

## **Appendix A: Tables**

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2011**  
**Otter Tail Power Company**  
**Status Report**

	COSTS			PARTICIPATION		
	PROPOSED BUDGET	ACTUAL EXPENSES	% OF MODIFIED BUDGET	PROPOSED PART.	ACTUAL	% of GOAL
<b>DIRECT IMPACT PROJECTS</b>						
<b>RESIDENTIAL</b>						
Air Conditioning Control *	\$6,000	\$10,140	169%	30	29	97%
Air Source Heat Pumps -Residential	\$14,000	\$18,705	134%	20	29	145%
Geothermal Heat Pumps -Residential	\$19,000	\$7,860	41%	10	8	80%
Residential Demand Control	\$5,000	\$1,134	23%	6	2	33%
Total -Residential	\$44,000	\$37,839	86%	66	68	103%
<b>COMMERCIAL</b>						
Air Source Heat Pumps -Commercial	\$25,000	\$36,515	146%	22	19	86%
Custom Efficiency Projects	\$74,000	\$76,297	103%	6	6	100%
Geothermal Heat Pumps -Commercial	\$45,000	\$13,294	30%	25	16	64%
Lighting	\$30,000	\$44,276	148%	12	16	133%
Motors	\$10,000	\$21,776	218%	15	36	240%
Total -Commercial	\$184,000	\$192,159	104%	80	93	116%
Total -Direct Impact	\$228,000	\$229,998	101%	146	161	110%
<b>INDIRECT IMPACT PROJECTS</b>						
Advertising & Education	\$10,000	\$10,287	103%	625	1082	173%
Total - Indirect Impact	\$10,000	\$10,287	103%	625	1082	173%
<b>Total - Without Development Costs</b>	\$238,000	\$240,285	101%	771	1243	161%
<b>DEVELOPMENT</b>						
EEP DEVELOPMENT - 2010	\$25,000	\$31,807	127%	0		
Total Development	\$25,000	\$31,807	127%	0		
<b>TOTAL - ALL PROGRAMS (INC. DEVL)</b>	\$263,000	\$272,093	103%	771	1,243	161%
Prior Year Tracker Ending Balance		(\$31,900)				
Carrying Costs		(\$4,286)				
Accounting Adjustments		\$45				
Prior Year Approved Incentive		\$73,145				
Total Recoverable with Carrying Costs & Incentive		\$309,097				
Recoverd through rates -- 12/31/11		(\$263,330)				
Balance - EEP Tracker -- 12/31/11		\$45,767				

\* Air conditioning programs include summer load reductions, which are not coincident to the system winter-peak

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2011**  
**Otter Tail Power Company**  
**Status Report**

	ENERGY SAVINGS			DEMAND SAVINGS		
	PROPOSED ENERGY SAVINGS (KWH)	ACTUAL ENERGY SAVINGS (KWH)	% OF GOAL	PROPOSED COINC. PEAK DEMAND SAVINGS (KW)	ACTUAL COINC. PEAK DEMAND SAVINGS (KW)	% OF GOAL
<b>DIRECT IMPACT PROJECTS</b>						
<b>RESIDENTIAL</b>						
Air Conditioning Control *	1,464	1,415	97%	31.22	30.18	97%
Air Source Heat Pumps -Residential	168,130	274,340	163%	28.94	47.22	163%
Geothermal Heat Pumps -Residential	120,400	88,017	73%	86.00	67.58	79%
Residential Demand Control	3,587	1,196	33%	46.85	15.62	33%
Total -Residential	293,581	364,968	124%	193.01	160.60	83%
<b>COMMERCIAL</b>						
Air Source Heat Pumps -Commercial	184,943	535,523	290%	24.84	71.93	290%
Custom Efficiency Projects	967,500	1,426,047	147%	121.59	191.60	158%
Geothermal Heat Pumps -Commercial	350,719	157,553	45%	234.73	113.36	48%
Lighting	280,094	354,062	126%	69.03	47.55	69%
Motors	37,733	73,457	195%	6.00	9.06	151%
Total -Commercial	1,820,989	2,546,642	140%	456.18	433.49	95%
Total -Direct Impact	2,114,570	2,911,610	138%	649.19	594.09	92%
<b>INDIRECT IMPACT PROJECTS</b>						
Advertising & Education						
Total - Indirect Impact						
<b>Total - Without Development Costs</b>	2,114,570	2,911,610	138%	649.19	594.09	92%
<b>DEVELOPMENT</b>						
EEP DEVELOPMENT - 2010						
Total Development						
<b>TOTAL - ALL PROGRAMS (INC. DEVL)</b>	2,114,570	2,911,610	138%	649.19	594.09	92%
<b>Prior Year Tracker Ending Balance</b>						
<b>Carrying Costs</b>						
<b>Accounting Adjustments</b>						
<b>Prior Year Approved Incentive</b>						
<b>Total Recoverable with Carrying Costs &amp; Incentive</b>						
<b>Recoverd through rates -- 12/31/11</b>						
<b>Balance - EEP Tracker -- 12/31/11</b>						

\* Air conditioning programs include summer load reductions, which are not coincident to

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2011**  
**OTTER TAIL POWER COMPANY**  
**Net Benefits**

	2011 Approved Savings, Costs and Benefits				2011 Actual Savings, Costs and Benefits			
	ENERGY SAVINGS (KWH)	BUDGETED COSTS	TOTAL BENEFITS	UTILITY NET BENEFITS	ENERGY SAVINGS (KWH)	ACTUAL COSTS	TOTAL BENEFITS	UTILITY NET BENEFITS
<b>DIRECT IMPACT PROJECTS</b>								
<b>RESIDENTIAL</b>								
Air Conditioning Control *	1,464	\$6,000	\$63,106	\$57,106	1,415	\$10,140	\$61,003	\$50,863
Air Source Heat Pumps - Residential	168,130	\$14,000	\$119,363	\$105,363	274,340	\$18,705	\$194,765	\$176,060
Geothermal Heat Pumps - Residential	120,400	\$19,000	\$292,358	\$273,358	88,017	\$7,860	\$145,545	\$137,685
Residential Demand Control	3,587	\$5,000	\$76,337	\$71,337	1,196	\$1,134	\$25,446	\$24,312
Total - Residential	293,581	\$44,000	\$551,164	\$507,164	364,968	\$37,839	\$426,759	\$388,920
<b>COMMERCIAL</b>								
Air Source Heat Pumps - Commercial	184,943	\$25,000	\$134,835	\$109,835	535,523	\$36,515	\$390,430	\$353,915
Custom Efficiency Project	967,500	\$74,000	\$684,700	\$610,700	1,426,047	\$76,297	\$1,268,177	\$1,191,880
Geothermal Heat Pumps - Commercial	350,719	\$45,000	\$806,144	\$761,144	157,553	\$13,294	\$249,401	\$236,107
Lighting	280,094	\$30,000	\$246,323	\$216,323	354,062	\$44,276	\$221,059	\$176,783
Motors	37,733	\$10,000	\$32,060	\$22,060	73,457	\$21,776	\$51,595	\$29,819
Total - Commercial	1,820,989	\$184,000	\$1,904,060	\$1,720,060	2,546,642	\$192,159	\$2,180,662	\$1,988,503
Total - Direct Impact	2,114,570	\$228,000	\$2,455,224	\$2,227,224	2,911,610	\$229,998	\$2,607,421	\$2,377,423
<b>INDIRECT IMPACT PROJECTS</b>								
Advertising & Education	0	\$10,000	\$0	(\$10,000)	0	\$10,287	\$0	(\$10,287)
Development (all years)	0	\$25,000	\$0	(\$25,000)	0	\$31,807	\$0	(\$31,807)
Total - Indirect Impact	0	\$35,000	\$0	(\$35,000)	0	\$42,094	\$0	(\$42,094)
<b>TOTAL - ALL PROGRAMS</b>	2,114,570	\$263,000	\$2,455,224	\$2,192,224	2,911,610	\$272,093	\$2,607,421	\$2,335,328

\* Air conditioning programs include summer load reductions, which are not coincident to the system winter-peak

**Benefit/Cost Results**  
**2011 SD EEP**

	<b>AS FILED</b>	<b>ACTUAL 2011</b>
Data discounted to 2011	Utility Test	Utility Test
NPV Method: Midyear		
Discount Rates:	8%	8%
Benefit/Cost Ratio	9.34	9.58
Total Costs	\$263,000	\$272,093
Total Benefits	\$2,455,224	\$2,607,421
Net Benefits	\$2,192,224	\$2,335,328
Total Benefits:		
Utility Elec. Production Cost Decr	\$784,010	\$1,160,932
Utility Generation Cap. Credit	\$1,299,589	\$1,081,220
Utility Transmission & Distribution Cred	\$371,625	\$365,269
Total Benefits	\$2,455,224	\$2,607,421
Total Costs:		
Utility Rebates Paid	\$115,737	\$144,634
Utility Fixed Admin Cost Increase	\$147,263	\$127,459
Total Costs	\$263,000	\$272,093

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2011**  
**OTTER TAIL POWER COMPANY**  
**Benefit Cost Ratios**

APPENDIX A, TABLE 3

	APPROVED BENEFIT / COST TEST RESULTS					ACTUAL BENEFIT / COST TEST RESULTS				
	PART. TEST	RATEPAYER IMPACT TEST	TOTAL RESOURCE TEST	SOCIETAL TEST	UTILITY TEST	PART. TEST	RATEPAYER IMPACT TEST	TOTAL RESOURCE TEST	SOCIETAL TEST	UTILITY TEST
<b>DIRECT IMPACT PROJECTS</b>										
<b>RESIDENTIAL</b>										
Air Conditioning Control *	inf.	8.72	13.21	13.22	10.52	inf.	5.38	7.56	7.56	6.02
Air Source Heat Pumps - Residential	5.07	0.90	4.46	4.64	8.53	5.68	0.91	5.25	5.46	10.41
Geothermal Heat Pumps - Residential	1.49	2.45	4.26	4.32	15.39	1.36	1.80	2.94	2.99	18.52
Residential Demand Control	8.66	1.67	11.54	11.78	15.27	8.66	1.73	14.29	14.60	22.45
Total - Residential	2.72	1.81	5.17	5.27	12.53	3.14	1.33	4.41	4.52	11.28
<b>COMMERCIAL</b>										
Air Source Heat Pumps - Commercial	3.01	0.93	2.82	2.92	5.39	10.80	0.91	8.79	9.14	10.69
Custom Efficiency Projects	1.79	1.02	2.16	2.24	9.25	2.61	0.92	3.04	3.15	16.62
Geothermal Heat Pumps - Commercial	1.54	2.58	4.63	4.69	17.91	1.08	1.87	2.43	2.48	18.76
Lighting	2.50	1.31	3.24	3.32	8.21	1.89	0.90	1.78	1.85	4.99
Motors	6.38	0.94	3.75	3.86	3.21	6.22	0.68	2.95	3.07	2.37
Total - Commercial	1.90	1.41	3.05	3.13	10.35	2.71	0.96	3.09	3.20	11.35
<b>INDIRECT IMPACT PROJECTS</b>										
Advertising & Education	inf.	inf.	NA	NA	inf.	inf.	inf.	NA	NA	inf.
Development	inf.	inf.	NA	NA	inf.	inf.	inf.	NA	NA	inf.
Total - Indirect Impact										
<b>TOTAL - ALL PROGRAMS</b>	2.01	1.45	3.24	3.31	9.34	2.75	0.99	3.11	3.22	9.58

\* Air conditioning programs include summer load reductions, which are not coincident to the system winter-peak

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2011**  
**OTTER TAIL POWER COMPANY**  
**Incentive Calculation**

APPENDIX A, TABLE 4

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

1 Original EEP Expense Budget	\$263,000
2 Original EEP Expense Budget multiplied by 30%	\$78,900

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

3 Actual EEP Expenses	\$272,093
4 Actual EEP Expenses multiplied by 30%	\$81,628

5 <b>Financial Incentive:</b> lesser of lines 2 and 4.	<b>\$78,900</b>
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**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2011**  
**OTTER TAIL POWER COMPANY**  
**EEP Tracker Account / Cost Recovery**

**APPENDIX A, TABLE 5**

**EEP AUTOMATIC RECOVERY MECHANISM**

FILING DATE

May 1

	2008/09 ACTUAL	2010 ACTUAL	2011 ACTUAL	2012 Budget Financial Incentive
1 Estimated EEP Tracker Account Balance - end of prior year	\$27,487	(\$43,107)	(\$31,900)	\$45,767
2 Accounting Adjustments	\$0	(\$45)	\$45	\$0
3				
4 True up from Previous Year (sum of lines 1 and 2)	\$27,487	(\$43,152)	(\$31,855)	\$45,767
5 EEP Program expenditures	\$252,677	\$243,816	\$272,093	\$278,800
6 Previous Year EEP Financial Incentives	\$0	\$47,130	\$73,145	\$78,900
7 Projected EEP Carrying Charge	(\$726)	(\$6,503)	(\$4,286)	\$3,260
8 EEP Cost Recovery through EE Adjustment Factor	(\$322,545)	(\$273,190)	(\$263,330)	(\$307,701)
9 Recoverable Tracker Balance (Line 4 Plus Lines 5 thru 8)	(\$43,107)	(\$31,900)	\$45,767	\$99,026
10 SD Sales (KWH budget)			417,984,286	413,706,043
11 Conservation Surcharge (1)	\$0.00063	\$0.00063	\$0.00063	\$0.00088
12 Estimated EEP Tracker Account Balances				
(1) Effective for 12-month period July 1 through June 30				



Otter Tail Power Company

APPENDIX A, TABLE 6

EEP TRACKER AND CALCULATION OF PROPOSED EEP

	January 2012	February 2012	March* 2012	April 2012	May 2012	June 2012	Total
1 Beginning of Period Balance	\$45,767	\$38,461	\$29,362	\$16,795	\$6,346	-\$436	
2 Monthly Carrying Charge	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	
3 Monthly Carrying Charge	\$324	\$272	\$208	\$119	\$45	-\$3	\$965
4 EEP Program Charges	\$17,315	\$16,038	\$10,047	\$10,928	\$12,730	\$28,189	\$95,248
5 EEP Incentive	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7 Less: Energy Efficiency Adjustment (EEP Revenue)	-\$24,945	-\$25,409	-\$22,822	-\$21,497	-\$19,557	-\$18,715	-\$132,945
8 End of Period Balance	\$38,461	\$29,362	\$16,795	\$6,346	-\$436	\$9,035	
9 <b>CURRENT EEP FACTOR (\$/kWh)</b>	<b>\$0.00063</b>						
10 Projected EEP expenditures 2012	\$280,000						
11 Projected sales (kWh)	39,595,672	40,332,300	36,224,828	34,122,149	31,042,805	29,705,839	

1. EEP TRACKER PROPOSED \$/kWh Method

	July 2012	August 2012	September 2012	October 2012	November 2012	December 2012	January 2013	February 2013	March 2013	April 2013	May 2013	June 2013	Total
1 Beginning of Period Balance	\$9,035	\$81,361	\$70,507	\$63,415	\$55,745	\$47,191	\$100,249	\$78,219	\$55,192	\$31,834	\$13,133	(\$1,084)	
2 Monthly Carrying Charge Rate	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	
3 Monthly Carrying Charge	\$64.00	\$576.31	\$499.42	\$449.19	\$394.86	\$334.27	\$710.10	\$554.05	\$390.94	\$225.49	\$93.02	-\$7.68	\$4,284
4 EEP Program Charges	\$20,990	\$16,882	\$21,193	\$18,120	\$22,015	\$85,552	\$12,452	\$12,266	\$8,448	\$11,401	\$13,281	\$29,408	\$272,008
5 EEP Incentive	\$78,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$78,900
7 Less: Energy Efficiency Adjustment (EEP Revenue)	-\$27,628	-\$28,312	-\$28,785	-\$26,239	-\$30,964	-\$32,828	-\$35,193	-\$35,847	-\$32,197	-\$30,328	-\$27,591	-\$26,403	-\$362,314
8 End of Period Balance	\$81,361	\$70,507	\$63,415	\$55,745	\$47,191	\$100,249	\$78,219	\$55,192	\$31,834	\$13,133	-\$1,084	\$1,914	
9 <b>PROPOSED EEP FACTOR (\$ / kWh)</b>	<b>\$0.00088</b>												
10 Projected EEP expenditures 2012	\$280,000												
11 Projected EEP expenditures 2013	\$280,000												
12 Projected sales (kWh)	31,395,042	32,173,161	32,709,981	29,817,015	35,186,463	37,304,690	39,991,629	40,735,623	36,587,076	34,463,371	31,353,233	30,002,897	

\*Actual data was used through March 2012