

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2012**  
**Otter Tail Power Company**

**APPENDIX A, TABLE 1**

	<b>BUDGET</b>	<b>PARTICIPATION</b>	<b>PROPOSED ENERGY SAVINGS (KWH)</b>	<b>PROPOSED DEMAND SAVINGS (KW)</b>
<b>DIRECT IMPACT PROJECTS</b>				
<b>RESIDENTIAL</b>				
Air Source Heat Pumps -Residential	\$14,000	20	168,130	17.11
Geothermal Heat Pumps -Residential	\$21,000	10	120,398	86.00
Air Conditioning Control *	\$10,000	30	1,464	31.22
Total -Residential	\$45,000	60	289,992	134.33
<b>COMMERCIAL</b>				
Custom Efficiency Projects	\$73,000	5	806,250	161.25
Motors	\$17,000	16	32,311	5.36
Lighting	\$37,000	15	522,671	126.47
Air Source Heat Pumps -Commercial	\$25,000	22	314,403	37.30
Geothermal Heat Pumps -Commercial	\$50,000	22	308,633	206.56
Total -Commercial	\$202,000	80	1,984,268	536.94
Total -Direct Impact	\$247,000	140	2,274,260	671.27
<b>INDIRECT IMPACT PROJECTS</b>				
Advertising & Education	\$8,000	900		
Total - Indirect Impact	\$8,000	900		
<b>Total - Without Development Costs</b>	<b>\$255,000</b>	<b>1040</b>	<b>2,274,260</b>	<b>671.27</b>
<b>DEVELOPMENT</b>				
EEP DEVELOPMENT - 2010	\$25,000			
Total Development	\$25,000			
<b>TOTAL - ALL PROGRAMS (INC. DEVL)</b>	<b>\$280,000</b>	<b>1040</b>	<b>2,274,260</b>	<b>671.27</b>

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

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2013**  
**Otter Tail Power Company**

APPENDIX A, TABLE 2

	BUDGET	PARTICIPATION	PROPOSED ENERGY SAVINGS (KWH)	PROPOSED DEMAND SAVINGS (KW)
<b>DIRECT IMPACT PROJECTS</b>				
<b>RESIDENTIAL</b>				
Air Source Heat Pumps -Residential	\$14,000	20	168,130	17.11
Geothermal Heat Pumps -Residential	\$21,000	10	120,398	86.00
Air Conditioning Control *	\$10,000	30	1,464	31.22
Total -Residential	\$45,000	60	289,992	134.33
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Geothermal Heat Pumps -Commercial	\$50,000	22	308,633	206.56
Total -Commercial	\$202,000	80	1,984,268	536.94
Total -Direct Impact	\$247,000	140	2,274,260	671.27
<b>INDIRECT IMPACT PROJECTS</b>				
Advertising & Education	\$8,000	900		
Total - Indirect Impact	\$8,000	900		
<b>Total - Without Development Costs</b>	\$255,000	1040	2,274,260	671.27
<b>DEVELOPMENT</b>				
EEP DEVELOPMENT - 2010	\$25,000			
Total Development	\$25,000			
<b>TOTAL - ALL PROGRAMS (INC. DEVL)</b>	\$280,000	1040	2,274,260	671.27

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

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN , 2012 only**  
**OTTER TAIL POWER COMPANY**  
**Benefit Cost Ratios**

APPENDIX A, TABLE 3

	APPROVED BENEFIT / COST TEST RESULTS				
	PART. TEST	RATEPAYER IMPACT TEST	TOTAL RESOURCE TEST	SOCIETAL TEST	UTILITY TEST
<b>DIRECT IMPACT PROJECTS</b>					
<b>RESIDENTIAL</b>					
Air Source Heat Pumps - Residential	4.18	0.94	3.98	4.13	8.53
Geothermal Heat Pumps - Residential	1.11	2.02	2.71	2.75	11.17
Air Conditioning Control *	inf.	5.56	7.83	7.84	6.20
Total - Residential	1.83	1.59	3.17	3.23	7.85
<b>COMMERCIAL</b>					
Custom Efficiency Projects	2.03	1.70	4.00	4.08	12.89
Motors	1.50	1.00	1.61	1.65	2.08
Lighting	4.52	1.63	7.83	8.00	26.05
Air Source Heat Pumps - Commercial	4.69	1.06	4.96	5.12	9.30
Geothermal Heat Pumps - Commercial	1.07	2.13	2.77	2.81	11.77
Total - Commercial	2.32	1.65	4.27	4.36	13.67
Total - Direct Impact					
<b>INDIRECT IMPACT PROJECTS</b>					
Advertising & Education					
Total - Indirect Impact					
<b>TOTAL - ALL PROGRAMS</b>	2.24	1.62	3.98	4.06	11.35

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

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN , 2013 Only**  
**OTTER TAIL POWER COMPANY**  
**Benefit Cost Ratios**

APPENDIX A, TABLE 4

	APPROVED BENEFIT / COST TEST RESULTS				
	PART. TEST	RATEPAYER IMPACT TEST	TOTAL RESOURCE TEST	SOCIETAL TEST	UTILITY TEST
<b>DIRECT IMPACT PROJECTS</b>					
<b>RESIDENTIAL</b>					
Air Source Heat Pumps - Residential	4.30	0.96	4.15	4.30	8.92
Geothermal Heat Pumps - Residential	1.14	2.08	2.84	2.89	11.77
Air Conditioning Control *	inf.	5.91	8.29	8.29	6.61
Total - Residential	1.88	1.63	3.33	3.39	8.27
<b>COMMERCIAL</b>					
Custom Efficiency Projects	2.08	1.74	4.18	4.26	13.54
Motors	1.53	1.03	1.69	1.72	2.18
Lighting	4.65	1.69	8.29	8.47	27.67
Air Source Heat Pumps - Commercial	4.83	1.08	5.17	5.34	9.72
Geothermal Heat Pumps - Commercial	1.10	2.19	2.90	2.95	12.40
Total - Commercial	2.39	1.69	4.49	4.58	14.42
Total - Direct Impact					
<b>INDIRECT IMPACT PROJECTS</b>					
Advertising & Education					
Total - Indirect Impact					
<b>TOTAL - ALL PROGRAMS</b>	2.31	1.67	4.18	4.27	11.97

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

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN , 2012 and 2013**  
**OTTER TAIL POWER COMPANY**  
**Benefit Cost Ratios**

APPENDIX A, TABLE 5

	APPROVED BENEFIT / COST TEST RESULTS				
	PART. TEST	RATEPAYER IMPACT TEST	TOTAL RESOURCE TEST	SOCIETAL TEST	UTILITY TEST
<b>DIRECT IMPACT PROJECTS</b>					
<b>RESIDENTIAL</b>					
Air Source Heat Pumps - Residential	4.24	0.95	4.06	4.21	8.72
Geothermal Heat Pumps - Residential	1.13	2.05	2.77	2.82	11.46
Air Conditioning Control *	inf.	5.73	8.06	8.06	6.40
Total - Residential	1.85	1.61	3.25	3.31	8.05
<b>COMMERCIAL</b>					
Custom Efficiency Projects	2.05	1.72	4.09	4.17	13.20
Motors	1.51	1.01	1.65	1.68	2.12
Lighting	2.43	1.54	4.00	4.09	13.53
Air Source Heat Pumps - Commercial	4.76	1.07	5.06	5.23	9.50
Geothermal Heat Pumps - Commercial	1.09	2.16	2.83	2.88	12.07
Total - Commercial	1.95	1.65	3.63	3.71	11.59
Total - Direct Impact					
<b>INDIRECT IMPACT PROJECTS</b>					
Advertising & Education					
Total - Indirect Impact					
<b>TOTAL - ALL PROGRAMS</b>	1.94	1.62	3.48	3.55	9.89

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