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Xcel Energy

Docket No.: EL15-015

Response To: South Dakota Public Utilities Data Request No. 1-1
Commission

Requestor: Darren Kearney

Date Received: October 16, 2015

Question:

Please provide a copy of any models used to produce the energy savings data and benefit/cost test results provided in Attachment A.

Response:

We provide these details in Attachments A to this response.

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Date: November 2, 2015

BUSINESS SAVER'S SWITCH **ACTUAL**

Net Present Cost Benefit Summary Analysis For All Participants					
	Participant Test (\$Total)	Utility Test (\$Total)	Rate Impact Test (\$Total)	Total Resource Test (\$Total)	Societal Test (\$Total)
Benefits					
Avoided Revenue Requirements					
Generation	N/A	\$108,662	\$108,662	\$108,662	\$108,662
T & D	N/A	\$41,198	\$41,198	\$41,198	\$41,198
Marginal Energy	N/A	\$476	\$476	\$476	\$476
Environmental Externality	N/A	N/A	N/A	N/A	\$0
Subtotal	N/A	\$150,336	\$150,336	\$150,336	\$150,336
Participant Benefits					
Bill Reduction - Electric	\$102,465	N/A	N/A	N/A	N/A
Rebates from Xcel Energy	\$0	N/A	N/A	\$0	\$0
Incremental Capital Savings	\$0	N/A	N/A	\$0	\$0
Incremental O&M Savings	\$0	N/A	N/A	\$0	\$0
Subtotal	\$102,465	N/A	N/A	\$0	\$0
Total Benefits	\$102,465	\$150,336	\$150,336	\$150,336	\$150,336
Costs					
Utility Project Costs					
Product Delivery	N/A	\$34,212	\$34,212	\$34,212	\$34,212
Project Administration	N/A	\$16,950	\$16,950	\$16,950	\$16,950
Advertising & Promotion	N/A	\$1,372	\$1,372	\$1,372	\$1,372
Measurement & Verification	N/A	\$0	\$0	\$0	\$0
Rebates	N/A	\$0	\$0	\$0	\$0
Other	N/A	\$0	\$0	\$0	\$0
Subtotal	N/A	\$52,534	\$52,534	\$52,534	\$52,534
Utility Revenue Reduction					
Revenue Reduction - Electric	N/A	N/A	\$102,465	N/A	N/A
Subtotal	N/A	N/A	\$102,465	N/A	N/A
Participant Costs					
Incremental Capital Costs	\$0	N/A	N/A	\$0	\$0
Incremental O&M Costs	\$0	N/A	N/A	\$0	\$0
Subtotal	\$0	N/A	N/A	\$0	\$0
Total Costs	\$0	\$52,534	\$154,999	\$52,534	\$52,534
Net Benefit (Cost)	\$102,465	\$97,802	(\$4,663)	\$97,802	\$97,802
Benefit/Cost Ratio	INF	2.86	0.97	2.86	2.86

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	15.0 years
Annual Hours	B	8760
Gross Customer kW	C	1 kW
Generator Peak Coincidence Factor	D	17.11%
Gross Load Factor at Customer	E	0.01%
Transmission Loss Factor (Energy)	F	6.740%
Transmission Loss Factor (Demand)	G	7.890%
Societal Net Benefit (Cost)	H	\$159
Program Summary per Participant		
Gross kW Saved at Customer	I	8.43 kW
Net coincident kW Saved at Generator	$(I \times D) / (1 - G)$	1.57 kW
Gross Annual kWh Saved at Customer	$(B \times E \times I)$	11 kWh
Net Annual kWh Saved at Generator	$(B \times E \times I) / (1 - F)$	11 kWh
Program Summary All Participants		
Total Participants	J	73
Total Budget	K	\$52,534
Gross kW Saved at Customer	$(J \times I)$	615 kW
Net coincident kW Saved at Generator	$(I \times D) / (1 - G) \times J$	114 kW
Gross Annual kWh Saved at Customer	$(B \times E \times I) \times J$	778 kWh
Net Annual kWh Saved at Generator	$((B \times E \times I) / (1 - F)) \times J$	834 kWh
Societal Net Benefits	$(J \times I \times H)$	\$97,802
Utility Program Cost per kWh Lifetime		\$4.1982
Utility Program Cost per kW at Gen		\$460