

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2018

Otter Tail Power Company

Net Benefits

	Approved Savings, Costs, and Benefits				Actual Savings, Costs, and Benefits			
	Energy Savings (kWh)	Proposed Budget	Total Benefits	Utility Net Benefits	Energy Savings (kWh)	Actual Expenses	Total Benefits	Utility Net Benefits
Residential								
Air Conditioning Control	19,413	\$14,000	\$47,294	\$33,294	19,630	\$3,476	\$56,381	\$52,906
Air Source Heat Pumps	298,204	\$20,000	\$169,043	\$149,043	201,963	\$19,410	\$113,066	\$93,656
Geothermal Heat Pumps	321,779	\$30,000	\$228,330	\$198,330	50,907	\$4,813	\$40,442	\$35,629
Lighting	33,209	\$11,000	\$18,149	\$7,149	131,560	\$6,724	\$68,668	\$61,945
Total - Residential	672,605	\$75,000	\$462,816	\$387,816	404,060	\$34,422	\$278,557	\$244,135
Commercial								
Air Source Heat Pumps	291,112	\$18,000	\$147,829	\$129,829	80,731	\$6,657	\$42,322	\$35,664
Custom Efficiency Projects	130,729	\$40,000	\$119,087	\$79,087	1,064,853	\$77,252	\$700,646	\$623,395
Drive Power	1,013,339	\$79,000	\$542,416	\$463,416	1,370,254	\$158,374	\$789,336	\$630,962
Geothermal Heat Pumps	730,265	\$73,000	\$497,382	\$424,382	212,994	\$20,126	\$167,205	\$147,079
Lighting	957,826	\$127,000	\$594,692	\$467,692	2,193,782	\$170,651	\$1,304,865	\$1,134,214
Total - Commercial	3,123,271	\$337,000	\$1,901,406	\$1,564,406	4,922,614	\$433,059	\$3,004,374	\$2,571,314
Total - Direct Impact	3,795,876	\$412,000	\$2,364,222	\$1,952,222	5,326,674	\$467,482	\$3,282,930	\$2,815,449
Indirect Impact								
Advertising & Education		\$12,000	\$0	(\$12,000)		\$13,227	\$0	(\$13,227)
EEP Development - 2018		\$25,000	\$0	(\$25,000)		\$12,644	\$0	(\$12,644)
Total - Indirect Impact		\$37,000	\$0	(\$37,000)		\$25,871	\$0	(\$25,871)
Total - All Programs (Including Development)	3,795,876	\$449,000	\$2,364,222	\$1,915,222	5,326,674	\$493,353	\$3,282,930	\$2,789,578

**Benefit/Cost Results
2018 SD EEP**

Data discounted to 2018	AS FILED Utility Test	ACTUAL 2018 Utility Test
NPV Method: Midyear		
Discount Rates:	8.50%	8.50%
Benefit/Cost Ratio	5.27	6.65
Total Costs	\$449,000	\$493,353
Total Benefits	\$2,364,222	\$3,282,930
Net Benefits	\$1,915,222	\$2,789,578
Total Benefits:		
Utility Elec. Production Cost Decr	\$1,362,429	\$1,842,771
Utility Ancillary	\$0	\$0
Utility Generation Cap. Credit	\$593,490	\$852,951
Utility Transmission & Distrib. Credit	\$519,226	\$587,209
Total Benefits	\$2,475,145	\$3,282,930
Total Costs:		
Utility Rebates Paid	\$297,743	\$410,395
Utility Fixed Admin Cost	\$151,257	\$82,958
Total Costs	\$449,000	\$493,353

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2018

Otter Tail Power Company

Benefit/Cost Ratios

APPENDIX A, TABLE 3 (CORRECTED)

	Approved Budget Benefit / Cost Test Results					Actual Benefit / Cost Test Results				
	Utility Test	Total Resource Test	Ratepayer Impact Test	Societal Test	Participant Test	Utility Test	TRC Test	RIM Test	Societal Test	Participant Test
Residential										
Air Conditioning Control	3.38	3.38	3.02	3.38	inf.	16.22	16.22	11.19	16.22	inf.
Air Source Heat Pumps	8.45	1.81	0.51	2.90	6.18	5.83	1.41	0.56	2.26	4.51
Geothermal Heat Pumps	7.61	1.61	0.62	2.55	4.34	8.40	1.30	0.80	2.04	2.67
Lighting	1.65	4.27	0.43	6.37	inf.	10.21	6.72	0.61	9.96	18.84
Total - Residential	6.17	1.83	0.61	2.79	5.32	8.09	2.23	0.75	3.22	5.23
Commercial										
Air Source Heat Pumps	8.21	1.61	0.57	2.40	3.18	6.36	6.30	0.63	9.33	19.76
Custom Efficiency Projects	2.98	0.71	0.78	1.07	0.96	9.07	2.95	0.96	3.77	2.81
Drive Power	6.87	2.98	0.75	4.45	4.61	4.98	1.58	0.82	2.34	2.06
Geothermal Heat Pumps	6.81	1.35	0.72	1.99	2.03	8.31	1.82	0.93	2.67	2.12
Lighting	4.68	1.63	0.81	2.39	2.23	7.65	8.87	0.90	13.15	11.92
Total - Commercial	5.64	1.62	0.74	2.40	2.42	6.94	3.05	0.89	4.36	3.62
Indirect Impact										
Advertising & Education										
EEP Development - 2018										
Total - Indirect Impact										
Total - All Programs	5.27	1.61	0.70	2.40	2.91	6.65	2.90	0.87	4.14	3.78

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2018

APPENDIX A, TABLE 4 (CORRECTED)

Otter Tail Power Company

Lifetime Savings

	Energy Savings			Demand Savings		
	Proposed Energy Savings (kWh)	Actual Energy Savings (kWh)	% of Goal	Proposed Summer Coincident kW Savings	Actual Summer Coincident kW Savings	% of Goal
Residential						
Air Conditioning Control	18,328	19,630	107%	437.0	468.1	107%
Air Source Heat Pumps	5,367,667	3,635,327	68%	28.3	15.7	56%
Geothermal Heat Pumps	5,792,020	916,334	16%	23.9	4.8	20%
Lighting	498,136	1,973,397	396%	3.9	11.4	295%
Total - Residential	11,676,150	6,544,687	56%	493.1	500.1	101%
Commercial						
Air Source Heat Pumps	4,366,686	1,210,968	28%	25.6	7.3	28%
Custom Efficiency Projects	1,960,932	16,293,098	831%	45.3	233.1	515%
Drive Power	15,200,082	20,553,816	135%	133.5	193.5	145%
Geothermal Heat Pumps	10,953,976	3,194,912	29%	93.0	27.1	29%
Lighting	11,717,502	32,469,073	277%	210.0	345.6	165%
Total - Commercial	44,199,177	73,721,867	167%	507.4	806.6	159%
Total - Direct Impact	55,875,327	80,266,554	144%	1,000.5	1,306.7	131%
Indirect Impact						
Advertising & Education						
Total - Indirect Impact						
Total - Without Development Costs	55,875,327	80,266,554	144%	1,000.5	1,306.7	131%
Development						
EEP Development						
Total - Development						
Total - All Programs (Including Development)	55,875,327	80,266,554	144%	1,000.5	1,306.68	131%