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VIA E-FILE

January 9, 2007

Ms. Patricia Van Gerpen
Executive Director
Public Utilities Commission
Capitol Building, 1st floor
500 East Capitol Avenue
Pierre, SD 57501-5070

Re: **In the Matter of the Consideration of the New PURPA Standards as set forth in the Energy Policy Act of 2005.**

Docket No. EL06-018

Dear Ms. Van Gerpen:

Otter Tail Corporation d/b/a Otter Tail Power Company (Otter Tail) provides its comments, submitted via electronic filing, regarding the Consideration of the New PURPA Standards as set forth in the Energy Policy Act of 2005.

Otter Tail commends the Commission and staff on the types of questions set forth in the Order Requesting Comments on Standards, dated December 5th, 2006. The questions will likely encourage interesting written responses – and also create a good starting point for discussions at the proposed workshops, used for further study whether to implement the standards. Otter Tail looks forward to participating in the workshops.

As a summary of our responses contained herein, Otter Tail encourages the Commission not to adopt any standard, but address each utility and the type of metering technology and load management infrastructure on a case-by-case basis. The reasons not to adopt the standard are clear – the Commission, the utility and their customers need flexibility, not a one size-fits-all approach. These types of standards can tie our hands and force uneconomic decisions. These decisions are better made at the utility and state level.

Please contact me at (218) 739-8595 or dprazak@otpco.com if you have any questions regarding this filing.

Yours truly,

/s/ David G. Prazak
David G. Prazak
Supervisor, Pricing
Regulatory Services

STATE OF SOUTH DAKOTA
BEFORE THE
SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

In the Matter of the Consideration of the
New PURPA Standards as set forth in the
Energy Policy Act of 2005.

Docket No. EL06-018

COMMENTS OF OTTER TAIL POWER COMPANY

I. INTRODUCTION

On December 5, 2006, the Commission issued its Order Requesting Comments on Standards in EL06-018 ("Order"). These Standards include the following;

- PURPA Standard 12 – Fuel Diversity
- PURPA Standard 13 – Fossil Fuel Generation Efficiency
- PURPA Standard 14 – Smart Metering
- PURPA Standard 15 – Interconnection Standards for Distributed Resources

The Commission is seeking written comments from the parties regarding the standards, then conducting workshops to further study whether to implement the standards. The Commission requests the parties file answers to the questions set forth in the Order.

II. SUMMARY OF COMMENTS

Otter Tail Corporation d/b/a Otter Tail Power Company (Otter Tail) has assembled comments for the Commission and other interested parties in order to help the Commission make an informed decision on whether to implement the Standards.

In summary, Otter Tail does not believe the Commission should adopt any of the standards listed above. Otter Tail will provide support for its position on each of the standards using the outline as provided in the Order.

III. PURPA Standard 12 – Fuel Diversity

1. Should the Commission adopt this standard?

Otter Tail's Summary Reply: The Commission should not adopt the Fuel Diversity Standard, as it is unnecessary.

Otter Tail already employs a fuel diversity program. In general, 73 percent of our fuel source mix is coal. About 17 percent is purchases, 7 percent is hydro, and the remainder is from wind, biomass, fuel oil, solid waste and natural gas. This fuel mix is set forth in a customer brochure titled "Your electricity." This brochure, which identifies fuel sources, air emissions, and other important customer information, is attached as Appendix A.

The Otter Tail's fuel diversity mix was determined by geographic and other factors including the Integrated Resource Planning Process (IRP) - which follows a least-cost approach, and the recent legislation in Minnesota regarding the Renewable Energy Objective (REO). Otter Tail believes fuel diversity will continue to develop based on economics, technology, and legislation at both the state and federal level.

2. If the Commission adopts the standard, how often should the plan be updated? What time period should the plan encompass?

Otter Tail's Reply: Since Otter Tail does not support the adoption of this standard, no further comments are provided at this time.

3. What other more specific requirements should be adopted in order to implement this standard?

Otter Tail's Reply: Since Otter Tail does not support the adoption of this standard, no further comments are provided at this time.

4. Are there any other issues the Commission should consider?

Otter Tail's Reply: None at this time.

IV. PURPA Standard 13 – Fossil Fuel Generation Efficiency

1. Should the Commission adopt this standard?

Otter Tail's Summary Reply: The Commission should not adopt the Fossil Fuel Generation Efficiency Standard, as it is unnecessary.

From Otter Tail's perspective, this standard formulizes a goal that is normal utility practice, or at least Otter Tail's normal practice – to optimize efficiency of our fossil-fuel generating stations as economically as possible.

Otter Tail supports the above statement in two ways –our current proposed Big Stone II project and other efficiency projects at our existing power plants.

Big Stone II is a proposed 630-megawatt power plant designed to optimize existing and new construction to achieve *the greatest efficiency* with the fewest emissions.

This project, supported by seven utility partners, provides a commitment to deliver the energy in the most efficient, cost-effective, and environmentally responsible way possible. All of these commitments are made without efficiency mandates.

Finally, Appendix B shows a list of power plant efficiency improvements Otter Tail or Otter Tail and its partners have made in the past 10 years. In general, efficiency improvements are made to a) restore lost efficiency and b) improve efficiency over original design. Otter Tail is reporting both where appropriate.

Again, these efficiency improvements are standard practice – made without efficiency mandates.

2. If the Commission adopts the standard, how often should the 10-year plan be updated?

Otter Tail's Summary Reply: Otter Tail doesn't believe there should be a set planning horizon. Again, Otter Tail encourages the Commission to not adopt this standard.

The Integrated Resource Plan process Otter Tail is required to follow in Minnesota, which includes a system-wide view, utilizes a 20-year planning horizon. This process is updated every 2-3 years. Otter Tail believes this process has served Otter Tail and its customers well.

3. What other more specific requirements should be adopted in order to implement this standard?

Otter Tail's Reply: Since Otter Tail does not support the adoption of this standard, no further comments are provided at this time.

4. Are there any other issues the Commission should consider?

Otter Tail's Reply: Yes. The Commission should consider that any ongoing activities related to fossil-fuel efficiencies need to meet U.S. Environmental Protection Agency (EPA) requirements with respect to EPA New Source Review (NSR) and prescribed in 40 CFR 52.21.

V. PURPA Standard 14 – Smart Metering

1. Describe any Smart Metering programs that you have already implemented or are in the process of implementing. Include programs that are conducted in states other than South Dakota. Please list the customer classes eligible for each program and how many customers are in each program for each year beginning with the inception of the program.

Otter Tail's Summary Reply: Otter Tail provides two responses to the question above.

First, Otter Tail provides Appendix C, a quick summary of Otter Tail's load management - smart metering-type programs, by state. Some of this information in Appendix C contains excerpts from Otter Tail's 2005 response to FERC's Form 728 Survey, by class. Otter Tail has included in Appendix C, responses from question 2 as posed by the South Dakota Commission.

Second, Otter Tail provides below a summary of our load management history and other practices because the use of load management achieves some of the same goals as smart metering – to keep customers' costs low by avoiding on-peak energy and/or demand use. (Note: During the winter months, Otter Tail is able to control 8 – 12 percent of its system peak demand.)

Otter Tail provides the following information regarding its Load Management history and practices.

- Otter Tail's load management: the early days to the present
- Metering technologies
- Communication technologies
- Otter Tail's load research program (non-tariff metering)

Otter Tail's load management history: the early days to the present. Otter Tail made the choice in the 1940s to request that customers allow us to install time clocks on water heaters in order to control demand during peak hours since our load was growing dramatically after the war. In the early 1980s we saw that controlling other heating loads would help to flatten our load curve, thus delaying the addition of new power plants and making better use of our existing power plants. Consequently, after 25+ years of options for customers to control their home and business energy costs, we have nearly 1/3 of our customers with some type of load control device on their home (over 41,000 of our 128,000-plus customers, system-wide).

In 2002 we made the decision to upgrade our load management system since our technology was 20+ years old and starting to cause concerns that all customers were consistently receiving the load management control signals. This required new software to operate the system, system integration with our system operations center, training of company Service Reps and Linemen who installed receivers, new handheld test devices for installers, a trip to each premise to remove, install and then test radio receivers -- all of which was a major effort. By the end of 2006 we have replaced just over 80% of the radio receivers, with expected completion by mid-2007 of the load management radio receiver and system upgrade. This large demand-response investment (over $7 million) allows our customers to continue to help Otter Tail control energy costs for all customers over the next 20 years.

Metering technologies: Otter Tail has three basic types of meters: energy meters, energy and peak demand meters, and energy and demand interval meters.

Otter Tail's typical meter is a residential 240 volt meter with five dials that are read and entered into a handheld PC once a month for energy use billing (136,000 meters of the total meter count of 170,000).

For the majority of commercial customers and a few residential customers our rates require we install meters that display energy usage (kWh) along with peak energy demand (kW) for the month. These are also read once a month by service representatives or contract meter readers.

Otter Tail has a number of meters on commercial or industrial accounts where we have installed a meter with the capability to record energy for each 15-minute period during the month. Data is collected weekly using land-line or cell phones (approximately 75 phones or cell phones are presently used on billing accounts). In some cases the load profile data is used to calculate the billing (e.g. Real Time Pricing rate) and in all cases, to watch more closely these large accounts.

Communications technology: Otter Tail utilizes the following communications technology; cell phones, satellites, and internet.

Otter Tail's load research program (non-tariff metering). Otter Tail is including a brief discussion on our load research program. Otter Tail believes this is an important part of the metering infrastructure that helps Otter Tail understand its customers for rate design.

Since 1991, Otter Tail has an on-going load research program. The main purpose of load research is to produce statistically valid samples of various customer groups in order to better allocate costs and design rates.

Approximately 2,000 meters with recording ability have been installed on a random sample of premises for each rate grouping. This data is presently collected once each quarter using a handheld device. To keep up with new technology that is economical, we have budgeted and have on order new handheld devices which will allow service representatives and contract meter readers to collect data from these load survey accounts each month during normal meter reading routes.

Meters are also installed in our larger substations and a sample of smaller substations in order to collect 15-minute energy usage data to be used to determine loading on transformers, substations and the system. Daily data is collected using satellite modems and sent to our computer system early each morning for the previous day.

2. State whether any Smart Metering programs that currently exist comply with the PURPA Standard 14.

Otter Tail Summary Reply: Please see Appendix C.

In general, Otter Tail believes it has some existing programs that may fully or partially comply with the PURPA Standard 14.

Otter Tail responded to the above question, as shown in Appendix C in the last row, in the following manner:

- "Yes" (meaning Otter Tail believes it may comply with PURPA Standard 14 B), or
- "Partial" (meaning Otter Tail believes it may partially comply with PURPA Standard 14 B).
- Then, within each response, Otter Tail referenced the appropriate four PURPA time-based rate schedules it believes matches with programs offered by Otter Tail.
- Example: Real Time Pricing – Yes, 14Biii. This means for the current Real Time Pricing Tariff, Otter Tail believes it may comply with PURPA Standard 14, B. (iii) – which mentions real-time pricing.

3. Describe how the four PURPA time-based rate schedules are most applicable to various classes of customers.

Otter Tail's Summary Reply: Otter Tail suggests this question be discussed at the proposed workshop. Otter Tail would like to reserve its responses to this question for the workshop.

4. Should time-based rates as set forth in PURPA Standard 14 be mandatory for all customers, mandatory for some customers, or voluntary?

Otter Tail's Summary Reply: Otter Tail suggests this question be discussed at the proposed workshop. Otter Tail would like to reserve its responses to this question for the workshop.

5. Explain why the Commission should or should not adopt PURPA Standard 14 or any part thereof? In support of your position, provide citations to studies that have been conducted to determine the effectiveness of Smart Metering programs.

Otter Tail's Summary Reply: Otter Tail encourages the Commission not to adopt this standard, but address each utility and the type of metering technology and load management infrastructure on a case-by-case basis.

The reasons not to adopt the standard are clear – the Commission, the utility and their customers need flexibility, not a one size-fits-all approach. These types of standards can tie our hands and force uneconomic decisions. These decisions are better made at the utility and state level.

In further support, Otter Tail cites a report[1] from the Edison Electric Institute (EEI) which addresses the EPACT 2005 Standards.

[1] "Responding to EPAct 2005: Looking at Smart Meters for Electricity, Time-Based Rate Structures, and Net Metering." May 2006. Prepared by: National Economic Research Associates for Edison Electric Institute.

The purpose of the report is to provide guidance to state regulators on whether to adopt some or all of the proposed standards.

The authors report their conclusions on smart meters: the jury is still out. Furthermore, the authors add that smart meters have significant capabilities, and they could be beneficial. They also indicate while the cost of new metering is dropping, the up-front costs remain a significant consideration. Otter Tail agrees with their conclusions.

Otter Tail believes the main goal of smart metering is to send price signals to the customers in order for the utility to reduce costs and pass on the savings to the customers. This must be coupled with the use of proven and cost-effective technology.

Otter Tail is aware of new technology for Automated Metering Infrastructure (AMI) and options vendors have brought to the table. There have been vast improvements in the communications methods to meters, allowing two-way communications at a lower price than ever before. However, the economics must be justified for our customers.

Another important aspect of AMI is it must be able to communicate with the company's billing system. Otter Tail has a legacy billing system that, while over 20 years old, performs well enough for the metering and other technologies we utilize. In the future, AMI may be possible for Otter Tail. But the decision should be made on a case-by-case basis by the utility and/or regulators, after close study of cost effectiveness, and rigorous study of other alternatives[2] or other programs intended to drive real-time connections to energy use such as prepaid metering.

Furthermore, with developments occurring rapidly in the locational marginal pricing markets, how those developments might impact utility demand and price response programs remains unclear.

6. Of the types of time-based rate schedules listed in PURPA Standard 14, which standard(s) is the most effective in reducing demand? Which is the most cost effective?

Otter Tail's Summary Reply: Otter Tail suggests this question be discussed at the proposed workshop. Otter Tail would like to reserve its responses to this question for the workshop.

7. If the Commission adopts PURPA Standard 14, how should costs for time based rates or programs be allocated and recovered?

[2] Such as Otter Tails Residential Demand Control program that allows customers to set their own demand level using a load management device. Essentially, the customers set their own demand level which also sets the amount of saving they desire.

Otter Tail's Reply: Otter Tail again urges the Commission to carefully review these standards before adoption. If the Commission does adopt this standard, Otter Tail offers the following comments.

In general, allocations should be as direct to the affected class(es) as possible. As for program costs, they should be included in the tariff, except for customer-owned or leased devices, or in situations where a customer requires additional facilities which are either paid up front or handled with our Line Extension Policy.

8. Are there any other issues the Commission should consider?

Otter Tail's Reply: None at this time.

VI. PURPA Standard 15 – Interconnection Standards for Distributed Resources

1. Do you currently have tariffs, agreements, procedures, or schedules regarding interconnection of customer-owned generating facilities? If so, please describe them in general terms, including any limits on the capacity of customer-owned generating facilities. In addition, provide a copy or electronic link to the tariff, agreement, procedure or schedule.

Otter Tail's Summary Reply: Yes. Otter Tail has tariffs, agreements and procedures regarding the interconnection of customer-owned generating facilities. Otter Tail will discuss the procedures for transmission and distribution, and then describe the tariffs and other agreements.

Interconnection Guidelines: In general, the interconnection procedures sort out to those interconnections that are transmission and distribution-system related. MISO is accountable for transmission system-related interconnections whereas Otter Tail is accountable for distribution system-related interconnections. In Minnesota, Otter Tail follows the interconnection procedures per Minnesota Statute § 216B.1611. In the Dakotas, and those in Minnesota who do not meet the criteria per Minnesota Statute § 216B.1611, Otter Tail follows its own interconnection guidelines. Below are the links to interconnection guidelines as described above, and their capacity limits:

Transmission – system-wide - MISO website:
http://www.midwestmarket.org/page/Generator+Interconnection
Capacity limits: None - other than limited to transmission system capacity.

Distribution - Minnesota only – "State of Minnesota Interconnection Process for Distributed Generation Systems" at Otter Tail Power Company website:
http://www.otpco.com/NewsInformation/GeneratorInterconnectDist.asp
Capacity Limits: 10 MW or less.

Distribution - North and South Dakota (and Minnesota interconnections not covered above). "Otter Tail Power Company's interconnection procedures" at Otter Tail Power Company website:
http://www.otpco.com/NewsInformation/PDF/OTP%20CASOT.pdf
Capacity limits: None - other than limited to distribution system capacity.

In addition to the procedures noted above, an interconnection customer will be required to abide by Otter Tail Power Company's technical guidelines provided in the link below. The technical handbook[3] outlines the technical requirements when interconnecting a generator, tie line, or substation to Otter Tail Power Company's electric system. This handbook ensures all interconnections mentioned above meet the safety and reliability requirements of Otter Tail Power Company.

http://www.otpco.com/NewsInformation/PDF/OTPtechGuideCASOT.pdf

Tariffs: Otter Tail has the following tariffs designed to handle customer-owned generation. Links to these tariffs are from the Otter Tail Power Company website:

- Small Power Producer Rider - Occasional Delivery Energy Service P-09S
  http://www.otpco.com/ElectricRates/PDF/SD/p-09s.pdf
- Small Power Producer Rider - Temperature Time of Delivery Energy Service P-10S
  http://www.otpco.com/ElectricRates/PDF/SD/p-10s.pdf
- Small Power Producer Rider Dependable Service P-11S
  http://www.otpco.com/ElectricRates/PDF/SD/p-11s.pdf
- Standby Service P-14S
  http://www.otpco.com/ElectricRates/PDF/SD/p-14s.pdf

Agreements: Otter Tail has two customers on a retail tariff called Bulk Interruptible Service I-06S (http://www.otpco.com/ElectricRates/PDF/SD/i-06s.pdf). Otter Tail has supplied these agreements for Commission approval as part of the Summary of Contracts with Deviations, Section 4, Eighth Revised Sheet No. 3, and Section 4, Ninth Revised Sheet No. 4.

2. Explain why the Commission should or should not adopt interconnection standards consistent with PURPA Standard 15 or any part thereof.

Otter Tail's Reply: Otter Tail believes the Commission should not adopt this standard because it is unnecessary and may limit flexibility.

As described in Otter Tail's response to Question 1, Otter Tail already has two processes for interconnections at the distribution level. Adding a third process would be cumbersome and complicate the procedure. The current processes work.

3. Should the Commission adopt IEEE Standard 1547?

[3] A/k/a Otter Tail Power Company Guide for Generation, Tie line, and Substation Interconnections.

Otter Tail's Reply: Otter Tail is not opposed to the adoption of IEEE 1547.

The Commission should be aware that the following interconnection documents as discussed above contain references to IEEE 1547.

- Otter Tail's Guidelines for Generation, Tie-line, and Substation Interconnections", and
- "State of Minnesota Interconnection Process for Distributed Generation Systems"

Otter Tail understands the IEEE 1547 standard is periodically updated. Therefore, if the Commission adopts the standard, it would be prudent to review any updates and determine whether or not these updates should be included in the "adoption" of the standard. Otter Tail recommends the Commission allow comments from the affected utilities before it adopts any updates to the IEEE 1547 Standard.

4. Should the Commission adopt the NARUC Model Interconnection Procedures and Agreement? Should the Commission adopt parts of the NARUC Model Interconnection Procedures and Agreement or make changes?

Otter Tail's Reply: Otter Tail has performed a cursory comparison of the NARUC Model Interconnection procedures versus the "State of Minnesota Interconnection Process for Distributed Generation Systems." The Minnesota interconnection process is similar to the NARUC interconnection model. Otter Tail prefers the Minnesota interconnection process as it is clearer and provides more information to the customer.

Therefore, Otter Tail would recommend the Commission consider the "State of Minnesota Interconnection Process for Distributed Generation Systems" before adopting the NARUC Model "as is."

5. Are there any other issues the Commission should consider?

Otter Tail's Reply: Yes. Again, Otter Tail is concerned about having an additional interconnection process to learn and explain to customers. The goal should be to have consistent interconnection processes between inter-state and intra-state models.

VII. Conclusions

Otter Tail urges the Commission not to adopt the PURPA Standards. The reasons not to adopt the standards are clear – Commissions, utilities and their customers need flexibility, not a one size-fits-all approach. These types of standards can tie our hands and force uneconomic decisions. These decisions are better made at the utility and state level.

January 9, 2007

Respectfully submitted:

Otter Tail Corporation d/b/a
Otter Tail Power Company

By: /s/ David G. Prazak

David G. Prazak
Supervisor, Pricing
Otter Tail Power Company
215 South Cascade Street
Fergus Falls, MN 56538-0496

Appendix A:

Otter Tail Brochure “Your electricity”

Your electricity

Fuel sources

Air emissions

Your choices

OTTER TAIL POWER COMPANY

www.otpco.com

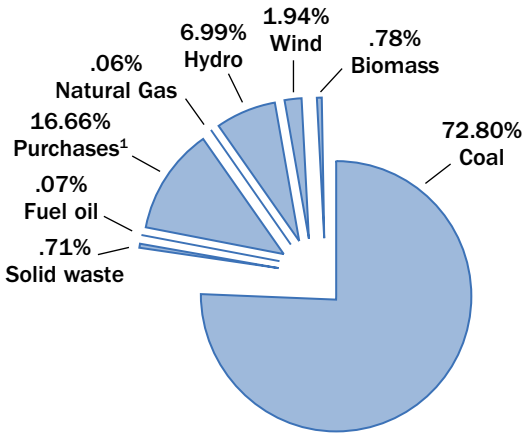
Use your electricity wisely to help the environment

Fuels used to generate electricity have different costs, reliability, and air emissions

OTTER TAIL POWER COMPANY

How are your electricity needs met?

The following chart shows the primary fuel sources used to produce your electricity in 2005.



Based on 2005 data, the following charts rank Otter Tail Power Company's energy sources on the basis of cost and reliability.

Ranked by cost per kwh

Lowest
- Solid waste
- Coal
- Biomass
- Wind
- Hydro
- Purchases[1]

Highest
- Natural gas
- Fuel oil

Ranked by typical reliability

Highest
- Coal
- Fuel oil
- Natural gas
- Hydro
- Biomass
- Solid waste

Lowest
- Purchases
- Wind

[1] *We purchase electricity from various fuel sources throughout the region that may or may not include coal, hydro, fuel oil, nuclear, natural gas, or others. Otter Tail Power Company does not own any nuclear generating facilities, and we would not be likely to purchase nuclear-based electricity because utilities that own nuclear generating facilities typically use their lowest-cost resources, including nuclear, to serve their own customers.*

What air emissions are produced?

Fuel type	Measured in pounds per 1,000 kilowatt-hours				
	Carbon dioxide	Sulfur dioxide	Nitrogen oxides	Particulate matter	Mercury
Coal	2,452	7.955	7.866	0.5668	0.00006440
Fuel oil	2,915	8.460	10.080	1.0400	0.0000090
Biomass	4,212	0.440	2.840	0.5300	0.00000270
Solid waste	2,384	7.480	9.700	0.0012	0.00005200
Purchases	1,839	5.537	3.982	0.3257	0.00004319
Natural Gas	1,386	0.008	1.290	0.0800	0.00000001

How do air emissions affect the environment?

Carbon dioxide (CO_2) is the principal greenhouse gas linked to global warming. **Nitrogen oxides** (NO_x) and **sulfur dioxide** (SO_2) contribute to acid rain; nitrogen oxides also contribute to smog. **Particulate matter** (sometimes called soot) contributes to asthma attacks and other respiratory illness. **Mercury** accumulates in some fish to levels exceeding current health department guidelines. *The Minnesota Pollution Control Agency is responsible for ensuring that emissions from utilities meet air-quality standards for nitrogen oxides, sulfur dioxide, and smog.*

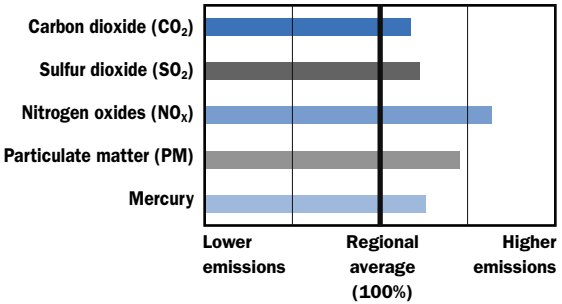
Wind and solar power produce none of these air emissions. Nuclear energy does not produce these air emissions but does produce both high- and low-level nuclear waste. Large hydropower may alter ecosystems and cultural resources, depending upon the location and design of the facility.

Statewide, coal-fired power plants in Minnesota generate 50 percent of all sulfur dioxide pollution, 35 percent of all carbon dioxide pollution, 43 percent of all mercury pollution, and 16 percent of all nitrogen oxides pollution.[2] All other generation sources contribute a small amount of pollution.

[2] *Pollution is emitted from many places, such as industrial and commercial sources, cars, trucks, and home heating.*

How does Otter Tail Power Company compare with the regional average?

The chart below shows how our company's air emissions compare with the regional average air emissions.



What can you do to help reduce air emissions?

You can participate in Otter Tail Power Company's energy-conservation programs. Minnesota customer participation in these programs between 1992 and 2005 reduced the need to produce 146,401,910 kilowatt-hours of electricity in 2005, a 3.59 percent savings. These annual savings resulted from both new and ongoing participation in our energy-conservation programs. By not producing this electricity, we avoided the following air emissions:

Air emission	Tons
Carbon dioxide	156,949
Sulfur dioxide	496
Nitrogen oxides	475
Particulate matter	35
Mercury	0.004

Save money by using electricity wisely

Conservation Improvement Programs (CIP) play a key role in planning to meet future electricity needs. In 2006 we continue to offer incentives and rebates to our customers who install energy-efficient systems.

Residential programs

- House Therapy—Home weatherization for low-income households.
- HotPack—A free water-saver kit to customers who install an electric water heater.
- Heat pump options—Rebates or financing for installing an air-source or geothermal heat pump.
- Residential demand control—A lower rate for customers who let us control their system during peak periods. A leasing program and rebates are available for installing a residential demand controller.
- **Cool***Savings*—A $5 monthly bill credit from June through September for customers who let us control their central cooling system during peak periods.
- Change a light—A fall in-store instant rebate promotion on compact fluorescent bulbs.

Commercial/industrial programs

- Rebates and grants—Businesses may qualify for a rebate for installing high-efficiency refrigeration, lighting, motors, heat pumps, or cooking equipment.
- Financing—Low-interest loans are available for efficiency-improvement projects.

Energy-saving tips

- Wash clothes with cold water.
- Replace your aging washing machine with a high-efficiency front-loading washer to reduce energy, water, and detergent use by up to 60 percent.
- Use task lighting instead of general lighting for work and leisure activities.
- Close shades and blinds during the day to keep your home cooler and open them in the evening to take advantage of natural light.
- Replace old refrigerators with more efficient models.
- Use electric fry pans, toaster ovens, and microwave ovens when cooking single-dish meals.

Tail*Winds renewable wind energy*

Emission-free wind-generated electricity is available from Otter Tail Power Company. For a few more pennies a day you can support the advancement of wind power through **Tail** *Winds.*

To learn more

Checkout these resources:

www.ConservingElectricity.com for energy saving help for kids, homeowners, and businesses.

www.otpco.com or call **800-493-3299** for more about the Otter Tail Power Company programs described here.

www.commerce.state.mn.us or call **800-657-3710** for energy saving tips from the Minnesota Department of Commerce.

www.pca.state.mn.us/programs/electricity.html or call **651-297-2274** or **800-646-6247** for information about air emissions from the Minnesota Pollution Control Agency.

OTTER TAIL POWER COMPANY

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8/06 - MN

APPENDIX B: NON-MANDATED POWER PLANT EFFICIECY IMPROVEMENTS

Coyote Station – near Beulah, North Dakota:

2003

- LP Turbine Upgrade - New design rotor provided a 2 percent improvement in plant efficiency.
- Boiler Controls Upgrade -Indeterminate efficiency improvement.

2004

- Changes in the lime slurry preparation process to increase the efficiency of the scrubber. This improved sulfur dioxide removal from the flue gas stream with the same amount of lime input to the system. Increased scrubber efficiency about 3 percent.

2004, 2005, 2006

- Three year project to modify baghouse to membrane bags and acoustical horns for cleaning. This decreased differential pressure across the baghouse by ~.5 inches of water.

2005, 2006, 2007, (Planned for 2008, 2009)

- The plant has retrofitted 4 out of 10 cooling tower fans to Variable Frequency Drive (VFD) control. When this project is completed, we will see approximately 1 MW reduction in station service for 75 percent of the year.

Projects at a scheduled interval to restore lost plant efficiency:

Quarterly

- High pressure water washing the boiler restores ~2 percent of the boiler efficiency

Yearly

- Foam cleaning the turbine once a year recovers lost MW and improves high pressure turbine steam flow passing capacity by ~3 percent.

2006

- Replace air heater baskets to restore lost efficiency due to degrading of the baskets. Reducing pressure drop across air heater by 6 inches of water is equivalent to 1 MW station service on ID fans.

Big Stone - near Milbank, South Dakota

1995

- Switch from lignite to sub-bituminous coal increased boiler efficiency by around 5 percent due to lower moisture levels in the fuel.

1996 & 2005

- Turbine replacement projects in 1996 (low pressure) and 2005 (high and intermediate pressure) have increased plant efficiency by a total of about 3 percent.

Hoot Lake – near Fergus Falls, Minnesota

1991 & 1992

- Control system change out. Indeterminate efficiency improvement.

2005

- Turbine control upgrade. Indeterminate efficiency improvement.

Hydro Units – various Minnesota locations

2004

- A complete turbine overhaul of Central Hydro. Approximately 3% efficiency improvement.
- A complete turbine overhaul of Pisgah Hydro. Approximately 3% efficiency improvement.

2006

- A complete turbine overhaul of Dayton Hollow #2 unit turbine. Too early to determine efficiency improvements.

Combustion Turbines - various locations

2000

- In three combustion turbines (CT) Otter Tail installed a Mee-Fog system which cools the inlet air to the CT compressor, thereby lowering the firing temperature of the combustion and exhaust gas temperature. This improved the three Otter Tail CT units by about 10 percent - which is up to 2 MW for each unit.

2003

- Intermediate Peaking Facility Selection: Otter Tail commissioned a new CT - a GE LM6000 Aeroderivitive design gas turbine over a Frame design turbine. The aeroderivitive design has a number fuel efficiency advantages over the Frame design turbine - including a very sophisticated control system that gives precise fuel and air control. The GE LM6000 is approximately 30% more fuel efficient than the frame design.

APPENDIX C

Otter Tail Power - System-Wide Load Management Programs for Residential

Excerpts and variations from 2005 FERC Form 728

Name of Program or Tariff	DLC-Water Heating	Small Dual Fuel	Thermal Storage	Residential Demand Control	DLC-A/C		Total
Voluntary or Mandatory Enrollment	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary		
Voluntary or Mandatory Interruption	Mandatory	Mandatory	Mandatory	Voluntary	Mandatory		
Number of Enrolled Customers-MN	10,453	4,475	900	2,538	359		18,725
Number of Enrolled Customers-ND	8,103	5,512	695	3,830	Not Available		18,140
Number of Enrolled Customers-SD	2,786	747	164	480	Not Available		4,177
May Comply with PURPA Standard 14	Partial - 14Biv	Partial - 14Bi	Partial - 14Biv	Partial - 14Bi	Partial - 14Biv		
						Total Residential	41,042

Otter Tail Power - System-Wide Load Management Programs for Commercial

Excerpts and variations from 2005 FERC Form 728

Name of Program or Tariff	Large Dual Fuel	Water Heating-DLC	Thermal Storage	Commercial Time of Use	Irrigation	Commercial Demand Control	Total
Voluntary or Mandatory Enrollment	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	
Voluntary or Mandatory Interruption	Mandatory	Mandatory	Mandatory	Voluntary	Mandatory	Mandatory	
Number of Enrolled Customers-MN	140	52	31	42	111	Not Available	376
Number of Enrolled Customers-ND	164	11	17	Not Available	19	29	211
Number of Enrolled Customers-SD	23	17	7	Not Available	2	5	49
May Comply with PURPA Standard 14	Partial - 14Bi	Partial - 14Biv	Partial - 14Biv	Yes - 14Bii	Partial-14Bi	Yes - 14Bii	
						Total Commercial	636

Otter Tail Power - System-Wide Load Management Programs for Industrial

Excerpts and variations from 2005 FERC Form 728

Name of Program or Tariff	Real Time Pricing	Large General Service-Time of Use Tariff	Large General Service-Rider	Released Energy Access Program (REAP)	Interruptible & Curtailable (I/C) Bulk Int. Tariff	Large General Service -Time of Day PROPOSED	Total
Voluntary or Mandatory Enrollment	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	Voluntary	
Voluntary or Mandatory Interruption	Voluntary	Not Applicable	Mandatory	Once agreed, then mandatory	Mandatory	Voluntary	
Number of Enrolled Customers-MN	1	10	7	3	Not Available	Not Available	21
Number of Enrolled Customers-ND	1	Not Available	Not Available	3	0	Pending Approval	4
Number of Enrolled Customers-SD	Not Available	Not Available	Not Available	0	2	Not Available	2
May Comply with PURPA Standard 14	Yes-14Biii	Yes - 14Bi	Yes - 14Biii and 14Biv	Yes - 14Bii	Yes - 14Biv	Yes - 14Bi	
						Total Industrial	27

All Classes - 2005 Totals 41,705