

2022 SD DSM Plan Cost-Effectiveness Analysis

<b>LIGHTING EFFICIENCY</b>						<b>2022 ELECTRIC</b>		<b>GOAL</b>
<b>2022 Net Present Cost Benefit Summary Analysis For All Participants</b>						<b>Input Summary and Totals</b>		
	<b>Participant Test (\$Total)</b>	<b>Utility Test (\$Total)</b>	<b>Rate Impact Test (\$Total)</b>	<b>Total Resource Test (\$Total)</b>	<b>Societal Test (\$Total)</b>	<b>Program "Inputs" per Customer kW</b>		
<b>Benefits</b>						Lifetime (Weighted on Generator kWh)	A	18.3 years
<b>Avoided Revenue Requirements</b>						Annual Hours	B	8760
Generation	N/A	\$433,287	\$433,287	\$433,287	\$433,287	Gross Customer kW	C	1 kW
T & D	N/A	\$77,357	\$77,357	\$77,357	\$77,357	Generator Peak Coincidence Factor	D	49.71%
Marginal Energy	N/A	\$1,409,645	\$1,409,645	\$1,409,645	\$1,409,645	Gross Load Factor at Customer	E	48.58%
Environmental Externality	N/A	N/A	N/A	N/A	\$0	Transmission Loss Factor (Energy)	F	4.752%
Subtotal	N/A	\$1,920,289	\$1,920,289	\$1,920,289	\$1,920,289	Transmission Loss Factor (Demand)	G	5.520%
<b>Participant Benefits</b>						Societal Net Benefit (Cost)	H	(\$343)
Bill Reduction - Electric	\$5,092,084	N/A	N/A	N/A	N/A	<b>Program Summary per Participant</b>		
Rebates from Xcel Energy	\$401,209	N/A	N/A	\$401,209	\$401,209	Gross kW Saved at Customer	I	2.41 kW
Incremental Capital Savings	\$0	N/A	N/A	\$0	\$0	Net coincident kW Saved at Generator	$(I \times D) / (1 - G)$	
Incremental O&M Savings	\$0	N/A	N/A	\$0	\$0	Gross Annual kWh Saved at Customer	$(B \times E \times I)$	
Subtotal	\$5,493,293	N/A	N/A	\$401,209	\$401,209	Net Annual kWh Saved at Generator	$(B \times E \times I) / (1 - F)$	
<b>Total Benefits</b>	<b>\$5,493,293</b>	<b>\$1,920,289</b>	<b>\$1,920,289</b>	<b>\$2,321,498</b>	<b>\$2,321,498</b>	<b>Program Summary All Participants</b>		
<b>Costs</b>						Total Participants	J	477
<b>Utility Project Costs</b>						<b>Total Budget</b>	K	<b>\$423,484</b>
Customer Services	N/A	\$0	\$0	\$0	\$0	Gross kW Saved at Customer	$(J \times I)$	
Utility Administration	N/A	\$22,275	\$22,275	\$22,275	\$22,275	<b>Net coincident kW Saved at Generator</b>	$(I \times D) / (1 - G) \times J$	
Advertising & Promotion	N/A	\$0	\$0	\$0	\$0	Gross Annual kWh Saved at Customer	$(B \times E \times I) \times J$	
Measurement & Verification	N/A	\$0	\$0	\$0	\$0	<b>Net Annual kWh Saved at Generator</b>	$((B \times E \times I) / (1 - F)) \times J$	
Rebates	N/A	\$401,209	\$401,209	\$401,209	\$401,209	<b>Societal Net Benefits</b>	$(J \times I \times H)$	
Other	N/A	\$0	\$0	\$0	\$0	<b>Utility Program Cost per kWh Lifetime</b>		
Subtotal	N/A	\$423,484	\$423,484	\$423,484	\$423,484	<b>Utility Program Cost per kW at Gen</b>		
<b>Utility Revenue Reduction</b>								<b>\$0.0045</b>
Revenue Reduction - Electric	N/A	N/A	\$5,092,084	N/A	N/A			<b>\$701</b>
Subtotal	N/A	N/A	\$5,092,084	N/A	N/A			
<b>Participant Costs</b>								
Incremental Capital Costs	\$2,137,464	N/A	N/A	\$2,137,464	\$2,137,464			
Incremental O&M Costs	\$154,092	N/A	N/A	\$154,092	\$154,092			
Subtotal	\$2,291,555	N/A	N/A	\$2,291,555	\$2,291,555			
<b>Total Costs</b>	<b>\$2,291,555</b>	<b>\$423,484</b>	<b>\$5,515,568</b>	<b>\$2,715,039</b>	<b>\$2,715,039</b>			
<b>Net Benefit (Cost)</b>	<b>\$3,201,737</b>	<b>\$1,496,805</b>	<b>(\$3,595,279)</b>	<b>(\$393,541)</b>	<b>(\$393,541)</b>			
<b>Benefit/Cost Ratio</b>	<b>2.40</b>	<b>4.53</b>	<b>0.35</b>	<b>0.86</b>	<b>0.86</b>			

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