Appendix A: Tables

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019 Otter Tail Power Company Status Report

		Costs			Participation			Energy Savings		Demand Savings			
	Proposed Budget	Actual Expenses	% of Budget	Proposed Participants	Actual Participants	% of Goal	Proposed Energy Savings (kWh)	Actual	% of Goal	Proposed Summer Coincident kW Savings	Actual Summer Coincident kW Savings	% of Goal	
Residential	1	_			1.1.1		and group /			a a a a a a a a a a a a a a a a a a a			
Air Conditioning Control	\$14,000	\$3,476	25%	661	643	97%	20,498	19,940	97%	488.8	475.5	97%	
Air Source Heat Pumps	\$20,000	\$31,804	159%	20	35	175%	298,204	481,523	161%	28.3	39.4	139%	
Geothermal Heat Pumps	\$30,000	\$9,028	30%	9	3	33%	321,779	103,046	32%	23.9	9.4	39%	
Lighting	\$11,000	\$4,180	38%	900	830	92%	33,209	83,472	251%	3.9	5.6	146%	
Total - Residential	\$75,000	\$48,488	65%	1,590	1,511	95%	673,690	687,980	102%	544.9	529.9	97%	
Commercial													
Air Source Heat Pumps	\$18,000	\$34,473	192%	25	65	260%	291,112	123,974	43%	25.6	9.1	36%	
Custom Efficiency Projects	\$168,000	\$21,716	13%	88	9	10%	4,274,737	318,012	7%	598.5	233.1	39%	
Drive Power	\$201,000	\$362,263	180%	151	264	175%	4,207,940	7,779,015	185%	589.6	1,308.9	222%	
Geothermal Heat Pumps	\$73,000	\$0	0%	16	0	0%	730,265	0	0%	93.0	0.0	0%	
Lighting	\$127,000	\$222,895	176%	38	98	258%	957,826	4,308,116	450%	210.0	563.0	268%	
Total - Commercial	\$587,000	\$641,347	109%	318	436	137%	10,461,880	12,529,117	120%	1,516.7	2,114.1	139%	
Total - Direct Impact	\$662,000	\$689,835	104%	1,908	1,947	102%	11,135,570	13,217,098	119%	2,061.6	2,644.0	128%	
Indirect Impact													
Advertising & Education	\$12,000	\$13,667	114%	400	678	170%							
Total - Indirect Impact	\$12,000	\$13,667	114%	400	678	170%							
Total - Without Development Costs	\$674,000	\$703,502	104%	2,308	2,625	114%	11,135,570	13,217,098	119%	2,061.6	2,644.0	128%	
Development													
EEP Development	\$25,000	\$12,482	50%										
Total - Development	\$25,000	\$12,482	50%										
Total - All Programs (Including Development)	\$699,000	\$715,984	102%	2,308	2,625	114%	11,135,570	13,217,098	119%	2,061.6	2,644.0	128%	
Prior Year Tracker Ending Balance Carrying Costs Accounting Adjustments Prior Year Approved Incentive		(\$128) (\$2,292) \$0 \$134,700											
Total Recoverable with Carrying Costs & Incentive Recovered through rates - 12/31/19 Balance - EEP Tracker - 12/31/19		\$848,264 (\$777,590) \$70,674											

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019 Otter Tail Power Company

Net Benefits

Energy Savings	Proposed	T ()				Acutal Savings, Costs, and Benefits					
		Total Utility Net		Energy Savings	Actual	Total	Utility Net				
(kWh)	Budget	Benefits	Benefits	(kWh)	Expenses	Benefits	Benefits				
20,498	\$14,000	\$60,573	\$46,573	19,940	\$3,476	\$59,555	\$56,079				
298,204	\$20,000	\$201,561	\$181,561	481,523	\$31,804	\$321,776	\$289,972				
321,779	\$30,000	\$265,427	\$235,427	103,046	\$9,028	\$86,081	\$77,053				
33,209	\$11,000	\$21,456	\$10,456	83,472	\$4,180	\$47,626	\$43,447				
673,690	\$75,000	\$549,018	\$474,018	687,980	\$48,488	\$515,039	\$466,550				
291,112	\$18,000	\$174,516	\$156,516	123,974	\$34,473	\$71,768	\$37,295				
4,274,737	\$168,000	\$2,780,534	\$2,612,534	318,012	\$21,716	\$198,500	\$176,785				
4,207,940	\$201,000	\$2,732,482	\$2,531,482	7,779,015	\$362,263	\$5,466,002	\$5,103,739				
730,265	\$73,000	\$578,048	\$505,048	0	\$0	\$0	\$0				
957,826	\$127,000	\$706,840	\$579,840	4,308,116	\$222,895	\$2,569,717	\$2,346,822				
10,461,880	\$587,000	\$6,972,418	\$6,385,418	12,529,117	\$641,347	\$8,305,988	\$7,664,641				
11,135,570	\$662,000	\$7,521,436	\$6,859,436	13,217,098	\$689,835	\$8,821,026	\$8,131,191				
	\$12,000	\$0	(\$12,000)		\$13,667	\$0	(\$13,667)				
	\$25,000	\$0	(\$25,000)		\$12,482	\$0	(\$12,482)				
	\$37,000	\$0	(\$37,000)		\$26,149	\$0	(\$26,149)				
11,135,570	\$699,000	\$7,521,436	\$6,822,436	13,217,098	\$715,984	\$8,821,026	\$8,105,042				
	298,204 321,779 33,209 673,690 291,112 4,274,737 4,207,940 730,265 957,826 10,461,880 11,135,570	298,204 \$20,000 321,779 \$30,000 33,209 \$11,000 673,690 \$75,000 291,112 \$18,000 4,274,737 \$168,000 4,207,940 \$201,000 730,265 \$73,000 957,826 \$127,000 10,461,880 \$587,000 \$11,135,570 \$662,000 \$12,000 \$25,000 \$37,000 \$37,000	298,204 \$20,000 \$201,561 321,779 \$30,000 \$265,427 33,209 \$11,000 \$21,456 673,690 \$75,000 \$549,018 291,112 \$18,000 \$2,780,534 4,207,940 \$201,000 \$2,732,482 730,265 \$73,000 \$578,048 957,826 \$127,000 \$706,840 10,461,880 \$587,000 \$6,972,418 \$11,135,570 \$662,000 \$7,521,436 \$12,000 \$0 \$20 \$337,000 \$0 \$0	298,204 \$20,000 \$201,561 \$181,561 321,779 \$30,000 \$265,427 \$235,427 33,209 \$11,000 \$21,456 \$10,456 673,690 \$75,000 \$549,018 \$474,018 291,112 \$18,000 \$2,780,534 \$2,612,534 4,207,940 \$201,000 \$2,732,482 \$2,531,482 730,265 \$73,000 \$578,048 \$505,048 957,826 \$127,000 \$706,840 \$579,840 10,461,880 \$587,000 \$6,972,418 \$6,385,418 \$11,135,570 \$662,000 \$7,521,436 \$6,859,436 \$12,000 \$0 \$25,000 \$0 \$25,000 \$37,000 \$0 \$37,000 \$0 \$37,000	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	298,204 \$20,000 \$201,561 \$181,561 481,523 \$31,804 321,779 \$30,000 \$265,427 \$235,427 103,046 \$9,028 33,209 \$11,000 \$21,456 \$10,456 83,472 \$4,180 673,690 \$75,000 \$549,018 \$474,018 687,980 \$48,488 291,112 \$18,000 \$174,516 \$156,516 123,974 \$34,473 4,274,737 \$168,000 \$2,780,534 \$2,612,534 318,012 \$21,716 4,207,940 \$201,000 \$2,732,482 \$2,551,482 7,779,015 \$362,263 730,265 \$73,000 \$578,048 \$505,048 0 \$0 957,826 \$127,000 \$706,840 \$579,840 4,308,116 \$222,895 10,461,880 \$587,000 \$6,972,418 \$6,385,418 12,529,117 \$641,347 11,135,570 \$662,000 \$7,521,436 \$6,859,436 13,217,098 \$689,835 \$12,000 \$0 \$12,000 \$0 \$13,667 <td< td=""><td>$\begin{array}{c c c c c c c c c c c c c c c c c c c$</td></td<>	$\begin{array}{c c c c c c c c c c c c c c c c c c c $				

Benefit/Cost Results 2019 SD EEP

	AS FILED	ACTUAL 2019
Data discounted to 2019	Utility Test	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

APPENDIX A, TABLE 2 Page 2 of 2

SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019 Otter Tail Power Company

Benefit/Cost Ratios

-

		Approved Bu	dget Benefit / Co	st Test Results	Actual Benefit / Cost Test Results					
		Total Resource	Ratepayer		Participant					
	Utility Test	Test	Impact Test	Societal Test	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 Otter Tail Power Company Lifetime Savings

		Energy Savings		Demand Savings					
				Proposed	Actual				
		Actual		Summer	Summer				
	Proposed Energy	Energy Savings		Coincident	Coincident				
	Savings (kWh)	(kWh)	% of Goal	kW Savings	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%			
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SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2019 Otter Tail Power Company Incentive Calculation

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

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

	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

1. EEP TRACKER PROPOSED \$/kWh Method													
	July	August	September	October	November	December	January	February	March	April	May	June	Total
	2020	2020	2020	2020	2020	2020	2021	2021	2021	2021	2021	2021	
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 Marsh 2010						I							

*Actual data was used through March 2019

APPENDIX A, TABLE 7