum. Retired Σ[-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
May	2010	-		0	0		0	0	0		0	0		0	
June	2010	12		12	0		0	12	135,000		135,000	0		0	
July	2010	31		31	0		0	31	156,960		156,960	0		0	
August	2010	84		84	0		0	84	371,105		371,105	0		0	
September	2010	253		253	0		0	253	597,436		597,436	0		0	
October	2010	310		310	0		0	310	761,945		761,945	0		0	
November	2010	356		356	0		0	356	925,966		925,966	0		0	
December	2010	399		399	0		0	399	1,004,807		1,004,807	0		0	
January	2011	450		450	0		0	450	1,175,418		1,175,418	0		0	
February	2011	1,007		1,007	0		0	1,007	1,523,980		1,523,980	0		0	
March	2011	1,063		1,063	0		0	1,063	1,680,750		1,680,750	0		0	
April	2011	1,105		1,105	0		0	1,105	1,945,898		1,945,898	0		0	
May	2011	1,157		1,157	0		0	1,157	2,179,412		2,179,412	0		0	
June	2011	1,230		1,230	0		0	1,230	2,537,700		2,537,700	0		0	
July	2011	1,244		1,244	0		0	1,244	2,601,871		2,601,871	0		0	
August	2011	1,366		1,366	0		0	1,366	2,814,028		2,814,028	0		0	
September	2011	1,439		1,439	0		0	1,439	3,312,485		3,312,485	0		0	
October	2011	1,508		1,508	0		0	1,508	3,495,674		3,495,674	0		0	
November	2011	1,566		1,566	0		0	1,566	3,873,170		3,873,170	0		0	
December	2011	1,706		1,706	1		1	1,707	4,130,625		4,130,625	131,821		4,262,446	
January	2012	1,862		1,862	2		2	1,864	4,550,521		4,550,521	137,096		4,687,617	
February	2012	2,088		2,088	4		4	2,092	4,749,057		4,749,057	137,278		4,886,334	
March	2012	2,145		2,145	6		6	2,151	4,847,139		4,847,139	137,513		4,984,652	
April	2012	2,177		2,177	18		18	2,195	4,973,004		4,973,004	139,323		5,112,327	
May	2012	2,177		2,177	18		18	2,195	4,973,004		4,973,004	139,323		5,112,327	
June	2012	2,322		2,322	21		21	2,343	5,508,787		5,508,787	153,872		5,662,659	
July	2012	2,408		2,408	24		24	2,432	5,882,199		5,882,199	155,436		6,037,634	
August	2012	2,409		2,409	25		25	2,434	5,889,448		5,889,448	156,293		6,045,740	
September	2012	2,409		2,409	25		25	2,434	5,889,448		5,889,448	156,293		6,045,740	
October	2012	2,409		2,409	25		25	2,434	5,889,448		5,889,448	156,293		6,045,740	
November	2012	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
December	2012	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
January	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
February	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
March	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
April	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
May	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
June	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
July	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
August	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
September	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
October	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
November	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
December	2013	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
January	2014	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
February	2014	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
March	2014	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
April	2014	2,409		2,409	26		26	2,435	5,889,448		5,889,448	162,235		6,051,682	
May	2014	2,409		2,409	30		30	2,439	5,889,448		5,889,448	175,465		6,064,912	
June	2014	2,409		2,409	31		31	2,440	5,889,448		5,889,448	187,179		6,076,627	
July	2014	2,409		2,409	32		32	2,441	5,889,448		5,889,448	193,998		6,083,446	
August	2014	2,409		2,409	32		32	2,441	5,889,448		5,889,448	194,148		6,083,595	
September	2014	2,409		2,409	34		34	2,443	5,889,448		5,889,448	205,273		6,094,721	
October	2014	2,409		2,409	34		34	2,443	5,889,448		5,889,448	205,273		6,094,721	
November	2014	2,409		2,409	45		45	2,454	5,889,448		5,889,448	227,251		6,116,699	
December	2014	2,409		2,409	47		47	2,456	5,889,448		5,889,448	228,622		6,118,070	

Appendix D.19 Commercial Lighting Program

Table 1		Participation							Energy Savings									
Month	Year	Program Participants							Net kWh									
		VA			NC				System		VA			NC				System
		VA Monthly Cum. Σ[A]	VA Monthly Cum. Retired Σ[-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum. Σ[C]	NC Monthly Cum. Retired Σ[-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP			
January	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
February	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
March	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
April	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
May	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
June	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
July	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
August	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
September	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
October	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
November	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
December	2015	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
January	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
February	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
March	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
April	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
May	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
June	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
July	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
August	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
September	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
October	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
November	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
December	2016	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
January	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
February	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
March	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
April	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
May	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
June	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
July	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
August	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
September	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
October	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
November	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
December	2017	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
January	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
February	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
March	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
April	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
May	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
June	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
July	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
August	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
September	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
October	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
November	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
December	2018	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
January	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
February	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
March	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
April	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
May	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
June	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
July	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
August	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
September	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
October	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
November	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		
December	2019	2,409		2,409	47		47	2,456	5,889,448			5,889,448	228,622		228,622	6,118,070		

Appendix D.19 Commercial Lighting Program

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA			NC				VA			NC			
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
Σ[A]	Σ[-A retired]		Σ[C]	Σ[-C retired]		E+G									
January	2020	2,409		2,409	47		47	2,456	5,889,448		5,889,448	228,622		228,622	6,118,070
February	2020	2,409		2,409	47		47	2,456	5,889,448		5,889,448	228,622		228,622	6,118,070
March	2020	2,409		2,409	47		47	2,456	5,889,448		5,889,448	228,622		228,622	6,118,070
April	2020	2,409		2,409	47		47	2,456	5,889,448		5,889,448	228,622		228,622	6,118,070
May	2020	2,409		2,409	47		47	2,456	5,889,448		5,889,448	228,622		228,622	6,118,070
June	2020	2,409	-12	2,397	47		47	2,444	5,889,448	-135,000	5,754,448	228,622		228,622	5,983,070
July	2020	2,409	-31	2,378	47		47	2,425	5,889,448	-156,960	5,732,488	228,622		228,622	5,961,110
August	2020	2,409	-84	2,325	47		47	2,372	5,889,448	-371,105	5,518,343	228,622		228,622	5,746,965
September	2020	2,409	-253	2,156	47		47	2,203	5,889,448	-597,436	5,292,012	228,622		228,622	5,520,634
October	2020	2,409	-310	2,099	47		47	2,146	5,889,448	-761,945	5,127,503	228,622		228,622	5,356,125
November	2020	2,409	-356	2,053	47		47	2,100	5,889,448	-925,966	4,963,482	228,622		228,622	5,192,104
December	2020	2,409	-399	2,010	47		47	2,057	5,889,448	-1,004,807	4,884,641	228,622		228,622	5,113,263
January	2021	2,409	-450	1,959	47		47	2,006	5,889,448	-1,175,418	4,714,029	228,622		228,622	4,942,652
February	2021	2,409	-1,007	1,402	47		47	1,449	5,889,448	-1,523,980	4,365,468	228,622		228,622	4,594,090
March	2021	2,409	-1,063	1,346	47		47	1,393	5,889,448	-1,680,750	4,208,698	228,622		228,622	4,437,320
April	2021	2,409	-1,105	1,304	47		47	1,351	5,889,448	-1,945,898	3,943,550	228,622		228,622	4,172,172
May	2021	2,409	-1,157	1,252	47		47	1,299	5,889,448	-2,179,412	3,710,035	228,622		228,622	3,938,658
June	2021	2,409	-1,230	1,179	47		47	1,226	5,889,448	-2,537,700	3,351,748	228,622		228,622	3,580,370
July	2021	2,409	-1,244	1,165	47		47	1,212	5,889,448	-2,601,871	3,287,577	228,622		228,622	3,516,199
August	2021	2,409	-1,366	1,043	47		47	1,090	5,889,448	-2,814,028	3,075,420	228,622		228,622	3,304,042
September	2021	2,409	-1,439	970	47		47	1,017	5,889,448	-3,312,485	2,576,963	228,622		228,622	2,805,585
October	2021	2,409	-1,508	901	47		47	948	5,889,448	-3,495,674	2,393,774	228,622		228,622	2,622,396
November	2021	2,409	-1,566	843	47		47	890	5,889,448	-3,873,170	2,016,278	228,622		228,622	2,244,900
December	2021	2,409	-1,706	703	47	-1	46	749	5,889,448	-4,130,625	1,758,822	228,622	-131,821	96,801	1,855,624
January	2022	2,409	-1,862	547	47	-2	45	592	5,889,448	-4,550,521	1,338,926	228,622	-137,096	91,526	1,430,453
February	2022	2,409	-2,088	321	47	-4	43	364	5,889,448	-4,749,057	1,140,391	228,622	-137,278	91,345	1,231,736
March	2022	2,409	-2,145	264	47	-6	41	305	5,889,448	-4,847,139	1,042,309	228,622	-137,513	91,109	1,133,418
April	2022	2,409	-2,177	232	47	-18	29	261	5,889,448	-4,973,004	916,444	228,622	-139,323	89,299	1,005,743
May	2022	2,409	-2,177	232	47	-18	29	261	5,889,448	-4,973,004	916,444	228,622	-139,323	89,299	1,005,743
June	2022	2,409	-2,322	87	47	-21	26	113	5,889,448	-5,508,787	380,661	228,622	-153,872	74,750	455,411
July	2022	2,409	-2,408	1	47	-24	23	24	5,889,448	-5,882,199	7,249	228,622	-155,436	73,186	80,435
August	2022	2,409	-2,409	0	47	-25	22	22	5,889,448	-5,889,448	0	228,622	-156,293	72,330	72,330
September	2022	2,409	-2,409	0	47	-25	22	22	5,889,448	-5,889,448	0	228,622	-156,293	72,330	72,330
October	2022	2,409	-2,409	0	47	-25	22	22	5,889,448	-5,889,448	0	228,622	-156,293	72,330	72,330
November	2022	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
December	2022	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
January	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
February	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
March	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
April	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
May	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
June	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
July	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
August	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
September	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
October	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
November	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
December	2023	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
January	2024	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
February	2024	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
March	2024	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
April	2024	2,409	-2,409	0	47	-26	21	21	5,889,448	-5,889,448	0	228,622	-162,235	66,388	66,388
May	2024	2,409	-2,409	0	47	-30	17	17	5,889,448	-5,889,448	0	228,622	-175,465	53,158	53,158
June	2024	2,409	-2,409	0	47	-31	16	16	5,889,448	-5,889,448	0	228,622	-187,179	41,443	41,443
July	2024	2,409	-2,409	0	47	-32	15	15	5,889,448	-5,889,448	0	228,622	-193,998	34,624	34,624
August	2024	2,409	-2,409	0	47	-32	15	15	5,889,448	-5,889,448	0	228,622	-194,148	34,475	34,475
September	2024	2,409	-2,409	0	47	-34	13	13	5,889,448	-5,889,448	0	228,622	-205,273	23,349	23,349
October	2024	2,409	-2,409	0	47	-34	13	13	5,889,448	-5,889,448	0	228,622	-205,273	23,349	23,349
November	2024	2,409	-2,409	0	47	-45	2	2	5,889,448	-5,889,448	0	228,622	-227,251	1,371	1,371
December	2024	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
January	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
February	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
March	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
April	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
May	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
June	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
July	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
August	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
September	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
October	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
November	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0
December	2025	2,409	-2,409	0	47	-47	0	0	5,889,448	-5,889,448	0	228,622	-228,622	0	0

Appendix D.19 Commercial Lighting Program

Table 2. EM&V Data Incremental by Vintage Year	Program Participants (Gross)						Energy Savings (Incremental)					
	Program Participants (Gross)						Net kWh					
	VA	NC	System	VA	NC	System						
2010	399	-	399	3,953,218	-	3,953,218						
2011	1,307	1	1,308	19,213,327	131,821	19,345,147						
2012	703	25	728	15,363,445	211,338	15,574,784						
2013	-	-	-	-	-	-						
2014	-	21	21	-	319,334	319,334						
2015	-	-	-	-	-	-						
2016	-	-	-	-	-	-						

Table 3. EM&V Data Annualized by Vintage Year	Program Participants (Gross)						Energy Savings (Annualized)					
	Program Participants (Gross)						Net kWh					
	VA	NC	System	VA	NC	System						
2010	399	-	399	12,057,683	-	12,057,683						
2011	1,307	1	1,308	37,509,820	1,581,849	39,091,670						
2012	703	25	728	21,105,869	364,965	21,470,834						
2013	-	-	-	-	-	-						
2014	-	21	21	-	796,653	796,653						
2015	-	-	-	-	-	-						
2016	-	-	-	-	-	-						
2017	-	-	-	-	-	-						

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)	Program Participants (Gross)						Energy Savings for Program Performance Incentives (PPI)					
	Program Participants (Gross)						Net kWh					
	VA	NC	System	VA	NC	System						
2010	399	-	399	3,953,218	-	3,953,218						
2011	1,706	1	1,707	31,271,010	131,821	31,402,830						
2012	2,409	26	2,435	64,930,949	1,793,188	66,724,136						
2013	2,010	26	2,036	58,615,689	1,946,814	60,562,503						
2014	703	46	749	21,105,869	684,299	21,790,168						
2015	-	21	21	-	796,653	796,653						
2016	-	21	21	-	796,653	796,653						
2017	N/A	N/A	N/A	N/A	N/A	N/A						

Table 5. EM&V Data Accumulated through Vintage Year (for IRP)	Program Participants (Gross)						Energy Savings for Integrated Resource Planning (IRP)					
	Program Participants (Gross)						Net kWh					
	VA	NC	System	VA	NC	System						
2010	399	-	399	3,953,218	-	3,953,218						
2011	1,706	1	1,707	31,271,010	131,821	31,402,830						
2012	2,409	26	2,435	64,930,949	1,793,188	66,724,136						
2013	2,409	26	2,435	70,673,372	1,946,814	72,620,186						
2014	2,409	47	2,456	70,673,372	2,266,148	72,939,520						
2015	2,409	47	2,456	70,673,372	2,743,467	73,416,839						
2016	2,409	47	2,456	70,673,372	2,743,467	73,416,839						
2017	2,409	47	2,456	70,673,372	2,743,467	73,416,839						
2018	2,409	47	2,456	70,673,372	2,743,467	73,416,839						
2019	2,409	47	2,456	70,673,372	2,743,467	73,416,839						
2020	2,010	47	2,057	66,720,155	2,743,467	69,463,622						
2021	703	46	749	39,402,362	2,611,646	42,014,009						
2022	-	21	21	5,742,423	950,279	6,692,703						
2023	-	21	21	-	796,653	796,653						
2024	-	-	-	-	477,319	477,319						
2025	-	-	-	-	-	-						

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Net KW						Incremental Energy Savings / Participant Net kWh/Participant			Incremental Capacity Savings / Participant Net kW/Participant		
	VA		NC	System		VA	NC	System	VA	NC	System
	1,494		-	1,494		9,908	-	9,908	3.7	-	3.7
	4,681		334	5,015		14,700	131,821	14,790	3.6	334.0	3.8
	2,670		54	2,724		21,854	8,454	21,394	3.8	2.2	3.7
	-		-	-		-	-	-	-	-	-
	-		115	115		-	15,206	15,206	-	5.5	5.5
	-		-	-		-	-	-	-	-	-
	-		-	-		-	-	-	-	-	-

Net KW						Annualized Energy Savings / Participant Net kWh/Participant			Annualized Capacity Savings / Participant Net kW/Participant		
	VA		NC	System		VA	NC	System	VA	NC	System
	1,494		-	1,494		30,220	-	30,220	3.7	-	3.7
	4,681		334	5,015		28,699	1,581,849	29,887	3.6	334.0	3.8
	2,670		54	2,724		30,023	14,599	29,493	3.8	2.2	3.7
	-		-	-		-	-	-	0.0	0.0	0.0
	-		115	115		-	37,936	37,936	0.0	5.5	5.5
	-		-	-		-	-	-	0.0	0.0	0.0
	-		-	-		-	-	-	-	-	-
	-		-	-		-	-	-	-	-	-

Net kW						PPI Energy Savings/Participant Net kWh/Participant			PPI Capacity Savings/Participant Net kW/Participant		
	VA		NC	System		VA	NC	System	VA	NC	System
	1,494		-	1,494		9,908	-	9,908	3.7	-	3.7
	6,175		334	6,509		18,330	131,821	18,397	3.6	334.0	3.8
	8,845		388	9,233		26,953	68,969	27,402	3.7	14.9	3.8
	7,351		388	7,739		29,162	74,877	-	3.7	14.9	0.0
	2,670		169	2,840		30,023	14,876	29,092	3.8	3.7	3.8
	-		115	115		-	37,936	-	-	5.5	0.0
	-		115	115		-	37,936	37,936	-	5.5	5.5
	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A

Net kW						IRP Energy Savings/Participant Net kWh/Participant			IRP Capacity Savings/Participant Net kW/Participant		
	VA		NC	System		VA	NC	System	VA	NC	System
	1,494		-	1,494		9,908	-	9,908	3.7	-	3.7
	6,175		334	6,509		18,330	131,821	18,397	3.6	334.0	3.8
	8,845		388	9,233		26,953	68,969	27,402	3.7	14.9	3.8
	8,845		388	9,233		29,337	74,877	29,823	3.7	14.9	3.8
	8,845		503	9,349		29,337	48,216	29,699	3.7	10.7	3.8
	8,845		503	9,349		29,337	58,372	29,893	3.7	10.7	3.8
	8,845		503	9,349		29,337	58,372	29,893	3.7	10.7	3.8
	8,845		503	9,349		29,337	58,372	29,893	3.7	10.7	3.8
	8,845		503	9,349		29,337	58,372	29,893	3.7	10.7	3.8
	7,351		503	7,855		33,194	58,372	33,769	3.7	10.7	3.8
	2,670		169	2,840		56,049	56,775	56,093	3.8	3.7	3.8
	-		115	115		-	45,251	318,700	-	5.5	5.5
	-		115	115		-	37,936	37,936	-	5.5	5.5
	-		-	-		-	-	-	-	-	-
	-		-	-		-	-	-	-	-	-

Appendix D.19 Commercial Lighting Program

Table 6. EM&V Data Accumulated through Vintage Year (for NC Lost Revenue)	Program Participants (Gross)						Energy Savings for NC Lost Revenue					
							Net kWh					
		VA			NC	System			VA		NC	System
2010		399			-	399			3,953,218		-	3,953,218
2011		1,706			1	1,707			31,271,010		131,821	31,402,830
2012		2,409			26	2,435			64,930,949		1,793,188	66,724,136
2013		2,409			26	2,435			67,724,962		1,946,814	69,671,776
2014		2,010			47	2,057			42,528,181		2,266,148	44,794,329
2015		703			46	749			7,501,246		980,693	8,481,939
2016		-			21	21			-		796,653	796,653
2017		N/A			N/A	N/A			N/A		N/A	N/A

Table 7. EM&V Data Cumulative through Vintage Year (Lifetime)	Program Participants (Gross)						Lifetime Energy Savings					
							Net kWh					
		VA			NC	System			VA		NC	System
2010		399			-	399			3,953,218		-	3,953,218
2011		1,706			1	1,707			35,224,227		131,821	35,356,048
2012		2,409			26	2,435			100,155,176		1,925,009	102,080,184
2013		2,409			26	2,435			170,828,548		3,871,823	174,700,371
2014		2,409			47	2,456			241,501,920		6,137,971	247,639,891
2015		2,409			47	2,456			312,175,292		8,881,438	321,056,731
2016		2,409			47	2,456			382,848,665		11,624,905	394,473,570
2017		2,409			47	2,456			453,522,037		14,368,373	467,890,409
2018		2,409			47	2,456			524,195,409		17,111,840	541,307,249
2019		2,409			47	2,456			594,868,781		19,855,307	614,724,088
2020		2,409			47	2,456			661,588,936		22,598,774	684,187,710
2021		2,409			47	2,456			700,991,298		25,210,421	726,201,719
2022		2,409			47	2,456			706,733,722		26,160,700	732,894,422
2023		2,409			47	2,456			706,733,722		26,957,353	733,691,075
2024		2,409			47	2,456			706,733,722		27,434,672	734,168,394
2025		2,409			47	2,456			706,733,722		27,434,672	734,168,394

Appendix D.19 Commercial Lighting Program

Net kW						NC Lost Revenue Net kWh/Participant			NC Lost Revenue Capacity Net kW/Participant		
VA			NC		System	VA	NC	System	VA	NC	System
						9,908	-	9,908			
						18,330	131,821	18,397			
						26,953	68,969	27,402			
						28,113	74,877	28,613			
						21,158	48,216	21,777			
						10,670	21,319	11,324			
						-	37,936	37,936			
						N/A	N/A	N/A			

Net kW						Lifetime Energy Savings/Participant Net kWh/Participant			Lifetime Capacity Savings/Participant Net kW/Participant		
VA			NC		System	VA	NC	System	VA	NC	System
		1,494			1,494	9,908	-	9,908	3.7	-	3.7
		6,175		334	6,509	20,647	131,821	20,712	3.6	334.0	3.8
		8,845		388	9,233	41,575	74,039	41,922	3.7	14.9	3.8
		8,845		388	9,233	70,913	148,916	71,746	3.7	14.9	3.8
		8,845		503	9,349	100,250	130,595	100,831	3.7	10.7	3.8
		8,845		503	9,349	129,587	188,967	130,723	3.7	10.7	3.8
		8,845		503	9,349	158,924	247,338	160,616	3.7	10.7	3.8
		8,845		503	9,349	188,262	305,710	190,509	3.7	10.7	3.8
		8,845		503	9,349	217,599	364,082	220,402	3.7	10.7	3.8
		8,845		503	9,349	246,936	422,453	250,295	3.7	10.7	3.8
		8,845		503	9,349	274,632	480,825	278,578	3.7	10.7	3.8
		8,845		503	9,349	290,989	536,392	295,685	3.7	10.7	3.8
		8,845		503	9,349	293,372	556,611	298,410	3.7	10.7	3.8
		8,845		503	9,349	293,372	573,561	298,734	3.7	10.7	3.8
		8,845		503	9,349	293,372	583,716	298,928	3.7	10.7	3.8
		8,845		503	9,349	293,372	583,716	298,928	3.7	10.7	3.8

Appendix D.20 Commercial HVAC Program

PROGRAM: Commercial HVAC
DSM Phase I Program
Type: Energy Efficiency
Measure Life: 15 years

Table 1		Participation Program Participants							Energy Savings Net kWh						
Month	Year	VA		NC			System	VA		NC			System		
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
		Σ[A]	Σ[-A retired]		Σ[C]	Σ[-C retired]									
May	2010	-	-	-	-	-	-	-	-	-	-	-	-	-	
June	2010	-	-	-	-	-	-	-	-	-	-	-	-	-	
July	2010	3	-	3	-	-	3	3,673	-	3,673	-	-	-	3,673	
August	2010	4	-	4	-	-	4	3,779	-	3,779	-	-	-	3,779	
September	2010	10	-	10	-	-	10	12,863	-	12,863	-	-	-	12,863	
October	2010	14	-	14	-	-	14	14,612	-	14,612	-	-	-	14,612	
November	2010	22	-	22	-	-	22	30,381	-	30,381	-	-	-	30,381	
December	2010	28	-	28	-	-	28	40,042	-	40,042	-	-	-	40,042	
January	2011	31	-	31	-	-	31	47,209	-	47,209	-	-	-	47,209	
February	2011	33	-	33	-	-	33	51,259	-	51,259	-	-	-	51,259	
March	2011	42	-	42	-	-	42	117,015	-	117,015	-	-	-	117,015	
April	2011	43	-	43	-	-	43	129,659	-	129,659	-	-	-	129,659	
May	2011	47	-	47	-	-	47	134,120	-	134,120	-	-	-	134,120	
June	2011	55	-	55	-	-	55	158,139	-	158,139	-	-	-	158,139	
July	2011	59	-	59	-	-	59	164,541	-	164,541	-	-	-	164,541	
August	2011	67	-	67	-	-	67	175,302	-	175,302	-	-	-	175,302	
September	2011	72	-	72	-	-	72	176,811	-	176,811	-	-	-	176,811	
October	2011	76	-	76	-	-	76	185,697	-	185,697	-	-	-	185,697	
November	2011	87	-	87	-	-	87	416,908	-	416,908	-	-	-	416,908	
December	2011	87	-	87	-	-	87	416,908	-	416,908	-	-	-	416,908	
January	2012	93	-	93	2	-	95	425,172	-	425,172	2,364	-	2,364	427,536	
February	2012	93	-	93	3	-	96	425,172	-	425,172	3,453	-	3,453	428,625	
March	2012	96	-	96	3	-	99	427,188	-	427,188	3,453	-	3,453	430,641	
April	2012	99	-	99	3	-	102	438,432	-	438,432	3,453	-	3,453	441,885	
May	2012	99	-	99	3	-	102	438,432	-	438,432	3,453	-	3,453	441,885	
June	2012	114	-	114	3	-	117	463,987	-	463,987	3,453	-	3,453	467,439	
July	2012	123	-	123	3	-	126	485,451	-	485,451	3,453	-	3,453	488,903	
August	2012	123	-	123	3	-	126	485,451	-	485,451	3,453	-	3,453	488,903	
September	2012	123	-	123	3	-	126	485,451	-	485,451	3,453	-	3,453	488,903	
October	2012	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
November	2012	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
December	2012	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
January	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
February	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
March	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
April	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
May	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
June	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
July	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
August	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
September	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
October	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
November	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
December	2013	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
January	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
February	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
March	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
April	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
May	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
June	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
July	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
August	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
September	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
October	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
November	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	
December	2014	123	-	123	4	-	127	485,451	-	485,451	9,214	-	9,214	494,664	

Appendix D.20 Commercial HVAC Program

Table 1		Participation							Energy Savings						
Month	Year	Program Participants							Net kWh						
		VA			NC			System	VA			NC			System
		VA Monthly Cum. Σ[A]	VA Monthly Cum. Retired Σ[-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum. Σ[C]	NC Monthly Cum. Retired Σ[-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP E+G	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
January	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
February	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
March	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
April	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
May	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
June	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
July	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
August	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
September	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
October	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
November	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
December	2021	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
January	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
February	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
March	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
April	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
May	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
June	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
July	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
August	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
September	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
October	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
November	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
December	2022	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
January	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
February	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
March	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
April	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
May	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
June	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
July	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
August	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
September	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
October	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
November	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
December	2023	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
January	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
February	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
March	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
April	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
May	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
June	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
July	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
August	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
September	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
October	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
November	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
December	2024	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
January	2025	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
February	2025	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
March	2025	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
April	2025	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
May	2025	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
June	2025	123		123	4		4	127	485,451		485,451	9,214		9,214	494,664
July	2025	123	-3	120	4		4	124	485,451	-3,673	481,777	9,214		9,214	490,991
August	2025	123	-4	119	4		4	123	485,451	-3,779	481,671	9,214		9,214	490,885
September	2025	123	-10	113	4		4	117	485,451	-12,863	472,588	9,214		9,214	481,802
October	2025	123	-14	109	4		4	113	485,451	-14,612	470,839	9,214		9,214	480,053
November	2025	123	-22	101	4		4	105	485,451	-30,381	455,070	9,214		9,214	464,284
December	2025	123	-28	95	4		4	99	485,451	-40,042	445,408	9,214		9,214	454,622

Appendix D.20 Commercial HVAC Program

Table 1		Participation						Energy Savings							
Month	Year	Program Participants						Net kWh							
		VA		NC		System		VA		NC		System			
		VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	System Cum. for IRP	VA Monthly Cum.	VA Monthly Cum. Retired	VA Cum. for IRP (New + Retired)	NC Monthly Cum.	NC Monthly Cum. Retired	NC Cum. for IRP (New + Retired)	System Cum. for IRP
		Σ[A]	Σ[-A retired]		Σ[C]	Σ[-C retired]	E+G								
January	2026	123	-31	92	4		4	96	485,451	-47,209	438,242	9,214		9,214	447,456
February	2026	123	-33	90	4		4	94	485,451	-51,259	434,192	9,214		9,214	443,406
March	2026	123	-42	81	4		4	85	485,451	-117,015	368,436	9,214		9,214	377,650
April	2026	123	-43	80	4		4	84	485,451	-129,659	355,791	9,214		9,214	365,005
May	2026	123	-47	76	4		4	80	485,451	-134,120	351,331	9,214		9,214	360,544
June	2026	123	-55	68	4		4	72	485,451	-158,139	327,312	9,214		9,214	336,525
July	2026	123	-59	64	4		4	68	485,451	-164,541	320,910	9,214		9,214	330,124
August	2026	123	-67	56	4		4	60	485,451	-175,302	310,148	9,214		9,214	319,362
September	2026	123	-72	51	4		4	55	485,451	-176,811	308,640	9,214		9,214	317,854
October	2026	123	-76	47	4		4	51	485,451	-185,697	299,753	9,214		9,214	308,967
November	2026	123	-87	36	4		4	40	485,451	-416,908	68,543	9,214		9,214	77,757
December	2026	123	-87	36	4		4	40	485,451	-416,908	68,543	9,214		9,214	77,757
January	2027	123	-93	30	4	-2	2	32	485,451	-425,172	60,279	9,214	-2,364	6,850	67,129
February	2027	123	-93	30	4	-3	1	31	485,451	-425,172	60,279	9,214	-3,453	5,761	66,040
March	2027	123	-96	27	4	-3	1	28	485,451	-427,188	58,263	9,214	-3,453	5,761	64,024
April	2027	123	-99	24	4	-3	1	25	485,451	-438,432	47,019	9,214	-3,453	5,761	52,780
May	2027	123	-99	24	4	-3	1	25	485,451	-438,432	47,019	9,214	-3,453	5,761	52,780
June	2027	123	-114	9	4	-3	1	10	485,451	-463,987	21,464	9,214	-3,453	5,761	27,225
July	2027	123	-123	0	4	-3	1	1	485,451	-485,451	0	9,214	-3,453	5,761	5,761
August	2027	123	-123	0	4	-3	1	1	485,451	-485,451	0	9,214	-3,453	5,761	5,761
September	2027	123	-123	0	4	-3	1	1	485,451	-485,451	0	9,214	-3,453	5,761	5,761
October	2027	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
November	2027	123	-123	0	4	-4	0	0	485,451	-485,451	0	9,214	-9,214	0	0
December	2027	123	-123	0	4	-4	0	0	485,451	-485,451	0	9,214	-9,214	0	0
January	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
February	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
March	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
April	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
May	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
June	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
July	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
August	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
September	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
October	2028	123	-123	0	4	-4	0	-	485,451	-485,451	0	9,214	-9,214	0	-
November	2028	123	-123	0	4	-4	0	0	485,451	-485,451	0	9,214	-9,214	0	0
December	2028	123	-123	0	4	-4	0	0	485,451	-485,451	0	9,214	-9,214	0	0

Table 2. EM&V Data Incremental by Vintage Year	Program Participants (Gross)						Energy Savings (Incremental)					
	VA		NC		System		VA		NC		System	
2010			28			28		105,350				105,350
2011			59			59		1,693,060				1,693,060
2012			36		4	40		528,192		57,627		585,819
2013			-		-	-		-		-		-
2014			-		-	-		-		-		-
2015			-		-	-		-		-		-
2016			-		-	-		-		-		-
2017			-		-	-		-		-		-

Table 3. EM&V Data Annualized by Vintage Year	Program Participants (Gross)						Energy Savings (Annualized)					
	VA		NC		System		VA		NC		System	
2010			28			28		480,508				480,508
2011			59			59		4,522,387				4,522,387
2012			36		4	40		822,513		110,566		933,079
2013			-		-	-		-		-		-
2014			-		-	-		-		-		-
2015			-		-	-		-		-		-
2016			-		-	-		-		-		-
2017			-		-	-		-		-		-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)	Program Participants (Gross)						Energy Savings for Program Performance Incentives (PPI)					
	VA		NC		System		VA		NC		System	
2010			28			28		105,350				105,350
2011			87			87		2,173,568				2,173,568
2012			123		4	127		5,531,087		57,627		5,588,714
2013			95		4	99		5,344,900		110,566		5,455,466
2014			36		4	40		822,513		110,566		933,079
2015			-		-	-		-		-		-
2016			-		-	-		-		-		-
2017			N/A		N/A	N/A		N/A		N/A		N/A

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Table 5. EM&V Data Accumulated through Vintage Year (for IRP)	Program Participants (Gross)						Energy Savings for Integrated Resource Planning (IRP)							
	VA			NC			System			Net kWh				
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System		
2010			28			-	28			105,350			-	105,350
2011			87			-	87			2,173,568			-	2,173,568
2012			123			4	127			5,531,087			57,627	5,588,714
2013			123			4	127			5,825,408			110,566	5,935,974
2014			123			4	127			5,825,408			110,566	5,935,974
2015			123			4	127			5,825,408			110,566	5,935,974
2016			123			4	127			5,825,408			110,566	5,935,974
2017			123			4	127			5,825,408			110,566	5,935,974
2018			123			4	127			5,825,408			110,566	5,935,974
2019			123			4	127			5,825,408			110,566	5,935,974
2020			123			4	127			5,825,408			110,566	5,935,974
2021			123			4	127			5,825,408			110,566	5,935,974
2022			123			4	127			5,825,408			110,566	5,935,974
2023			123			4	127			5,825,408			110,566	5,935,974
2024			123			4	127			5,825,408			110,566	5,935,974
2025			95			4	99			5,720,058			110,566	5,830,623
2026			36			4	40			3,651,840			110,566	3,762,406
2027			36			4	40			822,513			110,566	933,079
2028			-			-	-			-			-	-

Table 6. EM&V Data Accumulated through Vintage Year (for NC Lost Revenue)	Program Participants (Gross)						Energy Savings for NC Lost Revenue							
	VA			NC			System			Net kWh				
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System		
2010			28			-	28			105,350			-	-
2011			87			-	87			2,173,568			-	2,173,568
2012			123			4	127			5,531,087			57,627	5,588,714
2013			123			4	127			5,760,100			110,566	5,870,666
2014			95			4	99			4,028,706			110,566	4,139,271
2015			36			4	40			362,864			62,152	425,016
2016			-			-	-			-			-	-
2017			N/A			N/A	N/A			N/A			N/A	N/A

Table 7. EM&V Data Cumulative through Vintage Year (Lifetime)	Program Participants (Gross)						Lifetime Energy Savings							
	VA			NC			System			Net kWh				
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System		
2010			28			-	28			105,350			-	105,350
2011			87			-	87			2,278,918			-	2,278,918
2012			123			4	127			7,810,005			57,627	7,867,632
2013			123			4	127			13,635,413			168,193	13,803,606
2014			123			4	127			19,460,821			278,759	19,739,580
2015			123			4	127			25,286,229			389,325	25,675,553
2016			123			4	127			31,111,636			499,891	31,611,527
2017			123			4	127			36,937,044			610,456	37,547,501
2018			123			4	127			42,762,452			721,022	43,483,474
2019			123			4	127			48,587,860			831,588	49,419,448
2020			123			4	127			54,413,268			942,154	55,355,422
2021			123			4	127			60,238,676			1,052,720	61,291,396
2022			123			4	127			66,064,084			1,163,286	67,227,369
2023			123			4	127			71,889,491			1,273,852	73,163,343
2024			123			4	127			77,714,899			1,384,417	79,099,317
2025			123			4	127			83,434,957			1,494,983	84,929,940
2026			123			4	127			87,086,797			1,605,549	88,692,346
2027			123			4	127			87,909,310			1,716,115	89,625,425
2028			123			4	127			87,909,310			1,716,115	89,625,425

Appendix D.20 Commercial HVAC Program

Net kW						IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
						Net kWh/Participant			Net kW/Participant		
VA		NC		System	VA	NC	System	VA	NC	System	
	176			-	176	3,763	-	3,763	6.3	-	6.3
	1,158			-	1,158	24,984	-	24,984	13.3	-	13.3
	1,556			32	1,588	44,968	14,407	44,006	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,556			32	1,588	47,361	27,641	46,740	12.7	8.0	12.5
	1,380			32	1,412	60,211	27,641	58,895	14.5	8.0	14.3
	398			32	430	101,440	27,641	94,060	11.1	8.0	10.7
	398			32	430	22,848	27,641	23,327	11.1	8.0	10.7
	-			-	-	-	-	-	-	-	-

Net kW						NC Lost Revenue			NC Lost Revenue Capacity		
						Net kWh/Participant			Net kW/Participant		
VA		NC		System	VA	NC	System	VA	NC	System	
						3,763	-	-			
						24,984	-	24,984			
						44,968	14,407	44,006			
						46,830	27,641	46,226			
						42,407	27,641	41,811			
						10,080	15,538	10,625			
						-	-	-			
						N/A	N/A	N/A			

Net kW						Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
						Net kWh/Participant			Net kW/Participant		
VA		NC		System	VA	NC	System	VA	NC	System	
	176			-	176	3,763	-	3,763	6.3	-	6.3
	1,158			-	1,158	26,194	-	26,194	13.3	-	13.3
	1,556			32	1,588	63,496	14,407	61,950	12.7	8.0	12.5
	1,556			32	1,588	110,857	42,048	108,690	12.7	8.0	12.5
	1,556			32	1,588	158,218	69,690	155,430	12.7	8.0	12.5
	1,556			32	1,588	205,579	97,331	202,170	12.7	8.0	12.5
	1,556			32	1,588	252,940	124,973	248,910	12.7	8.0	12.5
	1,556			32	1,588	300,301	152,614	295,650	12.7	8.0	12.5
	1,556			32	1,588	347,662	180,256	342,390	12.7	8.0	12.5
	1,556			32	1,588	395,023	207,897	389,130	12.7	8.0	12.5
	1,556			32	1,588	442,384	235,539	435,869	12.7	8.0	12.5
	1,556			32	1,588	489,745	263,180	482,609	12.7	8.0	12.5
	1,556			32	1,588	537,106	290,821	529,349	12.7	8.0	12.5
	1,556			32	1,588	584,467	318,463	576,089	12.7	8.0	12.5
	1,556			32	1,588	631,828	346,104	622,829	12.7	8.0	12.5
	1,556			32	1,588	678,333	373,746	668,740	12.7	8.0	12.5
	1,556			32	1,588	708,023	401,387	698,365	12.7	8.0	12.5
	1,556			32	1,588	714,710	429,029	705,712	12.7	8.0	12.5
	1,556			32	1,588	714,710	429,029	705,712	12.7	8.0	12.5

Appendix D.21 Non-residential Duct Testing and Sealing Program

PROGRAM: Non-Residential Duct Testing & Sealing
DSM Phase II Program
Type: Energy Efficiency
Program Measure Life: 25.0 years

Table 1		Participation Program Participants											
Month	Year	VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G	
October	2012	0		0		0						0	
November	2012	1		1		1						1	
December	2012	10		11		11						11	
January	2013	2		13		13						13	
February	2013	0		13		13						13	
March	2013	8		21		21						21	
April	2013	17		38		38						38	
May	2013	12		50		50						50	
June	2013	4		54		54						54	
July	2013	27		81		81						81	
August	2013	24		105		105						105	
September	2013	67		172		172						172	
October	2013	63		235		235						235	
November	2013	30		265		265						265	
December	2013	103		368		368						368	
January	2014	22		390		390	0		0		0	390	
February	2014	106		496		496	0		0		0	496	
March	2014	243		739		739	0		0		0	739	
April	2014	125		864		864	0		0		0	864	
May	2014	115		979		979	0		0		0	979	
June	2014	98		1,077		1,077	0		0		0	1,077	
July	2014	166		1,243		1,243	0		0		0	1,243	
August	2014	190		1,433		1,433	0		0		0	1,433	
September	2014	206		1,639		1,639	0		0		0	1,639	
October	2014	212		1,851		1,851	0		0		0	1,851	
November	2014	137		1,988		1,988	46		46		46	2,034	
December	2014	80		2,068		2,068	14		60		60	2,128	
January	2015	100		2,168		2,168	12		72		72	2,240	
February	2015	81		2,249		2,249	4		76		76	2,325	
March	2015	116		2,365		2,365	2		78		78	2,443	
April	2015	193		2,558		2,558	62		140		140	2,698	
May	2015	112		2,670		2,670	13		153		153	2,823	
June	2015	215		2,885		2,885	40		193		193	3,078	
July	2015	101		2,986		2,986	9		202		202	3,188	
August	2015	207		3,193		3,193	7		209		209	3,402	
September	2015	250		3,443		3,443	0		209		209	3,652	
October	2015	89		3,532		3,532	2		211		211	3,743	
November	2015	93		3,625		3,625	1		212		212	3,837	
December	2015	98		3,723		3,723	0		212		212	3,935	
January	2016	49		3,772		3,772	0		212		212	3,984	
February	2016	59		3,831		3,831	1		213		213	4,044	
March	2016	41		3,872		3,872	0		213		213	4,085	
April	2016	47		3,919		3,919	4		217		217	4,136	
May	2016	21		3,940		3,940	3		220		220	4,160	
June	2016	61		4,001		4,001	5		225		225	4,226	
July	2016	52		4,053		4,053	4		229	4	229	4,282	
August	2016	43		4,096		4,096	5		234	9	234	4,330	
September	2016	61		4,157		4,157	1		235	10	235	4,392	
October	2016	77		4,234		4,234	2		237	12	237	4,471	
November	2016	72		4,306		4,306	8		245	20	245	4,551	
December	2016	57		4,363		4,363	0		245	0	245	4,608	
January	2017	42		4,405		4,405	3		248		23	4,653	
February	2017	38		4,443		4,443	1		249		24	4,692	
March	2017	1		4,444		4,444	1		250		25	4,694	
April	2017	0		4,444		4,444	0		250		25	4,694	
May	2017	0		4,444		4,444	0		250		25	4,694	
June	2017	0		4,444		4,444	0		250		25	4,694	
July	2017	0		4,444		4,444	0		250		25	4,694	
August	2017	0		4,444		4,444	0		250		25	4,694	
September	2017	0		4,444		4,444	0		250		25	4,694	
October	2017	0		4,444		4,444	0		250		25	4,694	
November	2017	0		4,444		4,444	0		250		25	4,694	
December	2017	0		4,444		4,444	0		250		25	4,694	

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Energy Savings										
Month	Year	VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
October	2012	0		0		0						0
November	2012	152		152		152						152
December	2012	5,327		5,478		5,478						5,478
January	2013	1,990		7,469		7,469						7,469
February	2013	0		7,469		7,469						7,469
March	2013	2,208		9,677		9,677						9,677
April	2013	2,242		11,919		11,919						11,919
May	2013	3,147		15,066		15,066						15,066
June	2013	248		15,315		15,315						15,315
July	2013	11,666		26,981		26,981						26,981
August	2013	6,619		33,600		33,600						33,600
September	2013	23,531		57,130		57,130						57,130
October	2013	26,550		83,680		83,680						83,680
November	2013	9,686		93,366		93,366						93,366
December	2013	36,540		129,906		129,906						129,906
January	2014	11,178		141,084		141,084	0		0		0	141,084
February	2014	60,951		202,035		202,035	0		0		0	202,035
March	2014	94,598		296,632		296,632	0		0		0	296,632
April	2014	153,591		450,224		450,224	0		0		0	450,224
May	2014	86,282		536,505		536,505	0		0		0	536,505
June	2014	109,785		646,291		646,291	0		0		0	646,291
July	2014	243,423		889,713		889,713	0		0		0	889,713
August	2014	178,317		1,068,031		1,068,031	0		0		0	1,068,031
September	2014	307,626		1,375,657		1,375,657	0		0		0	1,375,657
October	2014	420,776		1,796,433		1,796,433	0		0		0	1,796,433
November	2014	246,917		2,043,350		2,043,350	38,558		38,558	38,558	0	2,081,908
December	2014	92,862		2,136,212		2,136,212	3,435		41,993	41,993	0	2,178,205
January	2015	-96,461		2,039,752		2,039,752	30,380		72,373	72,373	0	2,112,125
February	2015	365,963		2,405,715		2,405,715	1,113		73,485	73,485	0	2,479,200
March	2015	87,470		2,493,185		2,493,185	1,695		75,181	75,181	0	2,568,366
April	2015	141,609		2,634,794		2,634,794	52,676		127,857	127,857	0	2,762,650
May	2015	50,682		2,685,475		2,685,475	17,352		145,209	145,209	0	2,830,684
June	2015	168,027		2,853,502		2,853,502	32,025		177,234	177,234	0	3,030,736
July	2015	49,381		2,902,883		2,902,883	17,142		194,376	194,376	0	3,097,259
August	2015	196,108		3,098,990		3,098,990	11,300		205,677	205,677	0	3,304,667
September	2015	183,945		3,282,935		3,282,935	0		205,677	205,677	0	3,488,612
October	2015	74,140		3,357,075		3,357,075	2,530		208,207	208,207	0	3,565,282
November	2015	75,247		3,432,322		3,432,322	2,971		211,178	211,178	0	3,643,500
December	2015	147,687		3,580,009		3,580,009	0		211,178	211,178	0	3,791,187
January	2016	-744,273		2,835,736		2,835,736	0		211,178	211,178	0	3,046,914
February	2016	1,007,512		3,843,249		3,843,249	2,280		213,458	213,458	0	4,056,707
March	2016	54,327		3,897,576		3,897,576	0		213,458	213,458	0	4,111,034
April	2016	182,774		4,080,350		4,080,350	231		213,689	213,689	0	4,294,039
May	2016	179,684		4,260,034		4,260,034	423		214,112	214,112	0	4,474,145
June	2016	383,439		4,643,472		4,643,472	284		214,396	214,396	0	4,857,868
July	2016	94,840		4,738,312		4,738,312	14,018		228,414	14,018	29,058	4,966,726
August	2016	119,870		4,858,182		4,858,182	15,040		243,454	29,058	243,454	5,101,636
September	2016	154,499		5,012,681		5,012,681	199		243,653	29,257	243,653	5,256,334
October	2016	163,659		5,176,340		5,176,340	903		244,556	30,160	244,556	5,420,896
November	2016	154,271		5,330,610		5,330,610	5,390		249,946	35,550	35,550	5,580,556
December	2016	106,469		5,437,080		5,437,080	0		249,946	35,550	35,550	5,687,026
January	2017	203,613		5,640,693		5,640,693	714		250,660		36,264	5,891,353
February	2017	94,003		5,734,696		5,734,696	717		251,376		36,981	5,986,073
March	2017	1,975		5,736,671		5,736,671	11,554		262,930		48,535	5,999,602
April	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
May	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
June	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
July	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
August	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
September	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
October	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
November	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
December	2017	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
October	2012	0		0		0					0		-		-		-	
November	2012	0		0		0					0		152		152		0.24	
December	2012	7		7		7					7		498		498		0.67	
January	2013	2		10		10					10		575		575		0.75	
February	2013	0		10		10					10		575		575		0.75	
March	2013	3		13		13					13		461		461		0.62	
April	2013	5		18		18					18		314		314		0.49	
May	2013	10		28		28					28		301		301		0.57	
June	2013	5		33		33					33		284		284		0.61	
July	2013	33		66		66					66		333		333		0.81	
August	2013	40		106		106					106		320		320		1.01	
September	2013	78		184		184					184		332		332		1.07	
October	2013	62		246		246					246		356		356		1.05	
November	2013	44		290		290					290		352		352		1.10	
December	2013	182		472		472					472		353		353		1.28	
January	2014	18		490		490	0		0		490		362	-	362		1.26	-
February	2014	95		586		586	0		0		586		407	-	407		1.18	-
March	2014	118		704		704	0		0		704		401	-	401		0.95	-
April	2014	203		907		907	0		0		907		521	-	521		1.05	-
May	2014	119		1,026		1,026	0		0		1,026		548	-	548		1.05	-
June	2014	123		1,149		1,149	0		0		1,149		600	-	600		1.07	-
July	2014	274		1,423		1,423	0		0		1,423		716	-	716		1.14	-
August	2014	160		1,583		1,583	0		0		1,583		745	-	745		1.10	-
September	2014	189		1,772		1,772	0		0		1,772		839	-	839		1.08	-
October	2014	220		1,992		1,992	0		0		1,992		971	-	971		1.08	-
November	2014	256		2,248		2,248	55		55		2,302		1,028	838	1,024		1.13	1.19
December	2014	103		2,350		2,350	5		60		2,410		1,033	700	1,024		1.14	0.99
January	2015	192		2,542		2,542	42		102		2,644		941	1,005	943		1.17	1.41
February	2015	170		2,712		2,712	1		103		2,815		1,070	967	1,066		1.21	1.35
March	2015	139		2,851		2,851	2		105		2,956		1,054	964	1,051		1.21	1.34
April	2015	200		3,051		3,051	93		198		3,249		1,030	913	1,024		1.19	1.41
May	2015	72		3,123		3,123	31		229		3,352		1,006	949	1,003		1.17	1.49
June	2015	368		3,491		3,491	51		280		3,771		989	918	985		1.21	1.45
July	2015	120		3,611		3,611	23		303		3,914		972	962	972		1.21	1.50
August	2015	292		3,904		3,904	17		320		4,224		971	984	971		1.22	1.53
September	2015	259		4,163		4,163	0		320		4,483		954	984	955		1.21	1.53
October	2015	130		4,292		4,292	4		324		4,616		950	987	953		1.22	1.53
November	2015	178		4,470		4,470	3		326		4,796		947	996	950		1.23	1.54
December	2015	182		4,652		4,652	0		326		4,978		962	996	963		1.25	1.54
January	2016	161		4,813		4,813	0		326		5,139		752	996	765		1.28	1.54
February	2016	116		4,928		4,928	8		335		5,263		1,003	1,002	1,003		1.29	1.57
March	2016	144		5,072		5,072	0		335		5,407		1,007	1,002	1,006		1.31	1.57
April	2016	164		5,236		5,236	1		335		5,571		1,041	985	1,038		1.34	1.55
May	2016	90		5,325		5,325	1		337		5,662		1,081	973	1,076		1.35	1.53
June	2016	303		5,628		5,628	2		338		5,966		1,161	953	1,150		1.41	1.50
July	2016	228		5,856		5,856	57		396	57	6,252		1,169	997	1,160		1.44	1.73
August	2016	300		6,156		6,156	63		459	121	6,615		1,186	1,040	1,178		1.50	1.96
September	2016	206		6,363		6,363	1		460	121	6,822		1,206	1,037	1,197		1.53	1.96
October	2016	209		6,571		6,571	2		461	123	7,033		1,223	1,032	1,212		1.55	1.95
November	2016	291		6,863		6,863	11		473	134	7,335		1,238	1,020	1,226		1.59	1.93
December	2016	164		7,027		7,027	0		473		7,499		1,246	1,020	1,234		1.61	1.93
January	2017	432		7,459		7,459	2		475		7,934		1,281	1,011	1,266		1.69	1.92
February	2017	201		7,660		7,660	1		476		8,136		1,291	1,010	1,276		1.72	1.91
March	2017	3		7,663		7,663	46		522		8,185		1,291	1,052	1,278		1.72	2.09
April	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09
May	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09
June	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09
July	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09
August	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09
September	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09
October	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09
November	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09
December	2017	0		7,663		7,663	0		522		8,185		1,291	1,052	1,278		1.72	2.09

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Participation										
Month	Year	Program Participants										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2018	0		4,444		4,444	0		250		25	4,694
February	2018	0		4,444		4,444	0		250		25	4,694
March	2018	0		4,444		4,444	0		250		25	4,694
April	2018	0		4,444		4,444	0		250		25	4,694
May	2018	0		4,444		4,444	0		250		25	4,694
June	2018	0		4,444		4,444	0		250		25	4,694
July	2018	0		4,444		4,444	0		250		25	4,694
August	2018	0		4,444		4,444	0		250		25	4,694
September	2018	0		4,444		4,444	0		250		25	4,694
October	2018	0		4,444		4,444	0		250		25	4,694
November	2018	0		4,444		4,444	0		250		25	4,694
December	2018	0		4,444		4,444	0		250		25	4,694
January	2019	0		4,444		4,444	0		250		25	4,694
February	2019	0		4,444		4,444	0		250		25	4,694
March	2019	0		4,444		4,444	0		250		25	4,694
April	2019	0		4,444		4,444	0		250		25	4,694
May	2019	0		4,444		4,444	0		250		25	4,694
June	2019	0		4,444		4,444	0		250		25	4,694
July	2019	0		4,444		4,444	0		250	0	25	4,694
August	2019	0		4,444		4,444	0		250	0	25	4,694
September	2019	0		4,444		4,444	0		250	0	25	4,694
October	2019	0		4,444		4,444	0		250	0	25	4,694
November	2019	0		4,444		4,444	0		250	0	4,694	4,694
December	2019	0		4,444		4,444	0		250		0	4,694
January	2020	0		4,444		4,444	0		250		0	4,694
February	2020	0		4,444		4,444	0		250		0	4,694
March	2020	0		4,444		4,444	0		250		0	4,694
April	2020	0		4,444		4,444	0		250		0	4,694
May	2020	0		4,444		4,444	0		250		0	4,694
June	2020	0		4,444		4,444	0		250		0	4,694
July	2020	0		4,444		4,444	0		250		0	4,694
August	2020	0		4,444		4,444	0		250		0	4,694
September	2020	0		4,444		4,444	0		250		0	4,694
October	2020	0		4,444		4,444	0		250		0	4,694
November	2020	0		4,444		4,444	0		250		0	4,694
December	2020	0		4,444		4,444	0		250		0	4,694
January	2021	0		4,444		4,444	0		250		0	4,694
February	2021	0		4,444		4,444	0		250		0	4,694
March	2021	0		4,444		4,444	0		250		0	4,694
April	2021	0		4,444		4,444	0		250		0	4,694
May	2021	0		4,444		4,444	0		250		0	4,694
June	2021	0		4,444		4,444	0		250		0	4,694
July	2021	0		4,444		4,444	0		250		0	4,694
August	2021	0		4,444		4,444	0		250		0	4,694
September	2021	0		4,444		4,444	0		250		0	4,694
October	2021	0		4,444		4,444	0		250		0	4,694
November	2021	0		4,444		4,444	0		250		0	4,694
December	2021	0		4,444		4,444	0		250		0	4,694
January	2022	0		4,444		4,444	0		250		0	4,694
February	2022	0		4,444		4,444	0		250		0	4,694
March	2022	0		4,444		4,444	0		250		0	4,694
April	2022	0		4,444		4,444	0		250		0	4,694
May	2022	0		4,444		4,444	0		250		0	4,694
June	2022	0		4,444		4,444	0		250		0	4,694
July	2022	0		4,444		4,444	0		250		0	4,694
August	2022	0		4,444		4,444	0		250		0	4,694
September	2022	0		4,444		4,444	0		250		0	4,694
October	2022	0		4,444		4,444	0		250		0	4,694
November	2022	0		4,444		4,444	0		250		0	4,694
December	2022	0		4,444		4,444	0		250		0	4,694

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
February	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
March	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
April	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
May	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
June	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
July	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
August	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
September	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
October	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
November	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
December	2018	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
January	2019	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
February	2019	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
March	2019	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
April	2019	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
May	2019	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
June	2019	0		5,736,671		5,736,671	0		262,930		48,535	5,999,602
July	2019	0		5,736,671		5,736,671	0		262,930	0	48,535	5,999,602
August	2019	0		5,736,671		5,736,671	0		262,930	0	48,535	5,999,602
September	2019	0		5,736,671		5,736,671	0		262,930	0	48,535	5,999,602
October	2019	0		5,736,671		5,736,671	0		262,930	0	48,535	5,999,602
November	2019	0		5,736,671		5,736,671	0		262,930	0	48,535	5,999,602
December	2019	0		5,736,671		5,736,671	0		262,930	0	48,535	5,999,602
January	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2020	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2021	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2022	0		5,736,671		5,736,671	0		262,930		0	5,999,602

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2018	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2019	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2019	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2019	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2019	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2019	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2019	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2019	0		7,663		7,663	0		522	0	183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2019	0		7,663		7,663	0		522	0	183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2019	0		7,663		7,663	0		522	0	183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2019	0		7,663		7,663	0		522	0	183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2019	0		7,663		7,663	0		522	0	183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2019	0		7,663		7,663	0		522	0	183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2020	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2021	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2022	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Participation										
Month	Year	Program Participants										System Cum for IRP
		VA				NC				System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
January	2023	0		4,444		4,444	0		250		0	4,694
February	2023	0		4,444		4,444	0		250		0	4,694
March	2023	0		4,444		4,444	0		250		0	4,694
April	2023	0		4,444		4,444	0		250		0	4,694
May	2023	0		4,444		4,444	0		250		0	4,694
June	2023	0		4,444		4,444	0		250		0	4,694
July	2023	0		4,444		4,444	0		250		0	4,694
August	2023	0		4,444		4,444	0		250		0	4,694
September	2023	0		4,444		4,444	0		250		0	4,694
October	2023	0		4,444		4,444	0		250		0	4,694
November	2023	0		4,444		4,444	0		250		0	4,694
December	2023	0		4,444		4,444	0		250		0	4,694
January	2024	0		4,444		4,444	0		250		0	4,694
February	2024	0		4,444		4,444	0		250		0	4,694
March	2024	0		4,444		4,444	0		250		0	4,694
April	2024	0		4,444		4,444	0		250		0	4,694
May	2024	0		4,444		4,444	0		250		0	4,694
June	2024	0		4,444		4,444	0		250		0	4,694
July	2024	0		4,444		4,444	0		250		0	4,694
August	2024	0		4,444		4,444	0		250		0	4,694
September	2024	0		4,444		4,444	0		250		0	4,694
October	2024	0		4,444		4,444	0		250		0	4,694
November	2024	0		4,444		4,444	0		250		0	4,694
December	2024	0		4,444		4,444	0		250		0	4,694
January	2025	0		4,444		4,444	0		250		0	4,694
February	2025	0		4,444		4,444	0		250		0	4,694
March	2025	0		4,444		4,444	0		250		0	4,694
April	2025	0		4,444		4,444	0		250		0	4,694
May	2025	0		4,444		4,444	0		250		0	4,694
June	2025	0		4,444		4,444	0		250		0	4,694
July	2025	0		4,444		4,444	0		250		0	4,694
August	2025	0		4,444		4,444	0		250		0	4,694
September	2025	0		4,444		4,444	0		250		0	4,694
October	2025	0		4,444		4,444	0		250		0	4,694
November	2025	0		4,444		4,444	0		250		0	4,694
December	2025	0		4,444		4,444	0		250		0	4,694
January	2026	0		4,444		4,444	0		250		0	4,694
February	2026	0		4,444		4,444	0		250		0	4,694
March	2026	0		4,444		4,444	0		250		0	4,694
April	2026	0		4,444		4,444	0		250		0	4,694
May	2026	0		4,444		4,444	0		250		0	4,694
June	2026	0		4,444		4,444	0		250		0	4,694
July	2026	0		4,444		4,444	0		250		0	4,694
August	2026	0		4,444		4,444	0		250		0	4,694
September	2026	0		4,444		4,444	0		250		0	4,694
October	2026	0		4,444		4,444	0		250		0	4,694
November	2026	0		4,444		4,444	0		250		0	4,694
December	2026	0		4,444		4,444	0		250		0	4,694
January	2027	0		4,444		4,444	0		250		0	4,694
February	2027	0		4,444		4,444	0		250		0	4,694
March	2027	0		4,444		4,444	0		250		0	4,694
April	2027	0		4,444		4,444	0		250		0	4,694
May	2027	0		4,444		4,444	0		250		0	4,694
June	2027	0		4,444		4,444	0		250		0	4,694
July	2027	0		4,444		4,444	0		250		0	4,694
August	2027	0		4,444		4,444	0		250		0	4,694
September	2027	0		4,444		4,444	0		250		0	4,694
October	2027	0		4,444		4,444	0		250		0	4,694
November	2027	0		4,444		4,444	0		250		0	4,694
December	2027	0		4,444		4,444	0		250		0	4,694

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh					NC					System
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
VA Monthly New	VA Monthly Retired	NC Monthly New	NC Monthly Retired									
January	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2023	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2024	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2025	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2026	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2027	0		5,736,671		5,736,671	0		262,930		0	5,999,602

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2023	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2024	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2025	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2026	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2027	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Participation										
Month	Year	Program Participants										System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
January	2028	0		4,444		4,444	0		250		0	4,694
February	2028	0		4,444		4,444	0		250		0	4,694
March	2028	0		4,444		4,444	0		250		0	4,694
April	2028	0		4,444		4,444	0		250		0	4,694
May	2028	0		4,444		4,444	0		250		0	4,694
June	2028	0		4,444		4,444	0		250		0	4,694
July	2028	0		4,444		4,444	0		250		0	4,694
August	2028	0		4,444		4,444	0		250		0	4,694
September	2028	0		4,444		4,444	0		250		0	4,694
October	2028	0		4,444		4,444	0		250		0	4,694
November	2028	0		4,444		4,444	0		250		0	4,694
December	2028	0		4,444		4,444	0		250		0	4,694
January	2029	0		4,444		4,444	0		250		0	4,694
February	2029	0		4,444		4,444	0		250		0	4,694
March	2029	0		4,444		4,444	0		250		0	4,694
April	2029	0		4,444		4,444	0		250		0	4,694
May	2029	0		4,444		4,444	0		250		0	4,694
June	2029	0		4,444		4,444	0		250		0	4,694
July	2029	0		4,444		4,444	0		250		0	4,694
August	2029	0		4,444		4,444	0		250		0	4,694
September	2029	0		4,444		4,444	0		250		0	4,694
October	2029	0		4,444		4,444	0		250		0	4,694
November	2029	0		4,444		4,444	0		250		0	4,694
December	2029	0		4,444		4,444	0		250		0	4,694
January	2030	0		4,444		4,444	0		250		0	4,694
February	2030	0		4,444		4,444	0		250		0	4,694
March	2030	0		4,444		4,444	0		250		0	4,694
April	2030	0		4,444		4,444	0		250		0	4,694
May	2030	0		4,444		4,444	0		250		0	4,694
June	2030	0		4,444		4,444	0		250		0	4,694
July	2030	0		4,444		4,444	0		250		0	4,694
August	2030	0		4,444		4,444	0		250		0	4,694
September	2030	0		4,444		4,444	0		250		0	4,694
October	2030	0		4,444		4,444	0		250		0	4,694
November	2030	0		4,444		4,444	0		250		0	4,694
December	2030	0		4,444		4,444	0		250		0	4,694
January	2031	0		4,444		4,444	0		250		0	4,694
February	2031	0		4,444		4,444	0		250		0	4,694
March	2031	0		4,444		4,444	0		250		0	4,694
April	2031	0		4,444		4,444	0		250		0	4,694
May	2031	0		4,444		4,444	0		250		0	4,694
June	2031	0		4,444		4,444	0		250		0	4,694
July	2031	0		4,444		4,444	0		250		0	4,694
August	2031	0		4,444		4,444	0		250		0	4,694
September	2031	0		4,444		4,444	0		250		0	4,694
October	2031	0		4,444		4,444	0		250		0	4,694
November	2031	0		4,444		4,444	0		250		0	4,694
December	2031	0		4,444		4,444	0		250		0	4,694
January	2032	0		4,444		4,444	0		250		0	4,694
February	2032	0		4,444		4,444	0		250		0	4,694
March	2032	0		4,444		4,444	0		250		0	4,694
April	2032	0		4,444		4,444	0		250		0	4,694
May	2032	0		4,444		4,444	0		250		0	4,694
June	2032	0		4,444		4,444	0		250		0	4,694
July	2032	0		4,444		4,444	0		250		0	4,694
August	2032	0		4,444		4,444	0		250		0	4,694
September	2032	0		4,444		4,444	0		250		0	4,694
October	2032	0		4,444		4,444	0		250		0	4,694
November	2032	0		4,444		4,444	0		250		0	4,694
December	2032	0		4,444		4,444	0		250		0	4,694

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2028	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2029	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2030	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2031	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2032	0		5,736,671		5,736,671	0		262,930		0	5,999,602

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2028	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2029	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2030	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2031	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2032	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Participation										
Month	Year	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2033	0		4,444		4,444	0		250		0	4,694
February	2033	0		4,444		4,444	0		250		0	4,694
March	2033	0		4,444		4,444	0		250		0	4,694
April	2033	0		4,444		4,444	0		250		0	4,694
May	2033	0		4,444		4,444	0		250		0	4,694
June	2033	0		4,444		4,444	0		250		0	4,694
July	2033	0		4,444		4,444	0		250		0	4,694
August	2033	0		4,444		4,444	0		250		0	4,694
September	2033	0		4,444		4,444	0		250		0	4,694
October	2033	0		4,444		4,444	0		250		0	4,694
November	2033	0		4,444		4,444	0		250		0	4,694
December	2033	0		4,444		4,444	0		250		0	4,694
January	2034	0		4,444		4,444	0		250		0	4,694
February	2034	0		4,444		4,444	0		250		0	4,694
March	2034	0		4,444		4,444	0		250		0	4,694
April	2034	0		4,444		4,444	0		250		0	4,694
May	2034	0		4,444		4,444	0		250		0	4,694
June	2034	0		4,444		4,444	0		250		0	4,694
July	2034	0		4,444		4,444	0		250		0	4,694
August	2034	0		4,444		4,444	0		250		0	4,694
September	2034	0		4,444		4,444	0		250		0	4,694
October	2034	0		4,444		4,444	0		250		0	4,694
November	2034	0		4,444		4,444	0		250		0	4,694
December	2034	0		4,444		4,444	0		250		0	4,694
January	2035	0		4,444		4,444	0		250		0	4,694
February	2035	0		4,444		4,444	0		250		0	4,694
March	2035	0		4,444		4,444	0		250		0	4,694
April	2035	0		4,444		4,444	0		250		0	4,694
May	2035	0		4,444		4,444	0		250		0	4,694
June	2035	0		4,444		4,444	0		250		0	4,694
July	2035	0		4,444		4,444	0		250		0	4,694
August	2035	0		4,444		4,444	0		250		0	4,694
September	2035	0		4,444		4,444	0		250		0	4,694
October	2035	0		4,444		4,444	0		250		0	4,694
November	2035	0		4,444		4,444	0		250		0	4,694
December	2035	0		4,444		4,444	0		250		0	4,694
January	2036	0		4,444		4,444	0		250		0	4,694
February	2036	0		4,444		4,444	0		250		0	4,694
March	2036	0		4,444		4,444	0		250		0	4,694
April	2036	0		4,444		4,444	0		250		0	4,694
May	2036	0		4,444		4,444	0		250		0	4,694
June	2036	0		4,444		4,444	0		250		0	4,694
July	2036	0		4,444		4,444	0		250		0	4,694
August	2036	0		4,444		4,444	0		250		0	4,694
September	2036	0		4,444		4,444	0		250		0	4,694
October	2036	0		4,444		4,444	0		250		0	4,694
November	2036	0		4,444		4,444	0		250		0	4,694
December	2036	0		4,444		4,444	0		250		0	4,694
January	2037	0		4,444		4,444	0		250		0	4,694
February	2037	0		4,444		4,444	0		250		0	4,694
March	2037	0		4,444		4,444	0		250		0	4,694
April	2037	0		4,444		4,444	0		250		0	4,694
May	2037	0		4,444		4,444	0		250		0	4,694
June	2037	0		4,444		4,444	0		250		0	4,694
July	2037	0		4,444		4,444	0		250		0	4,694
August	2037	0		4,444		4,444	0		250		0	4,694
September	2037	0		4,444		4,444	0		250		0	4,694
October	2037	0		4,444		4,444	0		250		0	4,694
November	2037	0	-1	4,443		4,443	0		250		0	4,693
December	2037	0	-10	4,433		4,433	0		250		0	4,683

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh				NC				System		
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
VA Monthly New	VA Monthly Retired	NC Monthly New	NC Monthly Retired									
January	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2033	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2034	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2035	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
December	2036	0		5,736,671		5,736,671	0		262,930		0	5,999,602
January	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
February	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
March	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
April	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
May	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
June	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
July	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
August	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
September	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
October	2037	0		5,736,671		5,736,671	0		262,930		0	5,999,602
November	2037	0	-152	5,736,520		5,736,520	0		262,930		0	5,999,450
December	2037	0	-5,327	5,731,193		5,731,193	0		262,930		0	5,994,123

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2033	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2034	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2035	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2036	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
January	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
February	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
March	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
April	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
May	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
June	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
July	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
August	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
September	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
October	2037	0		7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
November	2037	0	0	7,663		7,663	0		522		183	8,185	1,291	1,052	1,278	1.72	2.09	1.74
December	2037	0	-7	7,656		7,656	0		522		183	8,178	1,291	1,052	1,278	1.72	2.09	1.74

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Participation										
Month	Year	Program Participants										System Cum for IRP
		VA				NC				System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2038	0	-2	4,431		4,431	0		250		0	4,681
February	2038	0	0	4,431		4,431	0		250		0	4,681
March	2038	0	-8	4,423		4,423	0		250		0	4,673
April	2038	0	-17	4,406		4,406	0		250		0	4,656
May	2038	0	-12	4,394		4,394	0		250		0	4,644
June	2038	0	-4	4,390		4,390	0		250		0	4,640
July	2038	0	-27	4,363		4,363	0		250		0	4,613
August	2038	0	-24	4,339		4,339	0		250		0	4,589
September	2038	0	-67	4,272		4,272	0		250		0	4,522
October	2038	0	-63	4,209		4,209	0		250		0	4,459
November	2038	0	-30	4,179		4,179	0		250		0	4,429
December	2038	0	-103	4,076		4,076	0		250		0	4,326
January	2039	0	-22	4,054		4,054	0		250		0	4,304
February	2039	0	-106	3,948		3,948	0		250		0	4,198
March	2039	0	-243	3,705		3,705	0		250		0	3,955
April	2039	0	-125	3,580		3,580	0		250		0	3,830
May	2039	0	-115	3,465		3,465	0		250		0	3,715
June	2039	0	-98	3,367		3,367	0		250		0	3,617
July	2039	0	-166	3,201		3,201	0		250		0	3,451
August	2039	0	-190	3,011		3,011	0		250		0	3,261
September	2039	0	-206	2,805		2,805	0		250		0	3,055
October	2039	0	-212	2,593		2,593	0		250		0	2,843
November	2039	0	-137	2,456		2,456	0	-46	204		-46	2,660
December	2039	0	-80	2,376		2,376	0	-14	190		-60	2,566
January	2040	0	-100	2,276		2,276	0	-12	178		-72	2,454
February	2040	0	-81	2,195		2,195	0	-4	174		-76	2,369
March	2040	0	-116	2,079		2,079	0	-2	172		-78	2,251
April	2040	0	-193	1,886		1,886	0	-62	110		-140	1,996
May	2040	0	-112	1,774		1,774	0	-13	97		-153	1,871
June	2040	0	-215	1,559		1,559	0	-40	57		-193	1,616
July	2040	0	-101	1,458		1,458	0	-9	48		-202	1,506
August	2040	0	-207	1,251		1,251	0	-7	41		-209	1,292
September	2040	0	-250	1,001		1,001	0	0	41		-209	1,042
October	2040	0	-89	912		912	0	-2	39		-211	951
November	2040	0	-93	819		819	0	-1	38		-212	857
December	2040	0	-98	721		721	0	0	38		-212	759
January	2041	0	-49	672		672	0	0	38		-212	710
February	2041	0	-59	613		613	0	-1	37		-213	650
March	2041	0	-41	572		572	0	0	37		-213	609
April	2041	0	-47	525		525	0	-4	33		-217	558
May	2041	0	-21	504		504	0	-3	30		-220	534
June	2041	0	-61	443		443	0	-5	25		-225	468
July	2041	0	-52	391		391	0	-4	21		-229	412
August	2041	0	-43	348		348	0	-5	16		-234	364
September	2041	0	-61	287		287	0	-1	15		-235	302
October	2041	0	-77	210		210	0	-2	13		-237	223
November	2041	0	-72	138		138	0	-8	5		-245	143
December	2041	0	-57	81		81	0	0	5		-245	86
January	2042	0	-42	39		39	0	-3	2		-248	41
February	2042	0	-38	1		1	0	-1	1		-249	2
March	2042	0	-1	0		0	0	-1	0		-250	0
April	2042	0	0	0		0	0	0	0		-250	0
May	2042	0	0	0		0	0	0	0		-250	0
June	2042	0	0	0		0	0	0	0		-250	0
July	2042	0	0	0		0	0	0	0		-250	0
August	2042	0	0	0		0	0	0	0		-250	0
September	2042	0	0	0		0	0	0	0		-250	0
October	2042	0	0	0		0	0	0	0		-250	0
November	2042	0	0	0		0	0	0	0		-250	0
December	2042	0	0	0		0	0	0	0		-250	0

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Energy Savings										
Month	Year	Net kWh				NC						System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2038	0	-1,990	5,729,203		5,729,203	0		262,930		0	5,992,133
February	2038	0	0	5,729,203		5,729,203	0		262,930		0	5,992,133
March	2038	0	-2,208	5,726,995		5,726,995	0		262,930		0	5,989,925
April	2038	0	-2,242	5,724,752		5,724,752	0		262,930		0	5,987,683
May	2038	0	-3,147	5,721,605		5,721,605	0		262,930		0	5,984,536
June	2038	0	-248	5,721,357		5,721,357	0		262,930		0	5,984,287
July	2038	0	-11,666	5,709,691		5,709,691	0		262,930		0	5,972,621
August	2038	0	-6,619	5,703,072		5,703,072	0		262,930		0	5,966,002
September	2038	0	-23,531	5,679,541		5,679,541	0		262,930		0	5,942,471
October	2038	0	-26,550	5,652,991		5,652,991	0		262,930		0	5,915,922
November	2038	0	-9,686	5,643,305		5,643,305	0		262,930		0	5,906,236
December	2038	0	-36,540	5,606,765		5,606,765	0		262,930		0	5,869,696
January	2039	0	-11,178	5,595,587		5,595,587	0		262,930		0	5,858,518
February	2039	0	-60,951	5,534,637		5,534,637	0		262,930		0	5,797,567
March	2039	0	-94,598	5,440,039		5,440,039	0		262,930		0	5,702,969
April	2039	0	-153,591	5,286,448		5,286,448	0		262,930		0	5,549,378
May	2039	0	-86,282	5,200,166		5,200,166	0		262,930		0	5,463,097
June	2039	0	-109,785	5,090,381		5,090,381	0		262,930		0	5,353,311
July	2039	0	-243,423	4,846,958		4,846,958	0		262,930		0	5,109,889
August	2039	0	-178,317	4,668,641		4,668,641	0		262,930		0	4,931,571
September	2039	0	-307,626	4,361,014		4,361,014	0		262,930		0	4,623,945
October	2039	0	-420,776	3,940,239		3,940,239	0		262,930		0	4,203,169
November	2039	0	-246,917	3,693,321		3,693,321	0	-38,558	224,373		-38,558	3,917,694
December	2039	0	-92,862	3,600,459		3,600,459	0	-3,435	220,938		-41,993	3,821,397
January	2040	0	96,461	3,696,919		3,696,919	0	-30,380	190,558		-72,373	3,887,477
February	2040	0	-365,963	3,330,957		3,330,957	0	-1,113	189,445		-73,485	3,520,402
March	2040	0	-87,470	3,243,486		3,243,486	0	-1,695	187,750		-75,181	3,431,236
April	2040	0	-141,609	3,101,878		3,101,878	0	-52,676	135,074		-127,857	3,236,952
May	2040	0	-50,682	3,051,196		3,051,196	0	-17,352	117,721		-145,209	3,168,918
June	2040	0	-168,027	2,883,170		2,883,170	0	-32,025	85,696		-177,234	2,968,866
July	2040	0	-49,381	2,833,789		2,833,789	0	-17,142	68,554		-194,376	2,902,343
August	2040	0	-196,108	2,637,681		2,637,681	0	-11,300	57,254		-205,677	2,694,935
September	2040	0	-183,945	2,453,736		2,453,736	0	0	57,254		-205,677	2,510,990
October	2040	0	-74,140	2,379,596		2,379,596	0	-2,530	54,723		-208,207	2,434,320
November	2040	0	-75,247	2,304,349		2,304,349	0	-2,971	51,752		-211,178	2,356,102
December	2040	0	-147,687	2,156,662		2,156,662	0	0	51,752		-211,178	2,208,415
January	2041	0	744,273	2,900,935		2,900,935	0	0	51,752		-211,178	2,952,688
February	2041	0	-1,007,512	1,893,423		1,893,423	0	-2,280	49,472		-213,458	1,942,895
March	2041	0	-54,327	1,839,096		1,839,096	0	0	49,472		-213,458	1,888,568
April	2041	0	-182,774	1,656,322		1,656,322	0	-231	49,242		-213,689	1,705,563
May	2041	0	-179,684	1,476,638		1,476,638	0	-423	48,819		-214,112	1,525,457
June	2041	0	-383,439	1,093,199		1,093,199	0	-284	48,535		-214,396	1,141,734
July	2041	0	-94,840	998,359		998,359	0	-14,018	34,517		-228,414	1,032,876
August	2041	0	-119,870	878,490		878,490	0	-15,040	19,477		-243,454	897,966
September	2041	0	-154,499	723,990		723,990	0	-199	19,278		-243,653	743,268
October	2041	0	-163,659	560,332		560,332	0	-903	18,375		-244,556	578,706
November	2041	0	-154,271	406,061		406,061	0	-5,390	12,984		-249,946	419,045
December	2041	0	-106,469	299,592		299,592	0	0	12,984		-249,946	312,576
January	2042	0	-203,613	95,978		95,978	0	-714	12,271		-250,660	108,249
February	2042	0	-94,003	1,975		1,975	0	-717	11,554		-251,376	13,529
March	2042	0	-1,975	0		0	0	-11,554	0		-262,930	0
April	2042	0	0	0		0	0	0	0		-262,930	0
May	2042	0	0	0		0	0	0	0		-262,930	0
June	2042	0	0	0		0	0	0	0		-262,930	0
July	2042	0	0	0		0	0	0	0		-262,930	0
August	2042	0	0	0		0	0	0	0		-262,930	0
September	2042	0	0	0		0	0	0	0		-262,930	0
October	2042	0	0	0		0	0	0	0		-262,930	0
November	2042	0	0	0		0	0	0	0		-262,930	0
December	2042	0	0	0		0	0	0	0		-262,930	0

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		System Cum for IRP	VA	NC	System	VA	NC
January	2038	0	-2	7,654		7,654	0		522		183	8,176	1,291	1,052	1,278	1.72	2.09	1.74
February	2038	0	0	7,654		7,654	0		522		183	8,176	1,291	1,052	1,278	1.72	2.09	1.74
March	2038	0	-3	7,650		7,650	0		522		183	8,172	1,291	1,052	1,278	1.72	2.09	1.74
April	2038	0	-5	7,645		7,645	0		522		183	8,167	1,291	1,052	1,278	1.72	2.09	1.74
May	2038	0	-10	7,635		7,635	0		522		183	8,157	1,291	1,052	1,278	1.72	2.09	1.74
June	2038	0	-5	7,630		7,630	0		522		183	8,152	1,291	1,052	1,278	1.72	2.09	1.74
July	2038	0	-33	7,598		7,598	0		522		183	8,119	1,291	1,052	1,278	1.72	2.09	1.74
August	2038	0	-40	7,557		7,557	0		522		183	8,079	1,291	1,052	1,278	1.72	2.09	1.74
September	2038	0	-78	7,479		7,479	0		522		183	8,001	1,291	1,052	1,278	1.72	2.09	1.74
October	2038	0	-62	7,417		7,417	0		522		183	7,939	1,291	1,052	1,278	1.72	2.09	1.74
November	2038	0	-44	7,373		7,373	0		522		183	7,895	1,291	1,052	1,278	1.72	2.09	1.74
December	2038	0	-182	7,191		7,191	0		522		183	7,713	1,291	1,052	1,278	1.72	2.09	1.74
January	2039	0	-18	7,173		7,173	0		522		183	7,695	1,291	1,052	1,278	1.72	2.09	1.74
February	2039	0	-95	7,078		7,078	0		522		183	7,600	1,291	1,052	1,278	1.72	2.09	1.74
March	2039	0	-118	6,959		6,959	0		522		183	7,481	1,291	1,052	1,278	1.72	2.09	1.74
April	2039	0	-203	6,756		6,756	0		522		183	7,278	1,291	1,052	1,278	1.72	2.09	1.74
May	2039	0	-119	6,637		6,637	0		522		183	7,159	1,291	1,052	1,278	1.72	2.09	1.74
June	2039	0	-123	6,514		6,514	0		522		183	7,036	1,291	1,052	1,278	1.72	2.09	1.74
July	2039	0	-274	6,240		6,240	0		522		183	6,762	1,291	1,052	1,278	1.72	2.09	1.74
August	2039	0	-160	6,081		6,081	0		522		183	6,603	1,291	1,052	1,278	1.72	2.09	1.74
September	2039	0	-189	5,891		5,891	0		522		183	6,413	1,291	1,052	1,278	1.72	2.09	1.74
October	2039	0	-220	5,672		5,672	0		522		183	6,194	1,291	1,052	1,278	1.72	2.09	1.74
November	2039	0	-256	5,416		5,416	0	-55	467		183	5,883	1,291	1,052	1,278	1.72	2.09	1.74
December	2039	0	-103	5,313		5,313	0	-5	462		183	5,776	1,291	1,052	1,278	1.72	2.09	1.74
January	2040	0	-192	5,121		5,121	0	-42	420		183	5,542	1,291	1,052	1,278	1.72	2.09	1.74
February	2040	0	-170	4,951		4,951	0	-1	419		183	5,370	1,291	1,052	1,278	1.72	2.09	1.74
March	2040	0	-139	4,812		4,812	0	-2	417		183	5,230	1,291	1,052	1,278	1.72	2.09	1.74
April	2040	0	-200	4,612		4,612	0	-93	324		183	4,937	1,291	1,052	1,278	1.72	2.09	1.74
May	2040	0	-72	4,540		4,540	0	-31	293		183	4,833	1,291	1,052	1,278	1.72	2.09	1.74
June	2040	0	-368	4,172		4,172	0	-51	242		183	4,414	1,291	1,052	1,278	1.72	2.09	1.74
July	2040	0	-120	4,052		4,052	0	-23	219		183	4,271	1,291	1,052	1,278	1.72	2.09	1.74
August	2040	0	-292	3,760		3,760	0	-17	202		183	3,962	1,291	1,052	1,278	1.72	2.09	1.74
September	2040	0	-259	3,501		3,501	0	0	202		183	3,703	1,291	1,052	1,278	1.72	2.09	1.74
October	2040	0	-130	3,371		3,371	0	-4	198		183	3,569	1,291	1,052	1,278	1.72	2.09	1.74
November	2040	0	-178	3,194		3,194	0	-3	195		183	3,389	1,291	1,052	1,278	1.72	2.09	1.74
December	2040	0	-182	3,012		3,012	0	0	195		183	3,207	1,291	1,052	1,278	1.72	2.09	1.74
January	2041	0	-161	2,851		2,851	0	0	195		183	3,046	1,291	1,052	1,278	1.72	2.09	1.74
February	2041	0	-116	2,735		2,735	0	-8	187		183	2,922	1,291	1,052	1,278	1.72	2.09	1.74
March	2041	0	-144	2,591		2,591	0	0	187		183	2,778	1,291	1,052	1,278	1.72	2.09	1.74
April	2041	0	-164	2,428		2,428	0	-1	186		183	2,614	1,291	1,052	1,278	1.72	2.09	1.74
May	2041	0	-90	2,338		2,338	0	-1	185		183	2,523	1,291	1,052	1,278	1.72	2.09	1.74
June	2041	0	-303	2,035		2,035	0	-2	183		183	2,219	1,291	1,052	1,278	1.72	2.09	1.74
July	2041	0	-228	1,807		1,807	0	-57	126		183	1,933	1,291	1,052	1,278	1.72	2.09	1.74
August	2041	0	-300	1,507		1,507	0	-63	63		183	1,570	1,291	1,052	1,278	1.72	2.09	1.74
September	2041	0	-206	1,301		1,301	0	-1	62		183	1,363	1,291	1,052	1,278	1.72	2.09	1.74
October	2041	0	-209	1,092		1,092	0	-2	61		183	1,153	1,291	1,052	1,278	1.72	2.09	1.74
November	2041	0	-291	801		801	0	-11	49		183	850	1,291	1,052	1,278	1.72	2.09	1.74
December	2041	0	-164	637		637	0	0	49		183	686	1,291	1,052	1,278	1.72	2.09	1.74
January	2042	0	-432	204		204	0	-2	47		183	251	1,291	1,052	1,278	1.72	2.09	1.74
February	2042	0	-201	3		3	0	-1	46		183	49	1,291	1,052	1,278	1.72	2.09	1.74
March	2042	0	-3	0		0	0	-46	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
April	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
May	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
June	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
July	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
August	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
September	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
October	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
November	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74
December	2042	0	0	0		0	0	0	0		183	0	1,291	1,052	1,278	1.72	2.09	1.74

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 2. EM&V Data Incremental by Vintage Year

	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			11		11			-		-	11
2013			357		357			-		-	357
2014			1,700		1,700			60		60	1,760
2015			1,655		1,655			152		152	1,807
2016			640		640			33		20	673
2017			81		81			5		5	86

Table 3. EM&V Data Annualized by Vintage Year

	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			11		11			-		-	11
2013			357		357			-		-	357
2014			1,700		1,700			60		60	1,760
2015			1,655		1,655			152		152	1,807
2016			640		640			33		20	673
2017			81		81			5		5	86

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)

	Program Participants										
	VA							NC PPI			System
2012								-			
2013								-			
2014								60			
2015								212			
2016								245			
2017								190			

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			5,630		5,630			-		-	5,630
2013			425,836		425,836			-		-	425,836
2014			10,023,294		10,023,294			80,550		80,550	10,103,844
2015			9,132,087		9,132,087			1,403,719		1,403,719	10,535,806
2016			11,153,509		11,153,509			206,123		199,687	11,359,631
2017			3,497,145		3,497,145			131,988		131,988	3,629,134

Table 3. EM&V Data Annualized by Vintage Year											
Net Annualized Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			65,742		65,742			-		-	65,742
2013			1,493,132		1,493,132			-		-	1,493,132
2014			24,075,676		24,075,676			503,912		503,912	24,579,589
2015			17,325,562		17,325,562			2,030,224		2,030,224	19,355,786
2016			22,284,846		22,284,846			465,216		426,605	22,750,063
2017			3,595,098		3,595,098			155,813		155,813	3,750,912

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Net Energy (kWh) for PPI										
	VA							NC PPI		System
2012								-		
2013								-		
2014								80,550		
2015								1,907,631		
2016								2,740,259		
2017								2,627,428		

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2012	7	7	-	-	7	512	-	512	0.67	-	0.67					
2013	465	465	-	-	465	1,193	-	1,193	1.30	-	1.30					
2014	1,878	1,878	60	60	1,937	5,896	1,343	5,741	1.10	0.99	1.10					
2015	2,301	2,301	267	267	2,568	5,518	9,235	5,831	1.39	1.76	1.42					
2016	2,375	2,375	146	134	2,521	17,427	6,246	16,879	3.71	4.43	3.75					
2017	637	637	49	49	686	43,175	26,398	42,199	7.86	9.86	7.98					

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP	VA	NC	System	VA	NC	System					
2012	7	7	-	-	7	5,977	-	5,977	0.67	-	0.67					
2013	465	465	-	-	465	4,182	-	4,182	1.30	-	1.30					
2014	1,878	1,878	60	60	1,937	14,162	8,399	13,966	1.10	0.99	1.10					
2015	2,301	2,301	267	267	2,568	10,469	13,357	10,712	1.39	1.76	1.42					
2016	2,375	2,375	146	134	2,521	34,820	14,097	33,804	3.71	4.43	3.75					
2017	637	637	49	49	686	44,384	31,163	43,615	7.86	9.86	7.98					

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
	VA	VA NLR	NC PPI	NC NLR	System	VA	NC	System	VA	NC	System					
2012			-	-			-			-						
2013			-	-			-			-						
2014			60	60			1,343			0.99						
2015			326	267			8,998			1.54						
2016			473	146			11,185			1.93						
2017			462	49			13,829			2.43						

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			11		11			-		-	11
2013			368		368			-		-	368
2014			2,068		2,068			60		60	2,128
2015			3,723		3,723			212		212	3,935
2016			4,363		4,363			245		20	4,608
2017			4,444		4,444			250		25	4,694
2018			4,444					250			4,694
2019			4,444					250			4,694
2020			4,444					250			4,694
2021			4,444					250			4,694
2022			4,444					250			4,694
2023			4,444					250			4,694
2024			4,444					250			4,694
2025			4,444					250			4,694
2026			4,444					250			4,694
2027			4,444					250			4,694
2028			4,444					250			4,694
2029			4,444					250			4,694
2030			4,444					250			4,694
2031			4,444					250			4,694
2032			4,444					250			4,694
2033			4,444					250			4,694
2034			4,444					250			4,694
2035			4,444					250			4,694
2036			4,444					250			4,694
2037			4,433					250			4,683
2038			4,076					250			4,326
2039			2,376					190			2,566
2040			721					38			759
2041			81					5			86
2042			-					-			-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Program Participants										
			VA IRP					NC IRP			System IRP
2012			11					-			11
2013			368					-			368
2014			2,068					60			2,128
2015			3,723					212			3,935
2016			4,363					245			4,608
2017			4,444					250			4,694
2018			4,444					250			4,694
2019			4,444					250			4,694
2020			4,444					250			4,694
2021			4,444					250			4,694
2022			4,444					250			4,694
2023			4,444					250			4,694
2024			4,444					250			4,694
2025			4,444					250			4,694
2026			4,444					250			4,694
2027			4,444					250			4,694
2028			4,444					250			4,694
2029			4,444					250			4,694
2030			4,444					250			4,694
2031			4,444					250			4,694
2032			4,444					250			4,694
2033			4,444					250			4,694
2034			4,444					250			4,694
2035			4,444					250			4,694
2036			4,444					250			4,694
2037			4,444					250			4,694
2038			4,444					250			4,694
2039			4,444					250			4,694
2040			4,444					250			4,694
2041			4,444					250			4,694
2042			4,444					250			4,694

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
	Net Energy (kWh)									
			VA IRP		VA NLR		NC IRP		NC NLR	System IRP
2012			5,630		5,630		-		-	5,630
2013			491,578		491,578		-		-	491,578
2014			11,582,167		11,582,167		80,550		80,550	11,662,718
2015			34,766,637		34,766,637		1,907,631		1,907,631	36,674,269
2016			54,113,621		54,113,621		2,740,259		2,311,467	56,853,879
2017			68,742,104		68,742,104		3,131,341		558,594	71,873,444
2018			68,840,057		68,840,057		3,155,166		582,419	71,995,222
2019			68,840,057		68,840,057		3,155,166		485,349	71,995,222
2020			68,840,057		68,840,057		3,155,166		-	71,995,222
2021			68,840,057		68,840,057		3,155,166		-	71,995,222
2022			68,840,057		68,840,057		3,155,166		-	71,995,222
2023			68,840,057		68,840,057		3,155,166		-	71,995,222
2024			68,840,057		68,840,057		3,155,166		-	71,995,222
2025			68,840,057		68,840,057		3,155,166		-	71,995,222
2026			68,840,057		68,840,057		3,155,166		-	71,995,222
2027			68,840,057		68,840,057		3,155,166		-	71,995,222
2028			68,840,057		68,840,057		3,155,166		-	71,995,222
2029			68,840,057		68,840,057		3,155,166		-	71,995,222
2030			68,840,057		68,840,057		3,155,166		-	71,995,222
2031			68,840,057		68,840,057		3,155,166		-	71,995,222
2032			68,840,057		68,840,057		3,155,166		-	71,995,222
2033			68,840,057		68,840,057		3,155,166		-	71,995,222
2034			68,840,057		68,840,057		3,155,166		-	71,995,222
2035			68,840,057		68,840,057		3,155,166		-	71,995,222
2036			68,840,057		68,840,057		3,155,166		-	71,995,222
2037			68,834,426		68,834,426		3,155,166		-	71,989,592
2038			68,348,479		68,348,479		3,155,166		-	71,503,644
2039			57,257,890		57,257,890		3,074,615		-	60,332,505
2040			34,073,419		34,073,419		1,247,534		-	35,320,954
2041			14,726,436		14,726,436		414,907		-	15,141,343
2042			97,953		97,953		23,825		-	121,778

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP				NC IRP			System IRP
2012			5,630				-			5,630
2013			497,208				-			497,208
2014			12,079,376				80,550			12,159,926
2015			46,846,013				1,988,182			48,834,195
2016			100,959,634				4,728,440			105,688,074
2017			169,701,737				7,859,781			177,561,519
2018			238,541,794				11,014,947			249,556,741
2019			307,381,851				14,170,113			321,551,963
2020			376,221,908				17,325,278			393,547,186
2021			445,061,964				20,480,444			465,542,408
2022			513,902,021				23,635,610			537,537,631
2023			582,742,078				26,790,776			609,532,853
2024			651,582,135				29,945,941			681,528,076
2025			720,422,191				33,101,107			753,523,298
2026			789,262,248				36,256,273			825,518,521
2027			858,102,305				39,411,438			897,513,743
2028			926,942,362				42,566,604			969,508,966
2029			995,782,418				45,721,770			1,041,504,188
2030			1,064,622,475				48,876,936			1,113,499,411
2031			1,133,462,532				52,032,101			1,185,494,633
2032			1,202,302,589				55,187,267			1,257,489,855
2033			1,271,142,645				58,342,433			1,329,485,078
2034			1,339,982,702				61,497,598			1,401,480,300
2035			1,408,822,759				64,652,764			1,473,475,523
2036			1,477,662,816				67,807,930			1,545,470,745
2037			1,546,497,242				70,963,096			1,617,460,337
2038			1,614,845,721				74,118,261			1,688,963,982
2039			1,672,103,610				77,192,877			1,749,296,487
2040			1,706,177,030				78,440,411			1,784,617,441
2041			1,720,903,466				78,855,318			1,799,758,784
2042			1,721,001,419				78,879,143			1,799,880,562

Appendix D.21 Non-residential Duct Testing and Sealing Program

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
		VA IRP		VA NLR		NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012		7		7		-		-	7	512	-	512	0.67	-	0.67
2013		472		472		-		-	472	1,336	-	1,336	1.28	-	1.28
2014		2,350		2,350		60		60	2,410	5,601	1,343	5,481	1.14	0.99	1.13
2015		4,652		4,652		326		326	4,978	9,338	8,998	9,320	1.25	1.54	1.27
2016		7,027		7,027		473		134	7,499	12,403	11,185	12,338	1.61	1.93	1.63
2017		7,663		7,663		522		183	8,185	15,469	12,525	15,312	1.72	2.09	1.74
2018		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2019		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2020		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2021		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2022		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2023		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2024		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2025		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2026		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2027		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2028		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2029		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2030		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2031		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2032		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2033		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2034		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2035		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2036		7,663				522			8,185	15,491	12,621	15,338	1.72	2.09	1.74
2037		7,656				522			8,178	15,528	12,621	15,373	1.73	2.09	1.75
2038		7,191				522			7,713	16,769	12,621	16,529	1.76	2.09	1.78
2039		5,313				462			5,776	24,098	16,182	23,512	2.24	2.43	2.25
2040		3,012				195			3,207	47,259	32,830	46,536	4.18	5.14	4.23
2041		637				49			686	181,808	82,981	176,062	7.86	9.86	7.98
2042		(0)				-			(0)	-	-	-	-	-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
Net Peak Demand (kW)										Net kWh/Participant			Net kW/Participant		
		VA IRP				NC IRP			System IRP	VA	NC	System	VA	NC	System
2012		7				-			7	512	-	512	0.67	-	0.67
2013		472				-			472	1,351	-	1,351	1.28	-	1.28
2014		2,350				60			2,410	5,841	1,343	5,714	1.14	0.99	1.13
2015		4,652				326			4,978	12,583	9,378	12,410	1.25	1.54	1.27
2016		7,027				473			7,499	23,140	19,300	22,936	1.61	1.93	1.63
2017		7,663				522			8,185	38,187	31,439	37,827	1.72	2.09	1.74
2018		7,663				522			8,185	53,677	44,060	53,165	1.72	2.09	1.74
2019		7,663				522			8,185	69,168	56,680	68,503	1.72	2.09	1.74
2020		7,663				522			8,185	84,658	69,301	83,840	1.72	2.09	1.74
2021		7,663				522			8,185	100,149	81,922	99,178	1.72	2.09	1.74
2022		7,663				522			8,185	115,640	94,542	114,516	1.72	2.09	1.74
2023		7,663				522			8,185	131,130	107,163	129,854	1.72	2.09	1.74
2024		7,663				522			8,185	146,621	119,784	145,191	1.72	2.09	1.74
2025		7,663				522			8,185	162,111	132,404	160,529	1.72	2.09	1.74
2026		7,663				522			8,185	177,602	145,025	175,867	1.72	2.09	1.74
2027		7,663				522			8,185	193,092	157,646	191,204	1.72	2.09	1.74
2028		7,663				522			8,185	208,583	170,266	206,542	1.72	2.09	1.74
2029		7,663				522			8,185	224,073	182,887	221,880	1.72	2.09	1.74
2030		7,663				522			8,185	239,564	195,508	237,218	1.72	2.09	1.74
2031		7,663				522			8,185	255,055	208,128	252,555	1.72	2.09	1.74
2032		7,663				522			8,185	270,545	220,749	267,893	1.72	2.09	1.74
2033		7,663				522			8,185	286,036	233,370	283,231	1.72	2.09	1.74
2034		7,663				522			8,185	301,526	245,990	298,568	1.72	2.09	1.74
2035		7,663				522			8,185	317,017	258,611	313,906	1.72	2.09	1.74
2036		7,663				522			8,185	332,507	271,232	329,244	1.72	2.09	1.74
2037		7,663				522			8,185	347,997	283,852	344,580	1.72	2.09	1.74
2038		7,663				522			8,185	363,377	296,473	359,813	1.72	2.09	1.74
2039		7,663				522			8,185	376,261	308,772	372,666	1.72	2.09	1.74
2040		7,663				522			8,185	383,928	313,762	380,191	1.72	2.09	1.74
2041		7,663				522			8,185	387,242	315,421	383,417	1.72	2.09	1.74
2042		7,663				522			8,185	387,264	315,517	383,443	1.72	2.09	1.74

Appendix D.22 Non-residential Energy Audit Program

PROGRAM: Non-Residential Energy Audit
DSM Phase II Program
Type: Energy Efficiency
Program Measure Life: 7.0 years

Table 1		Participation Program Participants										
Month	Year	VA				NC				System		
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP E+G
November	2012	0		0		0						0
December	2012	1		1		1						1
January	2013	0		1		1						1
February	2013	0		1		1						1
March	2013	0		1		1						1
April	2013	0		1		1						1
May	2013	26		27		27						27
June	2013	7		34		34						34
July	2013	2		36		36						36
August	2013	3		39		39						39
September	2013	6		45		45						45
October	2013	88		133		133						133
November	2013	72		205		205						205
December	2013	98		303		303						303
January	2014	54		357		357	0		0			357
February	2014	72		429		429	0		0			429
March	2014	31		460		460	0		0			460
April	2014	70		530		530	0		0			530
May	2014	136		666		666	0		0			666
June	2014	41		707		707	0		0			707
July	2014	52		759		759	0		0			759
August	2014	114		873		873	0		0			873
September	2014	207		1,080		1,080	0		0		0	1,080
October	2014	145		1,225		1,225	2		2		2	1,227
November	2014	174		1,399		1,399	14		16		16	1,415
December	2014	20		1,419		1,419	0		16		16	1,435
January	2015	20		1,439		1,439	0		16		16	1,455
February	2015	16		1,455		1,455	0		16		16	1,471
March	2015	7		1,462		1,462	0		16		16	1,478
April	2015	2		1,464		1,464	0		16		16	1,480
May	2015	0		1,464		1,464	0		16		16	1,480
June	2015	0		1,464		1,464	1		17		17	1,481
July	2015	17		1,481		1,481	17		34		34	1,515
August	2015	10		1,491		1,491	60		94		94	1,585
September	2015	0		1,491		1,491	0		94		94	1,585
October	2015	0		1,491		1,491	0		94		94	1,585
November	2015	0		1,491		1,491	0		94		94	1,585
December	2015	1		1,492		1,492	0		94		94	1,586
January	2016	6		1,498		1,498	0		94		94	1,592
February	2016	1		1,499		1,499	0		94		94	1,593
March	2016	0		1,499		1,499	0		94		94	1,593
April	2016	0		1,499		1,499	0		94		94	1,593
May	2016	1		1,500		1,500	0		94		94	1,594
June	2016	7		1,507		1,507	0		94		94	1,601
July	2016	0		1,507		1,507	3		97	3	97	1,604
August	2016	11		1,518		1,518	7		104	10	104	1,622
September	2016	13		1,531		1,531	1		105	11	105	1,636
October	2016	29		1,560		1,560	3		108	14	108	1,668
November	2016	34		1,594		1,594	0		108	14	14	1,702
December	2016	23		1,617		1,617	0		108		14	1,725
January	2017	13		1,630		1,630	0		108		14	1,738
February	2017	1		1,631		1,631	1		109		15	1,740
March	2017	1		1,632		1,632	1		110		16	1,742
April	2017	0		1,632		1,632	0		110		16	1,742
May	2017	0		1,632		1,632	0		110		16	1,742
June	2017	0		1,632		1,632	0		110		16	1,742
July	2017	0		1,632		1,632	0		110		16	1,742
August	2017	0		1,632		1,632	0		110		16	1,742
September	2017	0		1,632		1,632	0		110		16	1,742
October	2017	0		1,632		1,632	0		110		16	1,742
November	2017	0		1,632		1,632	0		110		16	1,742
December	2017	0		1,632		1,632	0		110		16	1,742

Appendix D.22 Non-residential Energy Audit Program

Table 1		Energy Savings												
Month	Year	Net kWh										System Cum for IRP		
		VA					NC							
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
November	2012	0		0		0								0
December	2012	2,878		2,878		2,878								2,878
January	2013	0		2,878		2,878								2,878
February	2013	0		2,878		2,878								2,878
March	2013	0		2,878		2,878								2,878
April	2013	0		2,878		2,878								2,878
May	2013	13,873		16,751		16,751								16,751
June	2013	1,555		18,306		18,306								18,306
July	2013	3		18,309		18,309								18,309
August	2013	82		18,391		18,391								18,391
September	2013	166		18,557		18,557								18,557
October	2013	134,241		152,797		152,797								152,797
November	2013	66,268		219,066		219,066								219,066
December	2013	47,895		266,961		266,961								266,961
January	2014	136,410		403,371		403,371	0		0			0		403,371
February	2014	148,681		552,052		552,052	0		0			0		552,052
March	2014	11,801		563,853		563,853	0		0			0		563,853
April	2014	272,405		836,258		836,258	0		0			0		836,258
May	2014	153,357		989,614		989,614	0		0			0		989,614
June	2014	83,188		1,072,802		1,072,802	0		0			0		1,072,802
July	2014	139,267		1,212,070		1,212,070	0		0			0		1,212,070
August	2014	74,521		1,286,590		1,286,590	0		0			0		1,286,590
September	2014	376,592		1,663,182		1,663,182	0		0			0		1,663,182
October	2014	130,550		1,793,732		1,793,732	5,452		5,452			5,452		1,799,185
November	2014	856,785		2,650,518		2,650,518	35,192		40,644			40,644		2,691,162
December	2014	34,249		2,684,766		2,684,766	0		40,644			40,644		2,725,411
January	2015	24,367		2,709,133		2,709,133	0		40,644			40,644		2,749,777
February	2015	17,323		2,726,457		2,726,457	0		40,644			40,644		2,767,101
March	2015	3,675		2,730,131		2,730,131	0		40,644			40,644		2,770,775
April	2015	20		2,730,152		2,730,152	0		40,644			40,644		2,770,796
May	2015	0		2,730,152		2,730,152	0		40,644			40,644		2,770,796
June	2015	0		2,730,152		2,730,152	150		40,794			40,794		2,770,946
July	2015	95		2,730,247		2,730,247	7,449		48,242			48,242		2,778,489
August	2015	65		2,730,312		2,730,312	5,193		53,436			53,436		2,783,747
September	2015	0		2,730,312		2,730,312	0		53,436			53,436		2,783,747
October	2015	0		2,730,312		2,730,312	0		53,436			53,436		2,783,747
November	2015	0		2,730,312		2,730,312	0		53,436			53,436		2,783,747
December	2015	5		2,730,317		2,730,317	0		53,436			53,436		2,783,753
January	2016	-491		2,729,826		2,729,826	0		53,436			53,436		2,783,261
February	2016	8		2,729,834		2,729,834	0		53,436			53,436		2,783,270
March	2016	0		2,729,834		2,729,834	0		53,436			53,436		2,783,270
April	2016	0		2,729,834		2,729,834	0		53,436			53,436		2,783,270
May	2016	3,871		2,733,705		2,733,705	0		53,436			53,436		2,787,141
June	2016	187,661		2,921,366		2,921,366	0		53,436			53,436		2,974,801
July	2016	9,027		2,930,393		2,930,393	0		53,436	0		53,436		2,983,829
August	2016	41,133		2,971,526		2,971,526	164		53,600	164		53,600		3,025,126
September	2016	37,091		3,008,617		3,008,617	17		53,617	181		53,617		3,062,233
October	2016	38,106		3,046,723		3,046,723	11,559		65,176	11,740		65,176		3,111,899
November	2016	110,895		3,157,619		3,157,619	0		65,176	11,740		11,740		3,222,794
December	2016	90,358		3,247,977		3,247,977	9,391		74,567			21,131		3,322,543
January	2017	11,105		3,259,082		3,259,082	18,174		92,741			39,305		3,351,822
February	2017	1,662		3,260,743		3,260,743	16,777		109,517			56,082		3,370,261
March	2017	771		3,261,515		3,261,515	6,026		115,543			62,107		3,377,058
April	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058
May	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058
June	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058
July	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058
August	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058
September	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058
October	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058
November	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058
December	2017	0		3,261,515		3,261,515	0		115,543			62,107		3,377,058

Appendix D.22 Non-residential Energy Audit Program

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Month	Year	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA				NC				System			VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
November	2012	0		0		0					0		-		-	-	-	-
December	2012	10		10		10					10		2,878		2,878	9.80		9.80
January	2013	0		10		10					10		2,878		2,878	9.80		9.80
February	2013	0		10		10					10		2,878		2,878	9.80		9.80
March	2013	0		10		10					10		2,878		2,878	9.80		9.80
April	2013	0		10		10					10		2,878		2,878	9.80		9.80
May	2013	20		30		30					30		620		620	1.11		1.11
June	2013	2		32		32					32		538		538	0.95		0.95
July	2013	0		32		32					32		509		509	0.90		0.90
August	2013	0		32		32					32		472		472	0.83		0.83
September	2013	0		33		33					33		412		412	0.73		0.73
October	2013	415		448		448					448		1,149		1,149	3.37		3.37
November	2013	200		648		648					648		1,069		1,069	3.16		3.16
December	2013	94		743		743					743		881		881	2.45		2.45
January	2014	202		945		945	0			0	945		1,130		1,130	2.65		2.65
February	2014	209		1,154		1,154	0			0	1,154		1,287		1,287	2.69		2.69
March	2014	17		1,171		1,171	0			0	1,171		1,226		1,226	2.55		2.55
April	2014	378		1,549		1,549	0			0	1,549		1,578		1,578	2.92		2.92
May	2014	214		1,764		1,764	0			0	1,764		1,486		1,486	2.65		2.65
June	2014	114		1,878		1,878	0			0	1,878		1,517		1,517	2.66		2.66
July	2014	194		2,072		2,072	0			0	2,072		1,597		1,597	2.73		2.73
August	2014	107		2,179		2,179	0			0	2,179		1,474		1,474	2.50		2.50
September	2014	165		2,344		2,344	0			0	2,344		1,540		1,540	2.17		2.17
October	2014	48		2,392		2,392	7			7	2,399		1,464	2,726	1,466	1.95	3.74	1.96
November	2014	56		2,448		2,448	48			56	2,503		1,895	2,540	1,902	1.75	3.48	1.77
December	2014	21		2,469		2,469	0			56	2,525		1,892	2,540	1,899	1.74	3.48	1.76
January	2015	5		2,474		2,474	0			56	2,530		1,883	2,540	1,890	1.72	3.48	1.74
February	2015	1		2,475		2,475	0			56	2,531		1,874	2,540	1,881	1.70	3.48	1.72
March	2015	0		2,476		2,476	0			56	2,531		1,867	2,540	1,875	1.69	3.48	1.71
April	2015	0		2,476		2,476	0			56	2,531		1,865	2,540	1,872	1.69	3.48	1.71
May	2015	0		2,476		2,476	0			56	2,531		1,865	2,540	1,872	1.69	3.48	1.71
June	2015	0		2,476		2,476	0			56	2,532		1,865	2,400	1,871	1.69	3.29	1.71
July	2015	0		2,476		2,476	11			67	2,543		1,844	1,419	1,834	1.67	1.98	1.68
August	2015	0		2,476		2,476	9			76	2,552		1,831	568	1,756	1.66	0.81	1.61
September	2015	0		2,476		2,476	0			76	2,552		1,831	568	1,756	1.66	0.81	1.61
October	2015	0		2,476		2,476	0			76	2,552		1,831	568	1,756	1.66	0.81	1.61
November	2015	0		2,476		2,476	0			76	2,552		1,831	568	1,756	1.66	0.81	1.61
December	2015	0		2,476		2,476	0			76	2,552		1,830	568	1,755	1.66	0.81	1.61
January	2016	0		2,476		2,476	0			76	2,552		1,822	568	1,748	1.65	0.81	1.60
February	2016	0		2,476		2,476	0			76	2,552		1,821	568	1,747	1.65	0.81	1.60
March	2016	0		2,476		2,476	0			76	2,552		1,821	568	1,747	1.65	0.81	1.60
April	2016	0		2,476		2,476	0			76	2,552		1,821	568	1,747	1.65	0.81	1.60
May	2016	5		2,481		2,481	0			76	2,557		1,822	568	1,749	1.65	0.81	1.60
June	2016	254		2,735		2,735	0			76	2,811		1,939	568	1,858	1.81	0.81	1.76
July	2016	12		2,747		2,747	0			76	2,823		1,945	551	1,860	1.82	0.78	1.76
August	2016	56		2,803		2,803	0			76	2,879		1,958	515	1,865	1.85	0.73	1.78
September	2016	50		2,853		2,853	0			76	2,929		1,965	511	1,872	1.86	0.73	1.79
October	2016	52		2,905		2,905	16			92	2,997		1,953	603	1,866	1.86	0.85	1.80
November	2016	151		3,055		3,055	0			92	3,147		1,981	603	1,894	1.92	0.85	1.85
December	2016	122		3,178		3,178	13			105	3,282		2,009	690	1,926	1.97	0.97	1.90
January	2017	15		3,193		3,193	35			140	3,333		1,999	859	1,929	1.96	1.30	1.92
February	2017	3		3,196		3,196	33			173	3,369		1,999	1,005	1,937	1.96	1.58	1.94
March	2017	1		3,197		3,197	12			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
April	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
May	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
June	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
July	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
August	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
September	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
October	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
November	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94
December	2017	0		3,197		3,197	0			184	3,382		1,998	1,050	1,939	1.96	1.68	1.94

Appendix D.22 Non-residential Energy Audit Program

Table 1		Participation Program Participants										
Month	Year	VA				NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2018	0		1,632		1,632	0		110		16	1,742
February	2018	0		1,632		1,632	0		110		16	1,742
March	2018	0		1,632		1,632	0		110		16	1,742
April	2018	0		1,632		1,632	0		110		16	1,742
May	2018	0		1,632		1,632	0		110		16	1,742
June	2018	0		1,632		1,632	0		110		16	1,742
July	2018	0		1,632		1,632	0		110		16	1,742
August	2018	0		1,632		1,632	0		110		16	1,742
September	2018	0		1,632		1,632	0		110		16	1,742
October	2018	0		1,632		1,632	0		110		16	1,742
November	2018	0		1,632		1,632	0		110		16	1,742
December	2018	0		1,632		1,632	0		110		16	1,742
January	2019	0		1,632		1,632	0		110		16	1,742
February	2019	0		1,632		1,632	0		110		16	1,742
March	2019	0		1,632		1,632	0		110		16	1,742
April	2019	0		1,632		1,632	0		110		16	1,742
May	2019	0		1,632		1,632	0		110		16	1,742
June	2019	0		1,632		1,632	0		110		16	1,742
July	2019	0		1,632		1,632	0		110	0	16	1,742
August	2019	0		1,632		1,632	0		110	0	16	1,742
September	2019	0		1,632		1,632	0		110	0	16	1,742
October	2019	0		1,632		1,632	0		110	0	16	1,742
November	2019	0		1,632		1,632	0		110	0	16	1,742
December	2019	0	-1	1,631		1,631	0		110	0	0	1,741
January	2020	0	0	1,631		1,631	0		110		0	1,741
February	2020	0	0	1,631		1,631	0		110		0	1,741
March	2020	0	0	1,631		1,631	0		110		0	1,741
April	2020	0	0	1,631		1,631	0		110		0	1,741
May	2020	0	-26	1,605		1,605	0		110		0	1,715
June	2020	0	-7	1,598		1,598	0		110		0	1,708
July	2020	0	-2	1,596		1,596	0		110		0	1,706
August	2020	0	-3	1,593		1,593	0		110		0	1,703
September	2020	0	-6	1,587		1,587	0		110		0	1,697
October	2020	0	-88	1,499		1,499	0		110		0	1,609
November	2020	0	-72	1,427		1,427	0		110		0	1,537
December	2020	0	-98	1,329		1,329	0		110		0	1,439
January	2021	0	-54	1,275		1,275	0		110		0	1,385
February	2021	0	-72	1,203		1,203	0		110		0	1,313
March	2021	0	-31	1,172		1,172	0		110		0	1,282
April	2021	0	-70	1,102		1,102	0		110		0	1,212
May	2021	0	-136	966		966	0		110		0	1,076
June	2021	0	-41	925		925	0		110		0	1,035
July	2021	0	-52	873		873	0		110		0	983
August	2021	0	-114	759		759	0		110		0	869
September	2021	0	-207	552		552	0		110		0	662
October	2021	0	-145	407		407	0	-2	108		-2	515
November	2021	0	-174	233		233	0	-14	94		-16	327
December	2021	0	-20	213		213	0	0	94		-16	307
January	2022	0	-20	193		193	0	0	94		-16	287
February	2022	0	-16	177		177	0	0	94		-16	271
March	2022	0	-7	170		170	0	0	94		-16	264
April	2022	0	-2	168		168	0	0	94		-16	262
May	2022	0	0	168		168	0	0	94		-16	262
June	2022	0	0	168		168	0	-1	93		-17	261
July	2022	0	-17	151		151	0	-17	76		-34	227
August	2022	0	-10	141		141	0	-60	16		-94	157
September	2022	0	0	141		141	0	0	16		-94	157
October	2022	0	0	141		141	0	0	16		-94	157
November	2022	0	0	141		141	0	0	16		-94	157
December	2022	0	-1	140		140	0	0	16		-94	156

Appendix D.22 Non-residential Energy Audit Program

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
February	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
March	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
April	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
May	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
June	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
July	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
August	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
September	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
October	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
November	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
December	2018	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
January	2019	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
February	2019	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
March	2019	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
April	2019	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
May	2019	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
June	2019	0		3,261,515		3,261,515	0		115,543		62,107	3,377,058
July	2019	0		3,261,515		3,261,515	0		115,543	0	62,107	3,377,058
August	2019	0		3,261,515		3,261,515	0		115,543	0	62,107	3,377,058
September	2019	0		3,261,515		3,261,515	0		115,543	0	62,107	3,377,058
October	2019	0		3,261,515		3,261,515	0		115,543	0	62,107	3,377,058
November	2019	0		3,261,515		3,261,515	0		115,543	0	62,107	3,377,058
December	2019	0	-2,878	3,258,637		3,258,637	0		115,543	0	62,107	3,374,180
January	2020	0	0	3,258,637		3,258,637	0		115,543	0	62,107	3,374,180
February	2020	0	0	3,258,637		3,258,637	0		115,543	0	62,107	3,374,180
March	2020	0	0	3,258,637		3,258,637	0		115,543	0	62,107	3,374,180
April	2020	0	0	3,258,637		3,258,637	0		115,543	0	62,107	3,374,180
May	2020	0	-13,873	3,244,764		3,244,764	0		115,543	0	62,107	3,360,307
June	2020	0	-1,555	3,243,209		3,243,209	0		115,543	0	62,107	3,358,752
July	2020	0	-3	3,243,206		3,243,206	0		115,543	0	62,107	3,358,749
August	2020	0	-82	3,243,124		3,243,124	0		115,543	0	62,107	3,358,667
September	2020	0	-166	3,242,958		3,242,958	0		115,543	0	62,107	3,358,501
October	2020	0	-134,241	3,108,717		3,108,717	0		115,543	0	62,107	3,224,260
November	2020	0	-66,268	3,042,449		3,042,449	0		115,543	0	62,107	3,157,992
December	2020	0	-47,895	2,994,554		2,994,554	0		115,543	0	62,107	3,110,097
January	2021	0	-136,410	2,858,144		2,858,144	0		115,543	0	62,107	2,973,687
February	2021	0	-148,681	2,709,463		2,709,463	0		115,543	0	62,107	2,825,006
March	2021	0	-11,801	2,697,662		2,697,662	0		115,543	0	62,107	2,813,205
April	2021	0	-272,405	2,425,257		2,425,257	0		115,543	0	62,107	2,540,800
May	2021	0	-153,357	2,271,900		2,271,900	0		115,543	0	62,107	2,387,443
June	2021	0	-83,188	2,188,712		2,188,712	0		115,543	0	62,107	2,304,255
July	2021	0	-139,267	2,049,445		2,049,445	0		115,543	0	62,107	2,164,988
August	2021	0	-74,521	1,974,924		1,974,924	0		115,543	0	62,107	2,090,467
September	2021	0	-376,592	1,598,333		1,598,333	0		115,543	0	62,107	1,713,876
October	2021	0	-130,550	1,467,782		1,467,782	0	-5,452	110,091	-5,452	62,107	1,577,873
November	2021	0	-856,785	610,997		610,997	0	-35,192	74,899	-40,644	62,107	685,896
December	2021	0	-34,249	576,748		576,748	0	0	74,899	-40,644	62,107	651,647
January	2022	0	-24,367	552,381		552,381	0	0	74,899	-40,644	62,107	627,280
February	2022	0	-17,323	535,058		535,058	0	0	74,899	-40,644	62,107	609,957
March	2022	0	-3,675	531,383		531,383	0	0	74,899	-40,644	62,107	606,282
April	2022	0	-20	531,363		531,363	0	0	74,899	-40,644	62,107	606,262
May	2022	0	0	531,363		531,363	0	0	74,899	-40,644	62,107	606,262
June	2022	0	0	531,363		531,363	0	-150	74,749	-40,794	62,107	606,112
July	2022	0	-95	531,268		531,268	0	-7,449	67,301	-48,242	62,107	598,569
August	2022	0	-65	531,203		531,203	0	-5,193	62,107	-53,436	62,107	593,311
September	2022	0	0	531,203		531,203	0	0	62,107	-53,436	62,107	593,311
October	2022	0	0	531,203		531,203	0	0	62,107	-53,436	62,107	593,311
November	2022	0	0	531,203		531,203	0	0	62,107	-53,436	62,107	593,311
December	2022	0	-5	531,198		531,198	0	0	62,107	-53,436	62,107	593,305

Appendix D.22 Non-residential Energy Audit Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW					NC					System	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		VA	NC	System	VA	NC	System
January	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
February	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
March	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
April	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
May	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
June	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
July	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
August	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
September	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
October	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
November	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
December	2018	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
January	2019	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
February	2019	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
March	2019	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
April	2019	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
May	2019	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
June	2019	0		3,197		3,197	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
July	2019	0		3,197		3,197	0		184	0	109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
August	2019	0		3,197		3,197	0		184	0	109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
September	2019	0		3,197		3,197	0		184	0	109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
October	2019	0		3,197		3,197	0		184	0	109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
November	2019	0		3,197		3,197	0		184	0	109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
December	2019	0	-10	3,187		3,187	0		184	0	109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
January	2020	0	0	3,187		3,187	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
February	2020	0	0	3,187		3,187	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
March	2020	0	0	3,187		3,187	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
April	2020	0	0	3,187		3,187	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
May	2020	0	-20	3,167		3,167	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
June	2020	0	-2	3,165		3,165	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
July	2020	0	0	3,165		3,165	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
August	2020	0	0	3,165		3,165	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
September	2020	0	0	3,164		3,164	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
October	2020	0	-415	2,749		2,749	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
November	2020	0	-200	2,549		2,549	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
December	2020	0	-94	2,454		2,454	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
January	2021	0	-202	2,252		2,252	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
February	2021	0	-209	2,043		2,043	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
March	2021	0	-17	2,026		2,026	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
April	2021	0	-378	1,648		1,648	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
May	2021	0	-214	1,433		1,433	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
June	2021	0	-114	1,319		1,319	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
July	2021	0	-194	1,125		1,125	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
August	2021	0	-107	1,018		1,018	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
September	2021	0	-165	853		853	0		184		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
October	2021	0	-48	805		805	0	-7	177		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
November	2021	0	-56	749		749	0	-48	129		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
December	2021	0	-21	728		728	0	0	129		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
January	2022	0	-5	723		723	0	0	129		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
February	2022	0	-1	722		722	0	0	129		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
March	2022	0	0	721		721	0	0	129		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
April	2022	0	0	721		721	0	0	129		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
May	2022	0	0	721		721	0	0	129		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
June	2022	0	0	721		721	0	0	129		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
July	2022	0	0	721		721	0	-11	117		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
August	2022	0	0	721		721	0	-9	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
September	2022	0	0	721		721	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
October	2022	0	0	721		721	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
November	2022	0	0	721		721	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
December	2022	0	0	721		721	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94

Appendix D.22 Non-residential Energy Audit Program

Table 1		Participation										
Month	Year	Program Participants										System
		VA				NC				System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2023	0	-6	134		134	0	0	16		-94	150
February	2023	0	-1	133		133	0	0	16		-94	149
March	2023	0	0	133		133	0	0	16		-94	149
April	2023	0	0	133		133	0	0	16		-94	149
May	2023	0	-1	132		132	0	0	16		-94	148
June	2023	0	-7	125		125	0	0	16		-94	141
July	2023	0	0	125		125	0	-3	13		-97	138
August	2023	0	-11	114		114	0	-7	6		-104	120
September	2023	0	-13	101		101	0	-1	5		-105	106
October	2023	0	-29	72		72	0	-3	2		-108	74
November	2023	0	-34	38		38	0	0	2		-108	40
December	2023	0	-23	15		15	0	0	2		-108	17
January	2024	0	-13	2		2	0	0	2		-108	4
February	2024	0	-1	1		1	0	-1	1		-109	2
March	2024	0	-1	0		0	0	-1	0		-110	0
April	2024	0	0	0		0	0	0	0		-110	0
May	2024	0	0	0		0	0	0	0		-110	0
June	2024	0	0	0		0	0	0	0		-110	0
July	2024	0	0	0		0	0	0	0		-110	0
August	2024	0	0	0		0	0	0	0		-110	0
September	2024	0	0	0		0	0	0	0		-110	0
October	2024	0	0	0		0	0	0	0		-110	0
November	2024	0	0	0		0	0	0	0		-110	0
December	2024	0	0	0		0	0	0	0		-110	0

Table 2. EM&V Data Incremental by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2012	1	1	-	-	1					
2013	302	302	-	-	302					
2014	1,116	1,116	16	16	1,132					
2015	73	73	78	78	151					
2016	125	125	14	14	139					
2017	15	15	2	2	17					

Table 3. EM&V Data Annualized by Vintage Year										
	Program Participants									
	VA IRP	VA NLR	NC IRP	NC NLR	System IRP					
2012	1	1	-	-	1					
2013	302	302	-	-	302					
2014	1,116	1,116	16	16	1,132					
2015	73	73	78	78	151					
2016	125	125	14	14	139					
2017	15	15	2	2	17					

Appendix D.22 Non-residential Energy Audit Program

Table 1		Energy Savings										
Month	Year	Net kWh										
		VA				NC				System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
January	2023	0	491	531,689		531,689	0	0	62,107		-53,436	593,797
February	2023	0	-8	531,681		531,681	0	0	62,107		-53,436	593,788
March	2023	0	0	531,681		531,681	0	0	62,107		-53,436	593,788
April	2023	0	0	531,681		531,681	0	0	62,107		-53,436	593,788
May	2023	0	-3,871	527,810		527,810	0	0	62,107		-53,436	589,917
June	2023	0	-187,661	340,149		340,149	0	0	62,107		-53,436	402,257
July	2023	0	-9,027	331,122		331,122	0	0	62,107		-53,436	393,229
August	2023	0	-41,133	289,989		289,989	0	-164	61,943		-53,600	351,932
September	2023	0	-37,091	252,898		252,898	0	-17	61,927		-53,617	314,824
October	2023	0	-38,106	214,791		214,791	0	-11,559	50,368		-65,176	265,159
November	2023	0	-110,895	103,896		103,896	0	0	50,368		-65,176	154,264
December	2023	0	-90,358	13,538		13,538	0	-9,391	40,977		-74,567	54,515
January	2024	0	-11,105	2,433		2,433	0	-18,174	22,802		-92,741	25,236
February	2024	0	-1,662	771		771	0	-16,777	6,026		-109,517	6,797
March	2024	0	-771	0		0	0	-6,026	0		-115,543	0
April	2024	0	0	0		0	0	0	0		-115,543	0
May	2024	0	0	0		0	0	0	0		-115,543	0
June	2024	0	0	0		0	0	0	0		-115,543	0
July	2024	0	0	0		0	0	0	0		-115,543	0
August	2024	0	0	0		0	0	0	0		-115,543	0
September	2024	0	0	0		0	0	0	0		-115,543	0
October	2024	0	0	0		0	0	0	0		-115,543	0
November	2024	0	0	0		0	0	0	0		-115,543	0
December	2024	0	0	0		0	0	0	0		-115,543	0

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			2,878		2,878			-		-	2,878
2013			706,112		706,112			-		-	706,112
2014			12,505,279		12,505,279			86,741		86,741	12,592,020
2015			520,790		520,790			71,706		71,706	592,496
2016			2,173,449		2,173,449			44,956		44,956	2,218,405
2017			159,251		159,251			462,890		462,890	622,142

Table 3. EM&V Data Annualized by Vintage Year											
Net Annualized Energy (kWh/year)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			34,538		34,538			-		-	34,538
2013			3,168,993		3,168,993			-		-	3,168,993
2014			29,013,666		29,013,666			487,729		487,729	29,501,395
2015			546,608		546,608			153,498		153,498	700,106
2016			6,211,917		6,211,917			253,571		253,571	6,465,488
2017			162,456		162,456			491,719		491,719	654,175

Appendix D.22 Non-residential Energy Audit Program

Table 1		Capacity Savings										Energy Savings / Participant			Capacity Savings / Participant			
Month	Year	Net kW										Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA				NC				System		VA	NC	System	VA	NC	System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
January	2023	0	0	721		721	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
February	2023	0	0	721		721	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
March	2023	0	0	721		721	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
April	2023	0	0	721		721	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
May	2023	0	-5	716		716	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
June	2023	0	-254	462		462	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
July	2023	0	-12	450		450	0	0	109		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
August	2023	0	-56	394		394	0	0	108		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
September	2023	0	-50	344		344	0	0	108		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
October	2023	0	-52	292		292	0	-16	93		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
November	2023	0	-151	142		142	0	0	93		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
December	2023	0	-122	19		19	0	-13	80		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
January	2024	0	-15	4		4	0	-35	45		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
February	2024	0	-3	1		1	0	-33	12		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
March	2024	0	-1	0		0	0	-12	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
April	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
May	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
June	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
July	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
August	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
September	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
October	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
November	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94
December	2024	0	0	0		0	0	0	0		109	3,382	1,998	1,050	1,939	1.96	1.68	1.94

Table 2. EM&V Data Incremental by Vintage Year										Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)										kWh/Part			kW/Partic		
		VA IRP		VA NLR		NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012		10		10		-		-	10	2,878	-	2,878	9.80	-	9.80
2013		733		733		-		-	733	2,338	-	2,338	2.43	-	2.43
2014		1,726		1,726		56		56	1,782	11,205	5,421	11,124	1.55	3.48	1.57
2015		7		7		20		20	27	7,134	919	3,924	0.09	0.26	0.18
2016		702		702		29		29	730	17,388	3,211	15,960	5.61	2.04	5.26
2017		19		19		80		80	99	10,617	231,445	36,597	1.29	39.95	5.84

Table 3. EM&V Data Annualized by Vintage Year										Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)										kWh/Part			kW/Partic		
		VA IRP		VA NLR		NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012		10		10		-		-	10	34,538	-	34,538	9.80	-	9.80
2013		733		733		-		-	733	10,493	-	10,493	2.43	-	2.43
2014		1,726		1,726		56		56	1,782	25,998	30,483	26,061	1.55	3.48	1.57
2015		7		7		20		20	27	7,488	1,968	4,636	0.09	0.26	0.18
2016		702		702		29		29	730	49,695	18,112	46,514	5.61	2.04	5.26
2017		19		19		80		80	99	10,830	245,859	38,481	1.29	39.95	5.84

Appendix D.22 Non-residential Energy Audit Program

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants							NC PPI	System	
	VA									
2012								-		
2013								-		
2014								16		
2015								94		
2016								108		
2017								94		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
	Program Participants							NC IRP	NC NLR	System IRP
	VA IRP		VA NLR							
2012	1		1				-	-	1	
2013	303		303				-	-	303	
2014	1,419		1,419				16	16	1,435	
2015	1,492		1,492				94	94	1,586	
2016	1,617		1,617				108	14	1,725	
2017	1,632		1,632				110	16	1,742	
2018	1,632		1,632				110	16	1,742	
2019	1,631						110		1,741	
2020	1,329						110		1,439	
2021	213						94		307	
2022	140						16		156	
2023	15						2		17	
2024	-						-		-	

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants							NC IRP	System IRP	
	VA IRP									
2012	1						-		1	
2013	303						-		303	
2014	1,419						16		1,435	
2015	1,492						94		1,586	
2016	1,617						108		1,725	
2017	1,632						110		1,742	
2018	1,632						110		1,742	
2019	1,632						110		1,742	
2020	1,632						110		1,742	
2021	1,632						110		1,742	
2022	1,632						110		1,742	
2023	1,632						110		1,742	
2024	1,632						110		1,742	

Appendix D.22 Non-residential Energy Audit Program

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
	VA							NC PPI		System
2012								-		
2013								-		
2014								86,741		
2015								559,434		
2016								686,183		
2017								869,960		

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			2,878		2,878			-		-	2,878
2013			740,650		740,650			-		-	740,650
2014			15,708,810		15,708,810			86,741		86,741	15,795,551
2015			32,737,988		32,737,988			559,434		559,434	33,297,422
2016			34,937,254		34,937,254			686,183		579,312	35,623,437
2017			39,134,973		39,134,973			1,357,689		716,462	40,492,662
2018			39,138,178		39,138,178			1,386,517		745,290	40,524,695
2019			39,135,299		39,135,299			1,386,517			40,521,816
2020			38,397,528		38,397,528			1,386,517			39,784,044
2021			23,429,368		23,429,368			1,299,776			24,729,144
2022			6,400,190		6,400,190			827,083			7,227,272
2023			4,200,924		4,200,924			700,334			4,901,257
2024			3,205		3,205			28,828			32,033

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA IRP					NC IRP		System IRP	
2012			2,878					-			2,878
2013			743,528					-			743,528
2014			16,452,338					86,741			16,539,079
2015			49,190,326					646,175			49,836,501
2016			84,127,580					1,332,358			85,459,939
2017			123,262,554					2,690,047			125,952,600
2018			162,400,731					4,076,564			166,477,295
2019			201,536,031					5,463,081			206,999,111
2020			239,933,558					6,849,598			246,783,156
2021			263,362,926					8,149,374			271,512,300
2022			269,763,116					8,976,457			278,739,572
2023			273,964,039					9,676,790			283,640,829
2024			273,967,244					9,705,619			283,672,862

Appendix D.22 Non-residential Energy Audit Program

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)						Net kW				Net kWh/Participant			Net kW/Participant		
	VA						NC PPI			System	VA	NC	System	VA	NC	System
2012							-					-			-	
2013							-					-			-	
2014							56					5,421			3.48	
2015							76					5,951			0.81	
2016							105					6,354			0.97	
2017							129					9,255			1.37	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	Net Peak Demand (kW)										kWh/Part			kW/Partic		
	VA		VA IRP		VA NLR		NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			10		10		-		-	10	2,878	-	2,878	9.80	-	9.80
2013			743		743		-		-	743	2,444	-	2,444	2.45	-	2.45
2014			2,469		2,469		56		56	2,525	11,070	5,421	11,007	1.74	3.48	1.76
2015			2,476		2,476		76		76	2,552	21,942	5,951	20,995	1.66	0.81	1.61
2016			3,178		3,178		105		29	3,282	21,606	6,354	20,651	1.97	0.97	1.90
2017			3,197		3,197		184		109	3,382	23,980	12,343	23,245	1.96	1.68	1.94
2018			3,197		3,197		184		109	3,382	23,982	12,605	23,263	1.96	1.68	1.94
2019			3,187				184			3,372	23,995	12,605	23,275	1.95	1.68	1.94
2020			2,454				184			2,639	28,892	12,605	27,647	1.85	1.68	1.83
2021			728				129			857	109,997	13,827	80,551	3.42	1.37	2.79
2022			721				109			830	45,716	51,693	46,329	5.15	6.78	5.32
2023			19				80			99	280,062	350,167	288,309	1.29	39.95	5.84
2024			0				0			0	-	-	-	-	-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											Lifetime Energy Savings/Participant			Lifetime Capacity Savings/Participant		
	Net Peak Demand (kW)										kWh/Part			kW/Partic		
	VA		VA IRP				NC IRP			System IRP	VA	NC	System	VA	NC	System
2012			10				-			10	2,878	-	2,878	9.80	-	9.80
2013			743				-			743	2,454	-	2,454	2.45	-	2.45
2014			2,469				56			2,525	11,594	5,421	11,525	1.74	3.48	1.76
2015			2,476				76			2,552	32,969	6,874	31,423	1.66	0.81	1.61
2016			3,178				105			3,282	52,027	12,337	49,542	1.97	0.97	1.90
2017			3,197				184			3,382	75,529	24,455	72,303	1.96	1.68	1.94
2018			3,197				184			3,382	99,510	37,060	95,567	1.96	1.68	1.94
2019			3,197				184			3,382	123,490	49,664	118,828	1.96	1.68	1.94
2020			3,197				184			3,382	147,018	62,269	141,667	1.96	1.68	1.94
2021			3,197				184			3,382	161,374	74,085	155,862	1.96	1.68	1.94
2022			3,197				184			3,382	165,296	81,604	160,011	1.96	1.68	1.94
2023			3,197				184			3,382	167,870	87,971	162,825	1.96	1.68	1.94
2024			3,197				184			3,382	167,872	88,233	162,843	1.96	1.68	1.94



Appendix E. Glossary of Terms

APPENDIX E. GLOSSARY OF TERMS

Below is a list of selected key terms used in energy efficiency impact evaluation. All terms below are from the Glossary of Terms (Version 1.0): A Project of the Regional Evaluation, Measurement and Verification Forum, Mar. 2009. Prepared by Paul Horowitz of PAH Associates for the Northeast Energy Efficiency Partnerships.

Assumed Error Ratio – The strength of the association between the actual value and the estimated value. It is the primary driver of the sample size required to satisfy a given confidence interval.

Coincidence Factor - The ratio, expressed as a numerical value or as a percentage, of the simultaneous maximum demand within a specified period of a group of electrical appliances or consumers within a specified period, to the sum of their individual maximum demands within the same period.

Confidence - An indication of how close, expressed as a probability, the true value of the quantity in question is within a specified distance to the estimate of the value. Confidence is the likelihood that the evaluation has captured the true value of a variable within a certain estimated range. Also see Precision.

Deemed Savings - An estimate of energy or demand savings for a single unit of an installed energy efficiency measure that (a) has been developed from data sources and analytical methods that are widely considered acceptable for the measure and purpose, and (b) is applicable to the situation being evaluated. Individual parameters or calculation methods can also be deemed.

Energy Efficiency Measure - An installed piece of equipment or system, or modification of equipment, systems, or operations on end-use customer facilities that reduces the total amount of electrical energy and capacity that would otherwise have been needed to deliver an equivalent or improved level of end-use service.

Evaluation, Measurement and Verification (EM&V) - A subset of program impact evaluation that is associated with the documentation of energy savings at individual sites or projects using one or more methods that can involve measurements, engineering calculations, statistical analyses, and/or computer simulation modeling.

Ex Ante Savings Estimate - Forecasted savings used for program and portfolio planning purposes.

Ex Post Savings Estimate - Savings estimate reported by an evaluator after the energy impact evaluation has been completed.

Free Driver - A program non-participant who has adopted a particular efficiency measure or practice as a result of the evaluated program. Also see Spillover.

Free-Rider - A program participant who would have implemented the program measure or practice in the absence of the program. Free-riders can be (1) total, in which the participant's activity would have completely replicated the program measure; (2) partial, in which the participant's activity would have

partially replicated the program measure; or (3) deferred, in which the participant's activity would have completely replicated the program measure, but at a future time than the program's timeframe.

Free-Ridership Rate - The percent of savings attributable to free-riders.

Gross Savings - The change in energy consumption and/or demand that results directly from program-related actions taken by participants in an efficiency program, regardless of why they participated.

Impact Evaluation - An evaluation of the program-specific measures directly induced quantitative changes (e.g., kWh, kW) attributable to an energy efficiency program.

Load Shapes - Representations such as graphs, tables, and databases that show the time-of-use pattern of customer or equipment energy use. These are typically shown over a 24 hour or whole year (8760 hours) period.

Model Based Statistical Sampling - MBSS™ methodology is used to develop efficient sample designs and to assess the likely statistical precision.

Net Savings - The total change in load that is attributable to an energy efficiency program. This change in load may include, implicitly or explicitly, the effects of free drivers, free-riders, energy efficiency standards, changes in the level of energy service, and other causes of changes in energy consumption or demand.

Peak Demand - The maximum level of metered demand during a specified period, such as a billing month or a peak demand period.


Peak Load - The highest electrical demand within a particular period of time. Daily electric peaks on weekdays typically occur in late afternoon and early evening. Annual peaks typically occur on hot summer days.

Precision - The indication of the closeness of agreement among repeated measurements of the same physical quantity. It is also used to represent the degree to which an estimated result in social science (e.g. energy savings) would be replicated with repeated studies.

Prescriptive Program - An energy efficiency program focused on measures that are one-for-one replacements of the existing equipment and for which fixed customer incentives can be developed based on the anticipated similar savings that will accrue from their installation.

Program Participant - A consumer that received a service offered through an efficiency program in a given program year. The term "service" can be one or more of a wide variety of services, including financial rebates, technical assistance, product installations, training, energy efficiency information or other services, items, or conditions.

Realization Rate - The term is used in several contexts in the development of reported program savings. The primary applications include the ratio of project tracking system savings data (e.g., initial estimates of



project savings) to savings (1) adjusted for data errors, (2) that incorporate evaluated or verified results of the tracked savings, and (3) that account for free-ridership and/or spillover.

Representative Sample - A sample that has approximately the same distribution of characteristics as the population from which it was drawn.

Sampling Error - The error that is caused by observing a sample and not the entire population.

Spillover - Reductions in energy consumption and/or demand caused by the presence of an energy efficiency program, beyond the program-related gross savings of the participants and without financial or technical assistance from the program.

Standard Error - A measure of the variability in a data sample, how far a “typical” data point is from the mean of a sample. In a large sample, about 2/3 of observations lie within one standard error of the mean, and 95% of observations lie within two standard errors.

Stratified Ratio Estimation - A sampling method that combines a stratified sample design with a ratio estimator to reduce the coefficient of variation by using the correlation of a known measure for the unit (*e.g.*, expected energy savings) to stratify the population and allocate sample from strata for optimal sampling.

Verification - An independent assessment of the reliability (considering completeness and accuracy) of claimed energy savings



Appendix F. Standard Tracking and Engineering Protocols (STEP) Manual Version 10



**Appendix F-1. Standard Tracking and Engineering Protocols
(STEP) Manual for Residential Programs Version 10**

Appendix F1 Standard Tracking and Engineering Protocols Manual for Residential Programs

(Version 10.0.0)

Protocols to Track Demand-Side Management Programs (DSM)
Resource Savings

Virginia Electric and Power Company

Prepared by DNV GL Energy Insights USA, Inc.

May 1, 2020





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1 INTRODUCTION

This manual presents Standard Tracking and Engineering Protocols (STEP) for demand-side management (DSM) programs approved by State Corporation Commission of Virginia (SCC) Order as well as the North Carolina Utilities Commission's (NCUC) Orders. These protocols assess gross program impacts and resource savings, including annual electric energy and peak capacity savings, for technologies and measures supported by Virginia Electric and Power Company (Dominion, or the Company) in Virginia and North Carolina. Protocols to determine resource savings for each program are presented for each eligible measure and technology.

1.1 Purpose

The STEP Manual was developed to estimate resource savings from installed DSM technologies and measures, and will serve as the primary estimates of annual energy and peak demand reductions for tracking, monitoring, and reporting. Consulting firm DNV GL, under contract with Dominion, developed the STEP Manual using industry-standard approaches for estimating annual energy savings and peak demand reductions. This document references authoritative studies in Technical Reference Manuals (TRMs) issued by regulatory agencies in other states, primarily the Mid-Atlantic TRM version 2016 managed by the Northeast Energy Efficiency Partnerships (NEEP) for its Mid-Atlantic partners, Maryland, Delaware, and the District of Columbia, with significant involvement by the respective states' Public Service Commissions (PSCs). Other reference sources include TRMs and impact study results from California, Connecticut, Maine, Massachusetts, New Jersey, New York, Michigan, North Carolina, Ohio, Pennsylvania, the Tennessee Valley Authority, and Vermont, as well as other engineering resources such as the American Society of Heating, Refrigeration & Air Conditioner Engineers (ASHRAE), the 2012 International Energy Conservation Code, the National Electrical Manufacturers Association (NEMA) Standards Publication Condensed MG 1-2007, ENERGY STAR®, the US Energy Information Administration (2005). Residential Energy Consumption Survey and Commercial Building Energy Consumption Survey, and the Energy Conservatory.

The STEP Manual is not intended to be the sole source or final word on gross annual energy and peak demand reductions estimates. Rather, the STEP Manual will serve as the foundation to guide ongoing program operations and as the basis for further refinement through Evaluation, Measurement & Verification (EM&V). Savings estimates from the STEP Manual will be coupled with the results of actual EM&V activities to calibrate the annual energy and peak demand reductions estimates derived from the STEP Manual to report population level estimates.

This version of the STEP Manual is version 10.0.0 (v10.0.0). This version is currently designed to estimate gross savings in concert with program tracking data received from Dominion through its Business Intelligence (BI) data system, which is populated by its program implementation vendors. Dominion has developed data specification requirements (listed in Table 1-10) for each of the programs and this STEP manual is designed to leverage that data.

Table 1-1: Program Tracking Data Specifications

Program	Data Specification Version	
	Virginia	North Carolina
Residential Income and Age Qualifying Home Improvement (DSM Phase IV)	1.2	1.2
Residential Retail LED Lighting	N/A	N/A
Residential AC Cycling	2.0	-
Residential Home Energy Assessment(DSM Phase VII)	7.12	N/A
Residential Efficient Product Marketplace	4.0	4.0
Residential Appliance Recycling (DSM Phase IV)	1.1	1.1
Residential Appliance Recycling (DSM Phase VII)	7.6	N/A
Residential Home Energy Check Up (DSM Phase III)	1.3	1.0
Residential Heat Pump Upgrade (DSM Phase III)	3.0	2.0
Residential Heat Pump Tune Up (DSM Phase III)	2.0	2.0
Residential Duct Sealing (DSM Phase III)	1.7	1.0
Non-residential Energy Audit (DSM Phase III)	5.0	1.0
Non-residential Lighting Systems and Controls (DSM Phase III)	4.0	2.0
Non-residential Lighting Systems and Controls (DSM Phase VII)	7.5	7.5
Non-residential Heating and Cooling Efficiency (DSM Phase III)	3.3	3.3
Non-residential Heating and Cooling Efficiency (DSM Phase VII)	7.6	7.5
Non-residential Window Film (DSM Phase III)	2.0	1.0
Non-residential Window Film (DSM Phase VII)	7.3	7.2
Non-residential Small Business Improvement (DSM Phase V)	1.6	1.6
Non-residential Prescriptive (DSM Phase VI)	4.1	4.1
Non-residential Distributed Generation	Final	-
Non-residential Small Manufacturing (DSM Phase VII)	7.1	N/A
Non-residential Small Office (DSM Phase VII)	7.3	N/A

For Dominion, these protocols will also serve the following purposes:

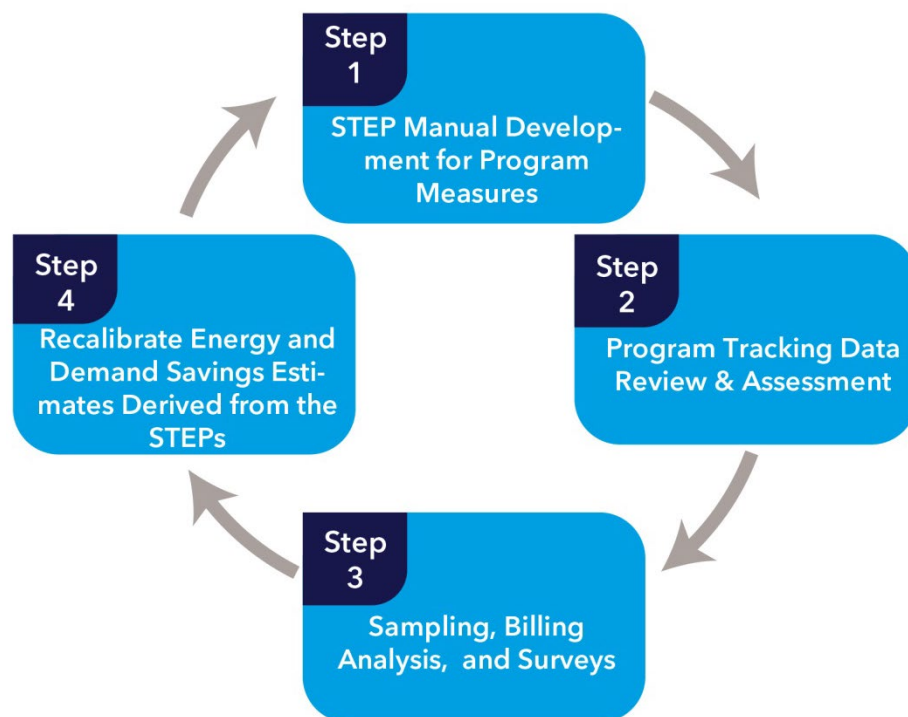
1. Establish a common resource for Dominion’s gross annual energy and peak demand reductions estimates across business units.
2. Ensure all internal parties (e.g., Program Managers, implementation contractors, etc.) use the same protocols, input values, assumptions, and algorithms.
3. Assist in defining program data tracking elements in the change management process.
4. Serve as a basis to assess performance of program implementation progress.

- 5. Allow Dominion Program Managers and their implementation contractors to manage the programs to their annual energy savings (kWh/year) and peak demand (kW) reductions objectives.

Figure 1-1 shows how these protocols shall be updated regularly to reflect the addition of new programs, modifications to existing programs, updates based on measured data, regulatory requirements, and the results of future program evaluations. Some examples of key drivers to updating and revising the STEP Manual include the following:

- Updates of input factors based on primary research
- Updates of input approaches or input factors in source documents of secondary data or revised modeled outputs
- Added efficiency measures
- Corrections of errors in prior STEP Manuals

Figure 1-1: STEP Manual DSM development, measurement, and update cycle



The next scheduled update of the STEP Manual is Fall 2020. This version of the STEP manual (for the May 1, 2020 Virginia and North Carolina EM&V report filing) applies to the period from January 1 through December 31, 2019 in both states.

1.2 Algorithms

The algorithms calculate gross customer electric savings without counting line losses (from the generator to the customer), spillover, or persistence. A free-ridership assumption is specified for each program. For energy efficiency programs, the algorithms are driven by a change in efficiency level for the installed, energy-efficient (ee) measure compared to a baseline (base) level of efficiency. This change is reflected in both energy savings and demand reductions. The basic algorithms are presented below.

$$\text{Electric demand savings} = \Delta kW = kW_{base} - kW_{ee}$$

$$\text{Annual electric energy savings} = \Delta kWh = \Delta kW \times EFLH$$

$$\text{Electric coincident demand reduction} = \Delta kW \times CF$$

Where:

EFLH = annual equivalent full load hours of operation for the installed measure
CF = coincidence factor

Algorithms for each of the program measures may incorporate additional factors to reflect specific conditions associated with a program or measure such as accounting for coincidence of multiple installations, or interaction between different measures.¹ In some cases, a savings factor is provided in place of the expanded algorithm if the factor is properly documented and applicable.

1.3 Measure Life

Measure lives are provided at the end of each section of this manual devoted to the measures offered as shown in Table 1-2. These are used for estimating lifetime savings for planning or in benefit/cost studies spanning more than one year. Measure lives are included in the initial planning assumptions as filed with the SCC and NCUC state regulatory commissions when each program was considered for approval. Program-level measure lives are a composite estimate of the associated measures that comprise the program.

¹ Interactive effects include those from the installation of multiple measures at a single participant site. Where those interactive effects are accounted for in referenced technical reference manuals, they will also be documented in this STEP Manual.

Table 1-2: Measure Life Assumptions

DSM Phase	Program	Program-Weighted Measure Life (Years)
Residential Programs		
I	Residential Lighting Program	9.40
I	Residential Low Income Program	13.60
II	Residential Duct Testing and Sealing Program	18.00
II	Residential Heat Pump Tune-Up Program	5.00
II	Residential Heat Pump Upgrade Program	15.00
II	Residential Home Energy Check-up Program	10.00
IV	Residential Appliance Recycling Program	8.00
IV	Residential Income and Age Qualifying Home Improvement Program	15.00
V	Residential Retail LED Lighting Program	20.00
VII	Residential Appliance Recycling Program	8.00
VII	Residential Efficient Products Marketplace Program	16.50
VII	Residential Home Energy Assessment Program	12.41
Non-residential Programs		
I	Commercial HVAC Upgrade Program	15.00
I	Commercial Lighting Program	10.00
II	Non-residential Duct Testing and Sealing Program	25.00
II	Non-residential Energy Audit Program	7.00
III	Non-residential Heating and Cooling Efficiency Program	15.00
III	Non-residential Lighting & Controls Program	9.00
III	Non-residential Window Film Program	10.00
V	Non-residential Small Business Improvement Program	14.00
VI	Non-residential Prescriptive Program	6.30
VII	Non-residential Heating and Cooling Efficiency Program	15.00
VII	Non-residential Lighting Systems & Controls Program	10.59
VII	Non-residential Office Program	7.00
VII	Non-residential Small Manufacturing Program	12.24
VII	Non-residential Window Film Program	10.00
Peak-shaving Programs		
I	Residential AC Cycling Program	15.00
II	Non-residential Distributed Generation Program	N/A



1.4 Data and Input Values

Input values and algorithms in the protocols and on the program application forms are based primarily on the best available and applicable data for Dominion's programs. In more detail, the input values are taken primarily from two sources: program application forms completed during enrollment, or from standard values based on measured or industry data. As stated earlier, the STEP Manual leverages the Mid-Atlantic TRM whenever possible.

Many input values, including site-specific data, are taken directly from program application forms, worksheets, and field tools. Site-specific data on the application forms are used for measures with important variations in one or more input values (e.g., delta watts, efficiency rating, capacity, etc.).

Standard input values are based on the best available measured or industry data, including metered data, measured data from prior evaluations (applied prospectively), field data and program results, and standards from industry associations. Many input values are based on evaluations of programs in other similar regions.

For the standard input assumptions for which metered or measured data were not available, the input values (e.g., delta watts, delta efficiency, equipment capacity, operating hours, and coincidence factors) were based on the best available industry data or standards. These input values were developed from a review of literature from industry organizations, equipment manufacturers, and suppliers.

Program evaluation will be used to assess key data and input values to either confirm that current values should continue to be used or update the values going forward.

1.5 Peak Definition

Gross coincident peak demand reduction or potential represents the average expected connected load over a peak period defined by the power system operators. In most cases, demand reductions are calculated using a CF, which represents the fraction of the annual average connected load expected to be coincident with the defined peak period.

Peak demand reduction calculations for individual measures in this document are based on the respective source TRM's demand reduction calculations, as referenced in each section. Depending on the TRM referenced and the jurisdiction that it applies to, peak demand reduction can be defined differently per TRM and thus per measure in this Manual. Table 1-3 lists the peak period definitions for TRMs referenced in this Manual.

The Mid-Atlantic TRM uses data and assumptions specific to the Mid-Atlantic region, wherever possible. For this reason, the DNV GL leverages energy and demand calculations from the Mid-Atlantic TRM in its STEP calculations. However, several assumptions and peak coincidence factors

(CFs) originate in other regions because they are the most transferable resources available.² These other TRMs have some variation in peak performance period definition, geography, climate, and customer characteristics.

Table 1-3: Definition of Peak Demand in STEP Manual Reference TRMs

Peak period definition source	Dates ³	Hours ⁴	TRMs using this period
PJM Summer Peak Performance Hours	June 1 – August 31	2 pm - 6 pm	All versions of the Mid-Atlantic TRM (non-cooling measures); Pennsylvania TRM;
Peak Performance Hours	June 1 – August 31	3 pm - 6 pm Summer: 3 pm – 6 pm	2010 Ohio TRM; 2019 Pennsylvania TRM; 2017 Arkansas TRM
ISO New England Seasonal Peak Demand Savings	Summer: June 1 through August 31 Winter: December 1 through January 31	Summer: 1 pm - 5 pm Winter: 5 pm – 7 pm	2016 CT TRM; 2016 Maine Commercial TRM; 2014 Massachusetts TRM
2011 Avoided Energy Supply Costs in New England Report	Summer: June to September Winter: October to May	7 am – 11 pm	2015 Vermont TRM
Peak Performance Hours	Summer: June 1 through September 30 Winter: December 1 through March 31	Summer: 2 pm – 5 pm Winter: 6 am – 8 am	2016 Tennessee Valley Authority (TVA) TRM
Summer Peak Period	Summer: June to August	Summer: 1 pm – 4 pm	2019 Wisconsin TRM
Peak Period	Summer: June through August (Non-weather sensitive) Summer: July 30 (Weather sensitive) Winter: October to May	Summer: 3 pm – 6 pm (Non-weather sensitive) Summer: 6 pm (Weather sensitive) Winter: 9 am – 10 pm	2019 Iowa TRM

² For more discussion about the transferability of consumption data, see the EM&V Forum Report: Cataloguing Available End-Use and Efficiency Measure Load Data, October 2009 at <http://www.neep.org/file/1010/download?token=XDUhN8Aq>.

³ Excluding weekends and federal holidays

⁴ Local time zone

Peak period definition source	Dates ³	Hours ⁴	TRMs using this period
Summer System Peak	Mid-Atlantic TRM: Summer System Peak days (hottest summer weekdays)	5 pm	2014 Mid-Atlantic TRM (cooling measures)
	TVA TRM: Summer and Winter System Peak hours	Summer: 10 hottest hours Winter: 10 coldest hours	2013 TVA TRM (weather-sensitive measures)
	New York TRM: hottest summer non-holiday weekday in June through August	5 pm	2016 New York TRM

As this Manual provides deemed energy savings and peak demand, impact evaluations conducted on a regular basis can be used to adjust them for Dominion’s needs. Dominion peak demand is defined as the hour ending at 1700 hour on Dominion’s July summer peak day for that year. Coincidence factor is defined as the ratio of this coincident peak load to annual (non-coincident) peak for that measure’s load shape.

Gross coincident demand reduction results are used for comparison against Dominion’s program goals for this same metric. They are also used for bidding energy efficiency resources in wholesale electric capacity markets operated by regional bulk power system operators, such as the PJM Reliability Pricing Model and the ISO New England Forward Capacity Market.


1.6 Program Descriptions and Protocols

Sections 2 through 6 of this appendix provide descriptions of each program and the protocol for calculating energy savings and demand reductions for the measures under each program. For each measure, its section gives the energy savings and demand reduction algorithms, input values, default savings calculations, and sources for the protocols.

Dominion’s residential programs are provided in Sections 2 through 6 and non-residential programs are provided in Appendix F2. Unless the states in which they are implemented are specifically listed below, the programs are implemented in both Virginia and North Carolina.

To go to a particular program’s description and protocol, simply click on one of the provided section links:

- Section 2: Residential Income and Age Qualifying Home Improvement Program, DSM Phase IV
- Section 3: Residential AC Cycling Program, DSM Phase I
- Section 4: Residential Appliance Recycling Program, DSM Phase VII

- 
- Section 5: Residential Home Energy Assessment Program, DSM Phase VII
 - Section 6: Residential Efficient Products Marketplace Program, DSM Phase VII
 - Section 7: References
 - Section 8: Sub-appendices

2 RESIDENTIAL INCOME AND AGE QUALIFYING HOME IMPROVEMENT PROGRAM, DSM PHASE IV

The Residential Income and Age Qualifying Home Improvement Program provides direct install energy efficiency improvements to age and income qualifying homeowners in order to reduce electric use. The measures offered through the program and the sections that contain the savings algorithms for each measure are presented in Table 2-1.

Table 2-1: Income & Age Qualifying Home Improvement Program Measure List

End-Use	Measure	Manual Section
Domestic Hot Water	Domestic Hot Water Pipe Insulation	Section 2.1.1
	Kitchen & Bathroom Aerator	Section 2.1.2
	Low-flow Showerhead	Section 2.1.3
HVAC	Attic Insulation	Section 2.2.1
Lighting	LED Lighting	Section 2.3.1

The program has been offered in Virginia since 2015 and in North Carolina since 2016.

2.1 Domestic Hot Water (DHW) End Use

2.1.1 Domestic Hot Water Pipe Insulation

Measure Description

This measure realizes energy savings by adding insulation to uninsulated domestic hot water piping. The measure assumes the pipe wrap is installed to the first elbow of the hot water carrying pipe. The baseline condition is uninsulated hot water copper piping.

This measure is also offered through the Residential Home Energy Assessment Program as indicated in Section 5.1.1, but uses the savings estimation approach described in this section.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \frac{\left(\frac{1}{R_{base}} - \frac{1}{R_{ee}}\right) \times L \times C \times \Delta T \times 8,760 \text{ hours}}{3,412 \frac{Btu/h}{kW} \times \eta_{DHW}}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh}{8,760 \text{ hours}}$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident demand reduction
R_{base}	= assumed R-value of existing uninsulated piping
R_{ee}	= R-value of existing pipe plus installed insulation
L	= length of piping insulated
C	= circumference of piping
ΔT	= temperature difference between water at the inlet pipe and ambient air
8,760	= hours per year
3,412	= conversion factor between kW and Btu/h
η_{DHW}	= recovery efficiency of electric, domestic water heater with storage tank

Input Variables

Table 2-2: Input Values for Domestic Water Heater Pipe Insulation Savings Calculations

Component	Type	Value	Unit	Source(s)
R_{base}	Fixed	R-1.0	hour·°F· feet ² /Btu	Mid-Atlantic TRM 2019, p. 186 ⁵
R_{ee}	Variable	R-2.5	hour·°F· feet ² /Btu	Program design
L	Variable	See customer application	feet	Customer application
		Default = 1		Mid-Atlantic TRM 2019, p. 187
C	Variable	See customer application	feet	Customer application
		Default = 0.13		Mid-Atlantic TRM 2019, p. 187
ΔT	Fixed	65	°F	Mid-Atlantic TRM 2019, p. 187 ⁶
η_{DHW}	Fixed	0.98	percent	Mid-Atlantic TRM 2019, p. 187 ⁷

Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default per measure gross annual electric energy savings will be assigned according to the following calculation.

$$\Delta kWh = \frac{\left(\frac{1}{R_{base}} - \frac{1}{R_{ee}}\right) \times L \times C \times \Delta T \times 8,760 \text{ hours}}{3,412 \frac{Btu/h}{kW} \times \eta_{DHW}}$$

$$= \frac{\left(\frac{1}{1.0} - \frac{1}{2.5}\right) \frac{Btu}{hr \cdot ^\circ F \cdot ft^2} \times 1 \text{ ft} \times 0.13 \text{ ft} \times 65 \text{ }^\circ F \times 8,760 \text{ hours}}{3,412 \frac{Btu/h}{kW} \times 0.98}$$

⁵ Mid-Atlantic TRM 2019, p.186. Navigant Consulting Inc., April 2009; "Measures and Assumptions for Demand Side Management (DSM) Planning; Appendix C Substantiation Sheets," p. 77, presented to the Ontario Energy Board. http://www.ontarioenergyboard.ca/oeb/Documents/EB-2008-0346/Navigant_Appendix_C_substantiation_sheet_20090429.pdf. Accessed 9/16/2019.

⁶ Mid-Atlantic TRM 2019, p. 187. Assumes 130°F water leaving the hot water tank and an average basement temperature of 65°F.

⁷ Mid-Atlantic TRM 2019, p. 187. Electric water heaters have a recovery efficiency of 98%. http://www.ahrinet.org/App_Content/ahri/files/Certification/GAMA/PG-CMW.pdf. Accessed 9/17/2019

$$= 13.3 \text{ kWh}$$

The default per measure gross coincident demand reductions will be assigned according to the following calculation:

$$\begin{aligned} \Delta kW &= \frac{\Delta kWh}{8,760 \text{ hours}} \\ &= \frac{13.3 \text{ kWh}}{8,760 \text{ hours}} \\ &= 0.002 \text{ kW} \end{aligned}$$

Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 186-188.

Update Summary

The changes to this section, compared with last year, are described in Table 2-3.

Table 2-3: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Source	<ul style="list-style-type: none"> Updated page numbers / version of the Mid-Atlantic TRM
Input Variable	<ul style="list-style-type: none"> Clarified default assumption value

2.1.2 Kitchen and Bathroom Aerator

Measure Description

This measure realizes energy savings by installing a low-flow faucet aerator in a home's kitchen faucet and/or bathroom. Doing so reduces overall water usage and, in particular, the need to heat water. Faucet aerators are changed from those that deliver an estimated 2.2 gallons per minute (gpm) to low-flow, ≤ 1.5 -gpm aerators.

This measure is also offered through the Residential Home Energy Assessment program, Section 5.1.1.

Savings Estimation Approach

Per measure, gross annual water savings are calculated according to the following equation:

$$\Delta Water = [(Flow_{base} \times Throttle_{base}) - (Flow_{ee} \times Throttle_{ee})] \times Minutes_{faucet} \times Qty_{people} \times Flow_{drain} \times 365 \text{ days}$$

Per measure, gross annual electric energy savings⁸ are calculated according to the following equation:

$$\Delta kWh = \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \frac{\text{Btu/h}}{\text{kW}}}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh \times CF}{Minutes_{faucet} \times Qty_{people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}}$$

Where:

- $\Delta Water$ = per measure gross annual water savings per faucet
- ΔkWh = per measure gross annual electric energy savings per faucet
- ΔkW = gross coincident demand reductions
- $Flow_{base}$ = baseline faucet flow rate
- $Flow_{ee}$ = energy efficient (low-flow) faucet flow rate
- Qty_{people} = number of people per household
- $Flow_{drain}$ = percentage of water flowing down drain
- $Minutes_{faucet}$ = average length of use of faucet per person per day

⁸ Mid-Atlantic TRM 2019, p. 177. Note, the algorithm and variables are provided as documentation for the deemed savings result provided which should be claimed for all faucet aerator installations.

Throttle_{base} = baseline faucet throttling factor
 Throttle_{ee} = energy efficient (low-flow) faucet throttling factor
 ΔT = change in temperature of the water used for kitchen and bathroom faucets
 and temperature entering the house ($\Delta T = T_{\text{faucet}} - T_{\text{in-house}}$)
 η_{DHW} = recovery efficiency of electric, storage-tank water heater
 CF = peak coincidence factor

Input Variables

Table 2-4: Input Values for Kitchen and Bathroom Aerators Savings Calculations

Component	Type	Value	Unit	Source(s)
Flow_{base}	Fixed	2.2	gallons/ minute	Mid-Atlantic TRM 2019, p. 177 ⁹
Flow_{ee}	Variable	1.5	gallons/ minute	Program design ¹⁰
Qty_{people}	Variable	See customer application	-	Customer application
		Default = 2.53		Mid-Atlantic TRM 2019, p. 178 ¹¹
Flow_{drain}	Variable	Kitchen: 0.5 Bathroom: 0.7	-	Mid-Atlantic TRM 2019, p. 178 ¹²
Throttle_{base}	Fixed	0.83	-	Mid-Atlantic TRM 2019, p. 178
Throttle_{ee}	Fixed	0.95	-	Mid-Atlantic TRM 2019, p. 178 ¹³
Minutes_{faucet}	Fixed	Kitchen: 4.5 Bathroom: 1.6	minutes/ person/day	Mid-Atlantic TRM 2019, p. 178 ¹⁴

⁹ Mid-Atlantic TRM 2019, p. 177. In 1998, the Department of Energy adopted a maximum flow rate standard of 2.2 gpm at 60 psi for all faucets: 63 Fed. Reg. 13307; March 18, 1998.

¹⁰ Based on program eligibility requirements.

¹¹ Mid-Atlantic TRM 2019, p. 178. U.S. Energy Information Administration, Residential Energy Consumption Survey; http://www.eia.doe.gov/emeu/recs/recs2005/hc2005_tables/hc3demographics/pdf/tablehc11.3.pdf.

¹² Mid-Atlantic TRM 2019, p. 178. Estimate consistent with Ontario Energy Board, "Measures and Assumptions for Demand Side Management Planning."

¹³ Mid-Atlantic TRM 2019, p. 178. Schultdt, Marc, and Debra Tachibana, "Energy Related Water Fixture Measurements: Securing the Baseline for Northwest Single Family Homes. 2008 ACEEE Summer Study on Energy Efficiency in Buildings," 2008, page 1-265.

¹⁴ Mid-Atlantic TRM 2019, p. 178. Cadmus and Opinion Dynamics Evaluation Team. Showerhead and Faucet Aerator Meter Study. For Michigan Evaluation Working Group. June 2013. If aerator location is known, use the corresponding kitchen/bathroom value. If unknown, use 3 min/person/day as the average length of use value, which is the total for the household: kitchen (4.5 min/person/day) + bathroom (1.6 min/person/day) = 6.1 min/person/day/2. Via Pennsylvania TRM.

Component	Type	Value	Unit	Source(s)
ΔT	Variable	Kitchen: 32.1 Bathroom: 25.1	$^{\circ}\text{F}$	Mid-Atlantic TRM 2019, p. 178: $T_{\text{faucet, kitchen}} = 93.0 \text{ }^{\circ}\text{F}$ $T_{\text{faucet, bathroom}} = 86.0 \text{ }^{\circ}\text{F}$ $T_{\text{in-house}} = 60.9 \text{ }^{\circ}\text{F}$ ¹⁵
η_{DHW}	Fixed	0.98	-	Mid-Atlantic TRM 2019, p. 178 ¹⁶
CF	Fixed	0.00262	-	Mid-Atlantic TRM 2019, p. 179 ¹⁷

Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default per measure gross annual water savings will be assigned according to the following calculations.

Kitchen:

$$\begin{aligned} \Delta Water &= [(Flow_{base} \times Throttle_{base}) - (Flow_{ee} \times Throttle_{ee})] \times Minutes_{faucet} \\ &\quad \times Qty_{people} \times Flow_{drain} \times 365 \text{ days} \\ &= [(2.2 \text{ gpm} \times 0.83) - (1.5 \text{ gpm} \times 0.95)] \times \frac{4.5 \text{ min./person}}{\text{day}} \times 2.53 \text{ people} \\ &\quad \times 0.5 \times 365 \text{ days} \\ &= 833 \text{ gallons} \end{aligned}$$

Bathroom:

$$\begin{aligned} \Delta Water &= [(Flow_{base} \times Throttle_{base}) - (Flow_{ee} \times Throttle_{ee})] \times Minutes_{faucet} \\ &\quad \times Qty_{people} \times Flow_{drain} \times 365 \text{ days} \end{aligned}$$

¹⁵ Mid-Atlantic TRM 2019, p. 178. Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential Retrofit Programs." April 4, 2014, Appendix E, page 66.

¹⁶ Mid-Atlantic TRM 2019, p. 178. Electric water heater has recovery efficiency of 98%. http://www.ahrinet.org/App_Content/ahri/files/Certification/GAMA/PG-CMW.pdf. Accessed 9/17/2019.

¹⁷ Mid-Atlantic TRM 2019, p. 179. "Calculated as follows: Assume 13% faucet use takes place during peak hours (based on http://s3.amazonaws.com/zanran_storage/www.aquacraft.com/ContentPages/47768067.pdf). 13% * 3.6 minutes per day (10.9 * 2.56 / 3.5 / 2.2 = 3.6) = 0.47 minutes = 0.47 / 180 (minutes in peak period) = 0.00262." Website was provided in Mid-Atlantic TRM and could not be accessed when DNV GL attempted on 8/4/2016.

$$\begin{aligned}
&= [(2.2 \text{ gpm} \times 0.83) - (1.5 \text{ gpm} \times 0.95)] \times \frac{1.6 \text{ min./person}}{\text{day}} \times 2.53 \text{ people} \\
&\quad \times 0.7 \times 365 \text{ days} \\
&= 415 \text{ gallons}
\end{aligned}$$

The default per measure gross annual electric energy savings will be assigned according to the following calculations:

Kitchen:

$$\begin{aligned}
\Delta kWh &= \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\
&= \frac{833 \text{ gallons} \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times 32.1 \text{ }^\circ\text{F}}{0.98 \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\
&= 66 \text{ kWh}
\end{aligned}$$

Bathroom:

$$\begin{aligned}
\Delta kWh &= \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\
&= \frac{415 \text{ gallons} \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times 25.1 \text{ }^\circ\text{F}}{0.98 \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\
&= 26 \text{ kWh}
\end{aligned}$$

The default per measure gross coincident demand reductions will be assigned according to the following calculation:

Kitchen:

$$\Delta kW = \frac{\Delta kWh \times CF}{\text{Minutes}_{faucet} \times Qty_{people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}}$$

$$= \frac{66 \text{ kWh} \times 0.00262}{4.5 \text{ minutes} \times 2.53 \text{ people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}}$$

$$= 0.0025 \text{ kW}$$

Bathroom:

$$\Delta kW = \frac{\Delta kWh \times CF}{\text{Minutes}_{faucet} \times Qty_{people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}}$$

$$= \frac{26 \text{ kWh} \times 0.00262}{1.6 \text{ minutes} \times 2.53 \text{ people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}}$$

$$= 0.0028 \text{ kW}$$

Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 177-181.

Update Summary

The changes to this section, compared with last year, are described in Table 2-5.

Table 2-5: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Source	<ul style="list-style-type: none"> Updated page numbers / version of the Mid-Atlantic TRM
Input Variable	<ul style="list-style-type: none"> Updated kitchen values for ΔT and $Flow_{\text{drain}}$
Equation	<ul style="list-style-type: none"> Updated equation for water savings

2.1.3 Low-Flow Showerhead

Measure Description

This measure realizes energy savings by replacing an existing showerhead with a low-flow showerhead. Doing so reduces overall water usage and, in particular, the need to heat water. Showerheads are changed from those that deliver an estimated 2.5 gpm to low-flow, ≤ 2.0 -gpm aerators. The baseline condition is a showerhead with a flow rate of 2.5 gpm.

Savings Estimation Approach

Gross annual water savings per showerhead are calculated according to the following equation:

$$\Delta Water = [(Flow_{base} - Flow_{ee}) \times Qty_{people} \times Minutes_{shower} \times Showers_{daily} \times 365 \text{ days}] \div Qty_{showerheads}$$

Gross annual electric energy savings¹⁸ per showerhead are calculated according to the following equation:

$$\Delta kWh = \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \text{ Btu/kWh}}$$

Gross coincident demand reduction per showerhead is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh \times CF}{Minutes_{shower} \times Qty_{people} \times Showers_{daily} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}}$$

Where:

- $\Delta Water$ = gross annual water savings per showerhead
- $\Delta kWh/\text{year}$ = gross annual electric energy savings per showerhead
- ΔkW = gross coincident demand reduction per showerhead
- $Flow_{base}$ = baseline showerhead flow rate
- $Flow_{ee}$ = energy efficient (low-flow) showerhead flow rate
- Qty_{people} = number of people per household
- $Minutes_{shower}$ = average shower duration
- $Showers_{daily}$ = average showers per person per day
- Qty_{shower} = number of showers in home
- ΔT = change in temperature of the water used for shower and temperature entering the house ($\Delta T = T_{shower} - T_{in \text{ house}}$)
 η_{DHW} = recovery efficiency of electric, storage-tank water heater
 CF = peak coincidence factor

¹⁸ Mid-Atlantic TRM 2019, p. 179. "Calculated as follows: Assume 13% faucet use takes place during peak hours (per http://s3.amazonaws.com/zanran_storage/www.aquacraft.com/ContentPages/47768067.pdf).

Input Variables

Table 2-6: Input Values for Low-Flow Shower Head Savings Calculations

Component	Type	Value	Unit	Source(s)
Flow_{base}	Fixed	2.5	gpm	Mid-Atlantic TRM 2019, p. 172 ¹⁹
Flow_{ee}	Variable	2.0	gpm	Program design
Qty_{people}	Variable	See customer application	-	Customer application
		Default = 2.53		Mid-Atlantic TRM 2019, p. 173 ²⁰
Minutes_{shower}	Fixed	7.8	Minutes/ shower	Mid-Atlantic TRM 2019, p. 173 ²¹
Showers_{daily}	Fixed	0.6	showers/ person/day	Mid-Atlantic TRM 2019, p. 173 ²²
Qty_{shower}	Variable	See customer application	showers/ home	Customer application
		Default: 1.3		Mid-Atlantic TRM 2019, p. 173 ²³

tPages/47768067.pdf"

http://s3.amazonaws.com/zanran_storage/www.aquacraft.com/ContentPages/47768067.pdf). 13% * 3.6 minutes per day (10.9 * 2.56 / 3.5 / 2.2 = 3.6)

= 0.47 minutes = 0.47 / 180 (minutes in peak period) = 0.00262." Website was provided in Mid-Atlantic TRM and could not be accessed when DNV GL attempted on 8/4/2016.

recs2005/hc2005_tables/hc3demographics/pdf/tablehc11.3.pdf"

http://www.eia.doe.gov/emeu/recs/recs2005/hc2005_tables/hc3demographics/pdf/tablehc11.3.pdf. Accessed 9/18/2019.

²⁰ Mid-Atlantic TRM 2019, p. 172. The Energy Policy Act of 1992 (EPAAct) established the maximum flow rate for showerheads at 2.5 gallons per minute (gpm)

²¹ Mid-Atlantic TRM 2019, p. 173. US Energy Information Administration, Residential Energy Consumption Survey; <https://www.eia.gov/consumption/residential/data/2015/hc/php/hc9.7.php>

²¹ Mid-Atlantic TRM 2019, p. 173. Table 6. Cadmus and Opinion Dynamics Evaluation Team. Showerhead and Faucet Aerator Meter Study. For Michigan Evaluation Working Group. June 2013. The study compared shower length by single-family and multifamily populations, finding no statistical difference in showering times. For the energy-saving analysis, the study used the combined single-family and multifamily average shower length of 7.8 minutes. Per Pennsylvania TRM-2016.

²² Mid-Atlantic TRM 2019, p. 173. Table 8. Cadmus and Opinion Dynamics Evaluation Team. Showerhead and Faucet Aerator Meter Study. For Michigan Evaluation Working Group. June 2013. For each shower fixture metered, the evaluation team knew the total number of showers taken, duration of time meters remained in each home, and total occupants reported to live in the home. From these values average showers taken per day, per person was calculated. The study compared showers per day, per person by single-family and multifamily populations, finding no statistical difference in the values. For the energy-saving analysis, the study used the combined single-family and multifamily average showers per day, per person of 0.6. Per Pennsylvania TRM-2016.

²³ Mid-Atlantic TRM 2019, p. 173. Table 9; Cadmus and Opinion Dynamics Evaluation Team. Showerhead and Faucet Aerator Meter Study. For Michigan Evaluation Working Group. June 2013

Component	Type	Value	Unit	Source(s)
ΔT	Fixed	44.1	°F	Mid-Atlantic TRM 2019, p. 173: $T_{shower} = 105.0 \text{ }^{\circ}\text{F}$ ²⁴ $T_{in \text{ house}} = 60.9 \text{ }^{\circ}\text{F}$ ²⁵
η_{DHW}	Fixed	0.98	-	Mid-Atlantic TRM 2019, p. 173 ²⁶
CF	Fixed	0.0039	-	Mid-Atlantic TRM 2019, p. 174 ²⁷

Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values.

The default per measure gross annual water savings will be assigned according to the following calculation:

$$\begin{aligned}
 \Delta Water &= [(Flow_{base} - Flow_{ee}) \times Qty_{people} \times Minutes_{shower} \times Showers_{daily} \\
 &\quad \times 365 \text{ days}] \div Qty_{shower} \\
 &= \left[(2.5 \text{ gpm} - 2.0 \text{ gpm}) \times 2.53 \text{ people} \times 7.8 \frac{\text{min.}}{\text{shower}} \times 0.6 \frac{\text{showers}}{\text{day}} \right. \\
 &\quad \left. \times 365 \text{ days} \right] \div 1.3 \text{ showers} \\
 &= 1,662 \text{ gallons}
 \end{aligned}$$

The default per measure gross annual electric energy savings will be assigned according to the following calculation:

²⁴ Mid-Atlantic TRM 2018, p. 171. Connecticut Energy Efficiency Fund; CL&P and UI Program Savings Documentation for 2008 Program Year. The Mid-Atlantic TRM 2016 source has a bookmark error, but since the value is the same as that listed in the Mid-Atlantic TRM 2013, the same source was retained.

²⁵ Mid-Atlantic TRM 2019, p. 173. Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential Retrofit Programs." April 4, 2014, Appendix E, page 66.

²⁶ Mid-Atlantic TRM 2019, p. 173. Electric water heater has recovery efficiency of 98%. http://www.ahrinet.org/App_Content/ahri/files/Certification/GAMA/PG-CMW.pdf. Accessed 9/17/2019

²⁷ Mid-Atlantic TRM 2019, p. 174. Calculated as follows: Assume 9% showers take place during peak hours (based on http://s3.amazonaws.com/zanran_storage/www.aquacraft.com/ContentPages/47768067.pdf). Accessed 9/18/2019. Nine percent x 7.8 minutes per day = 0.702 minutes; 0.702 / 180 (minutes in peak period) = 0.0039." Website that was provided in Mid-Atlantic TRM, however, could not be accessed when DNV GL attempted on the same date.

$$\begin{aligned} \Delta kWh &= \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\ &= \frac{1,662 \text{ gal} \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times 44.1^\circ\text{F}}{0.98 \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\ &= 181.5 \text{ kWh} \end{aligned}$$

The default per measure gross coincident demand reductions will be assigned according to the following calculation:

$$\begin{aligned} \Delta kW &= \frac{\Delta kWh \times CF}{Qty_{people} \times Minutes_{shower} \times Showers_{daily} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}} \\ &= \frac{181.5 \text{ kWh} \times 0.0039}{2.53 \text{ people} \times 7.8 \frac{\text{min}}{\text{shower}} \times 0.6 \frac{\text{shower}}{\text{day}} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}} \\ &= 0.010 \text{ kW} \end{aligned}$$

Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp.172-181.

Update Summary

The changes to this section, compared with last year, are described in Table 2-7.

Table 2-7: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Source	<ul style="list-style-type: none"> Updated page numbers / version of the Mid-Atlantic TRM
Input Variable	<ul style="list-style-type: none"> Updated Qty_{shower} to use customer application data when available

2.2 Heating Ventilation and Air Conditioning (HVAC) End Use

2.2.1 Attic Insulation

Measure Description

This measure characterization is for the installation of new insulation in the attic/roof/ceiling of a residential building. The measure assumes that an auditor, contractor or utility staff member is on location, and will measure and record the existing and new insulation depth and type (to calculate R-values), the surface area of insulation added, and where possible the efficiency of the heating and cooling system used in the home. Through the program, attic insulation is brought up to a maximum of R-49.

Savings Estimation Approach

R-values:

$$R_{base} = R_{base,insulation} + R_{roof}$$

$$R_{ee} = R_{ee,insulation} + R_{roof}$$

Annual cooling energy savings per measure are calculated according to the following equations:

$$\Delta kWh_{cool} = \frac{\left(\frac{1}{R_{base}} - \frac{1}{R_{ee}}\right) \times CDH \times DUA \times Area \times Adj_{cool}}{1,000 \times \eta_{cool}}$$

Annual heating savings are only applicable for homes with electric heating and calculated as follows:

$$\Delta kWh_{heat} = \frac{\left(\frac{1}{R_{base}} - \frac{1}{R_{ee}}\right) \times HDD \times 24 \frac{hours}{day} \times Area \times 293.1 \frac{kWh}{MMBtu} \times Adj_{heat}}{1,000,000 \times \eta_{heat}}$$

Heating and cooling energy savings are added together to calculate the per measure gross annual electric energy savings:

$$\Delta kWh = \Delta kWh_{heat} + \Delta kWh_{cool}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh_{cool}}{EFLH_{cool}} \times CF$$

Where:

- ΔkWh_{cool} = per measure gross annual electric energy savings from reduced cooling load
- ΔkWh_{heat} = per measure gross annual electric energy savings from reduced heating load
- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident demand reduction
- R_{roof} = R-value of roof assembly
- $R_{base_insulation}$ = R-value of any existing insulation
- R_{base} = R-value of roof assembly plus any existing insulation
- $R_{ee_insulation}$ = R-value of new insulation
- R_{ee} = R-value of roof assembly plus new insulation
- CDH = cooling degree hours
- DUA = discretionary use adjustment
- Area = square footage of area covered by new insulation
- η_{cool} = efficiency (in SEER) of air conditioning equipment
- HDD = heating degree days
- η_{heat} = efficiency (in COP) of heating equipment
- $EFLH_{cool}$ = equivalent full load cooling hours
- CF = gross coincident demand reduction coincidence factor
- Adj_{cool} = adjustment for cooling savings to account for inaccuracies in engineering algorithms
- Adj_{heat} = adjustment for electric heating savings to account for inaccuracies in engineering algorithms

Input Variables

Table 2-8: Input Values, Income and Age Qualifying Insulation Upgrades

Component	Type	Value	Units	Source(s)
R_{roof}	Fixed	R-5	hr-F-ft ² /Btu	Mid-Atlantic TRM 2019, p. 261 ²⁸
R_{base_insulation}	Variable	See customer application	hr-F-ft ² /Btu	Customer application
		Default = 0		Mid-Atlantic TRM 2019, p. 261

²⁸ "The R-5 assumption for roof assembly is based on J.Neymark & Associates and National Renewable Energy Laboratory, June 2009; "BESTEST-EX Interim Test Procedure" p. 27. The attic floor and roof should be modeled as a system including solar gains and attic ventilation, and R-5 is the standard assumption for the thermal resistance of the whole attic/roof system." Mid-Atlantic TRM 2019, p. 260.

Component	Type	Value	Units	Source(s)
Ree_insulation	Variable	See customer application	hr-°F-ft ² /Btu	See customer application; Maximum of R-49 from program planning. See Table 2-6 for average R-values by material.
CDH	Fixed	See Table 8-3, using a base temperature of 65°F	degree-hours	Sub-appendix I: Cooling and Heating Degree Days and Hours ²⁹ from the National Solar Radiation Data Base, National Renewable Energy Laboratory (NREL)
DUA	Fixed	0.75	-	Mid-Atlantic TRM 2019, p. 261 ³⁰
Area	Variable	Variable	ft ²	Customer application
η_{cool}	Variable	See Table 8-7:, baseline efficiency	Btu/watt-hr	Federal efficiency requirements
		Default = SEER 14.0		Mid-Atlantic TRM 2019 ³¹
HDD	Fixed	See Table 8-2, using a base temperature of 65°F	degree-days	Sub-appendix I: Cooling and Heating Degree Days and Hours ³² from National Solar Radiation Data Base, National Renewable Energy Laboratory (NREL)
η_{heat}	Variable	See Table 8-7:	-	Federal efficiency requirements
		Default: no electric heat & no heating savings		
EFLH_{cool}	Variable	See Table 8-5	hours (annual)	Mid-Atlantic TRM 2019, p. 91, and ENERGY STAR [®] calculator ³³
CF	Fixed	0.69	-	Mid-Atlantic TRM 2019, p. 263

²⁹ These CDH values are calculated by DNV GL using base temperatures of 65°F rather than 75°F for cooling degree hours, as was done in the Mid-Atlantic TRM.

³⁰ To account for the fact that people do not always operate their air conditioning system when the outside temperature is greater than 75°F. Based on Energy Center of Wisconsin, May 2008 metering study; "Central Air Conditioning in Wisconsin, A Compilation of Recent Field Research", p31. Mid-Atlantic TRM 2019, p. 261

³¹ Assumed same as baseline efficiency used for residential HVAC measures for consistency. Mid-Atlantic TRM 2018, p. 82. The latest version of the Mid-Atlantic TRM i.e. 2019 is not having the SEER value for the systems manufactured after 2015 as the previous version of Mid-Atlantic TRM is having

³² These HDD values are calculated by DNV GL using base temperatures of 65°F rather than 60°F for heating degree days, as was done in the Mid-Atlantic TRM.

³³ ENERGY STAR[®]. Heat Pumps "Savings Calculator," Heating Usage, https://www.energystar.gov/index.cfm?c=airsrc_heat.pr_proc_as_heat_pumps. Accessed 9/27/2019.

Component	Type	Value	Units	Source(s)
Adj_{cool}	Fixed	1.21	-	Mid-Atlantic TRM 2019, p. 261 ³⁴
Adj_{heat}	Fixed	0.60	-	Mid-Atlantic TRM 2019, p. 263 ³⁵

Table 2-9: Average R-Values per Inch of Thickness by Insulating Material

Insulating Material	Avg. R-value, per inch
Blanket: batts and rolls (fiberglass)	3.2
Loose-fill and blown-in (cellulose, fiberglass, mineral—rock or slag—wool)	3.3
Foam board or rigid foam (polystyrene, polyisocyanurate, polyurethane)	4.8

Insulation R-values per inch, shown in Table 2-9, are from the 2013 ASHRAE Handbook – Fundamentals, Table 1. Building and Insulating Matierlas: Design Values. The values given are average R-values. If needed, insulation manufacturers can be contacted for the R-values of insulating materials not listed above.

Default Savings

If the values are not supplied, default input values may be applied using conservative assumptions.

Source(s)

The primary sources for this deemed savings approach are the Mid-Atlantic TRM 2019, p. 91, pp. 260-265, the 2013 ASHRAE Handbook Fundamentals, and ENERGY STAR® guidelines.

Update Summary

The changes to this section, compared with last year, are described in Table 2-10.

Table 2-10: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Source	<ul style="list-style-type: none"> Updated page numbers / version of the Mid-Atlantic TRM and ASHRAE Handbook Fundamentals

³⁴ From Illinois TRM, 9 as demonstrated in two years of metering evaluation by Opinion Dynamics. Adjusts savings derived through engineering algorithms to actual savings measured in field. Note: The value given in the Mid-atlantic TRM is different than their reference in Illionis TRM and the value used here is the value given in the Illionis TRM

³⁵ From Illinois TRM, 9 as demonstrated in two years of metering evaluation by Opinion Dynamics.



Type of Change	Description of Change
Input Variable	<ul style="list-style-type: none">• Clarified default assumption values

2.3 Lighting End Use

2.3.1 LED Lighting

Measure Description

Forty- and 60-watt incandescent light bulbs or EISA-compliant³⁶ light bulbs will be replaced with their respective equivalents of 9-watt and 14.5-watt LED bulbs. From 2020, all light bulbs sold in the US will need to be EISA compliant. This means from 2020, the baseline will be a EISA compliant bulb and not a 40- or 60-watt incandescent.

This measure is also offered through the Residential Home Energy Assessment program, Section 5.

Savings Estimation Approach

Per unit savings are multiplied by the number of total bulbs installed based on the program tracking data. Based on the program design, the maximum number of bulbs installed is six.

Per measure,
gross annual
electric energy
savings are
calculated
according to
the following
equation:
$$\Delta kWh = Qty \times \frac{\text{watts}_{\text{base}} - \text{watts}_{\text{ee}}}{1,000 \text{ W/kW}} \times \text{ISR} \times \text{HOU} \times [\text{WHF}_{\text{e}_{\text{heat}}} + (\text{WHF}_{\text{e}_{\text{cool}}} - 1)]$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = Qty \times \frac{\text{watts}_{\text{base}} - \text{watts}_{\text{ee}}}{1,000 \text{ W/kW}} \times \text{ISR} \times \text{WHFd} \times \text{CF}$$

Where:

Qty = quantity of lamps replaced³⁷
 ΔkWh = per measure gross annual electric energy savings
 ΔkW = per measure gross coincident peak demand savings
 $\text{watts}_{\text{base}}$ = wattage of incandescent bulb being replaced
 watts_{ee} = wattage of new efficient LED bulb
ISR = in service rate
HOU = hours of use per year

³⁶ For text of Energy and Independence and Security Act, see <http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf>

³⁷ Maximum quantity of 6 lamps replaced for Residential Income and Age Qualifying Home Improvement program

WHF_{heat} = waste heat factor to account for electric heating increase due to reduced waste heat from efficient lighting
 WHF_{cool} = waste heat factor to account for electric cooling savings due to reduced waste heat from efficient lighting
 WHF_d = waste heat factor for summer coincident peak demand savings to account for cooling savings from efficient lighting
 CF = peak coincidence factor

Input Variables

Table 2-11: Input Values for LED Lighting Savings

Component	Type	Value	Units	Sources
Qty	Variable	1 (maximum of 6)	-	Dominion program requirements
watts_{base}	Variable	For 2019: 40 W ³⁸ 60 W For 2020 and beyond: ³⁹ 29 (40 W equivalent) 43 (60 W equivalent)	watts	Dominion Residential Income and Age Qualifying Home Improvement program requirements, US EPA Energy Independence and Security Act of 2007 Frequently Asked Questions, p. 1
		See Table 2-12		Dominion Residential Home Energy Assessment Program requirements
watts_{ee}	Variable	9 (for 40 W base) or 14.5 (for 60 W base)	watts	Dominion Residential Income and Age Qualifying Home Improvement program requirements
		See Table 2-12		Dominion Residential Home Energy Assessment Program requirements
ISR	Fixed	0.98	-	Mid-Atlantic TRM 2019, p. 34
HOU	Fixed	See Table 8-9, Sub-appendix F1-IV: Residential Lighting Factors	hour/year	Mid-Atlantic TRM 2019, p. 34
		Default = 760 for Unknown room location		

³⁸ The $watts_{\text{base}}$ values shown are also consistent with (in terms of scale) and lower than $watts_{\text{base}}$ for 40W and 60W equivalent lumen output lamps in the Mid-Atlantic TRM 2018 (WattsBase table on pages 31 through 34) through the end of 2019 based upon the 2017-2019 $watts_{\text{base}}$ values for both downlights and omnidirectional lamps. According to program design specifications, the 40W equivalent replacement are expected to have a efficacy of 43 lumens per watt (LPW) for downlights, and 50 LPW for omnidirectional lights.

³⁹ In 2020, only EISA compliant bulbs will be available and therefore this baseline will be updated with EISA compliant wattages.

Component	Type	Value	Units	Sources
WHF_{heat}	Fixed	See Table 8-9, Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 35
		Default = 0.899 for Unknown room location		
WHF_{cool}	Fixed	See Table 8-9, Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 35
		Default = 1.077 for Unknown room location		
WHFd	Fixed	See Table 8-9, Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 36
		Default = 1.17 for Unknown room location		
CF	Fixed	See Table 8-9, Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 37
		Default = 0.058 for Unknown room location		

Table 2-12: LED Lighting Savings for Eligible Measures

Measure	watts _{base}	watts _{ee}
A-line LED 40 W Equivalent	29	5
A-line LED 60 W Equivalent	43	9
A-line LED 75 W Equivalent	53	12
A-line LED 100 W Equivalent	53	12
A-line LED 3 Way 75 W / 100 W / 150 W Equivalent	53	12
Decorative LED 25W Equivalent	-	-
Decorative LED 40W Equivalent	29	4
LED Downlight 50 W Equivalent	30	6
LED Downlight 65 W Equivalent	45	8
LED Downlight 75 W Equivalent	50	10
LED Downlight 90 W Equivalent	75	14

Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. In the event that either $watts_{base}$ or $watts_{ee}$ is missing, the savings are calculated using default values. The default gross annual electric energy savings will be assigned according to the following equations as follow.

40 W LEDs:

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\begin{aligned}\Delta kWh &= Qty \times \frac{watts_{base} - watts_{ee}}{1,000 W/kW} \times ISR \times HOU \times [WHFe_{heat} + (WHFe_{cool} - 1)] \\ &= 1 \times \frac{29 - 9}{1,000 W/kW} \times 0.98 \times 760 \times [0.899 + (1.077 - 1)] \\ &= 14.54 kWh\end{aligned}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\begin{aligned}\Delta kW &= Qty \times \frac{watts_{base} - watts_{ee}}{1,000 W/kW} \times ISR \times WHFd \times CF \\ &= 1 \times \frac{29 - 9}{1,000 W/kW} \times 0.98 \times 1.17 \times 0.058 \\ &= 0.001 kW\end{aligned}$$

60 W LEDs:

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\begin{aligned}\Delta kWh &= Qty \times \frac{watts_{base} - watts_{ee}}{1,000 W/kW} \times ISR \times HOU \times [WHFe_{heat} + (WHFe_{cool} - 1)] \\ &= 1 \times \frac{43 - 14.5}{1,000 W/kW} \times 0.98 \times 760 \times [0.899 + (1.077 - 1)] \\ &= 20.72 kWh\end{aligned}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\begin{aligned} \Delta kW &= Qty \times \frac{\text{watts}_{\text{base}} - \text{watts}_{\text{ee}}}{1,000 W/kW} \times \text{ISR} \times \text{WHFd} \times \text{CF} \\ &= 1 \times \frac{43 - 14.5}{1,000 W/kW} \times 0.98 \times 1.17 \times 0.058 \\ &= 0.002 \text{ kW} \end{aligned}$$

Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 21-42. Wattage requirements for EISA-compliant bulbs come from the US EPA’s Energy Independence and Security Act of 2007 Frequently Asked Questions, p1.⁴⁰

Update Summary

The changes to this section, compared with last year, are described in Table 2-13.

Table 2-13: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Source	<ul style="list-style-type: none"> Updated page numbers / version of the Mid-Atlantic TRM

⁴⁰ Available at https://www.energystar.gov/ia/products/lighting/cfls/downloads/EISA_Backgrounder_FINAL_4-11_EPA.pdf

3 RESIDENTIAL AC CYCLING PROGRAM, DSM PHASE I

3.1 Heating Ventilation and Air Conditioning End Use

3.1.1 Residential AC Cycling

Measure Description

Under the program, when AC cycling events are called, a radiofrequency (RF) paging signal is broadcast throughout the Company's service area. The signal is received by load curtailment switches installed on central air conditioners and heat pumps of participating residential customers. The dispatch of the RF signal to the load curtailment switch reduces the duty cycle of the registered AC units up to 50% during an event. The objective of the program is to reduce kW demand during AC cycling events.

Evaluation History

At the conclusion of the 2014 program event season, DNV GL conducted an ex ante regression analysis to predict kW impacts per dispatched AC Cycling participant specific to hour of day and weather conditions. This ex ante value was derived by averaging historical ex-ante impacts over the 2011–2014 event seasons. In 2015, due to the elapsed time between 2011 and 2014, the decline in average connected load per participant, and other longitudinal factors, the 2015 ex ante model was based solely on 2015 ex post impacts. Since 2015, ex ante models are built on current year ex post impacts only.

Savings Estimation Approach

The regression analysis that DNV GL used to estimate the ex post kW impacts per participant in 2018 is derived by fitting a linear regression model for each event hour ending 15–19 with the temperature humidity index (THI) as a predictor variable. The event hours included in the ex post analysis is determined by the start and end of each event.⁴¹

Ex ante event day demand reduction is calculated according to the following equations:

$$\text{Predicted Ex Ante kW Impact}_{15:00,day} = \hat{\beta}_{0,15:00} + \hat{\beta}_{1,15:00} * (THI_{15:00})$$

$$\text{Predicted Ex Ante kW Impact}_{16:00,day} = \hat{\beta}_{0,16:00} + \hat{\beta}_{1,16:00} * (THI_{16:00})$$

$$\text{Predicted Ex Ante kW Impact}_{17:00,day} = \hat{\beta}_{0,17:00} + \hat{\beta}_{1,17:00} * (THI_{17:00})$$

⁴¹ The impact analysis follows protocols outlined in Miriam L. Goldberg & G. Kennedy Agnew. Measurement and Verification for Demand Response, National Forum on the National Action Plan on Demand Response, <https://www.ferc.gov/industries/electric/indus-act/demand-response/dr-potential/napdr-mv.pdf>.

$$\text{Predicted Ex Ante kW Impact}_{18:00,\text{day}} = \hat{\beta}_{0,18:00} + \hat{\beta}_{1,18:00} * (\text{THI}_{18:00})$$

$$\text{Predicted Ex Ante kW Impact}_{19:00,\text{day}} = \hat{\beta}_{0,19:00} + \hat{\beta}_{1,19:00} * (\text{THI}_{19:00})$$

Where:

$\text{Predicted Ex Ante kW Impact}_{\text{hour}}$ = estimated ex ante load impact estimate for hour

$\hat{\beta}_{0,\text{hour}}$ = fixed estimate for the ex-ante kW impact

$\hat{\beta}_{1,\text{hour}}$ = increase to the ex ante kW impact estimate when THI increases by one

THI_{hour} = THI value for a specific hour.

The Dominion peak condition for planning purposes is assumed to be 95°F, 43% relative humidity at hour ending 17:00. This corresponds with a THI of 83.4. Therefore, the gross coincident summer peak demand savings are calculated according to the following equations:

$$\text{Predicted Ex Ante kW Impact}_{17:00,\text{day}} = \hat{\beta}_{0,17:00} + \hat{\beta}_{1,17:00} * (83.4 \text{ THI})$$

$$\text{Predicted Ex Ante kW Impact}_{17:00,\text{day}} = -0.22321 + 0.01018 * (83.4)$$

Input Variables

Table 3-1: Input Values for Residential AC Cycling Program Reductions Calculations

Component	Type	Value	Unit	Source
$\hat{\beta}_{0,15:00}$	Fixed	-2.37023	kW	Ex ante model regression
$\hat{\beta}_{0,16:00}$	Fixed	-1.38948	kW	Ex ante model regression
$\hat{\beta}_{0,17:00}$	Fixed	-0.22320	kW	Ex ante model regression
$\hat{\beta}_{0,18:00}$	Fixed	-0.12815	kW	Ex ante model regression
$\hat{\beta}_{0,19:00}$	Fixed	-2.26617	kW	Ex ante model regression
$\hat{\beta}_{1,15:00}$	Fixed	0.03458	kW	Ex ante model regression
$\hat{\beta}_{1,16:00}$	Fixed	0.02375	kW	Ex ante model regression
$\hat{\beta}_{1,17:00}$	Fixed	0.01018	kW	Ex ante model regression
$\hat{\beta}_{1,18:00}$	Fixed	0.00883	kW	Ex ante model regression
$\hat{\beta}_{1,19:00}$	Fixed	0.03544	kW	Ex ante model regression
$\text{THI}_{15:00}$	Variable	-	THI	NOAA
$\text{THI}_{16:00}$	Variable	-	THI	NOAA
$\text{THI}_{17:00}$	Variable	-	THI	NOAA
$\text{THI}_{18:00}$	Variable	-	THI	NOAA
$\text{THI}_{19:00}$	Variable	-	THI	NOAA



Default Savings

The kW impact per AC Cycling Program participant during Dominion’s peak conditions for 2019 is 0.63 kW. DNV GL conducts a yearly impact analysis to support an ex ante model specification that is based on updated ex post impacts.

Source

Local weather data are gathered from [NOAA, National Centers for Environmental Information](#).

Update Summary

The changes to this section, compared with last year, are described in Table 3-2.

Table 3-2: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Source	<ul style="list-style-type: none">Updated regression coefficients for 2019 ex post results

4 RESIDENTIAL APPLIANCE RECYCLING PROGRAM, DSM PHASE VII

The Residential Appliance Recycling Program provides a financial incentive to residential customers to recycle aged refrigerators and/or freezers. Customers are limited to two units per electric account and eligible units must be at least 10 years old and operational.

4.1 Refrigeration End Use

4.1.1 Refrigerator and Freezer Recycling

Measure Description

Under this measure Dominion will remove older, less efficient refrigerators and/or freezers directly from customers' homes. Savings are realized through the decommissioning of secondary refrigerators or replacing older primary refrigerators with new units.

Savings Estimation Approach

Per measure, gross energy savings for refrigerators and freezers are defined in the equations below. Baseline kWh is from a linear regression model and energy efficient kWh is a weighted average of the federal baseline maximum energy usage for the measure multiplied by a dummy variable equal to 1 if the unit will be replaced and 0 if not. The coefficients can be found in Table 4-2 and Table 4-3.

Refrigerators:

$$\Delta kWh = kWh_{base} - kWh_{ee}$$

$$\begin{aligned} kWh_{ee} = & ((0.018333 \times Size + 0.5211) + (0.021573 \times Size + 0.6075) \\ & + (4.619268 \times Size + 133.76988) \\ & + (0.11914 \times Size + 4.1692) + (1.455825 \times Size + 52.1465) \\ & + (0.02268 \times Size + 1.04058) \\ & + (2.05814 \times Size + 104.3048)) \times Replacement \end{aligned}$$

$$\begin{aligned}
kWh_{base} = & \left[0.80460 + (Age \times 0.02107) + (Pre1990 \times 1.03605) + (Size \times 0.05930) \right. \\
& + (SingleDoor \times -1.75138) + (SideBySide \times 1.11963) \\
& + (Primary \times 0.55990) \\
& + \left(\frac{HDD}{365} \times Unconditioned \times -0.04013 \right) \\
& \left. + \left(\frac{CDD}{365} \times Unconditioned \times 0.02622 \right) \right] \times 365 \times PUF
\end{aligned}$$

Freezers:

$$\Delta kWh = kWh_{base} - kWh_{ee}$$

$$\begin{aligned}
kWh_{ee} = & (3.166988 \times Size + 83.87742) \\
& + (4.611654 \times Size + 68.19428) \times Replacement
\end{aligned}$$

$$\begin{aligned}
kWh_{base} = & \left[-0.95470 + (Age \times 0.04536) + (Pre1990 \times 0.54341) \right. \\
& + (Size \times 0.12023) + (ChestFreezer \times 0.29816) \\
& + \left(\frac{HDD}{365} \times Unconditioned \times -0.03148 \right) \\
& \left. + \left(\frac{CDD}{365} \times Unconditioned \times 0.08217 \right) \right] \times 365 \times PUF
\end{aligned}$$

Summer per measure gross coincident peak demand reduction for both refrigerators and freezers are calculated according to the following equation:

$$\Delta kW = \left(\frac{\Delta kWh}{8,760} \right) \times TAF \times LSAF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident peak demand savings
- kWh_{base} = baseline annual electric energy consumption
- kWh_{ee} = annual electric energy consumption of efficient unit
- Age = age of refrigerator or freezer
- Pre1990 = adjustment variables for refrigerators and freezers manufactured before 1990
- Size = size of refrigerator or freezer

Replacement = dummy variable for if the recycled freezer or refrigerator will be replaced
 SingleDoor = adjustment factor for single-door refrigerators
 SideBySide = adjustment factor for side-by-side refrigerators
 ChestFreezer = adjustment factor for chest freezers
 Primary = adjustment factor for refrigerators or freezers that were primary units
 HDD = Heating Degree Days for location of appliance removal
 CDD = Cooling Degree Days for location of appliance removal
 Unconditioned = adjustment factor for refrigerators or freezers in unconditioned space
 PUF = Part-use Factor to account for units that do not run throughout the year
 TAF = Temperature Adjustment Factor
 LSAF = Load-shape Adjustment Factor

Input Variables

Table 4-1: Input Values for Refrigerator and Freezer Recycling Input Values for Refrigerator and Freezer Recycling

Component	Type	Value	Unit	Source(s)
Age	Variable	See customer application	years	Customer application
		Default = 18.61, for refrigerators 23.79, for freezers		
Pre1990	Variable	See customer application	-	Customer application
		Default = 0.20 for refrigerators, 0.46 for freezers		
Size	Variable	See customer application	cubic feet	Customer application
		Default = 19.43, for refrigerators 15.86, for freezers		
SingleDoor	Variable	See customer application	-	Customer application
		Default = 0.02		
SideBySide	Variable	See customer application	-	Customer application
		Default = 0.34		
ChestFreezer	Variable	See customer application	-	Customer application
		Default = 0.21		
Primary	Variable	See customer application	-	Customer application
		Default = 0.64		
HDD	Variable	Location-dependent value using a base temperature of 65°F	Heating Degree Days (HDD)	See Table 8-2 in Sub-appendix F1-I: Cooling and Heating Degree Days and Hours from National Solar Radiation Data Base, National Renewable Energy Laboratory (NREL)

Component	Type	Value	Unit	Source(s)
CDD	Variable	Location-dependent value using a base temperature of 65°F	Cooling Degree Days (CDD)	See Table 8-2 in Sub-appendix F1-I: Cooling and Heating Degree Days and Hours from National Solar Radiation Data Base, National Renewable Energy Laboratory (NREL)
Unconditioned	Variable	See customer application Default = 0.22 for refrigerators, 0.55 for freezers	-	Customer application
PUF	Variable	See customer application Default = 0.95, for refrigerators 0.86, for freezers	-	Customer application Mid-Atlantic TRM 2019, p. 69
TAF	Fixed	1.23	-	Mid-Atlantic TRM 2019, p. 70
LSAF	Fixed	1.066	-	Mid-Atlantic TRM 2019, p. 70
Replacement	Variable	See customer application	-	Customer application

Table 4-2: Model Coefficients Used for Refrigerator-recycling Energy Savings

Independent Variable Description	Estimate Coefficient
Intercept	0.80460
Age (years)	0.02107
Pre-1990 (=1 if manufactured pre-1990)	1.03605
Size (cubic feet)	0.05930
Dummy: Single Door (=1 if single door)	-1.75138
Dummy: Side-by-Side (=1 side-by-side)	1.11963
Dummy: Primary Usage Type (=1 if primary unit)	0.55990
Interaction: Located in Unconditioned Space x HDD/365	-0.04013
Interaction: Located in Unconditioned Space x CDD/365	0.02622

Table 4-3: Model Coefficients Used for Freezer-recycling Energy Savings

Independent Variable Description	Estimate Coefficient
Intercept	-0.95470
Age (years)	0.04530

Independent Variable Description	Estimate Coefficient
Pre-1990 (=1 if manufactured pre-1990)	0.54341
Size (cubic feet)	0.12023
Dummy: Chest Freezer Configuration (=1 if chest freezer)	0.29816
Interaction: Located in Unconditioned Space x HDD/365	-0.03148
Interaction: Located in Unconditioned Space x CDD/365	0.08217

Default Savings

Savings is calculated in the following manner if variable values are not provided in the data. These are established using default values provided in Table 4-1.

Refrigerators:

Virginia:

Units that are not replaced:

$$\begin{aligned} \Delta kWh &= [0.80460 + (Age \times 0.02107) + (Pre1990 \times 1.03605) \\ &\quad + (Size \times 0.05930) + (SingleDoor \times -1.75138) \\ &\quad + (SideBySide \times 1.11963) + (Primary \times 0.55990) \\ &\quad + (HDD/365 \times Unconditioned \times -0.04013) \\ &\quad + (CDD/365 \times Unconditioned \times 0.02622)] \times 365 \times PUF \end{aligned}$$

$$\begin{aligned} &= \left[0.80460 + (18.61 \text{ years} \times 0.02107) + (0.20 \times 1.03605) \right. \\ &\quad + (19.43 \text{ cu. ft.} \times 0.05930) + (0.02 \times -1.75138) \\ &\quad + (0.34 \times 1.11963) + (0.64 \times 0.55990) \\ &\quad + \left(3,863 \frac{HDD}{365} \times 0.22 \times -0.04013 \right) \\ &\quad \left. + \left(1,436 \frac{CDD}{365} \times 0.22 \times 0.02622 \right) \right] \times 365 \times 0.95 \end{aligned}$$

$$= 1,105.9 \text{ kWh}$$

All units that are replaced:

$$\begin{aligned}
 \Delta kWh &= [0.80460 + (Age \times 0.02107) + (Pre1990 \times 1.03605 \\
 &\quad + (Size \times 0.05930) + (SingleDoor \times -1.75138) \\
 &\quad + (SideBySide \times 1.11963) + (Primary \times 0.55990) \\
 &\quad + (HDD/365 \times Unconditioned \times -0.04013) \\
 &\quad + (CDD/365 \times Unconditioned \times 0.02622)] \times 365 \times PUF \\
 &\quad - [(0.018333 \times Size + 0.5211) \\
 &\quad + (0.021573 \times Size + 0.6075) \\
 &\quad + (4.619268 \times Size + 133.76988) \\
 &\quad + (0.11914 \times Size + 4.1692) \\
 &\quad + (1.455825 \times Size + 52.1465) \\
 &\quad + (0.02268 \times Size + 1.04058) \\
 &\quad + (2.05814 \times Size + 104.3048)] \times Replacement \\
 &= \left[\left[0.80460 + (18.61 \text{ years} \times 0.02107) + (0.20 \times 1.03605) \right. \right. \\
 &\quad + (19.43 \text{ cu. ft.} \times 0.05930) + (0.02 \times -1.75138) \\
 &\quad + (0.34 \times 1.11963) + (0.64 \times 0.55990) \\
 &\quad + \left(3,863 \frac{HDD}{365} \times 0.22 \times -0.04013 \right) \\
 &\quad \left. \left. + \left(1,436 \frac{CDD}{365} \times 0.22 \times 0.02622 \right) \right] \times 365 \right] \\
 &\quad - \left[[(0.018333 \times 19.43 \text{ cu. ft.} + 0.5211) \right. \\
 &\quad + (0.021573 \times 19.43 \text{ cu. ft.} + 0.6075) \\
 &\quad + (4.619268 \times 19.43 \text{ cu. ft.} + 133.76988) \\
 &\quad + (0.11914 \times 19.43 \text{ cu. ft.} + 4.1692) \\
 &\quad + (1.455825 \times 19.43 \text{ cu. ft.} + 52.1465) \\
 &\quad + (0.02268 \times 19.43 \text{ cu. ft.} + 1.04058) \\
 &\quad \left. \left. + (2.05814 \times 19.43 \text{ cu. ft.} + 104.3048)] \times 1 \right] \\
 &= 1,105.9 - 458.1
 \end{aligned}$$

$$= 647.8 \text{ kWh}$$

North Carolina:

Units that are not replaced:

$$\begin{aligned} \Delta kWh &= \left[0.80460 + (18.61 \times 0.02107) + (0.20 \times 1.03605) \right. \\ &\quad + (19.43 \times 0.05930) + (0.02 \times -1.75138) \\ &\quad + (0.34 \times 1.11963) + (0.64 \times 0.55990) \\ &\quad + \left(\frac{2,712}{365} \times 0.22 \times -0.04013 \right) \\ &\quad \left. + \left(\frac{1,748}{365} \times 0.22 \times 0.02622 \right) \right] \times 365 \times 0.95 \\ &= 1,117.3 \text{ kWh} \end{aligned}$$

$$\begin{aligned} \text{Units that are replaced: } \Delta kWh &= \left[0.80460 + (18.61 \times 0.02107) + (0.20 \times 1.03605) \right. \\ &\quad + (19.43 \times 0.05930) + (0.02 \times -1.75138) \\ &\quad + (0.34 \times 1.11963) + (0.64 \times 0.55990) \\ &\quad + \left(\frac{2,712}{365} \times 0.22 \times -0.04013 \right) \\ &\quad \left. + \left(\frac{1,748}{365} \times 0.22 \times 0.02622 \right) \right] \times 365 \times 0.95 \\ &\quad - \left[(0.018333 \times 19.43 \text{ cu. ft.} + 0.5211) \right. \\ &\quad + (0.021573 \times 19.43 \text{ cu. ft.} + 0.6075) \\ &\quad + (4.619268 \times 19.43 \text{ cu. ft.} + 133.76988) \\ &\quad + (0.11914 \times 19.43 \text{ cu. ft.} + 4.1692) \\ &\quad + (1.455825 \times 19.43 \text{ cu. ft.} + 52.1465) \\ &\quad + (0.02268 \times 19.43 \text{ cu. ft.} + 1.04058) \\ &\quad \left. + (2.05814 \times 19.43 \text{ cu. ft.} + 104.3048) \right] \times 1 \\ &= 1,117.3 - 458.1 \\ &= 659.2 \text{ kWh} \end{aligned}$$



Freezers:

Virginia:

Units that are not replaced:

$$\begin{aligned}\Delta kWh &= \left[-0.95470 + (23.79 \times 0.04536) + (0.46 \times 0.54341) \right. \\ &\quad + (15.86 \times 0.12023) + (0.210 \times 0.29816) \\ &\quad \left. + \left(\frac{3,863}{365} \times 0.55 \times -0.03148 \right) + \left(\frac{1,436}{365} \times 0.55 \times 0.08217 \right) \right] \\ &\quad \times 365 \times 0.86 \\ &= 734.0 \text{ kWh}\end{aligned}$$

Units that are replaced:

$$\begin{aligned}\Delta kWh &= \left[\left[-0.95470 + (23.79 \times 0.04536) + (0.46 \times 0.54341) \right. \right. \\ &\quad + (15.86 \times 0.12023) + (0.21 \times 0.29816) \\ &\quad \left. + \left(\frac{3,863}{365} \times 0.55 \times -0.03148 \right) + \left(\frac{1,436}{365} \times 0.55 \times 0.08217 \right) \right] \\ &\quad \left. \times 365 \times 0.86 \right] \\ &\quad - \left[[(3.166988 \times 15.86 + 83.87742) \right. \\ &\quad \left. + (4.611654 \times 15.86 + 68.19428)] \times 1 \right] \\ &= 734.0 - 275.4 \\ &= 458.6 \text{ kWh}\end{aligned}$$

North Carolina:

Units that are not replaced:

$$\begin{aligned}\Delta kWh &= \left[-0.95470 + (23.79 \times 0.04536) + (0.46 \times 0.54341) \right. \\ &\quad + (15.86 \times 0.12023) + (0.21 \times 0.29816) \\ &\quad \left. + \left(\frac{2,712}{365} \times 0.55 \times -0.03148 \right) + \left(\frac{1,748}{365} \times 0.55 \times 0.08217 \right) \right] \\ &\quad \times 365 \times 0.86 \\ &= 763.3 kWh\end{aligned}$$

Units that are replaced:


$$\begin{aligned}\Delta kWh &= \left[\left[-0.95470 + (23.79 \times 0.04536) + (0.46 \times 0.54341) \right. \right. \\ &\quad + (15.86 \times 0.12023) + (0.21 \times 0.29816) \\ &\quad \left. + \left(\frac{2,712}{365} \times 0.55 \times -0.03148 \right) + \left(\frac{1,748}{365} \times 0.55 \times 0.08217 \right) \right] \\ &\quad \left. \times 365 \times 0.86 \right] \\ &\quad - \left[[(3.166988 \times 15.86 + 83.87742) \right. \\ &\quad \left. + (4.611654 \times 15.86 + 68.19428)] \times 1 \right] \\ &= 763.3 - 275.4 \\ &= 487.8 kWh\end{aligned}$$

Summer per measure gross coincident peak demand savings for both refrigerators and freezers are calculated according to the following equations:

Refrigerators: Virginia:

Units that are not replaced:

$$\begin{aligned}\Delta kW &= \left(\frac{\Delta kWh}{8,760} \right) \times TAF \times LSAF \\ &= \left(\frac{1,105.9}{8,760} \right) \times 1.23 \times 1.066\end{aligned}$$


$$= 0.166 \text{ kW}$$

Units that are replaced:

$$\Delta kW = \left(\frac{647.8}{8,760}\right) \times 1.23 \times 1.066$$
$$= 0.097 \text{ kW}$$

North Carolina:

Units that are not replaced:

$$\Delta kW = \left(\frac{1,117.3}{8,760}\right) \times 1.23 \times 1.066$$
$$= 0.167 \text{ kW}$$

Units that are replaced:

$$\Delta kW = \left(\frac{659.2}{8,760}\right) \times 1.23 \times 1.066$$
$$= 0.099 \text{ kW}$$

Freezers:

Virginia:

Units that are not replaced:

$$\Delta kW = \left(\frac{734.0}{8,760}\right) \times 1.23 \times 1.066$$
$$= 0.110 \text{ kW}$$

Units that are replaced:

$$\Delta kW = \left(\frac{458.6}{8,760}\right) \times 1.23 \times 1.066$$
$$= 0.069 \text{ kW}$$



North Carolina:

Units that are not replaced:

$$\begin{aligned}\Delta kW &= \left(\frac{763.3}{8,760}\right) \times 1.23 \times 1.066 \\ &= 0.114 \text{ kW}\end{aligned}$$

Units that are replaced:

$$\begin{aligned}\Delta kW &= \left(\frac{487.8}{8,760}\right) \times 1.23 \times 1.066 \\ &= 0.073 \text{ kW}\end{aligned}$$

Sources

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 57-62 and 67-71.

Update Summary

The changes to this section, compared with last year, are described in Table 4-4.

Table 4-4: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

5 RESIDENTIAL HOME ENERGY ASSESSMENT PROGRAM, DSM PHASE VII

The Residential Home Energy Assessment Program provides energy efficiency measures to homeowners in order to reduce electric use. The measures offered through the program and the sections that contain the savings algorithms for each measure are presented in Table 5-1.

Table 5-1: Home Energy Assessment Program Measure List

End-Use	Measure	Legacy Program	Manual Section
Domestic Hot Water	Domestic Hot Water Pipe Insulation	Income & Age Qualifying Home Improvement Program	Section 2.1.1
	Heat Pump Domestic Hot Water Heater	-	Section 5.1.2
	Low-Flow Aerator	Income & Age Qualifying Home Improvement Program	Section 2.1.2
	Low-Flow Showerhead	Income & Age Qualifying Home Improvement Program	Section 2.1.3
	Water Heater Temperature Setback	-	Section 5.1.4
HVAC	Heat Pump & Ductless Mini-split Heat Pump Upgrades	-	Section 5.2.1
	Heat Pump Tune-Up	-	Section 5.2.2
	ECM Fan Motors	-	Section 5.2.4
	Duct Insulation	-	Section 5.2.5

The program has been offered in Virginia since 2019.



5.1 Domestic Hot Water (DHW) End Use

5.1.1 Domestic Hot Water Pipe Insulation

This measure is also provided by the Residential Income and Age Qualifying Home Improvement Program. The savings are determined using the methodology described in Section 2.1.1.

5.1.2 Heat Pump Domestic Water Heater

Measure Description

This measure involves replacing a electric storage water heater with a heat-pump water heater (HPWH) having an input power rating of greater than or equal to 12 kW.⁴² The baseline condition is a new electric storage water heater satisfying the minimum efficiency standards in effect since December 29, 2016 as provided in Table 5-3.^{43,44} For this measure, the ENERGY STAR-qualified heat-pump water heater⁴⁵ is considered to be the efficient condition.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = DHW_{annual} \times \left(\frac{1}{UEF_{base}} - \frac{1}{UEF_{ee}} \right) \div 3,412 \frac{Btu/h}{kW} + kWh_{cool} - kWh_{heat}$$

The amount of heat contained in the hot water produced per home each year, DHW_{annual} , is calculated as follows:

$$DHW_{annual} = GDP \times Qty_{people} \times 365 \text{ days} \times \gamma_{water} \times (T_{out} - T_{in}) \times 1.0 \frac{Btu}{lb \text{ } ^\circ F}$$

The cooling savings by using the heat in the house to heat the water is calculated according to the following equation:⁴⁶

$$kWh_{cool} = \frac{1}{UEF_{ee}} \times DHW_{annual} \div 3,412 \frac{Btu/h}{kW} \times LF \times 0.33 \div COP_{cool}$$

⁴² [CFR 10 → Chapter II → Subchapter D → Part 430 → Subpart C → § 430.2](#). Mid-Atlantic TRM 2019, p. 193.

⁴³ [Docket No. EERE-2015-BT-TP-0007](#). Mid-Atlantic TRM, p. 193.

⁴⁴ The federal minimum standard for water heaters >55 gallon was increased to $EF \geq 2.0$, compared to an $EF \geq 0.907$ for water heaters ≤ 55 gallons. Since the standard went into effect, sales of the larger units have declined dramatically. Evaluators in Maryland hypothesize that customers are using a variety of strategies to avoid the higher efficiency standard including: combining multiple smaller water heaters, increasing set points on smaller heaters, etc. To address this concern, some TRM stakeholders recommended that a common practice baseline be used for this measure rather than the minimum federal standard. To maintain consistency with other measures in the Mid-Atlantic TRM, however, the decision was made to use the federal minimum efficiency for the standard baseline, recognizing that individual jurisdictions may depart from the federal standard baseline and use a common practice baseline instead (per Mid-Atlantic TRM 2019, p. 193).

⁴⁵ [ENERGY STAR® v3.2 Program Requirements for Residential Water Heaters](#). Mid-Atlantic TRM 2019, p. 193.

⁴⁶ This algorithm calculates the heat removed from the air by subtracting the HPWH electric consumption from the total water heating energy delivered. This is then adjusted to account for the location of the HP unit and the coincidence of the waste with cooling requirements, the efficiency of the central cooling and latent cooling demands. Mid-Atlantic TRM 2019, p. 195.

The heating savings by using the heat in the house to heat the water is calculated according to the following equation:

$$kWh_{heat} = \frac{1}{UEF_{ee}} \times DHW_{annual} \div 3,412 \frac{Btu/h}{kW} \times LF \times 0.47 \div COP_{heat}$$

Per measure, gross coincident demand reduction is fixed as follows:⁴⁷

$$\Delta kW = 0.17$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident demand savings
- DHW_{annual} = heat added to annual domestic hot water usage
- UEF_{base} = uniform energy factor (UEF) of electric storage water heater based on minimum federal standards, per Table 5-3
- UEF_{ee} = uniform energy factor of efficient heat pump water heater
- kWh_{cool} = cooling savings from conversion of heat in home to water heat
- kWh_{heat} = heating cost from conversion of heat in water to water heat (dependent on heating fuel)
- GPD = gallons per day of hot water use per person
- Qty_{people} = average number of people per household
- γ_{water} = specific weight of water
- T_{out} = tank temperature
- T_{in} = incoming temperature from well or municipal system
- 1.0 = heat capacity of water
- 3,412 = conversion factor from Btu/h to kW
- LF = location factor
- 0.33 = proportion of removed heat that results in cooling savings⁴⁸
- COP_{cool} = coefficient of performance (COP) of central air conditioning
- 0.47 = proportion or removed heat that results in increased space heating load⁴⁹
- COP_{heat} = coefficient of performance (COP) of electric heating system

⁴⁷ Based on a chart showing summer weekday average electrical demand on page 10 of FEMP Study "Field Testing of Pre-Production Prototype Residential Heat Pump Water Heaters" (http://www1.eere.energy.gov/femp/pdfs/tir_heatpump.pdf). Using data points from the chart, the average delta kW in heat pump mode during the peak hours compared to resistance mode is 0.17kW.

⁴⁸ REMRate determined percentage (33%) of lighting savings that result in reduced cooling loads for several different building configurations in Wilmington, DE, Baltimore, MD and Washington, DC (lighting is used as a proxy for hot water heating since load shapes suggest their seasonal usage patterns are similar. Mid-Atlantic TRM 2019, p. 196

⁴⁹ REMRate determined percentage (47%) of lighting savings that result in increased heating loads (lighting is used as a proxy for hot water heating since load shapes suggest their seasonal usage patterns are similar). Mid-Atlantic TRM 2019, p. 196

Input Variables

Table 5-2: Input Values for the Heat Pump Domestic Hot Water Heater Savings Calculations

Component	Type	Value	Unit	Source(s)
DHW_{annual}	Fixed	8,869,183	Btu	Mid-Atlantic TRM 2019, pp. 194-195
UEF_{base}	Variable	See customer application	-	See Table 5-3
		Default=0.945		Mid-Atlantic TRM 2019, p. 195 ⁵⁰
UEF_{efficient}	Variable	See customer application	-	Customer application
		Default=2.000		Mid-Atlantic TRM 2019, p. 195 ⁵¹
GPD	Fixed	18.35	gallon/day	Mid-Atlantic TRM 2019, p. 195 ⁵²
Qty_{people}	Fixed	2.48	people	Mid-Atlantic TRM 2019, p. 195
Y_{water}	Fixed	8.33	pound/gallon	Mid-Atlantic TRM 2019, p. 195
T_{out}	Fixed	125.0	°F	Mid-Atlantic TRM 2019, p. 195
T_{in}	Fixed	60.9	°F	Mid-Atlantic TRM 2019, p. 195 ⁵³
LF	Variable	Conditioned space=1.0 Unconditioned space=0.0	-	Mid-Atlantic TRM 2019, p. 196
		Default=0.5		
COP_{cool}	Variable	See customer application	-	Customer application
		Default=3.08		Mid-Atlantic TRM 2019, p. 196
COP_{heat}	Variable	See customer application	-	Customer application
		Default=2.40		Mid-Atlantic TRM 2019, p. 196-197 ⁵⁴

⁵⁰ 45.5 gallons hot water per day per household/2.48 people per household. US Energy Information Administration, Residential Energy Consumption Survey 2015; EIA RECS demographics for South Atlantic regions. Mid-Atlantic TRM 2019, p. 195

⁵¹ 45.5 gallons hot water per day per household/2.48 people per household. US Energy Information Administration, Residential Energy Consumption Survey 2015; EIA RECS demographics for South Atlantic regions. Mid-Atlantic TRM 2019, p. 195

⁵² 45.5 gallons hot water per day per household/2.48 people per household. US Energy Information Administration, Residential Energy Consumption Survey 2015; EIA RECS demographics for South Atlantic regions. Mid-Atlantic TRM 2019, p. 195

⁵³ Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential Retrofit Programs." April 4, 2014, Appendix E, page 66. Mid-Atlantic TRM 2019, p. 195

⁵⁴ The default system efficiencies are based on the applicable minimum Federal Standards. In 2006 the Federal Standard for Heat Pumps was adjusted. While one would expect the average system efficiency to be higher than this minimum, the likely degradation of efficiencies over time mean that using the minimum standard is appropriate. Mid-Atlantic TRM 2019, p. 196-197

Table 5-3: Consumer Electric Storage Water Heater Efficiency Criteria

Standard	Baseline		Efficient	
	≥20 and ≤55 gallons	>55 gallons	≤55 gallons	>55 gallons
2015 ENERGY STAR Energy Factor (EF) Standard	0.960 - (0.00300 × V _s)	2.057 - (0.00113 × V _s)	2.0	2.2
2017 Uniform Energy Factor (UEF) Standard	Very small draw pattern (first-hour rating <18 gal.; nom. 10 gal./day)			
	0.8808 - (0.00080 × V _s)	1.9236 - (0.00110 × V _s)	N/A	N/A
	Low draw pattern (first-hour rating ≥18 and <51 gal.; nom. 38 gal./day)			
	0.9254 - (0.00030 × V _s)	2.0440 - (0.00110 × V _s)	N/A	N/A
	Medium draw pattern (first-hour rating ≥51 and <75 gal.; nom. 55 gal./day)			
	0.9307 - (0.00020 × V _s)	2.1171 - (0.00110 × V _s)	2.0	2.2
	High draw pattern (first-hour rating ≥75 gal.; nom. 84 gal./day)			
0.9349 - (0.00010 × V _s)	2.2418 - (0.00110 × V _s)	2.0	2.3	

If first hour rating is unknown, assume medium draw pattern for electric storage water heaters having ≤50-gallon capacity and high draw pattern for those having >50-gallon capacity.

Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default gross annual electric energy savings will be assigned according to the sequence of equations that follow. First, the amount of hot water produced per home each year is calculated as follows:

$$DHW_{annual} = GDP \times Qty_{people} \times 365 \text{ days} \times \gamma_{water} \times (T_{out} - T_{in}) \times 1.0 \frac{Btu}{lb \text{ } ^\circ F}$$

$$\begin{aligned}
&= 18.35 \frac{\text{gallon}}{\text{day}} \times 2.48 \text{ people} \times 365 \text{ days} \times 8.33 \frac{\text{lb}}{\text{gallon}} \times (125^\circ\text{F} \\
&\quad - 60.9^\circ\text{F}) \times 1.0 \frac{\text{Btu}}{\text{lb } ^\circ\text{F}} \\
&= 8,869,184 \text{ Btu}
\end{aligned}$$

The cooling savings due to using the heat in the house to heat the water is calculated according to the following equation:⁵⁵

$$\begin{aligned}
kWh_{cool} &= \frac{1}{UEF_{ee}} \times DHW_{annual} \div 3,412 \frac{\text{Btu/h}}{\text{kW}} \times LF \times 0.33 \div COP_{cool} \\
&= \frac{1}{2.00} \times 8,869,184 \text{ Btu} \div 3,412 \frac{\text{Btu/h}}{\text{kW}} \times 0.5 \times 0.33 \div 3.08 \\
&= 69.62 \text{ kWh}
\end{aligned}$$

The heating savings due to using the heat in the house to heat the water is calculated according to the following equation:

$$\begin{aligned}
kWh_{heat} &= \frac{1}{UEF_{ee}} \times DHW_{annual} \div 3,412 \frac{\text{Btu/h}}{\text{kW}} \times LF \times 0.47 \div COP_{heat} \\
&= \frac{1}{2.00} \times 8,869,184 \text{ Btu} \div 3,412 \frac{\text{Btu/h}}{\text{kW}} \times 0.5 \times 0.47 \div 2.40 \\
&= 127.26 \text{ kWh}
\end{aligned}$$

Gross annual electric energy savings are calculated according to the following equation:

$$\begin{aligned}
\Delta kWh &= DHW_{annual} \times \left(\frac{1}{UEF_{base}} - \frac{1}{UEF_{ee}} \right) \div 3,412 \frac{\text{Btu/h}}{\text{kW}} + kWh_{cool} - kWh_{heat} \\
&= 8,869,184 \text{ Btu} \times \left(\frac{1}{0.945} - \frac{1}{2.00} \right) \div 3,412 \frac{\text{Btu/h}}{\text{kW}} + 69.62 \text{ kWh} - 127.26 \text{ kWh}
\end{aligned}$$

⁵⁵ This algorithm calculates the heat removed from the air by subtracting the HPWH electric consumption from the total water heating energy delivered. This is then adjusted to account for the location of the HP unit and the coincidence of the waste with cooling requirements, the efficiency of the central cooling and latent cooling demands. Mid-Atlantic TRM 2019, p. 195.

$$= 8,869,184 \text{ Btu} \times \left(\frac{1}{0.945} - \frac{1}{2.00} \right) \div 3,412 \frac{\text{Btu/h}}{\text{kW}} + 69.62 \text{ kWh} - 127.26 \text{ kWh}$$

$$= 1,393.35 \text{ kWh}$$

Source(s)

The primary sources for this deemed savings approach are the Mid-Atlantic TRM 2019, pp. 193-200.

Update Summary

The changes to this section, compared with last year, are described in Table 5-4.

Table 5-4: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section



5.1.3 Low-Flow Aerator

This measure is also provided by the Residential Income and Age Qualifying Home Improvement Program. The savings are determined using the methodology described in Section 2.1.2.

5.1.4 Low-Flow Showerhead

This measure is also provided by the Residential Income and Age Qualifying Home Improvement Program. The savings are determined using the methodology described in Section 2.1.3.

5.1.5 Water Heater Temperature Setback

Measure Description

This measure involves lowering the thermostat setting for an existing electric storage water heater. The savings are provided to account for the resulting reduction in standby losses.

The baseline condition is an electric storage water heater with its thermostat set at ≥ 130 °F. The efficient condition is an electric storage water heater with its thermostat set 10 °F lower, but not lower than 120 °F.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \frac{U \times A \times (T_{base} - T_{ee}) \times HOU}{3,412 \text{ Btu/kWh} \times \eta_{DHW}}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh}{8,760 \text{ hr}}$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident demand savings
U	= overall heat transfer coefficient of storage tank
A	= surface area of storage tank
T_{base}	= temperature setting of storage water heater prior to measure
T_{ee}	= temperature setting of storage water heater subsequent to measure
HOU	= annual hours of use
η_{DHW}	= recovery efficiency of electric, domestic hot water heater with storage tank

Input Variables

Table 5-5: Input Values for the Water Heater Temperature Setback Savings Calculations

Component	Type	Value	Unit	Source(s)
U	Fixed	0.083	Btu/hour·°F· feet ²	Mid-Atlantic TRM 2019, p. 207
A	Variable	See customer application	ft ²	Customer application
		Default: assume 50-gallon tank thus A = 24.99		Mid-Atlantic TRM 2019, p. 207

Component	Type	Value	Unit	Source(s)
T_{base}	Fixed	135	°F	Mid-Atlantic TRM 2019, p. 208
T_{ee}	Fixed	120	°F	Mid-Atlantic TRM 2019, p. 208
HOU	Variable	8,760	hours, annual	No. of hours in a year
η_{DHW}	Fixed	0.98	-	Mid-Atlantic TRM 2019, p. 208 ⁵⁶

Default Savings

If the proper values are not supplied, a default savings may be applied using

conservative input values.

The default per measure gross annual electric energy savings will be assigned according to the following calculation: ΔkWh

$$= \frac{U \times A \times (T_{base} - T_{ee}) \times HOU}{3,412 \frac{Btu/h}{kW} \times \eta_{DHW}}$$


$$= \frac{0.083 \times 24.99 \text{ ft}^2 \times (135^\circ F - 120^\circ F) \times 8,760 \text{ hr}}{3,412 \text{ Btu/kWh} \times 0.98}$$

$$= 81.5 \text{ kWh}$$

The default per measure gross coincident demand reductions will be assigned according to the following calculation:

$$\Delta kW = \frac{\Delta kWh}{8,760 \text{ hr}}$$

⁵⁶ Electric water heaters have recovery efficiency of 98%:
<http://www.ahridirectory.org/ahridirectory/pages/home.aspx>. Mid-Atlantic TRM 2019, p. 208.


$$= \frac{81.5 \text{ kWh}}{8,760 \text{ hr}}$$

$$\Delta kW = 0.009 \text{ kW}$$

Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 207-208.

Update Summary

The changes to this section, compared with last year, are described in Table 5-6.

Table 5-6: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

5.3 Heating Ventilation and Air Conditioning End Use

5.3.1 Heat Pump Upgrade

Measure Description

This measure upgrades an existing air-source heat pump or a ductless, mini-split heat pump with a new one—of like kind—that meets the ENERGY STAR efficiency standards as provided in Table 8-7: of Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings. A ductless, mini-split heat pump (DHP) is a type of heat pump with an outdoor condensing unit connected via refrigerant line to one or more indoor evaporator coils. Heat pumps deliver cooling at the same or higher efficiency as standard central AC units, but can also deliver heat.

The baseline condition for the measure is an air-source and ductless split-system heat pump that meets the minimum Federal standards defined above. The efficient condition is an air source and ductless split-system heat pump that meets the ENERGY STAR standards defined above or other specifications as determined by the programs.

Savings Estimation Approach

Per measures, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \Delta kWh_{cool} + \Delta kWh_{heat}$$

Cooling Savings:

$$\Delta kWh_{cool} = Size_{cool} \times \left(\frac{1}{SEER_{base}} - \frac{1}{SEER_{ee}} \right) \times EFLH_{cool} \times \frac{1 \text{ kBtu/h}}{1,000 \text{ Btu/h}}$$

Heating Savings:

$$\Delta kWh_{heat} = Size_{heat} \times \left(\frac{1}{HSPF_{base}} - \frac{1}{HSPF_{ee}} \right) \times EFLH_{heat} \times \frac{1 \text{ kBtu/h}}{1,000 \text{ Btu/h}}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = Size_{cool} \times \left(\frac{1}{EER_{base}} - \frac{1}{EER_{ee}} \right) \times \frac{1 \text{ kBtu/h}}{1,000 \text{ Btu/h}} \times CF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident demand reduction
- $Size_{cool}$ = cooling capacity of efficient heat pump
- $Size_{heat}$ = heating capacity of efficient heat pump

- EFLH_{cool} = equivalent full load cooling hours
 EFLH_{heat} = equivalent full load heating hours
 CF = coincidence factor
 SEER_{base} = seasonal energy efficiency ratio (SEER) of the existing or baseline air conditioning equipment. It is used for heat pumps and AC units that are smaller than 65,000 Btu/h.
 SEER_{ee} = seasonal energy efficiency ratio (SEER) of the installed air conditioning equipment. It is used for heat pumps and AC units that are smaller than 65,000 Btu/h.
 HSPF_{base} = heating seasonal performance factor (HSPF) of existing or baseline heat pump. HSPF is used in heating savings for air source heat pumps.
 HSPF_{ee} = heating seasonal performance factor (HSPF) of installed heat pump. HSPF is used in heating savings for air source heat pumps.
 EER_{base} = energy efficiency ratio (EER) of existing or baseline air conditioning equipment. EER is used to analyze demand performance of heat pumps and AC units.
 EER_{ee} = energy efficiency ratio (EER) of installed air conditioning equipment. EER is used to analyze performance of heat pumps and AC units.

Input Variables

Table 5-7: Input Values for Heat Pump Upgrade Savings Calculations

Component	Type	Value	Unit	Source(s)
Size _{cool}	Variable	See customer application	Btu/h	Customer application
Size _{heat}	Variable	See customer application Default = Size _{cool}	Btu/h	
EFLH _{cool}	Variable	Default: VA = 842 NC = 939	hours, annual	Mid-Atlantic TRM, p. 89
EFLH _{heat}	Variable	Default: VA = 789 NC = 744	hours, annual	Mid-Atlantic TRM, p. 91
HSPF/SEER/ EER _{base}	Variable	See Table 8-7 in 138Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings	kBtu/kWh (except COP is dimensionless)	ASHRAE 90.1 2010 Table 6.8.1A and Table 6.8.1B
HSPF/SEER/ EER _{ee}	Variable	See customer application	kBtu/kWh (except COP is dimensionless)	Customer application
CF	Fixed	0.30	-	Mid-Atlantic TRM 2019, p. 124, PJM Summer Peak (June to August weekdays between 2 pm and 6 pm)



Default Savings

If the proper values are not available, zero savings will be given for both gross annual electric energy savings and gross demand energy savings.

Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 87-97.

Update Summary

The changes to this section, compared with last year, are described in Table 5-8.

Table 5-8: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

5.3.2 Heat Pump Tune-Up

Measure Description

This measure realizes energy savings by tuning up an existing air-source and ductless mini-split heat pump system.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{EFLH_{cool}}{SEER} + \frac{EFLH_{heat}}{HSPF} \right) \times ESF$$

Per measure, gross coincident demand reductions are calculated according to the following equations:

$$\Delta kW_{cool} = Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{SEER} \times DRF$$

$$\Delta kW_{heat} = Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{HSPF} \times DRF$$

$$\Delta kW = MAX(\Delta kW_{cool}, \Delta kW_{heat})$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident demand reductions
Size	= cooling capacity of heat pump
SEER	= seasonal energy efficiency ratio of heat pump
EER	= energy efficiency ratio of heat pump
HSPF	= heating seasonal performance factor of heat pump
$EFLH_{cool}$	= equivalent cooling full load hours
$EFLH_{heat}$	= equivalent heating FLH
ESF	= annual energy savings factor attributed to tune-up
DRF	= demand reduction savings factor attributed to tune-up

Input Variables

Table 5-9: Input Values for Heat Pump Tune-Up Savings Calculations

Component	Type	Value	Unit	Source(s)
Size _{cool}	Variable	See customer application	tons	Customer application
		Default: VA = 2.39 NC = 2.57		Dominion Energy portfolio of residential energy-efficiency programs ⁵⁷
SEER/EER/ HSPF	Variable	Default: See Table 8-4 of Sub-appendix III	Btu/W -hr	Mid-Atlantic TRM 2019, p. 87 ^{58,59}
EFLH _{cool}	Fixed	See Table 8-5:	hours, annual	See Table 8-5: in Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment
EFLH _{heat}	Fixed	See Table 8-5:		
ESF	Fixed	0.05	-	Massachusetts TRM 2014, p. 74 ⁶⁰
DRF	Fixed	0.05	-	

Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default per measure gross annual electric energy savings will be assigned according to the equations provided earlier in this section:

VA:

$$\begin{aligned}
 \Delta kWh &= Size_{cool} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{EFLH_{cool}}{SEER} + \frac{EFLH_{heat}}{HSPF} \right) \times ESF \\
 &= 2.39 \text{ ton} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{842 \text{ hr}}{14 \text{ Btu/W} \cdot \text{hr}} + \frac{789 \text{ hr}}{8.2 \text{ Btu/W} \cdot \text{hr}} \right) \times 0.05 \\
 &= 224 \text{ kWh}
 \end{aligned}$$

⁵⁷ DNV GL reviewed the customer application data on heat pump size of participants in the Residential AC Cycling Program, Residential Duct Testing Program, Residential Heat Pump Upgrade Program and Residential Heat Pump Tune-Up Programs from program start dates through the end of 2015 (12/31/2015). The average heat pump capacity in VA (2.39 tons or 28,720 Btu/h) was calculated using data from 85,412 air source heat pump units enrolled in these programs in Virginia. The average capacity in NC (2.57 tons or 30,889 Btu/h) was calculated using data from 5,292 air source heat pump units enrolled in these programs in North Carolina. The average capacity was converted to Btu/h using the conversion factor of 12,000 Btu/h per ton. These values were not updated for 2016 as average heat pump capacity varied little between 2014 and 2015.

⁵⁸ Mid-Atlantic TRM 2019, p. 87. ENERGY STAR and Minimum Federal Standard.

⁵⁹ Actual customer application efficiency ratings are typically considered inaccurate due to presumed age of system and resulting deterioration of efficiency.

⁶⁰ Massachusetts TRM 2014, p. 74. "Massachusetts Common Assumption."

NC:

$$\begin{aligned}\Delta kWh &= Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{EFLH_{cool}}{SEER} + \frac{EFLH_{heat}}{HSPF} \right) \times ESF \\ &= 2.57 \text{ ton} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{939 \text{ hr}}{14 \text{ Btu/W} \cdot \text{hr}} + \frac{744 \text{ hr}}{8.2 \text{ Btu/W} \cdot \text{hr}} \right) \times 0.05 \\ &= 234 \text{ kWh}\end{aligned}$$

The default per measure gross coincident demand reductions will be assigned according to the following calculations:

VA:

$$\begin{aligned}\Delta kW_{cool} &= Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{SEER} \times DRF \\ &= 2.39 \text{ ton} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{14 \text{ Btu/W} \cdot \text{hr}} \times 0.05 \\ &= 0.102 \text{ kW}\end{aligned}$$

$$\begin{aligned}\Delta kW_{heat} &= Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{HSPF} \times DRF \\ &= 2.39 \text{ ton} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{8.2 \text{ Btu/W} \cdot \text{hr}} \times 0.05 \\ &= 0.175 \text{ kW}\end{aligned}$$

$$\begin{aligned}\Delta kW &= MAX(\Delta kW_{cool}, \Delta kW_{heat}) \\ &= 0.175 \text{ kW}\end{aligned}$$

NC:

$$\begin{aligned} \Delta kW_{cool} &= Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{SEER} \times DRF \\ &= 2.57 \text{ ton} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{14 \text{ Btu/W} \cdot \text{hr}} \times 0.05 \\ &= 0.110 \text{ kW} \end{aligned}$$

$$\begin{aligned} \Delta kW_{heat} &= Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{HSPF} \times DRF \\ &= 2.57 \text{ ton} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{8.2 \text{ Btu/W} \cdot \text{hr}} \times 0.05 \\ &= 0.188 \text{ kW} \end{aligned}$$

$$\begin{aligned} \Delta kW &= MAX(\Delta kW_{cool}, \Delta kW_{heat}) \\ &= 0.188 \text{ kW} \end{aligned}$$

Source(s)

The primary sources for this deemed savings approach are the Massachusetts TRM 2014, p. 74, and the Mid-Atlantic TRM 2016, pp. 103-110.

Update Summary

The changes to this section, compared with last year, are described in Table 5-10.

Table 5-10: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

5.3.3 ECM Fan Motor

Measure Description

Conventional natural-gas furnaces and air-conditioning systems that contain a permanent split capacitor (PSC) blower motor to deliver the conditioned air to the home are eligible to be replaced with a brushless DC motor, commonly called an electronically-commutated motor (ECM). The baseline condition is a furnace or air handler with a PSC motor at the fan; the efficient condition is an ECM motor in place of the PSC motor.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \Delta kWh_{cool} + \Delta kWh_{heat} + \Delta kWh_{fan}$$

$$\Delta kWh_{cool} = tons_{cool} \times EFLH_{cool} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{1}{SEER_{base}} - \frac{1}{SEER_{ee}} \right) \times AC$$

$$\Delta kWh_{heat} = EFLH_{heat} \times \Delta kW_{heat}$$

$$\Delta kWh_{fan} = HOU_{fan} \times \Delta kW_{fan}$$

Summer per measure coincident peak demand reduction is calculated according to the following equation:

$$\Delta kW = tons_{cool} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{1}{EER_{base}} - \frac{1}{EER_{ee}} \right) \times CF \times AC$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident demand reduction
- tons = cooling capacity of equipment
- $EFLH_{cool}$ = equivalent full-load hours for cooling
- $SEER_{base}$ = baseline-case Seasonal Energy Efficiency Rating (SEER)
- $SEER_{ee}$ = efficient-case Seasonal Energy Efficiency Rating (SEER)
- AC = proportion of furnaces with cooling
- $EFLH_{heat}$ = equivalent full-load hours for heating
- ΔkW_{heat} = electric energy savings in heating mode

HOU_{fan} = annual hours of fan-only operation
 ΔkW_{fan} = electric energy savings in fan-only mode
 EER_{base} = baseline-case Energy Efficiency Rating (EER)
 EER_{ee} = efficient-case Energy Efficiency Rating (EER)
 CF = Coincidence Factor

Input Variables

Table 5-11: Input Values for ECM Fan Motors Savings Calculations

Component	Type	Value	Units	Sources
$tons_{cool}$	Variable	See customer application	tons, cooling	Customer application
		Default: VA: 2.39 NC: 2.57		Dominion's portfolio of residential energy efficiency programs ⁶¹
ΔkWh_{fan}	Fixed	211.14	kWh	Wisconsin TRM 2019, pg. 968
$EFLH_{cool}$	Variable	See Table 8-5:	hours, annual	Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment
$SEER_{base}$	Fixed	12.0	Btu/W-hr	Wisconsin TRM 2019, p. 968
$SEER_{ee}$	Fixed	13.0	Btu/W-hr	
AC	Fixed	1.00	-	
$EFLH_{heat}$	Variable	See Table 8-5:	hours, annual	Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment
ΔkW_{heat}	Variable	0.116	kW	Wisconsin TRM 2019, pg. 968. (Default Source: Focus on Energy, Deemed savings report 2014, CADMUS metering study)
HOU_{fan}	Fixed	1,020	hours, annual	Wisconsin TRM 2019, pg. 968

⁶¹ DNV GL reviewed the customer application data on heat pump size of participants in the Residential AC Cycling Program, Residential Duct Testing Program, Residential Heat Pump Upgrade Program and Residential Heat Pump Tune-Up Programs from program start dates through the end of 2015 (12/31/2015). The average heat pump capacity in VA (2.39 tons or 28,720 Btu/h) was calculated using data from 85,412 air source heat pump units enrolled in these programs in Virginia. The average capacity in NC (2.57 tons or 30,889 Btu/h) was calculated using data from 5,292 air source heat pump units enrolled in these programs in North Carolina. The average capacity was converted to Btu/h using the conversion factor of 12,000 Btu/h per ton. These values were not updated for 2016 as average heat pump capacity varied little between 2014 and 2015.

Component	Type	Value	Units	Sources
ΔkW_{fan}	Variable	0.207	kW	Wisconsin TRM 2019, pg. 968 (Default Source: Focus on Energy, Deemed savings report 2014, CADMUS metering study)
EER_{base}	Variable	10.5	Btu/W-hr	Customer application Wisconsin TRM 2019, p. 968
EER_{ee}	Variable	11.0	Btu/W-hr	Customer application Wisconsin TRM 2019, p. 968
CF	Fixed	0.68	-	Wisconsin TRM 2019, p. 968

Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default gross annual electric energy savings and the default coincident peak demand reduction will be assigned according to the following calculations, by system type and location.

Central Air-conditioning:

In Virginia:

$$\begin{aligned}
 \Delta kWh &= \left[tons_{cool} \times EFLH_{cool} \times \frac{12 \text{ kBtu}}{ton} \times \left(\frac{1}{SEER_{base}} - \frac{1}{SEER_{ee}} \right) \times \%AC \right] \\
 &\quad + (EFLH_{heat} \times \Delta kW_{heat}) + (HOU_{fan} \times \Delta kW_{fan}) \\
 &= \left[2.39 \times 613 \times \frac{12 \text{ kBtu}}{ton} \times \left(\frac{1}{12.0} - \frac{1}{13.0} \right) \times 1.00 \right] + (0 \times 0.116) \\
 &\quad + (1,020 \times 0.207) \\
 &= 323.84 \text{ kWh}
 \end{aligned}$$

The default summer coincident peak demand reduction will be assigned according to the following calculation:

$$\Delta kW = tons_{cool} \times \frac{12 \text{ kBtu}}{ton} \times \left(\frac{1}{EER_{base}} - \frac{1}{EER_{ee}} \right) \times CF \times \%AC$$

$$= 2.39 \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{10.5} - \frac{1}{11.0} \right) \times 0.68 \times 1.00$$

$$= 0.084 \text{ kW}$$

In North Carolina:

$$\Delta kWh = \left[\text{tons}_{cool} \times EFLH_{cool} \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{SEER_{base}} - \frac{1}{SEER_{ee}} \right) \times \%AC \right]$$

$$+ (EFLH_{heat} \times \Delta kW_{heat}) + (HOU_{fan} \times \Delta kW_{fan})$$

$$= \left[2.57 \times 682 \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{12.0} - \frac{1}{13.0} \right) \times 1.00 \right] + (0 \times 0.116)$$

$$+ (1,020 \times 0.207)$$

$$= 345.97 \text{ kWh}$$

$$\Delta kW = \text{tons}_{cool} \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{EER_{base}} - \frac{1}{EER_{ee}} \right) \times CF \times \%AC$$

$$= 2.57 \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{10.5} - \frac{1}{11.0} \right) \times 0.68 \times 1.00$$

$$= 0.091 \text{ kW}$$

Central heat pump system:

In Virginia:

$$\Delta kWh = \left[\text{tons}_{cool} \times EFLH_{cool} \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{SEER_{base}} - \frac{1}{SEER_{ee}} \right) \times \%AC \right]$$

$$+ (EFLH_{heat} \times \Delta kW_{heat}) + (HOU_{fan} \times \Delta kW_{fan})$$

$$= \left[2.39 \times 842 \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{12.0} - \frac{1}{13.0} \right) \times 1.00 \right] + (789 \times 0.116)$$

$$+ (1,020 \times 0.207)$$

$$= 457.46 \text{ kWh}$$

$$\begin{aligned}
 \Delta kW &= \text{tons}_{cool} \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{EER_{base}} - \frac{1}{EER_{ee}} \right) \times CF \times \%AC \\
 &= 2.39 \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{10.5} - \frac{1}{11.0} \right) \times 0.68 \times 1.00 \\
 &= 0.084 \text{ kW}
 \end{aligned}$$

In North Carolina:

$$\begin{aligned}
 \Delta kWh &= \left[\text{tons}_{cool} \times EFLH_{cool} \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{SEER_{base}} - \frac{1}{SEER_{ee}} \right) \times \%AC \right] \\
 &\quad + (EFLH_{heat} \times \Delta kW_{heat}) + (HOU_{fan} \times \Delta kW_{fan}) \\
 &= \left[2.57 \times 936 \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{12.0} - \frac{1}{13.0} \right) \times 1.00 \right] + (533 \times 0.116) \\
 &\quad + (1,020 \times 0.207) \\
 &= 458.01 \text{ kWh}
 \end{aligned}$$

$$\begin{aligned}
 \Delta kW &= \text{tons}_{cool} \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{EER_{base}} - \frac{1}{EER_{ee}} \right) \times CF \times \%AC \\
 &= 2.57 \times \frac{12 \text{ kBtu}}{\text{ton}} \times \left(\frac{1}{10.5} - \frac{1}{11.0} \right) \times 0.68 \times 1.00 \\
 &= 0.091 \text{ kW}
 \end{aligned}$$

Source(s)

The primary source for this deemed savings approach is the Wisconsin TRM 2019, pp. 967-968.

Update Summary

The changes to this section, compared with last year, are described in Table 5-12.

Table 5-12: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

5.3.4 Duct Insulation

Measure Description

Energy and demand savings are realized through reductions in the home cooling and heating loads by insulating ductwork in unconditioned areas (e.g., attic with floor insulation, vented crawlspace, unheated garages). Basements shall be considered conditioned spaces.

The baseline condition is the existing uninsulated or poorly insulated ductwork in unconditioned spaces; The efficient condition is ductwork in unconditioned areas that has been insulated.

Savings Estimation approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \Delta kWh_{cool} + \Delta kWh_{heat}$$

$$\Delta kWh_{cool} = \left(\frac{1}{R_{base}} - \frac{1}{R_{ee}} \right) \times Area \times EFLH_{cool} \times \Delta T_{cool,avg.} \times \left(\frac{1}{1,000 W/kW \times SEER} \right)$$

$$\Delta kWh_{heat} = \left(\frac{1}{R_{base}} - \frac{1}{R_{ee}} \right) \times Area \times EFLH_{heat} \times \Delta T_{heat,avg.} \times \left(\frac{1}{3,412 Btu/kWh \times HSPF} \right)$$

Summer per measure gross coincident peak demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh_{cool}}{EFLH_{cool}} \times CF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross summer coincident demand reduction
- R_{base} = duct heat loss coefficient of existing duct and insulation
- R_{ee} = duct heat loss coefficient with new insulation
- Area = area of the duct surface exposed to the unconditioned space that has been insulated
- $EFLH_{cool}$ = Equivalent Full Load Hours of cooling
- $\Delta T_{cool,avg.}$ = average temperature difference during cooling season between outdoor air temperature, assuming 60°F supply air temperature

- SEER = Seasonal Energy Efficiency Ratio (SEER) of the cooling system
 EFLH_{heat} = Equivalent Full Load Hours of heating
 $\Delta T_{\text{heat,avg.}}$ = Average temperature difference during heating season between outdoor air temperature, assuming 115°F supply air temperature
 HSPF = efficiency of the heating system
 CF = summer system peak coincidence factor for cooling

Input Variables

Table 5-13: Input Values for Duct Insulation Savings Calculations

Component	Type	Value	Units	Sources
R_{base}	Variable	See customer application	hr-°F-ft ² /Btu	Iowa 2019 Res TRM, pg. 215
		Default: 1.0 minimum for uninsulated duct		
R_{ee}	Variable	See customer application	hr-°F-ft ² /Btu	Iowa 2019 Res TRM, pg. 215. From Default calculation. R-7 as typical value.
		Default: 7.0		
Area	Variable	See Customer Application. For Circular Ducts, take $\pi * \text{diameter} * \text{length}$ of duct	ft ²	Iowa 2019 Res TRM, pg. 215. Default is based on 6-in diameter pipe, 10-ft length.
		Default: 15.7		
EFLH_{cool}	Variable	Table 8-5:	hours	See Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment
$\Delta T_{\text{cool,avg.}}$	Variable	Default: VA: 20.0 NC: 18.9	°F	Iowa 2019 Res TRM, pg. 215. Values are derived from TMY data of Elizabeth City and Rocky Mount-Wilson (for NC), and Richmond (for VA), using 60°F supply temperature and an average OA temperature. ⁶²
SEER	Variable	See customer application	kBtu/kWh	See baseline efficiencies in Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings
		Default: Table 8-7:		
EFLH_{heat}	Variable	Table 8-5:	hours	See Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment

⁶² Cooling season is estimated as May through August, only during 8 AM to 8 PM each day. See Iowa TRM pg. 215, footnote 568.

Component	Type	Value	Units	Sources
$\Delta T_{\text{heat,avg.}}$	Variable	Default: VA: 64.9 NC: 61.6	°F	Iowa 2019 Res TRM, pg. 215. Values are derived from TMY data of Elizabeth City and Rocky Mount-Wilson (for NC), and Richmond (for VA), using 115°F supply temperature and an average OA temperature. ⁶³
HSPF	Variable	See customer application	Btu/Wh	See baseline efficiencies in Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings
		Default: Table 8-7:		
CF	Fixed	Default: 0.69	-	Mid-Atlantic 2019 TRM, page 84.

Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values.

The default per measure gross annual electric energy savings will be assigned according to the following calculation: (for residential homes in Virginia, with Central Air SEER=13, heat pump COP=2.0, and 10 ft. of uninsulated standard 6-inch round duct in an unconditioned space.

$$\begin{aligned}
 \Delta kWh_{cool} &= \left(\frac{1}{R_{base}} - \frac{1}{R_{ee}} \right) \times Area \times EFLH_{cool} \times \Delta T_{cool,avg.} \times \left(\frac{1}{1,000 W/kW \times \eta_{cool}} \right) \\
 &= \left(\frac{1}{1.0} - \frac{1}{7.0} \right) \times (\pi \times 0.5ft \times 10ft) \times 613 \text{ hours} \times 20.0^{\circ}F \times \left(\frac{1}{1,000 W/kW \times 13.0} \right) \\
 &= 12.7 kWh
 \end{aligned}$$

⁶³ Heating Season is estimated as September through April. See Iowa TRM, pg. 215, footnote 568.

$$\begin{aligned} \Delta kWh_{heat} &= \left(\frac{1}{R_{base}} - \frac{1}{R_{ee}} \right) \times Area \times EFLH_{heat} \times \Delta T_{avg,heat} \times \left(\frac{1}{3,412 \text{ Btu/kWh} \times \eta_{heat}} \right) \\ &= \left(\frac{1}{1.0} - \frac{1}{7.0} \right) \times (\pi \times 0.5 \text{ ft} \times 10 \text{ ft}) \times 789 \text{ hours} \times 64.9^\circ F \times \left(\frac{1}{3,412 \text{ Btu/kWh} \times 2.0} \right) \\ &= 101.0 \text{ kWh} \end{aligned}$$

The default summer per measure gross coincident peak demand reduction will be assigned according to the following calculation:

$$\begin{aligned} \Delta kW &= \frac{\Delta kWh_{cool}}{EFLH_{cool}} \times CF \\ &= \frac{12.7 \text{ kWh}}{613 \text{ hours}} \times 0.68 \\ &= 0.014 \text{ kW} \end{aligned}$$

Source(s)

The primary source for this deemed savings approach is the Iowa TRM 2019, pp. 212-217. Other assumptions such as heating/cooling full load hours and temperature differences are based on NOAA TMY data estimations.

Update Summary

The changes to this section, compared with last year, are described in Table 5-14.

Table 5-14: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

5.3.6 Duct Sealing

Measure Description

This measure realizes energy savings by identifying and sealing leaky duct work in unconditioned space using mastic sealant or metal tape.

Three methodologies for estimating the savings associated with sealing the ducts are provided. The first method requires the use of a blower door and the second requires the use of a duct blaster.

1. Modified Blower Door Subtraction - this technique is described in of the Energy Conservatory Blower Door Manual:
<http://energyconservatory.com/wp-content/uploads/2017/08/Blower-Door-Subtraction-Method.pdf>
2. Total Leakage Test – this technique is described in detail on p. 18 – 24 of the Energy Conservatory Duct Blaster Manual:
<https://energyconservatory.com/wp-content/uploads/2014/07/Duct-Blaster-Manual-Series-B-DG700.pdf>
3. Prescriptive – this method will make assumptions about the pre-sealing leakage value, calculate the energy savings and demand reductions for those first five participants where total leakage testing was used, and make assumptions about the energy savings and demand reductions for remaining participants (using data gathered from the first five participants) who used the same contractor.

The existing baseline condition is leaky duct work within the unconditioned space. The efficient condition is sealed duct work throughout the unconditioned space in the home.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to duct leakage reduction and based on the methodology used:

Methodology 1: Modified Blower Door Subtraction Leakage

$$cfm50_{DL} = (cfm50_{whole\ house} - cfm50_{envelope\ only}) \times SCF$$

$$\Delta cfm25_{DL} = (Pre\ cfm50_{DL} - Post\ cfm50_{DL}) \times 0.64 \times (SLF + RLF)$$

Methodology 2: Total Leakage Test

$$\Delta cfm25_{DL} = (Pre\ cfm25_{DL} - Post\ cfm25_{DL}) * DLF$$

After obtaining duct leakage reduction from one of the above methods, gross annual electric energy savings are calculated according to the following equations:



$$\Delta kWh = \Delta kWh_{cool} + \Delta kWh_{heat}$$

$$\Delta kWh_{cool} = \frac{\Delta cfm_{25_{DL}} \times EFLH_{cool} \times Size}{tons \times 400 \frac{cfm}{ton} \times 1,000 \frac{W}{kW} \times SEER}$$

$$\Delta kWh_{heat} = \frac{\Delta cfm_{25_{DL}} \times EFLH_{heat} \times Size \times 293.1 \frac{kW}{MMBtu}}{tons \times 400 \frac{cfm}{ton} \times 1,000,000 \frac{Btu}{MMBtu} \times COP}$$

Per measure, gross coincident demand reductions are calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh}{EFLH_{cool}} \times CF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkWh_{cool} = gross annual electric energy cooling savings
- ΔkWh_{heat} = gross annual electric energy heating savings
- ΔkW = per measure gross coincident demand reductions
- $cfm_{50_{DL}}$ = duct leakage
- $\Delta cfm_{25_{DL}}$ = duct leakage reduction
- $cfm_{25_{DL}}$ = duct blaster test result finding cubic feet per minute at 25 Pascal⁶⁴ pressure differential with all supply and return registers sealed
- $cfm_{50_{whole\ house}}$ = standard blower door test result finding cubic feet per minute at 50 Pascal pressure differential
- $cfm_{50_{envelope\ only}}$ = blower door test result finding cubic feet per minute at 50 Pascal pressure differential with all supply and return registers sealed
- SCF = subtraction correction factor used to account for underestimation of duct leakage due to connections between duct system and the home. This value is determined by measuring pressure in duct system with registers sealed and using look up table provided by Energy Conservatory.

⁶⁴ Mid-Atlantic TRM 2019, p. 110. "25 Pascal is the typical pressures experienced in the duct system under normal operating conditions. To convert CFM50 to CFM25 you multiply by 0.64 (inverse of the "Can't Reach Fifty" factor for CFM25; see Energy Conservatory Blower Door Manual)."

- SLF = supply loss factor; percentage of leaks sealed located in supply ducts x 1⁶⁵
 RLF = return loss factor; percentage of leaks sealed located in return ducts x 0.5⁶⁶
 $\Delta\text{cfm}_{25\text{DL}}$ = duct leakage reduction in CFM25
 EFLH_{cool} = equivalent cooling full load hours (FLH)
 EFLH_{heat} = equivalent heating full load hours (FLH)
 Size = cooling/heating capacity of equipment in Btu/h (1 ton = 12,000 Btu/h)
 SEER = seasonal energy efficiency ratio of air conditioning equipment
 COP = coefficient of performance of heating equipment⁶⁷

Input Variables

Table 5-15: Input Values for Duct Sealing Savings Calculations

Component	Type	Value	Units	Sources
cfm50_{whole house}	Variable	See customer application	cfm	Customer application
cfm50_{envelope only}	Variable	See customer application	cfm	Customer application
SCF	Variable	See Table 5-11	-	Mid-Atlantic TRM 2019, p. 110
SLF	Fixed	0.5	-	Mid-Atlantic TRM 2019, p. 111 ⁶⁸
RLF	Fixed	0.25	-	Mid-Atlantic TRM 2019, p. 111 ⁶⁹
Precfm25_{DL}	Variable	See customer application	cfm	Customer application

⁶⁵ Mid-Atlantic TRM 2019, p. 111. Assumes that for each percent of supply air loss there is one percent annual energy penalty. This assumes supply side leaks are direct losses to the outside and are not recaptured back to the house. This could be adjusted downward to reflect regain of usable energy to the house from duct leaks. For example, during the winter some of the energy lost from supply leaks in a crawlspace will probably be regained back to the house (sometimes 1/2 or more may be regained). More information provided in "Appendix E Estimating HVAC System Loss From Duct Airtightness Measurements" <https://energyconservatory.com/wp-content/uploads/2014/07/Duct-Blaster-Manual-Series-B-DG700.pdf>. Accessed 10/01/2019.

⁶⁶ Mid-Atlantic TRM 2019, p. 111. Assumes that for each percent of return air loss there is a half percent annual energy penalty. Note that this assumes that return leaks contribute less to energy losses than do supply leaks. This value could be adjusted upward if there was reason to suspect that the return leaks contribute significantly more energy loss than "average" (e.g., pulling return air from a super-heated attic), or can be adjusted downward to represent significantly less energy loss (e.g. pulling return air from a moderate temperature crawl space). More information provided in "Appendix E Estimating HVAC System Loss From Duct Airtightness Measurements" from <https://energyconservatory.com/wp-content/uploads/2014/07/Duct-Blaster-Manual-Series-B-DG700.pdf>. Accessed 10/01/2019.

⁶⁷ If a HSPF value is provided for residential split heat pump systems, COP = HSPF x 3.412.

⁶⁸ Mid-Atlantic TRM 2019, p. 111. Assumes 50% of leaks are in supply ducts.

⁶⁹ Mid-Atlantic TRM 2019, p. 111. Assumes 50% of leaks are in return ducts.

Component	Type	Value	Units	Sources
		Prescriptive method default = 30% x Btu/h / (12,000 Btu/ton-h) x 400 cfm/ton Or—if Btu/h not available: Richmond, VA default = 289 Charlotte, NC default = 287		Dominion Residential Duct Testing Program participant data ⁷⁰
Postcfm25_{DL}	Variable	See customer application	cfm	Customer application
		Prescriptive method default = Lower of average of available PostCFM25 _{DL} for similar contractor or PreCFM25 _{DL} default		Dominion Residential Duct Testing Program participant data
Δcfm25_{DL}	Variable	See duct leakage calculations	cfm	Mid-Atlantic TRM 2019, p. 111
EFLH_{cool}	Fixed	VA = 842; NC = 936; See Table 8-3 in Sub-appendix II	hours (annual)	Mid-Atlantic TRM 2019, p. 111; ENERGY STAR® calculator ⁷¹
EFLH_{heat}	Fixed	VA = 789; NC = 533; See Table 8-3 in Sub-appendix II	hours (annual)	Mid-Atlantic TRM 2019, p. 112
Size	Variable	See customer application	Btu/h	Customer application
		VA default = 28,720 NC default = 30,889		Dominion's portfolio of residential energy efficiency programs program ⁷²

⁷⁰ DNV GL reviewed the customer application data on total leakage duct blaster method PreCFM25DL percentages in the Residential Duct Testing Program from program start dates through the end of 2014 (12/31/2014). The average pre-sealing duct leakage percentage (PreCFM25DL / (system size in tons x 400 CFM/ton)) was 30% for VA customers. There were no NC participants in this program at the end of 2014. To calculate customer specific PreCFM25DL, 30% was converted to 289 CFM for VA and 287 CFM for NC. For VA, the calculation = 28,903Btu/h 400CFM/ton x 30% / 12000 Btu/ton-hr, assuming a default of 28,903 Btu/h for Richmond, VA. These values were not updated for 2016 as average heat pump capacity varied little between 2014 and 2015.

⁷¹ ENERGY STAR®. Heat Pumps "Savings Calculator," Heating Usage, http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=EP. Accessed December 24, 2014.

⁷² DNV GL reviewed the customer application data on air source heat pump size of participants in the Residential AC Cycling Program, Residential Duct Testing Program, Residential Heat Pump Upgrade Program and Residential Heat Pump Tune-Up Programs from program start dates through the end of 2015 (12/31/2015). The average air source heat pump capacity in VA (2.39 tons or 28,720 Btu/h) was calculated using data from 85,412 air source heat pump units enrolled in these programs in Virginia. The average capacity in NC (2.57 tons or 30,889 Btu/h) was calculated using data from 5,292 air source heat pump units enrolled in these programs in North Carolina. The average capacity was converted to Btu/h using the conversion factor of 12,000 Btu/h per ton. These values were not updated for 2016 as average heat pump capacity varied little between 2014 and 2015.

Component	Type	Value	Units	Sources
SEER	Variable	See customer application	Btu/W -h	Customer application
		Default: see in Table 8-7:		Mid-Atlantic TRM 2019, pp. 111-112, based on Table C403.2.3(2) of 2012 IECC
COP	Variable	See customer application	-	Customer application
		Default: see in Table 8-7: Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings		Mid-Atlantic TRM 2019, p. 114, which is based on Table C403.2.3(2) of 2012 IECC
DLF	Variable	1 floor: 0.75 2 floors: 0.67	-	DEER Update Study (2004-2005), pp. 8-19 ⁷³
CF	Fixed	0.69	-	Mid-Atlantic TRM 2019, p. 116 ⁷⁴

Table 5-16: Correction Table for Blower Door Subtraction⁷⁵

House to Duct Pressure (Taped Off)	Subtraction Correction Factor (SCF)	House to Duct Pressure (Taped Off)	Subtraction Correction Factor (SCF)
50	1.00	30	2.23
49	1.09	29	2.32
48	1.14	28	2.42
47	1.19	27	2.52
46	1.24	26	2.64
45	1.29	25	2.76
44	1.34	24	2.89
43	1.39	23	3.03
42	1.44	22	3.18
41	1.49	21	3.35
40	1.54	20	3.54

⁷³ Itron prepared for SCE, Database for Energy Efficiency Resources (DEER) Update Study, Final Report (2004 – 2005), p. 8-19, http://deeresources.com/files/deer2005/downloads/DEER2005UpdateFinalReport_ItronVersion.pdf. Accessed 8/16/2016.

⁷⁴ Mid-Atlantic TRM 2019, p. 116. Summer system peak coincidence factor for central A/C (hour ending 5pm on hottest summer weekday). "Based on BG&E "Development of Residential Load Profiler for Central Air Conditioner and Heat Pumps" research, the Maryland Peak Definition coincidence factor is 0.69.

⁷⁵ Table sourced from p.1 of the Energy Conservatory blower door manual – blower door subtraction method: <http://energyconservatory.com/wp-content/uploads/2017/08/Blower-Door-Subtraction-Method.pdf>. Accessed 10/1/2019.

House to Duct Pressure (Taped Off)	Subtraction Correction Factor (SCF)
39	1.60
38	1.65
37	1.71
36	1.78
35	1.84
34	1.91
33	1.98
32	2.06
31	2.14

House to Duct Pressure (Taped Off)	Subtraction Correction Factor (SCF)
19	3.74
18	3.97
17	4.23
16	4.51
15	4.83
14	5.20
13	5.63
12	6.12
11	6.71

Default Savings

No default savings will be awarded for this measure if pre- and post-duct testing values are not provided in the customer application.

Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 106–119.

Update Summary

The changes to this section, compared with last year, are described in Table 5-17.

Table 5-17: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

5.4 Lighting End Use

5.4.1 LED Lighting

This measure is also provided by the Residential Income and Age Qualifying Home Improvement Program. The savings are determined using the methodology described in Section 2.3.1.

6 RESIDENTIAL EFFICIENT PRODUCTS MARKETPLACE PROGRAM, DSM PHASE VII

6.1 Lighting End Use

6.1.1 Lighting Lamps & Fixtures

Measure Description

This measure describes savings from the purchase and installation of an ENERGY STAR® Integrated Screw Based SSL (LED) Lamp in place of an in situ lamp. For time of sale, the baseline wattage is assumed to be that of an incandescent or EISA-compliant (where applicable) lamp installed in a screw-base socket. Note that the baseline will be EISA-compliant lamps for all categories to which EISA applies.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = (watts_{base} - watts_{ee}) \times ISR \times HOU \times NRS \\ \times [WHFe_{heat} + (WHFe_{cool} - 1)] \times \frac{1 kW}{1,000 W} \times DCP$$

Per measure, gross summer coincident peak demand savings are calculated according to the following equation:

$$\Delta kW = (watts_{base} - watts_{ee}) \times ISR \times NRS \times WHFd \times CF \times \frac{1 kW}{1,000 W} \times DCP$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident peak demand savings
- $watts_{base}$ = assumed wattage of lamp being replaced based on lumens of LED
- $watts_{ee}$ = wattage of efficient LED bulb
- ISR = in-service rate
- HOU = annual hours of use
- NRS = non-residential sales factor to account for lighting measures purchased by non-residential customers
- $WHFe_{heat}$ = waste heat factor to account for electric heating increase due to reduced waste heat from efficient lighting
- $WHFe_{cool}$ = waste heat factor to account for electric cooling savings due to reduced waste heat from efficient lighting
- WHFd = waste heat factor for summer coincident peak demand savings to account for cooling savings from efficient lighting

DCP = Dominion Energy customer proportion to account for leakage due to non-Dominion customers making in-store purchases
 CF = peak coincidence factor

Input Variables

Table 6-1: Input Parameters for Lighting Savings

Component	Type	Value	Units	Sources
Qty	Variable	Total quantity of lamps or retrofit kits	-	Customer application
ISR	Variable	0.98	-	Mid-Atlantic TRM 2019, p. 34
lumens_{ee}	Variable	Lumens per lamp	lumens	Customer application
watts_{base}	Variable	See Table 6-2	watts	Mid-Atlantic TRM 2019, p. 30
watts_{ee}	Variable	See customer application	watts	Mid-Atlantic TRM 2019, p. 34
HOU	Variable	See Table 8-9 in Sub-appendix F1-IV: Residential Lighting Factors	hour/year	Mid-Atlantic TRM 2019, p. 34
		Default = 679		
NRS	Fixed	0.90	-	Final EM&V Report for the 2013 Energy Efficient Lighting Program ⁷⁶
WHF_{heat}	Variable	See Table 8-9 in Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 35
		Default = 0.899		
WHF_{cool}	Variable	See Table 8-9 in Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 35
		Default = 1.077		
WHFd	Variable	See Table 8-9 in Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 36
		Default = 1.170		

⁷⁶ Final EM&V Report for the 2013 Energy Efficient Lighting Program, for Duke Energy Progress, by Navigant Consulting, Inc., August 13, 2014, p. 27.

Component	Type	Value	Units	Sources
CF	Variable	See Table 8-9 in Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 37, based on PJM Coincidence Factors
		Default = 0.058		
DCP	Variable	Varies by store location; See Table 8-10 in Sub-appendix F1-IV: Residential Lighting Factors	-	Dominion Energy
		Default = 1.0, for on-line purchases		On-line purchases by Dominion Energy customers, exclusively
Fixture Location	Variable	See customer application	-	See customer application
		Default = Unknown		
Fixture Type	Variable	See customer application	-	See customer application
Bulb Diameter	Variable	See customer application (for reflector lamps, only)	number of 1/8-inch increments	See customer application
Beam Angle	Variable	See customer application (for reflector lamps, only)	degrees	See customer application
Center-beam Candlepower	Variable	See customer application	candela	ENERGY STAR Center Beam Candle Power Tool

Table 6-2 is taken directly from the Mid-Atlantic TRM 2019, but with the addition of the left-most column that maps the “Lamp Types” to the “Product Types” categories offered by the program. The “Product Types” are mapped to the “Lamp Types” most similar to the “Product Type” category and having the largest lumen range to accommodate a range of lighting types. The minimum and maximum lumen values are used in combination with “Product Type” to determine watts_{base}.

Table 6-2: Baseline Wattage Determination⁷⁷

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Omnidirectional, Medium Screw Base Lamps (A, BT, P, PS, S, or T) (†, ◇ see exceptions that follow)	250	309	25	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"A15" "A19" "A21" "A23" "S14"	"NO"	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	749	29	12				
	750	1,049	43	20				
	1,050	1,489	53	28				
	1,490	2,600	72	46				
	3,601	3,300	150	66				
	3,301	3,999	200	200				
	4,000	6,000	300	300				
†S Shape: ≤749 lumens; T Shape: ≤749 lumens or >10" length)	250	309	25	25				
	310	749	40	12				

⁷⁷ Gray cells in this table indicates those lamp types that are not currently used by the tracking data because not enough tracking data details are available to map to them.

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Decorative, Medium Screw Base (G Shape) (± see exceptions that follow)	250	309	25	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"G16.5", "G25", "G30", "G40"	"NO" "YES" "	"E26 (MEDIUM)"
	310	749	29	12				"E26D"
	750	1,049	43	20				"GU10"
	1,050	1,300	53	26				"GU24"
±G16-1/2, G25, G30 ≤499 lumens	250	309	25	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"G16.5", "G25", "G30", "G40"	"NO" "YES" "	"E26 (MEDIUM)"
	310	349	25	7				"E12 (CANDELABRA)" "E17"
	350	499	40	9				"E26 (MEDIUM)"
								"GU10"
								"GU24"
								"GU5.3"
								"GX5.3"

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
±G Shape with diameter ≥5"	250	349	25	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"G16.5", "G25", "G30", "G40"	"NO" "YES" "	"E12 (CANDELABRA)" "E17"
	350	499	40	40				
	500	574	60	60				
	575	649	75	75				
	650	1,099	100	100				
	1,100	1,300	150	150				

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Decorative, Medium Screw Base (B, BA, C, CA, DC, F, and ST) (*see exceptions that follow)	70	89	10	10	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"C7" "C9" "C11" "B10" "B11" "B13" "BA10" "BA11" "C7" "C9" "C11" "CA10" "F10" "F15" "F20" "ST" "ST12" "ST18" "ST19"	"NO" "YES" "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	90	149	15	15				
	150	299	25	25				
	300	309	40	40				
	310	499	29	9				
	500	699	29	13				" " "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
*B, BA, CA, and F ≤499 lumens	70	89	10	10	"A-LINE" "BULGED REFLECTOR"	"C7" "C9"	"NO" "YES" "	" " "E12 (CANDELABR A)" "E17"
	90	149	15	15	"CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE"	"B11" "B13" "BA10" "BA11" "C7" "C9" "C11"	"	"E26 (MEDIUM)" "E26D"
	150	299	25	25	"MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR"	"CA10" "F10" "F15" "F20" "ST" "ST12"		"GU10" "GU24"
	300	309	40	40	"REFLECTOR" "SPECIALTY"	"ST18" "ST19"		"GU5.3" "GX5.3"
	310	499	40	9				
Omnidirectional, Intermediate Screw Base Lamps (A, BT, P, PS, S, or T) (†see exceptions that follow)	250	309	25	25	"A-LINE" "BULGED REFLECTOR"	"A15" "A19" "A21" "A23" "S14"	"NO"	" " "E12 (CANDELABR A)" "E17"
	310	749	40	12	"CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR"			"E26 (MEDIUM)" "E26D"
†S Shape: first number symbol ≤12.5; T Shape: first number symbol ≤8 and nominal overall length <12"	250	309	25	25	"PARABOLIC ALUMINIZED REFLECTOR"			"GU10" "GU24"
	310	749	40	40	"REFLECTOR" "SPECIALTY"			"GU5.3" "GX5.3"

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Decorative, Intermediate Screw Base (G Shape) (‡see exception that follows)	250	309	25	25				
	310	349	25	7				
	350	499	40	9				
‡G Shape: first numeral <12.5 or diameter ≥5"	250	349	25	25				
	350	499	40	40				
Decorative, Intermediate Screw Base (B, BA, C, CA, DC, F, and ST)	70	89	10	10				
	90	149	15	15				
	150	299	25	25				
	300	309	40	40				
	310	499	40	9				
Omnidirectional, Candelabra Screw Base Lamps (A, BT, P, PS, S, or T) (†see exceptions that follow)	250	309	25	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"A15" "A19" "A21" "A23" "S14"	"NO"	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	749	40	12				
	750	1,049	60	20				
†S Shape: first number symbol ≤12.5; T Shape: first number symbol ≤8 and nominal overall length <12"	250	309	25	25				
	310	749	40	40				
	750	1,049	60	60				

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Decorative, Candelabra Screw Base (G Shape) (±see exceptions that follow)	250	309	25	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"G16.5", "G25", "G30", "G40"	"NO" "YES" "	"E12 (CANDELABRA)" "E17"
	310	349	25	7				
	350	499	40	9				
	500	574	60	12				
±G Shape: first numeral <12.5 or diameter ≥5"	250	349	25	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"C7" "C9" "C11" "B10" "B11" "B13" "BA10" "BA11" "C7" "C9" "C11" "CA10" "F10" "F15" "F20" "ST" "ST12" "ST18" "ST19"	"NO" "YES" "	"E12 (CANDELABRA)" "E17"
	350	499	40	40				
	500	574	60	60				

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Decorative, Candelabra Screw Base (B, BA, C, CA, DC, and F, and ST)	70	89	10	10				
	90	149	15	15				
	150	299	25	25				
	300	309	40	40				
	310	499	40	9				
	500	699	60	13				
Directional, Medium Screw Base: diameter ≤2.25"	400	449	40	9	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"MR16" "MRX16" "PAR16" "R14" "R16"	"NO" "YES" "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	450	499	45	10				
	500	649	50	13				
	650	1,199	65	20				

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Directional, Medium Screw Base, R, ER, BR, BPAR or similar bulb shapes of diameter >2.5" (**see exceptions that follow)	640	739	40	15	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"PAR30" "PAR30L" "PAR30S" "PAR38" "R40"	"NO" "YES" "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	740	849	45	18				
	850	1,179	50	22				
	1,180	1,419	65	29				
	1,420	1,789	75	36				
	1,790	2,049	90	43				
	2,050	2,579	100	51				
	2,580	3,300	120	65				
	3,301	3,429	120	120				
	3,430	4,270	150	150				

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Directional, Medium Screw Base, R, ER, BR, BPAR or similar bulb shapes with medium screw bases w/ diameter > 2.26" and ≤ 2.5" (**see exceptions that follow)	540	629	40	13	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR"	"PAR20"	"NO" "YES" "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D"
	630	719	45	15	"PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"			"GU10" "GU24" "GU5.3" "GX5.3"
	720	999	50	19	"A-LINE" "BULGED REFLECTOR"	"R20" "PAR20"	"NO" "YES" "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D"
	1,000	1,199	65	24	"CANDELABRA BASE" "CANDLE"			"GU10" "GU24" "GU5.3" "GX5.3"
	1,200	1,519	75	30	"FLAME" "GLOBE"			
	1,520	1,729	90	36	"MULTIFACETED REFLECTOR"			
	1,730	2,189	100	44	"PARABOLIC ALUMINIZED REFLECTOR"			
	2,190	2,899	120	56	"REFLECTOR"			
	2,900	3,300	120	69	"SPECIALTY"			
	3,301	3,850	150	150				
**ER30, BR30, BR40, or ER40	400	449	40	9	"FIXTURE" "RETROFIT KIT"	" "	" " "NO"	" "
	450	499	45	10				
	500	649 to 1,179	50	14				

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
**BR30, BR40, or ER40	650	1,419	65	23				
**R20	400	449	40	9	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"R20"	"NO" "YES" "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	450	719	45	13				
**All reflector lamps below lumen ranges previously specified	200	299	20	20	"FIXTURE" "RETROFIT KIT"	" "	" " "NO"	" "
	300	399 to 639	30	9				

Mid-Atlantic v9 TRM Lamp Type	Lumen Range		watts _{base}		Tracking Data Categories			
	Lower Bound	Upper Bound	2017-2019	2020+	Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Rough service, shatter resistant, 3-way incandescent, and vibration service	250	309	25	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"A15" "A19" "A21" "A23" "S14"	"YES"	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	749	40	12				
	750	1,049	60	20				
	1,050	1,489	75	28				
	1,490	2,600	100	46				
	2,601	3,300	150	66				
	3,301	3,999	200	200				
	4,000	6,000	300	300				



Default Savings

No savings will be given when required information is missing.

Source

The primary sources for this deemed savings approach include the Mid-Atlantic TRM v.9 2019, pp. 29-41, and Navigant's Final EM&V Report for the 2013 Energy Efficient Lighting Program for Duke Energy Progress, pp. 22-23.

Update Summary

The changes to this section, compared with last year, are described in Table 6-3.

Table 6-3: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

6.2 Plug Load End Use

6.2.1 Air Purifier

Measure Description

An air purifier (cleaner) is a portable electric appliance that removes dust and fine particles from indoor air. This measure characterizes the purchase and installation of a unit meeting the energy efficiency specifications of ENERGY STAR in place of a baseline model.

The baseline equipment is assumed to be a conventional non-ENERGY STAR unit with the consumption estimates based upon EPA research on available models in 2011. The efficient equipment is defined as an air purifier that meets the specifications of ENERGY STAR as provided below:

The efficient equipment is defined as an air purifier that meets the specifications of ENERGY STAR as provided below:

Minimum Clean Air Delivery Rate (CADR), dust-free: 50 cfm

Minimum energy efficiency requirement: 2.0 CADR/watt

Maximum Standby Power Requirement: 2.0 watts; qualifying models that perform secondary consumer functions (e.g., clock, remote control) must also meet the standby power requirement.

Maximum ozone production: 50 parts per billion (ppb), per UL Standard 867 for models that emit ozone as a byproduct of air cleaning.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = kWh_{base} - kWh_{ee}$$

Per measure, gross summer coincident peak savings are calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh}{HOU} \times CF$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident demand reduction
kWh_{base}	= baseline annual electric energy usage
kWh_{ee}	= efficient annual electric energy usage
HOU	= average annual hours of use

CF = Summer Peak Coincidence Factor

Input Variables

Table 6-4: Input Values for Air Purifier Savings Calculations

Component	Type	Value	Unit	Source(s)
kWh_{base}	Variable	See Table 6-6	kWh	Mid Atlantic TRM 2019, p. 240, footnote 532
kWh_{ee}	Variable	See Table 6-6	kWh	Mid Atlantic TRM 2019, p. 240, footnote 533
HOU	Fixed	5,840	hours, annual	Mid Atlantic TRM 2019, p. 240, footnote 534
CF	Fixed	0.67	-	Mid Atlantic TRM 2019, pp. 240-241, footnote 535
Range_{CADR}	Variable	See customer application	-	See customer application
		Default: CADR 50-100		

Table 6-5: Annual Electric Energy Usage by Clear Air Delivery Rate (CADR)

Clean Air Delivery Rate (CADR)	Baseline kWh _{base} (kWh/year)	Efficient kWh _{ee} (kWh/year)
CADR 50-100	441	148
CADR 101-150	733	245
CADR 151-200	1,025	342
CADR Over 250	1,609	537

Default Savings

Default per measure gross annual electric energy savings are calculated according to the following equation, by assuming that Range_{CADR}=CADR 50-100:

$$\begin{aligned}
 \Delta kWh &= kWh_{base} - kWh_{ee} \\
 &= 441 kWh - 148 kWh \\
 &= 293 kWh
 \end{aligned}$$

Default per measure gross summer coincident peak savings are calculated according to the following equation, by assuming that Range_{CADR}=CADR 50-100:

$$\begin{aligned}
 \Delta kW &= \frac{\Delta kWh}{HOU} \times CF \\
 &= \frac{293 kWh}{5,840 hours} \times 0.67 \\
 &= 0.034 kW
 \end{aligned}$$

Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM v9.0 2019, pp. 239-241.

Update Summary

The changes to this section, compared with last year, are described in Table 6-6.

Table 6-6: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

6.2.2 Clothes Washer

Measure Description

This measure relates to the purchase (time of sale) and installation of a clothes washer exceeding either the ENERGY STAR/CEE Tier 1, ENERGY STAR Most Efficient/CEE Tier 2, or CEE Tier 3 minimum qualifying efficiency standards.

Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\begin{aligned} \Delta kWh &= [(Size \times 1/IMEF_{base} \times N_{cycle}) \\ &\quad \times (CW_{base} + (DHW_{base} \times DHW_{electric}) \\ &\quad + (Dryer_{base} \times Dryer_{electric}))] \\ &\quad - [(Size \times 1/IMEF_{ee} \times N_{cycle}) \\ &\quad \times (CW_{ee} + (DHW_{ee} \times DHW_{electric}) + (Dryer_{ee} \times Dryer_{electric}))] \end{aligned}$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = \Delta kWh/HOU \times CF$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident peak demand savings
Size	= clothes washer capacity
$IMEF_{base}$	= Integrated Modified Energy Factor of baseline unit
$IMEF_{ee}$	= Integrated Modified Energy Factor of efficient unit
N_{cycle}	= number of wash cycles per year
CW_{base}	= proportion of total energy consumption of baseline clothes washer operation
DHW_{base}	= proportion of total energy consumption for water heating of baseline unit
$Dryer_{base}$	= proportion of total energy consumption for baseline dryer operation
CW_{ee}	= proportion of total energy consumption for efficient clothes washer operation
DHW_{ee}	= proportion of total energy consumption for water heating of efficient unit
$Dryer_{ee}$	= proportion of total energy consumption for efficient dryer operation
$DHW_{electric}$	= proportion of DHW savings assumed to be electric
$Dryer_{electric}$	= proportion of dryer savings assumed to be electric
HOU	= annual hours of use of clothes washer
CF	= Summer Peak Coincidence Factor

Input Variables

Table 6-7: Input Variables for Clothes Washer Savings Calculation

Component	Type	Value	Unit	Source(s)
Size	Variable	See customer application	feet ³	Mid-Atlantic TRM 2019, p. 212
		Default = 3.45		
IMEF_{base}	Variable	Default = 1.66	-	Mid-Atlantic TRM 2019, p. 212
IMEF_{ee}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 213
		Default = 2.26		
N_{cycle}	Fixed	254	-	Mid-Atlantic TRM 2019, p. 213, footnote 482
%CW_{base}	Fixed	0.08	-	Mid-Atlantic TRM 2019, p. 213
%CW_{ee}	Fixed	0.08	-	Mid-Atlantic TRM 2019, p. 213
%DHW_{base}	Fixed	0.31	-	Mid-Atlantic TRM 2019, p. 213
%DHW_{ee}	Fixed	0.23	-	Mid-Atlantic TRM 2019, p. 213
%Dryer_{base}	Fixed	0.61	-	Mid-Atlantic TRM 2019, p. 213
%Dryer_{ee}	Fixed	0.69	-	Mid-Atlantic TRM 2019, p. 213
%DHW_{electric}	Fixed	0.65	-	Mid-Atlantic TRM 2019, p. 214
%Dryer_{electric}	Fixed	0.79	-	Mid-Atlantic TRM 2019, p. 214
Type_{Loading}	Variable	See customer application	-	See customer application
η_{Tier}	Variable	See customer application	-	See customer application
		Default = Tier 1		
Fuel_{DHW}	Variable	See customer application	-	See customer application
Fuel_{Dryer}	Variable	See customer application	-	See customer application
HOU	Fixed	265	hours, annual	Mid-Atlantic TRM 2019, p. 215, footnote 487
CF	Fixed	0.029	-	Mid-Atlantic TRM 2019, p. 215, footnote 488

Table 6-8: IMEF based on Efficiency Level and Loading Type

Efficiency Level	Loading Type		
	Front Loading	Top Loading	Weighted Average
Federal Standard (baseline)	1.84	1.29	1.66
ENERGYSTAR, CEE Tier 1	2.38	2.06	2.26
ENERGYSTAR, most efficient, CEE Tier 2	2.74	2.74	2.74
CEE Tier 3	2.92	N/A	2.92

Table 6-9: Proportion of Total Energy Consumption based on Efficiency Level

Efficiency Level	Total Energy Consumption Proportions		
	CW	DHW	Dryer
Federal Standard (baseline)	0.08	0.31	0.61
ENERGYSTAR, CEE Tier 1	0.08	0.23	0.69
ENERGYSTAR, most efficient, CEE Tier 2	0.14	0.10	0.76
CEE Tier 3	0.14	0.10	0.76


Table 6-10: Proportion of Savings Assumed based on DHW Fuel

DHW Fuel	DHW _{electric}	Dryer _{electric}
Electric	1.00	1.00
Fossil Fuel	0.00	0.00
Unknown	0.65	0.79

Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided.

$$\begin{aligned} \Delta kWh = & \left[(3.45 \times 1/1.66 \times 254) \times (0.08 + (0.31 \times 0.65) + (0.61 \times 0.79)) \right] \\ & - \left[(3.45 \times 1/2.26 \times 254) \right. \\ & \left. \times (0.08 + (0.23 \times 0.65) + (0.69 \times 0.79)) \right] \end{aligned}$$


$$= 102.6 \text{ kWh}$$

$$\Delta kW = 102.6 \text{ kWh} / 265 \text{ hours} \times 0.029$$

$$= 0.011 \text{ kW}$$

Sources

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 211-220.

Update Summary

The changes to this section, compared with last year, are described in Table 6-11.

Table 6-11: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

6.2.3 Clothes Dryer

Measure Description

This measure relates to the installation of a residential clothes dryer meeting the ENERGY STAR criteria. ENERGY STAR qualified clothes dryers save energy through a combination of more efficient drying and reduced runtime of the drying cycle. More efficient drying is achieved through increased insulation, modifying operating conditions such as air flow and/or heat input rate, improving air circulation through better drum design or booster fans, and improving efficiency of motors. Reducing the runtime of dryers through automatic termination by temperature and moisture sensors is believed to have the greatest potential for reducing energy use in clothes dryers. ENERGY STAR provides criteria for both gas and electric clothes dryers.

Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation.

$$\Delta kWh = \left(\frac{Load}{CEF_{base}} - \frac{Load}{CEF_{ee}} \right) \times N_{cycle} \times Dryer_{electric}$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = \Delta kWh / HOU \times CF$$

Where:

- ΔkWh = gross annual electric energy savings
- ΔkW = gross coincident peak demand savings
- Load = the average total weight of clothes per drying cycle
- CEF_{base} = Combined Energy Factor (CEF) of the baseline unit
- CEF_{ee} = Combined Energy Factor (CEF) of the efficient unit
- N_{cycle} = number of dryer cycles per year
- $Dryer_{electric}$ = proportion of overall savings coming from electricity
- HOU = annual hours of use of clothes dryer
- CF = summer peak coincidence factor for measure

Input Variables

Table 6-12: Input Variables for Clothes Dryer Savings Calculation

Component	Type	Value	Unit	Source(s)
Load	Variable	See customer application	lb	Mid-Atlantic TRM 2019, p. 242
		Default = 8.45		

Component	Type	Value	Unit	Source(s)
CEF_{base}	Variable	See customer application	lb/kWh	Mid-Atlantic TRM 2019, p. 243
		Default = 3.11		
CEF_{ee}	Variable	See customer application	lb/kWh	Mid-Atlantic TRM 2019, pg. 243
		Default = 3.93		
N_{cycle}	Fixed	311	-	Mid-Atlantic TRM 2019, pp. 243-244
Dryer_{electric}	Variable	See customer application		Mid-Atlantic TRM 2019, p. 244
		Default = 1.00		
HOU	Fixed	290	hours, annual	Mid-Atlantic TRM 2019, p. 244
CF	Fixed	0.029	-	Mid-Atlantic TRM 2019, p. 244
Size_{dryer}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 243
		Default = Standard		
Class	Variable	See customer application	-	Mid-Atlantic TRM 2019, pp. 243-244
		Default = Vented or Ventless Electric, Standard (≥ 4.4 ft ³)		
Fuel_{dryer}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 244
		Default = Electric		
Building	Variable	See customer application	-	See customer application
		Default = Single Family		

Table 6-13: Load Based on Dryer Size

Dryer Size	Default Load (lb)
Standard	8.45
Fossil Fuel	3.00

Table 6-14: CEF_{base} and CEF_{ee} based on Product Class

Product Class	Default CEF _{base} (lb/kWh)	Default CEF _{ee} (lb/kWh)
Vented or Ventless Electric, Standard (≥ 4.4 ft³)	3.11	3.93
Vented or Ventless Electric, Compact, 120V (< 4.4 ft³)	3.01	3.80

Product Class	Default CEF _{base} (lb/kWh)	Default CEF _{ee} (lb/kWh)
Vented Electric, Compact, 240V (< 4.4 ft ³)	2.73	3.45
Ventless Electric, Compact, 240V (< 4.4 ft ³)	2.13	2.68
Vented Gas	2.84	3.48

Table 6-15: Proportion of Overall Savings From Electric Based on Fuel Type

Clothes Dryer Fuel Type	Fuel _{electric}
Electric	1.00
Gas	0.16

Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided.

$$\begin{aligned} \Delta kWh &= \left(\frac{Load}{CEF_{base}} - \frac{Load}{CEF_{ee}} \right) \times N_{cycle} \times Fuel_{electric} \\ &= \left(\frac{8.45 \text{ lb}}{3.11 \text{ lb/kWh}} - \frac{8.45 \text{ lb}}{3.93 \text{ lb/kWh}} \right) \times 311 \times 1.00 \\ &= 176.3 \text{ kWh} \end{aligned}$$

$$\begin{aligned} \Delta kW &= \Delta kWh / HOU \times CF \\ &= 176.3 \text{ kWh} / 290 \text{ hours} \times 0.029 \\ &= 0.018 \text{ kW} \end{aligned}$$

Sources

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 242-246.



Update Summary

The changes to this section, compared with last year, are described in Table 6-16.

Table 6-16: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

6.2.4 Dehumidifier

Measure Description

This measure relates to the purchase (time of sale) and installation of a dehumidifier meeting the minimum qualifying efficiency standard established by the current ENERGY STAR (Version 4.0) in place of a unit that meets the minimum federal standard efficiency.

Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\Delta kWh = Capacity \times \frac{0.473 \text{ L/pint}}{24 \text{ hr/day}} \times HOU \times \left(\frac{1}{L/kWh_{base}} - \frac{1}{L/kWh_{ee}} \right)$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = \Delta kWh / HOU \times CF$$

Where:

ΔkWh = per measure gross annual electric energy savings

ΔkW = per measure gross coincident peak demand savings

Capacity = capacity of the unit

HOU = annual hours of use

L/kWh_{base} = liters of water per kWh consumed for the baseline unit

L/kWh_{ee} = liters of water per kWh consumed for the energy efficient unit

Input Variables

Table 6-17: Input Variables for Dehumidifier Savings Calculation

Component	Type	Value	Unit	Source(s)
Capacity	Variable	See customer application	pint/day	Customer application
		Default = 25		Mid-Atlantic TRM 2019, p. 232
HOU	Fixed	Default = 1,632	hours, annual	Mid-Atlantic TRM v2019, p. 232, footnote 520
L/kWh_{base}	Variable	See customer application	liter/kWh	Mid-Atlantic TRM 2019, p. 232
		Default = 1.30		

Component	Type	Value	Unit	Source(s)
L/kWh_{ee}	Variable	See customer application	liter/kWh	Mid-Atlantic TRM 2019, p. 232
		Default = 2.00, on or before or 10/31/2019; 1.57, after 10/31/2019		
CF	Fixed	Default = 0.37	-	Mid-Atlantic TRM 2019, p. 234, footnote 522

Table 6-18: L/kWh_{base} Based on Dehumidifier Capacity

Capacity Range (pint/day)	Minimum baseline (Federal standard) criteria (L/kWh _{base})
≤25	1.30
>25 and ≤ 50	1.60
>50	2.80

Table 6-19: L/kWh_{ee} based on capacity

Capacity Range (pint/day)	ENERGY STAR criteria (L/kWh _{ee}) before 10/31/2019
<75	2.00
75 to ≤185	2.80

Table 6-20: L/kWh_{ee} based on capacity

Capacity Range (pint/day)	ENERGY STAR criteria (L/kWh) after 10/31/19
≤25	1.57
>25 and ≤ 50	1.80
>50 and ≤ 75	3.30
>75 and ≤185	3.30

Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided, depending on the manufacturing date of the unit.

On or before 10/31/2019:

$$\begin{aligned}
 \Delta kWh &= Capacity \times \frac{0.473 \text{ L/pint}}{24 \text{ hr/day}} \times HOU \times \left(\frac{1}{L/kWh_{base}} - \frac{1}{L/kWh_{ee}} \right) \\
 &= 25 \frac{\text{pint}}{\text{day}} \times \frac{0.473 \text{ L/pint}}{24 \text{ hr/day}} \times 1,632 \text{ hours} \times \left(\frac{1}{1.30 \text{ L/kWh}} - \frac{1}{2.0 \text{ L/kWh}} \right) \\
 &= 216.5 \text{ kWh}
 \end{aligned}$$

$$\begin{aligned}
 \Delta kW &= \Delta kWh / HOU \times CF \\
 &= 216.5 \text{ kWh} / 1,632 \text{ hours} \times 0.37 \\
 &= 0.049 \text{ kW}
 \end{aligned}$$

After 10/31/2019:

$$\begin{aligned}
 \Delta kWh &= Capacity \times \frac{0.473 \text{ L/pint}}{24 \text{ hr/day}} \times HOU \times \left(\frac{1}{L/kWh_{base}} - \frac{1}{L/kWh_{ee}} \right) \\
 &= 25 \frac{\text{pint}}{\text{day}} \times \frac{0.473 \text{ L/pint}}{24 \text{ hr/day}} \times 1,632 \text{ hours} \times \left(\frac{1}{1.30 \text{ L/kWh}} - \frac{1}{1.57 \text{ L/kWh}} \right) \\
 &= 106.4 \text{ kWh}
 \end{aligned}$$

$$\begin{aligned}
 \Delta kW &= \Delta kWh / HOU \times CF \\
 &= 106.4 \text{ kWh} / 1,632 \text{ hours} \times 0.37 \\
 &= 0.024 \text{ kW}
 \end{aligned}$$

Source

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 211-220.



Update Summary

The changes to this section, compared with last year, are described in Table 6-21.

Table 6-21: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

6.2.5 Dishwasher

Measure Description

A dishwasher meeting the efficiency specifications of ENERGY STAR is installed in place of a model meeting the federal standard. This measure is only for standard dishwashers and not compact dishwashers. A compact dishwasher is a unit that holds fewer than eight place settings with six serving pieces.

Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\Delta kWh = (kWh_{base} - kWh_{ee}) \times [Elec_{op} + (Elec_{heat} \times Elec_{DHW})]$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = \Delta kWh / HOU \times CF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident peak demand savings
- kWh_{base} = kWh consumption per year of the baseline unit
- kWh_{ee} = kWh consumption per year of the energy efficient unit
- $Elec_{op}$ = percent of dishwasher energy consumption used for unit operation
- $Elec_{heat}$ = percent of dishwasher energy consumption used for water heating
- $Elec_{DHW}$ = percentage of DHW savings assumed to be electric
- HOU = annual hours of use
- CF = summer peak coincidence factor

Input Variables

Table 6-22: Input Variables for Dishwasher Savings Calculations

Component	Type	Value	Unit	Source(s)
kWh_{base}	Fixed	307	kWh	Mid-Atlantic TRM 2019, pp. 247-248
kWh_{ee}	Fixed	270	kWh	Mid-Atlantic TRM 2019, p. 248
$Elec_{op}$	Fixed	0.44	-	Mid-Atlantic TRM 2019, p. 248
$Elec_{heat}$	Fixed	0.56	-	Mid-Atlantic TRM 2019, p. 248

Component	Type	Value	Unit	Source(s)
Elec_{DHW}	Variable	0.00	-	Mid-Atlantic TRM 2019, p. 248
HOU	Fixed	210	hours, annual	Mid-Atlantic TRM 2019, p. 248
CF	Fixed	0.026	-	Mid-Atlantic TRM 2019, p. 249
Fuel_{DHW}	Variable	Default = Fossil Fuel	-	Customer application

Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations for all dishwashers.

$$\begin{aligned} \Delta kWh &= (kWh_{base} - kWh_{ee}) \times [Elec_{op} + (Elec_{heat} \times Elec_{DHW})] \\ &= (307 kWh - 270 kWh) \times (0.44 + (0.56 \times 0)) \\ &= 16.28 kWh \end{aligned}$$

$$\begin{aligned} \Delta kW &= \Delta kWh / HOU \times CF \\ &= 16.28 kWh / 210 hours \times 0.0260 \\ &= 0.002 kW \end{aligned}$$

Source

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 211-220.

Update Summary

The changes to this section, compared with last year, are described in Table 6-23.

Table 6-23: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

6.2.6 Freezer

Measure Description

This measure relates to the upstream promotion of residential freezers meeting the ENERGY STAR criteria through the Energy Star Retail Products Program. In the measure, a freezer meeting the efficiency specifications of ENERGY STAR is installed in place of a model meeting the federal standard (NAECA).

Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\Delta kWh = kWh_{base} - kWh_{ee}$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = (\Delta kWh / 8,760) \times TAF \times LSAF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident peak demand savings
- kWh_{base} = annual baseline electric energy consumption per year
- kWh_{ee} = annual ENERGY STAR electric energy consumption
- TAF = Temperature Adjustment Factor
- LSAF = Load Shape Adjustment Factor

Input Variables

Table 6-24: Input Variables for Freezer Savings Calculations

Component	Type	Value	Unit	Source(s)
Volume_{total}	Variable	See customer application	feet ³	Customer application
		Default = 11.764		
Volume_{adj.}	Variable	See customer application	feet ³	Mid-Atlantic TRM 2019, p. 54, footnote 121
		Default = 19.100		
TAF	Fixed	Default = 1.23	-	Mid-Atlantic TRM 2019, p. 55, footnote 126
LSAF	Fixed	Default = 1.15	-	Mid-Atlantic TRM 2019, p. 56, footnote 127
kWh_{base}	Fixed	See customer application	kWh	Customer application
		Default = 313.0		Mid-Atlantic TRM 2019, p. 55

Component	Type	Value	Unit	Source(s)
kWh_{ee}	Variable	See customer application	kWh	Customer application
		Default = 281.0		Mid-Atlantic TRM 2019, p. 55
Freezer_{type}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 54, footnote 124

Table 6-25: kWh_{base} and kWh_{ee} based on Freezer_{type} and Volume_{adj.}

Freezer _{type}	kWh _{base}	kWh _{ee}	Weighting if Freezer _{type} Unknown
Upright Freezer	8.62 x Volume _{adj.} + 228.3	7.76 x Volume _{adj.} + 205.5	0.37
Chest Freezer	7.29 x Volume _{adj.} + 107.8	6.56 x Volume _{adj.} + 97.0	0.63

Table 6-26: Savings based on Product Category Defaults


Freezer _{type}	Total Volume _{total}	Adjusted Volume _{adj.}	kWh _{base}	kWh _{ee}	kWh savings	kW savings
Upright Freezer	14.1	24.4	438.6	394.8	43.8	0.007
Chest Freezer	10.4	18.0	239.0	214.1	23.9	0.004
If category unknown	-	-	313.0	282.0	31.0	0.005

Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided.

$$\begin{aligned}
 \Delta kWh &= kWh_{base} - kWh_{ee} \\
 &= 313.0 - 282.0 \\
 &= 31 kWh
 \end{aligned}$$

$$\Delta kW = (\Delta kWh / 8,760) \times TAF \times LSAF$$


$$= 31/8,760 \times 1.23 \times 1.15$$

$$= 0.005 \text{ kW}$$

Source

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 54-56.

Update Summary

The changes to this section, compared with last year, are described in Table 6-27.

Table 6-27: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

6.2.7 Refrigerator

Measure Description

This measure relates to the purchase and installation of a new refrigerator meeting either ENERGY STAR or Consortium for Energy Efficiency (CEE) Tier 2 or Tier 3 specifications (defined as consuming $\geq 10\%$, $\geq 15\%$, or $\geq 20\%$ less energy than an equivalent unit meeting federal standard requirements, respectively).

Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\Delta kWh = kWh_{base} \times ESF$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = (\Delta kWh / 8,760) \times TAF \times LSAF$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident peak demand savings
kWh_{base}	= baseline annual electric energy consumption per
ESF	= energy savings factor of efficient unit
TAF	= Temperature Adjustment Factor
LSAF	= Load Shape Adjustment Factor

Input Variables

Table 6-28: Input Variables for Refrigerator Savings Calculation

Component	Type	Value	Unit	Source(s)
Volume_{adj.}	Variable	See customer application	feet ³	Customer application
		Default = 25.8 ⁷⁸		Mid-Atlantic TRM 2019, p. 58
Tier	Variable	See customer application	-	Customer application
		Default = ENERGY STAR		
kWh_{base}	Variable	See customer application	kWh	Customer application
		Default = 511.07		
ESF	Variable	See Table 6-24	-	Mid-Atlantic TRM 2019, p. 58

⁷⁸ Volume_{adj.} is based on the ENERGY STAR calculator assumption that the average refrigerator has 14.75 ft³ of fresh volume and 6.76 ft³ of freezer volume where Volume_{adj.} = Volume_{fresh} + (1.63 x Volume_{freezer}).

Component	Type	Value	Unit	Source(s)
Category	Variable	See customer application	-	Customer application
TAF	Fixed	Default = 1.23	-	Mid-Atlantic TRM 2019, p. 59
LSAF	Fixed	Default = 1.15	-	Mid-Atlantic TRM 2019, p. 60

Table 6-29: Energy Savings Factor Based on Efficiency Tier

Tier	ENERGY STAR	CEE Tier 2	CEE Tier 3
Energy Savings Factor (ESF)	0.10	0.15	0.20

Table 6-30: Default kWh_{base} Based on Category

Category	Formula for kWh _{base}	Default kWh _{base}
1. Refrigerators and Refrigerator-freezers with manual defrost	$6.79 \times Volume_{adj.} + 193.6$	368.8
2. Refrigerator-Freezer—partial automatic defrost	$7.99 \times Volume_{adj.} + 225.0$	431.1
3. Refrigerator-Freezers--automatic defrost with top-mounted freezer without through-the-door ice service and all-refrigerators--automatic defrost	$8.07 \times Volume_{adj.} + 233.7$	441.9
4. Refrigerator-Freezers--automatic defrost with side-mounted freezer without through-the-door ice service	$8.51 \times Volume_{adj.} + 297.8$	517.4
5. Refrigerator-Freezers--automatic defrost with bottom-mounted freezer without through-the-door ice service	$8.85 \times Volume_{adj.} + 317.0$	545.3
6. Refrigerator-Freezers--automatic defrost with top-mounted freezer with through-the-door ice service	$8.40 \times Volume_{adj.} + 385.4$	602.1
7. Refrigerator-Freezers--automatic defrost with side-mounted freezer with through-the-door ice service	$8.54 \times Volume_{adj.} + 432.8$	653.1

Table 6-31: Default kWh_{ee} Based on Category

Category	Default kWh _{ee}			Weight
	ENERGY STAR	CEE Tier 2	CEE Tier 3	
1. Refrigerators and Refrigerator-freezers with manual defrost	331.9	313.5	295.0	0.27%
2. Refrigerator-Freezer—partial automatic defrost	388.0	366.5	344.9	0.27%
3. Refrigerator-Freezers--automatic defrost with top-mounted freezer without through-the-door ice service and all-refrigerators--automatic defrost	397.7	375.6	353.5	57.24%
4. Refrigerator-Freezers--automatic defrost with side-mounted freezer without through-the-door ice service	465.6	439.8	413.9	1.40%
5. Refrigerator-Freezers--automatic defrost with bottom-mounted freezer without through-the-door ice service	490.8	463.5	436.3	16.45%
6. Refrigerator-Freezers--automatic defrost with top-mounted freezer with through-the-door ice service	541.9	511.8	481.7	0.27%
7. Refrigerator-Freezers--automatic defrost with side-mounted freezer with through-the-door ice service	587.8	555.2	522.5	24.10%
Weighted Average of Efficient-case Units, kWh	460.0	434.4	408.9	
Weighted Average of Base-case Units, kWh			511.1	

Table 6-32: Default kWh Savings Based on Category

Category	Default Savings, kWh		
	ENERGY STAR	CEE Tier 2	CEE Tier 3
1. Refrigerators and Refrigerator-freezers with manual defrost	36.9	55.3	73.8
2. Refrigerator-Freezer—partial automatic defrost	43.1	64.6	86.2
3. Refrigerator-Freezers--automatic defrost with top-mounted freezer without through-the-door ice service and all-refrigerators--automatic defrost	44.2	66.3	88.4
4. Refrigerator-Freezers--automatic defrost with side-mounted freezer without through-the-door ice service	51.8	77.6	103.5

Category	Default Savings, kWh		
	ENERGY STAR	CEE Tier 2	CEE Tier 3
5. Refrigerator-Freezers--automatic defrost with bottom-mounted freezer without through-the-door ice service	54.5	81.8	109.0
6. Refrigerator-Freezers--automatic defrost with top-mounted freezer with through-the-door ice service	60.2	90.3	120.4
7. Refrigerator-Freezers--automatic defrost with side-mounted freezer with through-the-door ice service	65.3	97.9	130.6
Weighted Average of Product Categories	51.1	76.7	102.2

Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided.

$$\begin{aligned}
 \Delta kWh &= kWh_{base} \times ESF \\
 &= 511.1 kWh \times 0.10 \\
 &= 51.1 kWh
 \end{aligned}$$

$$\begin{aligned}
 \Delta kW &= (\Delta kWh / 8,760) \times TAF \times LSAF \\
 &= 51.1 kWh / 8,760 hr \times 1.23 \times 1.15 \\
 &= 0.008 kW
 \end{aligned}$$

Sources

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 57-62.

Update Summary


The changes to this section, compared with last year, are described in Table 6-33.

Table 6-33: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Measure	New section

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8 SUB-APPENDICES

8.1 Sub-appendix F1-I: Cooling and Heating Degree Days and Hours

This section provides the reference cooling degree days (CDD) and heating degree days (HDD) using TMY3 data found in the National Solar Radiation Data Base, 1991 – 2005 Update: Typical Meteorological Year 3 (TMY3) produced by the Renewable Resource Data Center (RRDC) of the National Renewable Energy Laboratory (NREL). Data for the following weather stations are used:

- Baltimore BLT-Washington International AP (Weather station number 724060)
- Richmond International AP (Weather station number 724010)
- Elizabeth City Coast Guard AP (Weather station number 746943)
- Rocky Mount-Wilson AP. (Weather station number 723068)

Weather station identification codes can be found at

<https://www.google.com/fusiontables/DataSource?docid=1EsB07O-9SiyJDzl69G08jTHsomsNIpkA1SLL8#rows:id=1>.

TMY3 data can be found at http://rredc.nrel.gov/solar/old_data/nsrdb/1991-2005/tmy3.

TMY3 data spans a base time period between 1976 to 2005 wherever they are available (out of 1,020 locations) and from 1991 to 2005 for the remaining locations. The TMY3 data set provides a reasonably-sized annual dataset that holds hourly meteorological values that typify conditions at a specific location over a longer period of time. It represents a typical climatic condition for a location and excludes extremes. For the purposes of this document, DNV GL determined that it is more appropriate to use weather data that represents typical climatic conditions. Also, DNV GL uses actual temperatures from USAF stations in modeling consumption in post-installation evaluations. The corresponding temperatures from TMY3 are then used to predict weather-adjusted—or normalized—consumption. The goal is that models and predictions based on temperature data are using data from the same stations.

The TMY3 hourly data are available for 1,020 USAF stations. For each station, DNV GL calculates the average hourly temperature for each day. The CDD and HDD are calculated using a range of cooling and heating base temperature. If the average daily temperature is greater than the cooling base temperature, CDD is the deviation in degrees Fahrenheit from the average daily temperature with respect to a cooling base temperature and zero otherwise. If the average daily temperature is less than the heating base temperature, HDD is the deviation in degrees Fahrenheit from the average daily temperature with respect to a heating base temperature and zero otherwise. Daily CDD and HDD are summed for each station to come up with an annual estimate of CDD and HDD shown in this section, based on a typical meteorological year, as shown in Table 8-2. The same processes are repeated using average hourly temperatures to yield the Cooling Degree Hours (CDH) and Heating Degree Hours (HDH), provided in Table 8-3.

The Mid-Atlantic TRM uses different base temperatures for the HDD and CDD calculations, depending upon the measure type. Table 8-1 shows the base temperatures used to determine the CDD, HDD, CDH, and HDH values by the Mid-Atlantic TRM for each sector and end-use.

Table 8-1: Base Temperatures by Sector and End-use

Sector	End-Use	Cooling Base Temperature, °F	Heating Base Temperature, °F
Residential	Plug Load (appliance recycling, only)	65	65
Residential	HVAC	75	60
Residential	DHW	75	60
Residential	Building Envelope	75	60
Nonresidential	HVAC (except infrared heaters)	65	65

Based on the base temperatures used by the Mid-Atlantic TRM 2019, the two tables that follow, Table 8-2 and Table 8-3, provide the CDD, HDD, CDH, and HDH values using:

- Base temperatures of 65°F and 75°F for cooling metrics
- Base temperatures of 60°F and 65°F for heating metrics

Prior to the DSM Phase VII programs, savings for all residential measures are calculated using 65°F as the base temperature for CDD, HDD, CDH, and HDH. For DSM Phase VII and beyond, savings for all residential measures—besides refrigerator and freezer recycling—are calculated using 75°F as the base temperature for CDD and CDH and 60°F for HDD and HDH. For refrigerator and freezer recycling, savings are still calculated using 65°F as the base temperature for CDD, HDD, CDH, and HDH.

Table 8-2: Reference Cooling and Heating Degree Days

State	Weather Station Number	Location	Cooling Degree Days		Heating Degree Days	
			CDD – 65 °F ⁷⁹	CDD – 75 °F	HDD - 60 °F	HDD – 65 °F ⁸⁰
MD	724060	Baltimore-Washington International Airport	1,222	231	3,499	4,611
VA	724010	Richmond International Airport	1,436	319	2,891	3,863
NC	746943	Elizabeth City Coast Guard	1,748	363	1,831	2,712
	723068	Rocky Mount-Wilson	1,355	188	2,048	2,951
NC	746943 & 723068	Average of Elizabeth City and Rocky Mount-Wilson values ⁸¹	1,552	275	1,940	2,832

⁷⁹ National Solar Radiation Data Base. 1991-2005 Update: Typical Meteorological Year 3. Accessed June, 2017. http://rredc.nrel.gov/solar/old_data/nsrdb/1991-2005/tmy3

⁸⁰ Ibid.

⁸¹ Values are calculated for Elizabeth City and Rocky Mount-Wilson using the same method, then the average values between these two locations will be used for North Carolina for more location accuracy within Dominion’s service territory. The Richmond values will be used for Virginia.

Table 8-3: Reference Cooling and Heating Degree Hours

State	Weather Station Number	Location	Cooling Degree Hours		Heating Degree Hours	
			CDH - 65 °F ⁸²	CDH - 75 °F	HDH - 60 °F ⁸³	HDH - 65 °F
MD	724060	Baltimore-Washington International Airport	32,841	9,616	87,360	113,644
VA	724010	Richmond International Airport	39,416	12,954	73,168	97,043
NC	746943	Elizabeth City Coast Guard	45,491	12,936	47,855	68,632
	723068	Rocky Mount-Wilson	38,294	10,759	54,648	76,594
NC	746943 & 723068	Average of Elizabeth City and Rocky Mount-Wilson values ⁸⁴	41,893	11,847	51,521	72,613

Update Summary

The changes to this section, compared with last year, are described in Table 8-4.

Table 8-4: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Modified Weather Station	<ul style="list-style-type: none"> Updated North Carolina weather station from Charlotte to an average of Elizabeth City and Rocky Mount-Wilson
Base Temperature	<ul style="list-style-type: none"> Modified base temperature used for some measures

⁸² For consistency across all measures, DNV GL calculated cooling degree hours at the base 65°F temperature to be used in the attic insulation measure. These values are also used to derive the HVAC full load hours in Sub-appendix II: Residential HVAC Equipment Full Load Hours.

⁸³ Ibid.

⁸⁴ The CDD, CDH, and HDD values are calculated for Elizabeth City and Rocky Mount-Wilson using the same method, then the average values between these two locations will be used for North Carolina for more location accuracy within Dominion's Territory. The Richmond values will be used for Virginia.



8.2 Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment

Table 8-3 provides the equivalent full-load hours (EFLH) that are used as defaults to calculate gross annual electric energy savings for Dominion Energy residential programs. The Dominion full-load cooling and heating hours are determined by using ratios of the Cooling Degree Hours (CDH) and Heating Degree Hours (HDH) provided in Sub-appendix I: Cooling and Heating Degree Days and Hours to adapt the EFLH provided in the 2019 Mid-Atlantic TRM for Baltimore, MD to represent a location in Dominion Energy’s service territory.

$$City_State_EFLH_{cool} = \frac{City_State_CDH}{Baltimore_MD_CDH} \times Baltimore_MD_EFLH_{cool}$$

The same method is used to determine the equivalent full-load hours for residential heating systems as follows:

$$City_State_EFLH_{heat} = \frac{City_State_HDH}{Baltimore_MD_HDH} \times Baltimore_MD_EFLH_{heat}$$

Table 8-5: Equivalent Full Load Cooling and Heating Hours for Residential Buildings

System Type	State	Location	Annual EFLH _{cool}	Annual EFLH _{heat}	Annual EFLH _{cool}	Annual EFLH _{heat}
Air-source Heat Pump	MD	Baltimore, MD: reference city from Mid-Atlantic TRM	744	866	744 ⁸⁵	866 ⁸⁶
	VA	Richmond, VA	-	-	842	789
	NC	Average of Elizabeth City, NC & Rocky Mount-Wilson, NC	-	-	936	533
Central AC	MD	Baltimore, MD: reference city from Mid-Atlantic TRM	542	-	542 ⁸⁷	-
	VA	Richmond, VA	-	-	613	-
	NC	Average of Elizabeth City, NC & Rocky Mount-Wilson, NC	-	-	682	-
Forced-air Furnace	MD	Baltimore, MD: reference city from Mid-Atlantic TRM	-	-	-	1,782 ⁸⁸
	VA	Richmond, VA	-	-	-	1,624
	NC	Average of Elizabeth City, NC & Rocky Mount-Wilson, NC	-	-	-	1,096

⁸⁵ Mid-Atlantic TRM 2018, p. 91. Based on average of 5 utilities in Maryland from Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential HVAC Program." April 4, 2014, table 30, page 48.

⁸⁶ Mid-Atlantic TRM 2018, p. 93. Based on average of 5 utilities, two program years, in Maryland from Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential HVAC Program." April 4, 2014, table 30, page 48.

⁸⁷ Mid-Atlantic TRM 2018, p. 83. Based on average of 5 utilities in Maryland from Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential HVAC Program." April 4, 2014, table 30, page 48.

⁸⁸ The full load hours for forced-air furnaces was calculated using $FLH_{heat} = HDD_{60°F} \times 24 \div (65°F - DesignTemperature_{heat})$ along with the HDD provided in Sub-appendix I: Cooling and Heating Degree Days and Hours and the 99% heating design temperature of 17.9 °F for Baltimore, MD per 2013 ASHRAE Handbook – Fundamentals (IP).

System Type	State	Location	Annual EFLH _{cool}	Annual EFLH _{heat}	Annual EFLH _{cool}	Annual EFLH _{heat}
Window/ Room AC	MD	Baltimore, MD: reference city from Mid-Atlantic TRM			326 ⁸⁹	-
	VA	Richmond, VA			368 ⁹⁰	-
	NC	Average of Elizabeth City, NC & Rocky Mount-Wilson, NC			410	

Update Summary

The changes to this section, compared with last year, are described in Table 8-6.

Table 8-6: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Modified Weather Station	<ul style="list-style-type: none"> Updated North Carolina weather station from Charlotte to and average of Elizabeth City and Rocky Mount-Wilson

⁸⁹ Mid-Atlantic TRM 2018, p. 78. "VEIC calculated the average ratio of EFLH for Room AC (provided in RLW Report: Final Report Coincidence Factor Study Residential Room Air Conditioners, June 23, 2008) to EFLH for Central Cooling (provided by AHRI: http://www.energystar.gov/ia/business/bulk_purchasing/bpsavings_calc/Calc_CAC.xls) at 31%. Applying this to the EFLH for Central Cooling provided for Baltimore (1050) we get 325 EFLH for Room AC." DNV GL replicated the equation and calculated 325.5 EFLH_{cool} and rounded to 326 EFLH_{cool}

⁹⁰ Used the same approach as Mid-Atlantic TRM, and multiplied Richmond full load cooling hours (1,188) by 31% and calculated 368 EFLH_{cool}

8.3 Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings⁹¹

The efficiency ratings for residential baseline HVAC equipment, <65 kBtu/h, are based upon building code requirements in Virginia and North Carolina, as shown in Table 8-4.

Table 8-7: Residential Baseline and Efficient HVAC Equipment Efficiency Ratings

Standard	System Type	SEER (Btu/Wh)	EER (Btu/Wh)	HSPF (Btu/Wh)	COP (dimensionless)
Federal Standard⁹² (baseline case)	Air conditioning system, split-system	13.0	<45 kBtu/h: 12.2 ≥45 kBtu/h: 11.7	-	-
	Air conditioning system, package	14.0	11.0	-	-
	Air-source heat pump, split-system	14.0	11.8 ⁹³	8.2	3.40 ⁹⁴
	Air-source heat pump, package	14.0	11.8	8.0	3.35 ⁹⁴
	Ductless mini-split heat pump ⁹⁵	12.0	10.6 ⁹⁶	7.4	3.22 ⁹⁴
	Resistance heat	-	-	3.4	1.00

⁹¹ Mid-Atlantic TRM 2019, p. 87. Baseline system efficiencies are based on the applicable minimum federal standards, consistent with 2015 IECC Table C403.2.3(2)–Minimum Efficiency Requirements: Electrically Operated Unitary and Applied Heat Pump. Further, the table provides minimum efficiency values for units less than 65,000 Btu/h.

⁹² 10 CFR Ch. II (1-1-12 Edition) §430.32 at <https://www.govinfo.gov/content/pkg/CFR-2012-title10-vol3/pdf/CFR-2012-title10-vol3-sec430-32.pdf>, effective 2015-01-01.

⁹³ Since this value was not provided by 10 CFR Ch. II (1-1-12 Edition) §430.32, it was estimated using Equation 3 in Sub-appendix III: Residential HVAC Equipment Efficiency Ratings.

⁹⁴ Calculated using Equation 5 in Sub-appendix F1-V: General Equations

⁹⁵ 2018 North Carolina Energy Conservation Code (based on 2015 IECC with amendments) at https://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/BCC_Documents/Minutes_ah/2018%20NC%20Energy%20Conservation%20Code%20-%20Proposed.pdf, effective 2019-01-01. Virginia code follows 2015 IECC. (<https://www.energycodes.gov/adoption/states/virginia>)

⁹⁶ Since this value was not provided by North Carolina Energy Conservation Code, it was estimated using Equation 3 in Sub-appendix V: General Equations.

Standard	System Type	SEER (Btu/Wh)	EER (Btu/Wh)	HSPF (Btu/Wh)	COP (dimensionless)
ENERGY STAR⁹⁷ (efficient case)	Air conditioning, split system	15.0	12.5	-	-
	Air conditioning, package system	15.0	12.0	-	-
	Air-source heat pump, split-system	15.0	12.5	8.5	3.46 ⁹⁴
	Air-source heat pump, package system	15.0	12.0	8.2	3.40 ⁹⁴
	Ductless Mini-split heat pump ⁹⁸	15.0	12.5	8.5	3.46 ⁹⁴

Update Summary

The changes to this section, compared with last year, are described in Table 8-8.

Table 8-8: Summary of Update(s) from Previous Version

Type of Change	Description of Change
Added equipment categories	<ul style="list-style-type: none"> Added efficiency requirements for ductless mini-split heat pumps Distinguished between split-system and packaged air-conditioning systems
Added efficiency category	<ul style="list-style-type: none"> Added column for COP

⁹⁷ ENERGY STAR Air-Source Heat Pumps and Central Air Conditioners Key Product Criteria at https://www.energystar.gov/products/heating_cooling/heat_pumps_air_source/key_product_criteria (accessed 2019-12-04).

⁹⁸ Mid-Atlantic TRM 2019, p. 120. Ductless mini-split heat pump measure, efficient condition follows Energy Star standards.

8.4 Sub-appendix F1-IV: Residential Lighting Factors

Table 8-9: provides the following associated values for residential LED Lighting measures:

- Annual hours of use (HOU)
- Annual electric waste heat factors for heating season ($WHF_{e_{heat}}$)
- Annual electric waste heat factors for cooling season ($WHF_{e_{cool}}$)
- Demand reduction waste heat factors (WHFd) and
- Coincident factor (CF)

Table 8-9: Input Values by Room Type for LED Lighting Savings

Fixture Location	Annual HOU ⁹⁹ (hours)	$WHF_{e_{heat}}$ ¹⁰⁰	$WHF_{e_{cool}}$	WHFd	CF
Dining Room	770	0.899	1.077	1.170	0.058
Bedroom	661	0.899	1.077	1.170	0.058
Bathroom	788	0.899	1.077	1.170	0.058
Hallway	920	0.899	1.077	1.170	0.058
Living Room	916	0.899	1.077	1.170	0.058
Kitchen	2,902	0.899	1.077	1.170	0.058
Indoors	679	0.899	1.077	1.170	0.058
Exterior	1,643	1.000	1.000	1.000	0.018
Garage	391	1.000	1.000	1.000	0.018
Unknown ¹⁰¹	760	0.899	1.077	1.170	0.058

Table 8-10: provides the Dominion Energy customer proportion (DCP) to account for likely leakage rate due to purchased lighting products that are installed outside of the Dominion Energy service territory.

⁹⁹ Hours of use for Dining Room, Bedroom, Bathroom, Hallway, Living Room, and Kitchen are from Navigant, EM&V Report for the 2012 Energy Efficient Lighting Program, Duke Energy Progress, July 2013, p. 23. Hours of use for Indoor ("Residential Interior and in-unit Multi-Family"), Exterior, and Garage are from the 2019 Mid-Atlantic TRM, p. 36.

¹⁰⁰ The $WHF_{e_{heat}}$, $WHF_{e_{cool}}$, and WHFd factors were drawn from the 2019 Mid-Atlantic TRM v9, pp. 29 – 41.

¹⁰¹ For fixtures in unknown locations, the HOU is a weighted average of those for indoor-, outdoor-, and garage-located fixtures using the weights reported in Final EM&V Report for the 2013 Energy Efficient Lighting Program for Duke Energy Progress by Navigant, p. 23, of 89%, 9%, and 2%, respectively.

Table 8-10: DCP values for in-store lighting purchases¹⁰²

Store Location	DCP Value
100 Old Fair Grounds Way, Kilmarnock, VA 22482	0.6670
1000 19th Street, Virginia Beach, VA 23451	1.0000
10001 Southpoint Pkwy, Fredericksburg, VA 22407	0.8740
10083 Brook Rd Ste 76, Glen Allen, VA 23059	0.9010
101 Washington Square Plz, Fredericksburg, VA 22405	0.8380
10100 Brook Rd, Glen Allen, VA 23059	0.9059
10101 Southpoint Pkwy, Fredericksburg, VA 22407	0.8930
1020 Battlefield Blvd N, Chesapeake, VA 23320	1.0000
10233 Lakeridge Pkwy, Ashland, VA 23005	0.9339
1027 Centerbrooke Ln, Suffolk, VA 23434	1.0000
10301 New Guinea Rd, Fairfax, VA 22032	0.9764
10310B Main St, Fairfax, VA 22030	0.8226
10461 Midlothian Tpke, Richmond, VA 23235	1.0000
1055 Independence Blvd, Virginia Beach, VA 23455	1.0000
10586 Tinsbloom Mill Ln, King George, VA 22485	0.6670
10689 Sudley Manor Dr, Manassas, VA 20109	0.6750
10731 Jefferson Ave, Newport News, VA 23601	1.0000
10776 Sudley Manor Dr, Manassas, VA 20109	0.6670
109 Lucy Ln, Waynesboro, VA 22980	0.6670
10905 Hull Street Rd, Midlothian, VA 23112	1.0000
1095 International Pkwy, Fredericksburg, VA 22406	0.7230
1098 Frederick Blvd, Portsmouth, VA 23707	1.0000
1100 Stafford Market Pl, Stafford, VA 22556	0.6670
11008 Warwick Blvd Ste 400, Newport News, VA 23601	1.0000
1105 S Military Hwy, Chesapeake, VA 23320	1.0000
1112 London Blvd, Portsmouth, VA 23704	1.0000
11181 Lee Hwy, Fairfax, VA 22030	0.8529
11213 Lee Hwy, Fairfax, VA 22030	0.8950
11214 Jefferson Ave, Newport News, VA 23601	1.0000
11260 W Broad St, Glen Allen, VA 23060	0.9606
11290 W Broad St, Glen Allen, VA 23060	0.9579

¹⁰² Provided by program implementation vendor, CleaRESULT.

Store Location	DCP Value
11301 Midlothian Tpke, Richmond, VA 23235	1.0000
11400 W Broad St, Glen Allen, VA 23060	0.9586
1149 Nimmo Pkwy, Virginia Beach, VA 23456	1.0000
1157 Nimmo Pkwy Ste 102, Virginia Beach, VA 23456	1.0000
117 Market Place Dr, Hampton, VA 23666	1.0000
1170 N Military Hwy, Norfolk, VA 23502	1.0000
11740 W Broad St Ste 101, Richmond, VA 23233	0.9570
1180 Carl D Silver Pkwy, Fredericksburg, VA 22401	0.9422
1200 N Main St, Suffolk, VA 23434	1.0000
12000 Iron Bridge Rd, Chester, VA 23831	0.9863
12000 Ridgefield Pkwy, Richmond, VA 23233	0.9900
1201 Gateway Blvd, Fredericksburg, VA 22401	0.8777
1201 Mall Dr, Richmond, VA 23235	1.0000
1204 S Military Hwy, Chesapeake, VA 23320	1.0000
12101 Jefferson Davis Hwy, Chester, VA 23831	0.9780
1211 N Lee Hwy, Lexington, VA 24450	0.6650
12121 Jefferson Ave, Newport News, VA 23602	1.0000
12130 Jefferson Ave, Newport News, VA 23602	1.0000
1216 N Main St, Suffolk, VA 23434	0.9999
12197 Sunset Hills Rd, Reston, VA 20190	0.9919
12200 Chattanooga Plz, Midlothian, VA 23112	1.0000
1221 Harris St, Charlottesville, VA 22903	0.7880
12275 Price Club Plz, Fairfax, VA 22030	0.8378
12300 Chattanooga Plz, Midlothian, VA 23112	0.9997
12300 Jefferson Davis Hwy, Chester, VA 23831	0.9464
1236 Concord Ave, Richmond, VA 23228	0.9760
12372 Dillingham Sq, Woodbridge, VA 22192	0.6670
12401 Jefferson Ave, Newport News, VA 23602	1.0000
12407 Jefferson Ave, Newport News, VA 23602	1.0000
1245 N Military Hwy, Norfolk, VA 23502	1.0000
12490 Warwick Blvd, Newport News, VA 23606	1.0000
125 Washington Square Plz, Fredericksburg, VA 22405	0.8400
1250 E Atlantic St, LaCrosse, VA 23950	0.6660

Store Location	DCP Value
1261 N Military Hwy, Norfolk, VA 23502	1.0000
12651 Apollo Dr, Woodbridge, VA 22192	0.6670
12725 Jefferson Ave, Newport News, VA 23602	1.0000
1280 Smithfield Plz, Smithfield, VA 23430	0.6670
13047 Fair Lakes Shopping Ctr, Fairfax, VA 22033	0.8476
1305 Carmia Way, Richmond, VA 23235	1.0000
13059 Fair Lakes Parkway, Fairfax, VA 22033	0.8521
1308 Battlefield Blvd N, Chesapeake, VA 23320	1.0000
1316 Greenbrier Pkwy, Chesapeake, VA 23320	1.0000
1317 W Broad St, Waynesboro, VA 22980	0.6670
1320 N Laburnum Ave, Richmond, VA 23223	1.0000
13345 Worth Ave, Woodbridge, VA 22192	0.6700
13580 Minnieville Rd, Woodbridge, VA 22192	0.6840
1361 Carl D Silver Pkwy, Fredericksburg, VA 22401	0.9051
13653 Lee Jackson Memorial Hwy # B, Chantilly, VA 20151	0.8860
1367 Kempsville Rd, Chesapeake, VA 23320	1.0000
1385 Fordham Dr Ste 113, Virginia Beach, VA 23464	1.0000
13856 Metrotech Dr, Chantilly, VA 20151	0.8582
1386 Carmia Way, Richmond, VA 23235	1.0000
14 Lee Jackson Hwy, Staunton, VA 24401	0.6670
1400 Tintern St, Chesapeake, VA 23320	1.0000
1401 Emmet St N, Charlottesville, VA 22903	0.7660
1401 Mall Dr, North Chesterfield, VA 23235	0.9999
1405B S Main St, Farmville, VA 23901	0.6670
1410 Airport Road, Suffolk, VA 23434	0.9990
14120 Lee Hwy # B, Centreville, VA 20120	0.7720
1413 N Armistead Ave, Hampton, VA 23666	1.0000
14390 Chantilly Crossing Ln, Chantilly, VA 20151	0.8262
14391 Chantilly Crossing Ln, Chantilly, VA 20151	0.8605
14501 Hancock Village St, Chesterfield, VA 23832	0.9899
1457 Mt Pleasant Rd Ste 101A, Chesapeake, VA 23322	1.0000
14610 Lee Hwy, Gainesville, VA 20155	0.6670
15 Town Center Way, Hampton, VA 23666	1.0000

Store Location	DCP Value
1500 Cornerside Blvd Ste B, Vienna, VA 22182	1.0000
1500 Wilson Blvd, Rosslyn, VA 22209	0.8396
1501 Sams Cir, Chesapeake, VA 23320	1.0000
1502 Boulevard, Colonial Heights, VA 23834	0.6960
1504 N Parham Rd, Richmond, VA 23229	1.0000
1505 Lynnhaven Pkwy Ste 1355, Virginia Beach, VA 23453	1.0000
1509 Sams Cir, Chesapeake, VA 23320	1.0000
1510 W Broad St, Richmond, VA 23220	1.0000
1512 Koger Center Blvd, Richmond, VA 23235	1.0000
1521 Sams Cir, Chesapeake, VA 23320	1.0000
1540 International Blvd, Norfolk, VA 23513	1.0000
157 Hillcrest Pkwy, Chesapeake, VA 23322	1.0000
1629 Tappahannock Blvd, Tappahannock, VA 22560	0.6670
1651 Reston Pkwy, Reston, VA 20194	0.9616
171 W Lee Hwy, Warrenton, VA 20186	0.6670
1720 E Little Creek Rd, Norfolk, VA 23518	1.0000
17342 General Puller Hwy, Deltaville, VA 23043	1.0000
1800 Carl D Silver Pkwy, Fredericksburg, VA 22401	0.9558
1800 Liberty St Ste 106, Chesapeake, VA 23324	1.0000
18109 Triangle Shopping Plz, Dumfries, VA 22026	0.6670
1832 Kempsville Rd, Virginia Beach, VA 23464	1.0000
1832 Peery Dr, Farmville, VA 23901	0.6670
1900 Cunningham Dr, Hampton, VA 23666	1.0000
1909 Landstown Centre Way, Virginia Beach, VA 23456	1.0000
1918 William St, Fredericksburg, VA 22401	0.8430
1937 E Pembroke Ave, Hampton, VA 23663	1.0000
1948 Diamond Springs Rd, Virginia Beach, VA 23455	1.0000
1949 Lynnhaven Pkwy Ste 1552, Virginia Beach, VA 23453	1.0000
1950 Anderson Hwy, Powhatan, VA 23139	0.9166
1952 Laskin Rd Ste 512, Virginia Beach, VA 23454	1.0000
1973 S Military Hwy, Chesapeake, VA 23320	1.0000
1991 Daniel Stuart Sq, Woodbridge, VA 22191	0.6690
200 Marquis Pkwy, Williamsburg, VA 23185	1.0000

Store Location	DCP Value
2002 Power Plant Pkwy, Hampton, VA 23666	1.0000
201 Hillcrest Pkwy, Chesapeake, VA 23322	1.0000
201 Perimeter Dr, Midlothian, VA 23113	0.9954
202 E Williamsburg Rd, Sandston, VA 23150	1.0000
2020 Lynnhaven Pkwy, Virginia Beach, VA 23456	1.0000
2020 Rio Hill Ctr, Charlottesville, VA 22901	0.6950
2021 Lynnhaven Pkwy, Virginia Beach, VA 23456	1.0000
2044 Victory Blvd, Portsmouth, VA 23702	1.0000
2060 S Independence Blvd, Virginia Beach, VA 23453	1.0000
2098 Nickerson Blvd Ste A, Hampton, VA 23663	1.0000
2098 Nickerson Blvd, Hampton, VA 23663	1.0000
210 Monticello Ave, Williamsburg, VA 23185	1.0000
21398 Price Cascades Plz, Sterling, VA 20164	0.8133
215 Maple Ave W, Vienna, VA 22180	0.9710
21800 Towncenter Plz Ste 237, Sterling, VA 20164	0.8430
2210 Portsmouth Blvd, Portsmouth, VA 23704	1.0000
222 W 21st St, Norfolk, VA 23517	1.0000
2233 Upton Dr, Virginia Beach, VA 23454	1.0000
22330 S Sterling Blvd Ste A123, Sterling, VA 20164	0.7970
2324 Elson Green Ave, Virginia Beach, VA 23456	1.0000
233 Carmichael Way, Chesapeake, VA 23322	1.0000
237 Battlefield Blvd S Ste 13, Chesapeake, VA 23322	1.0000
2371 Carl D Silver Parkway, Fredericksburg, VA 22401	0.9558
2371 Carl D. Silver Pkwy, Fredericksburg, VA 22401	0.9558
2375 Pocahontas Trl, Quinton, VA 23141	1.0000
2384 Hayes Rd, Hayes, VA 23072	1.0000
2403 Virginia Beach Blvd, Virginia Beach, VA 23454	1.0000
2410 Sheila Ln, Richmond, VA 23225	1.0000
2420 E Little Creek Rd, Norfolk, VA 23518	1.0000
2421 Old Taylor Rd, Chesapeake, VA 23321	1.0000
2430 Sheila Ln, Richmond, VA 23225	1.0000
2444 Chesapeake Square Ring Rd, Chesapeake, VA 23321	1.0000
2448 Chesapeake Square Ring Rd, Chesapeake, VA 23321	1.0000

Store Location	DCP Value
25 S Gateway Dr, Fredericksburg, VA 22406	0.8448
2501 Sheila Ln, Richmond, VA 23225	1.0000
2530 Weir Rd, Chester, VA 23831	0.9511
2601 George Washington Mem Hwy, Yorktown, VA 23693	1.0000
2601 Weir Pl, Chester, VA 23831	0.9293
264 Cedar Ln SE Ste Ab-C, Vienna, VA 22180	0.9880
2715 W Main St, Waynesboro, VA 22980	0.6670
2720 N Mall Dr Ste 208, Virginia Beach, VA 23452	1.0000
2815 Merrilee Dr, Fairfax, VA 22031	0.9868
2905 District Ave, Fairfax, VA 22031	0.9963
299 Banks Ford Pkwy, Fredericksburg, VA 22406	0.8269
300 Chatham Dr, Newport News, VA 23602	1.0000
301 E Atlantic St, South Hill, VA 23970	0.6670
3061 Plank Rd, Fredericksburg, VA 22401	0.9440
308 Cavalier Sq, Hopewell, VA 23860	0.7070
3101 Jefferson Davis Hwy, Alexandria, VA 22305	0.9828
3102 Plank Rd Ste 600, Fredericksburg, VA 22407	0.8309
3105 S Crater Rd, Petersburg, VA 23805	0.6670
314 King St, Keysville, VA 23947	0.6660
3146 Western Branch Blvd, Chesapeake, VA 23321	1.0000
315 Cowardin Ave, Richmond, VA 23224	1.0000
3157 Magic Hollow Blvd, Virginia Beach, VA 23453	1.0000
3171 District Ave, Charlottesville, VA 22901	0.7669
3201 Holland Rd, Virginia Beach, VA 23453	1.0000
3201 Old Lee Hwy, Fairfax, VA 22030	0.9444
32032 N Main St, Boykins, VA 23827	0.6670
321 Thacker Ave, Covington, VA 24426	0.6670
3230 Tidewater Dr, Norfolk, VA 23509	1.0000
325 Chatham Dr, Newport News, VA 23602	1.0000
3330 S Crater Rd, Petersburg, VA 23805	0.6670
3332 Princess Anne Rd, Virginia Beach, VA 23456	1.0000
3345 Virginia Beach Blvd, Virginia Beach, VA 23452	1.0000
335 Merchant Walk Sq Bldg 800, Charlottesville, VA 22902	0.8630

Store Location	DCP Value
3350 E Princess Anne Rd, Norfolk, VA 23502	1.0000
3352 Virginia Beach Blvd, Virginia Beach, VA 23452	1.0000
337 Perimeter Dr, Midlothian, VA 23113	0.9970
3376 S Military Hwy, Chesapeake, VA 23323	1.0000
3412 W Mercury Blvd, Hampton, VA 23666	0.9980
3565 Holland Rd, Virginia Beach, VA 23452	1.0000
3569 Bridge Rd # 201, Suffolk, VA 23435	0.9900
3601 Old Halifax Rd Ste 200, South Boston, VA 24592	0.6670
3690 King St, Alexandria, VA 22302	0.9020
3750 Virginia Beach Blvd Ste B, Virginia Beach, VA 23452	1.0000
3818 Kecoughtan Rd, Hampton, VA 23669	1.0000
3857 Kecoughtan Rd, Hampton, VA 23669	1.0000
3877 Holland Rd, Virginia Beach, VA 23452	1.0000
3915 Centreville Rd, Chantilly, VA 20151	0.8520
3978 Meadowdale Blvd, Richmond, VA 23234	1.0000
40 Main Street -, Mathews, VA 23109	1.0000
400 S Pickett St, Alexandria, VA 22304	1.0000
400 W 21st St, Norfolk, VA 23517	1.0000
4000 Glenside Dr, Richmond, VA 23228	1.0000
4036 Victory Blvd, Portsmouth, VA 23701	1.0000
4040 Victory Blvd, Portsmouth, VA 23701	1.0000
4080 Jermantown Rd, Fairfax, VA 22030	0.8922
411 Wythe Creek Rd, Poquoson, VA 23662	1.0000
416 13th Street, West Point, VA 23181	0.6700
420 Pantops Ctr, Charlottesville, VA 22911	0.7140
4200 Portsmouth Blvd Ste 600, Chesapeake, VA 23321	1.0000
4300 Portsmouth Blvd Ste 170, Chesapeake, VA 23321	1.0000
4311 Walney Rd, Chantilly, VA 20151	0.8914
43150 Broadlands Center Plz Ste 110, Ashburn, VA 20148	0.6670
4318B George Washington Mem Hwy, Yorktown, VA 23692	1.0000
4336 Virginia Beach Blvd, Virginia Beach, VA 23452	1.0000
4340 S Laburnum Ave, Richmond, VA 23231	1.0000
4368 Chantilly Shopping Center Dr, Chantilly, VA 20151	0.8568

Store Location	DCP Value
4401 Pouncey Tract Rd, Glen Allen, VA 23060	0.9515
44110 Ashburn Shopping Plz, Ashburn, VA 20147	0.6670
4511 John Tyler Hwy Ste L, Williamsburg, VA 23185	1.0000
4521 S Laburnum Ave, Richmond, VA 23231	1.0000
45425 Dulles Crossing Plz, Sterling, VA 20166	0.7757
455 Oriana Rd, Newport News, VA 23608	1.0000
4551 S Laburnum Ave, Henrico, VA 23231	1.0000
4554 Virginia Beach Blvd, Virginia Beach, VA 23462	1.0000
4601 Commonwealth Centre Pkwy, Midlothian, VA 23112	0.9996
462 Wythe Creek Rd, Poquoson, VA 23662	1.0000
4630 Monticello Ave, Williamsburg, VA 23188	1.0000
4640 Monticello Ave, Williamsburg, VA 23188	1.0000
4655 Monticello Ave, Williamsburg, VA 23188	1.0000
4670 Casey Blvd, Williamsburg, VA 23188	1.0000
4708 Portsmouth Blvd, Chesapeake, VA 23321	1.0000
4725 W Ox Rd, Fairfax, VA 22030	0.9032
475 Kempsville Rd, Chesapeake, VA 23320	1.0000
4805 Shore Dr Ste B, Virginia Beach, VA 23455	1.0000
4814 Penlan Rd, New Canton, VA 23123	0.6670
4821 Virginia Beach Blvd, Virginia Beach, VA 23462	1.0000
4925 W Broad St Ste 404, Richmond, VA 23230	1.0000
500 S. Washington St, Falls Church, VA 22046	1.0000
5001 Holt Ave, Hampton, VA 23666	1.0000
5001 Nine Mile Rd, Henrico, VA 23223	1.0000
5007 Victory Blvd, Yorktown, VA 23693	1.0000
504 Bud Dr, Chesapeake, VA 23322	1.0000
5061 Westfields Blvd, Centreville, VA 20120	0.8050
5073 Jefferson Davis Hwy, Fredericksburg, VA 22408	0.9120
508 Fort Evans Rd, Leesburg, VA 20176	0.6670
5115 Leesburg Pike, Falls Church, VA 22041	1.0000
514 N Main St, Emporia, VA 23847	0.6670
5210 Wilkinson Rd, Henrico, VA 23227	0.9990
5215 Plank Rd, Fredericksburg, VA 22407	0.9630

Store Location	DCP Value
5221 Brook Rd, Richmond, VA 23227	0.9863
5222 Oaklawn Blvd Ste B2, Hopewell, VA 23860	0.6910
525 First Colonial Rd, Virginia Beach, VA 23451	1.0000
5270A Chamberlayne Rd, Richmond, VA 23227	0.9850
5275 Waterway Dr, Dumfries, VA 22025	0.6670
5277 Princess Anne Rd, Virginia Beach, VA 23462	1.0000
5401 W Broad St, Richmond, VA 23230	1.0000
546 First Colonial Rd, Virginia Beach, VA 23451	1.0000
5630 Princess Anne Rd Ste B, Virginia Beach, VA 23462	1.0000
57 W Windsor Blvd, Windsor, VA 23487	0.8120
5700 Hopkins Rd, North Chesterfield, VA 23234	1.0000
5771 Plank Rd, Fredericksburg, VA 22407	0.9497
5885 Kingstowne Blvd, Alexandria, VA 22315	1.0000
5900 E Virginia Beach Blvd Ste 206, Norfolk, VA 23502	1.0000
6000 Burke Commons Rd, Burke, VA 22015	0.9863
605 Newmarket Dr N Ste 1, Newport News, VA 23605	0.9990
6100 Arlington Blvd, Falls Church, VA 22044	1.0000
6101 N Military Hwy Ste 100, Norfolk, VA 23518	1.0000
6111 Jefferson Ave, Newport News, VA 23605	0.9979
614 S Hicks St, Lawrenceville, VA 23868	0.6670
6140 Rose Hill Dr, Alexandria, VA 22310	1.0000
6198 Little River Tpke, Alexandria, VA 22312	1.0000
6210 Seven Corners Ctr, Falls Church, VA 22044	1.0000
6215 Portsmouth Blvd, Portsmouth, VA 23701	1.0000
622 S Main St, Emporia, VA 23847	0.6670
6255 College Dr, Suffolk, VA 23435	0.9980
6259 College Dr, Suffolk, VA 23435	1.0000
6303 Richmond Hwy, Alexandria, VA 22306	0.9715
632 Grassfield Pkwy, Chesapeake, VA 23322	1.0000
6425 Mechanicsville Tpke, Mechanicsville, VA 23111	0.9984
6449 Centralia Rd, Chesterfield, VA 23832	0.9780
6493 Mechanicsville Tpke, Mechanicsville, VA 23111	0.9820
6501 W Broad St, Richmond, VA 23230	1.0000

Store Location	DCP Value
6555 Little River Tpke, Alexandria, VA 22312	1.0000
6569 Market Dr, Gloucester, VA 23061	1.0000
657 Phoenix Dr, Virginia Beach, VA 23452	1.0000
6600 Richmond Hwy, Alexandria, VA 22306	0.9983
6600 Springfield Mall, Springfield, VA 22150	1.0000
6610 Mooretown Rd, Williamsburg, VA 23188	1.0000
663 Turnberry Blvd, Newport News, VA 23602	1.0000
6659 George Washington Memorial Hwy, Gloucester, VA 23061	1.0000
6691 Frontier Dr, Springfield, VA 22150	1.0000
6700 Mooretown Rd, Williamsburg, VA 23188	1.0000
6715 Backlick Rd, Springfield, VA 22150	1.0000
672 Elden St, Herndon, VA 20170	0.9590
673 Cedar Rd, Chesapeake, VA 23322	1.0000
6730 Jefferson Davis Hwy, Richmond, VA 23237	1.0000
6750 Richmond Hwy, Alexandria, VA 22306	0.9848
6757 Lake Harbour Dr, Midlothian, VA 23112	0.9960
6819 Waltons Ln, Gloucester, VA 23061	1.0000
6825 Phenix Main St, Phenix, VA 23959	0.6670
6920 Braddock Rd, Annandale, VA 22003	1.0000
6920 Forest Ave, Richmond, VA 23230	1.0000
6921 Waltons Ln, Gloucester, VA 23061	1.0000
7 Town Center Way, Hampton, VA 23666	1.0000
7001 Winterpock Rd, Chesterfield, VA 23832	0.9910
701 Battlefield Blvd N Ste D, Chesapeake, VA 23320	1.0000
7041 Brookfield Plz, Springfield, VA 22150	1.0000
7107 Forest Hill Ave, Richmond, VA 23225	1.0000
7126 Hayes Shopping Ct, Hayes, VA 23072	1.0000
72 Coliseum Xing, Hampton, VA 23666	1.0000
7235 Bell Creek Rd, Mechanicsville, VA 23111	1.0000
7251 Bell Creek Rd, Mechanicsville, VA 23111	0.9947
7300 Midlothian Tpke Ste A, Richmond, VA 23225	1.0000
731 E Rochambeau Dr, Williamsburg, VA 23188	1.0000
7373 Boston Blvd, Springfield, VA 22153	0.9811

Store Location	DCP Value
7390 Bell Creek Rd Ste 308A, Mechanicsville, VA 23111	0.9960
7430 Bell Creek Rd, Mechanicsville, VA 23111	0.9924
7448 Little River Tpke Ste B, Annandale, VA 22003	1.0000
7525 Tidewater Dr, Norfolk, VA 23505	1.0000
7528 Mechanicsville Tpke, Mechanicsville, VA 23111	1.0000
7530 Tidewater Dr, Norfolk, VA 23505	1.0000
7552 W Broad St, Richmond, VA 23294	1.0000
7635 Granby St, Norfolk, VA 23505	1.0000
7700 Gunston Plz # A, Lorton, VA 22079	0.9020
7710 Richmond Hwy, Alexandria, VA 22306	1.0000
7734 Hampton Blvd Ste A, Norfolk, VA 23505	1.0000
7812 Richmond Hwy, Alexandria, VA 22306	1.0000
7901 Brook Rd, Richmond, VA 23227	0.9718
7910 Richmond Hwy, Alexandria, VA 22306	1.0000
7940 Richmond Hwy, Alexandria, VA 22306	0.9878
8001 Brook Rd, Richmond, VA 23227	0.9765
801 E Rochambeau Dr, Williamsburg, VA 23188	1.0000
801 Merrimac Trl, Williamsburg, VA 23185	1.0000
830 Southpark Blvd, Colonial Heights, VA 23834	0.6670
8315 Sudley Rd, Manassas, VA 20109	0.6670
8401 Hampton Blvd Ste 2, Norfolk, VA 23505	1.0000
8484 Kings Hwy, King George, VA 22485	0.6670
8490 Centreville Rd # A, Manassas Park, VA 20111	0.6670
850 Glenrock Rd, Norfolk, VA 23502	1.0000
8601 Airport Rd, Quinton, VA 23141	1.0000
869 S Pickett St, Alexandria, VA 22304	1.0000
8784 Guinea Road, Hayes, VA 23072	1.0000
8794 Sacramento Dr, Alexandria, VA 22309	1.0000
8920 Patterson Ave, Richmond, VA 23229	1.0000
900 Tidewater Dr, Norfolk, VA 23504	1.0000
900 Walmart Way, Midlothian, VA 23113	1.0000
9001 Staples Mill Rd, Henrico, VA 23228	0.9824
901 Walmart Way, Midlothian, VA 23113	0.9984
9140 Amelia St, Amelia Court House, VA 23002	0.6670
9159 Atlee Rd, Mechanicsville, VA 23116	0.9861
922 N Main St Ste A, Suffolk, VA 23434	1.0000
9232 Old Keene Mill Rd Ste B, Burke, VA 22015	1.0000
928 Diamond Springs Rd Ste 102, Virginia Beach, VA 23455	1.0000
9422 W Broad St, Richmond, VA 23294	0.9660

Store Location	DCP Value
9440 W Broad St, Richmond, VA 23294	0.9685
9490 W Broad St, Richmond, VA 23294	0.9718
9534 Main St, Fairfax, VA 22031	0.9520
9536 Woodman Rd # 9540, Richmond, VA 23228	0.9730
955 Providence Sq Shopping Ctr, Virginia Beach, VA 23464	1.0000
9573 Shore Dr, Norfolk, VA 23518	1.0000
9620 Granby St, Norfolk, VA 23503	1.0000
9650 W Broad St, Glen Allen, VA 23060	0.9649
9692 Liberia Ave, Manassas, VA 20110	0.6670
970 Hilton Heights Rd, Charlottesville, VA 22901	0.7528
9714 Sliding Hill Rd, Ashland, VA 23005	0.9008
9785 Jefferson Davis Hwy, Fredericksburg, VA 22407	0.8403
9870 W Broad St, Glen Allen, VA 23060	0.9820
99 Hill Carter Pkwy, Ashland, VA 23005	0.6670
9901 County Dr, Disputanta, VA 23842	0.6670

Update Summary

The changes to this section, compared with last year, are described in Table 8-11.

Table 8-11: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New	<ul style="list-style-type: none"> New section

8.5 Sub-appendix F1-V: General Equations

Equation 1: Cooling Capacities – Btu/h to tons

$$Size_{ton} = \frac{Size_{Btu/h}}{12,000 \text{ Btu/h} \cdot \text{ton}}$$

Equation 2: Cooling Capacities – tons to Btu/h

$$Size_{Btu/h} = Size_{ton} \times 12,000 \text{ Btu/h} \cdot \text{ton}$$

Equation 3: Energy Efficiencies - SEER to EER,¹⁰³ for systems < 65,000 Btu/h

$$EER \cong -0.02 \times SEER^2 + 1.12 \times SEER$$

If $EER \leq 15.68$, then using the quadratic equation,

$$SEER \cong \frac{1.12 - \sqrt{(-1.12)^2 - (4 \times 0.02 \times EER)}}{2 \times 0.02}$$

Otherwise use,

$$SEER \cong \frac{EER}{0.9}$$

Equation 4: Energy Efficiencies - EER to IEER, for systems $\geq 65,000$ Btu/h

$$IEER \cong \frac{EER}{0.9}$$

Equation 5: Energy Efficiencies - HSPF to COP¹⁰⁴

If $HSPF \leq 11.7$, then

$$COP \cong -0.0255 \times HSPF^2 + 0.6239 \times HSPF$$

Otherwise, use

¹⁰³ A Component-Based Model for Residential Air Conditioner and Heat Pump Energy Calculations. Master's Thesis, University of Colorado at Boulder, Wassmer, M. (2003). Note this is appropriate for single speed units only.

¹⁰⁴ Ibid.

$$COP \cong \frac{HSPF}{3.412}$$

Equation 6: Energy Efficiencies - COP to HSPF

If $COP \leq 3.81$, then

$$HSPF \cong \frac{0.6239 \mp \sqrt{((-0.6239)^2 - (4 \times 0.0255 \times COP))}}{2 \times 0.0255}$$

Otherwise, use

$$HSPF \cong 3.412 \times COP$$

Equation 7: Energy Efficiencies - COP to EER

$$EER \cong 3.412 \times COP$$

Equation 8: Energy Efficiencies – $\frac{kW}{ton_{full-load}}$ to $\frac{kW}{ton_{IPLV}}$

$$\frac{kW}{ton_{IPLV}} \cong C \times \frac{kW}{ton_{full-load}}$$

where $C = 0.80$ for water-cooled chillers < 200 tons

$= 0.95$ for water-cooled chillers ≥ 200 tons

Equation 9: Energy Efficiencies – $EER_{full-load}$ to EER_{IPLV}

$$EER_{IPLV} \cong C \times EER_{full-load}$$

where $C = 0.76$ for air-cooled chillers

Equation 10: Heat to electric energy – Btu/h to kW

$$kW = 3,412 \text{ Btu/h}$$

Update Summary

The changes to this section, compared with last year, are described in Table 8-12.

Table 8-12: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New Equation	<ul style="list-style-type: none">Heat to electric energy conversion added

8.6 Sub-appendix F1-VI: Definition of Terms

baseline condition	Typically the less efficient system that is being replaced (pre-retrofit); for HVAC equipment upgrades, the baseline energy efficiency values used to calculate savings equal the minimum requirements set forth by the state building code or federal standards, as relevant.
CDD	Annual cooling degree days
CEE	Consortium for Energy Efficiency
COP	The Coefficient of Performance (COP) of a heat pump is the ratio of the change in heat at the system output to the energy input of the heat pump
DBT	A Dry-Bulb Temperature (DBT) is the temperature of air measured using a thermometer freely exposed to the air, but shielded from radiation and moisture. This is the most commonly reported measure of air temperature.
EER	The Energy Efficiency Ratio (EER), an energy efficiency rating for unitary air conditioning and heat pump equipment, is the ratio of cooling output to electric input at a prescribed set of interior and exterior conditions that reflect peak operation
energy-efficient condition	The efficient replacement system (post-retrofit)
ENERGY STAR®	A program, operated by the Environmental Protection Agency, to benchmark efficiency standards for energy-consuming equipment or buildings
HDD	Annual heating degree days
HOU	Annual hours of use for energy-consuming equipment
HSPF	The Heating Seasonal Performance Factor (HSPF) is an estimate of seasonal heating energy efficiency that represents the total heating output of a heat pump, including supplementary electric heat, during the normal heating season (in Btu) as compared to the total electricity consumed (in watt-hours) during the same period
IEER	The Integrated Energy Efficiency Ratio (IEER), an energy efficiency rating for unitary air conditioning and heat pump equipment larger than 65 kBtu/h, comprised of cooling part-load EER on the basis of weighted operation at various load capacities

ISR	In-service rate, the percentage of rebated equipment that remains installed and operational
kW/ton	Water-cooled chiller system efficiency, in kW/ton
ODP	Open, drip-proof (ODP) motor enclosure type
participant	Multiple strategies to count participants are in use (see Table 8-7)
Pascal	A Pascal is a derived SI unit of pressure equal to 1 kg/(m·s ²) or 1 N/m ²
ppb	Parts per billion
R	R-value of insulation ¹⁰⁵
rpm	Rotational speed of motor, in revolutions per minute (rpm)
SEER	The Seasonal Energy Efficiency Ratio (SEER), an energy efficiency rating for unitary air conditioning and heat pump equipment ≤65 kBtu/h, is the total cooling output divided by the total electric input across a typical cooling season
SVGe	Percentage of annual lighting energy saved by lighting control
SVGd	Percentage of lighting demand saved by lighting control
ΔT	Average difference in temperature between cold intake water and shower water
TEFC	Totally enclosed fan-cooled (TEFC) motor enclosure type
TRM	Technical Reference Manual
time of sale¹⁰⁶	Time at which new equipment purchase takes place to replace an older, pre-existing piece of equipment that has reached the end of its useful life. Also referred to as “replace on burn-out.”
VRF	This is a special type of air conditioner or heat pump that allows for Variable Refrigerant Flow (VRF) whereby refrigerant may be used as a cooling and heating medium simultaneously.
ΔWater	Customer annual water savings per residential unit, in gallons
WBT	The Wet-Bulb Temperature (WBT) is the air temperature measured with a wet cloth surrounding the thermometer bulb while moving the bulb to simulate a breeze.

¹⁰⁵ New York Residential TRM. Prepared for New York Department of Public Service by New York Evaluation Advisory Contractor Team, p. 27.

¹⁰⁶ Mid-Atlantic TRM 2016, p. 97.

WHF

Waste-heat factor to account for electric cooling savings and/or negative electric heating savings from replacing baseline equipment with efficient equipment (e.g., clothes dryers and lighting¹⁰⁷)

Table 8-13: Participant Definition by Program

Program	DNV GL Definition of Participant	IRP Definition of Participant		
Residential AC Cycling	A unique electric account ID	Single AC or HP unit		
Non-residential Distributed Generation	1 MW available to Dominion for dispatch	1 MW of generated energy		
Residential Age and Income Qualifying	Only the first instance of a Dominion-approved rebate associated with a given electric account ID is counted as a unique participant. It is counted as a participant in the month that their first rebate is approved. The savings associated with subsequent measure(s) for a repeated electric account ID will be attributed to the month of their Dominion-approved rebate but will not increase the participant tally.	Single household		
Non-residential Heating and Cooling Efficiency		Single building		
Non-residential Lighting Systems and Controls				
Non-residential Small Business Improvement				
Non-residential Prescriptive				
Non-residential Office				
Non-residential Small Manufacturing				
Non-residential Window Film			Square footage of installed window film at one building	
Residential LED			A single eligible lamp sold through an approved retailer with a Dominion-approved invoice.	Single lamp

Update Summary

The changes to this section, compared with last year, are described in Table 8-14.

Table 8-14: Summary of Update(s) from Previous Version

Type of Change	Description of Change
New table	<ul style="list-style-type: none"> Added table of participant definitions

¹⁰⁷ Mid-Atlantic TRM, p. 22.