

## **Appendix A: Tables**



**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2017**

**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
<b>Residential</b>								
Air Conditioning Control	18,328	\$14,000	\$47,294	\$33,294	19,537	\$9,326	\$50,415	\$41,090
Air Source Heat Pumps	298,204	\$20,000	\$169,043	\$149,043	310,718	\$20,086	\$170,113	\$150,027
Geothermal Heat Pumps	321,779	\$30,000	\$228,330	\$198,330	153,739	\$12,408	\$114,782	\$102,374
Lighting	33,209	\$11,000	\$18,149	\$7,149	130,948	\$14,652	\$58,861	\$44,209
<b>Total - Residential</b>	671,519	\$75,000	\$462,816	\$387,816	614,942	\$56,471	\$394,171	\$337,700
<b>Commercial</b>								
Air Source Heat Pumps	291,112	\$18,000	\$147,829	\$129,829	57,504	\$4,163	\$26,733	\$22,570
Custom Efficiency Projects	130,729	\$40,000	\$119,087	\$79,087	1,277,412	\$60,171	\$685,509	\$625,338
Drive Power	1,013,339	\$79,000	\$542,416	\$463,416	622,586	\$78,878	\$344,385	\$265,508
Geothermal Heat Pumps	730,265	\$73,000	\$497,382	\$424,382	249,507	\$21,882	\$189,608	\$167,726
Lighting	957,826	\$127,000	\$594,692	\$467,692	2,119,879	\$217,741	\$1,270,574	\$1,052,832
<b>Total - Commercial</b>	3,123,271	\$337,000	\$1,901,406	\$1,564,406	4,326,888	\$382,835	\$2,516,808	\$2,133,974
<b>Total - Direct Impact</b>	3,794,791	\$412,000	\$2,364,222	\$1,952,222	4,941,830	\$439,306	\$2,910,980	\$2,471,674
<b>Indirect Impact</b>								
Advertising & Education		\$12,000	\$0	(\$12,000)		\$11,937	\$0	(\$11,937)
EEP Development - 2017		\$25,000	\$0	(\$25,000)		\$12,114	\$0	(\$12,114)
<b>Total - Indirect Impact</b>		\$37,000	\$0	(\$37,000)		\$24,051	\$0	(\$24,051)
<b>Total - All Programs (Including Development)</b>	3,794,791	\$449,000	\$2,364,222	\$1,915,222	4,941,830	\$463,357	\$2,910,980	\$2,447,623

**Benefit/Cost Results**  
**2017 SD EEP**

<b>Data discounted to 2017</b>	<b>AS FILED Utility Test</b>	<b>ACTUAL 2017 Utility Test</b>
NPV Method: Midyear		
Discount Rates:	8.50%	8.50%
Benefit/Cost Ratio	5.27	6.28
Total Costs	\$449,000	\$463,357
Total Benefits	\$2,364,222	\$2,910,980
Net Benefits	\$1,915,222	\$2,447,623
Total Benefits:		
Utility Elec. Production Cost Decr	\$1,307,538	\$1,608,588
Utility Ancillary	\$0	\$0
Utility Generation Cap. Credit	\$537,440	\$717,447
Utility Transmission & Distrib. Credit	\$519,245	\$584,945
Total Benefits	\$2,364,222	\$2,910,980
Total Costs:		
Utility Rebates Paid	\$297,743	\$356,398
Utility Fixed Admin Cost	\$151,257	\$106,959
Total Costs	\$449,000	\$463,357

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2017

Otter Tail Power Company  
Benefit/Cost Ratios

	Approved 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
						Ratio	Ratio	Ratio	Ratio	Ratio
<b>Residential</b>										
Air Conditioning Control	3.38	3.38	3.02	3.38	inf.	5.41	5.41	4.66	5.41	inf.
Air Source Heat Pumps	8.45	1.81	0.51	2.90	6.18	8.47	1.49	0.58	2.39	4.38
Geothermal Heat Pumps	7.61	1.61	0.62	2.55	4.34	9.25	1.26	0.78	1.99	2.65
Lighting	1.65	4.27	0.43	6.37	inf.	4.02	4.43	0.50	6.59	23.17
<b>Total - Residential</b>	<b>6.17</b>	<b>1.83</b>	<b>0.61</b>	<b>2.79</b>	<b>5.32</b>	<b>6.98</b>	<b>1.73</b>	<b>0.69</b>	<b>2.60</b>	<b>4.31</b>
<b>Commercial</b>										
Air Source Heat Pumps	8.21	1.61	0.57	2.40	3.18	6.42	1.20	0.58	1.79	2.30
Custom Efficiency Projects	2.98	0.71	0.78	1.07	0.96	11.39	6.39	0.92	6.67	5.85
Drive Power	6.87	2.98	0.75	4.45	4.61	4.37	2.00	0.78	2.98	2.85
Geothermal Heat Pumps	6.81	1.35	0.72	1.99	2.03	8.67	1.68	0.92	2.47	1.95
Lighting	4.68	1.63	0.81	2.39	2.23	5.84	10.82	0.87	16.17	17.80
<b>Total - Commercial</b>	<b>5.64</b>	<b>1.62</b>	<b>0.74</b>	<b>2.40</b>	<b>2.42</b>	<b>6.57</b>	<b>4.84</b>	<b>0.87</b>	<b>6.49</b>	<b>5.91</b>
<b>Indirect Impact</b>										
Advertising & Education										
EEP Development - 2017										
<b>Total - Indirect Impact</b>										
<b>Total - All Programs</b>	<b>5.27</b>	<b>1.61</b>	<b>0.70</b>	<b>2.40</b>	<b>2.91</b>	<b>6.63</b>	<b>3.95</b>	<b>0.84</b>	<b>5.38</b>	<b>5.45</b>

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2017**

**APPENDIX A, TABLE 4**

**Otter Tail Power Company**

**Incentive Calculation**

**Calculated Incentive Based on Pre-Year Inputs**

1 Original EEP Expense Budget	\$449,000
2 Original EEP Expense Budget multiplied by 30%	\$134,700

**Calculated Incentive Based on Post-Year Inputs**

3 Actual EEP Expenses	\$463,357
4 Actual EEP Expenses multiplied by 30%	\$139,007

5 <b>Financial Incentive:</b> lesser of lines 2 and 4.	<b>\$134,700</b>
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**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2017**

**APPENDIX A, TABLE 5**

**Otter Tail Power Company**

**EEP Tracker Account / Cost Recovery**

**EEP AUTOMATIC RECOVERY MECHANISM**

		<b>FILING DATE</b>								
		<b>May 1</b>								
		<b>2008/09 Actual</b>	<b>2010 Actual</b>	<b>2011 Actual</b>	<b>2012 Actual</b>	<b>2013 Actual</b>	<b>2014 Actual</b>	<b>2015 Actual</b>	<b>2016 Actual</b>	<b>2017 Actual</b>
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)
2	Accounting Adjustments	\$0	(\$45)	\$45	\$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)
4	EEP Program expenditures	\$252,677	\$243,816	\$272,093	\$309,911	\$281,549	\$351,483	\$371,902	\$362,330	\$463,357
5	Previous Year EEP Financial Incentives	\$0	\$47,130	\$73,145	\$78,900	\$84,000	\$84,000	\$105,445	\$105,900	\$105,900
6	EEP Carrying Charge	(\$726)	(\$6,503)	(\$4,286)	\$6,412	\$7,950	\$7,195	\$11,110	\$3,485	\$6,166
7	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)
8	Recoverable Tracker Balance (Line 4 Plus Lines 5 thru 8)	(\$43,107)	(\$31,900)	\$45,767	\$134,194	\$110,115	\$111,762	\$77,456	(\$15,484)	\$24,284
9										
10	SD Sales (KWH budget)									
11	Conservation Surcharge (1)	\$0.00063	\$0.00063	\$0.00063	\$0.00088	\$0.00103	\$0.00103	\$0.00152	\$0.00114	\$0.00138
12	Estimated EEP Tracker Account Balances									

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

		<b>2018 Budget Financial Incentive</b>
1	Estimated EEP Tracker Account Balance - end of prior year	\$24,284
2	Accounting Adjustments	\$0
3	True up from Previous Year (sum of lines 1 and 2)	\$24,284
4		
5	EEP Program expenditures	\$449,000
6	Previous Year EEP Financial Incentives	\$134,700
7	Projected EEP Carrying Charge	\$5,819
8	EEP Cost Recovery through EE Adjustment Factor	(\$616,749)
9	Recoverable Tracker Balance (Line 4 Plus Lines 5 thru 8)	(\$2,946)
10		
11	SD Sales (KWH budget)	415,987,031
12	Conservation Surcharge (1)	\$0.00155
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 6

	January 2018	February* 2018	March 2018	April 2018	May 2018	June 2018	Total
1 Beginning of Period Balance	\$24,284	\$10,474	\$29,398	\$51,705	\$60,332	\$78,824	
2 Monthly Carrying Charge	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%	
3 Monthly Carrying Charge	\$172	\$74	\$208	\$366	\$427	\$558	\$1,806
4 EEP Program Charges	\$50,761	\$82,474	\$73,816	\$56,406	\$59,652	\$17,442	\$340,552
5 EEP Incentive	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Less: Energy Efficiency Adjustment (EEP Revenue)	(\$64,744)	(\$63,624)	(\$51,718)	(\$48,145)	(\$41,587)	(\$40,847)	(\$310,665)
8 End of Period Balance	\$10,474	\$29,398	\$51,705	\$60,332	\$78,824	\$55,977	
<b>9 CURRENT EEP FACTOR (\$/kWh)</b>	<b>\$0.00138</b>						
10 Projected sales (kWh)			37,476,700	34,888,022	30,135,433	29,599,521	

1. EEP TRACKER PROPOSED \$/kWh Method

	July 2018	August 2018	September 2018	October 2018	November 2018	December 2018	January 2019	February 2019	March 2019	April 2019	May 2019	June 2019	Total
1 Beginning of Period Balance	\$55,977	\$152,837	\$148,830	\$108,547	\$71,207	\$29,080	(\$2,946)	(\$19,407)	(\$2,546)	\$13,091	\$15,416	\$28,357	
2 Monthly Carrying Charge Rate	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%	
3 Monthly Carrying Charge	\$397	\$1,083	\$1,054	\$769	\$504	\$206	(\$21)	(\$137)	(\$18)	\$93	\$109	\$201	\$4,239
4 EEP Program Charges	\$11,071	\$46,705	\$8,475	\$7,465	\$9,742	\$24,990	\$50,761	\$82,474	\$73,816	\$56,406	\$59,652	\$17,442	\$449,000
5 EEP Incentive	\$134,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$134,700
7 Less: Energy Efficiency Adjustment (EEP Revenue)	(\$49,308)	(\$51,794)	(\$49,813)	(\$45,574)	(\$52,373)	(\$57,221)	(\$67,201)	(\$65,476)	(\$58,161)	(\$54,174)	(\$46,819)	(\$46,000)	(\$643,916)
8 End of Period Balance	\$152,837	\$148,830	\$108,547	\$71,207	\$29,080	(\$2,946)	(\$19,407)	(\$2,546)	\$13,091	\$15,416	\$28,357	\$0	
<b>9 PROPOSED EEP FACTOR (\$ / kWh)</b>	<b>\$0.00155</b>												
12 Projected sales (kWh)	31,853,991	33,460,233	32,180,350	29,442,274	33,834,689	36,966,559	43,413,896	42,299,482	37,573,597	34,998,056	30,246,483	29,717,421	

\*Actual data was used through February 2018