

**COMMERCIAL REFRIGERATION EFFICIENCY**

**2020**

**ELECTRIC**

**GOAL**

2020 Net Present Cost Benefit Summary Analysis For All Participants

	Participant Test (\$Total)	Utility Test (\$Total)	Rate Impact Test (\$Total)	Modified TRC Test (\$Total)
<b>Benefits</b>				
<b>Avoided Revenue Requirements</b>				
Generation Capacity	N/A	\$492,994	\$492,994	\$492,994
Trans. & Dist. Capacity	N/A	\$61,864	\$61,864	\$61,864
Marginal Energy	N/A	\$787,129	\$787,129	\$787,129
Avoided Emissions (CO2)	N/A	N/A	N/A	\$0
Subtotal				\$1,341,987
Non-Energy Benefits Adder (20%)				\$268,397
Subtotal	N/A	\$1,341,987	\$1,341,987	\$1,610,384
<b>Other Benefits</b>				
Bill Reduction - Electric	\$2,050,984	N/A	N/A	N/A
Participant Rebates and Incentives	\$209,288	N/A	N/A	\$209,288
Incremental Capital Savings	\$0	N/A	N/A	\$0
Incremental O&M Savings	\$45,170	N/A	N/A	\$45,170
Subtotal	\$2,305,441	N/A	N/A	\$254,458
<b>Total Benefits</b>	<b>\$2,305,441</b>	<b>\$1,341,987</b>	<b>\$1,341,987</b>	<b>\$1,864,842</b>
<b>Utility Project Costs</b>				
Program Planning & Design	N/A	\$0	\$0	\$0
Administration & Program Delivery	N/A	\$427,207	\$427,207	\$427,207
Advertising/Promotion/Customer Ed	N/A	\$9,100	\$9,100	\$9,100
Participant Rebates and Incentives	N/A	\$209,288	\$209,288	\$209,288
Equipment & Installation	N/A	\$0	\$0	\$0
Measurement and Verification	N/A	\$27,000	\$27,000	\$27,000
Subtotal	N/A	\$672,595	\$672,595	\$672,595
<b>Utility Revenue Reduction</b>				
Revenue Reduction - Electric	N/A	N/A	\$2,050,984	N/A
Subtotal	N/A	N/A	\$2,050,984	N/A
<b>Participant Costs</b>				
Incremental Capital Costs	\$617,385	N/A	N/A	\$617,385
Incremental O&M Costs	\$0	N/A	N/A	\$0
Subtotal	\$617,385	N/A	N/A	\$617,385
<b>Total Costs</b>	<b>\$617,385</b>	<b>\$672,595</b>	<b>\$2,723,579</b>	<b>\$1,289,980</b>
<b>Net Benefit (Cost)</b>	<b>\$1,688,056</b>	<b>\$669,392</b>	<b>(\$1,381,592)</b>	<b>\$574,862</b>
<b>Benefit/Cost Ratio</b>	<b>3.73</b>	<b>2.00</b>	<b>0.49</b>	<b>1.45</b>

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

**Input Summary and Totals**

Program Inputs per Customer kW		
Lifetime (Weighted on Generator kWh)	A	15 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	89.75%
Gross Load Factor at Customer	E	59.25%
Net-to-Gross (Energy)	F	100.0%
Net-to-Gross (Demand)	G	100.0%
Transmission Loss Factor (Energy)	H	5.332%
Transmission Loss Factor (Demand)	I	7.711%
<b>Installation Rate (Energy)</b>	<b>J</b>	<b>100.0%</b>
<b>Installation Rate (Demand)</b>	<b>K</b>	<b>100.0%</b>
MTRC Net Benefit (Cost)	L	\$1,087
MTRC Non-Energy Benefit Adder	M	\$507
Gross Annual kWh Saved at Customer	( B x E x C )	5,191 kWh
Net Annual kWh Saved at Customer	( F x ( B x E x C x J ) )	5,191 kWh
Net Annual kWh Saved at Generator	( F x ( B x E x C x J ) ) / ( 1 - H )	5,483 kWh

**Program Summary All Participants**

<b>Total Budget</b>	N	<b>\$672,595</b>
Gross kW Saved at Customer	O	529 kW
<b>Net coincident kW Saved at Generator</b>	<b>( G x O x K ) x D / ( 1 - I )</b>	<b>514 kW</b>
Net Annual kWh Saved at Customer	( F x ( B x E x O x J ) )	2,745,152 kWh
<b>Net Annual kWh Saved at Generator</b>	<b>( F x ( B x E x O x J ) ) / ( 1 - H )</b>	<b>2,899,773 kWh</b>
<b>TRC Net Benefits with Adder</b>	( O x L )	<b>\$574,862</b>
<b>TRC Net Benefits without Adder</b>	( O x ( L - M ) )	<b>\$306,464</b>
<b>Utility Program Cost per kWh Lifetime</b>		<b>\$0.0153</b>
<b>Utility Program Cost per kW at Gen</b>		<b>\$1,308</b>