MEMORANDUM

To: Commissioners and Advisors

From: Brian Rounds, Dave Jacobson, Bob Knadle, Steve Wegman, and Karen Cremer

RE: EL07-011 In The Matter of the Filing by Otter Tail Power Company for Approval of its Proposed Energy Efficiency Partnership Plan for 2008.

March 3, 2008

The application by Otter Tail Power Company (Otter Tail) in Docket EL07-011 is a request for approval of launching an Energy Efficiency Plan (EEP) as a one year pilot. In their filing, Otter Tail proposes ten separate energy efficiency programs based on the programs they have been required to provide in Minnesota since 1992. Of the ten programs, four apply to residential customers, three apply to commercial, industrial and farm customers, one applies to both residential and commercial customers, and two apply to all customers. Otter Tail has requested to recover the costs associated with the EEP through a separate conservation cost recovery charge and has also suggested further options to incentivize the performance of their programs. Attached to this memorandum is further information regarding the EEP submitted by Otter Tail in response to a Staff data request. Staff offers the following discussion for the Commission to consider when deciding on Otter Tail's application.

Programs of this nature were promoted and adopted by some states during the 1970's and early 1980's when high rates of inflation and certain energy shortages concerned the nation. Much of this activity was aimed at electric service where the avoidance of building generating plants, large base load plants in particular, was the goal of Demand Side Management (DSM) activities. Many states required utilities to perform Integrated Resource Planning (IRP) studies which mandated that utilities not only consider supply side options when planning to meet the energy needs of customers but also demand response programs which might offset the need for additional resources.

Over the last decade, the demand for electricity has grown at an increasing rate as technology has changed. Also, the volatility of natural gas prices and the regulatory uncertainty associated with CO_2 emissions have increased the cost associated with new electricity generation. As a result, there has been a resurgence in slowing demand growth with energy efficiency rather than building new generation.

Each of Otter Tail's proposed programs raises certain issues which the Commission may wish to consider when considering the application. Following are Staff comments on each program.

HOTPACKS

Otter Tail currently offers rebates to residential customers on electric water heaters 80 gallons or larger. This program will provide a HOTPACK kit with each of those rebates. The kit includes an assortment of water-saving devices and accessories. Otter Tail projects 40 customers to participate in the program at a cost of $4,000 total. This works out to each customer saving approximately 730 kWh per year at a projected cost of $0.03/kWh. Considering that the HOTPACK kit reduces energy usage by water heaters for which Otter Tail offers an off-peak rate

of $0.03485/kWh, this program is cost-effective, assuming Otter Tail's estimated 5 year life and 5% free riders. However, of the $4000 projected cost of the program, only 25% is related to the cost of the actual kit.

CHANGE A LIGHT, CHANGE THE WORLD

Otter Tail proposes to work with the Wisconsin Energy Conservation Corporation (WECC) to develop, implement, and administer the 2008 Change a Light, Change the World project. Otter Tail projects to save approximately 767,515 kWh at a total cost of $11,100. At $0.01/kWh, the program offers an attractive cost benefit. However, Staff does question whether utility dollars are still needed to convince consumers to use more efficient lighting. The choice to use efficient lighting such as CFLs has become common sense over the last couple of years. In addition, Otter Tail does not correctly take into account free riders, which Staff believes has a significant effect on this program. The free rider issue is addressed later in this memorandum.

AIR CONDITIONING CONTROL

With this program, Otter Tail proposes to offer residential customers a $5 credit per month for four summer months to allow Otter Tail to cycle air conditioner loads on and off every fifteen minutes during peak periods. Otter Tail projects 30 customers to participate at a total cost of $12,600. Saving 22,020 kWh at a cost of $0.57/kWh, the project is the most expensive proposed, on a per kWh basis, but the kilowatt-hours being saved are off-setting higher-priced spot market electricity. Also, at a low cost of $396/kW, this program should increase their operating reserve, effectively increasing reliability. However, this program will not increase their winter operating reserve, when they have their peak load.

RESIDENTIAL DEMAND CONTROL

Otter Tail currently provides a residential demand control program that provides customers with a reduced rate and electricity pricing that more closely follows the wholesale demand price of electricity. This program would provide a cash rebate incentive of $300 for installing a Residential Demand Control (RDC) on the current approved rate. Otter Tail projects eight new customers to participate in the program at a total cost of $9,900. If there is already an RDC program in place and the proposal only adds a $300 rebate, Staff questions whether $7,500 is needed for Project Delivery & Administration. With a projected savings of 72,540 kWh at $0.14/kWh, this project is expensive. However, like the air conditioning control program, the kilowatt-hours being saved should be off-setting higher priced electricity. Also, this program projects saving almost 53 kW of demand at a very low price of $188/kW. This is a relatively cheap solution to demand growth and improving reliability.

HEAT PUMPS

With this program, Otter Tail proposes to offer rebates to residential and commercial customers that purchase Energy Star air source or geothermal heat pumps. The high efficiency of an Energy Star heat pump will reduce electricity usage for air conditioning and heating. This program offers the same low cost per kW as the air conditioning and residential demand control, while having a lower cost per kWh. These costs can be seen in the table below:

2008	Residential Air Source	Residential Geothermal	Commercial Air Source	Commercial Geothermal
Total kWh	489,315 kWh	725,415 kWh	247,800 kWh	210,990 kWh
Cost/kWh	$0.02/kWh	$0.01/kWh	$0.03/kWh	$0.01/kWh
Total kW	50.23 kW	34.93 kW	9.73 kW	9.72 kW
Cost/kW	$175/kW	$160/kW	$719/kW	$278/kW

Source: Informal Data Response – February 8, 2008 E-mail

LIGHTING
This program offers cash incentives and attempts to educate commercial, industrial and farm customers to install more efficient lighting. Like the Change A Light, Change The World program, this program has a very attractive cost per kWh of $0.01. However, it also draws the same free rider question about rebates for efficient lighting. According to Grainger, an industrial supply company that often provides large-scale lighting retrofits, commercial customers are seeing paybacks of two to five years. Although education may help, most of these customers should be funding their own retrofits.

MOTORS
With this program, Otter Tail proposes to educate and offer cash incentives to commercial, industrial and farm customers looking to install more efficient motors. According to Otter Tail's filing, a "motor running 4,000 hours per year will consume on the order of ten times its capital cost's worth of electricity every year". At this rate, education may be helpful, but rebates should not be necessary.

GRANTS
The Grants project allows commercial, industrial and farm customers to propose an incentive that will help them become more energy efficient. As a result, grants are given based on the feasibility of each proposal. Because the improvement is tailored to each customer, the program is able to achieve a very attractive cost per kWh and per kW of $0.01 and $384, respectively. Staff does, however, have reservations about spending $57,000 towards four participants. As a side note, the Commission has received feedback, including a letter of support, from school districts that would benefit from this program. Perhaps this program should be limited to Public or Governmental entities.

FINANCING
Otter Tail's proposed financing program provides low interest (2.9%) loans to all customers for energy efficiency improvements. The difference in Otter Tail's cost of capital would then be recovered through rates. As this program is implemented in conjunction with other programs, Otter Tail recognizes that its cost-effectiveness would be hard to determine. Although this appears to be a worthy venture, Staff takes issue with spending $2,000 on the actual incentive while spending $10,500 on delivery and administration.

ADVERTISING & EDUCATION
This program proposes to educate and advertise to all customers about energy efficiency improvements. Otter Tail intends to do this through websites, literature, bimonthly newsletters, advertising campaigns, home shows, and schools assemblies. Staff believes education is incredibly important to energy efficiency and supports this program. In addition, we would like to see increased efforts in educating builders, HVAC installers, and commercial lighting and motor customers.

FREE RIDERS & TECHNOLOGY LIFETIME ESTIMATION
Otter Tail has utilized sophisticated software as well as an intelligent, experienced staff to develop this proposal. There are two important aspects in Otter Tail's calculations that Staff would like to make note of in this memorandum.

First, Otter Tail's assumed technology lifetime estimation is five years for HotPacks and Change A Light, ten years for lighting, and fifteen years for all other programs. In most cases, to Otter Tail's credit, these are conservative estimates, pushing the cost estimates up, rather than down. However, we should keep in mind that those lifetime estimates have a considerable effect on the overall cost savings estimates of the proposal and are very difficult to estimate. By adjusting those lifetime estimates, the projected amount of electricity saved can change dramatically.

Second is the issue of free riders. Otter Tail points to Minnesota's Legislative Auditor's Office 2005 Report on Energy Conservation for further clarification. In that report, free riders are defined as "individuals who participate in a conservation program by taking a rebate but would have purchased the energy-efficient product (such as a furnace) on their own without the rebate", and free-drivership as the opposite force that "represents individuals who are influenced by the conservation program to buy an energy efficient product but do not bother to get a rebate." Otter Tail assumes, based on the report's recommendation, that free riders and free drivers cancel each other out. Then to be conservative, they assume a 5% free-ridership discount to CFLs in the Change A Light program and water saving kits in the HotPacks program.

Staff does not agree with the Minnesota's Legislative Auditor's Office report's conclusion, and does not believe Otter Tail correctly applies the conclusion in their analysis. For example, the Change A Light program budgets expenses towards "retailer training & recruitment, targeted advertising, instant - time of sale- rebates on Energy Star qualified CFLs, point of sale materials, and possibly a cooperative advertising budget for participating retailers." In this case, any consumer that would have bought CFLs regardless of the instant rebates and advertising is a free rider. However, there are no free drivers; everyone collects an instant rebate. Therefore, a 5% discount for free ridership assumes that 95% of those that buy CFLs would not have done so without the program. Free riders will affect all programs utilizing rebates, including the HotPacks, Change A Light, Residential Demand Control, Heat Pumps, Lighting, and Motors programs. The only way to reduce free riders is to offer rebates on equipment that really is cost-prohibitive to the consumer and make them large enough that they have an impact on the consumer's decision. In this case, the cost of accurately measuring and lowering free riders' effect on the program is too high. The point here is not to pick on the programs themselves, but to again point out how difficult it is to estimate the kWhs saved by these programs.

COST RECOVERY

Of course, the most important aspect of the program is cost recovery. Otter Tail proposes to recover costs incurred in the program by tracking all program-related costs in a balancing account, including a carrying charge at 8.99%, which is Otter Tail's requested overall rate of return in its current general rate case in Minnesota. The SD Commission granted Otter Tail a rate of return of 9.964% in Docket F-3691, their last rate case, effective as of 11/1/1987. This energy efficiency tracker account would then be approved on a yearly basis. Staff would argue that a full rate case gives the Commission better options than a cost recovery tracking mechanism. However, this mechanism is common with such programs, and Staff does not object so long as Otter Tail continues to file rate cases periodically and give the Commission access to their earned rate of return.

UTILITY INCENTIVE

In their filing, Otter Tail also proposes implementing a financial incentive mechanism to encourage the program's success. The two mechanisms they suggest are (1) a bonus for kilowatt-hours conserved and (2) recovery of sales lost through the success of the program. The first mechanism would allow Otter Tail to earn a cash bonus if they are able to save more than their goal, while keeping an overall cost-effective portfolio. The second option would allow them to recover the lost margin on the electricity not sold. Option (1) would be difficult to regulate. Otter Tail sets its own efficiency goals, determines the cost-effectiveness of the program, and determines the results. Each of these factors would have a tremendous effect on a bonus, and Otter Tail would be able to effectively earn a bonus every time. Option (2) is less favorable than (1). Recovering the margin from lost sales includes the same problems with tracking as option (1). Furthermore, projected sales would also factor into the margin recovered. Because of the difficulty in associating the change in energy sales with the effectiveness of the program, the lost margin would be another entirely subjective value. Additionally, ratepayers will likely reject the idea of paying for the electricity they are not using. For the reasons stated above, Staff does not believe Otter Tail should be allowed an incentive to provide these programs other than the rate of

return they will make on the costs associated with the programs. If the energy efficiency programs reduce demand to the point that Otter Tail is no longer earning a fair return, they can seek balance in a full rate case.

SUMMARY

Otter Tail has worked very hard over the last fifteen years to implement and refine most of the above proposed programs in Minnesota. However, South Dakota is not Minnesota, and South Dakotans are not Minnesotans. A primary concern with the plan as a whole is the idea of recovering costs from the entire population of ratepayers for the benefit of a few. Another major concern is the idea of a utility making a return on investment on such programs, whereas a nonprofit organization may be more effective. These are just a couple of the subjective factors the Commission will have to grapple with while making their decision.

As a result of Otter Tail's experience in Minnesota, Staff would like to point out that Otter Tail does bring a lot of expertise to designing these programs. Realizing the true effectiveness of Otter Tail's programs is an especially complex task, with factors like free riders, technology lifetime, participation and cost estimates. However, Staff is confident that Otter Tail's prior experience in implementing these programs has aided in evolving these programs to become as efficient and effective as possible.

In conclusion, Staff has attempted to provide objective information to the Commission for their consideration of this subjective decision. There is no doubt that the proposed energy efficiency programs would provide a benefit to the consumers, but the cost of some programs may be unreasonable. Otter Tail has stated that they would prefer to implement the same programs as in other jurisdictions to minimize costs through program efficiencies. Staff respects this position, but believes the proposed plan goes too far. A substantially reduced plan, taking only the most effective programs, would lessen the impact to ratepayers while still providing the most practical programs to consumers. If the Commission requests, Staff would be glad to work with Otter Tail in revising the proposed plan.

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VIA E-MAIL AND U.S. MAIL

September 12, 2007

Brian Rounds
Utility Analyst
South Dakota Public Utilities Commission
500 East Capitol Avenue
Pierre, South Dakota 57501-5070

RE: Otter Tail Power Company
Docket EL07-011, Application for Approval of Energy Efficiency Programs

Dear Mr. Rounds:

Enclosed please find Otter Tail Power Company's response to the data requests of the South Dakota Public Utilities Commission Staff in the above referenced matter. In some instances and to expedite the process as much as possible, it may be appropriate to clarify the information in person and Company staff is available to meet with the Commission and Staff at your convenience.

It should be noted that our response to Data Request 1-2 will be arriving in two separate boxes apart from this mailing.

If you have any questions, please contact me at 218-739-8303.

Sincerely,

/s/ Kim Pederson

Kim Pederson, Manager
Market Planning

South Dakota EEP Data Request Replies

1-1. Please provide proposed tariffs implementing the proposed Energy Efficiency Plan.

There will be two tariffs proposed for Otter Tail Power Company's Energy Efficiency Plan that will be formally filed upon South Dakota's approval of our proposed Energy Efficiency Plan. Draft copies of the air conditioning control and cost recovery tariffs are included as Attachment A and B.

1-2. Provide all Commission orders and settlement agreements approving, modifying or rejecting Otter Tail's Energy Efficiency Plan filings in other jurisdictions from inception to current. Provide the most recent filing for re-approval in Otter Tail's Minnesota jurisdiction. Provide when Otter Tail first initiated an Energy Efficiency Plan in Minnesota and compare that initial plan with what is being proposed in South Dakota.

Otter Tail Power Company has been managing conservation improvement programs (CIP) in Minnesota since the late 1980's. However, in 1992 the Minnesota Omnibus Energy Act was approved with legislative mandates and goals, formal filings, and increased state regulatory oversight. For purposes of this South Dakota data request Otter Tail Power Company is supplying paper copies of all Minnesota CIP filings and decisions from 1992 through 2008 and are enclosed under a separate mailing.

The following table shows the proposed 1992 CIP program in Minnesota. Please refer to the filings for detailed information:

1992 CIP FILING - MINNESOTA PROPOSED BUDGET Otter Tail Power Company	
	Q. Proposed Budget
RESIDENTIAL / FARM	
Air Conditioning - Residential	$48,661
Appliance Recycling	$75,000
Energy Check Up	$16,300
Lights 2000	$33,193
Residential Demand Control (RDC)	$31,050
Total - Residential / Farm	**$204,204**
LOW INCOME	
Appliance Aid	$34,579
House Therapy	$213,796
Total - Low Income	**$248,375**
COMMERCIAL / INDUSTRIAL	
Air Conditioning - Commercial	$26,212
Commercial And Industrial Grants	$200,000
Commercial Lighting	$45,206

Energy Efficient Motors	$13,048
Small Commercial Tune Up	$57,500
Street Lighting	$77,256
Total Commercial/Industrial/Street Lighting	**$419,222**
RESEARCH & TRAINING	
Industrial Research	$86,960
Total – Research / Training	**$86,960**
TOTAL - 1992 CIP PROGRAMS	$958,761

The following table shows 2008 proposed EEP proposed in South Dakota:

2008 EEP FILING – SOUTH DAKOTA PROPOSED BUDGET Otter Tail Power Company	
DIRECT IMPACT PROJECTS	**Proposed Budget**
RESIDENTIAL	
HotPacks	$4,000
Residential Demand Control (RDC)	$9,900
Air Source Heat Pumps - Residential *	$8,800
Geothermal Heat Pumps - Residential	$5,600
Air Conditioning Control *	$12,600
Change A Light	$11,100
Total - Residential	**$52,000**
COMMERCIAL	
Grant	$57,000
Motors	$13,100
Lighting	$22,400
Air Source Heat Pumps - Commercial *	$7,000
Geothermal Heat Pumps - Commercial	$2,700
Total - Commercial	**$102,200**
Total - Direct Impact	**$154,200**
INDIRECT IMPACT PROJECTS	
Financing	$12,500
Advertising & Education	$14,000
Total - Indirect Impact	**$26,500**
TOTAL – 2008 EEP PROGRAMS	$180,700

1-3. Please provide an example of the average Minnesota customer's bill, by class, quantifying the accumulated (since inception) effect of Minnesota's Energy Efficiency Plan on each bill. Provide the number of customers by class Otter Tail serves in Minnesota and the corresponding most recent annual revenues and volumes.

See Attachment C (7 pages)

1-4 Would it be acceptable to Otter Tail Power Company to offer a program in South Dakota that was significantly different than that in effect in other jurisdictions? For instance if South Dakota's program did not apply to new construction, would that be acceptable to Otter Tail Power Company? Would Otter Tail Power Company object to showing the program recovery as a separate line item on billings? Please offer comment.

Would it be acceptable to Otter Tail Power Company to offer a program in South Dakota that was significantly different than that in effect in other jurisdictions?

The Company would prefer keeping our conservation and efficiency programs the same as other jurisdictions. Varying the program design from programs that exist in other jurisdictions will increase costs to our South Dakota customers. Keeping the programs the same minimizes advertising, promotion, and sales costs, as well as significantly reduces administrative costs associated with setup and processing of incentives. In addition, customer service expense are higher if programs targeting the same "end uses" differ because representatives need to learn and manage multiple programs, criteria, incentives, and customer paybacks for the same end uses, for example lighting. In addition, customers bordering state lines can become confused by advertising a program that varies across state lines. Radio advertising, which is often used, crosses multiple jurisdictions. If the Company offers one program in one state and an entirely different program in another state the radio ad will either need to reflect that or be generic enough to not give much detail. We advise and much prefer keeping the program design as we have submitted it and the same as it exists in Minnesota. If significant changes are made, the Company requests the opportunity to reconsider the South Dakota plan it has submitted.

For instance if South Dakota's program did not apply to new construction, would that be acceptable to Otter Tail Power Company?

Again, we prefer programs remain the same. In the case of new construction, there are some programs that should not be rebated in new construction and some that should be. Mostly that decision is driven by free riders, manufacturer standards, and state policies.

Would Otter Tail Power Company object to showing the program recovery as a separate line item on billings?

The Company would not object to showing the program recovery as a separate line item on billings. We would need to review any state regulations that might require waiver from rules before proceeding. In Minnesota, program cost recovery is part of the Resource Adjustment, and in that way, shows up as a line item on customer bills. But it is not a separate line item at this time.

1-5 Explain how Otter Tail can assure that cost recovery for the proposed program is reasonable without the Commission knowing Otter Tail's recent earned return on its South Dakota operations?

Our 2006 South Dakota return on equity was 5.3%. In addition, it is important to note that the costs the Company has proposed in our South Dakota Energy Efficiency plan are not included in South Dakota customer rates at this time. The only way to recover those costs, outside of a rate case, is through a tracker mechanism as we have proposed. In many instances and in many states, the tracker mechanism and cost recovery rider are the preferred method for utility recovery of costs associated with energy efficiency investments.

To determine whether or not what we've proposed is reasonable, we would encourage the Commission to review the cost per kwh saved. Under least cost planning scenarios, demand side management solutions are evaluated equally with strategies to increase capacity and energy resources. Least cost planning also takes into account all significant impacts (costs and benefits), including non-market impacts. Lastly it involves the public in implementing these strategies. The Commission can note that the 2008 SD EEP plan achieves an estimated lifetime cost per kwh saved of $0.01085, a noteworthy achievement. Please note that any changes to the program design would likely increase this cost and the Company reserves the right to re-evaluate the plan to determine if it is still a least cost option.

1-6. For each proposed program, please provide a detailed description and calculation (including all factors included or excluded) of the elements shown in Otter Tail's "Long Term Demand Side Management Goals", as shown in the filing.

See Attachment D (13 pages, all marked Proprietary). Shown are all the calculations involved, including the calculated energy and demand savings (at the meter) and the energy and demand savings (at the generator). The Company currently utilizes DSManager to calculate energy and demand impacts. We are in the process of evaluating new software for future analysis. The information in this spreadsheet is considered proprietary.

1-7. For each proposed program, please provide a detailed breakout of "Project Delivery and Administration Costs".

See Attachment E.

1-8. Please provide all proposed rebates and the analysis or studies that support the proposed rebate levels with regard to the rebates being adequate to change customer purchasing decisions. Explain how Otter Tail has addressed this issue concerning the replacement of consumptive devices as opposed to new construction.

Change a Light Change the World

The Change a Light Change the World program is a part of a national campaign aimed at transforming the marketplace for residential light bulbs. The program accomplishes this goal with the following strategies:

- Advertising coordinated with local and participating retailers;
- $2/bulb instant rebates available through participating retailers;
- Introduction of product into nontraditional marketing channels, including grocers.

Otter Tail Power Company works with Wisconsin Energy Conservation Corporation for retailer recruitment and program administration services. Since introducing the program in the fall of 2004, Otter Tail Power Company customers have purchased about 18,000 to 20,000 bulbs per year on average.

The Company has managed a number of compact fluorescent programs since 1992, each with varying rebates according to the cost of the product, current market penetration, project goals, and energy and demand savings. The current program has by far been the most successful, due in large part to the better product and lower out-of-pocket customer costs. This level of participation suggests to Otter Tail Power Company that the rebate levels are adequate and justified to cost effectively meet the goals of the Change a Light Change the World program.

Lighting

Otter Tail Power Company provides cash incentives to customers choosing to upgrade the efficiency of their existing lighting systems through the Commercial Lighting Rebate program. The Company has had a commercial lighting rebate program since 1992. We've researched technologies and rebate levels since that time making adjustments as necessary based on product availability, cost, energy and demand savings, and market penetration.

Presently, typical retrofit projects involve the removal of inefficient T12 fluorescent lamps, magnetic ballasts, mercury vapor lamps and fixtures, and incandescent lamps and fixtures. Upgraded systems rely on LED, high efficiency T8 and T5 fluorescent technology, and high efficiency HID lighting systems.

Rebate levels for most hard-wired improvements are $.20 per watt of electric demand reduction achieved through the retrofit. The rebate level for screw-in retrofits is $.05 per watt of electric demand reduction. No rebate may exceed 75% of combined material and labor costs for the project.

Our own experience supplemented by research completed by E-Source on other electric utility lighting efficiency programs shows that rebate levels at Otter Tail are similar to other utilities in the region. The Lighting Project has been critical in meeting overall conservation goals in Minnesota with existing rebate levels generating adequate participation from customers. At the same time, checks and balances on costs in the rebate system help keep the program cost effective.

Motors

Motor rebates are based on efficiency standards from the National Electrical Manufacturers' Associations NEMA Premium motor efficiency standards. Customers are eligible for rebates in both replacement and new motor applications. Rebate levels vary from $20 for a one-horsepower motor up to $3,000 for a 500 horsepower motor.

Otter Tail Power Company has managed an efficient motor program since 1992, adjusting rebate levels as market conditions warrant and as done in other programs. Rebate levels are similar to rebate levels offered by other electric utilities in the region. Rebates have been high enough to support adequate participation from customers while assuring that the program meets all cost effectiveness requirements for Otter Tail Power Company.

Energy Grants

The Energy Grant project provides incentives for energy and demand saving end-uses that fall outside of other CIP projects, such as lighting or motors. All proposed Energy Grants measures must pass both the societal and utility test of 1.0. Otter Tail Power Company has based participation on the number of commercial and industrial customers and an average of the number completed in MN each year. Rebates are based on the average energy savings and resulting

grants over the past years under our MN program. Otter Tail Power Company has managed an energy grant program since 1992, adjusting rebate levels as market conditions warrant.

HotPack
This program does not offer cash rebates but instead offers an energy saving kit consisting of items to the homeowner to help them conserve on hot water usage. (See page 8 of SD filing.) Customers installing an electric water heater either new or replacement are eligible for the kit. Any customer installing an electric water heater, regardless of tank size, will receive a Hotpack kit. (Our South Dakota filing erroneously indicated that customers need to install an 80 gallon or larger electric water heater on an off-peak rate to receive a HotPack.) Program goals were set based on several years of data collected on the total quantity of electric water heaters being installed in our service territory.

Air Conditioning Control
Otter Tail Power Company will offer a $5 per month credit in June, July, August and September for 6 months of control from May through October. Research conducted in 2002 indicated that customers in Minnesota signed up for the program in response to their belief that it was a way to positively impact environmental concerns. In addition, participating customers indicated that control periods did not normally inconvenience customers. The total electric service bill credit of $20 is only part of what motivates customers to enroll in the program. In addition, the program is free to customers.

Otter Tail Power Company's South Dakota participation goals are based on our somewhat limited experience in Minnesota combined with projected air conditioning saturation in South Dakota. We continue to research promotional methods to increase participation.

Residential Demand Control
Beyond the Residential Demand Control rate offered through Rate Designation R-03S, Otter Tail Power Company offers a cash incentive of $300 to those customers who install a Residential Demand Controller (RDC). The Company includes the additional incentive in the South Dakota Energy Efficiency Plan because of the energy savings also attributable to the RDC program.

The customer rebate incentive of $300 is approximately 25% of the out of pocket cost to the customer since the RDC unit costs around $850 and installation is approximately $350. Although the rate is not new to South Dakota customers, Otter Tail proposes to include the program in our Energy Efficiency Plan with a $300 incentive to increase participation.

Again the goal has been set based on prior experience with this program both in Minnesota and South Dakota. Participation may decline due to market penetration over the years.

Heat Pumps

Otter Tail Power Company has adjusted rebate levels as market conditions warrant, including technology advancements and customer costs, as done in other programs. Program goals are set based on past experience.

	Residential		Commercial	
	Air Source Heat Pump	**Geothermal Heat Pump**	**Air Source Heat Pump**	**Geothermal Heat Pump**
Rebate	$12 / 1000 btus	$18 / 1000 btus	$12 / 1000 btus	$18 / 1000 btus
Avg. Size	2.66 kw	3.57 kw	4.25 kw	3.84 kw
Calculation	$12 X 12 (1000 btu's/ton) X kw]	$18 X 12 (1000 btu's/ton) X kw	$12 X 12 (1000 btu's/ton) X kw]	$18 X12 (1000 btu's/ton) X kw
Approximate Rebate	$383.04	$771.12	$612	$829.44

1-9. Please explain why Otter Tail has not proposed offering energy audits in South Dakota. Does Otter Tail offer energy audits in Minnesota?

A residential energy audit serves as an excellent tool at providing education to customers on occupant safety within the home, integrity of the home's structural components, and of course, energy savings related to heating, cooling, lighting, appliances and other systems in the home.

Otter Tail Power Company understands the importance of educational programs in its Energy Efficiency Plan. At the same time, Otter Tail recognizes the importance of programs with actual energy savings to maintain a cost effective portfolio of conservation and efficiency programs. Because of the cost associated with an on-site audit Otter Tail Power Company does offer on-line audits through its website.

Otter Tail Power Company does not offer residential energy audits as part of its Conservation Improvement Programs in Minnesota. However, in 2005 the Company developed and launched the residential Energy Makeover project in North Dakota, South Dakota, and Minnesota outside of its Conservation Improvement Programs. The Energy Makeover provided educational seminars to customers along with detailed audits and $7500 in weatherization improvements for makeover project winners.

The Company is not opposed to offering audits, but depending upon the definition of an audit, they can be expensive, particularly in more rural, remote areas where finding qualified auditors can be a challenge. Minnesota has just instituted auditor qualifications and it may be a challenge to find qualified auditors.

If South Dakota is interested in offering residential audits the Company and Commission staff should develop criteria, goals, and budgets to ensure that doing so meets our mutual objectives and that there is quantifiable savings.

Otter Tail Power Company offers both compressed air audits and commercial/industrial audits under our Energy Analysis and Recommissioning Conservation Improvement Program filed in Minnesota. The program provides audits to commercial and nonprofit customers, which will be designed to assist the business customer in improving the efficiency of existing buildings' operating systems. The goal is to reduce energy usage, energy cost savings for the customer, and reduce peak electric demand. The customer currently pays 50% of the cost for a regular audit and 20% of the cost of a compressed air audit.

1-10. Has Otter Tail determined a minimum level participation rate for each of the proposed programs? If so, please provide.

For the proposed programs, Otter Tail has based the participation goals on several factors including but not limited to the total number of customers eligible for each program, participation rates in similar programs offered in Minnesota, penetration of existing technologies, customer out-of-pocket expense, energy savings, and overall program goals. Participation goals are included in the Executive Summary, individual program descriptions, in Appendix A, and in the detailed worksheets included in the original filing. We do not view the numbers as "minimum" level participation; rather we view them as reasonable goals that are most likely to occur based on our history of doing programs of this nature.

1-11. Provide specific information on how Otter Tail works with trade groups and contractors in implementing rebate programs in Minnesota. Describe or identify the outside parties Otter Tail would work with in implementing its proposed plan in South Dakota and describe the resulting relationships.

Contractors and trade groups play a key role in implementing rebate programs in Minnesota, primarily through offering installation services for many of the technologies covered by Otter Tail Power Company's rebates. Contractors also learn about electric technologies, energy conservation strategies and products, and programs specific to Otter Tail Power Company available from Otter Tail Power through various training seminars and publications offered by Otter Tail.

In addition to contractor data in Otter Tail Power Company's Marketing Information System database, the Company has also developed and worked with its OnTarget network of trained contractors specializing in the installation of energy residential HVAC technologies. Otter Tail recently discontinued the OnTarget program offering to customers because the program had accomplished the goal of building up a network of qualified contractors. However, information on participating contractors is still used when relevant, such as direct mail campaign regarding new programs, modifications, and rebates. In the past we have offered training, been involved in joint training with other utilities, and have sponsored state or area trainings.

For most rebate programs offered in South Dakota, area contractors will be the likely source customers turn to for assistance. These contractors would provide installation services for projects involving rebates for installations of NEMA premium efficiency motors, efficient lighting systems, geothermal and air source heat pumps, residential demand controllers, and custom grants for commercial and industrial customers.

Otter Tail anticipates working with Wisconsin Energy Conservation Corporation (WECC) for the Change a Light Change the World program. Services that WECC provides under this program include:

1) Retailer recruiting—WECC recruits between fifteen and twenty retailers each year for the Change a Light Change World campaign in Minnesota. Retailers provide the valuable role of stocking and selling energy efficient compact fluorescent lighting products for Otter Tail Power Company customers to purchase at discounted prices throughout the campaign.
2) Training—WECC provides training to retailers on the benefits of CFL's, along with special in-store point of purchase promotional tools to help retailers promote sales of CFL bulbs.

3) Administrative services—WECC also tracks sales of all CFL's to Otter Tail customers through participating retailers. Otter Tail uses these reports for final energy savings calculations and reporting purposes.

1-12. *Regarding the Grants and Financing programs (pages 17-19), describe the factors or parameters that would be used in determining loan or financing eligibility or preferred status.*

Grants

The Grant Project offers customized incentives to commercial and industrial customers for conservation and efficiency improvements. All custom projects are individually analyzed for energy and demand savings and cost-effectiveness. The customer submits detailed information showing demand and energy savings for each proposed measure. Otter Tail then verifies the feasibility of the proposed savings, and if necessary, makes modifications to the submitted figures. The Company offers assistance to our commercial and industrial customers to help them determine the energy and demand savings necessary in developing a grant proposal. An incentive is calculated based on the savings. If the customer decides to move ahead with the project, they complete the necessary paperwork validating the installation and the appropriate incentive is paid.

Financing

Low interest financing is available to qualifying customers for any type of energy-efficiency improvement project that is currently included in our Energy Efficiency Plan or that has proven savings that can be measured by other conservation programs Otter Tail Power Company offers its customers. These improvements include, but would not be limited to lighting, motors, variable speed drives, process improvements, and heat pumps. The difference in the interest costs between the market rate and the rate charged on the low-interest loan is charged to the Financing project.

For CIP rebate projects, such as lighting and geothermal heat pumps, customers can choose between low-interest financing and a rebate, but they currently cannot receive both. Financing also gives customers an opportunity to conserve energy without having to have the upfront capital to make the purchase. Maximum loan amount for commercial and industrial customers is $100,000. Maximum load amount for residential customers is $12,000. Maximum loan length is 5 years. See original filing, page 18 for other details.

1-13 *For the proposed "Air Conditioning Control" program, please explain how you currently market your demand response programs, and how the proposed program will improve on that.*

We currently do not have an Air Conditioning Control program in South Dakota. However, Otter Tail Power Company operates an extensive demand response portfolio that covers a variety of end uses from whole house heating and cooling, water heating, appliances, and in some instances, business operations. Each program has distinct marketing strategies and tactics. There is not a broad brush approach to marketing each program because the market drivers and characteristics are unique to each end use. The marketing varies from mass marketing, radio and television, to personal consultation.

Specific to the Air Conditioning Control program, the Company would target customers with central air systems, first through billing and customer analysis, followed with direct target marketing to the eligible customer base. Our original research showed that customers would respond to the program for its environmental benefits, but we believe the incentive also plays a major factor. We have enlisted the assistance of a major research firm to gain insights into new ways to market the program and are currently evaluating the results of that research.

1-14 Regarding the Bonus/financial incentives discussed on pages 22-24, is the Company proposing that it both recover the lost revenues from energy conserved plus receive an additional bonus for offering the proposed programs, or is the Company simply offering a choice of methods to offset the loss of revenues from conserved energy?

We are not proposing to recover lost revenues from energy conserved through the program at this time, although that is one of the options we've asked the Commission to consider to completely remove any disincentive associated with conservation programs. We have asked only for recovery of our costs and a financial incentive for achieving cost-effective conservation.

1-15 Regarding the program Evaluation (page 25) please provide the following:

a) A detailed description of each test as depicted on the spreadsheets on page 25.

The five tests are part of the California Public Utilities Commission and California Energy Commission manual: Standard Practices Manual: Economic Analysis of Demand-Side Programs and Projects (October 2001). This manual is used widely by many states and utilities around the country.

The participant test examines the impact of EEP on program participants by comparing their cost of investing in an energy-efficient product with the benefit of having lower energy bills.

The ratepayer test examines the impact that an EEP project will have on the electric and natural gas rates paid by customers who do not participate in the conservation project.

The total resource / societal test examines the net impact that a conservation program has on society overall. The test combines the impact on the utility, program participants, and non-participating ratepayers. The societal test includes environmental benefits; the total resource test does not.

The utility test (also referred to as the "revenue requirements" test) compares the funds that a utility would need to carry out two alternative strategies to meet its customers' energy needs. Under the first approach, the utility sponsors and funds CIP. Under the alternative strategy, the utility provides the same amount of energy as would be conserved through conservation programs (EEP).

b) The calculations that produced the benefit/cost ratios depicted.

The following table outlines the benefit/cost factors for each of the four cost-effectiveness tests:

	Societal test	Participant test	Ratepayer test	Utility test
Avoided energy costs (from buying less fuel and reducing the amount of operation and maintenance of power plants, transmission lines, and distribution systems)	Benefit		Benefit	Benefit
Avoided capacity costs (from building/installing fewer power plants, pipelines, transmission lines, and distribution systems)	Benefit		Benefit	Benefit
Avoided environment damage (including smog, acid rain, and global warming)	Benefit			
Lower energy bills / lost utility revenue (from lower energy				

consumption and sales	Transfer	Benefit	Cost	
Rebates and other financial incentives for purchasing high efficiency products	Transfer	Benefit	Cost	Cost
Utilities' cost of administering the conservation programs (excluding rebates)	Cost		Cost	Cost
Participants incremental cost for purchasing the high efficiency product over the product that would have been purchased without CIP	Cost	Cost		

c) An explanation of the discount rates discussed in the section "Discount Rates – 2008" and a discussion as to how the rates depicted were chosen.

Otter Tail Power Company uses discount rates in its DSManager modeling software. Discount rates are the rate at which future benefits and costs are discounted to reflect their value today. Because conservation benefits may last for 10 to 20 years, the value of these benefits need to be discounted to reflect the fact that a dollar received in the future is less valuable than a dollar received today.

Otter Tail used the same 2008 discounts rates in South Dakota as were developed for Minnesota.

Participant test: 10.75% Customer's cost of money. Source: conventional mortgages are running 6.18% - 6.29% per FHLMC. Home equity loans for 15 year payback are 7.0%. Line of credit (unsecured) at US Bank range from 9.25% - 16.25%. Line of Credit consumer loans >$2500 range from 9.25% - 12.25%. Median for this group is 10.75%.

Ratepayer / utility test: 8.0% Utility's cost of money. Source: Minnesota Commission - Otter Tail Power Company filed a utility 8% discount rate for the C-BED tariff.

Societal / total resource test: 4.78% As requested by the Minnesota Department of Commerce for its analysis, the societal discount rate was the 20-year T-bill rate as of March 1, 2007.

d) A detailed description of the Externality values discussed and their application in evaluation Otter Tail's proposal.

Otter Tail Power Company determines both a high and low range externality value in its analysis, and has applied the high range to all projects. Avoided environmental damage costs are the estimated monetary value of the environmental damages that CIP avoided. The savings are expressed in avoided costs per kilowatt-hour or Mcf saved.

e) Explain whether the evaluation results show have utilized any South Dakota specific data. If not, describe where the inputs were obtained.

Otter Tail Power Company took into consideration South Dakota-specific data for determining participation goals and costs 2008 EEP program. All avoided costs used in the conservation program analysis are based on company-wide data, and is not specific to any one state.

f) In any of the evaluations provided throughout the filing, has Otter Tail considered the issue of "free riders" in its analysis? If no, please identity where and describe how the effect was quantified and used in the analysis.

Otter Tail Power Company does allow for discounting energy and demand savings due to free ridership in direct impact projects where the installation of the energy-efficient product is not readily accessible. Two programs currently fit this criteria in our EEP proposal. Change A Light is a program where compact fluorescents are purchased directly by customers. The Company applies a 5% free ridership discount for the energy savings for customers who purchase the light but do not install it. Second, the HotPack program provides customers a free energy-efficient water saving kit. A 5% free ridership discount is taken for non-installs of this measure as well.

AIR CONDITIONING CONTROL RIDER

APPENDIX A

Rate Zones 1 & 9

Code XXX

RULES AND REGULATIONS: Terms and conditions of this tariff and the General Rules and Regulations govern use of this schedule.

AVAILABILITY: This Rider is voluntary, available to customers with central cooling equipment served under the following rate designations: R-01S, and F-61S.

COMPENSATION: The Customer will be compensated for taking service on this Rider by receiving a $X.XX per month bill credit during the billing months June through September. The credit will be applied on the customer's account. Control may take place during any of the 6 summer months, May 1st through October 31st.

TERMS AND CONDITIONS:

1. Summer season hours of interruptions per year shall not exceed 300, except during periods of Company system emergencies. Central cooling equipment will be cycled on a 15-minute on / 15-minute off schedule.

2. The Company will install, own, and maintain the load management devices controlling the customer's central cooling equipment.

3. The Customer is required to remain on the Rider for twelve (12) consecutive months unless given special approval by the Company. If the Customer leaves the program, they may not participate for another twelve (12) months and may not receive any form of compensation as determined by the Company.

4. The Company has the right to test the function of the load management devices at any time.

5. The Customer must agree to allow the Company to control all central cooling equipment at the location of service.

APPENDIX B

ENERGY EFFICIENCY PLAN (EEP) RIDER

APPLICATION OF SCHEDULE: This rate schedule is applicable to any electric service under all of Otter Tail Power Company's retail rate schedules, except for Rate Designation C-10S, Standby Service.

CONSERVATION SURCHARGE: There shall be added to each customer's bill a Conservation Surcharge based on the applicable surcharge factor multiplied by the customer's monthly bill before sales tax and any local assessments.

DETERMINATION OF CONSERVATION SURCHARGE: The Conservation Surcharge shall be the quotient of the Recoverable EEP Tracker Balance, divided by projected retail revenues for a designated 12-month recovery period. The Surcharge may be adjusted annually by approval of the South Dakota Public Utilities Commission (SDPUC), and the Recoverable CIP Tracker Balance is determined as described below:

1. Starting with the SDPUC accepted EEP Tracker account balance as of the end of the prior year, or zero from the inception.
2. Add financial incentives awarded by the SDPUC not reflected in the prior-year end EEP Tracker balance;
3. Add current year EEP approved spending levels;
4. Subtract current year EEP cost recovery through base rates if applicable as estimated based on Company's budgeted retail sales.

All costs appropriately charged to the EEP Tracker account shall be eligible for recovery through this Rider and all revenues received from the application of the Conservation Surcharge shall be credited to the EEP Tracker account.

Minnesota Retail Revenue & Calculated CIP Recovery by Class and Customer

APPENDIX C

1995	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$24,977,911	27.02%	$62,223	20.35%	$271,175	$333,398	39,381	$2	$7	$8
Rural Residential	$2,796,115	3.03%	$6,965	2.59%	$34,522	$41,487	3,403	$2	$10	$12
Cottages	$535,636	0.58%	$1,334	0.56%	$7,436	$8,770	1,963	$1	$4	$4
Farms	$2,170,122	2.35%	$5,406	1.72%	$22,919	$28,325	1,707	$3	$13	$17
Commercial - Urban	$15,768,378	17.06%	$39,281	17.52%	$233,498	$272,779	8,396	$5	$28	$32
Rural Commercial	$734,251	0.79%	$1,829	1.04%	$13,810	$15,639	453	$4	$30	$35
Large Commercial - Ladish & Pipelines	$17,720,271	19.17%	$44,143	19.79%	$263,759	$307,902	10	$4,414	$26,376	$30,790
Large Commercial - All Others	$25,561,169	27.65%	$63,676	34.57%	$460,577	$524,253	621	$103	$742	$844
Streetlighting	$1,135,811	1.23%	$2,829	0.78%	$10,393	$13,223	142	$20	$73	$93
Other Sales to Public Authorities	$1,030,518	1.11%	$2,567	1.08%	$14,391	$16,958	223	$12	$65	$76
TOTAL RETAIL Revenue	$92,430,182	100.00%	$230,255	100.00%	$1,332,479	$1,562,734	56,299	$4	$24	$28

Annual Minnesota Conservation Recovery Charge	$230,255
Recovered in Base Rates	$1,332,479
Total CIP impact (surcharge + rate impact)	$1,562,734
Conservation Recovery Rate (July - Dec)	0.503%

1996	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$25,814,667	27.32%	$220,489	20.35%	$283,495	$503,985	39,522	$6	$7	$13
Rural Residential	$2,925,093	3.10%	$24,984	2.59%	$36,090	$61,074	3,443	$7	$10	$18
Cottages	$564,862	0.60%	$4,825	0.56%	$7,774	$12,598	1,984	$2	$4	$6
Farms	$2,282,184	2.42%	$19,493	1.72%	$23,960	$43,453	1,711	$11	$14	$25
Commercial - Urban	$16,446,638	17.40%	$140,475	17.52%	$244,107	$384,581	8,455	$17	$29	$45
Rural Commercial	$775,452	0.82%	$6,623	1.04%	$14,437	$21,060	490	$14	$29	$43
Large Commercial - Ladish & Pipelines	$16,715,303	17.69%	$142,770	19.79%	$275,742	$418,512	10	$14,277	$27,574	$41,851
Large Commercial - All Others	$26,736,734	28.29%	$228,365	34.57%	$481,501	$709,867	641	$356	$751	$1,107
Streetlighting	$1,155,220	1.22%	$9,867	0.78%	$10,866	$20,733	142	$69	$77	$146
Other Sales to Public Authorities	$1,084,082	1.15%	$9,259	1.08%	$15,045	$24,304	222	$42	$68	$109
TOTAL RETAIL Revenue	$94,500,236	100.00%	$807,150	100.00%	$1,393,016	$2,200,166	56,620	$14	$25	$39

Annual Minnesota Conservation Recovery Charge	$807,150
Recovered in Base Rates	$1,393,016
Total CIP impact (surcharge + rate impact)	$2,200,166
Conservation Recovery Rate (by half-year)	0.503% / 1.25%

Minnesota Retail Revenue & Calculated CIP Recovery by Class and Customer

APPENDIX C

1997	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$25,764,218	26.86%	$379,091	20.35%	$288,529	$667,620	39,811	$10	$7	$17
Rural Residential	$2,917,260	3.04%	$42,924	2.59%	$36,731	$79,655	3,525	$12	$10	$23
Cottages	$564,674	0.59%	$8,309	0.56%	$7,912	$16,220	2,000	$4	$4	$8
Farms	$2,220,077	2.31%	$32,666	1.72%	$24,385	$57,051	1,704	$19	$14	$33
Commercial - Urban	$15,939,678	16.62%	$234,534	17.52%	$248,441	$482,975	8,438	$28	$29	$57
Rural Commercial	$736,262	0.77%	$10,833	1.04%	$14,693	$25,527	472	$23	$31	$54
Large Commercial - Ladish & Pipelines	$17,582,044	18.33%	$258,699	19.79%	$280,638	$539,338	10	$25,870	$28,064	$53,934
Large Commercial - All Others	$27,954,870	29.15%	$411,324	34.57%	$490,051	$901,375	678	$607	$723	$1,329
Streetlighting	$1,186,968	1.24%	$17,465	0.78%	$11,058	$28,523	142	$123	$78	$201
Other Sales to Public Authorities	$1,050,018	1.09%	$15,450	1.08%	$15,312	$30,762	214	$72	$72	$144
TOTAL RETAIL Revenue	$95,916,070	100.00%	$1,411,294	100.00%	$1,417,751	$2,829,045	56,994	$25	$25	$50

Annual Minnesota Conservation Recovery Charge	$1,411,294
Recovered in Base Rates	$1,417,751
Total CIP impact (surcharge + rate impact)	$2,829,045
Conservation Recovery Rate (by half-year)	1.25% / 1.75%

1998	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$25,454,777	26.19%	$560,269	20.35%	$289,434	$849,703	40,091	$14	$7	$21
Rural Residential	$2,904,386	2.99%	$63,927	2.59%	$36,846	$100,773	3,580	$18	$10	$28
Cottages	$572,653	0.59%	$12,604	0.56%	$7,936	$20,541	2,023	$6	$4	$10
Farms	$2,161,603	2.22%	$47,578	1.72%	$24,462	$72,040	1,700	$28	$14	$42
Commercial - Urban	$16,093,770	16.56%	$354,230	17.52%	$249,220	$603,450	8,520	$42	$29	$71
Rural Commercial	$695,940	0.72%	$15,318	1.04%	$14,740	$30,057	494	$31	$30	$61
Large Commercial - Ladish & Pipelines	$17,921,670	18.44%	$394,463	19.79%	$281,518	$675,981	10	$39,446	$28,152	$67,598
Large Commercial - All Others	$29,122,720	29.96%	$641,002	34.57%	$491,588	$1,132,590	684	$937	$719	$1,656
Streetlighting	$1,210,502	1.25%	$26,644	0.78%	$11,093	$37,737	142	$188	$78	$266
Other Sales to Public Authorities	$1,051,868	1.08%	$23,152	1.08%	$15,360	$38,512	213	$109	$72	$181
TOTAL RETAIL Revenue	$97,189,890	100.00%	$2,139,187	100.00%	$1,422,197	$3,561,384	57,457	$37	$25	$62

Annual Minnesota Conservation Recovery Charge	$2,139,187
Recovered in Base Rates	$1,422,197
Total CIP impact (surcharge + rate impact)	$3,561,384
Conservation Recovery Rate (by half-year)	1.75% / 2.75%

Minnesota Retail Revenue & Calculated CIP Recovery by Class and Customer

APPENDIX C

1999	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$25,462,195	27.30%	$532,898	20.35%	$270,097	$802,995	40,193	$13	$7	$20
Rural Residential	$2,949,728	3.16%	$61,735	2.59%	$34,384	$96,119	3,654	$17	$9	$26
Cottages	$594,974	0.64%	$12,452	0.56%	$7,406	$19,858	2,046	$6	$4	$10
Farms	$2,121,092	2.27%	$44,392	1.72%	$22,827	$67,220	1,709	$26	$13	$39
Commercial - Urban	$15,673,622	16.81%	$328,033	17.52%	$232,570	$560,603	8,550	$38	$27	$66
Rural Commercial	$715,249	0.77%	$14,969	1.04%	$13,755	$28,724	491	$30	$28	$59
Large Commercial - Ladish & Pipelines	$14,554,242	15.61%	$304,606	19.79%	$262,710	$567,316	10	$30,461	$26,271	$56,732
Large Commercial - All Others	$28,940,095	31.03%	$605,687	34.57%	$458,745	$1,064,432	702	$863	$653	$1,516
Streetlighting	$1,235,532	1.32%	$25,858	0.78%	$10,352	$36,210	143	$181	$72	$253
Other Sales to Public Authorities	$1,017,047	1.09%	$21,286	1.08%	$14,334	$35,619	226	$94	$63	$158
TOTAL RETAIL Revenue	$93,263,775	100.00%	$1,951,918	100.00%	$1,327,180	$3,279,098	57,724	$34	$23	$57

Annual Minnesota Conservation Recovery Charge	$1,951,918
Recovered in Base Rates	$1,327,180
Total CIP impact (surcharge + rate impact)	$3,279,098
Conservation Recovery Rate (by half-year)	2.75% / 1.50%

2000	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$25,846,016	27.39%	$288,823	20.35%	$279,330	$568,154	40,465	$7	$7	$14
Rural Residential	$3,063,591	3.25%	$34,235	2.59%	$35,560	$69,795	3,721	$9	$10	$19
Cottages	$639,617	0.68%	$7,148	0.56%	$7,659	$14,807	2,077	$3	$4	$7
Farms	$2,082,333	2.21%	$23,270	1.72%	$23,608	$46,877	1,680	$14	$14	$28
Commercial - Urban	$15,873,310	16.82%	$177,381	17.52%	$240,520	$417,901	8,593	$21	$28	$49
Rural Commercial	$758,794	0.80%	$8,479	1.04%	$14,225	$22,704	510	$17	$28	$45
Large Commercial - Ladish & Pipelines	$13,920,783	14.75%	$155,562	19.79%	$271,691	$427,252	10	$15,556	$27,169	$42,725
Large Commercial - All Others	$29,937,854	31.73%	$334,549	34.57%	$474,427	$808,976	720	$465	$659	$1,124
Streetlighting	$1,235,166	1.31%	$13,803	0.78%	$10,706	$24,509	141	$98	$76	$174
Other Sales to Public Authorities	$990,650	1.05%	$11,070	1.08%	$14,824	$25,894	218	$51	$68	$119
TOTAL RETAIL Revenue	$94,348,114	100.00%	$1,054,319	100.00%	$1,372,550	$2,426,869	58,135	$18	$24	$42

Annual Minnesota Conservation Recovery Charge	$1,054,319
Recovered in Base Rates	$1,372,550
Total CIP impact (surcharge + rate impact)	$2,426,869
Conservation Recovery Rate (by half-year)	1.50% / 0.75%

Minnesota Retail Revenue & Calculated CIP Recovery by Class and Customer

APPENDIX C

2001	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$27,724,876	27.20%	$193,454	20.35%	$292,007	$485,460	40,574	$5	$7	$12
Rural Residential	$3,345,540	3.28%	$23,344	2.59%	$37,174	$60,518	3,856	$6	$10	$16
Cottages	$690,069	0.68%	$4,815	0.56%	$8,007	$12,822	2,085	$2	$4	$6
Farms	$2,259,373	2.22%	$15,765	1.72%	$24,679	$40,444	1,661	$9	$15	$24
Commercial - Urban	$16,656,278	16.34%	$116,221	17.52%	$251,436	$367,657	8,626	$13	$29	$43
Rural Commercial	$860,950	0.84%	$6,007	1.04%	$14,871	$20,878	542	$11	$27	$39
Large Commercial - Ladish & Pipelines	$15,747,468	15.45%	$109,880	19.79%	$284,021	$393,901	9	$12,209	$31,558	$43,767
Large Commercial - All Others	$32,332,377	31.72%	$225,603	34.57%	$495,958	$721,561	725	$311	$684	$995
Streetlighting	$1,241,445	1.22%	$8,662	0.78%	$11,192	$19,854	144	$60	$78	$138
Other Sales to Public Authorities	$1,082,797	1.06%	$7,555	1.08%	$15,496	$23,052	226	$33	$69	$102
TOTAL RETAIL Revenue	$101,941,173	100.00%	$711,307	100.00%	$1,434,839	$2,146,146	58,448	$12	$25	$37

Annual Minnesota Conservation Recovery Charge	$711,307
Recovered in Base Rates	$1,434,839
Total CIP impact (surcharge + rate impact)	$2,146,146
Conservation Recovery Rate (by half-year)	0.75% / 0.65%

2002	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$28,614,483	27.41%	$185,044	20.35%	$294,790	$479,834	40,805	$5	$7	$12
Rural Residential	$3,514,861	3.37%	$22,730	2.59%	$37,528	$60,258	3,945	$6	$10	$15
Cottages	$736,128	0.71%	$4,760	0.56%	$8,083	$12,844	2,110	$2	$4	$6
Farms	$2,295,491	2.20%	$14,844	1.72%	$24,914	$39,759	1,647	$9	$15	$24
Commercial - Urban	$16,979,153	16.27%	$109,801	17.52%	$253,832	$363,633	8,646	$13	$29	$42
Rural Commercial	$882,550	0.85%	$5,707	1.04%	$15,012	$20,720	549	$10	$27	$38
Large Commercial - Ladish & Pipelines	$15,297,064	14.66%	$98,923	19.79%	$286,728	$385,651	9	$10,991	$31,859	$42,850
Large Commercial - All Others	$33,761,730	32.34%	$218,330	34.57%	$500,686	$719,016	735	$297	$681	$978
Streetlighting	$1,222,773	1.17%	$7,907	0.78%	$11,298	$19,206	144	$55	$78	$133
Other Sales to Public Authorities	$1,076,288	1.03%	$6,960	1.08%	$15,644	$22,604	226	$31	$69	$100
TOTAL RETAIL Revenue	$104,380,521	100.00%	$675,008	100.00%	$1,448,517	$2,123,525	58,816	$11	$25	$36

Annual Minnesota Conservation Recovery Charge	$675,008
Recovered in Base Rates	$1,448,517
Total CIP impact (surcharge + rate impact)	$2,123,525
Conservation Recovery Rate (by half-year)	0.65% / 0.65%

Minnesota Retail Revenue & Calculated CIP Recovery by Class and Customer

APPENDIX C

2003	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$29,373,585	27.53%	$168,930	20.35%	$290,231	$459,161	41,046	$4	$7	$11
Rural Residential	$3,818,452	3.58%	$21,960	2.59%	$36,948	$58,908	4,173	$5	$9	$14
Cottages	$790,432	0.74%	$4,546	0.56%	$7,958	$12,504	2,119	$2	$4	$6
Farms	$2,204,126	2.07%	$12,676	1.72%	$24,529	$37,205	1,512	$8	$16	$25
Commercial - Urban	$17,238,517	16.16%	$99,140	17.52%	$249,907	$349,047	8,649	$11	$29	$40
Rural Commercial	$917,341	0.86%	$5,276	1.04%	$14,780	$20,056	563	$9	$26	$36
Large Commercial - Ladish & Pipelines	$15,809,664	14.82%	$90,923	19.79%	$282,294	$373,216	9	$10,103	$31,366	$41,468
Large Commercial - All Others	$34,201,343	32.06%	$196,694	34.57%	$492,942	$689,637	731	$269	$674	$943
Streetlighting	$1,261,759	1.18%	$7,256	0.78%	$11,124	$18,380	142	$51	$78	$129
Other Sales to Public Authorities	$1,070,595	1.00%	$6,157	1.08%	$15,402	$21,559	228	$27	$68	$95
TOTAL RETAIL Revenue	$106,685,812	100.00%	$613,558	100.00%	$1,426,115	$2,039,673	59,172	$10	$24	$34

Annual Minnesota Conservation Recovery Charge	$613,558
Recovered in Base Rates	$1,426,115
Total CIP impact (surcharge + rate impact)	$2,039,673
Conservation Recovery Rate (by half-year)	0.65% / 0.50%

2004	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$30,090,453	26.63%	$150,386	20.35%	$300,796	$451,183	41,454	$4	$7	$11
Rural Residential	$4,005,295	3.54%	$20,018	2.59%	$38,293	$58,310	4,242	$5	$9	$14
Cottages	$813,154	0.72%	$4,064	0.56%	$8,248	$12,312	2,139	$2	$4	$6
Farms	$2,266,972	2.01%	$11,330	1.72%	$25,422	$36,752	1,510	$8	$17	$24
Commercial - Urban	$17,711,036	15.68%	$88,516	17.52%	$259,004	$347,520	8,722	$10	$30	$40
Rural Commercial	$984,209	0.87%	$4,919	1.04%	$15,318	$20,237	606	$8	$25	$33
Large Commercial - Ladish & Pipelines	$18,040,982	15.97%	$90,165	19.79%	$292,570	$382,735	9	$10,018	$32,508	$42,526
Large Commercial - All Others	$36,707,611	32.49%	$183,458	34.57%	$510,887	$694,344	745	$246	$686	$932
Streetlighting	$1,257,052	1.11%	$6,283	0.78%	$11,529	$17,811	140	$45	$82	$127
Other Sales to Public Authorities	$1,107,589	0.98%	$5,536	1.08%	$15,963	$21,498	224	$25	$71	$96
TOTAL RETAIL Revenue	$112,984,355	100.00%	$564,674	100.00%	$1,478,029	$2,042,703	59,791	$9	$25	$34

Annual Minnesota Conservation Recovery Charge	$564,674
Recovered in Base Rates	$1,478,029
Total CIP impact (surcharge + rate impact)	$2,042,703
Conservation Recovery Rate (by half-year)	0.50% / 0.50%

Minnesota Retail Revenue & Calculated CIP Recovery by Class and Customer

APPENDIX C

2005	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$32,683,451	26.39%	$185,444	20.35%	$322,987	$508,431	41,858	$4	$8	$12
Rural Residential	$4,286,814	3.46%	$24,323	2.59%	$41,118	$65,441	4,043	$6	$10	$16
Cottages	$891,048	0.72%	$5,056	0.56%	$8,856	$13,912	2,140	$2	$4	$7
Farms	$2,459,000	1.99%	$13,952	1.72%	$27,298	$41,250	1,503	$9	$18	$27
Commercial - Urban	$18,945,145	15.30%	$107,494	17.52%	$278,112	$385,605	8,754	$12	$32	$44
Rural Commercial	$1,083,931	0.88%	$6,150	1.04%	$16,448	$22,598	619	$10	$27	$37
Large Commercial - Ladish & Pipelines	$20,065,242	16.20%	$113,849	19.79%	$314,154	$428,003	10	$11,385	$31,415	$42,800
Large Commercial - All Others	$40,955,576	33.07%	$232,379	34.57%	$548,577	$780,956	749	$310	$732	$1,043
Streetlighting	$1,295,617	1.05%	$7,351	0.78%	$12,379	$19,730	143	$51	$87	$138
Other Sales to Public Authorities	$1,176,579	0.95%	$6,676	1.08%	$17,140	$23,816	205	$33	$84	$116
TOTAL RETAIL Revenue	$123,842,402	100.00%	$702,674	100.00%	$1,587,069	$2,289,743	60,024	$12	$26	$38

Annual Minnesota Conservation Recovery Charge	$702,674
Recovered in Base Rates	$1,587,069
Total CIP impact (surcharge + rate impact)	$2,289,743
Conservation Recovery Rate (by half-year)	0.50% / 0.75%

2006	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$34,282,213	25.92%	$256,149	20.35%	$308,933	$565,082	42,135	$6	$7	$13
Rural Residential	$4,364,261	3.30%	$32,609	2.59%	$39,328	$71,937	4,102	$8	$10	$18
Cottages	$940,027	0.71%	$7,024	0.56%	$8,471	$15,495	2,165	$3	$4	$7
Farms	$2,621,178	1.98%	$19,585	1.72%	$26,110	$45,695	1,493	$13	$17	$31
Commercial - Urban	$19,366,681	14.64%	$144,703	17.52%	$266,010	$410,714	8,832	$16	$30	$47
Rural Commercial	$1,145,395	0.87%	$8,558	1.04%	$15,733	$24,291	634	$13	$25	$38
Large Commercial - Ladish & Pipelines	$24,388,159	18.44%	$182,223	19.79%	$300,484	$482,707	10	$18,222	$30,048	$48,271
Large Commercial - All Others	$42,586,672	32.20%	$318,198	34.57%	$524,706	$842,904	752	$423	$698	$1,121
Streetlighting	$1,335,482	1.01%	$9,978	0.78%	$11,840	$21,819	141	$71	$84	$155
Other Sales to Public Authorities	$1,217,926	0.92%	$9,100	1.08%	$16,395	$25,495	208	$44	$79	$123
TOTAL RETAIL Revenue	$132,247,995	100.00%	$988,127	100.00%	$1,518,011	$2,506,138	60,472	$16	$25	$41

Annual Minnesota Conservation Recovery Charge	$988,127
Recovered in Base Rates	$1,518,011
Total CIP impact (surcharge + rate impact)	$2,506,138
Conservation Recovery Rate (by half-year)	0.75% / 0.75%

Minnesota Retail Revenue & Calculated CIP Recovery by Class and Customer

APPENDIX C

(1) Source - percentages for base rate recovery
used 2006 allocations for 2006 from CCOSS

RESIDENTIAL	23.50%
FARMS	1.72%
G SERVICE	18.56%
LG SERVICE	54.36%
IRRIGATION	0.00%
LIGHTING	0.78%
OPA	1.08%
Total Minnesota	100.00%

Further breakdown by class yields:

		2006 Rev	% of Rev	Alloc.	% of alloc.
Residential - Urban	20.35%	$34,282,213	86.6%	23.50%	20.35%
Rural Residential	2.59%	$4,364,261	11.0%	23.50%	2.59%
Cottages	0.56%	$940,027	2.4%	23.50%	0.56%
		$39,586,501			

Farms	1.72%

		2006 Rev	% of Rev	Alloc.	% of alloc.
Commercial - Urban	17.52%	$19,366,681	94.4%	18.56%	17.52%
Rural Commercial	1.04%	$1,145,395	5.6%	18.56%	1.04%
		$20,512,076			

		2006 Rev	% of Rev	Alloc.	% of alloc.
Large Commercial - Ladish & Pipelines	19.79%	$24,388,159	36.4%	54.36%	19.79%
Large Commercial - All Others	34.57%	$42,586,672	63.6%	54.36%	34.57%
		$66,974,831			

Streetlighting	0.78%
IRRIGATION	0.00%
Other Sales to Public Authorities	1.08%
TOTAL RETAIL Revenue	100.00%

APPENDIX D

HOTPACKS

DSMANAGER INPUTS - 2008

PROPRIETARY

OTTER TAIL POWER CO.

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	HPSD08	HotPacks	699.2	0.141	5	below		$25.00	$0	$3,000	$0	40	5%	2	$4,000	26,570	5.358	28,548	5.85878
															$4,000	26,570	5.358	28,548	5.859
																		107.4%	109.3%
								$1,000		$3,000		40							
	TOTALS:														$4,000	$ 0.15	$ 746.55	$ 0.14	$ 682.74

Showerhead - 2.5 gpm at 70 to 80 psi.
Faucet aerators - 2.75 gpm at 80 psi.
Pipe insulation - one-half inch with a thermal conductivity of .25 BTU inch/hr.s.F.

2008: We will use 5% for non-installations.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Energy impacts are an aggregate of hotpack measures. Source is EPRI. Since the program was launched, modifications have been made to the savings based on evaluation results. A change to the distribution method of Hotpacks has decreased the number of

APPENDIX D

RESIDENTIAL DEMAND CONTROL

DSMANAGER INPUTS - 2008

PROPRIETARY

OTTER TAIL POWER CO.

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	RDCSD08	RDC Installation	556.1	6.040	15	n/a		$300	$0	$7,500	$850	8	0%	0	$9,900	4,449	48	4,836	52.75385
															$9,900	4,449	48.320	4,836	52.754
																		108.7%	109.2%
								$2,400		$7,500		8							
	TOTALS:														$9,900	$ 2.23	$ 204.88	$ 2.05	$ 187.66

No stated efficiency levels are mandated for this project.
Savings modified -- based on recorder information analysis done in 2004/2005.

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings were modified in 2006 based on new load recorder information - demand increased to 6.04 kw, kwh also increased as well.

APPENDIX D

PROPRIETARY

AIR SOURCE HEAT PUMPS - RESIDENTIAL

OTTER TAIL POWER CO.

DSMANAGER INPUTS - 2008

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Summer Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	H8SDASR	Air source - residential	2,310	0.000	15	ENERGY		$390		$3,730	$1,300	13	0%	0	$8,800	30,030	50.232	32,621	50.232
						STAR													
																	3.8640	summer on-peak demand for	
																	13		
															$8,800	30,030	50.232000	32,621	50.232
																		108.6%	100.0%
								$5,070		$3,730		13							
	TOTALS:														$8,800	$ 0.29	$ 175.19	$ 0.27	$ 175.19

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings figures are originally from EPRI, revised by OTP based on historic information.
Participation was based on prior year averages

Average size of single residential air source heat pump is 2.66 kw - which equates to rebate of approx. $390 -- $12 PER 1000 BTU

APPENDIX D

GEOTHERMAL HEAT PUMPS - RESIDENTIAL

DSMANAGER INPUTS - 2008

PROPRIETARY

OTTER TAIL POWER CO.

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	H8SDGSR	Geothermal - residential	11,200	8.000	15	COP 3.3		$775		$2,500	$7,500	4	0%	0	$5,600	44,799	32	48,361	34.9345
																0	0		
															$5,600	44,799	32.000	48,361	34.934
																		108.0%	109.2%
								$3,100		$2,500		4							
	TOTALS:														$5,600	$ 0.13	$ 175.00	$ 0.12	$ 160.30

For the 2008 filing, the efficiency level remains at 3.3 for geothermal heat pumps.

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings figures are originally from EPRI, revised by OTP based on historic information.
Participation was based on prior year averages

Average size of residential geothermal heat pump is 3.57 kw - which equates to rebate of approx. $775 -- $18 PER 1000 BTU

APPENDIX D

AIR CONDITIONING CONTROL

DSMANAGER INPUTS - 2008

PROPRIETARY

OTTER TAIL POWER CO.

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Summer Savings KW**	DSManager Savings KWH	Summer Demand KW
1	AC08C	Residential control 2008	45.4	0.000	15	n/a	up to 300	$20	$0	$12,000	$0	30	0%	0	$12,600	1,362	31.830	1,468	31.830
																0	1.0610	summer on-peak demand for	
																	30		
																0	0		0.000
																		Peak -->	0.000
																1,362	31.830	1,468	31.830
																		107.8%	100.0%
						2006		$600	$0	$12,000		30							
	TOTALS:													2006	$12,600	$ 9.25	$ 395.85	$ 8.58	$ 395.85

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings figures are based on research of other a/c control systems.

APPENDIX D

CHANGE A LIGHT

DSMANAGER INPUTS - 2008

PROPRIETARY

OTTER TAIL POWER CO.

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	CALSD081	75 -20 watt	80.30	0.011	5	55		$1.50	$0	$0	$1.50	300	5%	15	$450	22,886	3.135	153,503	21.546
2	CALSD082	60 -15 watt	65.70	0.009	5	53		$1.50	$0	$0	$1.00	1,100	5%	55	$1,650	68,657	9.405		
3	CALSD083	100 -26 watt	108	0.015	5	62		$1.50	$0	$0	$2.00	500	5%	25	$750	51,319	7.125		
4	CALSD084	admin								$8,250				0	$8,250	0	0.000		
															$11,100	142,861	19.665	153,503	21.546
																		107.4%	109.6%
								$2,850		$8,250		1,900							
	TOTALS:														$11,100	$ 0.08	$ 564.45	$ 0.07	$ 515.17

*Non-installations were determined to be 5%

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

APPENDIX D

GRANT

DSMANAGER INPUTS - 2008

PROPRIETARY

OTTER TAIL POWER CO.

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	GRSD08	C&I Grants	160,000.00	34.000	15	n/a		$10,000.00		$17,000.00	$62,000	4	0%	0.00	$57,000	640,000	136	687,804	148.472
															$57,000	640,000	136.000	687,804	148.472
																		107.5%	109.2%
								$40,000		$17,000		4							
	TOTALS:														$57,000	$ 0.09	$ 419.12	$ 0.08	$ 383.91

The Grant Project is based on energy and demand savings for end-uses that fall outside of other CIP projects, such as lighting or motors. All grants must pass both the societal and utility tests of 1.0. No specific efficiency levels are stated in the project.

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings figures and rebate amounts are based on historical data for implementation of an "average" grant.
Savings for kwh and kw are estimated by customer and reviewed by OTP industrial personnel for feasibility.

APPENDIX D

MOTORS

DSMANAGER INPUTS - 2008

PROPRIETARY

OTTER TAIL POWER CO.

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	INCR. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	MTRSD081	15 hp - 16 hour day	1,446.79	0.356	15	NEMA	4,060	$250.00	$0		$300	9	0%	0	$2,250	13,021	3	57,594	8.555
2	MTRSD082	15 hp - 24 hour day	3,121.65	0.356	15	NEMA	8,760	$250.00	$0		$300	13	0%	0	$3,250	40,581	5		
3	MTRSD083	Admin Costs								$7,600.00					$7,600				
															$13,100	53,603	7.840	57,594	8.555
																		107.4%	109.1%
								$5,500		$7,600		22							
	TOTALS:														$13,100	$ 0.24	$ 1,670.97	$ 0.23	$ 1,531.23

Efficiencies for DSManager runs are based on 15 hp motor at 16 hours and 24 hours per day or 4,060 and 8,760 annual hours.
Motor rebate was modified based on 3-year average figures, not 15 hp to better model rebate costs.
Minimum qualifying efficiencies based on "NEMA Premium" induction motors, Table 1. Savings based on comparison to an average motor efficiency (adjusted for new NEMA standards) from MotorMaster information.

For DSManager runs for 15 hp, 1800 rpm motor, used: .8968 (standard motor) and .9300 (high efficiency) efficiencies as before and after installation. Qualifying efficiency is .9300 for rebate eligibility.

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings figures based on Motor Master data, including NEMA information on both standard and high efficiency motors.
These savings are based on an "average" motor, 15 HP, 80% loading factor, with 2 load shapes - 16 hours & 24 hours.

Calculation: Hours * Qty * .746 * load factor * HP * ((1/std nema) - (1/motor nema))

std	effic	hp	hours	%	kwh	kw
0.8968	0.93	15	4060	0.8	1446.790	0.35635234
0.8968	0.93	15	8760	0.8	3121.6465	0.35635234

APPENDIX D

LIGHTING

DSMANAGER INPUTS - 2008

PROPRIETARY

OTTER TAIL POWER CO.

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Rebate/ kw	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	LT081	CFL Retro	27,842	6.851	10	$ 50	4,064	$856.0000	$0	$0	$1,093	2	0%	0	$1,712.00	55,684	14	280,176	69.991
2	LT082	Hi-bay T8	13,935	3.429	10	$ 200	4,064	$687.00	$0	$0	$5,845	1	0%	0	$687.00	13,935	3		
3	LT083	T-8 lamps & ballasts retro	25,418	6.254	10	$ 200	4,064	$1,250.00	$0	$0	$6,748	6	0%	0	$7,500.00	152,508	38		
4	LT084	MH & fixtures retro	36,849	9.067	10	$ 200	4,064	$1,814.00	$0	$0	$16,100	1	0%	0	$1,814.00	36,849	9		
5	LT085	Exit lighting retro	1,300	0.320	10	$ 200	4,064	$64.00	$0	$0	$2,330	1	0%	0	$64.00	1,300	0		
6	LT086	Motion sensors retro	276	0.068	10	$ 3,237	4,064	$220.00	$0	$0	$3,794	1	0%	0	$220.00	276	0		
7																0	0		
8	LT088	Admin Costs				n/a			$0	$10,403	$0	0	0%	0	$10,403.00				
9	LT089	Lamp Disposal Costs				n/a			$0	$0	$94	12	0%	0	$0.00				
															$22,400.00	260,553	64.112	280,176	69.991
																		107.5%	109.2%
								$11,997		$10,403		12							
	TOTALS:														$22,400.00	$ 0.09	$ 349.39	$ 0.08	$ 320.04

No specific efficiency levels were set, but all systems must meet IES lighting standards and must result in a 12% watt savings. Lifetime = 10 Years.

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings are based on "average" install of lighting systems taken from historical data, backed by EPRI information.

Lamp disposal costs are included as a participant cost.

APPENDIX D

PROPRIETARY

AIR SOURCE HEAT PUMPS - COMMERCIAL

OTTER TAIL POWER CO.

DSMANAGER INPUTS - 2008

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Summer Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	HP8ASC	Air Source - commercial	2,573	0.000	15	ENERGY		$620		$3,280	$1,000	6	0%	0	$7,000	15,435	9.738	16,520	9.738
						STAR													
																	1.6230	summer on-peak demand for	
																	6		
															$7,000	15,435	9.738	16,520	9.738
																		107.0%	100.0%
								$3,720		$3,280		6							
	TOTALS:														$7,000	$ 0.45	$ 718.83	$ 0.42	$ 718.83

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings figures are originally from EPRI, revised by OTP based on historic information.
Participation was based on prior year averages

Average size of single commercial air source heat pump is 4.25 kw - which equates to rebate of approx. $620 - $12 PER 1000 BTU

APPENDIX D

PROPRIETARY

GEOTHERMAL HEAT PUMPS - COMMERCIAL

OTTER TAIL POWER CO.

DSMANAGER INPUTS - 2008

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	HP8GSC	Geothermal - commercial	13,050	8.907	15			$840		$1,860	$7,000	1	0%	0	$2,700	13,050	9	14,066	9.724
						COP 3.3													
		For the 2008 filing, the efficiency level remains at 3.3 for geothermal heat pumps.																	
															$2,700	13,050	8.907	14,066	9.724
																		107.8%	109.2%
								$840		$1,860		1							
	TOTALS:														$2,700	$ 0.21	$ 303.13	$ 0.19	$ 277.67

* Free riders are assumed to be 0% for this program.

** Calculated Energy Savings = Participants x Annual kWh Savings less Free Riders x Annual kWh Savings
The difference between the Calculated Energy Savings and DSManager Energy Savings is attributable to line losses, approximately 8%

Savings figures are originally from EPRI, revised by OTP based on historic information.
Participation was based on prior year averages

Average size of commercial geothermal heat pump is 3.84 kw - which equates to rebate of approx. $840 - $18 PER 1000 BTU

APPENDIX D

PROPRIETARY

INDIRECT IMPACT PROJECTS - RESIDENTIAL - UPD

OTTER TAIL POWER CO.

DSMANAGER INPUTS - 2008

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	ADM08R	Resd indirect projects	0	0.000	0	0	0	$0	$0	$22,500	$0	604	0%	0	$22,500	0	0	0	0
															$22,500	0	0	0	0
										$22,500									
	TOTALS:														$22,500				

PROGRAMS: **2008**

FINANCING 8500

ADVERTISING & EDUC. 14000

APPENDIX D

PROPRIETARY

INDIRECT IMPACT PROJECTS - COMMERCIAL

OTTER TAIL POWER CO.

DSMANAGER INPUTS - 2008

#	DSManager Program	Type of Measure	Annual kWh Savings	Peak KW Savings	Lifetime Years	Efficiency Levels	Hours	Part. Rebate	Part. Admin.	Annual Admin.	Part. Cost	Part.	Free Riders	Free* Riders	Total Costs	Calculated Savings KWH**	Calculated Savings KW**	DSManager Savings KWH	DSManager Demand KW
1	ADM08C	Comm indirect projects	0	0.000	0	0	0	$0	$0	$4,000	$0	4	0%	0	$4,000	0	0	0	0
															$4,000	0	0	0	0
										$4,000									
	TOTALS:														$4,000				

PROGRAMS: **2008**

FINANCING 4000

SD Data Request -- 2008 EEP
Otter Tail Power Company

APPENDIX E

Change A Light	
Delivery	$5,000
Utility Admin	$2,250
Advertising	$500
Evaluation Labor	$500
Total Admin	$8,250
Project Delivery & Admin	$8,250
Incentives	$2,850
Total Budget	$11,100

Lighting	
Delivery	$6,403
Utility Admin	$3,000
Advertising	$500
Evaluation Labor	$500
Total Admin	$10,403
Project Delivery & Admin	$10,403
Incentives	$11,997
Total Budget	$22,400

Financing	
Delivery	$5,600
Utility Admin	$2,000
Advertising	$2,500
Evaluation Labor	$400
Total Admin	$10,500
Project Delivery & Admin	$10,500
Incentives	$2,000
Total	$12,500

Motors	
Delivery	$4,000
Utility Admin	$2,600
Advertising	$500
Evaluation Labor	$500
Total Admin	$7,600
Project Delivery & Admin	$7,600
Incentives	$5,500
Total	$13,100

Air Conditioning Control	
Delivery	$4,900
Utility Admin	$5,150
Advertising	$1,600
Evaluation Labor	$350
Total Admin	$12,000
Project Delivery & Admin	$12,000
Incentives	$600
Total	$12,600

Advertising & Education	
Delivery	$12,000
Utility Admin	$700
Advertising	$300
Evaluation Labor	$400
Other - Publications, forums, etc.	$600
Total Admin	$14,000
Project Delivery & Admin	$14,000
Total	$14,000

Residential Demand Control	
Delivery	$2,400
Utility Admin	$3,900
Advertising	$1,000
Evaluation Labor	$200
Total Admin	$7,500
Project Delivery & Admin	$7,500
Incentives	$2,400
Total	$9,900

Grants	
Delivery	$13,000
Utility Admin	$1,000
Advertising	$1,700
Evaluation Labor	$1,300
Total Admin	$17,000
Project Delivery & Admin	$17,000
Incentives	$40,000
Total	$57,000

Hot Packs	
Delivery	$1,900
Utility Admin	$500
Advertising	$500
Evaluation Labor	$100
Total Admin	$3,000
Project Delivery & Admin	$3,000
Incentives	$1,000
Total	$4,000

Resd Air Source Heat Pump	
Delivery	$2,500
Utility Admin	$400
Advertising	$430
Evaluation Labor	$400
Total Admin	$3,730
Project Delivery & Admin	$3,730
Incentives	$5,070
Total	$8,800

Resd Geothermal Heat Pump	
Delivery	$1,550
Utility Admin	$250
Advertising	$300
Evaluation Labor	$400
Total Admin	$2,500
Project Delivery & Admin	$2,500
Incentives	$3,100
Total	$5,600

Comm Air Source Heat Pump	
Delivery	$2,250
Utility Admin	$380
Advertising	$250
Evaluation Labor	$400
Total Admin	$3,280
Project Delivery & Admin	$3,280
Incentives	$3,720
Total	$7,000

Comm Geothermal Heat Pump	
Delivery	$1,200
Utility Admin	$160
Advertising	$200
Evaluation Labor	$300
Total Admin	$1,860
Project Delivery & Admin	$1,860
Incentives	$840
Total	$2,700

Rounds, Brian

From: KPederson@otpco.com
Sent: Friday, February 08, 2008 1:50 PM
To: Rounds, Brian
Cc: RWentler@otpco.com; BSandahl@otpco.com; KKouba@otpco.com
Subject: sd cost per kwh and kw for SD Staff.pdf - Adobe Reader

<<sd cost per kwh and kw for SD Staff.pdf>>
Brian,
Attached find the document that details our cost per kwh and kw for the Energy Efficiency Plan filed with South Dakota. In addition, we anticipate sending you a response to your request on per class responsibility for the SD energy efficiency plan possibly yet today or Monday.

Please let us know if you need anything else. Next week I will be out most of the week, but please contact Rebecca Wentler if you need more information.

Based on this information and the magnitude it likely will have on Staff's draft comments, please let us know if you want to postpone next Thursday's meeting.

Otter Tail Power Company South Dakota Energy Efficiency Program	Annal kwh saved	Budget	Technology Life	Lifetime kwh saved	Cost per kwh	kw saved	Cost per kw
HOTPACKS	28,548	$ 4,000	5	142,740	$ 0.03	5.86	$ 683
RESIDENTIAL DEMAND CONTROL*	4,836	$ 9,900	15	72,540	$ 0.14	52.75	$ 188
AIR SOURCE HEAT PUMPS - RESIDENTIAL	32,621	$ 8,800	15	489,315	$ 0.02	50.23	$ 175
GEOTHERMAL HEAT PUMPS - RESIDENTIAL	48,361	$ 5,600	15	725,415	$ 0.01	34.93	$ 160
AIR CONDITIONING CONTROL*	1,468	$ 12,600	15	22,020	$ 0.57	31.83	$ 396
CHANGE A LIGHT	153,503	$ 11,100	5	767,515	$ 0.01	21.55	$ 515
GRANT	687,804	$ 57,000	15	10,317,060	$ 0.01	148.50	$ 384
MOTORS	57,594	$ 13,100	15	863,910	$ 0.02	8.56	$ 1,530
LIGHTING	280,176	$ 22,400	10	2,801,760	$ 0.01	70.00	$ 320
AIR SOURCE HEAT PUMPS - COMMERCIAL	16,520	$ 7,000	15	247,800	$ 0.03	9.73	$ 719
GEOTHERMAL HEAT PUMPS - COMMERCIAL	14,066	$ 2,700	15	210,990	$ 0.01	9.72	$ 278
INDIRECT IMPACT PROJECTS - RESIDENTIAL - UPD	0	$ 22,500		0			
INDIRECT IMPACT PROJECTS - COMMERCIAL	0	$ 4,000		0			
INDIRECT IMPACT PROJECTS - OTHER - UPDATED	0	$ -		0			
TOTAL - ALL PROGRAMS	**1,325,497**	**$ 180,700**		**16,661,065**		**444**	**$ 407**
Cost per kwh					**$ 0.01085**		

*Air Conditioning and RDC are primarily demand reduction programs, which is why the cost per kwh is higher than other efficiency programs. However, both are cost effective from all test perspectives.

Rounds, Brian

From: KPederson@otpco.com
Sent: Friday, February 08, 2008 2:22 PM
To: Rounds, Brian
Cc: RWentler@otpco.com; BSandahl@otpco.com; KKouba@otpco.com
Subject: sd cip cost recovery est.pdf - Adobe Reader

<<sd cip cost recovery est.pdf>> Brian, Attached find OTPCo's response to your request for impacts by class. As you can see, OTP's proposed energy efficiency plan would cost an average residential customer **less than $7 per year**. This amount is approximate and may vary slightly depending upon the final decision on cost recovery and incentive.

South Dakota Estimated CIP Recovery by Class and Customer

APPENDIX C

2006	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$7,622,268	33.31%	$60,184	0.00%	$0	$60,184	8,396	$7	$0	$7
Rural Residential	$305,865	1.34%	$2,415	0.00%	$0	$2,415	291	$8	$0	$8
Cottages	$75,112	0.33%	$593	0.00%	$0	$593	225	$3	$0	$3
Farms	$636,459	2.78%	$5,025	0.00%	$0	$5,025	372	$14	$0	$14
Commercial - Urban	$3,443,621	15.05%	$27,190	0.00%	$0	$27,190	2,014	$14	$0	$14
Rural Commercial	$252,108	1.10%	$1,991	0.00%	$0	$1,991	89	$22	$0	$22
Large Commercial - Ladish & Pipelines	$0	0.00%	$0	0.00%	$0	$0	0	$0	$0	$0
Large Commercial - All Others	$10,018,857	43.78%	$79,107	0.00%	$0	$79,107	172	$460	$0	$460
Streetlighting	$324,059	1.42%	$2,559	0.00%	$0	$2,559	45	$57	$0	$57
Other Sales to Public Authorities	$207,220	0.91%	$1,636	0.00%	$0	$1,636	65	$25	$0	$25
TOTAL RETAIL Revenue	$22,885,568	100.00%	$180,700	0.00%	$0	$180,700	11,669	$15	$0	$15

Annual South Dakota Conservation Recovery Charge	$180,700
Recovered in Base Rates	$0
Total CIP impact (surcharge + rate impact)	$180,700
Conservation Recovery Rate (by half-year)	0.79%

Rounds, Brian

From: KPederson@otpco.com
Sent: Wednesday, February 20, 2008 11:47 AM
To: Rounds, Brian
Cc: RWentler@otpco.com; BSandahl@otpco.com; BBrutlag@otpco.com
Subject: SD Energy Efficiency Plan staff draft response

Brian,

Attached find Otter Tail Power Company's informal response to the questions raised during the teleconference on February 14 with SD staff. I am assuming you will forward to all the individuals from the Commission on the conference call. We are also prepared to meet with the Commissioners to further explain this document or our original submission, filed at the request of the South Dakota Commission.

If you have any questions or need further clarification please contact me at 218-739-8303.

Kim Pederson
Manager, Market Planning
Otter Tail Power Company
215 South Cascade
Fergus Falls, MN 56537
218-739-8303
218-770-6401
kpederson@otpco.com

<<SD CIP staff data request response.pdf>> <<sd cip cost recovery est.pdf>>

Otter Tail Power Company
Informal Response to
South Dakota Energy Efficiency Plan Staff Draft Comments

Information Request

February 19, 2008

Question 1: What have Otter Tail Power Company's regulated returns in South Dakota been for the last few years?

Company Response: The Company has calculated the following returns for SD since 2003. The last rate case in 1986 was a settlement and there are no details in the Order. It is our understanding that inside that settlement was a ROE of 11.75%, and the ROR was 9.964%.

South Dakota Regulated Returns		
	ROE	ROR
2003	11.0%	8.7%
2004	8.6%	7.5%
2005	6.8%	6.6%
2006	5.3%	5.7%

Question 2: What is the impact of free riders on energy efficiency and conservation analysis?

Otter Tail Power Company Response: Otter Tail Power Company indicated in a telephone conference with SD Commission Staff on February 14 that, in most instances, it operates under the generally industry wide acceptance that free riders and free drivers cancel each other out.

Otter Tail Power Company has not conducted a formal analysis on individual program free riders for a number of years. Such evaluations are costly and difficult. Our program evaluation includes free riders when defendable and relies on other studies conducted by reputable resources when available.

We refer to two such sources for this information request: "The Office of the Legislative Auditor's Office (OLA)" and the "American Council for an Energy Efficiency Economy (ACEEE)". The excerpt from the OLA report follows, but the entire report is available for review at www.auditor.leg.state.mn.us/ped/pedrep/0504all.pdf

> **From the Office of the Legislative Auditor's Office**
> **Report on Energy Conservation January 2005, page 36**
>
> **Free Riders and Free Drivers**
> "Free-rider and free-driver" effects refer to market factors that some utilities include in their benefit-cost calculations. "Free riders" are individuals who participate in a conservation program by taking a rebate but would have purchased the energy-efficient product (such as a furnace) on their own without the rebate. Thus, the energy savings from these individuals would have occurred without the conservation program and should not be attributed to the program. Some utilities reduce their energy savings

estimates to account for this phenomenon. Soon after the concept of "free-ridership" was recognized in the conservation field, researchers realized that there was a contrasting phenomenon called "free-drivership." This phenomenon represents individuals who are influenced by the conservation program to buy an energy efficient product but do not bother to get a rebate. For example, an individual may see a CIP financed promotion for an energy-efficient product and buy the product, but not apply for the rebate. The conservation field has also started to recognize other indirect benefits of conservation programs. For example, as conservation programs and demand for energy-efficient products grow, suppliers and retailers stock more of these products and devote more shelf space to them. With higher awareness and visibility, energy customers are more likely to buy these products even without the rebate. In the conservation field, this phenomenon is called "market transformation." To account for "free-drivership" and "market transformation," some utilities increase the energy savings attributed to their conservation programs beyond the energy savings that come from the products sold with a rebate.

Estimating the size of free-ridership and free-drivership/market-transformation effects is costly and very difficult. Consequently, Minnesota utilities generally assume that the competing effects cancel each other out.[13]

According to ACEEE, it is reasonable for Minnesota utilities to assume that free-ridership and free-drivership/market-transformation cancel each other out. Widely respected organizations have stated that this assumption is reasonable. For example, the International Energy Agency stated,

> "These indirect effects work in opposite directions and both are difficult to quantify. Until better information is available, it may be practical to assume…that these two effects cancel each other out."

Furthermore, ACEEE reviewed a range of studies that have tried to estimate the free-rider and free-driver/market-transformation effects. While the studies that just examined free-ridership showed some significant reductions in energy savings, studies that included the combination of free-ridership, free-drivership, and broader market transformation effects generally showed the factors canceling each other out."

Question 3: What cost recovery and incentive is Otter Tail Power Company agreeable to in order to proceed with programs as proposed in the South Dakota Energy Efficiency Plan filing?

Company response: In order for the Company to proceed with any of the proposed programs the Company requests the following conditions:

1. Approval of a rider that would be filed to recover costs associated with implementing the Energy Efficiency Plan in South Dakota since February 1, 2007. The amount would be collected monthly as a percent of customers' total bills, excluding sales tax. Costs associated with the Energy Efficiency Plan would be deferred to a tracker account. Revenue collected under the proposed rider and costs incurred would both be included in the tracker account, thus establishing a balancing account to track South Dakota energy efficiency plan costs.
2. The balancing account or tracker would include actual costs plus a carrying charge equal to Otter Tail's cost of capital to provide a return on the money invested in the projects incurred but not yet recovered from customers. The carrying charge the

Company proposes is 8.89%[1]. The Company requires a rate of return equal to our cost of capital on supply-side investments. To encourage energy efficiency expenditures over supply investments, regulators often authorize a return on investment that is slightly higher for energy efficiency investments or at minimum at least places them on equal footing with supply side investments. Otter Tail's proposed carrying charge of 8.89% allows the deferred balance of energy efficiency expenditures to be on an equal basis with rate base investments.

3. An incentive of net benefits based on project effectiveness or achieving energy savings greater than 100% of the proposal, capped at 130% of savings. The Company proposes the incentive be capped at 15% of net benefits.

Question 4: Is Otter Tail Power Company open to other modifications or programs other than the ones proposed by the Company?

Company response: The Company is open to suggestions but reserves the right to analyze all program modifications and costs. In addition, the Company emphasizes that the conditions in Question #3 are critical for the Company to implement the energy efficiency plan as filed by the Company or modified by SD Staff.

Question 5: Hypothetically speaking, what is the financial impact to customers given the proposed cost recovery defined in Question #3.

Company response: Otter Tail Power Company has calculated the impact defined in Appendix A.

Energy Savings Assumptions and Technology Life

While South Dakota Staff did not explicitly ask for more detail on energy savings, it did challenge our lifetime assumptions and energy impacts. The Company would like to reference the same OLA report as evidence that after careful evaluation and scrutiny, the Company's energy savings assumptions were deemed reasonable.

Energy Savings

> "We (OLA) also asked ACEEE to assess the reasonableness of the energy savings estimates that all eight investor-owned utilities used to report their 2003 program results. For each utility, ACEEE chose a small sample of energy-efficient products and assessed the underlying assumptions that were used to estimate energy savings. ACEEE examined such things as (1) the number of years that each utility assumed its energy-efficient products would operate and provide conservation savings and (2) the efficiency level of the product that each utility assumed its customers would purchase if CIP did not exist. The efficiency level of this baseline or standard product largely dictates the energy savings that CIP creates. If customers typically choose a higher-efficiency product on their own, CIP will provide small savings. Alternatively, if customers would otherwise choose a relatively inefficient product, CIP will provide large savings. While ACEEE found some questionable assumptions, it found the utilities' assumptions to be generally reasonable."

In fact, the final results indicated that at times Otter Tail Power Company assumptions were very conservative.

[1] This is the overall rate of return that Otter Tail has requested in its current general rate case in Minnesota (Docket No. E-017/GR-07-1178).

South Dakota Estimated CIP Recovery by Class and Customer

Appendix A

2006	Annual Revenue by Class	Percent of Revenue by Class	Annual CIP Recovery (Surcharge) by Class	Percent of base rate recovery (1)	Annual Recovery in Base Rates by Class	Total CIP Impact by Class	Customers per Class	Annual CIP Recovery per Customer - Surcharge on Electric Bill	Annual CIP Recovery per Customer - Base Rate Impact	Total Annual CIP Recovery per Customer - Surcharge & Rate Impact
Residential - Urban	$7,622,268	33.31%	$65,280	0.00%	$0	$65,280	8,396	$8	$0	$8
Rural Residential	$305,865	1.34%	$2,620	0.00%	$0	$2,620	291	$9	$0	$9
Cottages	$75,112	0.33%	$643	0.00%	$0	$643	225	$3	$0	$3
Farms	$636,459	2.78%	$5,451	0.00%	$0	$5,451	372	$15	$0	$15
Commercial - Urban	$3,443,621	15.05%	$29,493	0.00%	$0	$29,493	2,014	$15	$0	$15
Rural Commercial	$252,108	1.10%	$2,159	0.00%	$0	$2,159	89	$24	$0	$24
Large Commercial - Ladish & Pipelines	$0	0.00%	$0	0.00%	$0	$0	0	$0	$0	$0
Large Commercial - All Others	$10,018,857	43.78%	$85,806	0.00%	$0	$85,806	172	$499	$0	$499
Streetlighting	$324,059	1.42%	$2,775	0.00%	$0	$2,775	45	$62	$0	$62
Other Sales to Public Authorities	$207,220	0.91%	$1,775	0.00%	$0	$1,775	65	$27	$0	$27
TOTAL RETAIL Revenue	$22,885,568	100.00%	$196,002	0.00%	$0	$196,002	11,669	$17	$0	$17

*Potential incentive capped at a percentage of net benefits not included in calculations

Annual South Dakota Conservation Recovery Charge	$180,000
Carrying charge	$16,002
Total CIP impact (surcharge + rate impact)	$196,002
Conservation Recovery Rate (by half-year)	0.86%

Estimate based on proposed budget