

# South Dakota Public Utilities Commission

## Energy Efficiency Workshop

Utility Energy Efficiency Incentives  
June 23, 2010

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# NARUC Adopts Resolution



“A durable business case for utility involvement in end-use energy efficiency rests on three interrelated elements:

- ✓ Cost recovery
- ✓ A performance-based earnings opportunity tied to verification of results, and
- Being kept whole for authorized fixed costs as power sales volumes decline (relative to what they would have been).”

# OTP South Dakota

## EE Current Incentive

What works:

- Focus is on energy savings, not spending
- Uses a percentage of “net benefits”
  - Benefits = total avoided costs from conservation in place of generation
  - Less CIP program costs

# SD OTP Current EE Incentive

## Advantages

- Uses percent of net benefits – no gaming of costs, benefits, savings
- Energy goal is established ahead of time along with budgets
- Commission knows the maximum incentive amount

## Disadvantages

- Percent of net benefits returned to Company are too small
- Difficult to estimate until thorough analysis is done
- Current incentive has a cap of 30% of approved costs
- Current incentive starts at 90% of approved goal

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2008/2009**

APPENDIX A, TABLE 4



**OTTER TAIL POWER COMPANY**

**Incentive Calculation**

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

Original Budget	\$157,100	
Energy Savings Goal at Original Budget	1,143,446	
Multiplier for each 10% of energy savings goal (3)	0.461070%	((Budget x 30 percent) / Projected Net benefits @ 150% of goal) / 6
Estimated Net Benefits at Proposed Filing	\$1,135,765	

Changed to 90% in 2010

**Calculation of Estimated Incentive**

Derived Numbers Give the Percent of Net Benefits Awarded at Different Percentages of Energy Savings Goal

Percent of KWH Savings Goal	kWh Savings	Percent of Base	Estimated Benefits Achieved	Estimated Incentive
100 % of savings goal	1,143,446	0.46107%	\$1,135,765	\$5,237
110 % of savings goal	1,257,791	0.92214%	\$1,249,342	\$11,521
120 % of savings goal	1,372,135	1.38321%	\$1,362,918	\$18,852
130 % of savings goal	1,486,480	1.84428%	\$1,476,495	\$27,231
140 % of savings goal	1,600,824	2.30535%	\$1,590,071	\$36,657
150 % of savings goal	1,715,169	2.76642%	\$1,703,648	\$47,130

Incentive cap = 30% of budget	\$157,100
	30%
	\$47,130

**Determine incentive - post year**

Inputs from previous sheet actual results

2008 Actual Energy Savings Achieved (=Net Benefits!G28)	4,021,300
2008 Actual Expenditures (=Net Benefits!H28)	\$280,163
2008 Actual Net Benefits (=+Net Benefits!I28)	\$3,680,243

**351.68% of goal achieved**

Actual percentage applied to net benefits	12.07%
Percent of actual net benefits	\$444,036

**1.281% of net benefits**

Incentive not to go negative or to exceed incentive CAP

<b>Calculated Incentive</b>	<b>\$47,130</b>
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**17% ROI**

**SOUTH DAKOTA ENERGY EFFICIENCY PLAN - 2010**

**OTTER TAIL POWER COMPANY**

**2010 Incentive Plan Forecast**

APPENDIX A

Table 3



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

Original Budget	\$263,000
Energy Savings Goal at Original Budget	2,114,570

Multiplier for each 10% of energy savings goal	0.367407%	((Budget x 30 percent) / Projected Net benefits @ 150% of goal) / 7
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Estimated Net Benefits at Proposed Filing	\$2,045,219
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**Calculation of Estimated Incentive**

Derived Numbers Give the Percent of Net Benefits Awarded at Different Percentages of Energy Savings Goal

Percent of KWH Savings Goal	kWh Savings	Percent of Base	Estimated Benefits Achieved	Estimated Incentive
90 % of savings goal	1,903,113	0.36741%	\$1,840,697	\$6,763
100 % of savings goal	2,114,570	0.73481%	\$2,045,219	\$15,029
110 % of savings goal	2,326,027	1.10222%	\$2,249,740	\$24,797
120 % of savings goal	2,537,484	1.46963%	\$2,454,262	\$36,069
130 % of savings goal	2,748,941	1.83704%	\$2,658,784	\$48,843
140 % of savings goal	2,960,398	2.20444%	\$2,863,306	\$63,120
150 % of savings goal	3,171,855	2.57185%	\$3,067,828	\$78,900

Incentive cap = 30% of budget	\$263,000
	30%
	\$78,900

**Determine incentive - post year**

Inputs from previous sheet results (or enter arbitrary numbers for calculating and viewing)

2010 Actual Energy Savings Achieved	2,114,570	100.00%
2010 Actual Expenditures	\$263,000	
2010 Actual Net Benefits	\$2,045,219	<b>5.714% ROI</b>
Actual percentage applied to net benefits	0.73%	<b>0.735% % of net benefits</b>
Percent of actual net benefits	\$15,029	
	Incentive not to go negative or to exceed incentive CAP	

<b>Calculated Incentive</b>	<b>\$15,029</b>
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<b>Incentive at maximum</b>	<b>\$78,900</b>	<b>30.00% ROI</b>
		<b>3.86% % of net benefits</b>

# Current SD Incentive Modeled after old MN Incentive

- Except:
  - Original approved energy goal/original approved budget x **minimum spending level**
- Impact of exception:
  - Energy goal was calibrated to minimum spend which results in incentive starting at a lower level of achievement
    - Achievement of an incentive starts at 90% of calibrated goal

# MN Previous Incentive



MN CIP	Incentive	Spending	ROI
2000	\$ 477,424	\$ 1,917,388	24.90%
2001	\$ 461,322	\$ 1,988,338	23.20%
2002	\$ 300,393	\$ 1,631,332	18.41%
2003	\$ 495,330	\$ 1,703,663	29.07%
2004	\$ 472,173	\$ 1,783,288	26.48%
2005	\$ 473,903	\$ 1,590,411	29.80%
2006	\$ 158,363	\$ 1,938,812	8.17%
2007	\$ 25,066	\$ 1,915,722	1.31%
2008	\$ 273,798	\$ 2,345,875	11.67%
2009	\$ 1,101,060	\$ 4,093,050	26.90%
Average	\$ 423,883	\$ 2,090,788	20.27%

- Goal started at 90% of calculated (calibrated) energy savings goal
- 0% - 4% of net benefits awarded
- 30% cap of approved goal



# MN Current Incentive



- First year of new incentive - 2010
- Encourages utilities to improve overall cost-effectiveness
- Still returns vast majority of net benefits to customers, but can reach 25%+ to utility.
- Incentive starts at one unit more than .4.% of retail sales
- Calibration point of .09 cents per kWh
- Incentive cap of 125% per unit (11.25 cents per kWh)

# SD Energy Efficiency

- Long-term commitment and vision
- Cost recovery and carrying costs are critical
- Convene workgroup to develop an incentive
- Incentive should be equal to supply side option:
  - Return on investment, bonus rate of return
  - Shared savings/Larger share of net benefits
  - Lost revenue recovery

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