

DNV·GL

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

Case No. PUE-2016-00111 (Virginia
Docket No.: E-22 Sub 545 (North Carolina))

VOLUME 2 OF 4
PUBLIC VERSION

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A. PROGRAM PERFORMANCES INDICATOR TABLES FOR VIRGINIA

A.1 Virginia Residential Heat Pump Upgrade Program 2012-2017

A.1.1 2012-2017 Annual Indicator Tables

VA - Residential Heat Pump Upgrade Program		2012	2013	2014	2015	2016	2017	2012 - 2017
Category	Indicator	Total	Total	Total	Total	Total	Total	Program Total
O&M (\$)	Direct Rebate							
O&M (\$)	Direct Implementation							
O&M (\$)	Direct EM&V							
O&M (\$)	Indirect Other (Administrative)	\$126,049	\$202,451	\$101,388	\$76,038	\$78,750	\$29,454	\$614,131
Costs (\$)	Total							
Costs (\$)	Planned							
Costs (\$)	Variance							
	Cum. % toward planned total	52%	50%	36%	43%	41%	142%	45%
Participants	Total (Gross)	86	3,295	3,649	4,210	5,395	1,149	17,784
	Planned (Gross)	4,396	11,992	18,221	18,221	3,748	0	56,578
	Variance	-4,310	-8,697	-14,572	-14,011	1,647	1,149	-38,794
	Cum % toward planned total (Gross)	2%	27%	20%	23%	144%		31%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	199,447	6,665,695	5,667,002	2,405,953	3,072,240	553,935	18,564,272
78%	Realization Rate Adjustment (kWh/yr)	13,363	446,602	379,689	-538,933	-688,182	-124,081	-511,543
	Realization Rate Adjusted Savings (kWh/yr)	212,810	7,112,296	6,046,691	1,867,020	2,384,058	429,854	18,052,729
45%	Net-To-Gross Adjustment (kWh/yr)	-31,922	-1,066,844	-907,004	-1,024,994	-1,308,848	-235,990	-4,575,601
	Net Adjusted Savings (kWh/yr)	180,889	6,045,452	5,139,687	842,026	1,075,210	193,864	13,477,128
	Planned Net Savings (kWh/yr)	3,207,000	8,724,528	15,761,165	15,761,165	742,316	0	44,196,174
	Cum. % Toward Net Planned Savings (kWh/yr)	6%	69%	33%	5%	145%		30%
	Avg. Gross Savings Per Participant (kWh/yr)	2,319	2,023	1,553	571	569	482	1,044
	Avg. Net Savings Per Participant (kWh/yr)	2,103	1,835	1,409	200	199	169	758
Installed kW	Total Gross Demand Reduction (kW)	59	2,394	2,169	472	624	130	5,848
89%	Realization Rate Adjustment (kW)	-10	-405	-367	-53	-70	-15	-918
	Realization Rate Adjusted Gross Demand Reduction(kW)	49	1,989	1,802	419	554	115	4,930
45%	Net-To-Gross Adjustment (kW)	-7	-298	-270	-230	-304	-63	-1,174
	Net Adjusted Demand Reduction (kW)	42	1,691	1,532	189	250	52	3,756
	Planned Net Demand Reduction (kW)	1,068	2,904	5,284	5,284	267	0	14,807
	Cum. % Toward Net Planned Demand Reduction (kW)	4%	58%	29%	4%	94%		25%
	Avg. Gross Demand Reduction Per Participant (kW)	0.69	0.73	0.59	0.11	0.12	0.11	0.33
	Avg. Net Demand Reduction Per Participant (kW)	0.49	0.51	0.42	0.04	0.05	0.05	0.21
Program	Cum. \$Admin. per Cum. Participant (Gross)	\$1,466	\$61	\$28	\$18	\$15	\$26	\$35
Performance	Cum. \$Admin. per Cum. kWh (Gross)	\$0.63	\$0.03	\$0.02	\$0.03	\$0.03	\$0.05	\$0.03
	Cum. \$Admin. per Cum. kW (Gross)	\$2,125	\$85	\$47	\$161	\$126	\$227	\$105
	Cum. \$EM&V per Cum Total Costs (\$)	1.6%	15.1%	13.5%	18.5%	11.0%	18.8%	13.4%
	Cum. \$Rebate per Cum. Participant (Gross)							

1. A participant is a single unit that has been installed and rebated. A unique account number may represent multiple participants if that account had multiple units installed and rebated.

A.1.2 2017 Monthly Indicator Tables

VA - Residential Heat Pump Upgrade Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total	2012 - 2017			
O&M (\$)	Direct Rebate																	
O&M (\$)	Direct Implementation																	
O&M (\$)	Direct EM&V																	
O&M (\$)	Indirect Other (Administrative)	\$10,426	\$5,821	\$4,269	\$4,684	\$1,157	-\$165	\$1,052	\$737	\$470	\$466	\$227	\$290	\$29,454	\$614,131			
Costs (\$)	Total																	
Costs (\$)	Planned																	
Costs (\$)	Variance																	
	Cum. % toward planned total	50%	78%	99%	122%	127%	127%	132%	135%	138%	140%	141%	142%	142%	45%			
Participants ¹	Total (Gross)	828	235	86	0	0	0	0	0	0	0	0	0	1,149	17,784			
	Planned (Gross)	0	0	0	0	0	0	0	0	0	0	0	0	0	56,578			
	Variance	828	235	86	0	0	0	0	0	0	0	0	0	1,149	-38,794			
	Cum. % toward planned total (Gross)														31%			
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	403,525	114,943	35,467	0	0	0	0	0	0	0	0	0	553,935	18,564,272			
78%	Realization Rate Adjustment (kWh/yr)	-90,390	-25,747	-7,945	0	0	0	0	0	0	0	0	0	-124,081	-511,543			
	Realization Rate Adjusted Savings (kWh/yr)	313,135	89,196	27,523	0	0	0	0	0	0	0	0	0	429,854	18,052,729			
45%	Net-To-Gross Adjustment (kWh/yr)	-171,911	-48,969	-15,110	0	0	0	0	0	0	0	0	0	-235,990	-4,575,601			
	Net Adjusted Savings (kWh/yr)	141,224	40,227	12,413	0	0	0	0	0	0	0	0	0	193,864	13,477,128			
	Planned Net Savings (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	44,196,174			
	Cum. % Toward Net Planned Savings (kWh/yr)														30%			
	Avg. Gross Savings Per Participant (kWh/yr)	487	489	412										482	1,044			
	Avg. Net Savings Per Participant (kWh/yr)	171	171	144										169	758			
Installed kW	Total Gross Demand Reduction (kW)	94	25	11	0	0	0	0	0	0	0	0	0	130	5,848			
89%	Realization Rate Adjustment (kW)	-11	-3	-1	0	0	0	0	0	0	0	0	0	-15	-918			
	Realization Rate Adjusted Gross Demand Reduction (kW)	84	22	9	0	0	0	0	0	0	0	0	0	115	4,930			
45%	Net-To-Gross Adjustment (kW)	-46	-12	-5	0	0	0	0	0	0	0	0	0	-63	-1,174			
	Net Adjusted Demand Reduction (kW)	38	10	4	0	0	0	0	0	0	0	0	0	52	3,756			
	Planned Net Demand Reduction (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	14,807			
	Cum. % Toward Net Planned Demand Reduction (kW)														25%			
	Avg. Gross Demand Reduction Per Participant (kW)	0.11	0.11	0.12										0.11	0.33			
	Avg. Net Demand Reduction Per Participant (kW)	0.05	0.04	0.05										0.05	0.21			
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$13	\$15	\$18	\$22	\$23	\$23	\$24	\$24	\$25	\$25	\$25	\$26	\$26	\$35			
	Cum. \$Admin. per Cum. kWh (Gross)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0.05	\$0.03			
	Cum. \$Admin. per Cum. kW (Gross)	\$111	\$136	\$158	\$194	\$203	\$202	\$210	\$216	\$219	\$223	\$225	\$227	\$227	\$105			
	Cum. \$EM&V per Cum. Total Costs (\$)	0.0%	0.0%	0.0%	5.8%	9.8%	9.2%	12.6%	14.8%	16.1%	17.4%	18.0%	18.8%	18.8%	13.4%			
	Cum. \$Rebate per Cum. Participant (Gross)																	

A.2 Virginia Residential Heat Pump Tune-Up Program 2012-2017

A.2.1 2012-2017 Annual Indicator Tables

VA - Residential Heat Pump Tune Up Program		2012	2013	2014	2015	2016	2017	2012 - 2017
Category	Indicator	Total	Total	Total	Total	Total	Total	Program Total
O&M (\$)	Direct Rebate							
O&M (\$)	Direct Implementation							
O&M (\$)	Direct EM&V							
O&M (\$)	Indirect Other (Administrative)	\$179,541	\$339,952	\$229,172	\$124,325	\$103,917	\$26,250	\$1,003,156
Costs (\$)	Total							
Costs (\$)	Planned							
Costs (\$)	Variance							
	Cum. % toward planned total	60%	69%	73%	60%	50%	79%	62%
Participants ¹	Total (Gross)	1,209	15,636	24,687	24,114	19,008	2,472	87,126
	Planned (Gross)	10,203	27,830	42,293	42,293	22,958	0	145,577
	Variance	-8,994	-12,194	-17,606	-18,179	-3,950	2,472	-58,451
	Cum % toward planned total (Gross)	12%	56%	58%	57%	83%		60%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	364,856	4,605,801	6,269,989	5,067,124	4,035,338	500,799	20,843,906
99%	Realization Rate Adjustment (kWh/yr)	-2,919	-36,846	-50,160	-40,537	-32,283	-4,006	-166,751
	Realization Rate Adjusted Savings (kWh/yr)	361,937	4,568,954	6,219,829	5,026,587	4,003,055	496,793	20,677,155
90%	Net-To-Gross Adjustment (kWh/yr)	-36,194	-456,895	-621,983	-502,659	-400,306	-49,679	-2,067,715
	Net Adjusted Savings (kWh/yr)	325,743	4,112,059	5,597,846	4,523,928	3,602,750	447,114	18,609,439
	Planned Net Savings (kWh/yr)	7,024,000	19,102,880	32,227,266	32,227,266	2,595,483	0	93,176,895
	Cum. % Toward Net Planned Savings (kWh/yr)	5%	22%	17%	14%	139%		20%
	Avg. Gross Savings Per Participant (kWh/yr)	302	295	254	210	212	203	239
	Avg. Net Savings Per Participant (kWh/yr)	269	263	227	188	190	181	214
Installed kW	Total Gross Demand Reduction (kW)	250	3,160	3,198	5,435	3,003	391	15,437
99%	Realization Rate Adjustment (kW)	-2	-25	-26	-43	-24	-3	-123
	Realization Rate Adjusted Gross Demand Reduction (kW)	248	3,135	3,173	5,392	2,979	387	15,313
90%	Net-To-Gross Adjustment (kW)	-25	-314	-317	-539	-298	-39	-1,531
	Net Adjusted Demand Reduction (kW)	223	2,822	2,855	4,852	2,681	349	13,782
	Planned Net Demand Reduction (kW)	2,053	5,585	9,727	9,727	869	0	27,962
	Cum. % Toward Net Planned Demand Reduction (kW)	11%	51%	29%	50%	309%		49%
	Avg. Gross Demand Reduction Per Participant (kW)	0.21	0.20	0.13	0.23	0.16	0.16	0.18
	Avg. Net Demand Reduction Per Participant (kW)	0.18	0.18	0.12	0.20	0.14	0.14	0.16
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$149	\$22	\$9	\$5	\$5	\$11	\$12
	Cum. \$Admin. per Cum. kWh (Gross)	\$0.49	\$0.07	\$0.04	\$0.02	\$0.03	\$0.05	\$0.05
	Cum. \$Admin. per Cum. kW (Gross)	\$719	\$108	\$72	\$23	\$35	\$67	\$65
	Cum. \$EM&V per Cum Total Costs (\$)	1%	3%	2%	2%	3%	10%	3%
	Cum. \$Rebate per Cum. Participant (Gross)							

1. A participant is a single unit that has been installed and rebated. A unique account number may represent multiple participants if that account had multiple units installed and rebated.

A.2.2 2017 Monthly Indicator Tables

VA - Residential Heat Pump Tune Up Program		2017 Jan	2017 Feb	2017 Mar	2017 Apr	2017 May	2017 June	2017 Jul	2017 Aug	2017 Sept	2017 Oct	2017 Nov	2017 Dec	2017 Total	2012 - 2017 Program Total	
Category	Indicator															
O&M (\$)	Direct Rebate															
O&M (\$)	Direct Implementation															
O&M (\$)	Direct EM&V															
O&M (\$)	Indirect Other (Administrative)	\$12,451	\$4,108	\$3,564	\$4,051	\$266	-\$58	\$289	\$378	\$266	\$338	\$250	\$347	\$26,250	\$1,003,156	
Costs (\$)	Total															
Costs (\$)	Planned															
Costs (\$)	Variance															
	Cum. % toward planned total	37%	50%	60%	72%	73%	73%	74%	75%	76%	77%	78%	79%	79%	62%	
Participants ¹	Total (Gross)	2,221	219	32	0	0	0	0	0	0	0	0	0	2,472	87,126	
	Planned (Gross)	0	0	0	0	0	0	0	0	0	0	0	0	0	145,577	
	Variance	2,221	219	32	0	0	0	0	0	0	0	0	0	2,472	-58,451	
	Cum % toward planned total (Gross)														60%	
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	444,565	48,588	7,646	0	0	0	0	0	0	0	0	0	500,799	20,843,906	
	99% Realization Rate Adjustment (kWh/yr)	-3,557	-389	-61	0	0	0	0	0	0	0	0	0	-4,006	-166,751	
	Realization Rate Adjusted Savings (kWh/yr)	441,009	48,199	7,585	0	0	0	0	0	0	0	0	0	496,793	20,677,155	
	90% Net-To-Gross Adjustment (kWh/yr)	-44,101	-4,820	-758	0	0	0	0	0	0	0	0	0	-49,679	-2,067,715	
	Net Adjusted Savings (kWh/yr)	396,908	43,379	6,826	0	0	0	0	0	0	0	0	0	447,114	18,609,439	
	Planned Net Savings (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	93,176,895	
	Cum. % Toward Net Planned Savings (kWh/yr)														20%	
	Avg. Gross Savings Per Participant (kWh/yr)	200	222	239											203	239
	Avg. Net Savings Per Participant (kWh/yr)	179	198	213											181	214
Installed kW	Total Gross Demand Reduction (kW)	347	38	6	0	0	0	0	0	0	0	0	0	391	15,437	
	99% Realization Rate Adjustment (kW)	-3	0	0	0	0	0	0	0	0	0	0	0	-3	-123	
	Realization Rate Adjusted Gross Demand Reduction(kW)	344	38	6	0	0	0	0	0	0	0	0	0	387	15,313	
	90% Net-To-Gross Adjustment (kW)	-34	-4	-1	0	0	0	0	0	0	0	0	0	-39	-1,531	
	Net Adjusted Demand Reduction (kW)	310	34	5	0	0	0	0	0	0	0	0	0	349	13,782	
	Planned Net Demand Reduction (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	27,962	
	Cum. % Toward Net Planned Demand Reduction (kW)														49%	
	Avg. Gross Demand Reduction Per Participant (kW)	0.16	0.17	0.19											0.16	0.18
	Avg. Net Demand Reduction Per Participant (kW)	0.14	0.15	0.17											0.14	0.16
Program Performance	Cum. SAdmin. per Cum. Participant (Gross)	\$6	\$7	\$8	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$11	\$11	\$12	
	Cum. SAdmin. per Cum. kWh (Gross)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0.05	\$0.05	
	Cum. SAdmin. per Cum. kW (Gross)	\$36	\$43	\$52	\$62	\$63	\$62	\$63	\$64	\$65	\$66	\$66	\$67	\$67	\$65	
	Cum. SEM&V per Cum Total Costs (\$)	0%	0%	0%	1%	4%	3%	5%	6%	7%	8%	9%	10%	10%	3%	
	Cum. SRebate per Cum. Participant (Gross)															

A.3 Virginia Residential Duct Sealing Program 2012-2017

A.3.1 2012-2017 Annual Indicator Tables

VA - Residential Duct Sealing Program		2012	2013	2014	2015	2016	2017	2012 - 2017
Category	Indicator	Total	Total	Total	Total	Total	Total	Program Total
O&M (\$)	Direct Rebate							
O&M (\$)	Direct Implementation							
O&M (\$)	Direct EM&V							
O&M (\$)	Indirect Other (Administrative)	\$107,619	\$88,535	\$47,393	\$29,028	\$21,206	\$12,428	\$306,208
Costs (\$)	Total							
Costs (\$)	Planned							
Costs (\$)	Variance							
	Cum. % toward planned total	83%	57%	57%	56%	40%	109.9%	58.4%
Participants ¹	Total (Gross)	8	108	401	1,860	658	264	3,299
	Planned (Gross)	1,267	3,456	5,249	5,249	1,499	0	16,720
	Variance	-1,259	-3,348	-4,848	-3,389	-841	264	-13,421
	Cum % toward planned total (Gross)	1%	3%	8%	35%	44%		19.7%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	10,093	120,772	264,570	1,024,299	369,325	145,638	1,934,698
49%	Realization Rate Adjustment (kWh/yr)	-5,107	-61,111	-133,872	-518,295	-186,879	-73,693	-978,957
	Realization Rate Adjusted Savings (kWh/yr)	4,986	59,661	130,697	506,004	182,447	71,945	955,741
80%	Net-To-Gross Adjustment (kWh/yr)	-997	-11,932	-26,139	-101,201	-36,489	-14,389	-191,148
	Net Adjusted Savings (kWh/yr)	3,989	47,729	104,558	404,803	145,957	57,556	764,592
	Planned Net Savings (kWh/yr)	533,000	1,449,268	2,750,476	2,750,476	178,861	0	7,662,081
	Cum. % Toward Net Planned Savings (kWh/yr)	1%	3%	4%	15%	82%		10%
	Avg. Gross Savings Per Participant (kWh/yr)	1,262	1,118	660	551	561	552	586
	Avg. Net Savings Per Participant (kWh/yr)	499	442	261	218	222	218	232
Installed kW	Total Gross Demand Reduction (kW)	12	138	217	839	302	119	1,627
43%	Realization Rate Adjustment (kW)	-7	-79	-125	-483	-174	-69	-936
	Realization Rate Adjusted Gross Demand Reduction (kW)	5	59	92	357	129	51	692
80%	Net-To-Gross Adjustment (kW)	-1	-12	-18	-71	-26	-10	-138
	Net Adjusted Demand Reduction (kW)	4	47	74	285	103	41	553
	Planned Net Demand Reduction (kW)	330	898	1,732	1,732	60	0	4,752
	Cum. % Toward Net Planned Demand Reduction (kW)	1%	5%	4%	16%	172%		12%
	Avg. Gross Demand Reduction Per Participant (kW)	1.45	1.28	0.54	0.45	0.46	0.45	0.49
	Avg. Net Demand Reduction Per Participant (kW)	0.49	0.43	0.18	0.15	0.16	0.15	0.17
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$13,452	\$820	\$118	\$16	\$32	\$47	\$93
	Cum. \$Admin. per Cum. kWh (Gross)	\$10.66	\$0.73	\$0.18	\$0.03	\$0.06	\$0.09	\$0.16
	Cum. \$Admin. per Cum. kW (Gross)	\$9,287	\$642	\$219	\$97	\$70	\$104	\$188
	Cum. \$EM&V per Cum Total Costs (\$)	2.1%	13.5%	18.6%	15.0%	15.4%	21.1%	12.0%
	Cum. \$Rebate per Cum. Participant (Gross)							

1. A participant is a single unit that has been installed and rebated. A unique account number may represent multiple participants if that account had multiple units installed and rebated.

A.3.2 2017 Monthly Indicator Tables

VA - Residential Duct Sealing Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2012 - 2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total	Program Total
O&M (\$)	Direct Rebate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$2,430	\$2,862	\$2,135	\$2,599	\$573	-\$56	\$343	\$422	\$297	\$298	\$166	\$359	\$12,428	\$306,208
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	21.5%	46.8%	65.7%	88.7%	93.8%	93.3%	96.3%	100.0%	102.7%	105.3%	106.8%	109.9%	109.9%	58.4%
Participants ¹	Total (Gross)	101	147	16	0	0	0	0	0	0	0	0	0	264	3,299
	Planned (Gross)	0	0	0	0	0	0	0	0	0	0	0	0	0	16,720
	Variance	101	147	16	0	0	0	0	0	0	0	0	0	264	-13,421
	Cum % toward planned total (Gross)														19.7%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	57,810	78,675	9,153	0	0	0	0	0	0	0	0	0	145,638	1,934,698
49%	Realization Rate Adjustment (kWh/yr)	-29,252	-39,810	-4,631	0	0	0	0	0	0	0	0	0	-73,693	-978,957
	Realization Rate Adjusted Savings (kWh/yr)	28,558	38,866	4,522	0	0	0	0	0	0	0	0	0	71,945	955,741
80%	Net-To-Gross Adjustment (kWh/yr)	-5,712	-7,773	-904	0	0	0	0	0	0	0	0	0	-14,389	-191,148
	Net Adjusted Savings (kWh/yr)	22,847	31,093	3,617	0	0	0	0	0	0	0	0	0	57,556	764,592
	Planned Net Savings (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	7,662,081
	Cum. % Toward Net Planned Savings (kWh/yr)														10%
	Avg. Gross Savings Per Participant (kWh/yr)	572	535	572										552	586
	Avg. Net Savings Per Participant (kWh/yr)	226	212	226										218	232
Installed kW	Total Gross Demand Reduction (kW)	47	64	8	0	0	0	0	0	0	0	0	0	119	1,627
43%	Realization Rate Adjustment (kW)	-27	-37	-4	0	0	0	0	0	0	0	0	0	-69	-936
	Realization Rate Adjusted Gross Demand Reduction(kW)	20	27	3	0	0	0	0	0	0	0	0	0	51	692
80%	Net-To-Gross Adjustment (kW)	-4	-5	-1	0	0	0	0	0	0	0	0	0	-10	-138
	Net Adjusted Demand Reduction (kW)	16	22	3	0	0	0	0	0	0	0	0	0	41	553
	Planned Net Demand Reduction (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	4,752
	Cum. % Toward Net Planned Demand Reduction (kW)														12%
	Avg. Gross Demand Reduction Per Participant (kW)	0.47	0.44	0.47										0.45	0.49
	Avg. Net Demand Reduction Per Participant (kW)	0.16	0.15	0.16										0.15	0.17
Program Performance	Cum. SAdmin. per Cum. Participant (Gross)	\$24	\$21	\$28	\$38	\$40	\$40	\$41	\$43	\$44	\$45	\$46	\$47	\$47	\$93
	Cum. SAdmin. per Cum. kWh (Gross)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0.09	\$0.16
	Cum. SAdmin. per Cum. kW (Gross)	\$51	\$47	\$62	\$84	\$89	\$88	\$91	\$95	\$97	\$100	\$101	\$104	\$104	\$188
	Cum. SEM&V per Cum Total Costs (\$)	0.0%	0.0%	0.0%	2.6%	8.2%	7.7%	10.5%	13.7%	15.8%	17.8%	18.9%	21.1%	21.1%	12.0%
	Cum. SRebate per Cum. Participant (Gross)														

A.4 Virginia Residential Home Energy Check-Up Program 2012-2017

A.4.1 2012-2017 Annual Indicator Tables

VA - Residential Home Energy Check-Up Program		2012	2013	2014	2015	2016	2017	2012 - 2017
Category	Indicator	Total	Total	Total	Total	Total	Total ²	Program Total
O&M (\$)	Direct Rebate							
O&M (\$)	Direct Implementation							
O&M (\$)	Direct EM&V							
O&M (\$)	Indirect Other (Administrative)	\$45,900	\$107,979	\$302,076	\$142,892	\$152,251	\$27,969	\$779,066
Costs (\$)	Total							
Costs (\$)	Planned							
Costs (\$)	Variance							
	Cum. % toward planned total	67%	99%	506%	326%	343%	75%	269%
Participants ¹	Total (Gross)	31	1,569	19,702	13,860	15,252	1,500	51,914
	Planned (Gross)	602	1,605	2,427	2,427	2,427	0	9,488
	Variance	-571	-36	17,275	11,433	12,825	1,500	42,426
	Cum % toward planned total (Gross)	5%	98%	812%	571%	628%		547%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	24,484	1,156,888	10,573,042	6,834,001	6,803,477	827,576	26,219,469
154%	Realization Rate Adjustment (kWh/yr)	13,099	618,935	5,656,578	3,656,191	3,639,860	442,753	14,027,416
	Realization Rate Adjusted Savings (kWh/yr)	37,583	1,775,823	16,229,620	10,490,192	10,443,338	1,270,330	40,246,885
82%	Net-To-Gross Adjustment (kWh/yr)	-7,517	-355,165	-3,245,924	-1,898,725	-1,890,244	-229,930	-7,627,504
	Net Adjusted Savings (kWh/yr)	30,066	1,420,658	12,983,696	8,591,467	8,553,094	1,040,400	32,619,381
	Planned Net Savings (kWh/yr)	492,000	1,306,356	2,468,259	2,468,259	4,593,678	0	11,328,552
	Cum. % Toward Net Planned Savings (kWh/yr)	6%	109%	526%	348%	186%		288%
	Avg. Gross Savings Per Participant (kWh/yr)	790	737	537	493	446	552	505
	Avg. Net Savings Per Participant (kWh/yr)	970	905	659	620	561	694	628
Installed kW	Total Gross Demand Reduction (kW)	3	140	1,106	695	693	76	2,713
154%	Realization Rate Adjustment (kW)	2	75	592	372	371	41	1,452
	Realization Rate Adjusted Gross Demand Reduction (kW)	5	215	1,698	1,066	1,064	117	4,165
82%	Net-To-Gross Adjustment (kW)	-1	-43	-340	-193	-193	-21	-790
	Net Adjusted Demand Reduction (kW)	4	172	1,358	873	871	96	3,374
	Planned Net Demand Reduction (kW)	85	225	437	437	1,002	0	2,186
	Cum. % Toward Net Planned Demand Reduction (kW)	4%	76%	311%	200%	87%		154%
	Avg. Gross Demand Reduction Per Participant (kW)	0.1	0.1	0.1	0.05	0.05	0.05	0.05
	Avg. Net Demand Reduction Per Participant (kW)	0.1	0.1	0.1	0.06	0.06	0.06	0.07
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$1,481	\$69	\$15	\$10	\$10	\$19	\$15
	Cum. \$Admin. per Cum. kWh (Gross)	\$2	\$0	\$0.03	\$0.02	\$0	\$0	\$0.03
	Cum. \$Admin. per Cum. kW (Gross)	\$14,840	\$771	\$273	\$206	\$220	\$366	\$287
	Cum. \$EM&V per Cum Total Costs (\$)	4.9%	9.7%	0.8%	2.6%	\$0	\$0	3.0%
	Cum. \$Rebate per Cum. Participant (Gross)							

1. A participant is a single unit that has been installed and rebated. A unique account number may represent multiple participants if that account had multiple units installed and rebated.

2. The 2017 total gross deemed savings values reported in this table include adjustments of -2.1 kWh/year and -0.00044 kW made to the January 2017 reported savings. The adjustments accounts for corrections to STEP Manual version 7.0.0 issued on May 1, 2017. Specifically, the correction was in section 2.1.5 for "Low-Flow Showerhead" measures, to the " ΔT " variable, which is a measure of the change in temperature of the water used for shower and temperature entering the house ($\Delta T = T_{\text{shower}} - T_{\text{in house}}$). STEP Manual 7.0.0 reported the value as 44.9°F, but has been corrected to 44.1°F. This correction is reflected in STEP Manual version 8.0.0 in this EM&V report.

A.4.2 2017 Monthly Indicator Tables

VA - Residential Home Energy Check-Up Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2012 - 2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total ²	Program Total
O&M (\$)	Direct Rebate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$14,162	\$6,617	\$2,433	\$2,166	\$788	-\$106	234	314	260	262	247	591	\$27,969	\$779,066
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	38%	56%	62%	68%	70%	70%	70%	71%	72%	73%	73%	75%	75%	269%
Participants ¹	Total (Gross)	1,069	377	54	0	0	0	0	0	0	0	0	0	1,500	51,914
	Planned (Gross)	0	0	0	0	0	0	0	0	0	0	0	0	0	9,488
	Variance	1,069	377	54	0	0	0	0	0	0	0	0	0	1,500	42,426
	Cum % toward planned total (Gross)														547%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	600,332	197,637	29,608	0	0	0	0	0	0	0	0	0	827,576	26,219,469
	154% Realization Rate Adjustment (kWh/yr)	321,177	105,736	15,840	0	0	0	0	0	0	0	0	0	442,753	14,027,416
	Realization Rate Adjusted Savings (kWh/yr)	921,509	303,372	45,449	0	0	0	0	0	0	0	0	0	1,270,330	40,246,885
82%	Net-To-Gross Adjustment (kWh/yr)	-166,793	-54,910	-8,226	0	0	0	0	0	0	0	0	0	-229,930	-7,627,504
	Net Adjusted Savings (kWh/yr)	754,716	248,462	37,223	0	0	0	0	0	0	0	0	0	1,040,400	32,619,381
	Planned Net Savings (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	11,328,552
	Cum. % Toward Net Planned Savings (kWh/yr)														288%
	Avg. Gross Savings Per Participant (kWh/yr)	562	524	548										552	505
	Avg. Net Savings Per Participant (kWh/yr)	706	659	689										694	628
Installed kW	Total Gross Demand Reduction (kW)	55	19	3	0	0	0	0	0	0	0	0	0	76	2,713
	154% Realization Rate Adjustment (kW)	29	10	1	0	0	0	0	0	0	0	0	0	41	1,452
		84	29	4	0	0	0	0	0	0	0	0	0	117	4,165
	82% Net-To-Gross Adjustment (kW)	-15	-5	-1	0	0	0	0	0	0	0	0	0	-21	-790
		69	24	3	0	0	0	0	0	0	0	0	0	96	3,374
		0	0	0	0	0	0	0	0	0	0	0	0	0	2,186
															154%
		0.05	0.05	0.05											0.05
	0.06	0.06	0.06											0.06	0.07
Program Performance	Cum. SAdmin. per Cum. Participant (Gross)	\$13	\$14	\$15	\$17	\$17	\$17	\$18	\$18	\$18	\$18	\$18	\$19	\$19	\$15
	Cum. SAdmin. per Cum. kWh (Gross)	\$0.02	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0	\$0.03
	Cum. SAdmin. per Cum. kW (Gross)	\$258	\$282	\$304	\$332	\$343	\$341	\$344	\$348	\$352	\$355	\$359	\$366	\$366	\$287
	Cum. SEM&V per Cum. Total Costs (\$)	0.0%	0.0%	0.0%	3.0%	6.3%	5.9%	6.7%	7.8%	8.6%	9.5%	10.3%	12.1%	\$0	3.0%
	Cum. SRebate per Cum. Participant (Gross)														

A.5 Virginia Residential Income and Age Qualifying Home Improvement Program 2015-2017

A.5.1 2015-2017 Annual Indicator Tables

VA- Residential Income and Age Qualifying Home Improvement Program		2015	2016	2017	2015-2017
Category	Indicator	Total	Total	Total ²	Total
O&M (\$)	Direct Rebate				
O&M (\$)	Direct Implementation				
O&M (\$)	Direct EM&V				
O&M (\$)	Indirect Other (Administrative)	\$48,256	\$191,950	\$199,872	\$440,079
Costs (\$)	Total				
Costs (\$)	Planned				
Costs (\$)	Variance				
	Cum. % toward planned total	68%	108%	109%	99%
Participants ¹	Total (Gross)	1,523	8,403	5,970	15,896
	Planned (Gross)	1,849	3,843	3,846	9,538
	Variance	-326	4,560	2,124	6,358
	Cum % toward planned total (Gross)	82%	219%	155%	167%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	984,230	3,575,492	2,431,737	6,991,460
	100% Realization Rate Adjustment (kWh/yr)	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	984,230	3,575,492	2,431,737	6,991,460
	80% Net-To-Gross Adjustment (kWh/yr)	-196,846	-715,098	-486,347	-1,398,292
	Net Adjusted Savings (kWh/yr)	787,384	2,860,394	1,945,390	5,593,168
	Planned Net Savings (kWh/yr)	1,810,380	998,136	765,945	3,574,461
	Cum. % Toward Net Planned Savings (kWh/yr)	43%	287%	254%	156%
	Avg. Gross Savings Per Participant (kWh/yr)	646	426	407	440
	Avg. Net Savings Per Participant (kWh/yr)	517	340	326	352
Installed kW	Total Gross Demand Reduction (kW)	80	398	228	706
	100% Realization Rate Adjustment (kW)	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	80	398	228	706
	80% Net-To-Gross Adjustment (kW)	-16	-80	-46	-141
	Net Adjusted Demand Reduction (kW)	64	318	182	565
	Planned Net Demand Reduction (kW)	415	218	170	803
	Cum. % Toward Net Planned Demand Reduction (kW)	15%	146%	107%	70%
	Avg. Gross Demand Reduction Per Participant (kW)	0.05	0.05	0.04	0.04
	Avg. Net Demand Reduction Per Participant (kW)	0.04	0.04	0.03	0.04
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$32	\$23	\$33	\$28
	Cum. \$Admin. per Cum. kWh (Gross)	\$0.05	\$0.05	\$0.08	\$0.06
	Cum. \$Admin. per Cum. kW (Gross)	\$602	\$482	\$876	\$623
	Cum. \$EM&V per Cum Total Costs (\$)	1%	1%	2%	2%
	Cum. \$Rebate per Cum. Participant (Gross)				

1. A participant is unique account that has been installed and rebated. A unique account number may represent multiple participants if that account had multiple units installed and rebated.
2. The 2017 total gross deemed savings values reported in this table include adjustments of 12183 kWh/year and -1.1 kW, made to the January 2017 reported savings. The adjustments accounts for corrections to STEP Manual version 7.0.0 issued on May 1, 2017. Specifically, the correction was in section 2.1.5 for "Low-Flow Showerhead" measures, to the " ΔT " variable, which is a measure of the change in temperature of the water used for shower and temperature entering the house ($\Delta T = T_{\text{shower}} - T_{\text{in house}}$). STEP Manual 7.0.0 reported the value as 44.9°F, but has been corrected to 44.1°F. This correction is reflected in STEP Manual version 8.0.0 in this EM&V report.

A.5.2 2017 Monthly Indicator Tables

VA- Residential Income and Age Qualifying Home Improvement Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2015-2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total ²	Total
O&M (\$)	Direct Rebate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$19,222	\$9,680	\$26,619	\$16,854	\$18,075	\$11,058	\$13,686	\$16,208	\$2,496	\$22,964	\$24,766	\$18,245	\$199,872	\$440,079
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	11%	16%	30%	40%	49%	55%	63%	72%	73%	86%	99%	109%	109%	99%
Participants ¹	Total (Gross)	428	202	737	507	617	585	443	252	101	513	822	763	5,970	15,896
	Planned (Gross)	321	321	321	321	321	321	320	320	320	320	320	320	3,846	9,538
	Variance	107	-119	416	186	296	264	123	-68	-219	193	502	443	2,124	6,358
	Cum % toward planned total (Gross)	11%	16%	36%	49%	65%	80%	91%	98%	101%	114%	135%	155%	155%	167%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	220,224	58,902	465,646	221,986	311,248	220,801	139,414	120,426	34,079	186,406	241,132	211,475	2,431,737	6,991,460
100%	Realization Rate Adjustment (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	220,224	58,902	465,646	221,986	311,248	220,801	139,414	120,426	34,079	186,406	241,132	211,475	2,431,737	6,991,460
80%	Net-To-Gross Adjustment (kWh/yr)	-44,045	-11,780	-93,129	-44,397	-62,250	-44,160	-27,883	-24,085	-6,816	-37,281	-48,226	-42,295	-486,347	-1,398,292
	Net Adjusted Savings (kWh/yr)	176,179	47,121	372,517	177,589	248,998	176,641	111,531	96,341	27,264	149,125	192,905	169,180	1,945,390	5,593,168
	Planned Net Savings (kWh/yr)	63,829	63,829	63,829	63,829	63,829	63,829	63,829	63,829	63,829	63,829	63,829	63,829	765,945	3,574,461
	Cum. % Toward Net Planned Savings (kWh/yr)	23%	29%	78%	101%	133%	157%	171%	184%	187%	207%	232%	254%	254%	156%
	Avg. Gross Savings Per Participant (kWh/yr)	515	292	632	438	504	377	315	478	337	363	293	277	407	440
	Avg. Net Savings Per Participant (kWh/yr)	412	233	505	350	404	302	252	382	270	291	235	222	326	352
Installed kW	Total Gross Demand Reduction (kW)	19	7	37	21	29	22	15	9	4	17	27	23	228	706
100%	Realization Rate Adjustment (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	19	7	37	21	29	22	15	9	4	17	27	23	228	706
80%	Net-To-Gross Adjustment (kW)	-4	-1	-7	-4	-6	-4	-3	-2	-1	-3	-5	-5	-46	-141
	Net Adjusted Demand Reduction (kW)	15	6	29	17	23	17	12	7	3	13	21	18	182	565
	Planned Net Demand Reduction (kW)	14	14	14	14	14	14	14	14	14	14	14	14	170	803
	Cum. % Toward Net Planned Demand Reduction (kW)	9%	12%	30%	39%	53%	63%	70%	75%	76%	84%	97%	107%	107%	70%
	Avg. Gross Demand Reduction Per Participant (kW)	0.04	0.04	0.05	0.04	0.05	0.04	0.03	0.04	0.04	0.03	0.03	0.03	0.04	0.04
	Avg. Net Demand Reduction Per Participant (kW)	0.04	0.03	0.04	0.03	0.04	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.03	0.04
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$45	\$46	\$41	\$39	\$36	\$33	\$33	\$35	\$35	\$36	\$35	\$33	\$33	\$28
	Cum. \$Admin. per Cum. kWh (Gross)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0.08	\$0.06
	Cum. \$Admin. per Cum. kW (Gross)	\$1,016	\$1,098	\$879	\$863	\$802	\$755	\$769	\$828	\$825	\$877	\$884	\$876	\$876	\$623
	Cum. SEM&V per Cum Total Costs (\$)	0%	0%	0%	1%	2%	1%	1%	2%	2%	2%	2%	2%	2%	2%
	Cum. \$Rebate per Cum. Participant (Gross)														

A.6 Virginia Residential Appliance Recycling Program 2015-2017

A.6.1 2015-2017 Annual Indicator Tables

VA- Residential Appliance Recycling Program		2015	2016	2017	2015-2017
Category	Indicator	Total	Total	Total	Total
O&M(\$)	Direct Rebate				
O&M(\$)	Direct Implementation				
O&M(\$)	Direct EM&V				
O&M(\$)	Indirect Other (Administrative)	\$21,660	\$65,648	\$38,635	\$125,943
Costs (\$)	Total				
Costs (\$)	Planned				
Costs (\$)	Variance				
	Cum. % toward planned total	84%	104%	90%	96%
Participants ¹	Total (Gross)	3,206	7,735	3,131	14,072
	Planned (Gross)	3,750	7,500	3,000	14,250
	Variance	-544	235	131	-178
	Cum % toward planned total (Gross)	85%	103%	104%	99%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	3,618,359	7,552,110	3,016,432	14,186,901
	100% Realization Rate Adjustment (kWh/yr)	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	3,618,359	7,552,110	3,016,432	14,186,901
	77% Net-To-Gross Adjustment (kWh/yr)	-832,223	-1,736,985	-693,779	-3,262,987
	Net Adjusted Savings (kWh/yr)	2,786,136	5,815,125	2,322,653	10,923,914
	Planned Net Savings (kWh/yr)	6,564,000	3,736,801	1,346,206	11,647,008
	Cum. % Toward Net Planned Savings (kWh/yr)	42%	156%	173%	94%
	Avg. Gross Savings Per Participant (kWh/yr)	1,129	976	963	1,008
	Avg. Net Savings Per Participant (kWh/yr)	869	752	742	776
Installed kW	Total Gross Demand Reduction (kW)	542	1,130	451	2,123
	100% Realization Rate Adjustment (kW)	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	542	1,130	451	2,123
	77% Net-To-Gross Adjustment (kW)	-125	-260	-104	-488
	Net Adjusted Demand Reduction (kW)	417	870	348	1,635
	Planned Net Demand Reduction (kW)	1,221	559	202	1,982
	Cum. % Toward Net Planned Demand Reduction (kW)	34%	156%	173%	83%
	Avg. Gross Demand Reduction Per Participant (kW)	0.17	0.15	0.14	0.15
	Avg. Net Demand Reduction Per Participant (kW)	0.13	0.11	0.11	0.12
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$7	\$8	\$12	\$9
	Cum. \$Admin. per Cum. kWh (Gross)	\$0	\$0	\$0	\$0
	Cum. \$Admin. per Cum. kW (Gross)	\$40	\$58	\$86	\$59
	Cum. \$EM&V per Cum Total Costs (\$)	1%	4%	7%	\$0
	Cum. \$Rebate per Cum. Participant (Gross)				

1. A participant is a unique account number.

A.6.2 2017 Monthly Indicator Tables

VA- Residential Appliance Recycling Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2015-2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total	Total
O&M (\$)	Direct Relate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$7,661	\$4,337	\$7,759	\$5,779	\$5,447	\$4,333	\$1,587	\$228	\$389	\$463	\$267	\$384	\$38,635	\$125,943
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	18%	28%	46%	60%	72%	83%	86%	87%	88%	89%	89%	90%	90%	96%
Participants ¹	Total (Gross)	816	313	416	511	584	475	16	0	0	0	0	0	3,131	14,072
	Planned (Gross)	429	429	429	429	428	428	428						3,000	14,250
	Variance	387	-116	-13	82	156	47	-412	0	0	0	0	0	131	-178
	Cum % toward planned total (Gross)	27%	38%	52%	69%	88%	104%	104%	104%	104%	104%	104%	104%	104%	99%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	812,076	307,904	395,521	499,835	557,324	432,881	10,890	0	0	0	0	0	3,016,432	14,186,901
100%	Realization Rate Adjustment (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	812,076	307,904	395,521	499,835	557,324	432,881	10,890	0	0	0	0	0	3,016,432	14,186,901
77%	Net-To-Gross Adjustment (kWh/yr)	-186,777	-70,818	-90,970	-114,962	-128,185	-99,563	-2,505	0	0	0	0	0	-693,779	-3,262,987
	Net Adjusted Savings (kWh/yr)	625,298	237,086	304,551	384,873	429,140	333,318	8,386	0	0	0	0	0	2,322,653	10,923,914
	Planned Net Savings (kWh/yr)	192,315	192,315	192,315	192,315	192,315	192,315	192,315	0	0	0	0	0	1,346,206	11,647,008
	Cum. % Toward Net Planned Savings (kWh/yr)	46%	64%	87%	115%	147%	173%	173%	173%	173%	173%	173%	173%	173%	94%
	Avg. Gross Savings Per Participant (kWh/yr)	995	984	951	978	954	911	681						963	1,008
	Avg. Net Savings Per Participant (kWh/yr)	766	757	732	753	735	702	524						742	776
Installed kW	Total Gross Demand Reduction (kW)	122	46	59	75	83	65	2	0	0	0	0	0	451	2,123
100%	Realization Rate Adjustment (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	122	46	59	75	83	65	2	0	0	0	0	0	451	2,123
77%	Net-To-Gross Adjustment (kW)	-28	-11	-14	-17	-19	-15	0	0	0	0	0	0	-104	-488
	Net Adjusted Demand Reduction (kW)	94	35	46	58	64	50	1	0	0	0	0	0	348	1,635
	Planned Net Demand Reduction (kW)	29	29	29	29	29	29	29						202	1,982
	Cum. % Toward Net Planned Demand Reduction (kW)	46%	64%	87%	115%	147%	172%	173%	173%	173%	173%	173%	173%	173%	83%
	Avg. Gross Demand Reduction Per Participant (kW)	0.15	0.15	0.14	0.15	0.14	0.14	0.10						0.14	0.15
	Avg. Net Demand Reduction Per Participant (kW)	0.11	0.11	0.11	0.11	0.11	0.11	0.08						0.11	0.12
Program Performance	Cum. SAdmin. per Cum. Participant (Gross)	\$9	\$11	\$13	\$12	\$12	\$11	\$12	\$12	\$12	\$12	\$12	\$12	\$12	\$9
	Cum. SAdmin. per Cum. kWh (Gross)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Cum. SAdmin. per Cum. kW (Gross)	\$63	\$72	\$87	\$85	\$80	\$79	\$82	\$82	\$83	\$84	\$85	\$86	\$86	\$59
	Cum. SEM&V per Cum Total Costs (\$)	0%	0%	0%	1%	3%	2%	3%	4%	5%	6%	6%	7%	7%	
	Cum. SRelate per Cum. Participant (Gross)														

A.7 Virginia Non-residential Duct Testing and Sealing Program 2012-2017

A.7.1 2012-2017 Annual Indicator Tables

VA - Non-Residential Duct Sealing and Testing Program		2012	2013	2014	2015	2016	2017	2012-2017
Category	Indicator	Total	Total	Total	Total	Total ²	Total	Program Total
O&M (\$)	Direct Rebate							
O&M (\$)	Direct Implementation							
O&M (\$)	Direct EM&V							
O&M (\$)	Indirect Other (Administrative)	\$71,464	\$202,348	\$393,299	\$219,936	\$171,043	\$69,478	\$1,127,568
Costs (\$)	Total							
Costs (\$)	Planned							
Costs (\$)	Variance							
	Cum. % toward planned total	34%	52%	160%	128%	94%	157%	108%
Participants ¹	Total (Gross)	11	357	1,700	1,655	640	81	4,444
	Planned (Gross)	112	299	472	472	578	0	1,933
	Variance	-101	58	1,228	1,183	62	81	-2,511
	Cum % toward planned total (Gross)	10%	119%	360%	351%	111%		230%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	77,742	1,765,683	28,470,361	20,488,106	26,352,640	4,251,334	81,405,866
87%	Realization Rate Adjustment (kWh/yr)	-10,106	-229,539	-3,701,147	-2,663,454	-3,425,843	-552,673	-10,582,763
	Realization Rate Adjusted Savings (kWh/yr)	67,635	1,536,144	24,769,214	17,824,652	22,926,796	3,698,661	70,823,104
97%	Net-To-Gross Adjustment (kWh/yr)	-1,894	-43,012	-693,538	-499,090	-641,950	-103,563	-1,983,047
	Net Adjusted Savings (kWh/yr)	65,742	1,493,132	24,075,676	17,325,562	22,284,846	3,595,098	68,840,057
	Planned Net Savings (kWh/yr)	3,324,000	8,826,223	15,569,864	15,569,864	3,432,339	0	46,722,290
	Cum. % Toward Net Planned Savings (kWh/yr)	2%	17%	155%	111%	649%		147%
	Avg. Gross Savings Per Participant (kWh/yr)	7,067	4,946	16,747	12,380	41,176	52,486	18,318
	Avg. Net Savings Per Participant (kWh/yr)	5,977	4,182	14,162	10,469	34,820	44,384	15,491
Installed kW	Total Gross Demand Reduction (kW)	8	508	2,051	2,514	2,594	695	8,370
94%	Realization Rate Adjustment (kW)	0	-29	-119	-146	-150	-40	-485
	Realization Rate Adjusted Gross Demand Reduction(kW)	8	478	1,932	2,368	2,444	655	7,884
97%	Net-To-Gross Adjustment (kW)	0	-13	-54	-66	-68	-18	-221
	Net Adjusted Demand Reduction (kW)	7	465	1,878	2,301	2,375	637	7,663
	Planned Net Demand Reduction (kW)	737	1,963	3,479	3,479	1,409	0	11,066
	Cum. % Toward Net Planned Demand Reduction (kW)	1%	24%	54%	66%	169%		69%
	Avg. Gross Demand Reduction Per Participant (kW)	0.73	1.42	1.21	1.52	4.05	8.58	1.88
	Avg. Net Demand Reduction Per Participant (kW)	0.67	1.30	1.10	1.39	3.71	7.86	1.72
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$6,497	\$567	\$231	\$133	\$267	\$858	\$254
	Cum. \$Admin. per Cum. kWh (Gross)	\$0.92	\$0.11	\$0.01	\$0.01	\$0.01	\$0.02	\$0.01
	Cum. \$Admin. per Cum. kW (Gross)	\$8,904	\$398	\$192	\$88	\$66	\$100	\$135
	Cum. \$EM&V per Cum Total Costs (\$)	11.8%	2.8%	4.1%	1.1%	2.0%	4.5%	2.9%
	Cum. \$Rebate per Cum. Participant (Gross)							

1. A participant is a single unit that has been installed and rebated. A unique account number may represent multiple participants if that account had multiple units installed and rebated.
2. The 2016 total gross deemed savings values reported in this table differs from values in the May 1, 2017 EM&V report, and have been refiled with the Commission. An adjustment totaled -30,849,970 kWh/year and 0 kW for 2016 reported savings. The adjustments accounts for corrections to STEP Manual version 7.0.0 issued on May 1, 2017, in section 12. The adjustment was made to full load heating hours (FLHheat) in Tables 90 and 91 to be consistent with those in the Mid-Atlantic TRM v 6, in response to requests by the North Carolina Public Staff Utilities Commission Re: Docket No. E-22, Sub 545, on October 23, 2017. This affected multiple non-residential HVAC measures (e.g. heat pumps, variable refrigerant flow, mini split systems) that reference Table 90 and 91, in multiple non-residential programs. This adjustment is reflected in STEP Manual version 8.0.0 in this EM&V report.

A.7.2 2017 Monthly Indicator Tables

VA - Non-Residential Duct Sealing and Testing Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2012-2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total	Program Total
O&M (\$)	Direct Rebate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$42,777	\$20,286	\$1,830	\$2,032	\$984	-\$106	\$438	\$154	\$168	\$217	\$231	\$468	\$69,478	\$1,127,568
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	97%	143%	147%	152%	154%	154%	155%	155%	155%	156%	156%	157%	157%	108%
Participants ¹	Total (Gross)	42	38	1	0	0	0	0	0	0	0	0	0	81	4,444
	Planned (Gross)	0	0	0	0	0	0	0	0	0	0	0	0	0	1,933
	Variance	42	38	1	0	0	0	0	0	0	0	0	0	81	-2,511
	Cum. % toward planned total (Gross)														230%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	2,889,362	1,333,947	28,025	0	0	0	0	0	0	0	0	0	4,251,334	81,405,866
87%	Realization Rate Adjustment (kWh/yr)	-375,617	-173,413	-3,643	0	0	0	0	0	0	0	0	0	-552,673	-10,582,763
	Realization Rate Adjusted Savings (kWh/yr)	2,513,745	1,160,534	24,382	0	0	0	0	0	0	0	0	0	3,698,661	70,823,104
97%	Net-To-Gross Adjustment (kWh/yr)	-70,385	-32,495	-683	0	0	0	0	0	0	0	0	0	-103,563	-1,983,047
	Net Adjusted Savings (kWh/yr)	2,443,360	1,128,039	23,699	0	0	0	0	0	0	0	0	0	3,595,098	68,840,057
	Planned Net Savings (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	46,722,290
	Cum. % Toward Net Planned Savings (kWh/yr)														147%
	Avg. Gross Savings Per Participant (kWh/yr)	68,794	35,104	28,025										52,486	18,318
	Avg. Net Savings Per Participant (kWh/yr)	58,175	29,685	23,699										44,384	15,491
Installed kW	Total Gross Demand Reduction (kW)	472	219	4	0	0	0	0	0	0	0	0	0	695	8,370
94%	Realization Rate Adjustment (kW)	-27	-13	0	0	0	0	0	0	0	0	0	0	-40	-485
	Realization Rate Adjusted Gross Demand Reduction (kW)	445	207	4	0	0	0	0	0	0	0	0	0	655	7,884
97%	Net-To-Gross Adjustment (kW)	-12	-6	0	0	0	0	0	0	0	0	0	0	-18	-221
	Net Adjusted Demand Reduction (kW)	432	201	3	0	0	0	0	0	0	0	0	0	637	7,663
	Planned Net Demand Reduction (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	11,066
	Cum. % Toward Net Planned Demand Reduction (kW)														69%
	Avg. Gross Demand Reduction Per Participant (kW)	11.24	5.77	3.77										8.58	1.88
	Avg. Net Demand Reduction Per Participant (kW)	10.29	5.28	3.45										7.86	1.72
Program	Cum. \$Admin. per Cum. Participant (Gross)	\$1,018	\$788	\$801	\$826	\$838	\$837	\$842	\$844	\$846	\$849	\$852	\$858	\$858	\$254
Performance	Cum. \$Admin. per Cum. kWh (Gross)	\$0.01	\$0.01	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.01
	Cum. \$Admin. per Cum. kW (Gross)	\$91	\$91	\$93	\$96	\$98	\$98	\$98	\$98	\$99	\$99	\$99	\$100	\$100	\$135
	Cum. \$EM&V per Cum. Total Costs (\$)	0.0%	0.0%	0.0%	1.1%	2.4%	2.3%	2.9%	3.1%	3.3%	3.6%	3.9%	4.5%	4.5%	2.9%
	Cum. \$Rebate per Cum. Participant (Gross)														

A.8 Virginia Non-residential Energy Audit Program 2012-2017

A.8.1 2012-2017 Annual Indicator Tables

VA - Non-Residential Energy Audit Program		2012	2013	2014	2015	2016	2017	2012-2017
Category	Indicator	Total	Total	Total	Total	Total	Total	Program Total
O&M (\$)	Direct Rebate							
O&M (\$)	Direct Implementation							
O&M (\$)	Direct EM&V							
O&M (\$)	Indirect Other (Administrative)	\$67,698	\$151,749	\$309,322	\$15,730	\$74,888	\$10,321	\$629,710
Costs (\$)	Total							
Costs (\$)	Planned							
Costs (\$)	Variance							
	Cum. % toward planned total	67%	93%	260%	24%	127%	86%	124%
Audits	Total (Gross)	8	514	22	69	118	4	735
Participants ¹	Total (Gross)	1	302	1,116	73	125	15	1,632
	Planned (Gross)	138	373	589	589	721	0	2,410
	Variance	-137	-71	527	-516	-596	15	-778
	Cum % toward planned total (Gross)	1%	81%	189%	12%	17%		68%
Installed kWh/year	Total (Gross)	35,433	4,498,061	31,588,249	667,407	6,765,468	196,549	43,751,165
	Attribution Rate weighted by Measure	100%	98%	99%	84%	99%	95%	93%
	Realization Rate weighted by Measure	97%	72%	93%	97%	92%	86%	91%
	Adjusted (Net) by Realization Rate and Attribution Rate	34,538	3,168,993	29,013,666	546,608	6,211,917	162,456	39,138,178
	Planned (Net)	3,401,000	9,140,494	17,399,649	17,399,649	4,818,529	0	52,159,321
	Cum. % toward planned total (Net)	1.0%	35%	167%	3%	129%		75%
	Avg. Gross Savings Per Participant (kWh/yr)	35,433	14,894	28,305	9,143	54,124	13,103	26,808
	Avg. Net Savings Per Participant (kWh/yr)	34,538	10,493	25,998	7,488	49,695	10,830	23,982
Installed kW	Total (Gross)	10	956	2,104	9	765	24	3,868
	Attribution Rate weighted by Measure	100%	98%	99%	94%	99%	93%	99%
	Realization Rate weighted by Measure	97%	78%	83%	66%	92%	86%	84%
	Adjusted (Net) by Realization Rate and Attribution Rate	10	733	1,724	7	701	19	3,195
	Planned (Net)	600	1,614	15,040	6,390	740	0	24,384
	Cum. % toward planned total (Net)	2%	45%	11%	0%	95%		13%
	Avg. Gross Demand Reduction Per Participant (kW)	10.0	3.2	1.9	0.1	6.1	1.6	2.4
	Avg. Net Demand Reduction Per Participant (kW)	9.8	2.4	1.5	0.1	5.6	1.3	2.0
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$67,698	\$502	\$277	\$215	\$599	\$688	\$386
	Cum. \$Admin. per Cum. kWh (Gross)	\$1.91	\$0.03	\$0.01	\$0.02	\$0.01	\$0.05	\$0.01
	Cum. \$Admin. per Cum. kW (Gross)	\$6,737	\$159	\$147	\$1,846	\$98	\$422	\$0.01
	Cum. \$EM&V per Cum Total Costs (\$)	17.6%	4.9%	6.7%	19.5%	4.5%	41.1%	\$0
	Cum. \$Rebate per Cum. Participant (Gross)							

1. A participant is a single unit that has been installed and rebated. A unique account number may represent multiple participants if that account had multiple units installed and rebated.

EXTRAORDINARILY SENSITIVE INFORMATION REDACTED

A.8.2 2017 Monthly Indicator Tables

VA - Non-Residential Energy Audit Program		2017 Jan	2017 Feb	2017 Mar	2017 Apr	2017 May	2017 June	2017 Jul	2017 Aug	2017 Sept	2017 Oct	2017 Nov	2017 Dec	2017 Total	2012-2017 Program Total
Category	Indicator														
O&M (\$)	Direct Rebate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$3,241	\$600	\$908	\$2,660	\$640	-\$133	\$594	\$369	\$444	\$260	\$277	\$461	\$10,321	\$629,710
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	27%	32%	40%	62%	67%	66%	71%	74%	78%	80%	82%	86%	86%	124%
Audits	Total (Gross)	4	0	0	0	0	0	0	0	0	0	0	0	4	735
Participants ¹	Total (Gross)	13	1	1	0	0								15	1,632
	Planned (Gross)	0	0	0	0	0	0	0	0	0	0	0	0	0	2,410
	Variance	13	1	1	0	0	0	0	0	0	0	0	0	15	-778
	Cum % toward planned total (Gross)														68%
Installed kWh/year	Total (Gross)	151,838	33,590	11,121	0	0	0	0	0	0	0	0	0	196,549	43,751,165
	Attribution Rate weighted by Measure	99%	75%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	95%	93%
	Realization Rate weighted by Measure	88%	79%	84%	100%	100%	100%	100%	100%	100%	100%	100%	100%	86%	91%
	Adjusted (Net) by Realization Rate and Attribution Rate	133,258	19,940	9,257	0	0	0	0	0	0	0	0	0	162,456	39,138,178
	Planned (Net)	0	0	0	0	0	0	0	0	0	0	0	0	0	52,159,321
	Cum. % toward planned total (Net)														75%
	Avg. Gross Savings Per Participant (kWh/yr)	11,680	33,590	11,121										13,103	26,808
	Avg. Net Savings Per Participant (kWh/yr)	10,251	19,940	9,257										10,830	23,982
Installed kW	Total (Gross)	17	6	1	0	0	0	0	0	0	0	0	0	24	3,868
	Attribution Rate weighted by Measure	99%	75%	99%	100%	100%	100%	100%	100%	100%	100%	100%	100%	93%	99%
	Realization Rate weighted by Measure	88%	79%	84%	100%	100%	100%	100%	100%	100%	100%	100%	100%	86%	84%
	Adjusted (Net) by Realization Rate and Attribution Rate	15.0	3.2	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19	3,195
	Planned (Net)	0	0	0	0	0	0	0	0	0	0	0	0	0	24,384
	Cum. % toward planned total (Net)														13%
	Avg. Gross Demand Reduction Per Participant (kW)	1.3	6.0	1.3										1.6	2.4
	Avg. Net Demand Reduction Per Participant (kW)	1.2	3.2	1.1										1.3	2.0
Program	Cum. \$Admin. per Cum. Participant (Gross)	\$249	\$274	\$317	\$494	\$537	\$528	\$567	\$592	\$622	\$639	\$657	\$688	\$688	\$386
Performance	Cum. \$Admin. per Cum. kWh (Gross)	\$0.02	\$0.02	\$0.02	\$0.04	\$0.04	\$0.04	\$0.04	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.05	\$0.01
	Cum. \$Admin. per Cum. kW (Gross)	\$189	\$166	\$194	\$303	\$329	\$323	\$348	\$363	\$381	\$391	\$403	\$422	\$422	\$0.01
	Cum. SEM&V per Cum Total Costs (\$)	0.0%	0.0%	0.0%	19.6%	25.7%	24.5%	29.5%	32.2%	35.2%	36.8%	38.5%	41.1%	41.1%	\$0
	Cum. \$Rebate per Cum. Participant (Gross)														

A.9 Virginia Non-residential Lighting Systems and Controls Program 2014-2017

A.9.1 2014-2017 Annual Indicator Tables

VA- Non-Residential Lighting Systems & Controls Program		2014	2015	2016	2017	2014-2017
Category	Indicator	Total	Total	Total ²	Total	Program Total
O&M (\$)	Direct Rebate					
O&M (\$)	Direct Implementation					
O&M (\$)	Direct EM&V					
O&M (\$)	Indirect Other (Administrative)	\$39,157	\$191,137	\$214,891	\$351,449	\$796,634
Costs (\$)	Total					
Costs (\$)	Planned					
Costs (\$)	Variance					
	Cum. % toward planned total	43%	123%	132%	169.5%	125.7%
Participants ¹	Total (Gross)	118	1,241	1,203	868	3,430
	Planned (Gross)	688	1,504	1,531	1,553	5,276
	Variance	-570	-263	-328	-685	-1,846
	Cum % toward planned total (Gross)	17%	83%	79%	56%	65%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	4,749,693	50,828,062	65,876,985	71,024,607	192,479,347
100%	Realization Rate Adjustment (kWh/yr)	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	4,749,693	50,828,062	65,876,985	71,024,607	192,479,347
70%	Net-To-Gross Adjustment (kWh/yr)	-1,424,908	-15,248,419	-19,763,096	-21,307,382	-57,743,804
	Net Adjusted Savings (kWh/yr)	3,324,785	35,579,643	46,113,890	49,717,225	134,735,543
	Planned Net Savings (kWh/yr)	12,317,239	27,461,536	24,119,220	33,214,031	97,112,026
	Cum. % Toward Net Planned Savings (kWh/yr)	27%	130%	191%	150%	139%
	Avg. Gross Savings Per Participant (kWh/yr)	40,252	40,957	54,761	81,826	56,116
	Avg. Net Savings Per Participant (kWh/yr)	28,176	28,670	38,332	57,278	39,281
Installed kW	Total Gross Demand Reduction (kW)	998	10,674	15,380	11,958	39,011
100%	Realization Rate Adjustment (kW)	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	998	10,674	15,380	11,958	39,011
70%	Net-To-Gross Adjustment (kW)	-300	-3,202	-4,614	-3,587	-11,703
	Net Adjusted Demand Reduction (kW)	699	7,472	10,766	8,371	27,308
	Planned Net Demand Reduction (kW)	3,229	7,670	4,089	5,486	20,475
	Cum. % Toward Net Planned Demand Reduction (kW)	21.65%	97.41%	263.26%	152.58%	133.37%
	Avg. Gross Demand Reduction Per Participant (kW)	8	9	13	14	11
	Avg. Net Demand Reduction Per Participant (kW)	6	6	9	10	8
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$332	\$154	\$179	\$405	\$232
	Cum. \$Admin. per Cum. kWh/year (Gross)	\$0.01	\$0	\$0	\$0	\$0
	Cum. \$Admin. per Cum. kW (Gross)	\$39	\$18	\$14	\$29	\$20
	Cum. \$EM&V per Cum Total Costs (\$)	5%	2%	2%	1%	2%
	Cum. \$Rebate per Cum. Participant (Gross)					

1. A participant is a unique account number.
2. The 2016 total gross deemed savings values reported in this table differs from values in the May 1, 2017 EM&V report, and have been refiled with the Commission. The adjustments totaled -14,862,478 kWh/year and 168 kW for 2016 reported savings. The adjustments accounts for corrections to STEP Manual version 7.0.0 issued on May 1, 2017, in section 9.1.1. The adjustment was to waste heat factors (WHFe and WHFd) applied to lighting fixtures installed in 2016, where the program participant building HVAC systems was assumed to be heat pump heating and cooling systems, rather than the previous assumption of AC cool and non-electric heat systems. This adjustment was made in response to requests by the North Carolina Public Staff Utilities Commission Re: Docket No. E-22, Sub 545, on October 23, 2017. It is reflected in STEP Manual version 8.0.0 in this EM&V report.

A.9.2 2017 Monthly Indicator Tables

VA- Non-Residential Lighting Systems & Controls Program		2017 Jan	2017 Feb	2017 Mar	2017 Apr	2017 May	2017 June	2017 Jul	2017 Aug	2017 Sept	2017 Oct	2017 Nov	2017 Dec	2017 Total	2014-2017 Program Total
Category	Indicator														
O&M (\$)	Direct Relate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$30,376	\$20,769	\$42,793	\$27,098	\$29,862	\$19,791	\$21,867	\$27,244	\$35,840	\$35,546	\$42,641	\$17,624	\$351,449	\$796,634
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	14.7%	24.7%	45.3%	58.4%	72.8%	82.3%	92.9%	106.0%	123.3%	140.5%	161.0%	169.5%	169.5%	125.7%
Participants ¹	Total (Gross)	81	78	86	81	87	78	66	77	64	78	57	35	868	3,430
	Planned (Gross)	130	130	130	130	130	129	129	129	129	129	129	129	1,553	5,276
	Variance	-49	-52	-44	-49	-43	-51	-63	-52	-65	-51	-72	-94	-685	-1,846
	Cum % toward planned total (Gross)	5%	10%	16%	21%	27%	32%	36%	41%	45%	50%	54%	56%	56%	65%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	6,821,083	4,690,715	7,421,108	5,858,406	5,214,750	3,857,828	3,123,795	6,502,837	6,989,457	9,556,037	7,690,036	3,298,557	71,024,607	192,479,347
100%	Realization Rate Adjustment (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	6,821,083	4,690,715	7,421,108	5,858,406	5,214,750	3,857,828	3,123,795	6,502,837	6,989,457	9,556,037	7,690,036	3,298,557	71,024,607	192,479,347
70%	Net-To-Gross Adjustment (kWh/yr)	-2,046,325	-1,407,214	-2,226,332	-1,757,522	-1,564,425	-1,157,348	-937,138	-1,950,851	-2,096,837	-2,866,811	-2,307,011	-989,567	-21,307,382	-57,743,804
	Net Adjusted Savings (kWh/yr)	4,774,758	3,283,500	5,194,776	4,100,884	3,650,325	2,700,479	2,186,656	4,551,986	4,892,620	6,689,226	5,383,025	2,308,990	49,717,225	134,735,543
	Planned Net Savings (kWh/yr)	2,767,836	2,767,836	2,767,836	2,767,836	2,767,836	2,767,836	2,767,836	2,767,836	2,767,836	2,767,836	2,767,836	2,767,836	33,214,031	97,112,026
	Cum. % Toward Net Planned Savings (kWh/yr)	14%	24%	40%	52%	63%	71%	78%	92%	106%	127%	143%	150%	150%	139%
	Avg. Gross Savings Per Participant (kWh/yr)	84,211	60,137	86,292	72,326	59,940	49,459	47,330	84,452	109,210	122,513	134,913	94,244	81,826	56,116
	Avg. Net Savings Per Participant (kWh/yr)	58,948	42,096	60,404	50,628	41,958	34,622	33,131	59,117	76,447	85,759	94,439	65,971	57,278	39,281
Installed kW	Total Gross Demand Reduction (kW)	1,113	805	1,189	948	873	505	461	964	1,225	1,649	1,537	689	11,958	39,011
100%	Realization Rate Adjustment (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	1,113	805	1,189	948	873	505	461	964	1,225	1,649	1,537	689	11,958	39,011
70%	Net-To-Gross Adjustment (kW)	-334	-242	-357	-284	-262	-151	-138	-289	-367	-495	-461	-207	-3,587	-11,703
	Net Adjusted Demand Reduction (kW)	779	564	832	664	611	353	323	675	857	1,154	1,076	482	8,371	27,308
	Planned Net Demand Reduction (kW)	457	457	457	457	457	457	457	457	457	457	457	457	5,486	20,475
	Cum. % Toward Net Planned Demand Reduction (kW)	14%	24%	40%	52%	63%	69%	75%	88%	103%	124%	144%	153%	152.58%	133.37%
	Avg. Gross Demand Reduction Per Participant (kW)	14	10	14	12	10	6	7	13	19	21	27	20	14	11
	Avg. Net Demand Reduction Per Participant (kW)	10	7	10	8	7	5	5	9	13	15	19	14	10	8
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$375	\$322	\$383	\$371	\$365	\$348	\$346	\$347	\$366	\$375	\$401	\$405	\$405	\$232
	Cum. \$Admin. per Cum. kWh/year (Gross)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Cum. \$Admin. per Cum. kW (Gross)	\$27	\$27	\$30	\$30	\$31	\$31	\$33	\$32	\$32	\$30	\$30	\$29	\$29	\$20
	Cum. SEM&V per Cum Total Costs (\$)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%
	Cum. \$Rebate per Cum. Participant (Gross)														

A.10 Virginia Non-residential Heating and Cooling Efficiency Program 2014-2017

A.10.1 2014-2017 Annual Indicator Tables

VA- Non-Residential Heating & Cooling Efficiency Program		2014	2015	2016	2017	2014-2017
Category	Indicator	Total	Total	Total ²	Total	Program Total
O&M (\$)	Direct Rebate					
O&M (\$)	Direct Implementation					
O&M (\$)	Direct EM&V					
O&M (\$)	Indirect Other (Administrative)	\$14,267	\$38,982	\$41,094	\$69,115	\$163,457
Costs (\$)	Total					
Costs (\$)	Planned					
Costs (\$)	Variance					
	Cum. % toward planned total	30%	72%	75%	95%	70%
Participants ¹	Total (Gross)	6	114	89	103	312
	Planned (Gross)	261	746	782	797	2,586
	Variance	-255	-632	-693	-694	-2,274
	Cum % toward planned total (Gross)	2%	15%	11%	13%	12%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	1,456,991	11,129,837	13,647,306	7,526,876	33,761,010
	100% Realization Rate Adjustment (kWh/yr)	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	1,456,991	11,129,837	13,647,306	7,526,876	33,761,010
70%	Net-To-Gross Adjustment (kWh/yr)	-437,097	-3,338,951	-4,094,192	-2,258,063	-10,128,303
	Net Adjusted Savings (kWh/yr)	1,019,894	7,790,886	9,553,114	5,268,813	23,632,707
	Planned Net Savings (kWh/yr)	3,299,301	9,430,186	24,119,220	38,355,947	75,204,654
	Cum. % Toward Net Planned Savings (kWh/yr)	31%	83%	40%	14%	31%
	Avg. Gross Savings Per Participant (kWh/yr)	242,832	97,630	153,341	73,076	108,208
	Avg. Net Savings Per Participant (kWh/yr)	169,982	68,341	107,338	51,154	75,746
Installed kW	Total Gross Demand Reduction (kW)	510	2,777	2,084	1,947	7,318
	100% Realization Rate Adjustment (kW)	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction(kW)	510	2,777	2,084	1,947	7,318
70%	Net-To-Gross Adjustment (kW)	-153	-833	-625	-584	-2,195
	Net Adjusted Demand Reduction (kW)	357	1,944	1,459	1,363	5,123
	Planned Net Demand Reduction (kW)	835	2,387	4,090	15,593	22,905
	Cum. % Toward Net Planned Demand Reduction (kW)	43%	81%	36%	9%	22%
	Avg. Gross Demand Reduction Per Participant (kW)	85	24	23	19	23
	Avg. Net Demand Reduction Per Participant (kW)	59.5	17	16	13	16
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$2,378	\$342	\$462	\$671	\$524
	Cum. \$Admin. per Cum. kWh/year (Gross)	\$0.01	\$0.00	\$0.00	\$0.01	\$0.00
	Cum. \$Admin. per Cum. kW (Gross)	\$28	\$14	\$20	\$36	\$22
	Cum. \$EM&V per Cum Total Costs (\$)	6%	6%	9%	8%	7%
	Cum. \$Rebate per Cum. Participant (Gross)					

1. A participant is a unique account number.
2. The 2016 total gross deemed savings values reported in this table differs from values in the May 1, 2017 EM&V report, and have been refiled with the Commission. The adjustments totaled -154,576 kWh/year and 0 kW for 2016 reported savings. The adjustments accounts for corrections to STEP Manual version 7.0.0 issued on May 1, 2017, in section 10. The adjustment was made to full load heating hours (FLHheat) in Tables 90 and 91 to be consistent with those in the Mid-Atlantic TRM v 6, in response to requests by the North Carolina Public Staff Utilities Commission Re: Docket No. E-22, Sub 545, on October 23, 2017. This affected multiple non-residential HVAC measures (e.g. heat pumps, variable refrigerant flow, mini split systems) that reference Table 90 and 91, in multiple non-residential programs. This adjustment is reflected in STEP Manual version 8.0.0 in this EM&V report.

A.10.2 2017 Monthly Indicator Tables

VA- Non-Residential Heating & Cooling Efficiency Program		2017 Jan	2017 Feb	2017 Mar	2017 Apr	2017 May	2017 June	2017 Jul	2017 Aug	2017 Sept	2017 Oct	2017 Nov	2017 Dec	2017 Total	2014-2017 Program Total
Category	Indicator														
O&M (\$)	Direct Rebate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$2,012	\$5,656	\$1,351	\$3,956	\$21,324	\$4,630	\$8,350	\$1,129	\$8,401	\$3,559	\$5,467	\$3,280	\$69,115	\$163,457
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	3%	10%	12%	18%	47%	53%	65%	66%	78%	83%	90%	95%	95%	70%
Participants ¹	Total (Gross)	9	9	1	2	13	23	12	10	8	5	10	1	103	312
	Planned (Gross)	67	67	67	67	66	66	66	66	66	66	66	66	66	2,586
	Variance	-58	-58	-66	-65	-54	-43	-54	-56	-58	-61	-56	-65	-694	-2,274
	Cum % toward planned total (Gross)	1%	2%	2%	3%	4%	7%	9%	10%	11%	12%	13%	13%	13%	12%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	123,694	569,944	86,363	205,686	2,386,171	673,739	1,000,627	154,958	1,008,007	418,426	539,782	359,479	7,526,876	33,761,010
100%	Realization Rate Adjustment (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	123,694	569,944	86,363	205,686	2,386,171	673,739	1,000,627	154,958	1,008,007	418,426	539,782	359,479	7,526,876	33,761,010
70%	Net-To-Gross Adjustment (kWh/yr)	-37,108	-170,983	-25,909	-61,706	-715,851	-202,122	-300,188	-46,487	-302,402	-125,528	-161,935	-107,844	-2,258,063	-10,128,303
	Net Adjusted Savings (kWh/yr)	86,585	398,961	60,454	143,980	1,670,320	471,617	700,439	108,471	705,605	292,898	377,847	251,635	5,268,813	23,632,707
	Planned Net Savings (kWh/yr)	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	3,196,329	38,355,947
	Cum. % Toward Net Planned Savings (kWh/yr)	0%	1%	1%	2%	6%	7%	9%	9%	11%	12%	13%	14%	14%	31%
	Avg. Gross Savings Per Participant (kWh/yr)	13,744	63,327	86,363	102,843	183,552	29,293	83,386	15,496	126,001	83,685	53,978	359,479	73,076	108,208
	Avg. Net Savings Per Participant (kWh/yr)	9,621	44,329	60,454	71,990	128,486	20,505	58,370	10,847	88,201	58,580	37,785	251,635	51,154	75,746
Installed kW	Total Gross Demand Reduction (kW)	25	67	12	7	1,471	36	85	8	133	48	41	14	1,947	7,318
100%	Realization Rate Adjustment (kW)	0	0	0	-0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction(kW)	25	67	12	7	1,471	36	85	8	133	48	41	14	1,947	7,318
70%	Net-To-Gross Adjustment (kW)	-8	-20	-4	-2	-441	-11	-25	-2	-40	-14	-12	-4	-584	-23
	Net Adjusted Demand Reduction (kW)	18	47	8	5	1,029	25	59	5	93	34	28	10	1,363	5,123
	Planned Net Demand Reduction (kW)	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	1,299	15,593	22,905
	Cum. % Toward Net Planned Demand Reduction (kW)	0%	0%	0%	1%	7%	7%	8%	8%	8%	8%	9%	9%	9%	22%
	Avg. Gross Demand Reduction Per Participant (kW)	3	7	12	4	113	2	7	1	17	10	4	14	19	23
	Avg. Net Demand Reduction Per Participant (kW)	2	5	8	3	79	1	5	1	12	7	3	10	13	16
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$224	\$426	\$475	\$618	\$1,009	\$683	\$685	\$613	\$653	\$656	\$645	\$671	\$671	\$524
	Cum. \$Admin. per Cum. kW/year (Gross)	\$0.02	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.06
	Cum. \$Admin. per Cum. kW (Gross)	\$80	\$83	\$86	\$116	\$22	\$24	\$28	\$28	\$31	\$32	\$34	\$36	\$36	\$22
	Cum. \$EM&V per Cum Total Costs (\$)	0%	0%	0%	5%	8%	6%	6%	8%	7%	7%	7%	8%	8%	7%
	Cum. \$Rebate per Cum. Participant (Gross)														

A.11 Virginia Non-residential Window Film Program 2014-2017

A.11.1 2014-2017 Annual Indicator Tables

VA- Non-Residential Window Film Program		2014	2015	2016	2017	2014-2017
Category	Indicator	Total	Total	Total	Total	Program Total
O&M (\$)	Direct Rebate					
O&M (\$)	Direct Implementation					
O&M (\$)	Direct EM&V					
O&M (\$)	Indirect Other (Administrative)	\$11,980	\$12,457	\$13,085	\$21,659	\$59,181
Costs (\$)	Total					
Costs (\$)	Planned					
Costs (\$)	Variance					
	Cum. % toward planned total	54%	32%	25%	29%	32%
Participants ¹	Total Participants	3	22	70	59	154
	Total Square Feet	53,021	97,121	57,228	231,634	439,004
	Planned Square Feet	133,086	681,000	1,148,077	1,371,237	3,333,400
	Variance	-80,065	-583,879	-1,090,849	-1,139,603	-2,894,396
	Cum % toward planned total	40%	14%	5%	17%	13%
Square feet	Total Square Feet	53,021	97,121	57,228	231,634	439,004
	North Facing	11,663	23,535	13,931	48,150	97,279
	East Facing	14,597	24,260	8,105	61,663	108,625
	West Facing	15,090	22,836	15,826	62,196	115,948
	South Facing	11,671	26,490	19,366	59,625	117,152
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	1,152,476	3,077,815	464,794	1,734,665	6,429,750
100%	Realization Rate Adjustment (kWh/yr)	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	1,152,476	3,077,815	464,794	1,734,665	6,429,750
80%	Net-To-Gross Adjustment (kWh/yr)	-230,495	-615,563	-92,959	-346,933	-1,285,950
	Net Adjusted Savings (kWh/yr)	921,980	2,462,252	371,835	1,387,732	5,143,800
	Planned Net Savings (kWh/yr)	2,395,548	12,258	15,842,639	15,209,376	33,459,821
	Cum. % Toward Net Planned Savings (kWh/yr)	38%	20087%	2%	9%	15%
	Avg. Gross Savings Per Participant (kWh/yr)	384,159	139,901	6,640	29,401	41,752
	Avg. Gross Savings Per Square Foot (kWh/yr)	22	32	8	7	N/A
	Avg. Net Savings Per Participant (kWh/yr)	307,327	111,921	5,312	23,521	33,401
	Avg. Net Savings Per Square Foot (kWh/yr)	17	25	6	6	12
Installed kW	Total Gross Demand Reduction (kW)	233	627	140	471	1,471
100%	Realization Rate Adjustment (kW)	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	233	627	140	471	1,471
80%	Net-To-Gross Adjustment (kW)	-47	-125	-28	-94	-294
	Net Adjusted Demand Reduction (kW)	187	501	112	377	1,177
	Planned Net Demand Reduction (kW)	532	2	14,497	13,693	28,725
	Cum. % Toward Net Planned Demand Reduction (kW)	35%	20885%	1%	3%	4%
	Avg. Gross Demand Reduction Per Participant (kW)	78	28	2	8	10
	Avg. Gross Demand Reduction Per Square Foot (kW)	0.004	0.006	0.002	0.002	0.003
	Avg. Net Demand Reduction Per Participant (kW)	62	23	2	6	8
	Avg. Net Demand Reduction Per Square Foot (kW)	0.00	0.01	0.002	0.00	0
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$3,993	\$566	\$187	\$367	\$384
	Cum. \$Admin. per Cum. kWh/year (Gross)	\$0.01	\$0.00	\$0.03	\$0.01	\$0.01
	Cum. \$Admin. per Cum. kW (Gross)	\$51	\$20	\$93.7	\$45.9	\$40
	Cum. \$EM&V per Cum Total Costs (\$)	22%	17%	26%	16%	20%
	Cum. \$Rebate per Cum. Participant (Gross)					

1. A participant is a unique account number.

A.11.2 2017 Monthly Indicator Tables

VA- Non-Residential Window Film Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2014-2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total	Program Total		
O&M (\$)	Direct Rebate																
O&M (\$)	Direct Implementation																
O&M (\$)	Direct EM&V																
O&M (\$)	Indirect Other (Administrative)	\$1,203	\$1,375	\$1,469	\$1,818	\$1,372	\$1,308	\$2,206	\$4,641	\$1,338	\$1,872	\$2,045	\$1,012	\$21,659	\$59,181		
Costs (\$)	Total																
Costs (\$)	Planned																
Costs (\$)	Variance																
	Cum. % toward planned total	2%	3%	5%	8%	10%	11%	14%	20%	22%	25%	27%	29%	29%	32%		
Participants ¹	Total Participants	4	3	4	1	7	1	3	15	7	8	6	0	59	154		
	Total Square Feet	3,526	17,206	8,447	9,817	2,145	11,152	9,590	123,492	2,467	16,809	26,713	270	231,634	439,004		
	Planned Square Feet	114,270	114,270	114,270	114,270	114,270	114,270	114,270	114,270	114,270	114,269	114,269	114,269	1,371,237	3,333,400		
	Variance	-110,744	-97,064	-105,823	-104,453	-112,125	-103,118	-104,680	9,222	-111,803	-97,460	-87,556	-113,999	-1,139,603	-2,894,396		
	Cum % toward planned total	0%	2%	2%	3%	3%	4%	5%	14%	14%	15%	17%	17%	17%	13%		
Square feet	Total Square Feet	3,526	17,206	8,447	9,817	2,145	11,152	9,590	123,492	2,467	16,809	26,713	270	231,634	439,004		
	North Facing	1,396	4,213	1,072	1,897	0	3,349	2,336	30,433	88	3,366	0	0	48,150	97,279		
	East Facing	880	4,009	3,233	2,946	1,072	1,341	2,336	31,233	555	5,302	8,621	135	61,663	108,625		
	West Facing	927	4,081	2,448	3,037	966	3,275	2,409	31,041	393	5,005	8,479	135	62,196	115,948		
	South Facing	323	4,903	1,694	1,937	107	3,187	2,509	30,785	1,431	3,136	9,613	0	59,625	117,152		
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	25,814	187,042	119,046	154,136	11,948	39,002	193,665	484,482	18,793	76,775	422,400	1,561	1,734,665	6,429,750		
	100% Realization Rate Adjustment (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	80% Realization Rate Adjusted Savings (kWh/yr)	25,814	187,042	119,046	154,136	11,948	39,002	193,665	484,482	18,793	76,775	422,400	1,561	1,734,665	6,429,750		
	Net-To-Gross Adjustment (kWh/yr)	-5,163	-37,408	-23,809	-30,827	-2,390	-7,800	-38,733	-96,896	-3,759	-15,355	-84,480	-312	-346,933	-1,285,950		
	Net Adjusted Savings (kWh/yr)	20,652	149,634	95,237	123,309	9,558	31,202	154,932	387,585	15,034	61,420	337,920	1,249	1,387,732	5,143,800		
	Planned Net Savings (kWh/yr)	1,267,448	1,267,448	1,267,448	1,267,448	1,267,448	1,267,448	1,267,448	1,267,448	1,267,448	1,267,448	1,267,448	1,267,448	15,209,376	33,459,821		
	Cum. % Toward Net Planned Savings (kWh/yr)	0%	1%	2%	3%	3%	3%	4%	6%	6%	7%	9%	9%	9%	15%		
	Avg. Gross Savings Per Participant (kWh/yr)	6,454	62,347	29,761	154,136	1,707	39,002	64,555	32,299	2,685	9,597	70,400	N/A	29,401	41,752		
	Avg. Gross Savings Per Square Foot (kWh/yr)	7	11	14	16	6	3	20	4	8	5	16	6	7	N/A		
	Avg. Net Savings Per Participant (kWh/yr)	5,163	49,878	23,809	123,309	1,365	31,202	51,644	25,839	2,148	7,677	56,320	N/A	23,521	33,401		
	Avg. Net Savings Per Square Foot (kWh/yr)	5.9	8.7	11.3	12.6	4.5	2.8	16.2	3.1	6.1	3.7	12.7	4.6	6	12		
Installed kW	Total Gross Demand Reduction (kW)	9	54	32	42	3	16	55	116	7	29	109	1	471	1,471		
	100% Realization Rate Adjustment (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	80% Realization Rate Adjusted Gross Demand Reduction (kW)	9	54	32	42	3	16	55	116	7	29	109	1	471	1,471		
	Net-To-Gross Adjustment (kW)	-2	-11	-6	-8	-1	-3	-11	-23	-1	-6	-22	0	-94	-294		
	Net Adjusted Demand Reduction (kW)	7	43	25	34	3	13	44	93	5	23	87	0	377	1,177		
	Planned Net Demand Reduction (kW)	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	1,141	13,693	28,725		
	Cum. % Toward Net Planned Demand Reduction (kW)	0%	0%	1%	1%	1%	1%	1%	2%	2%	2%	3%	3%	3%	4%		
	Avg. Gross Demand Reduction Per Participant (kW)	2	18	8	42	0	16	18	8	1	4	18	N/A	8	10		
	Avg. Gross Demand Reduction Per Square Foot (kW)	0.003	0.003	0.004	0.004	0.002	0.001	0.006	0.001	0.003	0.002	0.004	0.002	0.002	0.003		
	Avg. Net Demand Reduction Per Participant (kW)	1.8	14.3	6.3	33.9	0.4	12.9	14.5	6	1	3	14	N/A	6	8		
	Avg. Net Demand Reduction Per Square Foot (kW)	0.002	0.002	0.003	0.003	0.001	0.001	0.005	0.001	0.002	0.001	0.003	0.002	0.002	0		
Program Performance	Cum. SAdmin. per Cum. Participant (Gross)	\$301	\$368	\$368	\$489	\$381	\$427	\$467	\$405	\$372	\$351	\$350	\$367	\$367	\$384		
	Cum. SAdmin. per Cum. kWh/year (Gross)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0.01	\$0.01		
	Cum. SAdmin. per Cum. kW (Gross)	\$131	\$41	\$43	\$43	\$52	\$55	\$51	\$47	\$50	\$51	\$44	\$46	\$45.9	\$40		
	Cum. SEM&V per Cum. Total Costs (\$)	0%	0%	0%	11%	16%	13%	14%	12%	14%	15%	15%	16%	16%	20%		
	Cum. SRebate per Cum. Participant (Gross)																

A.12 Virginia Non-residential Small Business Improvement Program 2016-2017

A.12.1 2016-2017 Annual Indicator Tables

VA- Small Business Improvement Program		2016 Total ²	2017 Total	2016-2017 Program Total
Category	Indicator			
O&M (\$)	Direct Rebate			
O&M (\$)	Direct Implementation			
O&M (\$)	Direct EM&V			
O&M (\$)	Indirect Other (Administrative)	\$21,431	\$150,600	\$172,031
Costs (\$)	Total			
Costs (\$)	Planned			
Costs (\$)	Variance			
	Cum. % toward planned total	31%	72%	59%
Participants ¹	Total (Gross)	67	937	1,004
	Planned (Gross)	216	635	851
	Variance	-149	302	153
	Cum % toward planned total (Gross)	31%	148%	118%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	656,801	14,699,005	15,355,806
100%	Realization Rate Adjustment (kWh/yr)	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	656,801	14,699,005	15,355,806
93%	Net-To-Gross Adjustment (kWh/yr)	-45,976	-1,028,930	-1,074,906
	Net Adjusted Savings (kWh/yr)	610,825	13,670,074	14,280,899
	Planned Net Savings (kWh/yr)	1,255,549	4,323,476	5,579,025
	Cum. % Toward Net Planned Savings (kWh/yr)	49%	316%	256%
	Avg. Gross Savings Per Participant (kWh/yr)	9,803	15,687	15,295
	Avg. Net Savings Per Participant (kWh/yr)	9,117	14,589	14,224
Installed kW	Total Gross Demand Reduction (kW)	132	3,098	3,230
100%	Realization Rate Adjustment (kW)	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	132	3,098	3,230
93%	Net-To-Gross Adjustment (kW)	-9	-217	-226
	Net Adjusted Demand Reduction (kW)	122	2,881	3,004
	Planned Net Demand Reduction (kW)	308	661	969
	Cum. % Toward Net Planned Demand Reduction (kW)	40%	436%	310%
	Avg. Gross Demand Reduction Per Participant (kW)	2.0	3.3	3.2
	Avg. Net Demand Reduction Per Participant (kW)	1.8	3.1	3.0
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$320	\$161	\$171
	Cum. \$Admin. per Cum. kWh (Gross)	\$0.03	\$0.01	\$0.01
	Cum. \$Admin. per Cum. kW (Gross)	\$163	\$49	\$53
	Cum. \$EM&V per Cum Total Costs (\$)	7%	3%	3%
	Cum. \$Rebate per Cum. Participant (Gross)			

1. A participant is a unique account number.
2. The 2016 total gross deemed savings values reported in this table differs from values in the May 1, 2017 EM&V report, and have been refiled with the Commission. The adjustments totaled -171,768 kWh/year and 3 kW for 2016 reported savings. The adjustments accounts for corrections to STEP Manual version 7.0.0 issued on May 1, 2017, in section 15. The adjustment was to waste heat factors (WHFe and WHFd) applied to lighting fixtures installed in 2016, where the program participant building HVAC systems was assumed to be heat pump heating and cooling systems, rather than the previous assumption of AC cool and non-electric heat systems. This adjustment was made in response to requests by the North Carolina Public Staff Utilities Commission Re: Docket No. E-22, Sub 545, on October 23, 2017. It is reflected in STEP Manual version 8.0.0 in this EM&V report.

A.12.2 2017 Monthly Indicator Tables

VA-Small Business Improvement Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2016-2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total	Program Total
O&M (\$)	Direct Relate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$9,136	\$5,641	\$11,537	\$15,648	\$18,708	\$12,732	\$19,198	\$10,519	\$11,824	\$15,020	\$10,827	\$9,810	\$150,600	\$172,031
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	4%	7%	13%	20%	29%	35%	44%	49%	55%	62%	67%	72%	72%	59%
Participants ¹	Total (Gross)	73	37	92	101	165	101	89	89	40	74	38	38	937	1,004
	Planned (Gross)	53	53	53	53	53	53	53	53	53	53	53	52	635	851
	Variance	20	-16	39	48	112	48	36	36	-13	21	-15	-14	302	153
	Cum. % toward planned total (Gross)	11%	17%	32%	48%	74%	90%	104%	118%	124%	136%	142%	148%	148%	118%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	857,530	316,580	1,270,577	893,944	1,718,448	1,257,045	1,520,041	1,342,184	1,201,901	2,162,636	1,289,567	868,551	14,699,005	15,355,806
100%	Realization Rate Adjustment (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	857,530	316,580	1,270,577	893,944	1,718,448	1,257,045	1,520,041	1,342,184	1,201,901	2,162,636	1,289,567	868,551	14,699,005	15,355,806
93%	Net-To-Gross Adjustment (kWh/yr)	-60,027	-22,161	-88,940	-62,576	-120,291	-87,993	-106,403	-93,953	-84,133	-151,385	-90,270	-60,799	-1,028,930	-1,074,906
	Net Adjusted Savings (kWh/yr)	797,503	294,420	1,181,636	831,368	1,598,157	1,169,052	1,413,638	1,248,231	1,117,768	2,011,252	1,199,297	807,753	13,670,074	14,280,899
	Planned Net Savings (kWh/yr)	360,290	360,290	360,290	360,290	360,290	360,290	360,290	360,290	360,290	360,290	360,290	360,290	4,323,476	5,579,025
	Cum. % Toward Net Planned Savings (kWh/yr)	18%	25%	53%	72%	109%	136%	169%	197%	223%	270%	297%	316%	316%	256%
	Avg. Gross Savings Per Participant (kWh/yr)	11,747	8,556	13,811	8,851	10,415	12,446	17,079	15,081	30,048	29,225	33,936	22,857	15,687	15,295
	Avg. Net Savings Per Participant (kWh/yr)	10,925	7,957	12,844	8,231	9,686	11,575	15,884	14,025	27,944	27,179	31,560	21,257	14,589	14,224
Installed kW	Total Gross Demand Reduction (kW)	175	66	282	199	325	271	320	302	266	417	280	196	3,098	3,230
100%	Realization Rate Adjustment (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	175	66	282	199	325	271	320	302	266	417	280	196	3,098	3,230
93%	Net-To-Gross Adjustment (kW)	-12	-5	-20	-14	-23	-19	-22	-21	-19	-29	-20	-14	-217	-226
	Net Adjusted Demand Reduction (kW)	162	61	262	186	302	252	298	280	248	388	260	183	2,881	3,004
	Planned Net Demand Reduction (kW)	55	55	55	55	55	55	55	55	55	55	55	55	661	969
	Cum. % Toward Net Planned Demand Reduction (kW)	25%	34%	74%	102%	147%	185%	230%	273%	310%	369%	408%	436%	436%	310%
	Avg. Gross Demand Reduction Per Participant (kW)	2.4	1.8	3.1	2.0	2.0	2.7	3.6	3.4	6.7	5.6	7.4	5.2	3.3	3.2
	Avg. Net Demand Reduction Per Participant (kW)	2.2	1.7	2.8	1.8	1.8	2.5	3.3	3.2	6.2	5.2	6.8	4.8	3.1	3.0
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$125	\$134	\$130	\$138	\$130	\$129	\$141	\$138	\$146	\$151	\$157	\$161	\$161	\$171
	Cum. \$Admin. per Cum. kWh (Gross)	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
	Cum. \$Admin. per Cum. kW (Gross)	\$52	\$61	\$50	\$58	\$58	\$56	\$57	\$53	\$52	\$50	\$49	\$49	\$49	\$53
	Cum. SEM&V per Cum. Total Costs (\$)	0.0%	0.0%	0.0%	6.5%	5.8%	4.8%	4.0%	3.7%	3.5%	3.1%	3.0%	2.9%	2.9%	3%
	Cum. \$Relate per Cum. Participant (Gross)														

A.13 Virginia Non-residential Prescriptive Program 2017

A.13.1 2017 Monthly Indicator Tables

VA- Commercial Nonresidential Prescriptive Program		2017 Jan	2017 Feb	2017 Mar	2017 Apr	2017 May	2017 June	2017 Jul	2017 Aug	2017 Sept	2017 Oct	2017 Nov	2017 Dec	2017 Total
Category	Indicator													
O&M (\$)	Direct Rebate													
O&M (\$)	Direct Implementation													
O&M (\$)	Direct EM&V													
O&M (\$)	Indirect Other (Administrative)	\$0	\$0	\$0	\$0	\$0	\$0	\$628	\$5,768	\$6,414	\$5,404	\$5,132	\$5,555	\$28,898
Costs (\$)	Total													
Costs (\$)	Planned													
Costs (\$)	Variance													
	Cum. % toward planned total	0%	0%	0%	0%	0%	0%	0%	4%	9%	12%	16%	20%	20%
Participants ¹	Total (Gross)	0	0	0	0	0	0	0	0	0	0	0	4	4
	Planned (Gross)	23	23	22	22	22	22	22	22	22	22	22	22	266
	Variance	-23	-23	-22	-22	-22	-22	-22	-22	-22	-22	-22	-18	-262
	Cum. % toward planned total (Gross)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	2%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	699	699
	100% Realization Rate Adjustment (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Savings (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	699	699
	85% Net-To-Gross Adjustment (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	-105	-105
	Net Adjusted Savings (kWh/yr)	0	0	0	0	0	0	0	0	0	0	0	594	594
	Planned Net Savings (kWh/yr)	496,662	496,662	496,662	496,662	496,662	496,662	496,662	496,662	496,662	496,662	496,662	496,662	5,959,948
	Cum. % Toward Net Planned Savings (kWh/yr)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.01%
	Avg. Gross Savings Per Participant (kWh/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	175	175
	Avg. Net Savings Per Participant (kWh/yr)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	149	149
Installed kW	Total Gross Demand Reduction (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0
	100% Realization Rate Adjustment (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Realization Rate Adjusted Gross Demand Reduction (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0
	85% Net-To-Gross Adjustment (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Net Adjusted Demand Reduction (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Planned Net Demand Reduction (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Cum. % Toward Net Planned Demand Reduction (kW)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Avg. Gross Demand Reduction Per Participant (kW)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.02	0.02
	Avg. Net Demand Reduction Per Participant (kW)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.02	0.02
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$7,225	\$7,225
	Cum. \$Admin. per Cum. kWh (Gross)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$41.32	\$41.32
	Cum. \$Admin. per Cum. kW (Gross)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$351,557	\$351,557
	Cum. \$EM&V per Cum. Total Costs (\$)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$351,557	\$351,557
	Cum. \$Rebate per Cum. Participant (Gross)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	\$7,225	\$7,225

1. A participant is a unique account number.

A.14 Virginia Residential Air Conditioner Cycling Program 2010-2017

A.14.1 2010-2017 Annual Indicator Tables

VA - Residential AC Cycling Program		2010	2011	2012	2013	2014	2015	2016	2017	2010-2017
Category	Indicator	Total	Total	Total	Total	Total	Total	Total	Total	Program Total
O&M (\$)	Direct Rebate									
O&M (\$)	Direct Implementation									
O&M (\$)	Direct EM&V									
O&M (\$)	Indirect Other (Administrative)	\$872,470	\$763,964	\$681,876	\$668,850	\$301,103	\$196,693	\$186,752	\$238,408	\$3,910,114
Capital (\$)	Direct Implementation									
Costs (\$)	Total									
Costs (\$)	Planned									
Costs (\$)	Variance									
	Cum. % toward planned total	77%	96%	64%	73%	83%	84%	69%	65%	77%
Participants	Total (Cumulative @ End of Month)	10,900	36,545	66,890	91,280	115,083	140,022	147,723	149,219	149,219
	Removals (Uninstalled) / Deactivations	-90	-2,606	-5,516	-12,370	-23,145	-36,769	-49,635	-59,937	-59,937
	Opt-outs	98	309	18	16	18	93	353	30	437
	Adjusted Participants (Cum.)	10,712	33,630	61,356	78,894	91,920	103,160	98,088	89,282	88,845
0%	Net to gross adjustment (Cum.)	0	0	0	0	0	0	0	0	0
96%	In Service Rate Adjustment (Cum.)	-436	-1,462	-2,454	-3,156	-3,677	0	0	0	0
	Net Participation (Cum.)	10,276	32,168	58,901	75,738	88,243	103,160	98,088	89,282	88,845
	Planned (Cum.)	9,244	33,996	73,598	96,706	115,702	103,915	103,253	97,037	97,037
	Variance (Cum.)	1,656	2,549	-6,706	-20,968	-27,459	-755	-5,165	-7,755	-8,192
	Cum % toward planned total (Net basis)	111%	95%	80%	78%	76%	99%	95%	92%	92%
	Removal (Uninstalled) / Deactivation Rate	-0.22%	-0.82%	-0.48%	-0.81%	-1.02%	-1.15%	-1.05%	-0.92%	-0.84%
	Average % Opt-outs (rate)	0.91%	0.91%	0.03%	0.02%	0.02%	0.09%	0.36%	0.03%	0.21%
	Realization Rate	96%	111%	99%	78%	93%	100%	100%	100%	97%
	Connected Load kW	17,841	92,798	208,834	264,998	296,859	304,177	291,199	267,857	228,419
	Ex-Ante Estimated kW	0.94	0.96	1.09	0.95	0.78	0.71	0.97	0.68	0.88
	Connected Load Per Participant (kW)	1.74	2.88	3.55	3.50	3.36	2.95	2.97	3.00	2.99
kW Potential	Peak Shaving Potential kW - Gross Participants	11,990	40,200	73,579	100,408	80,558	99,416	143,291	101,469	101,469
	Removed (Uninstalled) / Deactivated Peak Shaving Potential kW	-99	-2,867	-6,068	-13,607	-16,202	-26,106	-48,146	-40,757	-40,757
	Less Opt-outs (kW)	108	340	20	17	13	66	343	21	297
	Dispatchable Peak Shaving Potential - Total kW	11,783	36,993	67,491	86,784	64,344	73,244	94,803	60,691	60,414
0%	Less Free Ridership Factor (Cum.)	0	0	0	0	0	0	0	0	0
96%	In Service Rate Adjustment (Cum.)	-471	-1,480	-2,700	-3,471	-2,574	0	0	0	0
	Adjustment for Realization Rate	-430	3,906	-389	-18,195	-4,633	0	0	0	0
	Net Demand (Cum.)	10,880	39,420	64,403	65,117	57,137	73,244	94,803	60,691	60,414
	Planned Demand (Cum.)	8,782	32,293	69,786	91,774	110,390	103,915	73,838	95,027	95,027
	Cum. % toward planned total (Net basis)	124%	122%	92%	71%	52%	70%	128%	64%	64%
	Dispatchable Peak Shaving Potential kW per Participant	1.06	1.23	1.05	0.83	0.69	0.71	0.97	0.68	0.68
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$80	\$45	\$22	\$33	\$29	\$25	\$25	\$25	\$25
	Cum. \$Admin. per Cum. kW (Gross)	\$73	\$41	\$20	\$30	\$41	\$40	\$26	\$37	\$37
	Cum. \$EM&V per Cum. Total Costs (\$)	1.0%	1.5%	1.3%	1.3%	1.6%	1.9%	2.2%	2.0%	2.0%
	Cum. \$Rebate per Cum. Participant (Gross)									

A.14.2 2017 Monthly Indicator Tables

VA - Residential AC Cycling Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2010-2017
Category	Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Program Total
O&M (\$)	Direct Rebate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$2,176	\$8,568	\$7,367	\$10,469	\$8,858	\$47,030	\$47,933	\$47,973	\$43,271	\$8,131	\$6,928	-\$298	\$238,408	\$3,910,114
Capital (\$)	Direct Implementation														
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	1%	3%	5%	8%	10%	23%	36%	49%	60%	62%	65%	65%	65%	77%
Participants	Total (Cumulative @ End of Month)	147,778	147,778	147,789	147,905	147,991	148,163	148,248	148,410	148,559	148,707	149,077	149,219	149,219	149,219
	Removals (Uninstalled) / Deactivations	-49,819	-49,867	-49,908	-50,958	-52,515	-53,565	-54,849	-56,310	-57,439	-58,202	-59,491	-59,937	-59,937	-59,937
	Opt-outs	33	33	33	33	32	32	32	31	31	31	30	30	30	437
	Adjusted Participants (Cum.)	97,959	97,911	97,881	96,947	95,476	94,598	93,399	92,100	91,120	90,505	89,586	89,282	89,282	88,845
	0% Net to gross adjustment (Cum.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	96% In Service Rate Adjustment (Cum.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Net Participation (Cum.)	97,959	97,911	97,881	96,947	95,476	94,598	93,399	92,100	91,120	90,505	89,586	89,282	89,282	88,845
	Planned (Cum.)	97,037	97,037	97,037	97,037	97,037	97,037	97,037	97,037	97,037	97,037	97,037	97,037	97,037	97,037
	Variance (Cum.)	922	874	844	-90	-1,561	-2,439	-3,638	-4,937	-5,917	-6,532	-7,451	-7,755	-7,755	-8,192
	Cum % toward planned total (Net basis)	101%	101%	101%	100%	98%	97%	96%	95%	94%	93%	92%	92%	92%	92%
	Removal (Uninstalled) / Deactivation Rate	-0.19%	-0.05%	-0.04%	-1.08%	-1.63%	-1.11%	-1.37%	-1.59%	-1.24%	-0.84%	-1.44%	-0.50%	-0.92%	-0.84%
	Average % Opt-outs (rate)	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.03%	0.21%
	Realization Rate	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	97%
kW Potential	Connected Load kW	279,060	279,075	276,746	273,803	271,978	269,714	264,245	262,141	260,763	259,292	259,236	258,225	267,857	228,419
	Ex-Ante Estimated kW	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.88
	Connected Load Per Participant (kW)	2.85	2.85	2.83	2.82	2.85	2.85	2.83	2.85	2.86	2.86	2.89	2.89	3.00	2.99
	Peak Shaving Potential kW - Gross Participants	100,489	100,489	100,497	100,575	100,634	100,751	100,809	100,919	101,020	101,121	101,372	101,469	101,469	101,469
	Removed (Uninstalled) / Deactivated Peak Shaving Potential kW	-33,877	-33,910	-33,937	-34,651	-35,710	-36,424	-37,297	-38,291	-39,059	-39,577	-40,454	-40,757	-40,757	-40,757
	Less Opt-outs (kW)	23	23	23	22	22	22	22	21	21	21	21	21	21	297
	Dispatchable Peak Shaving Potential - Total kW	66,589	66,557	66,536	65,902	64,902	64,305	63,490	62,607	61,941	61,522	60,898	60,691	60,691	60,414
	0% Less Free Ridership Factor (Cum.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	96% In Service Rate Adjustment (Cum.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Adjustment for Realization Rate	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Net Demand (Cum.)	66,589	66,557	66,536	65,902	64,902	64,305	63,490	62,607	61,941	61,522	60,898	60,691	60,691	60,414
	Planned Demand (Cum.)	95,027	95,027	95,027	95,027	95,027	95,027	95,027	95,027	95,027	95,027	95,027	95,027	95,027	95,027
	Cum. % toward planned total (Net basis)	70%	70%	70%	69%	68%	68%	67%	66%	65%	64%	64%	64%	64%	64%
	Dispatchable Peak Shaving Potential kW per Participant	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Program Performance	Cum. SAdmin. per Cum. Participant (Gross)	\$24	\$24	\$24	\$24	\$24	\$24	\$24	\$25	\$25	\$25	\$25	\$25	\$25	\$25
	Cum. SAdmin. per Cum. kW (Gross)	\$35	\$35	\$35	\$35	\$35	\$35	\$36	\$36	\$37	\$37	\$37	\$37	\$37	\$37
	Cum. SEM&V per Cum. Total Costs (\$)	1.9%	1.8%	1.8%	1.9%	2.0%	1.9%	1.9%	1.8%	1.8%	1.8%	1.9%	2.0%	2.0%	2.0%
	Cum. SRebate per Cum. Participant (Gross)														

A.15 Virginia Non-residential Distributed Generation Program 2012-2017

A.15.1 2012-2017 Annual Indicator Tables

VA - Non-Residential Distributed Generation Program		2012	2013	2014	2015	2016	2017	2012 - 2017
Category	Indicator	Total	Total	Total	Total	Total	Total	Program Total
O&M (\$)	Direct Rebate							
O&M (\$)	Direct Implementation							
O&M (\$)	Direct EM&V							
O&M (\$)	Indirect Other (Administrative)	\$45,196	\$70,742	\$55,136	\$14,914	\$17,395	\$20,476	\$223,859
Costs (\$)	Total							
Costs (\$)	Planned							
Costs (\$)	Variance							
	Cum. % toward planned total	21%	29%	55%	57%	67%	77%	43%
Participants ¹	Total (Cumulative @ End of Month)	19.0	19.4	18.6	5.9	6.5	6.1	6.10
	Planned (Cum.)	23	28	35	13	7	7.4	7.39
	Variance (Cum.)	-4	-9	-16	-7	-1	-1.3	-1.29
	Cum % Toward Planned Total (Net basis)	83%	69%	53%	45%	93%	82%	82%
kW Potential	Total (Cumulative @ End of Month)	19,040	19,410	18,580	5,875	5,740	5,548	5,548
	Realization Rate	69.8%	77.3%	78.0%	93.0%	106.0%	108.0%	108%
	Net kW (Cum.)	16,051	16,110	14,492	5,457	4,348	5,992	5,992
	Planned (Cum.)	23,000	28,000	35,000	13,000	7,000	7,394	7,394
	Cum % Toward Planned Total (Net basis)	70%	58%	41%	42%	62%	86%	81%
	Avg. per Net Participant (Net kW)	843	830	780	929	669	982	5,033
								0
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$2,374	\$5,973	\$9,207	\$9,294	\$9,589	\$3,357	\$3,357
	Cum. \$Admin. per Cum. kW (Gross)	\$2	\$6	\$9	\$9	\$10	\$3	\$3
	Cum. \$EM&V per Cum Total Costs (\$)	3.3%	7.5%	8.8%	9.7%	11.4%	11.3%	11%
	Cum. \$Rebate per Cum. Participant (Gross)							

1. A participant is equal to one megawatt (MW) available to Dominion for dispatch through the Commercial Distributed Generation program.

A.15.2 2017 Monthly Indicator Tables

VA - Non-Residential Distributed Generation Program		2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2012 - 2017
Category	Indicator	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Total	Program Total
O&M (\$)	Direct Rebate														
O&M (\$)	Direct Implementation														
O&M (\$)	Direct EM&V														
O&M (\$)	Indirect Other (Administrative)	\$591	\$0	\$552	\$1,737	\$1,811	\$2,125	\$1,874	\$4,893	\$1,452	\$993	\$1,692	\$2,757	\$20,476	\$223,859
Costs (\$)	Total														
Costs (\$)	Planned														
Costs (\$)	Variance														
	Cum. % toward planned total	2%	8%	10%	16%	22%	29%	36%	53%	58%	61%	67%	77%	77%	43%
Participants ¹	Total (Cumulative @ End of Month)	6.1				6.1	5.9	5.9	5.5	5.6			6.1	6.1	6.10
	Planned (Cum.)	7.4				7.4	7.4	7.4	7.4	7.4			7.4	7.4	7.39
	Variance (Cum.)	-1.3				-1.3	-1.5	-1.5	-1.9	-1.8			-1.3	-1.3	-1.29
	Cum % Toward Planned Total (Net basis)	87%				87%	84%	84%	79%	80%			87%	82%	82%
kW Potential								21							
	Total (Cumulative @ End of Month)	6,130				6,030	5,832	5,405	5,386	5,563			6,130	5,548	5,548
	Realization Rate	84.0%				91.0%	106.0%	112.0%	119.0%	102.0%			86.0%	108.0%	108%
	Net kW (Cum.)	5,149				5,487	6,182	6,054	6,409	5,674			5,272	5,992	5,992
	Planned (Cum.)	7,394				7,394	7,394	7,394	7,394	7,394			7,394	7,394	7,394
	Cum % Toward Planned Total (Net basis)	74%				78%	88%	86%	92%	81%			75%	86%	81%
	Avg. per Net Participant (Net kW)	844				900	1,048	1,026	1,165	1,013			864	982	5,033
Program Performance															0
	Cum. \$Admin. per Cum. Participant (Gross)	\$97				\$769	\$1,155	\$1,473	\$2,470	\$2,685			\$3,357	\$3,357	\$3,357
	Cum. \$Admin. per Cum. kW (Gross)	\$0				\$1	\$1	\$2	\$3	\$3			\$3	\$3	\$3
	Cum. \$EM&V per Cum. Total Costs (\$)	11.1%	11.0%	11.0%	11.1%	11.1%	11.1%	11.1%	11.0%	11.0%	11.1%	11.1%	11.3%	11.3%	11.3%
	Cum. \$Rebate per Cum. Participant (Gross)														

A.16 Virginia Residential Lighting Program 2010-2012¹

		Virginia			
		2010	2011	2012	Total (2010-2012)
O&M (\$)	Direct Rebate				
O&M (\$)	Direct Implementation				
O&M (\$)	Direct EM&V				
O&M (\$)	Indirect Other (Administrative)	\$857,229	\$297,373	\$3,259	\$1,157,861
Costs (\$)	Total				
Costs (\$)	Planned				
Costs (\$)	Variance				
	Cum. % toward planned total	66.9%	86.9%	64.0%	75.6%
Participants	Total bulbs (Gross)	2,016,479	2,206,030	0	4,222,509
	Planned (Gross)	2,013,600	2,001,784	0	4,015,384
	Variance	2,879	204,246	0	207,125
	Cum % toward planned total (Gross)	100.1%	110.2%	0.0%	105.2%
kWh	Total Gross Deemed Savings	101,640,578	116,730,747	0	218,371,325
65%	Realization Rate Adjustment	-16,262,492	-18,676,920	0	-34,939,412
84%	Adjusted Gross Savings	85,378,086	98,053,827	0	183,431,913
	Net Adjusted Savings	55,495,756	63,734,988	0	119,230,743
	Planned Savings (Net)	53,544,280	53,229,979	0	106,774,259
	Cum. % Toward Planned Savings (Net)	103.6%	119.7%	0.0%	111.7%
	Avg. Savings Per Participant (Net)	28	29	0	28
kW	Total Gross Deemed Demand	11,056	12,700	0	23,756
65%	Realization Rate Adjustment	-1,769	-2,032	0	-3,801
84%	Adjusted Gross Demand	9,287	10,668	0	19,955
	Net Adjusted Demand	6,037	6,934	0	12,971
	Planned Demand (Net)	4,685	4,657	0	9,342
	Cum. % Toward Planned Demand (Net)	128.8%	148.9%	0.0%	138.8%
	Avg. Demand Per Participant (Net)	0.003	0.003	0.000	0.003
Program	Cum. \$Admin. per Cum. Bulb (Gross)	\$0.43	\$0.13		\$0.27
Performance	Cum. \$Admin. per Cum. kWh (Gross)	\$0.01	\$0.00		\$0.01
	Cum. \$Admin. per Cum. kW (Gross)	\$78	\$23		\$49
	Cum. \$EM&V per Cum Total Costs (\$)	0.7%	3.5%	89.1%	2.6%
	Cum. \$Rebate per Cum. Bulb (Gross)				

¹ Program closed end of 2012.

A.17 Virginia Residential Low-income Program 2010 - 2014²

		Virginia					
		2010	2011	2012	2013	2014	Total (2010-2014)
O&M (\$)	Direct Rebate						
O&M (\$)	Direct Implementation						
O&M (\$)	Direct EM&V						
O&M (\$)	Indirect Other (Administrative)	\$825,883	\$386,039	\$388,331	\$273,011	\$126,173	\$1,999,436
Costs (\$)	Total						
Costs (\$)	Planned						
Costs (\$)	Variance						
	Cum. % toward planned total	79.1%	71.8%	32.0%	72.9%	81.7%	58.6%
Participants	Total (Gross)	1,431	3,913	2,380	1,883	1,880	11,487
	Planned (Gross)	1,414	3,789	6,062	2,467	1,872	15,604
	Variance	17	124	-3,682	-584	8	-4,117
	Cum % toward planned total (Gross)	101.2%	103.3%	39.3%	76.3%	100.4%	73.6%
kWh	Total Gross Deemed Savings	1,743,349	4,490,516	2,596,580	1,668,643	1,740,993	12,240,081
62%	Realization Rate Adjustment	-923,975	-2,379,974	-1,376,187	-417,161	-661,577	-5,758,874
	Adjusted Gross Savings	819,374	2,110,543	1,220,392	1,251,482	1,079,416	6,481,207
94%	Net-To-Gross Adjustment	-52,440	-135,075	-78,105	-80,095	-69,083	-414,797
	Net Adjusted Savings	766,934	1,975,468	1,142,287	1,171,388	1,010,333	6,066,410
	Planned Savings (Net)	554,704	554,704	554,704	554,704	1,560,401	3,779,217
	Cum. % Toward Planned Savings (Net)	138.3%	356.1%	205.9%	211.2%	64.7%	160.5%
	Avg. Savings Per Participant (Net)	536	505	480	622	537	528
Installed kW	Total Gross Deemed Demand	691	1,443	508	346	336	3,323
62%	Realization Rate Adjustment	-366	-765	-269	-86	-128	0
	Adjusted Gross Demand	325	678	239	259	208	1,709
94%	Net-To-Gross Adjustment	-21	-43	-15	-17	-13	-109
	Net Adjusted Demand	304	635	223	243	195	1,600
	Planned Demand (Net)	102	274	436	396	246	1,454
	Cum. % Toward Planned Demand (Net)	298.1%	231.6%	51.3%	61.3%	79.3%	110.1%
	Avg. Demand Per Participant (Net)	0.0	0.2	0.1	0.1	0.1	0.1
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$577	\$99	\$163	\$145	\$67	\$174
	Cum. \$Admin. per Cum. kWh (Gross)	\$0.47	\$0.09	\$0.15	\$0.16	\$0.07	\$0.16
	Cum. \$Admin. per Cum. kW (Gross)	\$1.195	\$268	\$764	\$790	\$376	\$602
	Cum. \$EM&V per Cum Total Costs (\$)	10%	3.2%	3.2%	4.0%	3.4%	3.0%
	Cum. \$Rebate per Cum. Participant (Gross)						

² Program closed September 9, 2014.

A.18 Virginia Commercial Lighting Program 2010-2012³

		Virginia			
		2010	2011	2012	Total (2010-2012)
O&M (\$)	Direct Rebate				
O&M (\$)	Direct Implementation				
O&M (\$)	Direct EM&V				
O&M (\$)	Indirect Other (Administrative)	\$574,965	\$419,642	\$310,152	\$1,304,759
Costs (\$)	Total				
Costs (\$)	Planned				
Costs (\$)	Variance				
	Cum. % toward planned total	112.7%	87.1%	29.1%	58.0%
Participants	Total (Gross)	399	1,307	703	2,409
	Planned (Gross)	26	146	32	204
	Variance	373	1161	671	2205
	Cum % toward planned total (Gross)	1534.6%	895.2%	2196.9%	1180.9%
kWh	Total Gross Deemed Savings	13,533,989	42,212,316	23,709,597	79,455,902
178%	Realization Rate Adjustment	10,581,378	32,807,324	18,502,140	61,890,842
0%	Adjusted Gross Savings	24,115,366	75,019,641	42,211,737	141,346,744
50%	Net-To-Gross Adjustment	-12,057,683	-37,509,820	-21,105,869	-70,673,372
	Net Adjusted Savings	12,057,683	37,509,820	21,105,869	70,673,372
	Planned Savings (Net)	6,364,934	35,764,075	7,716,991	49,846,000
	Cum. % Toward Planned Savings (Net)	189.4%	104.9%	273.5%	141.8%
	Avg. Savings Per Participant (Net)	30,220	28,699	30,023	29,337
kW	Total Gross Deemed Demand	3,049	9,553	5,450	18,052
50%	Realization Rate Adjustment	-61	-191	-109	0
0%	Adjusted Gross Demand	2,988	9,362	5,341	0
0%	Net-To-Gross Adjustment	-1,494	-4,681	-2,670	-8,845
	Net Adjusted Demand	1,494	4,681	2,670	8,845
	Planned Demand (Net)	798	4,490	969	6,257
	Cum. % Toward Planned Demand (Net)	187%	104%	276%	141%
	Avg. Demand Per Participant (Net)	4	4	4	6,257
Program	Cum. \$Admin. per Cum. Participant (Gross)	\$1,441	\$321	\$441	\$542
Performance	Cum. \$Admin. per Cum. KWh (Gross)	\$0.04	\$0.01	\$0.01	\$0.02
	Cum. \$Admin. per Cum. KW (Gross)	\$189	\$44	\$57	\$72
	Cum. \$EM&V per Cum Total Costs (\$)	1.3%	5.9%	1.8%	3.9%
	Cum. \$Rebate per Cum. Participant (Gross)				

1. Realization rate is 177% January 1st through May 30th, 179% June 1st through September 30th, and 177% October 1st through December 31st.

³ Program closed July 31, 2012.

A.19 Virginia Commercial HVAC Program 2010-2012⁴

VA- Commercial HVAC Program		2010	2011	2012	2010-2012
Category	Indicator	Total	Total	Total	Program Total
O&M (\$)	Direct Rebate				
O&M (\$)	Direct Implementation				
O&M (\$)	Direct EM&V				
O&M (\$)	Indirect Other (Administrative)	\$109,504	\$109,822	\$68,630	\$287,956
Costs (\$)	Total				
Costs (\$)	Planned				
Costs (\$)	Variance				
	Cum. % toward planned total	111.5%	119.6%	37.3%	74.9%
Participants	Total (Gross)	28	59	36	123
	Planned (Gross)	36	199	44	279
	Variance	-8	-140	-8	-156
	Cum % toward planned total (Gross)	77.8%	29.6%	81.8%	44.1%
kWh	Total Gross Deemed Savings	2,125,025	17,330,556	4,489,128	23,944,709
63.3%	Realization Rate Adjustment ¹	-1,057,231	-7,280,807	-2,661,321	-10,999,359
	Adjusted Gross Savings	1,067,795	10,049,749	1,827,807	12,945,351
45.0%	Net-To-Gross Adjustment	-587,287	-5,527,362	-1,005,294	-7,119,943
	Net Adjusted Savings	480,508	4,522,387	822,513	5,825,408
	Planned Savings (Net)	993,361	5,481,166	1,209,473	7,684,000
	Cum. % Toward Planned Savings (Net)	48.4%	82.5%	68.0%	75.8%
	Avg. Savings Per Participant (Net)	17,161	76,651	22,848	47,361
kW	Total Gross Deemed Demand	281	1,629	568	2,477
97.0%	Realization Rate Adjustment	110	555	316	981
	Adjusted Gross Demand	390	2,184	884	3,458
45.0%	Net-To-Gross Adjustment	-215	-1,201	-486	-1,902
	Net Adjusted Demand	176	983	398	1,556
	Planned Demand (Net)	401	2,210	488	3,099
	Cum. % Toward Planned Demand (Net)	43.8%	44.5%	81.5%	50.2%
	Avg. Demand Per Participant (Net)	6	17	11	13
Program Performance	Cum. \$Admin. per Cum. Participant (Gross)	\$3,911	\$1,861	\$1,906	\$2,341
	Cum. \$Admin. per Cum. KWh (Gross)	\$0.05	\$0.01	\$0.02	\$0.01
	Cum. \$Admin. per Cum. KW (Gross)	\$390	\$67	\$121	\$116
	Cum. \$EM&V per Cum Total Costs (\$)	6.3%	19.0%	19.1%	16.9%
	Cum. \$Rebate per Cum. Participant (Gross)				

1. Realization rate is 63% January 1st through May 30th, 35% June 1st through September 30th, and 63% October 1st through December 31st.

⁴ Program closed July 31, 2012.



B. PROGRAM PERFORMANCE INDICATOR TABLES FOR NORTH CAROLINA

B.1 North Carolina Residential Heat Pump Upgrade Program 2014-2017

B.1.1 2014-2017 Annual Indicator Tables

NC - Residential Heat Pump Upgrade Program		2014	2015	2016	2017	2014-2017
Category	Indicator	Total	Total	Total	Total	Program total
O&M (\$)	Direct Rebate					
O&M (\$)	Direct Implementation					
O&M (\$)	Direct EM&V					
O&M (\$)	Indirect Other (Administrative)	\$1,847	\$7,845	\$8,235	\$2,527	\$20,454
Costs (\$)	Total					
Costs (\$)	Planned					
Costs (\$)	Variance					
	Cum. % toward planned total	14%	70%	64%	191%	55%
Participants ¹	Total (Gross)	44	597	665	118	1,424
	Planned (Gross)	1,200	1,200	252	0	2,652
	Variance	-1,156	-603	413	118	-1,228
	Cum % toward planned total (Gross)	4%	50%	264%		54%
Installed kWh/year	Total Gross Deemed Savings (kWh/yr)	72,449	282,170	317,574	63,092	735,286
78%	Realization Rate Adjustment (kWh/yr)	4,854	-63,206	-71,137	-14,133	-143,621
	Realization Rate Adjusted Savings (kWh/yr)	77,303	218,964	246,438	48,960	591,665
45%	Net-To-Gross Adjustment (kWh/yr)	-11,595	-120,211	-135,294	-26,879	-293,980
	Net Adjusted Savings (kWh/yr)	65,708	98,753	111,143	22,081	297,685
	Planned Net Savings (kWh/yr)	1,038,000	1,038,000	49,858	0	2,125,858
	Cum. % Toward Net Planned Savings (kWh/yr)	6%	10%	223%		14%
	Avg. Gross Savings Per Participant (kWh/yr)	1,647	473	478	535	516
	Avg. Net Savings Per Participant (kWh/yr)	1,493	165	167	187	209
Installed kW	Total Gross Demand Reduction (kW)	19	58	69	14	160
89%	Realization Rate Adjustment (kW)	-3	-6	-8	-2	-19
	Realization Rate Adjusted Gross Demand Reduction(kW)	16	51	61	13	141
45%	Net-To-Gross Adjustment (kW)	-2	-28	-33	-7	-71
	Net Adjusted Demand Reduction (kW)	14	23	27	6	70
	Planned Net Demand Reduction (kW)	348	348	18	0	714
	Cum. % Toward Net Planned Demand Reduction (kW)	4%	7%	153%		10%
	Avg. Gross Demand Reduction Per Participant (kW)	0.44	0.10	0.10	0.12	0.11
	Avg. Net Demand Reduction Per Participant (kW)	0.31	0.04	0.04	0.05	0.05
Program	Cum. \$Admin. per Cum. Participant (Gross)	\$42	\$13	\$12	\$21	\$14
Performance	Cum. \$Admin. per Cum. kWh (Gross)	\$0.03	\$0.03	\$0.03	\$0.04	\$0.03
	Cum. \$Admin. per Cum. kW (Gross)	\$96	\$136	\$120	\$174	\$127.89
	Cum. \$EM&V per Cum Total Costs (\$)	34%	11%	7%	14%	12%
	Cum. \$Rebate per Cum. Participant (Gross)					

1. A participant is a single unit that has been installed and rebated. A unique account number may represent multiple participants if that account had multiple units installed and rebated.