

Appendix A: Tables

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019

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	20,498	\$14,000	\$60,573	\$46,573	19,940	\$3,476	\$59,555	\$56,079
Air Source Heat Pumps	298,204	\$20,000	\$201,561	\$181,561	481,523	\$31,804	\$321,776	\$289,972
Geothermal Heat Pumps	321,779	\$30,000	\$265,427	\$235,427	103,046	\$9,028	\$86,081	\$77,053
Lighting	33,209	\$11,000	\$21,456	\$10,456	83,472	\$4,180	\$47,626	\$43,447
Total - Residential	673,690	\$75,000	\$549,018	\$474,018	687,980	\$48,488	\$515,039	\$466,550
Commercial								
Air Source Heat Pumps	291,112	\$18,000	\$174,516	\$156,516	123,974	\$34,473	\$71,768	\$37,295
Custom Efficiency Projects	4,274,737	\$168,000	\$2,780,534	\$2,612,534	318,012	\$21,716	\$198,500	\$176,785
Drive Power	4,207,940	\$201,000	\$2,732,482	\$2,531,482	7,779,015	\$362,263	\$5,466,002	\$5,103,739
Geothermal Heat Pumps	730,265	\$73,000	\$578,048	\$505,048	0	\$0	\$0	\$0
Lighting	957,826	\$127,000	\$706,840	\$579,840	4,308,116	\$222,895	\$2,569,717	\$2,346,822
Total - Commercial	10,461,880	\$587,000	\$6,972,418	\$6,385,418	12,529,117	\$641,347	\$8,305,988	\$7,664,641
Total - Direct Impact	11,135,570	\$662,000	\$7,521,436	\$6,859,436	13,217,098	\$689,835	\$8,821,026	\$8,131,191
Indirect Impact								
Advertising & Education		\$12,000	\$0	(\$12,000)		\$13,667	\$0	(\$13,667)
EEP Development - 2019		\$25,000	\$0	(\$25,000)		\$12,482	\$0	(\$12,482)
Total - Indirect Impact		\$37,000	\$0	(\$37,000)		\$26,149	\$0	(\$26,149)
Total - All Programs (Including Development)	11,135,570	\$699,000	\$7,521,436	\$6,822,436	13,217,098	\$715,984	\$8,821,026	\$8,105,042

Benefit/Cost Results
2019 SD EEP

Data discounted to 2019	AS FILED Utility Test	ACTUAL 2019 Utility Test
NPV Method: Midyear		
Discount Rates:	7.09%	7.09%
Benefit/Cost Ratio	10.76	12.32
Total Costs	\$699,000	\$715,984
Total Benefits	\$7,521,436	\$8,821,026
Net Benefits	\$6,822,436	\$8,105,042
Total Benefits:		
Utility Elec. Production Cost Decr	\$4,354,798	\$4,983,844
Utility Ancillary	\$0	\$0
Utility Generation Cap. Credit	\$1,938,371	\$2,477,073
Utility Transmission & Distrib. Credit	\$1,228,267	\$1,360,109
Total Benefits	\$7,521,436	\$8,821,026
Total Costs:		
Utility Rebates Paid	\$507,744	\$607,986
Utility Fixed Admin Cost	\$191,256	\$107,998
Total Costs	\$699,000	\$715,984

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019

Otter Tail Power Company

Benefit/Cost Ratios

	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	4.33	4.33	3.78	4.33	inf.	17.13	17.13	11.47	17.13	inf.
Air Source Heat Pumps	10.08	2.16	0.54	3.11	6.35	10.12	2.04	0.59	2.93	5.33
Geothermal Heat Pumps	8.85	1.87	0.65	2.68	4.46	9.53	1.90	0.73	2.72	3.91
Lighting	1.95	5.05	0.47	6.87	inf.	11.39	52.43	0.58	71.10	3,335.52
Total - Residential	7.32	2.17	0.65	3.00	5.47	10.62	2.48	0.69	3.42	5.62
Commercial										
Air Source Heat Pumps	9.70	1.90	0.60	2.59	3.53	2.08	0.30	0.51	0.41	0.61
Custom Efficiency Projects	16.55	16.02	0.88	21.79	22.32	9.14	2.45	1.31	3.13	2.27
Drive Power	13.59	4.47	0.83	6.08	6.17	15.09	4.58	1.03	6.24	4.80
Geothermal Heat Pumps	7.92	1.56	0.76	2.12	2.25	inf.	inf.	inf.	inf.	inf.
Lighting	5.57	1.94	0.88	2.59	2.45	11.53	13.95	0.92	18.53	19.60
Total - Commercial	11.88	4.33	0.84	5.87	5.88	12.95	4.90	0.99	6.61	5.49
Indirect Impact										
Advertising & Education										
EEP Development - 2019										
Total - Indirect Impact										
Total - All Programs	10.76	3.95	0.82	5.38	5.83	12.32	4.57	0.96	6.18	5.50

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019

APPENDIX A, TABLE 4

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	20,498	19,940	97%	488.8	475.5	97%
Air Source Heat Pumps	5,367,667	8,667,406	161%	28.3	39.4	139%
Geothermal Heat Pumps	5,792,020	1,854,821	32%	23.9	9.4	39%
Lighting	498,136	1,252,083	251%	3.9	5.6	146%
Total - Residential	11,678,321	11,794,250	101%	544.9	529.9	97%
Commercial						
Air Source Heat Pumps	4,366,686	1,859,612	43%	25.6	9.1	36%
Custom Efficiency Projects	64,121,052	16,293,098	25%	598.5	233.1	39%
Drive Power	63,119,095	116,685,223	185%	589.6	1,308.9	222%
Geothermal Heat Pumps	10,953,976	0	0%	93.0	0.0	0%
Lighting	11,717,502	56,839,005	485%	210.0	563.0	268%
Total - Commercial	154,278,311	191,676,939	124%	1,516.7	2,114.1	139%
Total - Direct Impact	165,956,632	203,471,188	123%	2,061.6	2,644.0	128%
Indirect Impact						
Advertising & Education						
Total - Indirect Impact						
Total - Without Development Costs	165,956,632	203,471,188	123%	2,061.6	2,644.0	128%
Development						
EEP Development						
Total - Development						
Total - All Programs (Including Development)	165,956,632	203,471,188	123%	2,061.6	2,644.02	128%

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019
Otter Tail Power Company
Incentive Calculation

APPENDIX A, TABLE 5

Calculated Incentive Based on Pre-Year Inputs	
1 Original EEP Expense Budget	\$699,000
2 Original EEP Expense Budget multiplied by 30%	\$209,700
Calculated Incentive Based on Post-Year Inputs	
3 Actual EEP Expenses	\$715,984
4 Actual EEP Expenses multiplied by 30%	\$214,795
5 Financial Incentive: lesser of lines 2 and 4.	\$209,700

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019
Otter Tail Power Company
EEP Tracker Account / Cost Recovery

APPENDIX A, TABLE 6

EEP AUTOMATIC RECOVERY MECHANISM

		FILING DATE										
		May 1										
		2008/09 Actual	2010 Actual	2011 Actual	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Actual	2019 Actual
1	Estimated EEP Tracker Account Balance - end of prior year	\$27,487	(\$43,107)	(\$31,900)	\$45,767	\$134,194	\$110,115	\$111,762	\$77,456	(\$15,484)	\$24,284	(\$128)
2	Accounting Adjustments	\$0	(\$45)	\$45	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3	True up from Previous Year (sum of lines 1 and 2)	\$27,487	(\$43,152)	(\$31,855)	\$45,767	\$134,194	\$110,115	\$111,762	\$77,456	(\$15,484)	\$24,284	(\$128)
4												
5	EEP Program expenditures	\$252,677	\$243,816	\$272,093	\$309,911	\$281,549	\$351,483	\$371,902	\$362,330	\$463,357	\$493,353	\$715,984
6	Previous Year EEP Financial Incentives	\$0	\$47,130	\$73,145	\$78,900	\$84,000	\$84,000	\$105,445	\$105,900	\$105,900	\$134,700	\$134,700
7	EEP Carrying Charge	(\$726)	(\$6,503)	(\$4,286)	\$6,412	\$7,950	\$7,195	\$11,110	\$3,485	\$6,166	\$4,372	(\$2,291)
8	EEP Cost Recovery through EE Adjustment Factor	(\$322,545)	(\$273,190)	(\$263,330)	(\$306,796)	(\$397,578)	(\$441,030)	(\$522,763)	(\$564,655)	(\$535,655)	(\$656,837)	(\$777,590)
9	Recoverable Tracker Balance (Line 3 Plus Lines 5 thru 8)	(\$43,107)	(\$31,900)	\$45,767	\$134,194	\$110,115	\$111,762	\$77,456	(\$15,484)	\$24,284	(\$128)	\$70,674
10												
11	SD Sales (KWH budget)											
12	Conservation Surcharge (1)	\$0.00063	\$0.00063	\$0.00063	\$0.00088	\$0.00103	\$0.00103	\$0.00152	\$0.00114	\$0.00138	\$0.00155	\$0.00164
13	Estimated EEP Tracker Account Balances											

(1) Effective for 12-month period July 1 through June 30

	2020 Budget Financial Incentive
1	Estimated EEP Tracker Account Balance - end of prior year \$70,674
2	Accounting Adjustments \$0
3	True up from Previous Year (sum of lines 1 and 2) \$70,674
4	
5	EEP Program expenditures \$699,000
6	Previous Year EEP Financial Incentives \$205,679
7	Projected EEP Carrying Charge \$7,194
8	EEP Cost Recovery through EE Adjustment Factor (\$851,786)
9	Recoverable Tracker Balance (Line 3 Plus Lines 5 thru 8) \$130,761
10	
11	SD Sales (KWH budget) 482,713,058
12	Conservation Surcharge (1) \$0.00195
13	Estimated EEP Tracker Account Balances

(1) Effective for 12-month period July 1 through June 30

Otter Tail Power Company
EEP TRACKER AND CALCULATION OF PROPOSED EEP

APPENDIX A, TABLE 7

	January 2020	February 2020	March* 2020	April 2020	May 2020	June 2020	Total
1 Beginning of Period Balance	\$70,674	\$12,284	\$202,421	\$155,760	\$109,729	\$69,710	
2 Monthly Carrying Charge	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	
3 Monthly Carrying Charge	\$418	\$73	\$1,196	\$920	\$648	\$412	\$3,667
4 EEP Program Charges	\$24,554	\$265,061	\$20,629	\$19,042	\$17,376	\$11,818	\$358,480
5 EEP Incentive	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Less: Energy Efficiency Adjustment (EEP Revenue)	(\$83,362)	(\$74,997)	(\$68,486)	(\$65,993)	(\$58,043)	(\$56,864)	(\$407,745)
8 End of Period Balance	\$12,284	\$202,421	\$155,760	\$109,729	\$69,710	\$25,076	
9 CURRENT EEP FACTOR (\$/kWh)	\$0.00164						
10 Projected sales (kWh)				40,239,756	35,392,247	34,673,033	

1. EEP TRACKER PROPOSED \$/kWh Method

	July 2020	August 2020	September 2020	October 2020	November 2020	December 2020	January 2021	February 2021	March 2021	April 2021	May 2021	June 2021	Total
1 Beginning of Period Balance	\$25,076	\$177,067	\$127,908	\$68,279	\$122,718	\$87,192	\$133,049	\$62,575	\$233,082	\$170,640	\$109,970	\$56,648	
2 Monthly Carrying Charge Rate	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%	
3 Monthly Carrying Charge	\$148	\$1,046	\$756	\$403	\$725	\$515	\$786	\$370	\$1,377	\$1,008	\$650	\$335	\$8,119
4 EEP Program Charges	\$15,257	\$24,178	\$11,515	\$121,253	\$39,690	\$128,627	\$24,554	\$265,061	\$20,629	\$19,042	\$17,376	\$11,818	\$699,000
5 EEP Incentive	\$207,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$207,900
7 Less: Energy Efficiency Adjustment (EEP Revenue)	(\$71,314)	(\$74,383)	(\$71,900)	(\$67,218)	(\$75,941)	(\$83,286)	(\$95,814)	(\$94,923)	(\$84,449)	(\$80,720)	(\$71,348)	(\$69,996)	(\$941,290)
8 End of Period Balance	\$177,067	\$127,908	\$68,279	\$122,718	\$87,192	\$133,049	\$62,575	\$233,082	\$170,640	\$109,970	\$56,648	(\$1,196)	
9 PROPOSED EEP FACTOR (\$ / kWh)	\$0.00195												
12 Projected sales (kWh)	36,571,111	38,145,300	36,871,630	34,470,562	38,943,996	42,710,578	49,135,341	48,678,583	43,307,155	41,395,061	36,588,518	35,895,223	

*Actual data was used through March 2019