## **Introduction**

Otter Tail Power Company presents for the South Dakota Public Utilities Commission's (PUC) consideration this 2012-2013 Energy Efficiency Plan (EEP, "Plan") to market energy efficiency to South Dakota customers. The Energy Efficiency Plan, as proposed, includes projects for all customer classes and major end uses showing the greatest potential for energy savings. The Plan includes nine projects intended to achieve approximately 2,274,260 kWh in annual energy savings at an approximate cost of \$280,000. The Company proposes launching these projects January 1, 2012.

This plan will be evaluated on an ongoing basis and any major modifications will be proposed to the PUC in a timely manner. Major modifications would include new projects, increases to the overall proposed plan budget by more than 30%, or closing projects. We propose that the plan remain fairly flexible and dynamic, with minimal administrative overhead required both on our part and the PUC's.

The following sections provide specific details about the 2012-2013 EEP.

- Plan Summary The Plan Summary includes an overview of the proposed plan, a list of the individual projects, and 2010 Company statistics as background information. A summary of the overall annual kWh savings goals, budgets, and proposed participation is also provided.
- Project Descriptions This section presents the individual project descriptions and justifications, as well as kWh<sup>1</sup>, kW, budget and participation goals.
- Cost Recovery Mechanism and Financial Incentives Cost recovery methodology, carrying costs, tracker balances, and other accounting matters are addressed in this section. A discussion of the Company financial incentive for providing energy efficiency projects in South Dakota is also included.
- Evaluation This section shows the cost effectiveness test results for the Plan and assumptions associated with the cost effectiveness evaluations.
- Summary A brief conclusion and contact information is provided.

<sup>&</sup>lt;sup>1</sup> Cost per kWh reflects first year energy savings and first year costs. Lifetime costs per kWh saved will be substantially less spread over the lifetime of the technology. For example, lighting cost per kWh is \$0.07 for first year savings, but lifetime cost will be less than \$0.01 per kWh.

## Plan Summary

Otter Tail Power Company is proposing to continue its portfolio of cost-effective energy efficiency projects in South Dakota similar to those provided under the 2010-2011 EEP. The portfolio includes the projects listed below, which are described in greater detail in following sections of this filing.

#### Residential

- Air source heat pumps (promotes efficient heating and cooling)
- Geothermal heat pumps (promotes efficient heating and cooling)
- Air conditioning control (promotes managing demand and energy of cooling systems)

#### Commercial/Industrial

- Custom Efficiency Projects (promotes efficient energy use in large customer facilities, such as adjustable speed drives, heat recovery, and process improvements)
- Motors (promotes high efficient motor installation)
- Lighting (promotes efficient lighting)
- Air source heat pumps (promotes efficient heating and cooling)
- Geothermal heat pumps (promotes efficient heating and cooling)

All sectors

• Advertising & Education

South Dakota Data (Source: OTPCO 2010 Statistical Report)			
Customers 11,667			
kWh sales	433,665,031 kWh		
Retail revenue	\$29,398,915		

2012 South Dakota Energy Efficiency Plan				
Customer Class	Budget	Annual kWh savings	Annual kW savings	Annual Participants
Residential	\$45,000	289,992	134.33	60
Commercial/Industrial	\$202,000	1,984,268	536.94	80
Indirect impact (all sectors)	\$33,000	NA	NA	900
Totals	\$280,000	2,274,260	671.27	1040

2013 South Dakota Energy Efficiency Plan				
Customer Class	Budget	Annual kWh savings	Annual kW savings	Annual Participants
Residential	\$45,000	289,992	134.33	60
Commercial/Industrial	\$202,000	1,984,268	536.94	80
Indirect impact (all sectors)	\$33,000	NA	NA	900
Totals	\$280,000	2,274,260	671.27	1040

The Air Conditioning Control project adds to Otter Tail Power Company's extensive portfolio of demand and price response projects. About one-third of the Company's residential and small commercial customers in South Dakota are participating in one or another of the Company's demand response projects. Through these projects, the Company maintains system reliability, reduces the need to purchase high-priced spot market electricity, and meets our regulated resource adequacy requirements.

While the Company is currently winter peaking, our managed summer peaks are anticipated to exceed our managed winter peaks. This is due to our extensive winter demand response portfolio that is capable of meeting approximately 12-15% of our on-peak winter resource needs. The region is largely summer peaking and summer energy and capacity prices reflect the higher demand. For this reason, the Company is pursuing summer-season demand-response projects to manage costs.

Residential customers who enroll in the project will receive a \$7 credit for each of the summer months – June, July, August, and September. A controller is installed to cycle a customer's cooling load on a schedule of 15 minutes on followed by 15 minutes off throughout control periods. Otter Tail cycles load to maintain customer satisfaction and minimize customer discomfort during control periods. In 2010, Otter Tail Power Company controlled air conditioning on eight days, totaling 20 hours and 38 minutes of control. This control time is within the 300-hour control limit approved for the air conditioning control rider.

The project will target residential customers with central air conditioning systems that are not currently controlled. Commercial customers at this time will not be targeted for this project. The target group will be found through analysis of summer usage. Direct mail, bill inserts, web site information, and personal contact through our customer service representatives may be used as our primary marketing methods.

Year	2012	2013
kWh – at the generator	1,464	1,464
Cost / kWh	\$6.83	\$6.83
kW - at the generator <sup>2</sup>	31.218	31.218
Cost / kW	\$320	\$320

## **B. LONG TERM DEMAND SIDE MANAGEMENT GOALS**

<sup>&</sup>lt;sup>2</sup> The DSMore modeling software provides coincident peak-load reduction information, which is reported for all projects. Since Otter Tail Power Company is currently a winter-peaking utility, coincident peak data is typically presented for the winter season unless noted otherwise. For Air Conditioning Control, coincident peak savings is based on summer season. No energy or demand savings are realized from Air Conditioning Control during the winter season.

Year	2012	2013
Project Delivery & Administration	\$10,000	\$10,000
Incentives <sup>3</sup>	NA	NA
Total	\$10,000	\$10,000
Participation	30	30

<sup>&</sup>lt;sup>3</sup> The Air Conditioning Control project offers a \$7/month bill credit for four summer months. This credit was included in the most recently approved South Dakota rate case. Prior to that it was recovered through EEP, with the exception of 2010 where no cost recovery of the incentive occurred. Delivery and Administration costs included in EEP are costs to market and administer the project as an efficiency project.

Space heating accounts for about eight percent of total energy use in the U.S., and it represents significant potential for improved efficiency. In the residential sector, energy use for space heating accounts for nearly half of U.S. household site energy consumption. About one-third of residences in the U.S. are electrically heated, with two-thirds of homes relying on standard efficiency resistance heating technologies. According to the Energy Information Administration, electricity as the main heating fuel increased from 29 percent of homes in 2005 to 34 percent in 2009.

Space heating in the commercial and industrial sectors also offers an opportunity for energy savings. In any typical year, the total amount of energy used for commercial space heating in the United States doubles that used for space cooling. Electricity accounts for heating 29 percent of all commercial floor space in the United States.

Otter Tail Power Company's 2010 Demand Side Management Potential Study indicated that only nine percent of the Company's commercial customers in Minnesota and only three percent of our residential customers have an air source heat pump. Ground source heat pump system market penetration is even lower, with only three percent of commercial customers with a ground source heat pump. Residential heat pump market penetration is negligible. The majority of our electric heating customers have central furnace systems (76 percent), with the balance of resistance, radiant, and baseboard heating. Cooling is dominated by window and central air units, which are far more inefficient than heat pumps. While specific South Dakota data is not available, it is assumed that South Dakota market penetrations would be comparable, with heat pump market penetration possibly less than in Minnesota.

The Heat Pump project targets residential and commercial customers currently using or considering the installation of standard efficiency resistance heating and cooling systems. The project offers rebates to customers for replacing standard efficiency electric systems with qualifying higher efficiency heat pump systems or for purchasing higher efficiency systems for retrofit or new installations. Qualifications for project rebates will be based on Energy Star standards.

Otter Tail has structured the Heat Pumps project with separate energy, demand, and cost effectiveness goals for the following market segments.

- Residential air source heat pumps
- Commercial air source heat pumps
- Residential geothermal heat pumps
- Commercial geothermal heat pumps

The definition of a heat pump is a device that extracts energy from one substance and transfers it to another at a higher temperature. A heat pump takes low-temperature heat from an outdoor source (such as the air, ground, groundwater, or surface water) and mechanically concentrates it to produce high-temperature heat. Since most of the heat is simply moved (pumped) from the outdoor source to the indoors, the amount of electricity required to deliver it is typically less than would be required if using electric heat directly.

Heat pumps are available in a number of configurations, with the following two being the most popular.

#### 1) Air-to-air

The most common type of heat pumps, air-to-air (air source) units are used widely for residential heating and cooling. Outdoor air is the source of heat, with this heat delivered to the house as hot air, either through duct systems or air handlers. Air-to-air heat pumps that heat the home year-round without supplemental resistance electric heat are not yet widely available. However, an all-electric heating system taking advantage of a heat pump's high efficiency characteristics and resistance electric heat for severe weather operates at an average over-all efficiency of about 140 percent, compared to a standard electric resistance heating system operating at 100 percent efficiency.

## 2) Ground source heat pump (GSHP)

Also called geothermal heat pumps, these devices are most often used in the coldest climates where the ground temperature is significantly warmer and less variable than outside air temperatures. Because of the consistent, steady ground temperatures, geothermal heat pumps can achieve efficiencies of up to 400 percent.

The Heat Pump project will be promoted through bill stuffers, printed materials, and DVDs, newspaper ads, and articles, personal contact through our company representatives, and through the Company's web site at www.otpco.com.

2012	Residential Air Source	Residential Geothermal	Commercial Air Source	Commercial Geothermal
kWh – at the generator	168,130	120,398	314,403	308,633
Cost / kWh	\$0.08	\$0.17	\$0.08	\$0.16
kW – at the generator	17.111	86.000	37.301	206.559
Cost / kW	\$818	\$244	\$670	\$242
2013	Residential Air Source	Residential Geothermal	Commercial Air Source	Commercial Geothermal
kWh – at the generator	168,130	120,398	314,403	308,633
Cost / kWh	\$0.08	\$0.17	\$0.08	\$0.16
kW – at the generator	17.111	86.000	37.301	206.559
Cost / kW	\$818	\$244	\$670	\$242

## **B. LONG TERM DEMAND SIDE MANAGEMENT GOALS**

2012	Residential Air Source	Residential Geothermal	Commercial Air Source	Commercial Geothermal
Project Delivery & Administration		\$8,750	\$10,040	\$20,740
Incentives	\$8,000	\$12,250	\$14,960	\$29,260
Total	\$14,000	\$21,000	\$25,000	\$50,000
Participation	20	10	22	22

2013	Residential Air Source	Residential Geothermal	Commercial Air Source	Commercial Geothermal
Project Delivery & Administration	\$6,000	\$8,750	\$10,040	\$20,740
Incentives	\$8,000	\$12,250	\$14,960	\$29,260
Total	\$14,000	\$21,000	\$25,000	\$50,000
Participation	20	10	22	22

Pike Research reports that lighting currently represents about 17.5 percent of all global electricity consumption. The U.S. alone accounts for 20 percent of this amount at an annual cost of over \$40 billion. The National Association of Electrical Distributors reports that lighting accounts for between 26 percent to over 50 percent of a commercial building's energy use and nearly 40 percent in a typical industrial warehouse.

The energy efficiency of specific *new* lighting products has improved, but opportunities still exist for improvements in existing commercial, industrial, and farm buildings. Relatively recent data from the U.S. Department of Energy (DOE) indicates that florescent lighting technology represents 56 percent of all lighting used in commercial buildings. Forty percent of this florescent lighting is inefficient T12 technology and 27 percent is metal halide or mercury vapor. Much more efficient T8 systems represent only 13 percent of lighting used in commercial buildings. Florescent high bay luminaries provide up to 70 percent energy savings compared to traditional high-intensity discharge (HID) lighting systems. In commercial applications, high performance T8 or T5 fluorescent systems reduce energy use by 20 percent over typical three-lamp T8 Parabolic luminaries, and return even higher energy savings when replacing T12 fluorescent lighting systems still commonly used today.

Otter Tail's Lighting project focuses on replacing inefficient lighting systems with new and retrofit systems based on more efficient technology. Typical retrofit applications include the following.

- Inefficient incandescent bulbs replaced by screw-in compact fluorescent lamps.
- Inefficient fluorescent systems (T12 lamps and magnetic ballasts) replaced by high efficiency fluorescent systems (electronic ballasts with T5 and T8 lamps).
- LED lighting.
- Occupancy sensors.

The Minnesota Demand Side Management Potential Study indicates additional investments in energy efficiency lighting are highly cost-effective.

Otter Tail plans to promote the Lighting project through print and mail resources to educate consumers and vendors. Personal contacts by energy management representatives and industrial services engineers from Otter Tail Power Company will also promote the project to eligible commercial and industrial customers. Information about the project is also available through the Company web site at <u>www.otpco.com</u>.

## **B. LONG TERM DEMAND SIDE MANAGEMENT GOALS**

Year	2012	2013
kWh – at the generator	522,671	522,671
Cost / kWh	\$0.07	\$0.07
kW – at the generator	126.466	126.466
Cost / kW	\$293	\$293

Year	2012	2013
Project Delivery & Administration	\$13,520	\$13,520
Incentives	\$23,480	\$23,480
Total	\$37,000	\$37,000
Participation	15	15

About half of the world's electricity flows through electric motors. In the U.S., the National Association of Electric Distributors reports that industrial motors account for more than 60 percent of all industrial electricity consumption and HVAC systems account for 18 percent of energy used in commercial buildings. Since such an immense amount of energy is devoted to motor-driven systems, even seemingly small improvements in motor efficiency can yield huge savings.

The goal of the Motors project is to educate dealers and customers on the benefits of installing new and replacement electric motors that exceed the National Electrical Manufacturers Association (NEMA) Premium® efficiency requirements. The project has provided rebates to customers for the purchase of NEMA Premium® rated electric motors.

## **PROPOSED MODIFICATIONS**

## 1) EISA Efficiency Standards

The Energy Independence and Security Act (EISA) of 2007 intended, among other things, to increase the efficiency of products, buildings, and vehicles. EISA specifically raised the efficiency level of industrial electric motors and basically required all EPACT efficient motors to meet NEMA Premium<sup>®</sup> efficiency levels. EISA went into effect on December 19<sup>th</sup>, 2010 and will apply to motors ranging from one through 200 horsepower in size. (NEMA Premium<sup>®</sup> efficiency levels and tables are defined and available at the NEMA website: <u>www.nema.org/premiummotors</u>.) Under EISA, motors currently covered by the Energy Policy Act will change from NEMA MG-1, Table 12-11 Energy Efficient to Table 12-12 NEMA Premium<sup>®</sup> Efficiency as listed at <u>http://www.nema.org/gov/energy/efficiency/premium</u>.

For 2012 and 2013, Otter Tail proposes to discontinue rebate incentives for motors ranging from 1 to 200 horsepower that just meet NEMA MG-1 Table 12-12 NEMA Premium<sup>®</sup> efficiency levels. To qualify for rebate incentives, Otter Tail proposes that motor installations in 2012 and 2013 must exceed Table 12-12 NEMA Premium<sup>®</sup> efficiency. Availability of products exceeding NEMA Premium<sup>®</sup> is not yet certain for all motors from 1 to 500 horsepower in size and from 1,200 to 3,600 operating revolutions per minute (RPM.) Later in 2011, Otter Tail will develop more detailed tables for qualifying efficiency based on availability of motors exceeding NEMA Premium<sup>®</sup> efficiency levels in time for project changes proposed to take effect January 1, 2012.

## 2) Explosion Proof Enclosures

Efficiency levels in NEMA MG-1Table 12-12 do not apply to motors with special purpose (i.e. explosion-proof) enclosures. However, as an energy provider in rural South Dakota, Otter Tail serves industrial customers, including grain elevators and large food processors that operate under requirements for explosion-proof motors enclosures.

Otter Tail proposes incentives for customers upgrading to high-efficiency motors with explosion-proof enclosures. The Company has developed minimum efficiency levels and rebates based on the following criteria from MotorMaster<sup>®</sup> software.

- Motor horsepower
- NEMA Premium<sup>®</sup> efficiency levels
- Energy Policy Act 1992 efficiency levels
- Motor RPM
- Motor costs

#### 3) Enhanced Incentives

Changes in the motors market brought on by EISA 2007 are resulting in increased costs for businesses when purchasing new motors and retrofitting existing, inefficient motors to more efficient models that meet or exceed NEMA Premium<sup>®</sup> efficiency requirements. As a result, Otter Tail proposes two key changes in its rebate incentive structure.

For participant measures, including the purchase of new motors and replacement of existing motors at failure, Otter Tail proposes increasing rebates over 2011 Motors project levels. Based on research of list prices for motors exceeding NEMA Premium<sup>®</sup> efficiency levels, the rebate increase will not exceed incremental price differences between motors exceeding NEMA Premium<sup>®</sup> efficiency (new efficient option) and motors that just meet NEMA Premium<sup>®</sup> efficiency (new baseline.)

Anecdotal evidence and program participation data suggest that customers are reluctant to remove an inefficient, but still operating, motor and replace it with a more efficient motor. Otter Tail proposes to encourage South Dakota customers to remove inefficient, operating motors prior to failure with more efficient motors that exceed NEMA Premium<sup>®</sup> efficiency levels with rebates approximately twice the level for simply purchasing a motor that exceeds NEMA Premium<sup>®</sup> for new applications.

Otter Tail will use print and mail resources to educate consumers and vendors, and provide customers personal contacts from energy management representatives of Otter Tail Power Company to promote the Motors project. Information about the project is also available through the Company web site at <u>www.otpco.com</u>.

## **B. LONG TERM DEMAND SIDE MANAGEMENT GOALS**

Year	2012	2013
kWh – at the generator	32,311	32,311
Cost / kWh	\$0.53	\$0.53
kW – at the generator	5.363	5.363
Cost / kW	\$3,170	\$3,170

Year	2012	2013
Project Delivery & Administration	\$9,980	\$9,980
Incentives	\$7,020	\$7,020
Total	\$17,000	\$17,000
Participation	16	16

The Custom Energy Efficiency project pays incentives to commercial and industrial customers for energy saving equipment installations and process changes that improve energy efficiency. The Custom Energy Efficiency project is a comprehensive project that is designed to cover energy saving applications that are not served by the Company's other prescriptive rebate projects.

Impact savings estimates from Custom Energy Efficiency projects are provided to Otter Tail Power Company by the customer in a project proposal. The proposal presents detailed demand and energy savings for each proposed measure that are then reviewed and verified by Otter Tail Power Company engineering staff. If necessary, modifications are made to the proposal and an iterative process takes place with the customer to ensure accuracy of savings calculations and appropriate documentation of proposed improvements. Otter Tail Power Company offers assistance to commercial and industrial customers to help them determine the energy and demand savings necessary in developing a grant proposal.

In addition, the customer often works with internal or third party engineers to determine and verify savings. End-use metering is also an option for verifying impact savings. Currently, each proposal is studied to see if the existing metering arrangement is appropriate for the proposed measure, or if additional equipment should be used.

To promote the Custom Energy Efficiency project, Otter Tail will use print and mail resources to educate consumers and vendors, and contact customers personally through Company energy management representatives. Information about the project is also available through the Company web site at <u>www.otpco.com</u>.

#### **B. LONG TERM DEMAND SIDE MANAGEMENT GOALS**

Year	2012	2013
kWh – at the generator	806,250	806,250
Cost / kWh	\$0.09	\$0.09
kW – at the generator	161.250	161.250
Cost / kW	\$453	\$453

Year	2012	2013
Project Delivery & Administration	\$25,500	\$25,500
Incentives	\$47,500	\$47,500
Total	\$73,000	\$73,000
Participation	5	5

The goal of advertising and education efforts is to inform, persuade, remind, and add value. Advertising and education makes individuals aware of product options, informs them about those options, and assists the individual in making decisions about a course of action or purchase. Effective advertising and education prepares an individual to respond when a need or opportunity arises. This likely does not occur simultaneously with the message being received, but has an effect, none-the-less, on decisions made.

The range and complexity of energy related decisions consumers make continue to multiply. This is due to the variety of energy-powered technologies used in modern life; the variety of construction materials available; the number of construction techniques represented in today's housing stock; and the number of options available for heating, cooling, and ventilation systems.

The primary purpose of this project is educational outreach targeting residential customers and children across economic groups from within the Otter Tail Power Company customer base. The project objective is to promote consumer awareness of energy-saving practices and to educate both today's consumers and future consumers to help prepare them to make lifestyle choices and buying decisions that maximize energy efficiency and savings.

Primary components of the Advertising and Education project include presenting educational assemblies to school-aged children and their teachers, as well as providing educational materials such as newsletter articles and literature, and web-based educational information.

#### • Educational assemblies for teachers and school aged children.

The Energy Connection program is a production and tour offered by the Minnesota Science Museum. The energy tour will be offered free to selected schools in South Dakota in the spring of 2012 and 2013. The goal will be to provide the assembly program to at least four schools each year. The assembly program targets students in fourth through sixth grades with interactive displays and activities to develop an understanding of energy, alternative fuels and energy resources used to generate electricity, and energy conservation methods to use at home and at school. The program is supplemented with workshop and materials for teachers to assist them in meeting their energy education requirements for fourth through sixth grades.

#### • Literature, newsletters, general information.

Appropriate literature and material will be located and ordered or developed and produced as companion pieces to the education effort that will take place through advertising education. Customers will be offered educational materials as free resources as a part of the advertising campaigns, in educational displays at home shows, school visits, in local company offices in the South Dakota service territory, and will be published through a bimonthly newsletter for residential customers.

#### • Internet based resources

Ads and promotional campaigns developed through this project will direct customers to

<u>www.otpco.com</u> where they will find a variety of conservation tips and resources. The most significant tool available to customers on the web is an energy feedback tool that provides an online energy audit and bill analysis tool. Called Bill Analyzer, this tool helps individuals understand their individual energy consumption patterns, identify causes for changes in consumption, compare their use to other similar households, and to be guided to actions to reduce their personal energy use. Studies have shown that energy feedback programs are successful in driving household energy savings of two percent or more through behavior and prescriptive changes. This tool is available for web self-service and through contact with customer service center representatives.

The objective of the Advertising and Education project is to educate approximately 400 students on energy use, its impact on the environment, and how behavior and technology interact, to drive 300 customers to participate in the Bill Analyzer project, and to distribute a minimum of 200 pieces of energy efficient literature to customers upon their request. The project will also support other advertising efforts in specific projects.

### **B. LONG TERM DEMAND SIDE MANAGEMENT GOALS**

This project is not a direct impact project; therefore no estimates have been made to determine any effects on peak demand or energy consumption.

Year	2012	2013
Project Delivery & Administration	\$8,000	\$8,000
Total	\$8,000	\$8,000
Participation	900	900

## **Cost Recovery and Financial Incentive**

Otter Tail Power Company has established a balancing account to track South Dakota conservation costs, including a carrying charge for the time value of the money invested in energy efficiency projects incurred by the Company. The tracker also accounts for amounts collected from customers through the conservation cost recovery charge. The conservation cost recovery charge is collected monthly based on the applicable adjustment factor multiplied by the Customer's monthly energy (kWh) usage. For billing purposes, the cost recovery charge is combined with other charges as part of the energy adjustment that appears on customers' electric service bills.

We are not currently recovering any of these costs in base rates. The conservation cost recovery mechanism is an appropriate means to recover costs associated with developing and implementing the South Dakota Energy Efficiency Partnership.

On May 1, 2011 the Company filed the South Dakota EEP 2010 Status Report that included the amount of the conservation cost recovery charges and requested approval to continue the adjustment charge on customers' bills, effective July 1, 2011. The Company proposes providing a similar report to the Commission annually every May 1 summarizing the prior year's EEP expenses, carrying charges, incentives and the amount recovered from customers through the cost recovery charge. The report will develop a new cost recovery charge if necessary based on the outstanding balance of the tracker account and request approval to implement the new charge effective each July 1.

The Company proposes a financial incentive mechanism as part of the 2012-2013 EEP consistent with our incentive proposal filed on May 1. The following table shows the proposed incentive for 2012 and 2013 based 30% of anticipated annual EEP expenses. The actual financial incentive realized by the Company would be based on actual expenses and presented annually in the May 1 summary filings.

Year	2012	2013
Proposed EEP Expenses	\$280,000	\$280,000
Percent of Spend	30%	30%
Financial Incentive	\$84,000	\$84,000

# **Evaluation**

Otter Tail Power Company uses the software tool DSMore<sup>TM</sup> to analyze programs and calculate benefit-cost test results for each direct-impact project and for the aggregate EEP portfolio including indirect impact project costs. A summary of the cost effectiveness of the total portfolio is presented in the following table for each year of the 2012-2013 EEP and for both years combined.

	2012 Energy Efficiency Plan				
	Benefit / Cost Results				
Participant	Ratepayer	Total Resource	Societal	Utility	
Test	Impact Test	Test	Test	Test	
2.24	1.62	3.98	4.06	11.35	
	2013 Energy Efficiency Plan				
	Benefit / Cost Results				
Participant	Ratepayer	Total Resource	Societal	Utility	
Test	Impact Test	Test	Test	Test	
2.31	1.67	4.18	4.27	11.97	
	2012 and 2013 Energy Efficiency Plan				
Benefit / Cost Results					
Participant	Ratepayer	Total Resource	Societal	Utility	
Test	Impact Test	Test	Test	Test	
1.94	1.62	3.48	3.55	9.89	

Externality values are typically included in the Societal Test. No externality values have been included in this analysis, but a carbon tax starting in 2012 is embedded in the price strip used by the Company and contained in both the Total Resource and Societal Tests.

DSMore<sup>™</sup> incorporates data from the Company's Integrated Resource Plan, transmission cost models, and financial parameters to model our customer load profiles, system peaks, line losses, customer rates, marginal energy costs, avoided capacity costs, and avoided transmission and distribution costs. Results for the individual projects are provided in Appendix A along with benefit / cost test results for each project.

Otter Tail Power Company used the following discount rates as inputs to DSMore<sup>TM</sup> for the 2012-2013 analysis. The Societal Test discount rate uses the 20-year T-bill rate as of March 1, 2010.

Participant	Ratepayer	Total Resource	Societal	Utility
Test	Impact Test	Test	Test	Test
8.0%	8.0%	4.41%	4.41%	8.0%

## **Summary**

Otter Tail Power Company's 2012-2013 Plan presents projects for all customer classes and major end uses. The Plan includes nine projects intended to achieve approximately 2,274,260 kWh in annual energy savings at an approximate total cost of \$280,000. DSMore<sup>™</sup> results demonstrate that the Plan passes all cost effectiveness tests.

Otter Tail Power Company proposes launching these projects January 1, 2012. Following the Plan's implementation and evaluation, the Company will provide reviews to the Commission of the Company's performance compared to the budgets every year by May 1. The Company aims to achieve a financial incentive for providing energy efficiency projects to South Dakota customers. This incentive is proposed as a percentage of actual EEP expenses.