

OFFICIAL COPY

Oct 19 2022

AREA/PROJECT/PROGRAM	Distribution Automation: Fuse Replacement - 8
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM										
	2022	2023	2024	2025	2026	2027	2028	2029	2030	
	0	1	2	3	4	5	6	7	8	

COSTS

Program Capital Costs	\$ 22,006,794	\$ 1,346,625	\$ 9,630,976	\$ 8,691,821	\$ 3,516,405	\$ 1,363,964	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 2,239,140	\$ 137,016	\$ 979,929	\$ 884,372	\$ 357,786	\$ 138,780	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 24,245,934	\$ 1,483,641	\$ 10,610,905	\$ 9,576,193	\$ 3,874,191	\$ 1,502,744	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 485,707	\$ 29,721	\$ 212,563	\$ 191,835	\$ 77,610	\$ 30,104	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 24,731,641	\$ 1,513,362	\$ 10,823,468	\$ 9,768,029	\$ 3,951,801	\$ 1,532,847	\$ -	\$ -	\$ -	\$ -
On-Going Maintenance	\$ 162,480	\$ -	\$ -	\$ -	\$ 6,552	\$ 10,014	\$ 12,275	\$ 12,582	\$ 12,896	\$ 13,219
Total On-Going Costs	\$ 162,480	\$ -	\$ -	\$ -	\$ 6,552	\$ 10,014	\$ 12,275	\$ 12,582	\$ 12,896	\$ 13,219

OPERATIONAL BENEFITS

N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 377,946	\$ -	\$ -	\$ -	\$ 14,546	\$ 22,789	\$ 28,632	\$ 29,348	\$ 30,082	\$ 30,834
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 7,337,940	\$ -	\$ -	\$ -	\$ 282,407	\$ 442,448	\$ 555,902	\$ 569,799	\$ 584,044	\$ 598,645
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Avoided Momentary Outage Benefits (Non-MED) - Residential Customers	\$ 8,675,255	\$ -	\$ -	\$ -	\$ 333,875	\$ 523,082	\$ 657,213	\$ 673,643	\$ 690,484	\$ 707,747
Avoided Momentary Outage Benefits (Non-MED) - Small C&I Customers	\$ 50,587,528	\$ -	\$ -	\$ -	\$ 1,946,906	\$ 3,050,221	\$ 3,832,369	\$ 3,928,179	\$ 4,026,383	\$ 4,127,043
Avoided Momentary Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Customer Benefits	\$ 66,978,669	\$ -	\$ -	\$ -	\$ 2,577,733	\$ 4,038,539	\$ 5,074,116	\$ 5,200,969	\$ 5,330,993	\$ 5,464,268

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PV of Customer Benefits	\$ 66,978,669	\$ -	\$ -	\$ -	\$ 2,577,733	\$ 4,038,539	\$ 5,074,116	\$ 5,200,969	\$ 5,330,993	\$ 5,464,268
Total PV of Combined Benefits	\$ 66,978,669	\$ -	\$ -	\$ -	\$ 2,577,733	\$ 4,038,539	\$ 5,074,116	\$ 5,200,969	\$ 5,330,993	\$ 5,464,268
Total PV Program and On-Going Costs	\$ 24,894,120	\$ 1,513,362	\$ 10,823,468	\$ 9,768,029	\$ 3,958,352	\$ 1,542,861	\$ 12,275	\$ 12,582	\$ 12,896	\$ 13,219
Combined NPV of Program	\$ 42,084,548	\$ (1,513,362)	\$ (10,823,468)	\$ (9,768,029)	\$ (1,380,619)	\$ 2,495,678	\$ 5,061,841	\$ 5,188,387	\$ 5,318,097	\$ 5,451,050

Ratio of NPV Benefits to NPV Costs	2.7
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Cumulative Net Benefits (Payback Period)	\$ (1,513,362)	\$ (12,336,831)	\$ (22,104,859)	\$ (23,485,478)	\$ (20,989,801)	\$ (15,927,959)	\$ (10,739,572)	\$ (5,421,474)	\$ 29,575
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AREA/PROJECT/PROGRAM	Distribution Automation: Fuse Replacement - 8
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM	YEAR								
	2031	2032	2033	2034	2035	2036	2037	2038	2039
	9	10	11	12	13	14	15	16	17

COSTS

Program Capital Costs	\$ 22,006,794	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 2,239,140	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 24,245,934	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 485,707	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 24,731,641	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
On-Going Maintenance	\$ 162,480	\$ 13,549	\$ 13,888	\$ 14,235	\$ 14,591	\$ 14,956	\$ 15,330	\$ 15,713	\$ 16,106	\$ 16,508				
Total On-Going Costs	\$ 162,480	\$ 13,549	\$ 13,888	\$ 14,235	\$ 14,591	\$ 14,956	\$ 15,330	\$ 15,713	\$ 16,106	\$ 16,508				

OPERATIONAL BENEFITS

N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 377,946	\$ 31,604	\$ 32,395	\$ 33,204	\$ 34,035	\$ 34,885	\$ 35,758	\$ 36,652	\$ 37,568	\$ 38,507				
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 7,337,940	\$ 613,612	\$ 628,952	\$ 644,676	\$ 660,793	\$ 677,312	\$ 694,245	\$ 711,601	\$ 729,391	\$ 747,626				
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Avoided Momentary Outage Benefits (Non-MED) - Residential Customers	\$ 8,675,255	\$ 725,440	\$ 743,576	\$ 762,166	\$ 781,220	\$ 800,750	\$ 820,769	\$ 841,288	\$ 862,320	\$ 883,878				
Avoided Momentary Outage Benefits (Non-MED) - Small C&I Customers	\$ 50,587,528	\$ 4,230,219	\$ 4,335,974	\$ 4,444,374	\$ 4,555,483	\$ 4,669,370	\$ 4,786,104	\$ 4,905,757	\$ 5,028,401	\$ 5,154,111				
Avoided Momentary Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				
Total Customer Benefits	\$ 66,978,669	\$ 5,600,875	\$ 5,740,897	\$ 5,884,419	\$ 6,031,530	\$ 6,182,318	\$ 6,336,876	\$ 6,495,298	\$ 6,657,680	\$ 6,824,122				

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PV of Customer Benefits	\$ 66,978,669	\$ 5,600,875	\$ 5,740,897	\$ 5,884,419	\$ 6,031,530	\$ 6,182,318	\$ 6,336,876	\$ 6,495,298	\$ 6,657,680	\$ 6,824,122				
Total PV of Combined Benefits	\$ 66,978,669	\$ 5,600,875	\$ 5,740,897	\$ 5,884,419	\$ 6,031,530	\$ 6,182,318	\$ 6,336,876	\$ 6,495,298	\$ 6,657,680	\$ 6,824,122				
Total PV Program and On-Going Costs	\$ 24,894,120	\$ 13,549	\$ 13,888	\$ 14,235	\$ 14,591	\$ 14,956	\$ 15,330	\$ 15,713	\$ 16,106	\$ 16,508				
Combined NPV of Program	\$ 42,084,548	\$ 5,587,326	\$ 5,727,009	\$ 5,870,184	\$ 6,016,939	\$ 6,167,362	\$ 6,321,546	\$ 6,479,585	\$ 6,641,575	\$ 6,807,614				

Ratio of NPV Benefits to NPV Costs	2.7
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Cumulative Net Benefits (Payback Period)	\$ 5,616,901	\$ 11,343,910	\$ 17,214,094	\$ 23,231,033	\$ 29,398,395	\$ 35,719,942	\$ 42,199,527	\$ 48,841,102	\$ 55,648,716					
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AREA/PROJECT/PROGRAM	Distribution Automation: Fuse Replacement - 8
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM									
	2040	2041	2042	2043	2044	2045	2046	2047	2048
	18	19	20	21	22	23	24	25	26

COSTS

Program Capital Costs	\$ 22,006,794	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 2,239,140	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 24,245,934	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 485,707	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 24,731,641	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
On-Going Maintenance	\$ 162,480	\$ 16,921	\$ 17,344	\$ 17,778	\$ 18,222	\$ 18,678	\$ 19,145	\$ 19,623	\$ 20,114	\$ 20,617					
Total On-Going Costs	\$ 162,480	\$ 16,921	\$ 17,344	\$ 17,778	\$ 18,222	\$ 18,678	\$ 19,145	\$ 19,623	\$ 20,114	\$ 20,617					

OPERATIONAL BENEFITS

N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 377,946	\$ 39,470	\$ 40,456	\$ 41,468	\$ 42,505	\$ 43,567	\$ 44,656	\$ 45,773	\$ 46,917	\$ 48,090					
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 7,337,940	\$ 766,317	\$ 785,475	\$ 805,112	\$ 825,239	\$ 845,870	\$ 867,017	\$ 888,693	\$ 910,910	\$ 933,683					
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -					
Avoided Momentary Outage Benefits (Non-MED) - Residential Customers	\$ 8,675,255	\$ 905,975	\$ 928,625	\$ 951,840	\$ 975,636	\$ 1,000,027	\$ 1,025,028	\$ 1,050,654	\$ 1,076,920	\$ 1,103,843					
Avoided Momentary Outage Benefits (Non-MED) - Small C&I Customers	\$ 50,587,528	\$ 5,282,964	\$ 5,415,038	\$ 5,550,414	\$ 5,689,174	\$ 5,831,403	\$ 5,977,188	\$ 6,126,618	\$ 6,279,784	\$ 6,436,778					
Avoided Momentary Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -					
Total Customer Benefits	\$ 66,978,669	\$ 6,994,725	\$ 7,169,594	\$ 7,348,833	\$ 7,532,554	\$ 7,720,868	\$ 7,913,890	\$ 8,111,737	\$ 8,314,530	\$ 8,522,394					

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PV of Customer Benefits	\$ 66,978,669	\$ 6,994,725	\$ 7,169,594	\$ 7,348,833	\$ 7,532,554	\$ 7,720,868	\$ 7,913,890	\$ 8,111,737	\$ 8,314,530	\$ 8,522,394					
Total PV of Combined Benefits	\$ 66,978,669	\$ 6,994,725	\$ 7,169,594	\$ 7,348,833	\$ 7,532,554	\$ 7,720,868	\$ 7,913,890	\$ 8,111,737	\$ 8,314,530	\$ 8,522,394					
Total PV Program and On-Going Costs	\$ 24,894,120	\$ 16,921	\$ 17,344	\$ 17,778	\$ 18,222	\$ 18,678	\$ 19,145	\$ 19,623	\$ 20,114	\$ 20,617					
Combined NPV of Program	\$ 42,084,548	\$ 6,977,804	\$ 7,152,249	\$ 7,331,056	\$ 7,514,332	\$ 7,702,190	\$ 7,894,745	\$ 8,092,114	\$ 8,294,417	\$ 8,501,777					

Ratio of NPV Benefits to NPV Costs	2.7
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Cumulative Net Benefits (Payback Period)	\$ 62,626,520	\$ 69,778,769	\$ 77,109,825	\$ 84,624,157	\$ 92,326,348	\$ 100,221,093	\$ 108,313,207	\$ 116,607,623	\$ 125,109,400
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AREA/PROJECT/PROGRAM	Distribution Automation: Fuse Replacement - 8
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

		NPV of COST/BENEFIT STREAM				TOTAL
		2049	2050	2051	2052	
		27	28	29	30	
COSTS						
Program Capital Costs	\$ 22,006,794	\$ -	\$ -	\$ -	\$ -	\$ 24,549,791
Program Capital Contingency Costs	\$ 2,239,140	\$ -	\$ -	\$ -	\$ -	\$ 2,497,883
Total Program Capital Costs	\$ 24,245,934	\$ -	\$ -	\$ -	\$ -	\$ 27,047,674
Program O&M Costs	\$ 485,707	\$ -	\$ -	\$ -	\$ -	\$ 541,833
Total Program Costs	\$ 24,731,641	\$ -	\$ -	\$ -	\$ -	\$ 27,589,507
On-Going Maintenance	\$ 162,480	\$ 21,132	\$ 21,660	\$ 22,202	\$ 22,757	\$ 458,605
Total On-Going Costs	\$ 162,480	\$ 21,132	\$ 21,660	\$ 22,202	\$ 22,757	\$ 458,605
OPERATIONAL BENEFITS						
N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
CUSTOMER BENEFITS						
Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 377,946	\$ 49,292	\$ 50,525	\$ 51,788	\$ 53,082	\$ 1,068,425
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 7,337,940	\$ 957,025	\$ 980,950	\$ 1,005,474	\$ 1,030,611	\$ 20,743,829
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
						\$ -
Avoided Momentary Outage Benefits (Non-MED) - Residential Customers	\$ 8,675,255	\$ 1,131,439	\$ 1,159,725	\$ 1,188,718	\$ 1,218,436	\$ 24,524,320
Avoided Momentary Outage Benefits (Non-MED) - Small C&I Customers	\$ 50,587,528	\$ 6,597,698	\$ 6,762,640	\$ 6,931,706	\$ 7,104,999	\$ 143,007,295
Avoided Momentary Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
						\$ -
Total Customer Benefits	\$ 66,978,669	\$ 8,735,454	\$ 8,953,840	\$ 9,177,686	\$ 9,407,128	\$ 189,343,869
COMBINED COSTS AND BENEFITS						
Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PV of Customer Benefits	\$ 66,978,669	\$ 8,735,454	\$ 8,953,840	\$ 9,177,686	\$ 9,407,128	\$ 189,343,869
Total PV of Combined Benefits	\$ 66,978,669	\$ 8,735,454	\$ 8,953,840	\$ 9,177,686	\$ 9,407,128	\$ 189,343,869
Total PV Program and On-Going Costs	\$ 24,894,120	\$ 21,132	\$ 21,660	\$ 22,202	\$ 22,757	\$ 28,048,113
Combined NPV of Program	\$ 42,084,548	\$ 8,714,321	\$ 8,932,180	\$ 9,155,484	\$ 9,384,371	\$ 161,295,756
Ratio of NPV Benefits to NPV Costs		2.7				
Cumulative Net Benefits (Payback Period)		\$ 133,823,722	\$ 142,755,901	\$ 151,911,385	\$ 161,295,756	\$ 322,591,513

AREA/PROJECT/PROGRAM	Energy Storage (Reliability Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM						
	Pre 2022	2022	2023	2024	2025	2026
	0	0	1	2	3	4

COSTS

Revenue Requirement	\$ 66,756,950	\$ -	\$ -	\$ -	\$ -	\$ 9,646,202	\$ 9,112,770
Total Program Costs	\$ 66,756,950	\$ -	\$ -	\$ -	\$ -	\$ 9,646,202	\$ 9,112,770

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries)	\$ 13,200,693	\$ -	\$ -	\$ -	\$ -	\$ 199,000	\$ 513,600
Avoided Cost of T&D Alternative (Rev. Req.)	\$ 49,704,555	\$ -	\$ -	\$ -	\$ -	\$ 5,449,554	\$ 5,115,935
Total Operational Benefits	\$ 62,905,248	\$ -	\$ -	\$ -	\$ -	\$ 5,648,554	\$ 5,629,535

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 62,905,248	\$ -	\$ -	\$ -	\$ -	\$ 5,648,554	\$ 5,629,535
Total NPV Program Costs	\$ 66,756,950	\$ -	\$ -	\$ -	\$ -	\$ 9,646,202	\$ 9,112,770
Combined NPV of Program	\$ (3,851,702)	\$ -	\$ -	\$ -	\$ -	\$ (3,997,648)	\$ (3,483,235)

Ratio of NPV Benefits to NPV Costs	0.94
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Cumulative Net Benefits (Payback Period)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ (3,997,648)	\$ (7,480,884)
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AREA/PROJECT/PROGRAM	Energy Storage (Reliability Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM						
	2027	2028	2029	2030	2031	2032
	5	6	7	8	9	10

COSTS

Revenue Requirement	\$ 66,756,950	\$ 8,585,185	\$ 8,207,011	\$ 7,884,874	\$ 7,604,767	\$ (21,255,648)	\$ 7,254,682
Total Program Costs	\$ 66,756,950	\$ 8,585,185	\$ 8,207,011	\$ 7,884,874	\$ 7,604,767	\$ (21,255,648)	\$ 7,254,682

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries)	\$ 13,200,693	\$ 554,500	\$ 659,600	\$ 656,200	\$ 739,500	\$ 813,100	\$ 854,000
Avoided Cost of T&D Alternative (Rev. Req.)	\$ 49,704,555	\$ 4,786,020	\$ 4,550,781	\$ 4,351,049	\$ 4,177,949	\$ 4,058,107	\$ 3,964,897
Total Operational Benefits	\$ 62,905,248	\$ 5,340,520	\$ 5,210,381	\$ 5,007,249	\$ 4,917,449	\$ 4,871,207	\$ 4,818,897

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 62,905,248	\$ 5,340,520	\$ 5,210,381	\$ 5,007,249	\$ 4,917,449	\$ 4,871,207	\$ 4,818,897
Total NPV Program Costs	\$ 66,756,950	\$ 8,585,185	\$ 8,207,011	\$ 7,884,874	\$ 7,604,767	\$ (21,255,648)	\$ 7,254,682
Combined NPV of Program	\$ (3,851,702)	\$ (3,244,664)	\$ (2,996,630)	\$ (2,877,625)	\$ (2,687,318)	\$ 26,126,855	\$ (2,435,785)

Ratio of NPV Benefits to NPV Costs	0.94
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Cumulative Net Benefits (Payback Period)	\$ (10,725,548)	\$ (13,722,178)	\$ (16,599,804)	\$ (19,287,122)	\$ 6,839,733	\$ 4,403,948
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AREA/PROJECT/PROGRAM	Energy Storage (Reliability Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM	YEAR					
	2033	2034	2035	2036	2037	2038
	11	12	13	14	15	16

COSTS

Revenue Requirement	\$ 66,756,950	\$ 7,100,666	\$ 6,946,662	\$ 6,792,669	\$ 6,638,689	\$ 6,484,722	\$ 6,330,767
Total Program Costs	\$ 66,756,950	\$ 7,100,666	\$ 6,946,662	\$ 6,792,669	\$ 6,638,689	\$ 6,484,722	\$ 6,330,767

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries)	\$ 13,200,693	\$ 1,060,600	\$ 1,156,300	\$ 1,031,400	\$ 1,025,900	\$ 1,159,800	\$ 1,180,200
Avoided Cost of T&D Alternative (Rev. Req.)	\$ 49,704,555	\$ 3,871,695	\$ 3,778,499	\$ 3,685,311	\$ 3,592,131	\$ 3,498,958	\$ 3,405,793
Total Operational Benefits	\$ 62,905,248	\$ 4,932,295	\$ 4,934,799	\$ 4,716,711	\$ 4,618,031	\$ 4,658,758	\$ 4,585,993

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 62,905,248	\$ 4,932,295	\$ 4,934,799	\$ 4,716,711	\$ 4,618,031	\$ 4,658,758	\$ 4,585,993
Total NPV Program Costs	\$ 66,756,950	\$ 7,100,666	\$ 6,946,662	\$ 6,792,669	\$ 6,638,689	\$ 6,484,722	\$ 6,330,767
Combined NPV of Program	\$ (3,851,702)	\$ (2,168,371)	\$ (2,011,862)	\$ (2,075,958)	\$ (2,020,659)	\$ (1,825,964)	\$ (1,744,774)

Ratio of NPV Benefits to NPV Costs	0.94
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Cumulative Net Benefits (Payback Period)	\$ 2,235,577	\$ 223,714	\$ (1,852,244)	\$ (3,872,903)	\$ (5,698,867)	\$ (7,443,641)
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AREA/PROJECT/PROGRAM	Energy Storage (Reliability Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM						
	2039	2040	2041	2042	2043	2044
	17	18	19	20	21	22

COSTS

Revenue Requirement	\$ 66,756,950	\$ 6,176,826	\$ 4,211,713	\$ 3,560,605	\$ 3,558,623	\$ 3,526,782	\$ 3,483,722
Total Program Costs	\$ 66,756,950	\$ 6,176,826	\$ 4,211,713	\$ 3,560,605	\$ 3,558,623	\$ 3,526,782	\$ 3,483,722

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries)	\$ 13,200,693	\$ 1,365,400	\$ 1,413,500	\$ 1,444,700	\$ 1,477,200	\$ 1,510,000	\$ 1,544,400
Avoided Cost of T&D Alternative (Rev. Req.)	\$ 49,704,555	\$ 3,312,636	\$ 3,219,487	\$ 3,126,348	\$ 3,033,217	\$ 2,940,095	\$ 2,846,983
Total Operational Benefits	\$ 62,905,248	\$ 4,678,036	\$ 4,632,987	\$ 4,571,048	\$ 4,510,417	\$ 4,450,095	\$ 4,391,383

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 62,905,248	\$ 4,678,036	\$ 4,632,987	\$ 4,571,048	\$ 4,510,417	\$ 4,450,095	\$ 4,391,383
Total NPV Program Costs	\$ 66,756,950	\$ 6,176,826	\$ 4,211,713	\$ 3,560,605	\$ 3,558,623	\$ 3,526,782	\$ 3,483,722
Combined NPV of Program	\$ (3,851,702)	\$ (1,498,790)	\$ 421,274	\$ 1,010,443	\$ 951,794	\$ 923,313	\$ 907,661

Ratio of NPV Benefits to NPV Costs	0.94
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Cumulative Net Benefits (Payback Period)	\$ (8,942,431)	\$ (8,521,157)	\$ (7,510,715)	\$ (6,558,921)	\$ (5,635,608)	\$ (4,727,946)
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AREA/PROJECT/PROGRAM	Energy Storage (Reliability Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM						
	2045	2046	2047	2048	2049	2050
	23	24	25	26	27	28

COSTS

Revenue Requirement	\$ 66,756,950	\$ 3,432,241	\$ 3,363,960	\$ 3,287,267	\$ 3,210,567	\$ 3,133,882	\$ 3,057,215
Total Program Costs	\$ 66,756,950	\$ 3,432,241	\$ 3,363,960	\$ 3,287,267	\$ 3,210,567	\$ 3,133,882	\$ 3,057,215

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries)	\$ 13,200,693	\$ 1,578,500	\$ 1,614,000	\$ 1,650,500	\$ 1,687,600	\$ 1,725,800	\$ 1,764,400
Avoided Cost of T&D Alternative (Rev. Req.)	\$ 49,704,555	\$ 2,753,881	\$ 2,660,789	\$ 2,567,707	\$ 2,474,636	\$ 2,381,576	\$ 2,288,527
Total Operational Benefits	\$ 62,905,248	\$ 4,332,381	\$ 4,274,789	\$ 4,218,207	\$ 4,162,236	\$ 4,107,376	\$ 4,052,927

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 62,905,248	\$ 4,332,381	\$ 4,274,789	\$ 4,218,207	\$ 4,162,236	\$ 4,107,376	\$ 4,052,927
Total NPV Program Costs	\$ 66,756,950	\$ 3,432,241	\$ 3,363,960	\$ 3,287,267	\$ 3,210,567	\$ 3,133,882	\$ 3,057,215
Combined NPV of Program	\$ (3,851,702)	\$ 900,140	\$ 910,829	\$ 930,940	\$ 951,669	\$ 973,494	\$ 995,712

Ratio of NPV Benefits to NPV Costs	0.94
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Cumulative Net Benefits (Payback Period)	\$ (3,827,807)	\$ (2,916,978)	\$ (1,986,037)	\$ (1,034,369)	\$ (60,875)	\$ 934,837
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AREA/PROJECT/PROGRAM	Energy Storage (Reliability Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

	NPV of COST/BENEFIT STREAM						TOTAL					
			2051	2052	2053	2054						
			29	30	31	32						
COSTS												
Revenue Requirement	\$	66,756,950	\$	2,980,568	\$	2,903,940	\$	2,827,332	\$	4,784,597	\$	134,833,858
Total Program Costs	\$	66,756,950	\$	2,980,568	\$	2,903,940	\$	2,827,332	\$	4,784,597	\$	134,833,858
OPERATIONAL BENEFITS												
Bulk System Benefits (Capacity, Energy, Ancillaries)	\$	13,200,693	\$	1,804,400	\$	1,845,100	\$	1,886,900	\$	1,929,500	\$	37,845,600
Avoided Cost of T&D Alternative (Rev. Req.)	\$	49,704,555	\$	2,195,490	\$	2,102,465	\$	2,009,452	\$	1,794,576	\$	99,994,542
Total Operational Benefits	\$	62,905,248	\$	3,999,890	\$	3,947,565	\$	3,896,352	\$	3,724,076	\$	137,840,142
COMBINED COSTS AND BENEFITS												
Total NPV of Benefits	\$	62,905,248	\$	3,999,890	\$	3,947,565	\$	3,896,352	\$	3,724,076	\$	137,840,142
Total NPV Program Costs	\$	66,756,950	\$	2,980,568	\$	2,903,940	\$	2,827,332	\$	4,784,597	\$	134,833,858
Combined NPV of Program	\$	(3,851,702)	\$	1,019,322	\$	1,043,625	\$	1,069,020	\$	(1,060,521)	\$	3,006,284
Ratio of NPV Benefits to NPV Costs		0.94										
Cumulative Net Benefits (Payback Period)			\$	1,954,159	\$	2,997,784	\$	4,066,804	\$	3,006,284	\$	6,012,568

MYRP PROJECT	Energy Storage (Reliability Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

Location	NPV of COST	NPV of BENEFIT	Ratio
Q2 2025 Reliability Project	\$ 18,692,728	\$ 8,979,935	0.48
Nebo	\$ 9,730,403	\$ 5,445,872	0.56
Lowgap	\$ 8,962,325	\$ 3,534,063	0.39
Q3 2025 Reliability Project	\$ 48,064,222	\$ 53,925,313	1.12
Farr's Bridge	\$ 21,973,610	\$ 11,409,516	0.52
Longtown	\$ 13,244,513	\$ 28,238,273	2.13
Rich Mountain	\$ 12,846,099	\$ 14,277,523	1.11
Total	66,756,950	62,905,248	0.94

Sensitivity Analysis	
AREA/PROJECT/PROGRAM	Energy Storage (Reliability Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEP
STATE:	NC

Component What-If Analysis*			
Capital Cost Variance Percentage		0%	
Customer Benefit Variance Percentage		0%	
BCR	NPV Costs (\$M)	NPV Benefits (\$M)	
0.94	\$ 66.8	\$	62.9

*What-if Capital variance not applied to Pre 2022 actuals

Cost Variance				
Capital Cost Variance Percentage	Customer Benefit Variance Percentage	BCR	NPV Costs (\$M)	NPV Benefits (\$M)
-50%	0%	1.88	\$ 33.4	\$ 62.9
-30%	0%	1.35	\$ 46.7	\$ 62.9
-15%	0%	1.11	\$ 56.7	\$ 62.9
0 (Baseline)	0 (Baseline)	0.94	\$ 66.8	\$ 62.9
20%	0%	0.79	\$ 80.1	\$ 62.9
50%	0%	0.63	\$ 100.1	\$ 62.9
100%	0%	0.47	\$ 133.5	\$ 62.9

Benefit Variance				
Capital Cost Variance Percentage	Customer Benefit Variance Percentage	BCR	NPV Costs (\$M)	NPV Benefits (\$M)
0%	50%	1.41	\$ 66.8	\$ 94.4
0%	30%	1.22	\$ 66.8	\$ 81.8
0%	15%	1.08	\$ 66.8	\$ 72.3
0 (Baseline)	0 (Baseline)	0.94	\$ 66.8	\$ 62.9
0%	-15%	0.80	\$ 66.8	\$ 53.5
0%	-30%	0.66	\$ 66.8	\$ 44.0
0%	-50%	0.47	\$ 66.8	\$ 31.5

Combined Cost and Benefit Variance				
Capital Cost Variance Percentage	Customer Benefit Variance Percentage	BCR	NPV Costs (\$M)	NPV Benefits (\$M)
-50%	50%	2.83	\$ 33.4	\$ 94.4
-30%	30%	1.75	\$ 46.7	\$ 81.8
-15%	15%	1.27	\$ 56.7	\$ 72.3
0 (Baseline)	0 (Baseline)	0.94	\$ 66.8	\$ 62.9
20%	-15%	0.67	\$ 80.1	\$ 53.5
50%	-30%	0.44	\$ 100.1	\$ 44.0
100%	-50%	0.24	\$ 133.5	\$ 31.5

NPV of COST/BENEFIT STREAM						
	Pre 2022	2022	2023	2024	2025	2026
	0	0	1	2	3	4

Revenue Requirement

OPERATIONAL BENEFITS

\$ 6,992,600	\$ -	\$ -	\$ -	\$ 534,839	\$ 520,745	\$ 522,796
\$ 6,992,600	\$ -	\$ -	\$ -	\$ 534,839	\$ 520,745	\$ 522,796

Total NPV of Benefits

Ratio of NPV Benefits to NPV Costs	0.98
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*Releasing more detailed granular data about a single project could put customers at a competitive disadvantage in subsequent procurements.

AREA/PROJECT/PROGRAM	Energy Storage (Critical Community Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM						
	2027	2028	2029	2030	2031	2032
	5	6	7	8	9	10

COSTS

Revenue Requirement	\$ 7,166,991	\$ 822,697	\$ 790,797	\$ 763,073	\$ 743,701	\$ (2,108,761)	\$ 713,311
Total Program Costs	\$ 7,166,991	\$ 822,697	\$ 790,797	\$ 763,073	\$ 743,701	\$ (2,108,761)	\$ 713,311

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries) & Avoided Cost of T&D Alternative (Rev. Req.)*	\$ 6,992,600	\$ 513,161	\$ 510,830	\$ 500,779	\$ 503,586	\$ 517,472	\$ 510,559
Total Operational Benefits	\$ 6,992,600	\$ 513,161	\$ 510,830	\$ 500,779	\$ 503,586	\$ 517,472	\$ 510,559

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 6,992,600	\$ 513,161	\$ 510,830	\$ 500,779	\$ 503,586	\$ 517,472	\$ 510,559
Total NPV Program Costs	\$ 7,166,991	\$ 822,697	\$ 790,797	\$ 763,073	\$ 743,701	\$ (2,108,761)	\$ 713,311
Combined NPV of Program	\$ (174,391)	\$ (309,536)	\$ (279,966)	\$ (262,294)	\$ (240,115)	\$ 2,626,233	\$ (202,753)

Ratio of NPV Benefits to NPV Costs	0.98
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Cumulative Net Benefits (Payback Period)	\$ (1,469,176)	\$ (1,749,142)	\$ (2,011,436)	\$ (2,251,551)	\$ 374,682	\$ 171,930
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*Releasing more detailed granular data about a single project could put customers at a competitive c

AREA/PROJECT/PROGRAM	Energy Storage (Critical Community Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM	YEAR					
	2033	2034	2035	2036	2037	2038
	11	12	13	14	15	16

COSTS

Revenue Requirement	\$ 7,166,991	\$ 698,118	\$ 682,926	\$ 667,736	\$ 652,546	\$ 637,358	\$ 622,171
Total Program Costs	\$ 7,166,991	\$ 698,118	\$ 682,926	\$ 667,736	\$ 652,546	\$ 637,358	\$ 622,171

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries) & Avoided Cost of T&D Alternative (Rev. Req.)*	\$ 6,992,600	\$ 558,946	\$ 575,634	\$ 538,623	\$ 525,312	\$ 557,102	\$ 547,093
Total Operational Benefits	\$ 6,992,600	\$ 558,946	\$ 575,634	\$ 538,623	\$ 525,312	\$ 557,102	\$ 547,093

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 6,992,600	\$ 558,946	\$ 575,634	\$ 538,623	\$ 525,312	\$ 557,102	\$ 547,093
Total NPV Program Costs	\$ 7,166,991	\$ 698,118	\$ 682,926	\$ 667,736	\$ 652,546	\$ 637,358	\$ 622,171
Combined NPV of Program	\$ (174,391)	\$ (139,172)	\$ (107,292)	\$ (129,113)	\$ (127,234)	\$ (80,255)	\$ (75,078)

Ratio of NPV Benefits to NPV Costs	0.98
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Cumulative Net Benefits (Payback Period)	\$ 32,758	\$ (74,535)	\$ (203,647)	\$ (330,881)	\$ (411,136)	\$ (486,214)
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*Releasing more detailed granular data about a single project could put customers at a competitive c

AREA/PROJECT/PROGRAM	Energy Storage (Critical Community Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM						
	2039	2040	2041	2042	2043	2044
	17	18	19	20	21	22

COSTS

Revenue Requirement	\$ 7,166,991	\$ 521,097	\$ 482,366	\$ 474,401	\$ 465,013	\$ 455,092	\$ 444,770
Total Program Costs	\$ 7,166,991	\$ 521,097	\$ 482,366	\$ 474,401	\$ 465,013	\$ 455,092	\$ 444,770

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries) & Avoided Cost of T&D Alternative (Rev. Req.)*	\$ 6,992,600	\$ 569,185	\$ 575,378	\$ 573,771	\$ 572,165	\$ 570,760	\$ 569,556
Total Operational Benefits	\$ 6,992,600	\$ 569,185	\$ 575,378	\$ 573,771	\$ 572,165	\$ 570,760	\$ 569,556

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 6,992,600	\$ 569,185	\$ 575,378	\$ 573,771	\$ 572,165	\$ 570,760	\$ 569,556
Total NPV Program Costs	\$ 7,166,991	\$ 521,097	\$ 482,366	\$ 474,401	\$ 465,013	\$ 455,092	\$ 444,770
Combined NPV of Program	\$ (174,391)	\$ 48,088	\$ 93,011	\$ 99,370	\$ 107,152	\$ 115,668	\$ 124,786

Ratio of NPV Benefits to NPV Costs	0.98
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Cumulative Net Benefits (Payback Period)	\$ (438,126)	\$ (345,115)	\$ (245,745)	\$ (138,593)	\$ (22,924)	\$ 101,862
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*Releasing more detailed granular data about a single project could put customers at a competitive c

AREA/PROJECT/PROGRAM	Energy Storage (Critical Community Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

NPV of COST/BENEFIT STREAM						
	2045	2046	2047	2048	2049	2050
	23	24	25	26	27	28

COSTS

Revenue Requirement	\$ 7,166,991	\$ 433,648	\$ 422,126	\$ 410,604	\$ 399,085	\$ 387,567	\$ 376,051
Total Program Costs	\$ 7,166,991	\$ 433,648	\$ 422,126	\$ 410,604	\$ 399,085	\$ 387,567	\$ 376,051

OPERATIONAL BENEFITS

Bulk System Benefits (Capacity, Energy, Ancillaries) & Avoided Cost of T&D Alternative (Rev. Req.)*	\$ 6,992,600	\$ 568,653	\$ 567,651	\$ 567,050	\$ 566,650	\$ 566,351	\$ 566,253
Total Operational Benefits	\$ 6,992,600	\$ 568,653	\$ 567,651	\$ 567,050	\$ 566,650	\$ 566,351	\$ 566,253

COMBINED COSTS AND BENEFITS

Total NPV of Benefits	\$ 6,992,600	\$ 568,653	\$ 567,651	\$ 567,050	\$ 566,650	\$ 566,351	\$ 566,253
Total NPV Program Costs	\$ 7,166,991	\$ 433,648	\$ 422,126	\$ 410,604	\$ 399,085	\$ 387,567	\$ 376,051
Combined NPV of Program	\$ (174,391)	\$ 135,005	\$ 145,525	\$ 156,445	\$ 167,565	\$ 178,784	\$ 190,202

Ratio of NPV Benefits to NPV Costs	0.98
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Cumulative Net Benefits (Payback Period)	\$ 236,868	\$ 382,393	\$ 538,838	\$ 706,403	\$ 885,187	\$ 1,075,389
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*Releasing more detailed granular data about a single project could put customers at a competitive c

AREA/PROJECT/PROGRAM	Energy Storage (Critical Community Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC
WACC:	6.55%

		NPV of COST/BENEFIT STREAM					TOTAL	
		2051		2052		2053		2054
		29	30	31	32			
COSTS								
Revenue Requirement	\$ 7,166,991	\$ 364,537	\$ 353,024	\$ 428,482	\$ -	\$ -	\$ 14,841,554	
Total Program Costs	\$ 7,166,991	\$ 364,537	\$ 353,024	\$ 428,482	\$ -	\$ -	\$ 14,841,554	
OPERATIONAL BENEFITS								
Bulk System Benefits (Capacity, Energy, Ancillaries) & Avoided Cost of T&D Alternative (Rev. Req.)*	\$ 6,992,600	\$ 566,556	\$ 566,760	\$ 556,102	\$ -	\$ -	\$ 16,460,318	
Total Operational Benefits	\$ 6,992,600	\$ 566,556	\$ 566,760	\$ 556,102	\$ -	\$ -	\$ 16,460,318	
COMBINED COSTS AND BENEFITS								
Total NPV of Benefits	\$ 6,992,600	\$ 566,556	\$ 566,760	\$ 556,102	\$ -	\$ -	\$ 16,460,318	
Total NPV Program Costs	\$ 7,166,991	\$ 364,537	\$ 353,024	\$ 428,482	\$ -	\$ -	\$ 14,841,554	
Combined NPV of Program	\$ (174,391)	\$ 202,019	\$ 213,735	\$ 127,620	\$ -	\$ -	\$ 1,618,763	
Ratio of NPV Benefits to NPV Costs		0.98						
Cumulative Net Benefits (Payback Period)		\$ 1,277,408	\$ 1,491,143	\$ 1,618,763	\$ 1,618,763	\$ -	\$ 3,237,527	

*Releasing more detailed granular data about a single project could put customers at a competitive c

MYRP PROJECT	Energy Storage (Critical Community Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

Location	NPV of COST	NPV of BENEFIT	Ratio
Novant Health	\$ 7,166,991	\$ 6,992,600	0.98
Total	7,166,991	6,992,600	0.98

Sensitivity Analysis	
AREA/PROJECT/PROGRAM	Energy Storage (Critical Community Projects)
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEP
STATE:	NC

Component What-If Analysis*		
Capital Cost Variance Percentage		0%
Customer Benefit Variance Percentage		0%
BCR	NPV Costs (\$M)	NPV Benefits (\$M)
0.98	\$ 7.2	\$ 7.0

*What-if Capital variance not applied to Pre 2022 actuals

Cost Variance				
Capital Cost Variance Percentage	Customer Benefit Variance Percentage	BCR	NPV Costs (\$M)	NPV Benefits (\$M)
-50%	0%	1.95	\$ 3.6	\$ 7.0
-30%	0%	1.39	\$ 5.0	\$ 7.0
-15%	0%	1.15	\$ 6.1	\$ 7.0
0 (Baseline)	0 (Baseline)	0.98	\$ 7.2	\$ 7.0
20%	0%	0.81	\$ 8.6	\$ 7.0
50%	0%	0.65	\$ 10.8	\$ 7.0
100%	0%	0.49	\$ 14.3	\$ 7.0

Benefit Variance				
Capital Cost Variance Percentage	Customer Benefit Variance Percentage	BCR	NPV Costs (\$M)	NPV Benefits (\$M)
0%	50%	1.46	\$ 7.2	\$ 10.5
0%	30%	1.27	\$ 7.2	\$ 9.1
0%	15%	1.12	\$ 7.2	\$ 8.0
0 (Baseline)	0 (Baseline)	0.98	\$ 7.2	\$ 7.0
0%	-15%	0.83	\$ 7.2	\$ 5.9
0%	-30%	0.68	\$ 7.2	\$ 4.9
0%	-50%	0.49	\$ 7.2	\$ 3.5

Combined Cost and Benefit Variance				
Capital Cost Variance Percentage	Customer Benefit Variance Percentage	BCR	NPV Costs (\$M)	NPV Benefits (\$M)
-50%	50%	2.93	\$ 3.6	\$ 10.5
-30%	30%	1.81	\$ 5.0	\$ 9.1
-15%	15%	1.32	\$ 6.1	\$ 8.0
0 (Baseline)	0 (Baseline)	0.98	\$ 7.2	\$ 7.0
20%	-15%	0.69	\$ 8.6	\$ 5.9
50%	-30%	0.46	\$ 10.8	\$ 4.9
100%	-50%	0.24	\$ 14.3	\$ 3.5

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AREA/PROJECT/PROGRAM	Distribution H&R Lateral - 7a
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM										
	2022	2023	2024	2025	2026	2027	2028	2029	2030	
	0	1	2	3	4	5	6	7	8	

COSTS

Program Capital Costs	\$ 319,677,077	\$ 799,642	\$ 50,301,228	\$ 134,260,745	\$ 128,432,855	\$ 60,878,918	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 35,073,081	\$ 87,732	\$ 5,518,754	\$ 14,730,296	\$ 14,090,894	\$ 6,679,275	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 354,750,158	\$ 887,374	\$ 55,819,982	\$ 148,991,041	\$ 142,523,749	\$ 67,558,193	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 6,797,936	\$ 17,004	\$ 1,069,656	\$ 2,855,056	\$ 2,731,126	\$ 1,294,591	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 361,548,093	\$ 904,378	\$ 56,889,638	\$ 151,846,097	\$ 145,254,875	\$ 68,852,784	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 9,487,387	\$ -	\$ -	\$ -	\$ 120,307	\$ 353,080	\$ 749,347	\$ 768,080	\$ 787,282	\$ 806,965
Total Operational Benefits	\$ 9,487,387	\$ -	\$ -	\$ -	\$ 120,307	\$ 353,080	\$ 749,347	\$ 768,080	\$ 787,282	\$ 806,965

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 471,647	\$ -	\$ -	\$ -	\$ 5,700	\$ 17,145	\$ 37,297	\$ 38,230	\$ 39,186	\$ 40,165
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 11,134,278	\$ -	\$ -	\$ -	\$ 134,550	\$ 404,754	\$ 880,489	\$ 902,501	\$ 925,064	\$ 948,190
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Avoided Momentary Outage Benefits (Non-MED & MED) - Residential Customers	\$ 20,786,747	\$ -	\$ -	\$ -	\$ 251,193	\$ 755,641	\$ 1,643,797	\$ 1,684,892	\$ 1,727,015	\$ 1,770,190
Avoided Momentary Outage Benefits (Non-MED & MED) - Small C&I Customers	\$ 242,425,193	\$ -	\$ -	\$ -	\$ 2,929,537	\$ 8,812,650	\$ 19,170,768	\$ 19,650,037	\$ 20,141,288	\$ 20,644,820
Avoided Momentary Outage Benefits (Non-MED & MED) - Medium & Large C&I Customers	\$ 614,188,938	\$ -	\$ -	\$ -	\$ 7,422,040	\$ 22,327,021	\$ 48,569,514	\$ 49,783,751	\$ 51,028,345	\$ 52,304,054
Total Customer Benefits	\$ 889,006,803	\$ -	\$ -	\$ -	\$ 10,743,020	\$ 32,317,210	\$ 70,301,865	\$ 72,059,412	\$ 73,860,897	\$ 75,707,420

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 9,487,387	\$ -	\$ -	\$ -	\$ 120,307	\$ 353,080	\$ 749,347	\$ 768,080	\$ 787,282	\$ 806,965
Total PV of Customer Benefits	\$ 889,006,803	\$ -	\$ -	\$ -	\$ 10,743,020	\$ 32,317,210	\$ 70,301,865	\$ 72,059,412	\$ 73,860,897	\$ 75,707,420
Total PV of Combined Benefits	\$ 898,494,190	\$ -	\$ -	\$ -	\$ 10,863,327	\$ 32,670,291	\$ 71,051,212	\$ 72,827,492	\$ 74,648,180	\$ 76,514,384
Total PV Program and On-Going Costs	\$ 361,548,093	\$ 904,378	\$ 56,889,638	\$ 151,846,097	\$ 145,254,875	\$ 68,852,784	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 536,946,097	\$ (904,378)	\$ (56,889,638)	\$ (151,846,097)	\$ (134,391,548)	\$ (36,182,493)	\$ 71,051,212	\$ 72,827,492	\$ 74,648,180	\$ 76,514,384

Ratio of NPV Benefits to NPV Costs	2.5
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Cumulative Net Benefits (Payback Period)	\$ (904,378)	\$ (57,794,016)	\$ (209,640,113)	\$ (344,031,661)	\$ (380,214,154)	\$ (309,162,942)	\$ (236,335,450)	\$ (161,687,270)	\$ (85,172,886)
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Oct 19 2022

AREA/PROJECT/PROGRAM	Distribution H&R Lateral - 7a
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM	YEAR								
	2031	2032	2033	2034	2035	2036	2037	2038	2039
	9	10	11	12	13	14	15	16	17

COSTS

Program Capital Costs	\$ 319,677,077	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 35,073,081	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 354,750,158	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 6,797,936	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 361,548,093	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 9,487,387	\$ 827,139	\$ 847,817	\$ 869,013	\$ 890,738	\$ 913,006	\$ 935,831	\$ 959,227	\$ 983,208	\$ 1,007,788
Total Operational Benefits	\$ 9,487,387	\$ 827,139	\$ 847,817	\$ 869,013	\$ 890,738	\$ 913,006	\$ 935,831	\$ 959,227	\$ 983,208	\$ 1,007,788

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 471,647	\$ 41,169	\$ 42,199	\$ 43,254	\$ 44,335	\$ 45,443	\$ 46,579	\$ 47,744	\$ 48,937	\$ 50,161
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 11,134,278	\$ 971,895	\$ 996,192	\$ 1,021,097	\$ 1,046,624	\$ 1,072,790	\$ 1,099,610	\$ 1,127,100	\$ 1,155,278	\$ 1,184,160
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Avoided Momentary Outage Benefits (Non-MED & MED) - Residential Customers	\$ 20,786,747	\$ 1,814,445	\$ 1,859,806	\$ 1,906,301	\$ 1,953,959	\$ 2,002,808	\$ 2,052,878	\$ 2,104,200	\$ 2,156,805	\$ 2,210,725
Avoided Momentary Outage Benefits (Non-MED & MED) - Small C&I Customers	\$ 242,425,193	\$ 21,160,941	\$ 21,689,965	\$ 22,232,214	\$ 22,788,019	\$ 23,357,719	\$ 23,941,662	\$ 24,540,204	\$ 25,153,709	\$ 25,782,552
Avoided Momentary Outage Benefits (Non-MED & MED) - Medium & Large C&I Customers	\$ 614,188,938	\$ 53,611,655	\$ 54,951,947	\$ 56,325,745	\$ 57,733,889	\$ 59,177,236	\$ 60,656,667	\$ 62,173,084	\$ 63,727,411	\$ 65,320,596
Total Customer Benefits	\$ 889,006,803	\$ 77,600,105	\$ 79,540,108	\$ 81,528,610	\$ 83,566,826	\$ 85,655,996	\$ 87,797,396	\$ 89,992,331	\$ 92,242,139	\$ 94,548,193

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 9,487,387	\$ 827,139	\$ 847,817	\$ 869,013	\$ 890,738	\$ 913,006	\$ 935,831	\$ 959,227	\$ 983,208	\$ 1,007,788
Total PV of Customer Benefits	\$ 889,006,803	\$ 77,600,105	\$ 79,540,108	\$ 81,528,610	\$ 83,566,826	\$ 85,655,996	\$ 87,797,396	\$ 89,992,331	\$ 92,242,139	\$ 94,548,193
Total PV of Combined Benefits	\$ 898,494,190	\$ 78,427,244	\$ 80,387,925	\$ 82,397,623	\$ 84,457,564	\$ 86,569,003	\$ 88,733,228	\$ 90,951,558	\$ 93,225,347	\$ 95,555,981
Total PV Program and On-Going Costs	\$ 361,548,093	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 536,946,097	\$ 78,427,244	\$ 80,387,925	\$ 82,397,623	\$ 84,457,564	\$ 86,569,003	\$ 88,733,228	\$ 90,951,558	\$ 93,225,347	\$ 95,555,981

Ratio of NPV Benefits to NPV Costs	2.5
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Cumulative Net Benefits (Payback Period)	\$ (6,745,642)	\$ 73,642,283	\$ 156,039,906	\$ 240,497,469	\$ 327,066,472	\$ 415,799,700	\$ 506,751,258	\$ 599,976,605	\$ 695,532,586
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Oct 19 2022

AREA/PROJECT/PROGRAM	Distribution H&R Lateral - 7a
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

	NPV of COST/BENEFIT STREAM									
	2040	2041	2042	2043	2044	2045	2046	2047	2048	
	18	19	20	21	22	23	24	25	26	
COSTS										
Program Capital Costs	\$ 319,677,077	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 35,073,081	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 354,750,158	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 6,797,936	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 361,548,093	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OPERATIONAL BENEFITS										
Avoided Outage Benefits	\$ 9,487,387	\$ 1,032,983	\$ 1,058,807	\$ 1,085,278	\$ 1,112,410	\$ 1,140,220	\$ 1,168,725	\$ 1,197,943	\$ 1,227,892	\$ 1,258,589
Total Operational Benefits	\$ 9,487,387	\$ 1,032,983	\$ 1,058,807	\$ 1,085,278	\$ 1,112,410	\$ 1,140,220	\$ 1,168,725	\$ 1,197,943	\$ 1,227,892	\$ 1,258,589
CUSTOMER BENEFITS										
Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 471,647	\$ 51,415	\$ 52,700	\$ 54,018	\$ 55,368	\$ 56,752	\$ 58,171	\$ 59,625	\$ 61,116	\$ 62,644
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 11,134,278	\$ 1,213,763	\$ 1,244,108	\$ 1,275,210	\$ 1,307,091	\$ 1,339,768	\$ 1,373,262	\$ 1,407,594	\$ 1,442,783	\$ 1,478,853
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Avoided Momentary Outage Benefits (Non-MED & MED) - Residential Customers	\$ 20,786,747	\$ 2,265,993	\$ 2,322,643	\$ 2,380,709	\$ 2,440,227	\$ 2,501,232	\$ 2,563,763	\$ 2,627,857	\$ 2,693,553	\$ 2,760,892
Avoided Momentary Outage Benefits (Non-MED & MED) - Small C&I Customers	\$ 242,425,193	\$ 26,427,116	\$ 27,087,793	\$ 27,764,988	\$ 28,459,113	\$ 29,170,591	\$ 29,899,856	\$ 30,647,352	\$ 31,413,536	\$ 32,198,874
Avoided Momentary Outage Benefits (Non-MED & MED) - Medium & Large C&I Customers	\$ 614,188,938	\$ 66,953,611	\$ 68,627,451	\$ 70,343,137	\$ 72,101,716	\$ 73,904,259	\$ 75,751,865	\$ 77,645,662	\$ 79,586,803	\$ 81,576,473
Total Customer Benefits	\$ 889,006,803	\$ 96,911,898	\$ 99,334,695	\$ 101,818,063	\$ 104,363,514	\$ 106,972,602	\$ 109,646,917	\$ 112,388,090	\$ 115,197,792	\$ 118,077,737
COMBINED COSTS AND BENEFITS										
Total PV of Operational Benefits	\$ 9,487,387	\$ 1,032,983	\$ 1,058,807	\$ 1,085,278	\$ 1,112,410	\$ 1,140,220	\$ 1,168,725	\$ 1,197,943	\$ 1,227,892	\$ 1,258,589
Total PV of Customer Benefits	\$ 889,006,803	\$ 96,911,898	\$ 99,334,695	\$ 101,818,063	\$ 104,363,514	\$ 106,972,602	\$ 109,646,917	\$ 112,388,090	\$ 115,197,792	\$ 118,077,737
Total PV of Combined Benefits	\$ 898,494,190	\$ 97,944,881	\$ 100,393,503	\$ 102,903,340	\$ 105,475,924	\$ 108,112,822	\$ 110,815,642	\$ 113,586,033	\$ 116,425,684	\$ 119,336,326
Total PV Program and On-Going Costs	\$ 361,548,093	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 536,946,097	\$ 97,944,881	\$ 100,393,503	\$ 102,903,340	\$ 105,475,924	\$ 108,112,822	\$ 110,815,642	\$ 113,586,033	\$ 116,425,684	\$ 119,336,326
Ratio of NPV Benefits to NPV Costs										
Cumulative Net Benefits (Payback Period)		\$ 793,477,467	\$ 893,870,969	\$ 996,774,310	\$ 1,102,250,233	\$ 1,210,363,055	\$ 1,321,178,697	\$ 1,434,764,730	\$ 1,551,190,415	\$ 1,670,526,741

AREA/PROJECT/PROGRAM	Distribution H&R Lateral - 7a
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

		NPV of COST/BENEFIT STREAM					TOTAL
			2049	2050	2051	2052	
			27	28	29	30	
COSTS							
Program Capital Costs		\$ 319,677,077	\$ -	\$ -	\$ -	\$ -	\$ 374,673,388
Program Capital Contingency Costs		\$ 35,073,081	\$ -	\$ -	\$ -	\$ -	\$ 41,106,951
Total Program Capital Costs		\$ 354,750,158	\$ -	\$ -	\$ -	\$ -	\$ 415,780,339
Program O&M Costs		\$ 6,797,936	\$ -	\$ -	\$ -	\$ -	\$ 7,967,433
Total Program Costs		\$ 361,548,093	\$ -	\$ -	\$ -	\$ -	\$ 423,747,772
		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OPERATIONAL BENEFITS							
Avoided Outage Benefits		\$ 9,487,387	\$ 1,290,054	\$ 1,322,305	\$ 1,355,363	\$ 1,389,247	\$ 27,458,645
Total Operational Benefits		\$ 9,487,387	\$ 1,290,054	\$ 1,322,305	\$ 1,355,363	\$ 1,389,247	\$ 27,458,645
CUSTOMER BENEFITS							
Avoided Sustained Outage Benefits (Non-MED) - Residential Customers		\$ 471,647	\$ 64,210	\$ 65,815	\$ 67,461	\$ 69,147	\$ 1,365,988
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers		\$ 11,134,278	\$ 1,515,824	\$ 1,553,720	\$ 1,592,563	\$ 1,632,377	\$ 32,247,208
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
							\$ -
Avoided Momentary Outage Benefits (Non-MED & MED) - Residential Customers		\$ 20,786,747	\$ 2,829,915	\$ 2,900,663	\$ 2,973,179	\$ 3,047,509	\$ 60,202,787
Avoided Momentary Outage Benefits (Non-MED & MED) - Small C&I Customers		\$ 242,425,193	\$ 33,003,846	\$ 33,828,942	\$ 34,674,666	\$ 35,541,532	\$ 702,114,292
Avoided Momentary Outage Benefits (Non-MED & MED) - Medium & Large C&I Customers		\$ 614,188,938	\$ 83,615,885	\$ 85,706,282	\$ 87,848,939	\$ 90,045,163	\$ 1,778,820,201
							\$ -
Total Customer Benefits		\$ 889,006,803	\$ 121,029,680	\$ 124,055,422	\$ 127,156,808	\$ 130,335,728	\$ 2,574,750,476
COMBINED COSTS AND BENEFITS							
Total PV of Operational Benefits		\$ 9,487,387	\$ 1,290,054	\$ 1,322,305	\$ 1,355,363	\$ 1,389,247	\$ 27,458,645
Total PV of Customer Benefits		\$ 889,006,803	\$ 121,029,680	\$ 124,055,422	\$ 127,156,808	\$ 130,335,728	\$ 2,574,750,476
Total PV of Combined Benefits		\$ 898,494,190	\$ 122,319,734	\$ 125,377,728	\$ 128,512,171	\$ 131,724,975	\$ 2,602,209,121
Total PV Program and On-Going Costs		\$ 361,548,093	\$ -	\$ -	\$ -	\$ -	\$ 423,747,772
Combined NPV of Program		\$ 536,946,097	\$ 122,319,734	\$ 125,377,728	\$ 128,512,171	\$ 131,724,975	\$ 2,178,461,349
Ratio of NPV Benefits to NPV Costs		2.5					
Cumulative Net Benefits (Payback Period)		\$ 1,792,846,475 \$ 1,918,224,203 \$ 2,046,736,374 \$ 2,178,461,349					\$ 4,356,922,698

AREA/PROJECT/PROGRAM	Distribution H&R Public Int. - 7c
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM						
	2022	2023	2024	2025	2026	2027
	0	1	2	3	4	5

COSTS

Program Capital Costs	\$ 71,083,834	\$ 431,505	\$ 14,618,638	\$ 28,913,803	\$ 29,479,475	\$ 9,143,253	\$ -
Program Capital Contingency Costs	\$ 7,717,138	\$ 46,846	\$ 1,587,056	\$ 3,138,995	\$ 3,200,406	\$ 992,627	\$ -
Total Program Capital Costs	\$ 78,800,972	\$ 478,350	\$ 16,205,695	\$ 32,052,798	\$ 32,679,881	\$ 10,135,880	\$ -
Program O&M Costs	\$ 1,507,044	\$ 9,148	\$ 309,929	\$ 613,000	\$ 624,993	\$ 193,846	\$ -
Total Program Costs	\$ 80,308,016	\$ 487,499	\$ 16,515,623	\$ 32,665,798	\$ 33,304,874	\$ 10,329,725	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,527,692	\$ -	\$ -	\$ -	\$ 14,190	\$ 63,112	\$ 120,615
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 34,332,625	\$ -	\$ -	\$ -	\$ 318,910	\$ 1,418,347	\$ 2,710,654
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 64,086,067	\$ -	\$ -	\$ -	\$ 595,284	\$ 2,647,519	\$ 5,059,769
Total Customer Benefits	\$ 99,946,384	\$ -	\$ -	\$ -	\$ 928,384	\$ 4,128,978	\$ 7,891,039

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PV of Customer Benefits	\$ 99,946,384	\$ -	\$ -	\$ -	\$ 928,384	\$ 4,128,978	\$ 7,891,039
Total PV of Combined Benefits	\$ 99,946,384	\$ -	\$ -	\$ -	\$ 928,384	\$ 4,128,978	\$ 7,891,039
Total PV Program and On-Going Costs	\$ 80,308,016	\$ 487,499	\$ 16,515,623	\$ 32,665,798	\$ 33,304,874	\$ 10,329,725	\$ -
Combined NPV of Program	\$ 19,638,369	\$ (487,499)	\$ (16,515,623)	\$ (32,665,798)	\$ (32,376,490)	\$ (6,200,748)	\$ 7,891,039

Ratio of NPV Benefits to NPV Costs	1.2
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AREA/PROJECT/PROGRAM	Distribution H&R Public Int. - 7c
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM						
	2028	2029	2030	2031	2032	2033
	6	7	8	9	10	11

COSTS

Program Capital Costs	\$ 71,083,834	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 7,717,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 78,800,972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 1,507,044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 80,308,016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,527,692	\$ 123,631	\$ 126,722	\$ 129,890	\$ 133,137	\$ 136,465	\$ 139,877
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 34,332,625	\$ 2,778,420	\$ 2,847,881	\$ 2,919,078	\$ 2,992,055	\$ 3,066,856	\$ 3,143,528
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 64,086,067	\$ 5,186,263	\$ 5,315,920	\$ 5,448,818	\$ 5,585,038	\$ 5,724,664	\$ 5,867,781
Total Customer Benefits	\$ 99,946,384	\$ 8,088,315	\$ 8,290,523	\$ 8,497,786	\$ 8,710,230	\$ 8,927,986	\$ 9,151,186

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total PV of Customer Benefits	\$ 99,946,384	\$ 8,088,315	\$ 8,290,523	\$ 8,497,786	\$ 8,710,230	\$ 8,927,986	\$ 9,151,186
Total PV of Combined Benefits	\$ 99,946,384	\$ 8,088,315	\$ 8,290,523	\$ 8,497,786	\$ 8,710,230	\$ 8,927,986	\$ 9,151,186
Total PV Program and On-Going Costs	\$ 80,308,016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 19,638,369	\$ 8,088,315	\$ 8,290,523	\$ 8,497,786	\$ 8,710,230	\$ 8,927,986	\$ 9,151,186

Ratio of NPV Benefits to NPV Costs	1.2
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AREA/PROJECT/PROGRAM	Distribution H&R Public Int. - 7c
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM	YEAR					
	2034	2035	2036	2037	2038	2039
	12	13	14	15	16	17

COSTS

Program Capital Costs	\$ 71,083,834	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 7,717,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 78,800,972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 1,507,044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 80,308,016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,527,692	\$ 143,374	\$ 146,958	\$ 150,632	\$ 154,398	\$ 158,258	\$ 162,214	
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 34,332,625	\$ 3,222,116	\$ 3,302,669	\$ 3,385,235	\$ 3,469,866	\$ 3,556,613	\$ 3,645,528	
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 64,086,067	\$ 6,014,476	\$ 6,164,837	\$ 6,318,958	\$ 6,476,932	\$ 6,638,856	\$ 6,804,827	
Total Customer Benefits	\$ 99,946,384	\$ 9,379,965	\$ 9,614,464	\$ 9,854,826	\$ 10,101,197	\$ 10,353,727	\$ 10,612,570	

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total PV of Customer Benefits	\$ 99,946,384	\$ 9,379,965	\$ 9,614,464	\$ 9,854,826	\$ 10,101,197	\$ 10,353,727	\$ 10,612,570	
Total PV of Combined Benefits	\$ 99,946,384	\$ 9,379,965	\$ 9,614,464	\$ 9,854,826	\$ 10,101,197	\$ 10,353,727	\$ 10,612,570	
Total PV Program and On-Going Costs	\$ 80,308,016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Combined NPV of Program	\$ 19,638,369	\$ 9,379,965	\$ 9,614,464	\$ 9,854,826	\$ 10,101,197	\$ 10,353,727	\$ 10,612,570	

Ratio of NPV Benefits to NPV Costs	1.2
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AREA/PROJECT/PROGRAM	Distribution H&R Public Int. - 7c
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM						
	2040	2041	2042	2043	2044	2045
	18	19	20	21	22	23

COSTS

Program Capital Costs	\$ 71,083,834	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 7,717,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 78,800,972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 1,507,044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 80,308,016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,527,692	\$ 166,270	\$ 170,427	\$ 174,687	\$ 179,054	\$ 183,531	\$ 188,119	
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 34,332,625	\$ 3,736,667	\$ 3,830,083	\$ 3,925,835	\$ 4,023,981	\$ 4,124,581	\$ 4,227,695	
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 64,086,067	\$ 6,974,948	\$ 7,149,321	\$ 7,328,054	\$ 7,511,256	\$ 7,699,037	\$ 7,891,513	
Total Customer Benefits	\$ 99,946,384	\$ 10,877,884	\$ 11,149,831	\$ 11,428,577	\$ 11,714,291	\$ 12,007,149	\$ 12,307,327	

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total PV of Customer Benefits	\$ 99,946,384	\$ 10,877,884	\$ 11,149,831	\$ 11,428,577	\$ 11,714,291	\$ 12,007,149	\$ 12,307,327	
Total PV of Combined Benefits	\$ 99,946,384	\$ 10,877,884	\$ 11,149,831	\$ 11,428,577	\$ 11,714,291	\$ 12,007,149	\$ 12,307,327	
Total PV Program and On-Going Costs	\$ 80,308,016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Combined NPV of Program	\$ 19,638,369	\$ 10,877,884	\$ 11,149,831	\$ 11,428,577	\$ 11,714,291	\$ 12,007,149	\$ 12,307,327	

Ratio of NPV Benefits to NPV Costs	1.2
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AREA/PROJECT/PROGRAM	Distribution H&R Public Int. - 7c
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM						
	2046	2047	2048	2049	2050	2051
	24	25	26	27	28	29

COSTS

Program Capital Costs	\$ 71,083,834	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 7,717,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 78,800,972	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 1,507,044	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 80,308,016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,527,692	\$ 192,822	\$ 197,642	\$ 202,584	\$ 207,648	\$ 212,839	\$ 218,160	
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 34,332,625	\$ 4,333,388	\$ 4,441,722	\$ 4,552,765	\$ 4,666,585	\$ 4,783,249	\$ 4,902,830	
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 64,086,067	\$ 8,088,801	\$ 8,291,021	\$ 8,498,296	\$ 8,710,754	\$ 8,928,523	\$ 9,151,736	
Total Customer Benefits	\$ 99,946,384	\$ 12,615,010	\$ 12,930,386	\$ 13,253,645	\$ 13,584,987	\$ 13,924,611	\$ 14,272,726	

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total PV of Customer Benefits	\$ 99,946,384	\$ 12,615,010	\$ 12,930,386	\$ 13,253,645	\$ 13,584,987	\$ 13,924,611	\$ 14,272,726	
Total PV of Combined Benefits	\$ 99,946,384	\$ 12,615,010	\$ 12,930,386	\$ 13,253,645	\$ 13,584,987	\$ 13,924,611	\$ 14,272,726	
Total PV Program and On-Going Costs	\$ 80,308,016	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Combined NPV of Program	\$ 19,638,369	\$ 12,615,010	\$ 12,930,386	\$ 13,253,645	\$ 13,584,987	\$ 13,924,611	\$ 14,272,726	

Ratio of NPV Benefits to NPV Costs	1.2
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AREA/PROJECT/PROGRAM	Distribution H&R Public Int. - 7c
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM	
	2052
	30

COSTS

Program Capital Costs	\$ 71,083,834	\$ -
Program Capital Contingency Costs	\$ 7,717,138	\$ -
Total Program Capital Costs	\$ 78,800,972	\$ -
Program O&M Costs	\$ 1,507,044	\$ -
Total Program Costs	\$ 80,308,016	\$ -
	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ -	\$ -
Total Operational Benefits	\$ -	\$ -

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,527,692	\$ 223,614
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 34,332,625	\$ 5,025,401
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 64,086,067	\$ 9,380,529
Total Customer Benefits	\$ 99,946,384	\$ 14,629,545

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ -	\$ -
Total PV of Customer Benefits	\$ 99,946,384	\$ 14,629,545
Total PV of Combined Benefits	\$ 99,946,384	\$ 14,629,545
Total PV Program and On-Going Costs	\$ 80,308,016	\$ -
Combined NPV of Program	\$ 19,638,369	\$ 14,629,545

Ratio of NPV Benefits to NPV Costs	1.2
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AREA/PROJECT/PROGRAM	Distribution H&R Storm - 7b
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM							
	2022	2023	2024	2025	2026	2027	2028
	0	1	2	3	4	5	6

COSTS

Program Capital Costs	\$ 36,974,775	\$ -	\$ 4,002,757	\$ 13,664,601	\$ 15,077,677	\$ 11,235,699	\$ -	\$ -
Program Capital Contingency Costs	\$ 4,067,225	\$ -	\$ 440,303	\$ 1,503,106	\$ 1,658,544	\$ 1,235,927	\$ -	\$ -
Total Program Capital Costs	\$ 41,042,000	\$ -	\$ 4,443,060	\$ 15,167,707	\$ 16,736,221	\$ 12,471,626	\$ -	\$ -
Program O&M Costs	\$ 791,975	\$ -	\$ 85,736	\$ 292,687	\$ 322,954	\$ 240,661	\$ -	\$ -
Total Program Costs	\$ 41,833,976	\$ -	\$ 4,528,797	\$ 15,460,394	\$ 17,059,175	\$ 12,712,287	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 2,201,659	\$ -	\$ -	\$ -	\$ 11,560	\$ 67,571	\$ 175,923	\$ 180,321
Total Operational Benefits	\$ 2,201,659	\$ -	\$ -	\$ -	\$ 11,560	\$ 67,571	\$ 175,923	\$ 180,321

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 451,898	\$ -	\$ -	\$ -	\$ 2,260	\$ 13,542	\$ 36,137	\$ 37,041
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 12,215,374	\$ -	\$ -	\$ -	\$ 61,095	\$ 366,046	\$ 976,838	\$ 1,001,259
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 20,927,566	\$ -	\$ -	\$ -	\$ 104,669	\$ 627,115	\$ 1,673,533	\$ 1,715,372
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$ 1,463,999	\$ -	\$ -	\$ -	\$ 7,322	\$ 43,870	\$ 117,073	\$ 120,000
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$ 56,279,522	\$ -	\$ -	\$ -	\$ 281,482	\$ 1,686,470	\$ 4,500,555	\$ 4,613,069
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$ 74,405,811	\$ -	\$ -	\$ -	\$ 372,141	\$ 2,229,642	\$ 5,950,076	\$ 6,098,828
Total Customer Benefits	\$ 165,744,170	\$ -	\$ -	\$ -	\$ 828,971	\$ 4,966,685	\$ 13,254,213	\$ 13,585,568

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 2,201,659	\$ -	\$ -	\$ -	\$ 11,560	\$ 67,571	\$ 175,923	\$ 180,321
Total PV of Customer Benefits	\$ 165,744,170	\$ -	\$ -	\$ -	\$ 828,971	\$ 4,966,685	\$ 13,254,213	\$ 13,585,568
Total PV of Combined Benefits	\$ 167,945,829	\$ -	\$ -	\$ -	\$ 840,530	\$ 5,034,255	\$ 13,430,136	\$ 13,765,889
Total PV Program and On-Going Costs	\$ 41,833,976	\$ -	\$ 4,528,797	\$ 15,460,394	\$ 17,059,175	\$ 12,712,287	\$ -	\$ -
Combined NPV of Program	\$ 126,111,853	\$ -	\$ (4,528,797)	\$ (15,460,394)	\$ (16,218,645)	\$ (7,678,032)	\$ 13,430,136	\$ 13,765,889

Ratio of NPV Benefits to NPV Costs	4.0
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Cumulative Net Benefits (Payback Period)	\$ -	\$ (4,528,797)	\$ (19,989,191)	\$ (36,207,835)	\$ (43,885,867)	\$ (30,455,732)	\$ (16,689,843)
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AREA/PROJECT/PROGRAM	Distribution H&R Storm - 7b
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM							
	2029	2030	2031	2032	2033	2034	2035
	7	8	9	10	11	12	13

COSTS

Program Capital Costs	\$ 36,974,775	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 4,067,225	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 41,042,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 791,975	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 41,833,976	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 2,201,659	\$ 184,829	\$ 189,450	\$ 194,186	\$ 199,041	\$ 204,017	\$ 209,117	\$ 214,345
Total Operational Benefits	\$ 2,201,659	\$ 184,829	\$ 189,450	\$ 194,186	\$ 199,041	\$ 204,017	\$ 209,117	\$ 214,345

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 451,898	\$ 37,967	\$ 38,916	\$ 39,889	\$ 40,886	\$ 41,908	\$ 42,956	\$ 44,030
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 12,215,374	\$ 1,026,290	\$ 1,051,947	\$ 1,078,246	\$ 1,105,202	\$ 1,132,832	\$ 1,161,153	\$ 1,190,182
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 20,927,566	\$ 1,758,256	\$ 1,802,212	\$ 1,847,268	\$ 1,893,449	\$ 1,940,786	\$ 1,989,305	\$ 2,039,038
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$ 1,463,999	\$ 123,000	\$ 126,075	\$ 129,227	\$ 132,457	\$ 135,769	\$ 139,163	\$ 142,642
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$ 56,279,522	\$ 4,728,396	\$ 4,846,605	\$ 4,967,771	\$ 5,091,965	\$ 5,219,264	\$ 5,349,746	\$ 5,483,489
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$ 74,405,811	\$ 6,251,299	\$ 6,407,581	\$ 6,567,771	\$ 6,731,965	\$ 6,900,264	\$ 7,072,771	\$ 7,249,590
Total Customer Benefits	\$ 165,744,170	\$ 13,925,207	\$ 14,273,337	\$ 14,630,171	\$ 14,995,925	\$ 15,370,823	\$ 15,755,094	\$ 16,148,971

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 2,201,659	\$ 184,829	\$ 189,450	\$ 194,186	\$ 199,041	\$ 204,017	\$ 209,117	\$ 214,345
Total PV of Customer Benefits	\$ 165,744,170	\$ 13,925,207	\$ 14,273,337	\$ 14,630,171	\$ 14,995,925	\$ 15,370,823	\$ 15,755,094	\$ 16,148,971
Total PV of Combined Benefits	\$ 167,945,829	\$ 14,110,036	\$ 14,462,787	\$ 14,824,357	\$ 15,194,966	\$ 15,574,840	\$ 15,964,211	\$ 16,363,316
Total PV Program and On-Going Costs	\$ 41,833,976	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 126,111,853	\$ 14,110,036	\$ 14,462,787	\$ 14,824,357	\$ 15,194,966	\$ 15,574,840	\$ 15,964,211	\$ 16,363,316

Ratio of NPV Benefits to NPV Costs	4.0
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Cumulative Net Benefits (Payback Period)	\$ (2,579,806)	\$ 11,882,981	\$ 26,707,338	\$ 41,902,303	\$ 57,477,143	\$ 73,441,354	\$ 89,804,670
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AREA/PROJECT/PROGRAM	Distribution H&R Storm - 7b
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM	YEAR						
	2036	2037	2038	2039	2040	2041	2042
	14	15	16	17	18	19	20

COSTS

Program Capital Costs	\$ 36,974,775	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 4,067,225	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 41,042,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 791,975	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 41,833,976	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 2,201,659	\$ 219,704	\$ 225,196	\$ 230,826	\$ 236,597	\$ 242,512	\$ 248,575	\$ 254,789
Total Operational Benefits	\$ 2,201,659	\$ 219,704	\$ 225,196	\$ 230,826	\$ 236,597	\$ 242,512	\$ 248,575	\$ 254,789

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 451,898	\$ 45,131	\$ 46,259	\$ 47,415	\$ 48,601	\$ 49,816	\$ 51,061	\$ 52,338
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 12,215,374	\$ 1,219,937	\$ 1,250,435	\$ 1,281,696	\$ 1,313,738	\$ 1,346,582	\$ 1,380,246	\$ 1,414,752
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 20,927,566	\$ 2,090,014	\$ 2,142,264	\$ 2,195,821	\$ 2,250,716	\$ 2,306,984	\$ 2,364,659	\$ 2,423,775
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$ 1,463,999	\$ 146,208	\$ 149,863	\$ 153,610	\$ 157,450	\$ 161,386	\$ 165,421	\$ 169,557
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$ 56,279,522	\$ 5,620,576	\$ 5,761,091	\$ 5,905,118	\$ 6,052,746	\$ 6,204,065	\$ 6,359,166	\$ 6,518,146
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$ 74,405,811	\$ 7,430,830	\$ 7,616,601	\$ 7,807,016	\$ 8,002,191	\$ 8,202,246	\$ 8,407,302	\$ 8,617,484
Total Customer Benefits	\$ 165,744,170	\$ 16,552,695	\$ 16,966,513	\$ 17,390,676	\$ 17,825,442	\$ 18,271,079	\$ 18,727,856	\$ 19,196,052

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 2,201,659	\$ 219,704	\$ 225,196	\$ 230,826	\$ 236,597	\$ 242,512	\$ 248,575	\$ 254,789
Total PV of Customer Benefits	\$ 165,744,170	\$ 16,552,695	\$ 16,966,513	\$ 17,390,676	\$ 17,825,442	\$ 18,271,079	\$ 18,727,856	\$ 19,196,052
Total PV of Combined Benefits	\$ 167,945,829	\$ 16,772,399	\$ 17,191,709	\$ 17,621,502	\$ 18,062,039	\$ 18,513,590	\$ 18,976,430	\$ 19,450,841
Total PV Program and On-Going Costs	\$ 41,833,976	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 126,111,853	\$ 16,772,399	\$ 17,191,709	\$ 17,621,502	\$ 18,062,039	\$ 18,513,590	\$ 18,976,430	\$ 19,450,841

Ratio of NPV Benefits to NPV Costs	4.0
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Cumulative Net Benefits (Payback Period)	\$ 106,577,069	\$ 123,768,778	\$ 141,390,280	\$ 159,452,319	\$ 177,965,909	\$ 196,942,339	\$ 216,393,180
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AREA/PROJECT/PROGRAM	Distribution H&R Storm - 7b
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM							
	2043	2044	2045	2046	2047	2048	2049
	21	22	23	24	25	26	27

COSTS

Program Capital Costs	\$ 36,974,775	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 4,067,225	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 41,042,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 791,975	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 41,833,976	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 2,201,659	\$ 261,159	\$ 267,688	\$ 274,380	\$ 281,239	\$ 288,270	\$ 295,477	\$ 302,864
Total Operational Benefits	\$ 2,201,659	\$ 261,159	\$ 267,688	\$ 274,380	\$ 281,239	\$ 288,270	\$ 295,477	\$ 302,864

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 451,898	\$ 53,646	\$ 54,987	\$ 56,362	\$ 57,771	\$ 59,215	\$ 60,696	\$ 62,213
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 12,215,374	\$ 1,450,121	\$ 1,486,374	\$ 1,523,534	\$ 1,561,622	\$ 1,600,662	\$ 1,640,679	\$ 1,681,696
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 20,927,566	\$ 2,484,370	\$ 2,546,479	\$ 2,610,141	\$ 2,675,395	\$ 2,742,279	\$ 2,810,836	\$ 2,881,107
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$ 1,463,999	\$ 173,795	\$ 178,140	\$ 182,594	\$ 187,159	\$ 191,838	\$ 196,634	\$ 201,549
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$ 56,279,522	\$ 6,681,099	\$ 6,848,127	\$ 7,019,330	\$ 7,194,813	\$ 7,374,683	\$ 7,559,050	\$ 7,748,027
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$ 74,405,811	\$ 8,832,922	\$ 9,053,745	\$ 9,280,088	\$ 9,512,090	\$ 9,749,893	\$ 9,993,640	\$ 10,243,481
Total Customer Benefits	\$ 165,744,170	\$ 19,675,953	\$ 20,167,852	\$ 20,672,048	\$ 21,188,850	\$ 21,718,571	\$ 22,261,535	\$ 22,818,073

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 2,201,659	\$ 261,159	\$ 267,688	\$ 274,380	\$ 281,239	\$ 288,270	\$ 295,477	\$ 302,864
Total PV of Customer Benefits	\$ 165,744,170	\$ 19,675,953	\$ 20,167,852	\$ 20,672,048	\$ 21,188,850	\$ 21,718,571	\$ 22,261,535	\$ 22,818,073
Total PV of Combined Benefits	\$ 167,945,829	\$ 19,937,112	\$ 20,435,540	\$ 20,946,428	\$ 21,470,089	\$ 22,006,841	\$ 22,557,012	\$ 23,120,937
Total PV Program and On-Going Costs	\$ 41,833,976	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 126,111,853	\$ 19,937,112	\$ 20,435,540	\$ 20,946,428	\$ 21,470,089	\$ 22,006,841	\$ 22,557,012	\$ 23,120,937

Ratio of NPV Benefits to NPV Costs	4.0
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Cumulative Net Benefits (Payback Period)	\$ 236,330,292	\$ 256,765,832	\$ 277,712,260	\$ 299,182,348	\$ 321,189,189	\$ 343,746,202	\$ 366,867,139
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AREA/PROJECT/PROGRAM	Distribution H&R Storm - 7b
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

		NPV of COST/BENEFIT STREAM					TOTAL	
		2050	2051	2052				
		28	29	30				
COSTS								
Program Capital Costs	\$	36,974,775	\$	-	\$	-	\$	43,980,734
Program Capital Contingency Costs	\$	4,067,225	\$	-	\$	-	\$	4,837,881
Total Program Capital Costs	\$	41,042,000	\$	-	\$	-	\$	48,818,615
Program O&M Costs	\$	791,975	\$	-	\$	-	\$	942,038
Total Program Costs	\$	41,833,976	\$	-	\$	-	\$	49,760,653
	\$	-	\$	-	\$	-	\$	-
Total On-Going Costs	\$	-	\$	-	\$	-	\$	-
OPERATIONAL BENEFITS								
Avoided Outage Benefits	\$	2,201,659	\$	310,435	\$	318,196	\$	326,151
Total Operational Benefits	\$	2,201,659	\$	310,435	\$	318,196	\$	326,151
CUSTOMER BENEFITS								
Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$	451,898	\$	63,768	\$	65,362	\$	66,997
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$	12,215,374	\$	1,723,738	\$	1,766,832	\$	1,811,003
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$	20,927,566	\$	2,953,135	\$	3,026,963	\$	3,102,637
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$	1,463,999	\$	206,588	\$	211,753	\$	217,047
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$	56,279,522	\$	7,941,727	\$	8,140,271	\$	8,343,777
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$	74,405,811	\$	10,499,568	\$	10,762,057	\$	11,031,109
Total Customer Benefits	\$	165,744,170	\$	23,388,525	\$	23,973,238	\$	24,572,569
COMBINED COSTS AND BENEFITS								
Total PV of Operational Benefits	\$	2,201,659	\$	310,435	\$	318,196	\$	326,151
Total PV of Customer Benefits	\$	165,744,170	\$	23,388,525	\$	23,973,238	\$	24,572,569
Total PV of Combined Benefits	\$	167,945,829	\$	23,698,961	\$	24,291,435	\$	24,898,721
Total PV Program and On-Going Costs	\$	41,833,976	\$	-	\$	-	\$	-
Combined NPV of Program	\$	126,111,853	\$	23,698,961	\$	24,291,435	\$	24,898,721
Ratio of NPV Benefits to NPV Costs								4.0
Cumulative Net Benefits (Payback Period)								\$ 390,566,100 \$ 414,857,534 \$ 439,756,255 \$ 879,512,510

AREA/PROJECT/PROGRAM	Long Duration Interruption (LDI) - 10
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM							
	2022	2023	2024	2025	2026	2027	2028
	0	1	2	3	4	5	6

COSTS

Program Capital Costs	\$ 17,157,123	\$ 17,216	\$ 6,608,495	\$ 4,225,860	\$ 4,165,292	\$ 4,861,677	\$ -	\$ -
Program Capital Contingency Costs	\$ 1,858,473	\$ 1,865	\$ 715,837	\$ 457,748	\$ 451,188	\$ 526,621	\$ -	\$ -
Total Program Capital Costs	\$ 19,015,596	\$ 19,081	\$ 7,324,332	\$ 4,683,608	\$ 4,616,480	\$ 5,388,298	\$ -	\$ -
Program O&M Costs	\$ 683,560	\$ 686	\$ 263,290	\$ 168,363	\$ 165,950	\$ 193,695	\$ -	\$ -
Total Program Costs	\$ 19,699,156	\$ 19,767	\$ 7,587,622	\$ 4,851,972	\$ 4,782,430	\$ 5,581,993	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 203,202	\$ -	\$ -	\$ -	\$ 4,439	\$ 7,879	\$ 15,903	\$ 16,300
Avoided Vegetation Management Benefits	\$ 508,006	\$ -	\$ -	\$ -	\$ 11,097	\$ 19,699	\$ 39,757	\$ 40,751
Total Operational Benefits	\$ 711,208	\$ -	\$ -	\$ -	\$ 15,536	\$ 27,578	\$ 55,660	\$ 57,051

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,694,870	\$ -	\$ -	\$ -	\$ 35,296	\$ 64,221	\$ 132,855	\$ 136,177
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 48,047,743	\$ -	\$ -	\$ -	\$ 1,000,591	\$ 1,820,606	\$ 3,766,309	\$ 3,860,467
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 80,920,778	\$ -	\$ -	\$ -	\$ 1,685,169	\$ 3,066,218	\$ 6,343,121	\$ 6,501,699
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$ 2,079,379	\$ -	\$ -	\$ -	\$ 43,303	\$ 78,791	\$ 162,996	\$ 167,071
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$ 81,901,508	\$ -	\$ -	\$ -	\$ 1,705,593	\$ 3,103,379	\$ 6,419,997	\$ 6,580,497
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$ 104,854,765	\$ -	\$ -	\$ -	\$ 2,183,593	\$ 3,973,115	\$ 8,219,230	\$ 8,424,710
Total Customer Benefits	\$ 319,499,044	\$ -	\$ -	\$ -	\$ 6,653,544	\$ 12,106,331	\$ 25,044,508	\$ 25,670,621

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 711,208	\$ -	\$ -	\$ -	\$ 15,536	\$ 27,578	\$ 55,660	\$ 57,051
Total PV of Customer Benefits	\$ 319,499,044	\$ -	\$ -	\$ -	\$ 6,653,544	\$ 12,106,331	\$ 25,044,508	\$ 25,670,621
Total PV of Combined Benefits	\$ 320,210,253	\$ -	\$ -	\$ -	\$ 6,669,080	\$ 12,133,909	\$ 25,100,168	\$ 25,727,672
Total PV Program and On-Going Costs	\$ 19,699,156	\$ 19,767	\$ 7,587,622	\$ 4,851,972	\$ 4,782,430	\$ 5,581,993	\$ -	\$ -
Combined NPV of Program	\$ 300,511,097	\$ (19,767)	\$ (7,587,622)	\$ (4,851,972)	\$ 1,886,650	\$ 6,551,916	\$ 25,100,168	\$ 25,727,672

Ratio of NPV Benefits to NPV Costs	16.3
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Cumulative Net Benefits (Payback Period)	\$ (19,767)	\$ (7,607,389)	\$ (12,459,361)	\$ (10,572,711)	\$ (4,020,795)	\$ 21,079,373	\$ 46,807,045
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AREA/PROJECT/PROGRAM	Long Duration Interruption (LDI) - 10
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM							
	2029	2030	2031	2032	2033	2034	2035
	7	8	9	10	11	12	13

COSTS

Program Capital Costs	\$ 17,157,123	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 1,858,473	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 19,015,596	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 683,560	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 19,699,156	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 203,202	\$ 16,708	\$ 17,126	\$ 17,554	\$ 17,993	\$ 18,442	\$ 18,903	\$ 19,376
Avoided Vegetation Management Benefits	\$ 508,006	\$ 41,770	\$ 42,814	\$ 43,884	\$ 44,981	\$ 46,106	\$ 47,259	\$ 48,440
Total Operational Benefits	\$ 711,208	\$ 58,478	\$ 59,940	\$ 61,438	\$ 62,974	\$ 64,548	\$ 66,162	\$ 67,816

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,694,870	\$ 139,581	\$ 143,071	\$ 146,648	\$ 150,314	\$ 154,072	\$ 157,923	\$ 161,871
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 48,047,743	\$ 3,956,978	\$ 4,055,903	\$ 4,157,300	\$ 4,261,233	\$ 4,367,764	\$ 4,476,958	\$ 4,588,882
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 80,920,778	\$ 6,664,241	\$ 6,830,848	\$ 7,001,619	\$ 7,176,659	\$ 7,356,076	\$ 7,539,978	\$ 7,728,477
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$ 2,079,379	\$ 171,248	\$ 175,529	\$ 179,917	\$ 184,415	\$ 189,025	\$ 193,751	\$ 198,595
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$ 81,901,508	\$ 6,745,010	\$ 6,913,635	\$ 7,086,476	\$ 7,263,638	\$ 7,445,229	\$ 7,631,359	\$ 7,822,143
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$ 104,854,765	\$ 8,635,328	\$ 8,851,211	\$ 9,072,492	\$ 9,299,304	\$ 9,531,787	\$ 9,770,081	\$ 10,014,333
Total Customer Benefits	\$ 319,499,044	\$ 26,312,386	\$ 26,970,196	\$ 27,644,451	\$ 28,335,562	\$ 29,043,951	\$ 29,770,050	\$ 30,514,301

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 711,208	\$ 58,478	\$ 59,940	\$ 61,438	\$ 62,974	\$ 64,548	\$ 66,162	\$ 67,816
Total PV of Customer Benefits	\$ 319,499,044	\$ 26,312,386	\$ 26,970,196	\$ 27,644,451	\$ 28,335,562	\$ 29,043,951	\$ 29,770,050	\$ 30,514,301
Total PV of Combined Benefits	\$ 320,210,253	\$ 26,370,864	\$ 27,030,136	\$ 27,705,889	\$ 28,398,536	\$ 29,108,500	\$ 29,836,212	\$ 30,582,118
Total PV Program and On-Going Costs	\$ 19,699,156	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 300,511,097	\$ 26,370,864	\$ 27,030,136	\$ 27,705,889	\$ 28,398,536	\$ 29,108,500	\$ 29,836,212	\$ 30,582,118

Ratio of NPV Benefits to NPV Costs	16.3
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Cumulative Net Benefits (Payback Period)	\$ 73,177,909	\$ 100,208,045	\$ 127,913,934	\$ 156,312,471	\$ 185,420,970	\$ 215,257,183	\$ 245,839,300
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AREA/PROJECT/PROGRAM	Long Duration Interruption (LDI) - 10
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM	YEAR						
	2036	2037	2038	2039	2040	2041	2042
	14	15	16	17	18	19	20

COSTS

Program Capital Costs	\$ 17,157,123	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 1,858,473	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 19,015,596	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 683,560	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 19,699,156	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 203,202	\$ 19,860	\$ 20,357	\$ 20,866	\$ 21,388	\$ 21,922	\$ 22,470	\$ 23,032
Avoided Vegetation Management Benefits	\$ 508,006	\$ 49,651	\$ 50,892	\$ 52,165	\$ 53,469	\$ 54,806	\$ 56,176	\$ 57,580
Total Operational Benefits	\$ 711,208	\$ 69,512	\$ 71,249	\$ 73,031	\$ 74,856	\$ 76,728	\$ 78,646	\$ 80,612

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,694,870	\$ 165,918	\$ 170,066	\$ 174,318	\$ 178,676	\$ 183,143	\$ 187,721	\$ 192,414
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 48,047,743	\$ 4,703,604	\$ 4,821,194	\$ 4,941,724	\$ 5,065,267	\$ 5,191,898	\$ 5,321,696	\$ 5,454,738
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 80,920,778	\$ 7,921,689	\$ 8,119,731	\$ 8,322,724	\$ 8,530,793	\$ 8,744,062	\$ 8,962,664	\$ 9,186,731
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$ 2,079,379	\$ 203,560	\$ 208,649	\$ 213,865	\$ 219,211	\$ 224,692	\$ 230,309	\$ 236,067
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$ 81,901,508	\$ 8,017,697	\$ 8,218,139	\$ 8,423,593	\$ 8,634,183	\$ 8,850,037	\$ 9,071,288	\$ 9,298,070
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$ 104,854,765	\$ 10,264,692	\$ 10,521,309	\$ 10,784,342	\$ 11,053,950	\$ 11,330,299	\$ 11,613,556	\$ 11,903,895
Total Customer Benefits	\$ 319,499,044	\$ 31,277,159	\$ 32,059,088	\$ 32,860,565	\$ 33,682,079	\$ 34,524,131	\$ 35,387,234	\$ 36,271,915

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 711,208	\$ 69,512	\$ 71,249	\$ 73,031	\$ 74,856	\$ 76,728	\$ 78,646	\$ 80,612
Total PV of Customer Benefits	\$ 319,499,044	\$ 31,277,159	\$ 32,059,088	\$ 32,860,565	\$ 33,682,079	\$ 34,524,131	\$ 35,387,234	\$ 36,271,915
Total PV of Combined Benefits	\$ 320,210,253	\$ 31,346,670	\$ 32,130,337	\$ 32,933,596	\$ 33,756,936	\$ 34,600,859	\$ 35,465,880	\$ 36,352,527
Total PV Program and On-Going Costs	\$ 19,699,156	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 300,511,097	\$ 31,346,670	\$ 32,130,337	\$ 32,933,596	\$ 33,756,936	\$ 34,600,859	\$ 35,465,880	\$ 36,352,527

Ratio of NPV Benefits to NPV Costs	16.3
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Cumulative Net Benefits (Payback Period)	\$ 277,185,971	\$ 309,316,308	\$ 342,249,904	\$ 376,006,839	\$ 410,607,698	\$ 446,073,579	\$ 482,426,106
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AREA/PROJECT/PROGRAM	Long Duration Interruption (LDI) - 10
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM							
	2043	2044	2045	2046	2047	2048	2049
	21	22	23	24	25	26	27

COSTS

Program Capital Costs	\$ 17,157,123	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 1,858,473	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 19,015,596	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 683,560	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 19,699,156	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 203,202	\$ 23,608	\$ 24,198	\$ 24,803	\$ 25,423	\$ 26,059	\$ 26,710	\$ 27,378
Avoided Vegetation Management Benefits	\$ 508,006	\$ 59,020	\$ 60,495	\$ 62,007	\$ 63,558	\$ 65,147	\$ 66,775	\$ 68,445
Total Operational Benefits	\$ 711,208	\$ 82,627	\$ 84,693	\$ 86,810	\$ 88,981	\$ 91,205	\$ 93,485	\$ 95,823

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$ 1,694,870	\$ 197,225	\$ 202,155	\$ 207,209	\$ 212,389	\$ 217,699	\$ 223,142	\$ 228,720
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$ 48,047,743	\$ 5,591,107	\$ 5,730,884	\$ 5,874,156	\$ 6,021,010	\$ 6,171,536	\$ 6,325,824	\$ 6,483,970
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$ 80,920,778	\$ 9,416,399	\$ 9,651,809	\$ 9,893,104	\$ 10,140,432	\$ 10,393,942	\$ 10,653,791	\$ 10,920,136
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$ 2,079,379	\$ 241,968	\$ 248,018	\$ 254,218	\$ 260,573	\$ 267,088	\$ 273,765	\$ 280,609
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$ 81,901,508	\$ 9,530,522	\$ 9,768,785	\$ 10,013,005	\$ 10,263,330	\$ 10,519,913	\$ 10,782,911	\$ 11,052,484
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$ 104,854,765	\$ 12,201,493	\$ 12,506,530	\$ 12,819,193	\$ 13,139,673	\$ 13,468,165	\$ 13,804,869	\$ 14,149,991
Total Customer Benefits	\$ 319,499,044	\$ 37,178,713	\$ 38,108,181	\$ 39,060,886	\$ 40,037,408	\$ 41,038,343	\$ 42,064,301	\$ 43,115,909

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 711,208	\$ 82,627	\$ 84,693	\$ 86,810	\$ 88,981	\$ 91,205	\$ 93,485	\$ 95,823
Total PV of Customer Benefits	\$ 319,499,044	\$ 37,178,713	\$ 38,108,181	\$ 39,060,886	\$ 40,037,408	\$ 41,038,343	\$ 42,064,301	\$ 43,115,909
Total PV of Combined Benefits	\$ 320,210,253	\$ 37,261,341	\$ 38,192,874	\$ 39,147,696	\$ 40,126,388	\$ 41,129,548	\$ 42,157,787	\$ 43,211,732
Total PV Program and On-Going Costs	\$ 19,699,156	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 300,511,097	\$ 37,261,341	\$ 38,192,874	\$ 39,147,696	\$ 40,126,388	\$ 41,129,548	\$ 42,157,787	\$ 43,211,732

Ratio of NPV Benefits to NPV Costs	16.3
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Cumulative Net Benefits (Payback Period)	\$ 519,687,447	\$ 557,880,321	\$ 597,028,017	\$ 637,154,405	\$ 678,283,953	\$ 720,441,740	\$ 763,653,472
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AREA/PROJECT/PROGRAM	Long Duration Interruption (LDI) - 10
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

		NPV of COST/BENEFIT STREAM					TOTAL								
				2050	2051	2052									
				28	29	30									
COSTS															
Program Capital Costs	\$	17,157,123	\$	-	\$	-	\$	19,878,540							
Program Capital Contingency Costs	\$	1,858,473	\$	-	\$	-	\$	2,153,259							
Total Program Capital Costs	\$	19,015,596	\$	-	\$	-	\$	22,031,799							
Program O&M Costs	\$	683,560	\$	-	\$	-	\$	791,985							
Total Program Costs	\$	19,699,156	\$	-	\$	-	\$	22,823,784							
	\$	-	\$	-	\$	-	\$	-							
Total On-Going Costs	\$	-	\$	-	\$	-	\$	-							
OPERATIONAL BENEFITS															
Avoided Outage Benefits	\$	203,202	\$	28,062	\$	28,764	\$	29,483	\$	585,006					
Avoided Vegetation Management Benefits	\$	508,006	\$	70,156	\$	71,910	\$	73,707	\$	1,462,516					
Total Operational Benefits	\$	711,208	\$	98,218	\$	100,674	\$	103,190	\$	2,047,522					
CUSTOMER BENEFITS															
Avoided Sustained Outage Benefits (Non-MED) - Residential Customers	\$	1,694,870	\$	234,438	\$	240,299	\$	246,307	\$	4,883,868					
Avoided Sustained Outage Benefits (Non-MED) - Small C&I Customers	\$	48,047,743	\$	6,646,069	\$	6,812,221	\$	6,982,526	\$	138,452,412					
Avoided Sustained Outage Benefits (Non-MED) - Medium & Large C&I Customers	\$	80,920,778	\$	11,193,139	\$	11,472,968	\$	11,759,792	\$	233,178,008					
									\$	-					
Avoided Sustained Outage Benefits (MED) - Residential Customers	\$	2,079,379	\$	287,624	\$	294,815	\$	302,185	\$	5,991,855					
Avoided Sustained Outage Benefits (MED) - Small C&I Customers	\$	81,901,508	\$	11,328,796	\$	11,612,016	\$	11,902,316	\$	236,004,040					
Avoided Sustained Outage Benefits (MED) - Medium & Large C&I Customers	\$	104,854,765	\$	14,503,741	\$	14,866,334	\$	15,237,992	\$	302,145,208					
Total Customer Benefits	\$	319,499,044	\$	44,193,807	\$	45,298,652	\$	46,431,118	\$	920,655,392					
COMBINED COSTS AND BENEFITS															
Total PV of Operational Benefits	\$	711,208	\$	98,218	\$	100,674	\$	103,190	\$	2,047,522					
Total PV of Customer Benefits	\$	319,499,044	\$	44,193,807	\$	45,298,652	\$	46,431,118	\$	920,655,392					
Total PV of Combined Benefits	\$	320,210,253	\$	44,292,025	\$	45,399,325	\$	46,534,309	\$	922,702,914					
Total PV Program and On-Going Costs	\$	19,699,156	\$	-	\$	-	\$	-	\$	22,823,784					
Combined NPV of Program	\$	300,511,097	\$	44,292,025	\$	45,399,325	\$	46,534,309	\$	899,879,131					
Ratio of NPV Benefits to NPV Costs								16.3							
Cumulative Net Benefits (Payback Period)								\$	807,945,497	\$	853,344,822	\$	899,879,131	\$	1,799,758,261

Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

	Units		NPV (calculated)
Benefits			\$ 1,348,548,964
Costs			\$ 238,449,118
Net			\$ 1,110,099,846
BCR			5.7

COSTS

PROGRAM COSTS (Full & Partial SOG)

Switch Automation, Circuit Segmenation & Capacity	\$		\$ 207,825,872
Contingency	\$		\$ 21,144,576
Implementation O&M			\$ 3,353,874
Total Program Costs	\$		\$ 232,324,322

ON-GOING COSTS (Full & Partial SOG)

On-going O&M	\$		\$ 6,124,796
Total On-going O&M Costs	\$		\$ 6,124,796

TOTAL COSTS

Program Costs	\$		\$ 232,324,322
On-going Costs	\$		\$ 6,124,796
Total Cost	\$		\$ 238,449,118

BENEFITS

RELIABILITY

CI Savings	outages		
CMI Savings	min		
Typical Duration	hr		
Residential Customer %	%		
Small C&I Customer %	%		
Large C&I Customer %	%		
Residential Outage Value	\$/outage		
Small C&I Outage Value	\$/outage		
Large C&I Outage Value	\$/outage		
Residential Momentary Value	\$/momentary		
Small C&I Momentary Value	\$/momentary		
Large C&I Momentary Value	\$/momentary		
Momentary Outages Avoided	momentaries		
Customer Avoided Outage Costs: Residential	\$		\$ 9,050,691
Customer Avoided Outage Costs: Small C&I	\$		\$ 341,174,591
Customer Avoided Outage Costs: Large C&I	\$		\$ 534,348,840
Customer Avoided Outage Costs	\$		\$ 884,574,122
Customer Avoided Momentary Interruption Costs: Residential	\$		\$ 10,116,251
Customer Avoided Momentary Interruption Costs: Small C&I	\$		\$ 117,980,661
Customer Avoided Momentary Interruption Costs: Large C&I	\$		\$ 298,906,296
Customer Avoided Momentary Interruption Costs	\$		\$ 427,003,208

CAPACITY SAVINGS

Capacity Savings from additional IVVC peak shaving	MW		
Capacity Value	\$/kW		
Capacity Savings (IVVC)	\$		\$ 14,100,459

ENERGY SAVINGS

Capacity factor for energy savings	-		
Energy Savings from additional IVVC peak shaving	MWh		
Energy Value	\$/MWh		
Energy Savings (IVVC)	\$		\$ 122,763

ENVIRONMENTAL BENEFITS

Value: SOx	\$/ton		
Value: NOx	\$/ton		
Value: CO2	\$/ton		
Energy: SOx reduction	ton/MWh		
Energy: NOx reduction	ton/MWh		
Energy: CO2 reduction	ton/MWh		
Environmental Benefits	\$		\$ 67,114
Environmental Benefits (IVVC)	\$		\$ 67,114

Peak Shaving Benefits	\$		\$ 14,290,336
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DER ENABLEMENT

Forecasted PV (Annual)	MW	Total NC (DEC & DEP)	
Forecasted PV (Cumulative)	MW	Total NC (DEC & DEP)	PV Forecast from Net Meter
PV scaling factor (SOG vs. total)	-	Total NC (DEC & DEP)	
Limit (without SOG)	MW	Total NC (DEC & DEP)	
Limit (with SOG)	MW	Total NC (DEC & DEP)	
PV derate factor for capacity	-	Total NC (DEC & DEP)	
PV Enablement	MW	Total NC (DEC & DEP)	
Energy Savings	MWh/MW	Total NC (DEC & DEP)	
DER Enablement: Capacity Savings	\$	DEC NC = 60% of total D	\$ 3,961,373
DER Enablement: Energy Savings	\$	DEC NC = 60% of total D	\$ 9,551,438
DER Enablement: Environmental Benefits	\$	DEC NC = 60% of total D	\$ 9,416,133
DER/PV Enablement Benefits	\$		\$ 22,685,424

TOTAL BENEFITS

Customer Avoided Outage Costs	\$		\$ 884,574,122
Customer Avoided Momentary Interruption Costs	\$		\$ 427,003,208
Peak Shaving Benefits	\$		\$ 14,286,210
DER/PV Enablement Benefits	\$		\$ 22,685,424
Total Benefits	\$	\$ -	\$ 1,348,548,964

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Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

	Units	2022	2023		2024
		0	1	2	
Benefits			\$	-	\$ 32,946,491
Costs		\$ 10,852,690	\$ 93,708,996	\$	79,158,559
Net		\$ (10,852,690)	\$ (93,708,996)	\$	(46,212,069)
BCR					

COSTS

PROGRAM COSTS (Full & Partial SOG)					
Switch Automation, Circuit Segmenation & Capacity	\$	\$ 9,708,281	\$ 83,811,062	\$	70,653,549
Contingency	\$	\$ 987,738	\$ 8,527,087	\$	7,188,419
Implementation O&M		\$ 156,671	\$ 1,352,535	\$	1,140,200
Total Program Costs	\$	\$ 10,852,690	\$ 93,690,684	\$	78,982,168
ON-GOING COSTS (Full & Partial SOG)					
On-going O&M	\$		\$ 18,311	\$	176,392
Total On-going O&M Costs	\$		\$ 18,311	\$	176,392
TOTAL COSTS					
Program Costs	\$	\$ 10,852,690	\$ 93,690,684	\$	78,982,168
On-going Costs	\$	\$ -	\$ 18,311	\$	176,392
Total Cost	\$	\$ 10,852,690	\$ 93,708,996	\$	79,158,559

BENEFITS

RELIABILITY					
CI Savings	outages				46,929
CMI Savings	min				9,181,046
Typical Duration	hr				3.26
Residential Customer %	%				86.4%
Small C&I Customer %	%				11.4%
Large C&I Customer %	%				2.2%
Residential Outage Value	\$/outage			\$	12
Small C&I Outage Value	\$/outage			\$	2,107
Large C&I Outage Value	\$/outage			\$	19,753
Residential Momentary Value	\$/momentary			\$	6
Small C&I Momentary Value	\$/momentary			\$	564
Large C&I Momentary Value	\$/momentary			\$	7,340
Momentary Outages Avoided	momentaries				46,929
Customer Avoided Outage Costs: Residential	\$	\$ -		\$0	\$ 217,601
Customer Avoided Outage Costs: Small C&I	\$	\$ -		\$0	\$ 8,223,817
Customer Avoided Outage Costs: Large C&I	\$	\$ -		\$0	\$ 12,866,393
Customer Avoided Outage Costs	\$		\$ -	\$	21,307,811
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ -		\$0	\$ 257,495
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ -		\$0	\$ 3,003,028
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ -		\$0	\$ 7,608,231
Customer Avoided Momentary Interruption Costs	\$		\$ -	\$	10,868,753

CAPACITY SAVINGS					
Capacity Savings from additional IVVC peak shaving	MW	0	0		12
Capacity Value	\$/kW		\$ -	\$	63
Capacity Savings (IVVC)	\$		\$ -	\$	763,526

ENERGY SAVINGS					
Capacity factor for energy savings	-		0.4%		0.4%
Energy Savings from additional IVVC peak shaving	MWh		0		428
Energy Value	\$/MWh		\$ 16	\$	15
Energy Savings (IVVC)	\$		\$ -	\$	6,400

ENVIRONMENTAL BENEFITS					
Value: SOx	\$/ton			\$	-
Value: NOx	\$/ton			\$	-
Value: CO2	\$/ton			\$	-
Energy: SOx reduction	ton/MWh				0.00
Energy: NOx reduction	ton/MWh				0.00
Energy: CO2 reduction	ton/MWh				0.25
Environmental Benefits	\$			\$	-
Environmental Benefits (IVVC)	\$		\$ -	\$	-

Peak Shaving Benefits	\$		\$ -	\$	769,926
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DER ENABLEMENT					
Forecasted PV (Annual)	MW				56
Forecasted PV (Cumulative)	MW	er Data	145		201
PV scaling factor (SOG vs. total)	-				4%
Limit (without SOG)	MW				310
Limit (with SOG)	MW				522
PV derate factor for capacity	-				19%
PV Enablement	MW				0
Energy Savings	MWh/MW				1,936
DER Enablement: Capacity Savings	\$	\$ -	0	\$	-
DER Enablement: Energy Savings	\$	\$ -	0	\$	-
DER Enablement: Environmental Benefits	\$	\$ -	0	\$	-
DER/PV Enablement Benefits	\$		\$ -	\$	-

TOTAL BENEFITS					
Customer Avoided Outage Costs	\$	\$ -	\$ -	\$	21,307,811
Customer Avoided Momentary Interruption Costs	\$	\$ -	\$ -	\$	10,868,753
Peak Shaving Benefits	\$	\$ -	\$ -	\$	769,926
DER/PV Enablement Benefits	\$	\$ -	\$ -	\$	-
Total Benefits	\$		\$ -	\$	32,946,491

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Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

		2025	2026	2027
	Units	3	4	5
Benefits		\$ 53,000,401	\$ 73,909,834	\$ 98,392,575
Costs		\$ 63,180,311	\$ 15,877,496	\$ 441,822
Net		\$ (10,179,910)	\$ 58,032,338	\$ 97,950,753
BCR				

COSTS

PROGRAM COSTS (Full & Partial SOG)				
Switch Automation, Circuit Segmenation & Capacity	\$	\$ 56,240,986	\$ 13,831,329	
Contingency	\$	\$ 5,722,059	\$ 1,407,224	
Implementation O&M		\$ 907,612	\$ 223,209	
Total Program Costs	\$	\$ 62,870,656	\$ 15,461,762	\$ -
ON-GOING COSTS (Full & Partial SOG)				
On-going O&M	\$	\$ 309,655	\$ 415,734	\$ 441,822
Total On-going O&M Costs	\$	\$ 309,655	\$ 415,734	\$ 441,822
TOTAL COSTS				
Program Costs	\$	\$ 62,870,656	\$ 15,461,762	\$ -
On-going Costs	\$	\$ 309,655	\$ 415,734	\$ 441,822
Total Cost	\$	\$ 63,180,311	\$ 15,877,496	\$ 441,822

BENEFITS

RELIABILITY				
CI Savings	outages	71,166	96,701	126,987
CMI Savings	min	14,533,892	19,867,082	25,793,033
Typical Duration	hr	3.40	3.42	3.39
Residential Customer %	%	86.4%	86.4%	86.4%
Small C&I Customer %	%	11.4%	11.4%	11.4%
Large C&I Customer %	%	2.2%	2.2%	2.2%
Residential Outage Value	\$/outage	\$ 12	\$ 13	\$ 13
Small C&I Outage Value	\$/outage	\$ 2,239	\$ 2,307	\$ 2,342
Large C&I Outage Value	\$/outage	\$ 20,867	\$ 21,479	\$ 21,839
Residential Momentary Value	\$/momentary	\$ 7	\$ 7	\$ 7
Small C&I Momentary Value	\$/momentary	\$ 578	\$ 592	\$ 607
Large C&I Momentary Value	\$/momentary	\$ 7,523	\$ 7,712	\$ 7,904
Momentary Outages Avoided	momentaries	71,166	96,701	126,987
Customer Avoided Outage Costs: Residential	\$	\$ 361,566	\$ 507,494	\$ 671,434
Customer Avoided Outage Costs: Small C&I	\$	\$ 13,622,565	\$ 19,115,970	\$ 25,310,244
Customer Avoided Outage Costs: Large C&I	\$	\$ 21,340,701	\$ 29,948,947	\$ 39,641,049
Customer Avoided Outage Costs	\$	\$ 35,324,832	\$ 49,572,411	\$ 65,622,727
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ 400,243	\$ 557,450	\$ 750,339
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ 4,667,825	\$ 6,501,249	\$ 8,750,825
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ 11,826,025	\$ 16,471,041	\$ 22,170,384
Customer Avoided Momentary Interruption Costs	\$	\$ 16,894,092	\$ 23,529,740	\$ 31,671,548

CAPACITY SAVINGS				
Capacity Savings from additional IVVC peak shaving	MW	12	12	12
Capacity Value	\$/kW	\$ 63	\$ 64	\$ 66
Capacity Savings (IVVC)	\$	\$ 774,853	\$ 788,921	\$ 811,511

ENERGY SAVINGS				
Capacity factor for energy savings	-	0.4%	0.4%	0.4%
Energy Savings from additional IVVC peak shaving	MWh	429	431	433
Energy Value	\$/MWh	\$ 14	\$ 14	\$ 14
Energy Savings (IVVC)	\$	\$ 6,096	\$ 6,129	\$ 6,095

ENVIRONMENTAL BENEFITS				
Value: SOx	\$/ton	\$ -	\$ -	\$ -
Value: NOx	\$/ton	\$ -	\$ -	\$ -
Value: CO2	\$/ton	\$ 5	\$ 10	\$ 15
Energy: SOx reduction	ton/MWh	0.00	0.00	0.00
Energy: NOx reduction	ton/MWh	0.00	0.00	0.00
Energy: CO2 reduction	ton/MWh	0.25	0.24	0.24
Environmental Benefits	\$	\$ 528	\$ 1,037	\$ 1,527
Environmental Benefits (IVVC)	\$	\$ 528	\$ 1,037	\$ 1,527

Peak Shaving Benefits	\$	\$ 781,477	\$ 796,086	\$ 819,133
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DER ENABLEMENT				
Forecasted PV (Annual)	MW	56	56	43
Forecasted PV (Cumulative)	MW	257	312	355
PV scaling factor (SOG vs. total)	-	11%	20%	20%
Limit (without SOG)	MW	310	310	310
Limit (with SOG)	MW	522	522	522
PV derate factor for capacity	-	19%	19%	19%
PV Enablement	MW	0	0	9
Energy Savings	MWh/MW	1,936	1,936	1,936
DER Enablement: Capacity Savings	\$	\$ -	\$ 2,976.59	\$ 68,157.89
DER Enablement: Energy Savings	\$	\$ -	\$ 6,724.02	\$ 148,862.48
DER Enablement: Environmental Benefits	\$	\$ -	\$ 1,896	\$ 62,147
DER/PV Enablement Benefits	\$	\$ -	\$ 11,597	\$ 279,167

TOTAL BENEFITS				
Customer Avoided Outage Costs	\$	\$ 35,324,832	\$ 49,572,411	\$ 65,622,727
Customer Avoided Momentary Interruption Costs	\$	\$ 16,894,092	\$ 23,529,740	\$ 31,671,548
Peak Shaving Benefits	\$	\$ 781,477	\$ 796,086	\$ 819,133
DER/PV Enablement Benefits	\$	\$ -	\$ 11,597	\$ 279,167
Total Benefits	\$	\$ 53,000,401	\$ 73,909,834	\$ 98,392,575

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Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

	Units	2028	2029	2030
		6	7	8
Benefits		\$ 101,123,903	\$ 103,987,398	\$ 107,005,525
Costs		\$ 452,868	\$ 464,190	\$ 475,794
Net		\$ 100,671,035	\$ 103,523,208	\$ 106,529,731
BCR				

COSTS

PROGRAM COSTS (Full & Partial SOG)					
Switch Automation, Circuit Segmenation & Capacity	\$				
Contingency	\$				
Implementation O&M					
Total Program Costs	\$	\$ -	\$ -	\$ -	\$ -
ON-GOING COSTS (Full & Partial SOG)					
On-going O&M	\$	\$ 452,868	\$ 464,190	\$ 475,794	
Total On-going O&M Costs	\$	\$ 452,868	\$ 464,190	\$ 475,794	
TOTAL COSTS					
Program Costs	\$	\$ -	\$ -	\$ -	\$ -
On-going Costs	\$	\$ 452,868	\$ 464,190	\$ 475,794	
Total Cost	\$	\$ 452,868	\$ 464,190	\$ 475,794	

BENEFITS

RELIABILITY					
CI Savings	outages	126,987	126,987	126,987	
CMI Savings	min	25,793,033	25,793,033	25,793,033	
Typical Duration	hr	3.39	3.39	3.39	
Residential Customer %	%	86.4%	86.4%	86.4%	
Small C&I Customer %	%	11.4%	11.4%	11.4%	
Large C&I Customer %	%	2.2%	2.2%	2.2%	
Residential Outage Value	\$/outage	\$ 13	\$ 13	\$ 14	
Small C&I Outage Value	\$/outage	\$ 2,401	\$ 2,461	\$ 2,522	
Large C&I Outage Value	\$/outage	\$ 22,385	\$ 22,945	\$ 23,518	
Residential Momentary Value	\$/momentary	\$ 7	\$ 7	\$ 7	
Small C&I Momentary Value	\$/momentary	\$ 622	\$ 638	\$ 654	
Large C&I Momentary Value	\$/momentary	\$ 8,102	\$ 8,304	\$ 8,512	
Momentary Outages Avoided	momentaries	126,987	126,987	126,987	
Customer Avoided Outage Costs: Residential	\$	\$ 688,220	\$ 705,426	\$ 723,061	
Customer Avoided Outage Costs: Small C&I	\$	\$ 25,943,000	\$ 26,591,575	\$ 27,256,364	
Customer Avoided Outage Costs: Large C&I	\$	\$ 40,632,075	\$ 41,647,877	\$ 42,689,074	
Customer Avoided Outage Costs	\$	\$ 67,263,295	\$ 68,944,877	\$ 70,668,499	
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ 769,098	\$ 788,325	\$ 808,033	
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ 8,969,595	\$ 9,193,835	\$ 9,423,681	
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ 22,724,644	\$ 23,292,760	\$ 23,875,079	
Customer Avoided Momentary Interruption Costs	\$	\$ 32,463,337	\$ 33,274,921	\$ 34,106,794	

CAPACITY SAVINGS					
Capacity Savings from additional IVVC peak shaving	MW	12	13	13	
Capacity Value	\$/kW	\$ 67	\$ 70	\$ 74	
Capacity Savings (IVVC)	\$	\$ 831,155	\$ 881,798	\$ 936,342	

ENERGY SAVINGS					
Capacity factor for energy savings	-	0.4%	0.4%	0.4%	
Energy Savings from additional IVVC peak shaving	MWh	436	440	446	
Energy Value	\$/MWh	\$ 14	\$ 14	\$ 15	
Energy Savings (IVVC)	\$	\$ 6,165	\$ 6,277	\$ 6,575	

ENVIRONMENTAL BENEFITS					
Value: SOx	\$/ton	\$ -	\$ -	\$ -	
Value: NOx	\$/ton	\$ -	\$ -	\$ -	
Value: CO2	\$/ton	\$ 20	\$ 25	\$ 30	
Energy: SOx reduction	ton/MWh	0.00	0.00	0.00	
Energy: NOx reduction	ton/MWh	0.00	0.00	0.00	
Energy: CO2 reduction	ton/MWh	0.24	0.23	0.23	
Environmental Benefits	\$	\$ 2,100	\$ 2,503	\$ 3,099	
Environmental Benefits (IVVC)	\$	\$ 2,100	\$ 2,503	\$ 3,099	

Peak Shaving Benefits	\$	\$ 839,420	\$ 890,578	\$ 946,016	
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DER ENABLEMENT					
Forecasted PV (Annual)	MW	37	39	41	
Forecasted PV (Cumulative)	MW	392	431	472	
PV scaling factor (SOG vs. total)	-	20%	20%	20%	
Limit (without SOG)	MW	310	310	310	
Limit (with SOG)	MW	522	522	522	
PV derate factor for capacity	-	19%	19%	19%	
PV Enablement	MW	17	25	33	
Energy Savings	MWh/MW	1,936	1,936	1,936	
DER Enablement: Capacity Savings	\$	\$ 127,319.85	\$ 197,282.65	\$ 276,418.26	
DER Enablement: Energy Savings	\$	\$ 274,608.66	\$ 408,388.23	\$ 564,419.83	
DER Enablement: Environmental Benefits	\$	\$ 155,922	\$ 271,351	\$ 443,378	
DER/PV Enablement Benefits	\$	\$ 557,851	\$ 877,022	\$ 1,284,217	

TOTAL BENEFITS					
Customer Avoided Outage Costs	\$	\$ 67,263,295	\$ 68,944,877	\$ 70,668,499	
Customer Avoided Momentary Interruption Costs	\$	\$ 32,463,337	\$ 33,274,921	\$ 34,106,794	
Peak Shaving Benefits	\$	\$ 839,420	\$ 890,578	\$ 946,016	
DER/PV Enablement Benefits	\$	\$ 557,851	\$ 877,022	\$ 1,284,217	
Total Benefits	\$	\$ 101,123,903	\$ 103,987,398	\$ 107,005,525	

Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

		2031	2032	2033
	Units	9	10	11
Benefits		\$ 110,063,374	\$ 113,047,541	\$ 115,989,703
Costs		\$ 487,689	\$ 499,881	\$ 512,378
Net		\$ 109,575,684	\$ 112,547,660	\$ 115,477,325
BCR				

COSTS

PROGRAM COSTS (Full & Partial SOG)				
Switch Automation, Circuit Segmenation & Capacity	\$			
Contingency	\$			
Implementation O&M				
Total Program Costs	\$	\$ -	\$ -	\$ -

ON-GOING COSTS (Full & Partial SOG)				
On-going O&M	\$	\$ 487,689	\$ 499,881	\$ 512,378
Total On-going O&M Costs	\$	\$ 487,689	\$ 499,881	\$ 512,378

TOTAL COSTS				
Program Costs	\$	\$ -	\$ -	\$ -
On-going Costs	\$	\$ 487,689	\$ 499,881	\$ 512,378
Total Cost	\$	\$ 487,689	\$ 499,881	\$ 512,378

BENEFITS

RELIABILITY				
CI Savings	outages	126,987	126,987	126,987
CMI Savings	min	25,793,033	25,793,033	25,793,033
Typical Duration	hr	3.39	3.39	3.39
Residential Customer %	%	86.4%	86.4%	86.4%
Small C&I Customer %	%	11.4%	11.4%	11.4%
Large C&I Customer %	%	2.2%	2.2%	2.2%
Residential Outage Value	\$/outage	\$ 14	\$ 15	\$ 15
Small C&I Outage Value	\$/outage	\$ 2,585	\$ 2,650	\$ 2,716
Large C&I Outage Value	\$/outage	\$ 24,106	\$ 24,709	\$ 25,327
Residential Momentary Value	\$/momentary	\$ 8	\$ 8	\$ 8
Small C&I Momentary Value	\$/momentary	\$ 670	\$ 687	\$ 704
Large C&I Momentary Value	\$/momentary	\$ 8,725	\$ 8,943	\$ 9,167
Momentary Outages Avoided	momentaries	126,987	126,987	126,987
Customer Avoided Outage Costs: Residential	\$	\$ 741,138	\$ 759,666	\$ 778,658
Customer Avoided Outage Costs: Small C&I	\$	\$ 27,937,774	\$ 28,636,218	\$ 29,352,123
Customer Avoided Outage Costs: Large C&I	\$	\$ 43,756,300	\$ 44,850,208	\$ 45,971,463
Customer Avoided Outage Costs	\$	\$ 72,435,212	\$ 74,246,092	\$ 76,102,244
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ 828,234	\$ 848,940	\$ 870,164
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ 9,659,273	\$ 9,900,755	\$ 10,148,274
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ 24,471,956	\$ 25,083,755	\$ 25,710,849
Customer Avoided Momentary Interruption Costs	\$	\$ 34,959,463	\$ 35,833,450	\$ 36,729,286

CAPACITY SAVINGS				
Capacity Savings from additional IVVC peak shaving	MW	13	13	13
Capacity Value	\$/kW	\$ 76	\$ 82	\$ 86
Capacity Savings (IVVC)	\$	\$ 981,128	\$ 1,069,384	\$ 1,130,820

ENERGY SAVINGS				
Capacity factor for energy savings	-	0.4%	0.4%	0.4%
Energy Savings from additional IVVC peak shaving	MWh	452	457	462
Energy Value	\$/MWh	\$ 15	\$ 15	\$ 16
Energy Savings (IVVC)	\$	\$ 6,586	\$ 6,955	\$ 7,452

ENVIRONMENTAL BENEFITS				
Value: SOx	\$/ton	\$ -	\$ -	\$ -
Value: NOx	\$/ton	\$ -	\$ -	\$ -
Value: CO2	\$/ton	\$ 35	\$ 40	\$ 45
Energy: SOx reduction	ton/MWh	0.00	0.00	0.00
Energy: NOx reduction	ton/MWh	0.00	0.00	0.00
Energy: CO2 reduction	ton/MWh	0.22	0.22	0.21
Environmental Benefits	\$	\$ 3,493	\$ 3,972	\$ 4,370
Environmental Benefits (IVVC)	\$	\$ 3,493	\$ 3,972	\$ 4,370

Peak Shaving Benefits	\$	\$ 991,206	\$ 1,080,311	\$ 1,142,643
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DER ENABLEMENT				
Forecasted PV (Annual)	MW	41	41	41
Forecasted PV (Cumulative)	MW	513	554	596
PV scaling factor (SOG vs. total)	-	20%	20%	20%
Limit (without SOG)	MW	310	310	310
Limit (with SOG)	MW	522	522	522
PV derate factor for capacity	-	19%	19%	19%
PV Enablement	MW	41	43	43
Energy Savings	MWh/MW	1,936	1,936	1,936
DER Enablement: Capacity Savings	\$	\$ 358,645.70	\$ 402,385.21	\$ 420,840.17
DER Enablement: Energy Savings	\$	\$ 700,015.97	\$ 760,955.53	\$ 806,482.79
DER Enablement: Environmental Benefits	\$	\$ 618,830	\$ 724,348	\$ 788,207
DER/PV Enablement Benefits	\$	\$ 1,677,492	\$ 1,887,688	\$ 2,015,530

TOTAL BENEFITS				
Customer Avoided Outage Costs	\$	\$ 72,435,212	\$ 74,246,092	\$ 76,102,244
Customer Avoided Momentary Interruption Costs	\$	\$ 34,959,463	\$ 35,833,450	\$ 36,729,286
Peak Shaving Benefits	\$	\$ 991,206	\$ 1,080,311	\$ 1,142,643
DER/PV Enablement Benefits	\$	\$ 1,677,492	\$ 1,887,688	\$ 2,015,530
Total Benefits	\$	\$ 110,063,374	\$ 113,047,541	\$ 115,989,703

Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

		2034	2035	2036
	Units	12	13	14
Benefits		\$ 119,105,893	\$ 122,169,651	\$ 125,480,274
Costs		\$ 525,188	\$ 538,318	\$ 551,775
Net		\$ 118,580,705	\$ 121,631,333	\$ 124,928,499
BCR				

COSTS

PROGRAM COSTS (Full & Partial SOG)				
Switch Automation, Circuit Segmenation & Capacity	\$			
Contingency	\$			
Implementation O&M				
Total Program Costs	\$	\$ -	\$ -	\$ -

ON-GOING COSTS (Full & Partial SOG)				
On-going O&M	\$	\$ 525,188	\$ 538,318	\$ 551,775
Total On-going O&M Costs	\$	\$ 525,188	\$ 538,318	\$ 551,775

TOTAL COSTS				
Program Costs	\$	\$ -	\$ -	\$ -
On-going Costs	\$	\$ 525,188	\$ 538,318	\$ 551,775
Total Cost	\$	\$ 525,188	\$ 538,318	\$ 551,775

BENEFITS

RELIABILITY				
CI Savings	outages	126,987	126,987	126,987
CMI Savings	min	25,793,033	25,793,033	25,793,033
Typical Duration	hr	3.39	3.39	3.39
Residential Customer %	%	86.4%	86.4%	86.4%
Small C&I Customer %	%	11.4%	11.4%	11.4%
Large C&I Customer %	%	2.2%	2.2%	2.2%
Residential Outage Value	\$/outage	\$ 15	\$ 16	\$ 16
Small C&I Outage Value	\$/outage	\$ 2,784	\$ 2,854	\$ 2,925
Large C&I Outage Value	\$/outage	\$ 25,960	\$ 26,609	\$ 27,274
Residential Momentary Value	\$/momentary	\$ 8	\$ 8	\$ 9
Small C&I Momentary Value	\$/momentary	\$ 721	\$ 739	\$ 758
Large C&I Momentary Value	\$/momentary	\$ 9,396	\$ 9,631	\$ 9,871
Momentary Outages Avoided	momentaries	126,987	126,987	126,987
Customer Avoided Outage Costs: Residential	\$	\$ 798,124	\$ 818,078	\$ 838,529
Customer Avoided Outage Costs: Small C&I	\$	\$ 30,085,926	\$ 30,838,075	\$ 31,609,026
Customer Avoided Outage Costs: Large C&I	\$	\$ 47,120,750	\$ 48,298,768	\$ 49,506,238
Customer Avoided Outage Costs	\$	\$ 78,004,801	\$ 79,954,921	\$ 81,953,794
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ 891,918	\$ 914,216	\$ 937,071
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ 10,401,981	\$ 10,662,030	\$ 10,928,581
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ 26,353,620	\$ 27,012,461	\$ 27,687,772
Customer Avoided Momentary Interruption Costs	\$	\$ 37,647,518	\$ 38,588,706	\$ 39,553,424

CAPACITY SAVINGS				
Capacity Savings from additional IVVC peak shaving	MW	13	14	14
Capacity Value	\$/kW	\$ 87	\$ 87	\$ 90
Capacity Savings (IVVC)	\$	\$ 1,173,227	\$ 1,191,639	\$ 1,256,742

ENERGY SAVINGS				
Capacity factor for energy savings	-	0.4%	0.4%	0.4%
Energy Savings from additional IVVC peak shaving	MWh	472	477	488
Energy Value	\$/MWh	\$ 19	\$ 20	\$ 23
Energy Savings (IVVC)	\$	\$ 8,778	\$ 9,628	\$ 11,105

ENVIRONMENTAL BENEFITS				
Value: SOx	\$/ton	\$ -	\$ -	\$ -
Value: NOx	\$/ton	\$ -	\$ -	\$ -
Value: CO2	\$/ton	\$ 50	\$ 55	\$ 60
Energy: SOx reduction	ton/MWh	0.00	0.00	0.00
Energy: NOx reduction	ton/MWh	0.00	0.00	0.00
Energy: CO2 reduction	ton/MWh	0.22	0.21	0.22
Environmental Benefits	\$	\$ 5,147	\$ 5,613	\$ 6,528
Environmental Benefits (IVVC)	\$	\$ 5,147	\$ 5,613	\$ 6,528

Peak Shaving Benefits	\$	\$ 1,187,152	\$ 1,206,880	\$ 1,274,376
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DER ENABLEMENT				
Forecasted PV (Annual)	MW	42	43	43
Forecasted PV (Cumulative)	MW	637	680	724
PV scaling factor (SOG vs. total)	-	20%	20%	20%
Limit (without SOG)	MW	310	310	310
Limit (with SOG)	MW	522	522	522
PV derate factor for capacity	-	19%	19%	19%
PV Enablement	MW	43	43	43
Energy Savings	MWh/MW	1,936	1,936	1,936
DER Enablement: Capacity Savings	\$	\$ 427,480.72	\$ 429,521.58	\$ 443,344.98
DER Enablement: Energy Savings	\$	\$ 930,056.76	\$ 1,009,104.08	\$ 1,139,181.95
DER Enablement: Environmental Benefits	\$	\$ 908,885	\$ 980,519	\$ 1,116,154
DER/PV Enablement Benefits	\$	\$ 2,266,423	\$ 2,419,144	\$ 2,698,681

TOTAL BENEFITS				
Customer Avoided Outage Costs	\$	\$ 78,004,801	\$ 79,954,921	\$ 81,953,794
Customer Avoided Momentary Interruption Costs	\$	\$ 37,647,518	\$ 38,588,706	\$ 39,553,424
Peak Shaving Benefits	\$	\$ 1,187,152	\$ 1,206,880	\$ 1,274,376
DER/PV Enablement Benefits	\$	\$ 2,266,423	\$ 2,419,144	\$ 2,698,681
Total Benefits	\$	\$ 119,105,893	\$ 122,169,651	\$ 125,480,274

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Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

	Units	2037	2038	2039
		15	16	17
Benefits		\$ 128,799,426	\$ 132,047,421	\$ 135,357,785
Costs		\$ 565,570	\$ 579,709	\$ 594,202
Net		\$ 128,233,857	\$ 131,467,712	\$ 134,763,583
BCR				
COSTS				
PROGRAM COSTS (Full & Partial SOG)				
Switch Automation, Circuit Segmenation & Capacity	\$			
Contingency	\$			
Implementation O&M				
Total Program Costs	\$	\$ -	\$ -	\$ -
ON-GOING COSTS (Full & Partial SOG)				
On-going O&M	\$	\$ 565,570	\$ 579,709	\$ 594,202
Total On-going O&M Costs	\$	\$ 565,570	\$ 579,709	\$ 594,202
TOTAL COSTS				
Program Costs	\$	\$ -	\$ -	\$ -
On-going Costs	\$	\$ 565,570	\$ 579,709	\$ 594,202
Total Cost	\$	\$ 565,570	\$ 579,709	\$ 594,202
BENEFITS				
RELIABILITY				
CI Savings	outages	126,987	126,987	126,987
CMI Savings	min	25,793,033	25,793,033	25,793,033
Typical Duration	hr	3.39	3.39	3.39
Residential Customer %	%	86.4%	86.4%	86.4%
Small C&I Customer %	%	11.4%	11.4%	11.4%
Large C&I Customer %	%	2.2%	2.2%	2.2%
Residential Outage Value	\$/outage	\$ 16	\$ 17	\$ 17
Small C&I Outage Value	\$/outage	\$ 2,998	\$ 3,073	\$ 3,150
Large C&I Outage Value	\$/outage	\$ 27,956	\$ 28,655	\$ 29,371
Residential Momentary Value	\$/momentary	\$ 9	\$ 9	\$ 9
Small C&I Momentary Value	\$/momentary	\$ 777	\$ 796	\$ 816
Large C&I Momentary Value	\$/momentary	\$ 10,118	\$ 10,371	\$ 10,630
Momentary Outages Avoided	momentaries	126,987	126,987	126,987
Customer Avoided Outage Costs: Residential	\$	\$ 859,493	\$ 880,980	\$ 903,005
Customer Avoided Outage Costs: Small C&I	\$	\$ 32,399,252	\$ 33,209,233	\$ 34,039,464
Customer Avoided Outage Costs: Large C&I	\$	\$ 50,743,894	\$ 52,012,491	\$ 53,312,803
Customer Avoided Outage Costs	\$	\$ 84,002,638	\$ 86,102,704	\$ 88,255,272
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ 960,498	\$ 984,510	\$ 1,009,123
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ 11,201,795	\$ 11,481,840	\$ 11,768,886
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ 28,379,966	\$ 29,089,465	\$ 29,816,702
Customer Avoided Momentary Interruption Costs	\$	\$ 40,542,260	\$ 41,555,816	\$ 42,594,712
CAPACITY SAVINGS				
Capacity Savings from additional IVVC peak shaving	MW	14	14	14
Capacity Value	\$/kW	\$ 92	\$ 96	\$ 98
Capacity Savings (IVVC)	\$	\$ 1,298,631	\$ 1,366,742	\$ 1,417,138
ENERGY SAVINGS				
Capacity factor for energy savings	-	0.4%	0.4%	0.4%
Energy Savings from additional IVVC peak shaving	MWh	493	501	507
Energy Value	\$/MWh	\$ 25	\$ 25	\$ 26
Energy Savings (IVVC)	\$	\$ 12,177	\$ 12,594	\$ 13,102
ENVIRONMENTAL BENEFITS				
Value: SOx	\$/ton	\$ -	\$ -	\$ -
Value: NOx	\$/ton	\$ -	\$ -	\$ -
Value: CO2	\$/ton	\$ 65	\$ 70	\$ 75
Energy: SOx reduction	ton/MWh	0.00	0.00	0.00
Energy: NOx reduction	ton/MWh	0.00	0.00	0.00
Energy: CO2 reduction	ton/MWh	0.23	0.22	0.21
Environmental Benefits	\$	\$ 7,389	\$ 7,658	\$ 7,888
Environmental Benefits (IVVC)	\$	\$ 7,389	\$ 7,658	\$ 7,888
Peak Shaving Benefits	\$	\$ 1,318,198	\$ 1,386,995	\$ 1,438,129
DER ENABLEMENT				
Forecasted PV (Annual)	MW	44	44	45
Forecasted PV (Cumulative)	MW	767	812	857
PV scaling factor (SOG vs. total)	-	20%	20%	20%
Limit (without SOG)	MW	310	310	310
Limit (with SOG)	MW	522	522	522
PV derate factor for capacity	-	19%	19%	19%
PV Enablement	MW	43	43	43
Energy Savings	MWh/MW	1,936	1,936	1,936
DER Enablement: Capacity Savings	\$	\$ 452,834.44	\$ 469,403.00	\$ 480,672.10
DER Enablement: Energy Savings	\$	\$ 1,234,739.15	\$ 1,257,752.93	\$ 1,292,273.60
DER Enablement: Environmental Benefits	\$	\$ 1,248,757	\$ 1,274,750	\$ 1,296,727
DER/PV Enablement Benefits	\$	\$ 2,936,331	\$ 3,001,906	\$ 3,069,673
TOTAL BENEFITS				
Customer Avoided Outage Costs	\$	\$ 84,002,638	\$ 86,102,704	\$ 88,255,272
Customer Avoided Momentary Interruption Costs	\$	\$ 40,542,260	\$ 41,555,816	\$ 42,594,712
Peak Shaving Benefits	\$	\$ 1,318,198	\$ 1,386,995	\$ 1,438,129
DER/PV Enablement Benefits	\$	\$ 2,936,331	\$ 3,001,906	\$ 3,069,673
Total Benefits	\$	\$ 128,799,426	\$ 132,047,421	\$ 135,357,785

Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

		2040	2041	2042
	Units	18	19	20
Benefits		\$ 138,803,164	\$ 142,368,914	\$ 146,008,382
Costs		\$ 609,057	\$ 624,283	\$ 639,890
Net		\$ 138,194,107	\$ 141,744,631	\$ 145,368,491
BCR				

COSTS

PROGRAM COSTS (Full & Partial SOG)					
Switch Automation, Circuit Segmenation & Capacity	\$				
Contingency	\$				
Implementation O&M					
Total Program Costs	\$	\$	-	\$	-

ON-GOING COSTS (Full & Partial SOG)					
On-going O&M	\$	\$	609,057	\$	624,283
Total On-going O&M Costs	\$	\$	609,057	\$	624,283

TOTAL COSTS					
Program Costs	\$	\$	-	\$	-
On-going Costs	\$	\$	609,057	\$	624,283
Total Cost	\$	\$	609,057	\$	624,283

BENEFITS

RELIABILITY					
CI Savings	outages		126,987	126,987	126,987
CMI Savings	min		25,793,033	25,793,033	25,793,033
Typical Duration	hr		3.39	3.39	3.39
Residential Customer %	%		86.4%	86.4%	86.4%
Small C&I Customer %	%		11.4%	11.4%	11.4%
Large C&I Customer %	%		2.2%	2.2%	2.2%
Residential Outage Value	\$/outage	\$	18	\$	19
Small C&I Outage Value	\$/outage	\$	3,228	\$	3,309
Large C&I Outage Value	\$/outage	\$	30,106	\$	30,858
Residential Momentary Value	\$/momentary	\$	9	\$	10
Small C&I Momentary Value	\$/momentary	\$	837	\$	858
Large C&I Momentary Value	\$/momentary	\$	10,896	\$	11,169
Momentary Outages Avoided	momentaries		126,987	126,987	126,987
Customer Avoided Outage Costs: Residential	\$	\$	925,580	\$	948,719
Customer Avoided Outage Costs: Small C&I	\$	\$	34,890,451	\$	35,762,712
Customer Avoided Outage Costs: Large C&I	\$	\$	54,645,623	\$	56,011,764
Customer Avoided Outage Costs	\$	\$	90,461,654	\$	92,723,195
Customer Avoided Momentary Interruption Costs: Residential	\$	\$	1,034,351	\$	1,060,210
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$	12,063,108	\$	12,364,686
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$	30,562,120	\$	31,326,173
Customer Avoided Momentary Interruption Costs	\$	\$	43,659,579	\$	44,751,069

CAPACITY SAVINGS					
Capacity Savings from additional IVVC peak shaving	MW		15	15	15
Capacity Value	\$/kW	\$	102	\$	103
Capacity Savings (IVVC)	\$	\$	1,496,071	\$	1,554,218

ENERGY SAVINGS					
Capacity factor for energy savings	-		0.4%	0.4%	0.4%
Energy Savings from additional IVVC peak shaving	MWh		515	528	533
Energy Value	\$/MWh	\$	26	\$	28
Energy Savings (IVVC)	\$	\$	13,530	\$	14,630

ENVIRONMENTAL BENEFITS					
Value: SOx	\$/ton	\$	-	\$	-
Value: NOx	\$/ton	\$	-	\$	-
Value: CO2	\$/ton	\$	80	\$	85
Energy: SOx reduction	ton/MWh		0.00	0.00	0.00
Energy: NOx reduction	ton/MWh		0.00	0.00	0.00
Energy: CO2 reduction	ton/MWh		0.20	0.20	0.20
Environmental Benefits	\$	\$	8,353	\$	9,017
Environmental Benefits (IVVC)	\$	\$	8,353	\$	9,017

Peak Shaving Benefits	\$	\$	1,517,954	\$	1,577,865
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DER ENABLEMENT					
Forecasted PV (Annual)	MW		45	45	45
Forecasted PV (Cumulative)	MW		901	946	992
PV scaling factor (SOG vs. total)	-		20%	20%	20%
Limit (without SOG)	MW		310	310	310
Limit (with SOG)	MW		522	522	522
PV derate factor for capacity	-		19%	19%	19%
PV Enablement	MW		43	43	43
Energy Savings	MWh/MW		1,936	1,936	1,936
DER Enablement: Capacity Savings	\$	\$	499,381.57	\$	506,455.94
DER Enablement: Energy Savings	\$	\$	1,313,286.17	\$	1,386,329.90
DER Enablement: Environmental Benefits	\$	\$	1,351,309	\$	1,424,000
DER/PV Enablement Benefits	\$	\$	3,163,977	\$	3,316,785

TOTAL BENEFITS					
Customer Avoided Outage Costs	\$	\$	90,461,654	\$	92,723,195
Customer Avoided Momentary Interruption Costs	\$	\$	43,659,579	\$	44,751,069
Peak Shaving Benefits	\$	\$	1,517,954	\$	1,577,865
DER/PV Enablement Benefits	\$	\$	3,163,977	\$	3,316,785
Total Benefits	\$	\$	138,803,164	\$	142,368,914

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Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

	Units	2043	2044	2045
		21	22	23
Benefits		\$ 149,712,056	\$ 153,541,608	\$ 157,486,047
Costs		\$ 655,888	\$ 672,285	\$ 689,092
Net		\$ 149,056,168	\$ 152,869,323	\$ 156,796,955
BCR				

COSTS

PROGRAM COSTS (Full & Partial SOG)					
Switch Automation, Circuit Segmenation & Capacity	\$				
Contingency	\$				
Implementation O&M					
Total Program Costs	\$	\$	-	\$	-
ON-GOING COSTS (Full & Partial SOG)					
On-going O&M	\$	\$	655,888	\$	672,285
Total On-going O&M Costs	\$	\$	655,888	\$	672,285
TOTAL COSTS					
Program Costs	\$	\$	-	\$	-
On-going Costs	\$	\$	655,888	\$	672,285
Total Cost	\$	\$	655,888	\$	672,285

BENEFITS

RELIABILITY					
CI Savings	outages		126,987	126,987	126,987
CMI Savings	min		25,793,033	25,793,033	25,793,033
Typical Duration	hr		3.39	3.39	3.39
Residential Customer %	%		86.4%	86.4%	86.4%
Small C&I Customer %	%		11.4%	11.4%	11.4%
Large C&I Customer %	%		2.2%	2.2%	2.2%
Residential Outage Value	\$/outage	\$	19	\$	20
Small C&I Outage Value	\$/outage	\$	3,477	\$	3,564
Large C&I Outage Value	\$/outage	\$	32,420	\$	33,231
Residential Momentary Value	\$/momentary	\$	10	\$	10
Small C&I Momentary Value	\$/momentary	\$	901	\$	923
Large C&I Momentary Value	\$/momentary	\$	11,734	\$	12,027
Momentary Outages Avoided	momentaries		126,987	126,987	126,987
Customer Avoided Outage Costs: Residential	\$	\$	996,748	\$	1,021,667
Customer Avoided Outage Costs: Small C&I	\$	\$	37,573,199	\$	38,512,529
Customer Avoided Outage Costs: Large C&I	\$	\$	58,847,359	\$	60,318,543
Customer Avoided Outage Costs	\$	\$	97,417,307	\$	99,852,740
Customer Avoided Momentary Interruption Costs: Residential	\$	\$	1,113,883	\$	1,141,730
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$	12,990,648	\$	13,315,415
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$	32,912,060	\$	33,734,862
Customer Avoided Momentary Interruption Costs	\$	\$	47,016,592	\$	48,192,006

CAPACITY SAVINGS					
Capacity Savings from additional IVVC peak shaving	MW		15	16	16
Capacity Value	\$/kW	\$	105	\$	107
Capacity Savings (IVVC)	\$	\$	1,608,603	\$	1,672,382

ENERGY SAVINGS					
Capacity factor for energy savings	-		0.4%	0.4%	0.4%
Energy Savings from additional IVVC peak shaving	MWh		539	547	554
Energy Value	\$/MWh	\$	31	\$	32
Energy Savings (IVVC)	\$	\$	16,633	\$	17,435

ENVIRONMENTAL BENEFITS					
Value: SOx	\$/ton	\$	-	\$	-
Value: NOx	\$/ton	\$	-	\$	-
Value: CO2	\$/ton	\$	95	\$	100
Energy: SOx reduction	ton/MWh		0.00	0.00	0.00
Energy: NOx reduction	ton/MWh		0.00	0.00	0.00
Energy: CO2 reduction	ton/MWh		0.20	0.20	0.20
Environmental Benefits	\$	\$	10,240	\$	10,993
Environmental Benefits (IVVC)	\$	\$	10,240	\$	10,993

Peak Shaving Benefits	\$	\$	1,635,476	\$	1,700,810
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DER ENABLEMENT					
Forecasted PV (Annual)	MW		46	46	47
Forecasted PV (Cumulative)	MW		1,038	1,084	1,131
PV scaling factor (SOG vs. total)	-		20%	20%	20%
Limit (without SOG)	MW		310	310	310
Limit (with SOG)	MW		522	522	522
PV derate factor for capacity	-		19%	19%	19%
PV Enablement	MW		43	43	43
Energy Savings	MWh/MW		1,936	1,936	1,936
DER Enablement: Capacity Savings	\$	\$	513,637.82	\$	525,966.22
DER Enablement: Energy Savings	\$	\$	1,544,424.54	\$	1,594,454.49
DER Enablement: Environmental Benefits	\$	\$	1,584,619	\$	1,675,630
DER/PV Enablement Benefits	\$	\$	3,642,681	\$	3,796,051

TOTAL BENEFITS					
Customer Avoided Outage Costs	\$	\$	97,417,307	\$	99,852,740
Customer Avoided Momentary Interruption Costs	\$	\$	47,016,592	\$	48,192,006
Peak Shaving Benefits	\$	\$	1,635,476	\$	1,700,810
DER/PV Enablement Benefits	\$	\$	3,642,681	\$	3,796,051
Total Benefits	\$	\$	149,712,056	\$	153,541,608

Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

		2046	2047	2048
	Units	24	25	26
Benefits		\$ 161,375,788	\$ 165,507,271	\$ 169,704,931
Costs		\$ 706,319	\$ 723,977	\$ 742,077
Net		\$ 160,669,469	\$ 164,783,294	\$ 168,962,854
BCR				

COSTS

PROGRAM COSTS (Full & Partial SOG)				
Switch Automation, Circuit Segmenation & Capacity	\$			
Contingency	\$			
Implementation O&M				
Total Program Costs	\$	\$ -	\$ -	\$ -

ON-GOING COSTS (Full & Partial SOG)				
On-going O&M	\$	\$ 706,319	\$ 723,977	\$ 742,077
Total On-going O&M Costs	\$	\$ 706,319	\$ 723,977	\$ 742,077

TOTAL COSTS				
Program Costs	\$	\$ -	\$ -	\$ -
On-going Costs	\$	\$ 706,319	\$ 723,977	\$ 742,077
Total Cost	\$	\$ 706,319	\$ 723,977	\$ 742,077

BENEFITS

RELIABILITY				
CI Savings	outages	126,987	126,987	126,987
CMI Savings	min	25,793,033	25,793,033	25,793,033
Typical Duration	hr	3.39	3.39	3.39
Residential Customer %	%	86.4%	86.4%	86.4%
Small C&I Customer %	%	11.4%	11.4%	11.4%
Large C&I Customer %	%	2.2%	2.2%	2.2%
Residential Outage Value	\$/outage	\$ 21	\$ 21	\$ 22
Small C&I Outage Value	\$/outage	\$ 3,744	\$ 3,838	\$ 3,934
Large C&I Outage Value	\$/outage	\$ 34,913	\$ 35,786	\$ 36,681
Residential Momentary Value	\$/momentary	\$ 11	\$ 11	\$ 11
Small C&I Momentary Value	\$/momentary	\$ 970	\$ 994	\$ 1,019
Large C&I Momentary Value	\$/momentary	\$ 12,636	\$ 12,952	\$ 13,276
Momentary Outages Avoided	momentaries	126,987	126,987	126,987
Customer Avoided Outage Costs: Residential	\$	\$ 1,073,389	\$ 1,100,223	\$ 1,127,729
Customer Avoided Outage Costs: Small C&I	\$	\$ 40,462,226	\$ 41,473,782	\$ 42,510,626
Customer Avoided Outage Costs: Large C&I	\$	\$ 63,372,170	\$ 64,956,474	\$ 66,580,386
Customer Avoided Outage Costs	\$	\$ 104,907,785	\$ 107,530,479	\$ 110,218,741
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ 1,199,530	\$ 1,229,519	\$ 1,260,256
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ 13,989,507	\$ 14,339,245	\$ 14,697,726
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ 35,442,689	\$ 36,328,756	\$ 37,236,975
Customer Avoided Momentary Interruption Costs	\$	\$ 50,631,727	\$ 51,897,520	\$ 53,194,958

CAPACITY SAVINGS				
Capacity Savings from additional IVVC peak shaving	MW	16	16	17
Capacity Value	\$/kW	\$ 112	\$ 115	\$ 118
Capacity Savings (IVVC)	\$	\$ 1,796,529	\$ 1,892,930	\$ 1,964,335

ENERGY SAVINGS				
Capacity factor for energy savings	-	0.4%	0.4%	0.4%
Energy Savings from additional IVVC peak shaving	MWh	560	577	584
Energy Value	\$/MWh	\$ 34	\$ 35	\$ 35
Energy Savings (IVVC)	\$	\$ 19,200	\$ 20,033	\$ 20,734

ENVIRONMENTAL BENEFITS				
Value: SOx	\$/ton	\$ -	\$ -	\$ -
Value: NOx	\$/ton	\$ -	\$ -	\$ -
Value: CO2	\$/ton	\$ 110	\$ 115	\$ 120
Energy: SOx reduction	ton/MWh	0.00	0.00	0.00
Energy: NOx reduction	ton/MWh	0.00	0.00	0.00
Energy: CO2 reduction	ton/MWh	0.19	0.19	0.19
Environmental Benefits	\$	\$ 11,717	\$ 12,799	\$ 13,591
Environmental Benefits (IVVC)	\$	\$ 11,717	\$ 12,799	\$ 13,591

Peak Shaving Benefits	\$	\$ 1,827,446	\$ 1,925,763	\$ 1,998,660
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DER ENABLEMENT				
Forecasted PV (Annual)	MW	49	49	49
Forecasted PV (Cumulative)	MW	1,180	1,229	1,278
PV scaling factor (SOG vs. total)	-	20%	20%	20%
Limit (without SOG)	MW	310	310	310
Limit (with SOG)	MW	522	522	522
PV derate factor for capacity	-	19%	19%	19%
PV Enablement	MW	43	43	43
Energy Savings	MWh/MW	1,936	1,936	1,936
DER Enablement: Capacity Savings	\$	\$ 551,520.59	\$ 564,759.19	\$ 578,315.57
DER Enablement: Energy Savings	\$	\$ 1,714,026.07	\$ 1,738,040.45	\$ 1,775,062.61
DER Enablement: Environmental Benefits	\$	\$ 1,743,284	\$ 1,850,709	\$ 1,939,194
DER/PV Enablement Benefits	\$	\$ 4,008,831	\$ 4,153,509	\$ 4,292,572

TOTAL BENEFITS				
Customer Avoided Outage Costs	\$	\$ 104,907,785	\$ 107,530,479	\$ 110,218,741
Customer Avoided Momentary Interruption Costs	\$	\$ 50,631,727	\$ 51,897,520	\$ 53,194,958
Peak Shaving Benefits	\$	\$ 1,827,446	\$ 1,925,763	\$ 1,998,660
DER/PV Enablement Benefits	\$	\$ 4,008,831	\$ 4,153,509	\$ 4,292,572
Total Benefits	\$	\$ 161,375,788	\$ 165,507,271	\$ 169,704,931

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Oct 19 2022

Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

	Units	2049	2050	2051
		27	28	29
Benefits		\$ 173,975,824	\$ 178,191,030	\$ 182,592,858
Costs		\$ 760,629	\$ 779,644	\$ 799,135
Net		\$ 173,215,196	\$ 177,411,385	\$ 181,793,722
BCR				

COSTS

PROGRAM COSTS (Full & Partial SOG)				
Switch Automation, Circuit Segmenation & Capacity	\$			
Contingency	\$			
Implementation O&M				
Total Program Costs	\$	\$ -	\$ -	\$ -
ON-GOING COSTS (Full & Partial SOG)				
On-going O&M	\$	\$ 760,629	\$ 779,644	\$ 799,135
Total On-going O&M Costs	\$	\$ 760,629	\$ 779,644	\$ 799,135
TOTAL COSTS				
Program Costs	\$	\$ -	\$ -	\$ -
On-going Costs	\$	\$ 760,629	\$ 779,644	\$ 799,135
Total Cost	\$	\$ 760,629	\$ 779,644	\$ 799,135

BENEFITS

RELIABILITY				
CI Savings	outages	126,987	126,987	126,987
CMI Savings	min	25,793,033	25,793,033	25,793,033
Typical Duration	hr	3.39	3.39	3.39
Residential Customer %	%	86.4%	86.4%	86.4%
Small C&I Customer %	%	11.4%	11.4%	11.4%
Large C&I Customer %	%	2.2%	2.2%	2.2%
Residential Outage Value	\$/outage	\$ 22	\$ 23	\$ 23
Small C&I Outage Value	\$/outage	\$ 4,032	\$ 4,133	\$ 4,236
Large C&I Outage Value	\$/outage	\$ 37,598	\$ 38,538	\$ 39,501
Residential Momentary Value	\$/momentary	\$ 12	\$ 12	\$ 12
Small C&I Momentary Value	\$/momentary	\$ 1,045	\$ 1,071	\$ 1,098
Large C&I Momentary Value	\$/momentary	\$ 13,608	\$ 13,948	\$ 14,297
Momentary Outages Avoided	momentaries	126,987	126,987	126,987
Customer Avoided Outage Costs: Residential	\$	\$ 1,155,922	\$ 1,184,820	\$ 1,214,441
Customer Avoided Outage Costs: Small C&I	\$	\$ 43,573,392	\$ 44,662,727	\$ 45,779,295
Customer Avoided Outage Costs: Large C&I	\$	\$ 68,244,895	\$ 69,951,018	\$ 71,699,793
Customer Avoided Outage Costs	\$	\$ 112,974,210	\$ 115,798,565	\$ 118,693,529
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ 1,291,763	\$ 1,324,057	\$ 1,357,158
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ 15,065,169	\$ 15,441,799	\$ 15,827,844
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ 38,167,900	\$ 39,122,097	\$ 40,100,149
Customer Avoided Momentary Interruption Costs	\$	\$ 54,524,832	\$ 55,887,953	\$ 57,285,151

CAPACITY SAVINGS				
Capacity Savings from additional IVVC peak shaving	MW	17	17	17
Capacity Value	\$/kW	\$ 121	\$ 121	\$ 121
Capacity Savings (IVVC)	\$	\$ 2,024,867	\$ 2,050,736	\$ 2,067,142

ENERGY SAVINGS				
Capacity factor for energy savings	-	0.4%	0.4%	0.4%
Energy Savings from additional IVVC peak shaving	MWh	588	596	601
Energy Value	\$/MWh	\$ 36	\$ 37	\$ 38
Energy Savings (IVVC)	\$	\$ 21,301	\$ 22,116	\$ 22,575

ENVIRONMENTAL BENEFITS				
Value: SOx	\$/ton	\$ -	\$ -	\$ -
Value: NOx	\$/ton	\$ -	\$ -	\$ -
Value: CO2	\$/ton	\$ 125	\$ 130	\$ 135
Energy: SOx reduction	ton/MWh	0.00	0.00	0.00
Energy: NOx reduction	ton/MWh	0.00	0.00	0.00
Energy: CO2 reduction	ton/MWh	0.19	0.18	0.18
Environmental Benefits	\$	\$ 14,199	\$ 14,064	\$ 14,671
Environmental Benefits (IVVC)	\$	\$ 14,199	\$ 14,064	\$ 14,671

Peak Shaving Benefits	\$	\$ 2,060,368	\$ 2,086,916	\$ 2,104,388
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DER ENABLEMENT				
Forecasted PV (Annual)	MW	51	51	53
Forecasted PV (Cumulative)	MW	1,329	1,380	1,433
PV scaling factor (SOG vs. total)	-	20%	20%	20%
Limit (without SOG)	MW	310	310	310
Limit (with SOG)	MW	522	522	522
PV derate factor for capacity	-	19%	19%	19%
PV Enablement	MW	43	43	43
Energy Savings	MWh/MW	1,936	1,936	1,936
DER Enablement: Capacity Savings	\$	\$ 592,197.36	\$ 592,197.36	\$ 592,197.36
DER Enablement: Energy Savings	\$	\$ 1,811,584.47	\$ 1,857,111.73	\$ 1,880,625.80
DER Enablement: Environmental Benefits	\$	\$ 2,012,633	\$ 1,968,288	\$ 2,036,966
DER/PV Enablement Benefits	\$	\$ 4,416,415	\$ 4,417,597	\$ 4,509,790

TOTAL BENEFITS				
Customer Avoided Outage Costs	\$	\$ 112,974,210	\$ 115,798,565	\$ 118,693,529
Customer Avoided Momentary Interruption Costs	\$	\$ 54,524,832	\$ 55,887,953	\$ 57,285,151
Peak Shaving Benefits	\$	\$ 2,060,368	\$ 2,086,916	\$ 2,104,388
DER/PV Enablement Benefits	\$	\$ 4,416,415	\$ 4,417,597	\$ 4,509,790
Total Benefits	\$	\$ 173,975,824	\$ 178,191,030	\$ 182,592,858

Duke Energy Carolinas North Carolina Combined DEC Self Optimized Grid (SOG) Years 2022-2026
Sources

	Units	2052	
		30	TOTAL
Benefits		\$ 187,128,852	\$ 3,778,823,919
Costs		\$ 819,114	\$ 267,836,137
Net		\$ 186,309,738	\$ 3,510,987,781
BCR			

COSTS

PROGRAM COSTS (Full & Partial SOG)			
Switch Automation, Circuit Segmenation & Capacity	\$		\$ 224,536,926
Contingency	\$		\$ 22,844,789
Implementation O&M			
Total Program Costs	\$	\$ -	\$ 247,381,715
ON-GOING COSTS (Full & Partial SOG)			
On-going O&M	\$	\$ 819,114	\$ 16,830,867
Total On-going O&M Costs	\$	\$ 819,114	\$ 16,830,867
TOTAL COSTS			
Program Costs	\$	\$ -	\$ 251,005,270
On-going Costs	\$	\$ 819,114	\$ 16,830,867
Total Cost	\$	\$ 819,114	\$ 267,836,137

BENEFITS

RELIABILITY		
CI Savings	outages	126,987
CMI Savings	min	25,793,033
Typical Duration	hr	3.39
Residential Customer %	%	86.4%
Small C&I Customer %	%	11.4%
Large C&I Customer %	%	2.2%
Residential Outage Value	\$/outage	\$ 24
Small C&I Outage Value	\$/outage	\$ 4,342
Large C&I Outage Value	\$/outage	\$ 40,489
Residential Momentary Value	\$/momentary	\$ 13
Small C&I Momentary Value	\$/momentary	\$ 1,125
Large C&I Momentary Value	\$/momentary	\$ 14,654
Momentary Outages Avoided	momentaries	126,987
Customer Avoided Outage Costs: Residential	\$	\$ 1,244,802
Customer Avoided Outage Costs: Small C&I	\$	\$ 46,923,777
Customer Avoided Outage Costs: Large C&I	\$	\$ 73,492,288
Customer Avoided Outage Costs	\$	\$ 121,660,867
Customer Avoided Momentary Interruption Costs: Residential	\$	\$ 1,391,087
Customer Avoided Momentary Interruption Costs: Small C&I	\$	\$ 16,223,540
Customer Avoided Momentary Interruption Costs: Large C&I	\$	\$ 41,102,653
Customer Avoided Momentary Interruption Costs	\$	\$ 58,717,280

CAPACITY SAVINGS			
Capacity Savings from additional IVVC peak shaving	MW	17	
Capacity Value	\$/kW	\$ 121	
Capacity Savings (IVVC)	\$	\$ 2,083,679	\$ 40,199,995

ENERGY SAVINGS			
Capacity factor for energy savings	-	0.4%	
Energy Savings from additional IVVC peak shaving	MWh	605	
Energy Value	\$/MWh	\$ 38	
Energy Savings (IVVC)	\$	\$ 23,107	\$ 377,445

ENVIRONMENTAL BENEFITS			
Value: SOx	\$/ton	\$ -	
Value: NOx	\$/ton	\$ -	
Value: CO2	\$/ton	\$ 140	
Energy: SOx reduction	ton/MWh	0.00	
Energy: NOx reduction	ton/MWh	0.00	
Energy: CO2 reduction	ton/MWh	0.18	
Environmental Benefits	\$	\$ 15,439	\$ 219,415
Environmental Benefits (IVVC)	\$	\$ 15,439	\$ 219,415

Peak Shaving Benefits	\$	\$ 2,122,225	\$ 40,796,855
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DER ENABLEMENT			
Forecasted PV (Annual)	MW	55	
Forecasted PV (Cumulative)	MW	1,488	
PV scaling factor (SOG vs. total)	-	20%	
Limit (without SOG)	MW	310	
Limit (with SOG)	MW	522	
PV derate factor for capacity	-	19%	
PV Enablement	MW	43	
Energy Savings	MWh/MW	1,936	
DER Enablement: Capacity Savings	\$	\$ 592,197.36	\$ 11,714,726
DER Enablement: Energy Savings	\$	\$ 1,909,643.17	\$ 32,187,028
DER Enablement: Environmental Benefits	\$	\$ 2,126,639	\$ 32,894,634
DER/PV Enablement Benefits	\$	\$ 4,628,479	\$ 76,796,389

TOTAL BENEFITS			
Customer Avoided Outage Costs	\$	\$ 121,660,867	\$ 2,469,391,534
Customer Avoided Momentary Interruption Costs	\$	\$ 58,717,280	\$ 1,191,839,141
Peak Shaving Benefits	\$	\$ 2,122,225	\$ 40,796,855
DER/PV Enablement Benefits	\$	\$ 4,628,479	\$ 76,796,389
Total Benefits	\$	\$ 187,128,852	\$ 3,778,823,919

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Oct 19 2022

AREA/PROJECT/PROGRAM	Targeted Underground (TUG) - 11
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

NPV of COST/BENEFIT STREAM									
	2022	2023	2024	2025	2026	2027	2028	2029	2030
	0	1	2	3	4	5	6	7	8

COSTS

Program Capital Costs	\$ 143,222,365	\$ 28,642	\$ 36,777,966	\$ 54,853,284	\$ 49,153,637	\$ 25,423,961	\$ -	\$ -	\$ -	\$ -
Program Capital Contingency Costs	\$ 15,754,460	\$ 3,151	\$ 4,045,576	\$ 6,033,861	\$ 5,406,900	\$ 2,796,636	\$ -	\$ -	\$ -	\$ -
Total Program Capital Costs	\$ 158,976,825	\$ 31,793	\$ 40,823,542	\$ 60,887,145	\$ 54,560,537	\$ 28,220,597	\$ -	\$ -	\$ -	\$ -
Program O&M Costs	\$ 114,741	\$ 23	\$ 29,464	\$ 43,945	\$ 39,379	\$ 20,368	\$ -	\$ -	\$ -	\$ -
Total Program Costs	\$ 159,091,566	\$ 31,816	\$ 40,853,007	\$ 60,931,090	\$ 54,599,916	\$ 28,240,965	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

OPERATIONAL BENEFITS

Avoided Outage Benefits	\$ 4,238,784	\$ -	\$ -	\$ -	\$ 65,898	\$ 181,158	\$ 332,475	\$ 340,787	\$ 349,307	\$ 358,039
Avoided Vegetation Management Benefits	\$ 4,238,784	\$ -	\$ -	\$ -	\$ 65,898	\$ 181,158	\$ 332,475	\$ 340,787	\$ 349,307	\$ 358,039
Total Operational Benefits	\$ 8,477,567	\$ -	\$ -	\$ -	\$ 131,796	\$ 362,316	\$ 664,950	\$ 681,574	\$ 698,613	\$ 716,078

CUSTOMER BENEFITS

Avoided Sustained Outage Benefits (Non-MED/MED) - Residential Customers	\$ 504,276	\$ -	\$ -	\$ -	\$ 7,473	\$ 21,056	\$ 39,610	\$ 40,600	\$ 41,615	\$ 42,656
Avoided Sustained Outage Benefits (Non-MED/MED) - Small C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Avoided Sustained Outage Benefits (Non-MED/MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Avoided Momentary Outage Benefits (Non-MED/MED) - Residential Customers	\$ 11,215,749	\$ -	\$ -	\$ -	\$ 166,200	\$ 468,318	\$ 880,981	\$ 903,006	\$ 925,581	\$ 948,720
Avoided Momentary Outage Benefits (Non-MED/MED) - Small C&I Customers	\$ 131,047,684	\$ -	\$ -	\$ -	\$ 1,941,927	\$ 5,471,949	\$ 10,293,610	\$ 10,550,950	\$ 10,814,724	\$ 11,085,092
Avoided Momentary Outage Benefits (Non-MED/MED) - Medium & Large C&I Customers	\$ 335,755,317	\$ -	\$ -	\$ -	\$ 4,975,382	\$ 14,019,598	\$ 26,373,104	\$ 27,032,431	\$ 27,708,242	\$ 28,400,948
Total Customer Benefits	\$ 478,523,026	\$ -	\$ -	\$ -	\$ 7,090,982	\$ 19,980,921	\$ 37,587,304	\$ 38,526,987	\$ 39,490,162	\$ 40,477,416

COMBINED COSTS AND BENEFITS

Total PV of Operational Benefits	\$ 8,477,567	\$ -	\$ -	\$ -	\$ 131,796	\$ 362,316	\$ 664,950	\$ 681,574	\$ 698,613	\$ 716,078
Total PV of Customer Benefits	\$ 478,523,026	\$ -	\$ -	\$ -	\$ 7,090,982	\$ 19,980,921	\$ 37,587,304	\$ 38,526,987	\$ 39,490,162	\$ 40,477,416
Total PV of Combined Benefits	\$ 487,000,593	\$ -	\$ -	\$ -	\$ 7,222,777	\$ 20,343,237	\$ 38,252,254	\$ 39,208,561	\$ 40,188,775	\$ 41,193,494
Total PV Program and On-Going Costs	\$ 159,091,566	\$ 31,816	\$ 40,853,007	\$ 60,931,090	\$ 54,599,916	\$ 28,240,965	\$ -	\$ -	\$ -	\$ -
Combined NPV of Program	\$ 327,909,028	\$ (31,816)	\$ (40,853,007)	\$ (60,931,090)	\$ (47,377,139)	\$ (7,897,728)	\$ 38,252,254	\$ 39,208,561	\$ 40,188,775	\$ 41,193,494

Ratio of NPV Benefits to NPV Costs	3.1
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Cumulative Net Benefits (Payback Period)	\$ (31,816)	\$ (40,884,822)	\$ (101,815,912)	\$ (149,193,051)	\$ (157,090,779)	\$ (118,838,524)	\$ (79,629,963)	\$ (39,441,189)	\$ 1,752,306
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Oct 19 2022

AREA/PROJECT/PROGRAM	Targeted Underground (TUG) - 11
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

		NPV of COST/BENEFIT STREAM	YEAR																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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AREA/PROJECT/PROGRAM	Targeted Underground (TUG) - 11
PERIOD:	2024-2026
REGULATORY JURISDICTION:	DEC
STATE:	NC

	NPV of COST/BENEFIT STREAM					TOTAL
		2049	2050	2051	2052	
		27	28	29	30	
COSTS						
Program Capital Costs	\$ 143,222,365	\$ -	\$ -	\$ -	\$ -	\$ 166,237,490
Program Capital Contingency Costs	\$ 15,754,460	\$ -	\$ -	\$ -	\$ -	\$ 18,286,124
Total Program Capital Costs	\$ 158,976,825	\$ -	\$ -	\$ -	\$ -	\$ 184,523,614
Program O&M Costs	\$ 114,741	\$ -	\$ -	\$ -	\$ -	\$ 133,179
Total Program Costs	\$ 159,091,566	\$ -	\$ -	\$ -	\$ -	\$ 184,656,793
Total On-Going Costs	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
OPERATIONAL BENEFITS						
Avoided Outage Benefits	\$ 4,238,784	\$ 572,379	\$ 586,689	\$ 601,356	\$ 616,390	
Avoided Vegetation Management Benefits	\$ 4,238,784	\$ 572,379	\$ 586,689	\$ 601,356	\$ 616,390	\$ 12,220,048
Total Operational Benefits	\$ 8,477,567	\$ 1,144,759	\$ 1,173,378	\$ 1,202,712	\$ 1,232,780	\$ 12,220,048
CUSTOMER BENEFITS						
Avoided Sustained Outage Benefits (Non-MED/MED) - Residential Customers	\$ 504,276	\$ 68,192	\$ 69,897	\$ 71,644	\$ 73,435	\$ 1,454,959
Avoided Sustained Outage Benefits (Non-MED/MED) - Small C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Avoided Sustained Outage Benefits (Non-MED/MED) - Medium & Large C&I Customers	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
						\$ -
Avoided Momentary Outage Benefits (Non-MED/MED) - Residential Customers	\$ 11,215,749	\$ 1,516,672	\$ 1,554,589	\$ 1,593,454	\$ 1,633,290	\$ 32,360,156
Avoided Momentary Outage Benefits (Non-MED/MED) - Small C&I Customers	\$ 131,047,684	\$ 17,721,184	\$ 18,164,213	\$ 18,618,319	\$ 19,083,777	\$ 378,104,338
Avoided Momentary Outage Benefits (Non-MED/MED) - Medium & Large C&I Customers	\$ 335,755,317	\$ 45,403,181	\$ 46,538,260	\$ 47,701,717	\$ 48,894,260	\$ 968,735,486
						\$ -
Total Customer Benefits	\$ 478,523,026	\$ 64,709,228	\$ 66,326,959	\$ 67,985,133	\$ 69,684,761	\$ 1,380,654,938
COMBINED COSTS AND BENEFITS						
Total PV of Operational Benefits	\$ 8,477,567	\$ 1,144,759	\$ 1,173,378	\$ 1,202,712	\$ 1,232,780	\$ 24,440,095
Total PV of Customer Benefits	\$ 478,523,026	\$ 64,709,228	\$ 66,326,959	\$ 67,985,133	\$ 69,684,761	\$ 1,380,654,938
Total PV of Combined Benefits	\$ 487,000,593	\$ 65,853,987	\$ 67,500,337	\$ 69,187,845	\$ 70,917,541	\$ 1,405,095,034
Total PV Program and On-Going Costs	\$ 159,091,566	\$ -	\$ -	\$ -	\$ -	\$ 184,656,793
Combined NPV of Program	\$ 327,909,028	\$ 65,853,987	\$ 67,500,337	\$ 69,187,845	\$ 70,917,541	\$ 1,220,438,240
Ratio of NPV Benefits to NPV Costs	3.1					
Cumulative Net Benefits (Payback Period)		\$ 1,012,832,517	\$ 1,080,332,854	\$ 1,149,520,699	\$ 1,220,438,240	\$ 2,440,876,481

Duke Energy Carolinas (DEC) NORTH CAROLINA IVVC EVALUATION*				FORECAST												
				Years (for reference only)												
	Units		NPV (calculated)	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Benefits	\$		\$ 842,602,640	\$ -	\$ 2,965,726	\$ 5,895,398	\$ 13,794,536	\$ 21,283,923	\$ 23,259,315	\$ 31,702,446	\$ 36,997,943	\$ 119,910,641	\$ 47,171,200	\$ 49,721,752	\$ 52,169,957	\$ 63,045,918
Costs	\$		\$ 540,187,727	\$ 1,119,634	\$ 65,044,843	\$ 67,162,966	\$ 69,093,117	\$ 70,708,863	\$ 8,955,480	\$ 30,947,346	\$ 39,342,749	\$ 33,240,530	\$ 8,144,418	\$ 8,418,714	\$ 12,980,863	\$ 9,678,581
Net	\$		\$ 302,414,913	\$ (1,119,634)	\$ (62,079,118)	\$ (61,267,567)	\$ (55,298,580)	\$ (49,424,940)	\$ 14,303,835	\$ 755,100	\$ (2,344,806)	\$ 86,670,111	\$ 39,026,782	\$ 41,303,038	\$ 39,189,094	\$ 53,367,337
BCR			1.6													
COSTS																
Total Capital																
Transmission	\$		\$ 174,749,914	\$ -	\$ 16,550,882	\$ 16,945,409	\$ 17,349,799	\$ 17,764,299	\$ 3,776,429	\$ 14,247,438	\$ 17,604,265	\$ 11,481,871	\$ -	\$ -	\$ 3,954,914	\$ 4,053,787
Distribution	\$		\$ 210,481,241	\$ 598,239	\$ 34,691,140	\$ 35,518,080	\$ 36,365,694	\$ 37,096,447	\$ 855,496	\$ 8,977,423	\$ 12,652,885	\$ 10,361,002	\$ -	\$ -	\$ -	\$ -
Telecom	\$		\$ 30,973,700	\$ -	\$ 5,636,317	\$ 5,770,671	\$ 5,908,383	\$ 6,049,539	\$ 527,875	\$ 2,646,808	\$ 3,448,238	\$ 2,489,310	\$ 0	\$ 0	\$ (0)	\$ 0
IT	\$		\$ 11,112,374	\$ -	\$ 1,704,280	\$ 1,628,557	\$ 1,667,421	\$ 1,585,287	\$ 155,239	\$ 778,379	\$ 1,014,066	\$ 732,062	\$ -	\$ -	\$ 367,395	\$ 349,645
PM	\$		\$ 19,707,587	\$ 232,892	\$ 4,407,400	\$ 4,925,234	\$ 5,038,744	\$ 5,103,316	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ongoing	\$		\$ 27,349,339	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 3,485,900	\$ 3,573,048	\$ 3,662,374	\$ 3,753,933	\$ 308,470
	\$		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital	\$		\$ 474,374,155	\$ 831,131	\$ 62,990,019	\$ 64,787,951	\$ 66,330,041	\$ 67,598,887	\$ 5,315,039	\$ 26,650,048	\$ 34,719,454	\$ 28,550,145	\$ 3,573,048	\$ 3,662,374	\$ 8,076,242	\$ 4,711,901
Total O&M																
Transmission	\$		\$ 1,409,686	\$ -	\$ 148,965	\$ 152,689	\$ 156,506	\$ 160,419	\$ 75,529	\$ 284,949	\$ 352,085	\$ 229,637	\$ -	\$ -	\$ -	\$ -
Distribution	\$		\$ 7,818,516	\$ 288,502	\$ 1,686,479	\$ 1,728,641	\$ 1,771,857	\$ 1,752,463	\$ 29,486	\$ 213,620	\$ 238,161	\$ 229,234	\$ -	\$ -	\$ -	\$ -
Telecom	\$		\$ 374,663	\$ -	\$ 53,572	\$ 54,911	\$ 56,284	\$ 57,691	\$ 10,588	\$ 52,936	\$ 68,965	\$ 49,786	\$ -	\$ -	\$ -	\$ -
IT	\$		\$ 13,151,937	\$ -	\$ 54,923	\$ 137,309	\$ 277,688	\$ 418,067	\$ 544,409	\$ 674,194	\$ 802,217	\$ 929,089	\$ 1,064,455	\$ 1,190,358	\$ 1,278,095	\$ 1,278,095
PM	\$		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ongoing	\$		\$ 43,058,769	\$ -	\$ 110,886	\$ 301,465	\$ 500,741	\$ 721,336	\$ 2,980,429	\$ 3,071,599	\$ 3,161,867	\$ 3,252,639	\$ 3,506,915	\$ 3,565,983	\$ 3,626,527	\$ 3,688,585
Total O&M	\$		\$ 65,813,571	\$ 288,502	\$ 2,054,825	\$ 2,375,015	\$ 2,763,075	\$ 3,109,976	\$ 3,640,441	\$ 4,297,298	\$ 4,623,295	\$ 4,690,385	\$ 4,571,370	\$ 4,756,340	\$ 4,904,622	\$ 4,966,680
Total Costs																
Total Capital	\$		\$ 474,374,155	\$ 831,131	\$ 62,990,019	\$ 64,787,951	\$ 66,330,041	\$ 67,598,887	\$ 5,315,039	\$ 26,650,048	\$ 34,719,454	\$ 28,550,145	\$ 3,573,048	\$ 3,662,374	\$ 8,076,242	\$ 4,711,901
Total O&M	\$		\$ 65,813,571	\$ 288,502	\$ 2,054,825	\$ 2,375,015	\$ 2,763,075	\$ 3,109,976	\$ 3,640,441	\$ 4,297,298	\$ 4,623,295	\$ 4,690,385	\$ 4,571,370	\$ 4,756,340	\$ 4,904,622	\$ 4,966,680
Total Capital & O&M	\$		\$ 540,187,727	\$ 1,119,634	\$ 65,044,843	\$ 67,162,966	\$ 69,093,117	\$ 70,708,863	\$ 8,955,480	\$ 30,947,346	\$ 39,342,749	\$ 33,240,530	\$ 8,144,418	\$ 8,418,714	\$ 12,980,863	\$ 9,678,581
BENEFITS																
Operational Benefits																
Improved VAR Mgmt	\$		\$ 89,711,275	\$ -	\$ 1,207,215	\$ 2,333,710	\$ 3,548,006	\$ 4,813,044	\$ 4,955,475	\$ 5,561,915	\$ 5,791,848	\$ 6,003,446	\$ 6,298,053	\$ 6,530,947	\$ 7,025,943	\$ 7,449,689
Avoided Capacity Costs	\$		\$ 109,962,860	\$ -	\$ 1,758,511	\$ 3,561,688	\$ 5,410,382	\$ 7,305,459	\$ 7,398,238	\$ 7,492,196	\$ 7,587,346	\$ 7,683,706	\$ 7,781,289	\$ 7,880,111	\$ 7,980,189	\$ 8,081,537
Avoided Fixed O&M Generation Only	\$		\$ 4,608,029	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 76,644
Avoided Variable O&M Generation Only	\$		\$ 23,796,894	\$ -	\$ -	\$ -	\$ 324,455	\$ 524,156	\$ 703,705	\$ 1,017,079	\$ 1,246,780	\$ 2,057,398	\$ 1,746,073	\$ 2,082,388	\$ 2,107,452	\$ 1,943,778
Avoided Reagent Cost Generation	\$		\$ 281,705	\$ -	\$ -	\$ -	\$ (583)	\$ 5,062	\$ 2,879	\$ 18,955	\$ 28,968	\$ 12,315	\$ 15,546	\$ 28,534	\$ 20,907	\$ 16,667
Avoided Start Cost Generation	\$		\$ 12,056,328	\$ -	\$ -	\$ -	\$ (65,368)	\$ 323,528	\$ (641,605)	\$ 706,323	\$ 301,058	\$ 594,130	\$ 243,998	\$ 594,646	\$ 161,042	\$ 568,154
SUBTOTAL:	\$		\$ 240,417,091	\$ -	\$ 2,965,726	\$ 5,895,398	\$ 9,216,892	\$ 12,971,249	\$ 12,418,692	\$ 14,796,468	\$ 14,956,000	\$ 16,350,995	\$ 16,084,958	\$ 17,116,627	\$ 17,295,533	\$ 18,136,469
Customer Benefits																
Avoided Fuel Costs	\$		\$ 368,653,700	\$ -	\$ -	\$ -	\$ 4,571,386	\$ 8,297,974	\$ 10,819,947	\$ 16,880,652	\$ 19,785,832	\$ 25,929,170	\$ 23,399,839	\$ 22,687,340	\$ 23,375,724	\$ 29,390,479
SUBTOTAL:	\$		\$ 368,653,700	\$ -	\$ -	\$ -	\$ 4,571,386	\$ 8,297,974	\$ 10,819,947	\$ 16,880,652	\$ 19,785,832	\$ 25,929,170	\$ 23,399,839	\$ 22,687,340	\$ 23,375,724	\$ 29,390,479
Operational Benefits & Customer Benefits																
SUBTOTAL:	\$		\$ 609,070,791	0	2,965,726	5,895,398	13,788,278	21,269,222	23,238,639	31,677,120	34,741,831	42,280,165	39,484,797	39,803,966	40,671,257	47,526,949
Environmental Benefits																
SO2	\$		\$ 7,387	\$ -	\$ -	\$ -	\$ 105	\$ 374	\$ 591	\$ 471	\$ 419	\$ 1,324	\$ 793	\$ 778	\$ 636	\$ 1,069
NOX	\$		\$ 337,765	\$ -	\$ -	\$ -	\$ 6,154	\$ 14,327	\$ 20,085	\$ 24,855	\$ 22,694	\$ 42,061	\$ 28,310	\$ 26,089	\$ 29,858	\$ 30,448
CO2	\$		\$ 233,186,698	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,232,999	\$ 77,587,091	\$ 7,657,301	\$ 9,890,919	\$ 11,468,207	\$ 15,487,452
SUBTOTAL:	\$		\$ 233,531,849	\$ -	\$ -	\$ -	\$ 6,259	\$ 14,701	\$ 20,675	\$ 25,326	\$ 2,256,112	\$ 77,630,476	\$ 7,686,403	\$ 9,917,785	\$ 11,498,700	\$ 15,518,970
D	\$		\$ 842,602,640	\$ -	\$ 2,965,726	\$ 5,895,398	\$ 13,794,536	\$ 21,283,923	\$ 23,259,315	\$ 31,702,446	\$ 36,997,943	\$ 119,910,641	\$ 47,171,200	\$ 49,721,752	\$ 52,169,957	\$ 63,045,918

Duke Energy Carolinas (DEC) NORTH CAROLINA IVVC EVALUATION*

*Phase I and II deployments specific to DEC NC

	Units		NPV (calculated)	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	Total
Benefits	\$		\$ 842,602,640	\$ 70,227,088	\$ 72,644,921	\$ 79,575,256	\$ 91,175,775	\$ 75,084,935	\$ 83,206,541	\$ 88,306,843	\$ 109,021,424	\$ 126,122,046	\$ 109,733,512	\$ 129,468,955	\$ 119,236,368	\$ 129,624,599	\$ 1,751,347,019
Costs	\$		\$ 540,187,727	\$ 11,090,498	\$ 11,708,562	\$ 11,644,693	\$ 49,749,189	\$ 51,653,642	\$ 51,340,500	\$ 45,180,488	\$ 9,632,237	\$ 29,652,019	\$ 41,671,059	\$ 33,150,127	\$ 16,904,949	\$ 11,274,227	\$ 799,490,294
Net	\$		\$ 302,414,913	\$ 59,136,590	\$ 60,936,359	\$ 67,930,563	\$ 41,426,586	\$ 23,431,293	\$ 31,866,041	\$ 43,126,355	\$ 99,389,187	\$ 96,470,027	\$ 68,062,453	\$ 96,318,827	\$ 102,331,420	\$ 118,350,372	\$ 951,856,725
BCR			1.6														
COSTS																	
Total Capital																	
Transmission	\$		\$ 174,749,914	\$ 4,155,131	\$ 4,259,010	\$ 852,627	\$ 20,810,441	\$ 22,008,175	\$ 21,076,725	\$ 18,946,505	\$ 3,640,042	\$ 18,795,510	\$ 22,157,669	\$ 16,386,118	\$ 5,451,893	\$ -	\$ 282,268,937
Distribution	\$		\$ 210,481,241	\$ -	\$ -	\$ -	\$ 19,018,735	\$ 19,494,204	\$ 19,981,559	\$ 20,481,098	\$ 443,568	\$ 4,654,726	\$ 6,560,426	\$ 5,372,102	\$ -	\$ -	\$ 273,122,823
Telecom	\$		\$ 30,973,700	\$ 0	\$ 0	\$ (0)	\$ 0	\$ (0)	\$ 0	\$ -	\$ -	\$ -	\$ (0)	\$ (0)	\$ 0	\$ 0	\$ 32,477,141
IT	\$		\$ 11,112,374	\$ 358,386	\$ 339,047	\$ 31,452	\$ 441,962	\$ 496,820	\$ 446,969	\$ 306,117	\$ 26,247	\$ 601,901	\$ 619,028	\$ 582,538	\$ 434,009	\$ 40,261	\$ 14,707,068
PM	\$		\$ 19,707,587	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 19,707,587
Ongoing	\$		\$ 27,349,339	\$ 1,546,691	\$ 2,015,016	\$ 5,598,295	\$ 4,247,231	\$ 4,353,411	\$ 4,462,247	\$ -	\$ -	\$ -	\$ 6,654,614	\$ 5,048,623	\$ 5,174,838	\$ 5,304,209	\$ 59,188,899
	\$		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Capital	\$		\$ 474,374,155	\$ 6,060,209	\$ 6,613,073	\$ 6,482,374	\$ 44,518,370	\$ 46,352,610	\$ 45,967,499	\$ 39,733,720	\$ 4,109,857	\$ 24,052,137	\$ 35,991,737	\$ 27,389,380	\$ 11,060,740	\$ 5,344,470	\$ 681,472,455
Total O&M																	
Transmission	\$		\$ 1,409,686	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,560,778
Distribution	\$		\$ 7,818,516	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,938,442
Telecom	\$		\$ 374,663	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 404,733
IT	\$		\$ 13,151,937	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 1,278,095	\$ 25,264,129
PM	\$		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Ongoing	\$		\$ 43,058,769	\$ 3,752,195	\$ 3,817,395	\$ 3,884,224	\$ 3,952,725	\$ 4,022,938	\$ 4,094,906	\$ 4,168,674	\$ 4,244,286	\$ 4,321,788	\$ 4,401,227	\$ 4,482,653	\$ 4,566,114	\$ 4,651,662	\$ 82,849,757
Total O&M	\$		\$ 65,813,571	\$ 5,030,289	\$ 5,095,489	\$ 5,162,319	\$ 5,230,819	\$ 5,301,032	\$ 5,373,001	\$ 5,446,768	\$ 5,522,380	\$ 5,599,882	\$ 5,679,322	\$ 5,760,747	\$ 5,844,209	\$ 5,929,756	\$ 118,017,839
Total Costs																	
Total Capital	\$		\$ 474,374,155	\$ 6,060,209	\$ 6,613,073	\$ 6,482,374	\$ 44,518,370	\$ 46,352,610	\$ 45,967,499	\$ 39,733,720	\$ 4,109,857	\$ 24,052,137	\$ 35,991,737	\$ 27,389,380	\$ 11,060,740	\$ 5,344,470	\$ 681,472,455
Total O&M	\$		\$ 65,813,571	\$ 5,030,289	\$ 5,095,489	\$ 5,162,319	\$ 5,230,819	\$ 5,301,032	\$ 5,373,001	\$ 5,446,768	\$ 5,522,380	\$ 5,599,882	\$ 5,679,322	\$ 5,760,747	\$ 5,844,209	\$ 5,929,756	\$ 118,017,839
Total Capital & O&M	\$		\$ 540,187,727	\$ 11,090,498	\$ 11,708,562	\$ 11,644,693	\$ 49,749,189	\$ 51,653,642	\$ 51,340,500	\$ 45,180,488	\$ 9,632,237	\$ 29,652,019	\$ 41,671,059	\$ 33,150,127	\$ 16,904,949	\$ 11,274,227	\$ 799,490,294
BENEFITS																	
Operational Benefits																	
Improved VAR Mgmt	\$		\$ 89,711,275	\$ 7,828,080	\$ 8,393,477	\$ 8,936,560	\$ 6,633,301	\$ 6,828,770	\$ 7,100,741	\$ 7,333,229	\$ 7,709,856	\$ 8,056,471	\$ 8,361,270	\$ 8,648,115	\$ 8,774,514	\$ 8,903,115	\$ 165,026,788
Avoided Capacity Costs	\$		\$ 109,962,860	\$ 8,184,172	\$ 8,288,111	\$ 8,393,371	\$ 8,499,966	\$ 8,607,916	\$ 8,717,236	\$ 8,827,945	\$ 8,940,060	\$ 9,053,599	\$ 9,168,580	\$ 9,285,021	\$ 9,402,940	\$ 9,522,358	\$ 194,811,927
Avoided Fixed O&M Generation Only	\$		\$ 4,608,029	\$ 775,033	\$ 796,583	\$ 814,267	\$ 834,629	\$ 855,491	\$ 879,284	\$ 898,800	\$ 921,270	\$ 944,301	\$ 970,562	\$ 992,112	\$ 1,016,907	\$ 1,042,330	\$ 11,818,213
Avoided Variable O&M Generation Only	\$		\$ 23,796,894	\$ 2,121,024	\$ 2,411,000	\$ 3,352,826	\$ 2,910,272	\$ 1,922,811	\$ 2,551,824	\$ 2,454,961	\$ 2,612,847	\$ 2,662,879	\$ 2,572,940	\$ 2,651,723	\$ 2,735,164	\$ 3,663,994	\$ 48,377,530
Avoided Reagent Cost Generation	\$		\$ 281,705	\$ 22,253	\$ 30,052	\$ 51,991	\$ (30,351)	\$ 83,665	\$ 27,876	\$ 37,081	\$ 45,179	\$ 41,164	\$ 45,463	\$ 22,918	\$ 24,504	\$ 33,215	\$ 584,260
Avoided Start Cost Generation	\$		\$ 12,056,328	\$ 1,030,232	\$ 844,611	\$ 170,614	\$ 1,042,944	\$ 1,302,584	\$ 1,428,153	\$ 2,091,488	\$ 3,871,262	\$ 4,238,167	\$ 2,507,034	\$ 5,191,986	\$ 2,394,498	\$ 2,267,126	\$ 31,166,605
SUBTOTAL:	\$		\$ 240,417,091	\$ 19,960,794	\$ 20,763,835	\$ 21,719,628	\$ 19,890,760	\$ 19,601,237	\$ 20,705,114	\$ 21,643,504	\$ 24,100,474	\$ 24,996,580	\$ 23,625,848	\$ 26,791,876	\$ 24,348,527	\$ 25,432,138	\$ 451,785,322
Customer Benefits																	
Avoided Fuel Costs	\$		\$ 368,653,700	\$ 32,099,674	\$ 33,764,161	\$ 34,973,815	\$ 41,503,769	\$ 35,313,935	\$ 38,898,316	\$ 40,103,484	\$ 52,667,044	\$ 65,422,888	\$ 52,646,840	\$ 61,917,963	\$ 56,595,389	\$ 63,168,975	\$ 794,214,595
SUBTOTAL:	\$		\$ 368,653,700	\$ 32,099,674	\$ 33,764,161	\$ 34,973,815	\$ 41,503,769	\$ 35,313,935	\$ 38,898,316	\$ 40,103,484	\$ 52,667,044	\$ 65,422,888	\$ 52,646,840	\$ 61,917,963	\$ 56,595,389	\$ 63,168,975	\$ 794,214,595
Operational Benefits & Customer Benefits																	
SUBTOTAL:	\$		\$ 609,070,791	52,060,468	54,527,995	56,693,443	61,394,528	54,915,172	59,603,431	61,746,988	76,767,519	90,419,469	76,272,688	88,709,838	80,943,916	88,601,113	1,245,999,917
Environmental Benefits																	
SO2	\$		\$ 7,387	\$ 1,084	\$ 486	\$ 1,279	\$ 1,353	\$ 165	\$ (45)	\$ 194	\$ 165	\$ 45	\$ 60	\$ 52	\$ 82	\$ 22	\$ 11,500
NOX	\$		\$ 337,765	\$ 32,168	\$ 25,730	\$ 34,030	\$ 35,668	\$ 23,636	\$ 32,041	\$ 24,855	\$ 29,035	\$ 24,549	\$ 26,964	\$ 34,037	\$ 26,874	\$ 20,645	\$ 615,112
CO2	\$		\$ 233,186,698	\$ 18,133,367	\$ 18,090,710	\$ 22,846,504	\$ 29,744,225	\$ 20,145,962	\$ 23,571,115	\$ 26,534,805	\$ 32,224,706	\$ 35,677,984	\$ 33,433,800	\$ 40,725,026	\$ 38,265,496	\$ 41,002,819	\$ 504,720,489
SUBTOTAL:	\$		\$ 233,531,849	\$ 18,166,620	\$ 18,116,926	\$ 22,881,813	\$ 29,781,246	\$ 20,169,763	\$ 23,603,111	\$ 26,559,855	\$ 32,253,905	\$ 35,702,578	\$ 33,460,823	\$ 40,759,116	\$ 38,292,452	\$ 41,023,486	\$ 505,347,101
D TOTAL (all benefits)	\$		\$ 842,602,640	\$ 70,227,088	\$ 72,644,921	\$ 79,575,256	\$ 91,175,775	\$ 75,084,935	\$ 83,206,541	\$ 88,306,843	\$ 109,021,424	\$ 126,122,046	\$ 109,733,512	\$ 129,468,955	\$ 119,236,368	\$ 129,624,599	\$ 1,751,347,019

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Oct 19 2022



DEC NC COST-BENEFIT ANALYSIS - DISTRIBUTION PORTFOLIO SUMMARY
Net Present Value (Primary Costs and Benefits)
Substation and Line Projects

Program	NPV Costs			NPV Benefits				B/C Ratio
	Capital	O&M	Total	Operational	Customer	Other	Total	
Self-Optimizing Grid (Full SOG and Partial SOG)	\$ 228,970,448	\$ 9,478,670	\$ 238,449,118	\$ -	\$ 1,311,577,330	\$ 36,971,634	\$ 1,348,548,964	5.7
Distribution H&R: Laterals	\$ 354,750,158	\$ 6,797,936	\$ 361,548,093	\$ 9,487,387	\$ 889,006,803	\$ -	\$ 898,494,190	2.5
Distribution H&R: Storm	\$ 41,042,000	\$ 791,975	\$ 41,833,976	\$ 2,201,659	\$ 165,744,170	\$ -	\$ 167,945,829	4.0
Distribution H&R: Public Interference	\$ 78,800,972	\$ 1,507,044	\$ 80,308,016	\$ -	\$ 99,946,384	\$ -	\$ 99,946,384	1.2
Distribution Automation: Fuse Replacement	\$ 24,245,934	\$ 648,187	\$ 24,894,120	-	\$ 66,978,669	\$ -	\$ 66,978,669	2.7
Long Duration Interruptions (LDI)	\$ 19,015,596	\$ 683,560	\$ 19,699,156	\$ 711,208	\$ 319,499,044	\$ -	\$ 320,210,253	16.3
Targeted Undergrounding (TUG)	\$ 158,976,825	\$ 114,741	\$ 159,091,566	\$ 8,477,567	\$ 478,523,026	\$ -	\$ 487,000,593	3.1
Total NPV Costs and Benefits (Programs with CBAs)	\$ 905,801,932	\$ 20,022,113	\$ 925,824,045	\$ 20,877,821	\$ 3,331,275,426	\$ 36,971,634	\$ 3,389,124,882	3.7
Total NPV Costs and Benefits (Non-CBA Programs)	\$ 631,052,237	10,120,808	\$ 641,173,045	\$ -	\$ -	\$ -	\$ -	-
Total NPV Costs and Benefits (All Programs)	\$ 1,536,854,169	\$ 30,142,921	\$ 1,566,997,090	\$ 20,877,821	\$ 3,331,275,426	\$ 36,971,634	\$ 3,389,124,882	2.2