

2020 SD DSM Plan Cost-Effectiveness Analysis

AC REWARDS						2020	ELECTRIC	GOAL	
2020 Net Present Cost Benefit Summary Analysis For All Participants						Input Summary and Totals			
	Participant Test (\$Total)	Utility Test (\$Total)	Rate Impact Test (\$Total)	Total Resource Test (\$Total)	Societal Test (\$Total)	Program "Inputs" per Customer kW			
Benefits						Lifetime (Weighted on Generator kWh)	A	10.0 years	
						Annual Hours	B	8760	
						Gross Customer kW	C	1 kW	
						Generator Peak Coincidence Factor	D	53.91%	
						Gross Load Factor at Customer	E	1.50%	
						Transmission Loss Factor (Energy)	F	5.950%	
						Transmission Loss Factor (Demand)	G	7.220%	
						Societal Net Benefit (Cost)	H	\$530	
Avoided Revenue Requirements						Program Summary per Participant			
Generation	N/A	\$102,241	\$102,241	\$102,241	\$102,241	Gross kW Saved at Customer	I	0.79 kW	
T & D	N/A	\$62,145	\$62,145	\$62,145	\$62,145	Net coincident kW Saved at Generator	(I x D) / (1 - G)		0.46 kW
Marginal Energy	N/A	\$34,194	\$34,194	\$34,194	\$34,194	Gross Annual kWh Saved at Customer	(B x E x I)		104 kWh
Environmental Externality	N/A	N/A	N/A	N/A	\$0	Net Annual kWh Saved at Generator	(B x E x I) / (1 - F)		110 kWh
Subtotal	N/A	\$198,580	\$198,580	\$198,580	\$198,580	Program Summary All Participants			
Participant Benefits						Total Participants	J	900	
Bill Reduction - Electric	\$112,699	N/A	N/A	N/A	N/A	Total Budget	K	\$97,000	
Rebates from Xcel Energy	\$50,000	N/A	N/A	\$50,000	\$50,000	Gross kW Saved at Customer	(J x I)		708.63 kW
Incremental Capital Savings	\$0	N/A	N/A	\$0	\$0	Net coincident kW Saved at Generator	(I x D) / (1 - G) x J		412 kW
Incremental O&M Savings	\$363,741	N/A	N/A	\$363,741	\$363,741	Gross Annual kWh Saved at Customer	(B x E x I) x J		93,408 kWh
Subtotal	\$526,439	N/A	N/A	\$413,741	\$413,741	Net Annual kWh Saved at Generator	((B x E x I) / (1 - F)) x J		99,317 kWh
Total Benefits						Societal Net Benefits	(J x I x H)		\$375,321
Costs						Utility Program Cost per kWh Lifetime			\$0.0980
Utility Project Costs						Utility Program Cost per kW at Gen			\$236
Customer Services	N/A	\$0	\$0	\$0	\$0				
Utility Administration	N/A	\$47,000	\$47,000	\$47,000	\$47,000				
Advertising & Promotion	N/A	\$0	\$0	\$0	\$0				
Measurement & Verification	N/A	\$0	\$0	\$0	\$0				
Rebates	N/A	\$50,000	\$50,000	\$50,000	\$50,000				
Other	N/A	\$0	\$0	\$0	\$0				
Subtotal	N/A	\$97,000	\$97,000	\$97,000	\$97,000				
Utility Revenue Reduction									
Revenue Reduction - Electric	N/A	N/A	\$112,699	N/A	N/A				
Subtotal	N/A	N/A	\$112,699	N/A	N/A				
Participant Costs									
Incremental Capital Costs	\$140,000	N/A	N/A	\$140,000	\$140,000				
Incremental O&M Costs	\$0	N/A	N/A	\$0	\$0				
Subtotal	\$140,000	N/A	N/A	\$140,000	\$140,000				
Total Costs									
	\$140,000	\$97,000	\$209,699	\$237,000	\$237,000				
Net Benefit (Cost)									
	\$386,439	\$101,580	(\$11,119)	\$375,321	\$375,321				
Benefit/Cost Ratio									
	3.76	2.05	0.95	2.58	2.58				

Note: Dollar values represent present value of impacts accumulated over the lifetime of the measures.