BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

LeRoy Koppendrayer	Chair
R. Marshall Johnson	Commissioner
Kenneth Nickolai	Commissioner
Thomas W. Pugh	Commissioner
Phyllis Reha	Commissioner

In the Matter of Otter Tail Power Company's 2006 – 2020 Resource Plan	DOCKET NO. E-017/RP-05-968

OTTER TAIL POWER COMPANY UPDATE ON THE COMPANY'S INTEGRATED RESOURCE PLAN FILING AND REPLY COMMENTS TO THE COMMENTS FILED BY THE INTERVENOR PARTIES

PROCEDURAL HISTORY

On June 30, 2005, Otter Tail Corporation, dba Otter Tail Power Company (Otter Tail or the Company), filed its proposed Resource Plan covering the period 2006 – 2020, pursuant to Minnesota Statutes §216B.2422 and Minnesota Rule Chapter 7843.

On January 3, 2006, Excelsior Energy filed comments on Otter Tail's 2006 – 2020 Resource Plan.

On January 3, 2006, the Izaak Walton League – Midwest Office, Minnesotans for an Energy-Efficient Economy, the Union of Concerned Scientists, and Minnesota Center for Environmental Advocacy filed joint comments on Otter Tail's 2006 – 2020 Resource Plan.

On January 3, 2006, the Energy Division of the Minnesota Department of Commerce (Department) filed comments on Otter Tail's 2006 – 2020 Resource Plan.

INTRODUCTION

This Otter Tail submittal to the Commission is intended to serve several purposes, including:

- Providing an update to the Commission on several resources or proposed resource additions in the Company's initial filing, as well as significant load additions. Specifically, updates will be provided on the following:
    - The addition of scrubbing to Big Stone Plant I with the construction of the Big Stone Plant II unit.
    - The cancellation of the 70 MW Enbridge Wind Farm project.

- Issuance of an RFP for approximately 75 MW of renewable resources.
- Determination by the Minnesota Pollution Control Agency that Hoot Lake #3 emissions are not subject to Best Available Retrofit Technology (BART).
- The confirmed addition of approximately 23 MW of high load factor customer demand associated with two ethanol plant projects, an agricultural processing facility, and pipeline additions.

- Otter Tail responses to the comments filed by the intervenors to this docket.

- A request for an expedited deliberation and decision by the Commission in this docket.

- A waiver request to allow Otter Tail to file its next resource plan with the Commission by July 1, 2008 instead of the schedule July 1, 2007 date.

UPDATE INFORMATION TO THE COMMISSION

Big Stone Plant I

Otter Tail's Resource Plan filing includes up to 120 MW of the addition of the proposed Big Stone Plant II (BSPII) unit, a 600 MW super-critical pulverized coal facility. The location of this facility at the existing site of Big Stone Plant I (BSPI) offers synergies between the existing facility and the proposed facility through the sharing of staff and facilities. These synergies are an opportunity for cost savings to the existing BSPI unit as well as the new BSPII unit.

The BSPII unit design includes highly effective environmental control equipment, such as selective catalytic reduction (SCR) for NO_x reduction and a wet scrubber for SO_2 removal. The BSPI unit currently is not scrubbed and meets the requirements of the Clean Air Act Amendments of 1990 using low-sulfur coal. The BSPI co-owners[1] have decided to take advantage of the opportunity provided by the BSPII proposal by participating in the construction of a joint scrubber large enough to handle both generating units. The BSPI co-owners will realize savings by paying only the incremental construction cost of building a larger scrubber as part of the BSPII project. The cost savings would be realized from the construction of the scrubber as part of a total plant construction project, rather than as a stand-alone construction project. Both BSPI and BSPII plants would realize reduced scrubber operating costs by sharing in the fixed and variable operating costs.

The plans for BSPII include the construction of a wet scrubber for emissions control. The wet scrubber would not only reduce SO_2 emissions from BSPI, but would also provide the possibility of greater mercury (Hg) control as well.

[1] The BSPI unit is co-owned by Montana-Dakota Utilities, Northwestern Energy, and Otter Tail Power Company.

The BSPI co-owners have decided to take further advantage of the synergies by expanding the size of the BSPII scrubber to enable it to also scrub the emissions from the BSPI unit. This action offers capital and operational cost savings when compared to the potential for installing a stand-alone scrubber for BSPI at some future date. The current value of SO_2 allowances, combined with the cost savings, further helps to justify scrubbing BSPI with this opportunity.

The estimated budgetary incremental scrubber construction costs for the BSPI co-owners is expected to be about $55,500,000. Otter Tail's share of this investment would be 54.9%. This represents substantial savings from a BSPI stand-alone scrubber cost of approximately $80,000.000.

The BSPI co-owners have also decided to increase the usage of the over-fire air system in the BSPI unit to reduce NO_x emissions as well. This system is already in place and is being used. As a result, the expectation is the addition of the BSPII site will not result in any increased emissions of SO_2 and NO_x, from a total site perspective, and provides the opportunity to reduce mercury emissions. According to the EPA, a fabric filer followed by a wet scrubber will exhibit greater mercury removal than other conventional control configurations when firing subbituminous coal.[2] This opportunity, made possible by the proposed BSPII project, would occur at the same time BSPII would more than double the Big Stone Plant total site capacity and energy output.

It must be noted that the BSPI co-owners have not committed to constructing a scrubber in the event that the BSPII unit is not built. The co-owners recognize that there is a possibility of future environmental regulatory changes that could require the addition of a scrubber to the BSPI unit. Accordingly, they have chosen to take advantage of the opportunity provided by the BSPII proposal to do so in conjunction with the BSPII project.

Enbridge Wind Farm

The second update relates to the proposed 70.5 MW Enbridge Wind Farm project that was included in the Resource Plan filing. This project was before the Commission in Docket No. E-017/AI-05-652. Delays in project approval resulted in rapidly escalating estimated project costs to the point where the project structure as proposed was no longer feasible. The demand for wind turbines has increased dramatically and estimated installed costs of wind generation have jumped from the $1100/kW range to an estimated $1500/kW.[3] Otter Tail withdrew its filing to the Commission for approval of this project in December 2005.

[2] EPA Memorandum from Jim Eddinger, dated March 15, 2005, citing that for subbituminous units that are not under water restrictions, best demonstrated technology is a fabric filter in combination with a wet flue gas desulfurization system.

[3] Cost estimates are based on discussions with developers and presentations by the American Wind Energy Association.

As a contingency plan in the event that the Enbridge Wind project was delayed or cancelled, Otter Tail had prepared a request-for-proposals (RFP) for renewable energy projects. The RFP is discussed in greater detail below.

Renewable Resource RFP

With the cancellation of the proposed 70.5 MW Enbridge Wind project, Otter Tail issued an RFP for approximately 75 MW of additional renewable resources that would qualify towards the Renewable Energy Objective (REO). The request would be for projects that could be on-line by the end of 2007 or during 2008. The Company believes that it already has enough renewable resources to comply with the REO, pursuant to Minn. Stat. §216B.1691, across its entire three-state system through 2007.

The RFP includes consideration of C-BED projects, as envisioned in Minn. Stat. §216B.1612. The Company has filed its proposed C-BED tariff for approval with the Commission.

The RFP was issued on March 31, 2006 with proposals due by Friday, May 12, 2006. The schedule expects that a short list of developers will be developed by June 14, 2006 with notification to short list projects by June 21, 2006. If initial evaluations are completed sooner, the short list determination may be moved up.

In response to the comments filed by the Department, Otter Tail conducted additional IRP-Manager optimization model runs. These modeling runs incorporated wind generation with updated pricing in the price ranges expected through the RFP. Greater detail on the modeling results is provided in the response to the Department's comments included later in this filing.

A copy of the news release associated with the RFP was previously provided to the Commission. A copy of the RFP is included as an Exhibit to this filing.

Hoot Lake #3 BART Determination

Otter Tail's initial resource plan filing discusses the Regional Haze Program on page 12-7 and identifies the potential for the Hoot Lake #3 unit to be affected by the modeling of impacts to regional haze in Class I areas such as the Boundary Waters Canoe Area Wilderness and Voyager's National Park. Generating units shown to have an impact to regional haze in Class I areas would be subject to Best Available Retrofit Technology (BART) to reduce the impacts.

At the time of the resource plan filing, the rule provisions for identifying sources subject to BART had not yet been finalized and EPA had not yet developed the modeling protocol guidelines. Since that time, the rules have been finalized and the Minnesota Pollution Control Agency (MPCA) has conducted analysis. The MPCA has made a determination that the Hoot Lake #3 unit has a very minimal Class I area impact and falls

below the minimum threshold to be subject to BART. A copy of the MPCA letter to Otter Tail is included as an Exhibit to this filing.

Additional Load Information

Otter Tail included trade secret data on page 5-1 of its IRP filing on several potential large new load projects that were not yet public information. At that time, these new loads were proposed projects and because of their size and location it was unknown whether Otter Tail would be the utility serving the load if the projects were constructed.

Since that time Otter Tail has received notice on a few of these projects that they will be constructed and Otter Tail will serve the load. These loads are large enough to be outside of the base load forecast levels, and are considered a one-time step change in customer load. The projects include two ethanol plant projects, an agricultural processing facility project, and a pipeline project. One of the ethanol plant projects and the pipeline project will be located in Minnesota. The rest of the load additions are located in North and South Dakota portions of the service territory.

The expected total load addition resulting from these projects is about 23 MW[4] winter peak demand impact and 24 MW[5] summer peak demand impact. These are high load factor projects that are estimated to require a total of approximately 1129,000 MWh of energy per year. These loads were not included in the development of the resource plan filing, and will surely even strengthen the need for the BSPII project.

The additional IRP-Manager runs completed as a result of the Department's comments included this additional load impact.

REPLY COMMENTS TO THE COMMENTS FILED BY EXCELSIOR ENERGY

Excelsior Energy filed its comments with a focus on two areas:

- That MN Stat. §216B.1694, known as the Innovative Energy Project Statute, applies to Otter Tail's resource plan filing since Excelsior Energy feels that the resource plan is an application to the Commission for approval of an arrangement to build a fossil fuel-fired generation facility.
- That Otter Tail has included inaccurate or misleading statements about integrated gasification combined cycled technology.

Otter Tail contends that the resource plan filing process is not an application to the Commission for approval to build a fossil-fueled generation facility. The proposed BSPII

[4] The total capacity impact requirement is about 26.45 MW during the winter season when reserve requirements are included. This winter load addition will also add 3.45 MW to the summer season reserve requirement.

[5] Because the MAPP reserve requirement is based on annual peak, the summer season load addition does not impact reserve requirements as long as Otter Tail remains winter peaking.

project is located outside the state of Minnesota, and therefore the project co-owners do not need specific Commission approval to construct the generating facility itself. The Otter Tail resource plan filing is a request to the Commission to use capacity from that project to serve customer load located within Minnesota in accordance with the resource plan filing statutes in MN. Stat. §216B.2422 which requires Otter Tail to identify resources it could use to serve its customers.

It is not Otter Tail's intent to debate the legalities of the Innovative Energy Project Statute in this filing. What Excelsior Energy fails to include in their comments is that Otter Tail had three separate contacts with Excelsior Energy to discuss including a power supply proposal from their project in the development of the Otter Tail resource plan filing. As stated on page 8-2 of the Company's filing, Otter Tail contacted other utilities to seek power supply proposals. Excelsior Energy was included in these contacts, initially by mail with an RFP requesting a base load power supply proposal based on their project. In two subsequent telephone discussions, Excelsior Energy declined to make a proposal on the basis that their project did not yet have sufficient development to allow them to make a proposal.[6]

Since that time, Excelsior Energy has not contacted Otter Tail with any indication that they are now ready to make a proposal or to seek further information on Otter Tail's resource needs.

Simply put, Otter Tail cannot consider a specific resource option in its resource plan analysis for which the developer has declined to provide any information or a proposal. Even if Excelsior Energy had a mature project proposal to offer at the time of BSPII planning or even now, they cannot claim that the IRP process requires comparison of BSPII to Mesaba while at the same time refusing to participate in or even provide information to utilities considering alternatives within the context of that same IRP process.

Excelsior Energy submitted a filing[7] to the Commission on December 27, 2005 seeking a determination as a least-cost resource specifically for Xcel Energy.[8] This filing and its supporting legislation, which amounts to a request for favored status for fulfilling Xcel Energy's needs, conflicts with the very nature of the development of an integrated resource plan. It is not possible to identify an optimized resource plan without consideration of the impacts of the resource on other Company facilities through a determination of its dispatch characteristics, correspondence with resource needs, and overall system impact. Excelsior Energy has failed to provide any information at all to Otter Tail for the Company to begin consideration of the project.

[6] A copy of the original request to Excelsior Energy is included as an Exhibit to this filing.
[7] Docket No. E-6472/M-05-1993.
[8] The Commission's recent Order directing the Excelsior case to the Office of Administrative Hearings specifically states the context of the Docket should be narrowly focused on Xcel Energy needs; not that of other utilities. "Notice and Order for Hearing and Order Granting Intervention Petition'" MPUC Docket No. E-6472/M-05-1993, Spril 25, 2006, at Page 3.

Further, as discussed at the Commission hearing regarding the Excelsior Docket on April 6, 2006, more than three months after they filed their petition with the Commission, it was disclosed that Excelsior still has not finalized their project pricing in such a manner as to be able to offer it for the Commission's or even Xcel Energy's consideration. This is not indicative of a mature project proposal. Even if the Commission would determine that MN Stat. §216B.1694 applies to Otter Tail's resource plan, at its face a promising by untried IGCC technology, with an immature project proposal, with an expectedly higher capital cost, located many additional miles farther transmission-wise from most of the BSPII project participants, and offering no emissions benefits at BSPI would not be in the public interest of BSPII's intended customers as Excelsior Energy's comments might suggest.

Excelsior Energy felt that Otter Tail's comments with respect to IGCC technology was flawed in several areas. On page 8-5 of its filing, Otter Tail states, *"Three gasifier manufacturers have IGCC experience with various U.S. coals. Each of the manufacturers has a slightly different technology that has proven to work differently on different fuels. Of the current operating U.S. IGCC units, none are operating on low sulfur sub-bituminous Powder River Basin (PRB) coal. Testing of various coals on the different gasifiers is continuing, however, at the present time there is no long-term commercial operating IGCC experience with PRB coals."* Excelsior Energy counters that Louisiana Gasification Technology, Incl. successfully processed 3.7 million tons of sub-bituminous coal. Additionally, Excelsior Energy states that pre-engineering studies have been completed to ensure that the gasification process to be used in the Mesaba Energy Project will function effectively on Powder River Basin Coal[9].

A test burn of PRB coal does not constitute long-term commercial operating experience, and it still remains true that none of the current U.S. IGCC units is operating on PRB coal, to the best of Otter Tail's knowledge.[10] Any user of coal as a fuel knows that often times unforeseen combustion or gasification issues do not arise until a significant period of specific fuel usage has taken place. There is also great variability in the coal content of ash, various minerals and elements, from one PRB mine to another that affect the performance of each fuel in any given particular circumstance. And while pre-engineering studies are an absolute requirement of any project, those studies in themselves do not prevent unforeseen problems or issues associated with fuel quality, especially when there isn't a robust database of operating experience.

Excelsior Energy also states that Otter Tail underestimates the availability of IGCC facilities[11]. Otter Tail's comments were based on actual data presented in numerous papers and conferences from the existing fleet of U.S. IGCC facilities. Otter Tail noted that availability is improving, but that only two units finally achieved an availability of

[9] See Comments of Excelsior Energy, Inc., Page 3.
[10] According to Gas Turbine World, January-February 2006, there are only 14 commercially operating IGCC projects in the world, including a unit just undergoing commissioning. Of these units, only five use coal for fuel, either in part or as the only fuel. Of those, only two are in the U.S. These are the Wabash River and Tampa Electric facilities.
[11] See Comments of Excelsior Energy, Inc., Page 3.

83% in 2003. In response to a data request for information regarding IGCC availability, Excelsior Energy provided data that clearly showed that current IGCC availability is below that of super critical pulverized coal units. The data received from Excelsior Energy is shown in Table I.

Table I
IGCC Availabilities Provided by Excelsior Energy[12]

Year	Wabash River	Tampa Electric
1998	40%	-
1999	74%	-
2000	73%	78%
2001	79%	64%
2002	74%	79%
2003	-	63%
2004	-	81%

Excelsior Energy states that they *"expect"*[13] (emphasis added) the capacity factor from the Mesaba Project will be at least 90%. Such an operating level would require an availability of greater than 90%, which far exceeds the availability attained by any other IGCC unit in the U.S.

Excelsior Energy also supplied supplemental information on Wabash River, which was labeled as reliability[14]. However, this data, as derived, was not consistent with availability as defined by the National Electric Reliability Council, did not include outages due to maintenance, and thus significantly overestimated unit availability to serve customer load.

Excelsior Energy seems to believe that their project will be base loaded at full load whenever available. Such an operating mode would not fit well with the load variability on the Otter Tail system, and would create adverse cost impacts from having to dispatch around such a full output must-run operating requirement.

Excelsior Energy also commented about Otter Tail's use of the costs of IGCC, implying that Otter Tail did not appropriately include operational cost and environmental costs. The Otter Tail model includes all direct costs of a facility, and the Company incorporated the environmental externality values as determined by the Commission. Excelsior Energy states that Otter Tail should consider an optimized large IGCC unit in its IRP

[12] Excelsior Energy referenced the data as follows: Approximations derived from a presentation by Dr. Jeff Phillips, Electric Power Research Institute, *Integrated Gasification Combined Cycles with CO_s Capture*, GCEP Research Symposium, June 14, 2005.
[13] See Comments of Excelsior Energy, Inc., Page 4.
[14] Reliability was defined as: Reliability = [1 – (Forced Outage Hours/Period Hours)] x 100%. This definition is not consistent with availability as defined within the Generating Availability Data System of the National Electric Reliability Council (NERC).

development, rather than the 81 MW unit the Company considered. Otter Tail tried to include a portion of a large optimized unit, but Excelsior Energy declined to provide a proposal. Otter Tail does not have another large IGCC opportunity available to include in the plan development, such as it does with the BSPII project. Otter Tail has a current peak demand of less than 700 MW, and is certainly not in a position to construct a large IGCC unit on its own. Therefore, Otter Tail included consideration of unit sizes that were feasible for the Company to construct on its own.

Finally, Excelsior Energy has not provided any information or provided any opportunity at all for Otter Tail to consider the Mesaba Project as a potential resource. Otter Tail is planning for the reliability needs of its customers beginning in 2011. Excelsior Energy, through its December filing with the Commission, is clearly and expressly aiming at selling the 600 MW of output of Mesaba Unit I to Xcel Energy in 2011. Otter Tail customer needs are too important to allow them to be viewed as merely the backup contingency plan for a market for Excelsior Energy in the event that their Xcel Energy petition is not successful.

REPLY COMMENTS TO THE JOINT COMMENTS OF THE IZAAK WALTON LEAGUE OF AMERICA – MIDWEST OFFICE, MINNESOTANS FOR AN ENERGY EFFICIENT ECONOMY, THE UNION OF CONCERNED SCIENTISTS, AND MINNESOTA CENTER FOR ENVIRONMENTAL ADVOCACY (MCEA)

The MCEA joint comments were filed on January 3, 2005. Some members of the MCEA group received original mailings of the Otter Tail resource plan when the plan was submitted on June 30, 2005. MCEA filed for intervention on December 22, 2005 well after the deadline to file for intervention. Otter Tail did not receive any information requests from MCEA until December 8, 2005 (responses due December 19, 2005), December 13, 2005 (responses due December 23, 2005), and December 16, 2005 (responses due December 28, 2005). Otter Tail does not know the reason that MCEA delayed for so long to begin reviewing the filing. The MCEA comments contain numerous errors and misstatements. Otter Tail will respond to the MCEA comments, illustrating these errors and misunderstandings.

Since the inception of the resource plan filings in MN, the Commission and the Department have been consistent in that the goal is to develop resource plans that integrate resource selection on both the supply-side and the demand-side on an equal footing. Otter Tail has done that, using a fully integrated planning model that meets those goals. The IRP-Manager model evaluates all alternatives on an equal footing, including the consideration of environmental externalities in developing an optimized plan. Otter Tail put forth a plan that was selected by IRP-Manager that included the BSPII project, even when considering the environmental externality values required by the Commission as an integral part of the economic evaluation.

MCEA states that the resource plan should be rejected because Otter Tail has not provided the present-worth revenue requirement (PWRR) of the BSPII project[15] among other data requested by MCEA. MCEA is asked for the busbar costs of generating projects and the cost/kWh of demand-side and renewable resources. MCEA appears not to understand the basic tenets of integrated resource planning. Any resource addition, whether it is a conservation program, the BSPII project, a wind farm, or other alternative has an impact on other system resources and changes the costs of those resources. The cost/kWh of any particular resource itself does not inform how a resource fits within the resource needs or the current mix of resources on the system. If utility planning was solely done on a cost/kWh basis, no one would ever build a simple cycle combustion turbine for peaking duty. Yet such facilities have a well-defined role in utility operations and are installed for a purpose that matches their characteristics. The only way fully integrated resource options evaluations can take place and capture all of the cost and benefit impacts is through a proper resource planning model such as IRP-Manager. IRP-Manager does not calculate some of the information requested by MCEA. While it may be possible to manually calculate some of the information, it could not be accomplished in the time left available after the lateness of the MCEA information requests. Further, while perhaps not in a form MCEA prefers, the IRP-Manager results are fully useful for the purpose of demonstrating the relative value and cost of various alternatives. This fact has been demonstrated in multiple resource plan filings previous to this one.

MCEA claims that Otter Tail did not show that BSPII is cheaper than conservation and load management[16]. The IRP-Manager model selected a resource plan that minimized the PWRR to ratepayers, while simultaneously evaluating supply-side and demand-side opportunities. The model selected some conservation programs, some renewable energy projects, some peaking facilities, and the BSPII project. MCEA uses generic data from other areas of the U.S. to support its argument, but the fact is that Otter Tail modeled conservation within IRP-Manager, using data that was specific to the Otter Tail system and customers, including costs developed by independent consultants and based on historical performance in the CIP. MCEA claims that Otter Tail used conservation costs that were way too high and invited Otter Tail to clarify this point in its reply comments.[17] MCEA specifically mentions costs ranging from 13 to 75 cents/kWh. What MCEA fails to realize is that these are the implementation costs of a conservation program that are incurred in the first year. All succeeding years for the conservation done in the first year have zero cost. Therefore, a 20-year conservation program with a first-year implementation cost of 75 cents/kWh has an effective cost of 3.75 cents/kWh over its life.[18] MCEA failed to realize the simple difference between first year implementation costs necessary for proper modeling, and total lifetime costs.

MCEA states that Otter Tail has not shown that renewable energy is not in the public interest.[19] Again, Otter Tail modeled renewable resource alternatives within IRP-

[15] See Joint Comments of MCEA, et al, Section D, page 4.
[16] See Joint Comments of MCEA, et al, Section D, page 8.
[17] See Joint Comments of MCEA, et all, page 15.
[18] This simple illustration ignores the time value of money.
[19] See Joint Comments of MCEA, et al, page 17.

Manager. In the initial runs, the model did not select enough renewable energy to meet the Renewable Energy Objective (REO) across its entire system. In subsequent runs, Otter Tail forced enough wind generation into the model to comply with the REO, and had additional wind generation available for the model to select. IRP-Manager did not select more wind, even when considering environmental externalities, based on the economics. This demonstrates that Otter Tail compliance with the REO is already above the level that cost-effectiveness analysis of renewables compared to other, non-renewable alternatives would otherwise suggest.

MCEA continues in this section to state that Otter Tail did not model wind generation properly, first by not using hourly data and by arbitrarily imposing a cap on wind generation. Both of these statements are false. The IRP-Manager model uses four day-type curves (24-hourly data points) to represent each month. The model contains the number of each of these day-types per month. IRP-Manger then dispatches resources on an hourly basis to meet the loads. Otter Tail developed matching day-type curves, based on actual wind generation data from facilities on the Otter Tail system, to provide hourly outputs for each day-type by month. These curves had the same energy distributions as the actual performance of wind facilities from which Otter Tail receives energy. For the cost data, Otter Tail simply used pricing information received from developers. Otter Tail did not require any additional costs or backup generation for wind facilities. IRP-Manager made all decisions as to the amount of capacity to be installed and when facilities needed to operate.

Otter Tail did not cap the maximum amount of wind that the model could select. MCEA misinterpreted the Company's comments. IRP-Manager indicated in its results that it was being forced to dump energy to the market due to minimum load problems. Again, IRP-Manager made the determination and not Otter Tail. MCEA is wrong in their assertions.

MCEA states that Otter Tail has skewed the analysis, *"... by loading into the model undisclosed and potentially baseless operational costs of implementing more wind."* [20] MCEA cites the Otter Tail resource plan on page 9-8 as the source of this information. No where on that page does Otter Tail state that it added further implementation costs. Otter Tail did not add any costs at all into the model beyond the prices received from wind developers. In the same section, MCEA cites information from a separate study performed by *"Otter Tail's consultants"* that overstates the cost of wind. The study cited is not part of the Otter Tail resource planning process and had no part in the evaluation of renewables within the resource plan. Otter Tail intentionally kept its resource planning process separate from the BSPII team process. The study cited was part of the body of work completed by the BSPII team in the analysis of baseload options. It was not part of the development of the Otter Tail resource plan. MCEA is confused on a number of issues in this area relative to the development of the Company's resource plan.

[20] See Comments of MCEA, et al, page 20.

MCEA states that *"Otter Tail's computer model displays a troubling pattern of irrationally rejecting demand-side options."*[21] MCEA cites language from page 4-6 of the resource plan. Otter Tail agrees that the language on page 4-6 is poorly written and leads to an erroneous conclusion. IRP-Manager evaluates both supply-side and demand-side options one at a time and ranks them accordingly based on the specified objective function.[22] The model will then implement any alternatives determined to be cost-effective (meaning implementing the alternative results in lower costs than not implementing it). The model then re-evaluates all remaining alternatives to determine if more capacity is required to meet reserve requirements and, if so, implements the lowest cost resources. Conservation programs that are selected appropriately result in a reduction in load requirements, while supply-side alternatives result in an increase is supply.

MCEA feels that the model is flawed because it selected one less conservation program when externality values are considered. Otter Tail contends that the model performed in a very logical manner. Such a determination cannot be made without a clear understanding and review of what the model is doing. Some conservation programs are selected because they are cost-effective, lowering costs by implementation even though additional resources are not needed. Some are implemented because they are the lowest cost alternative when new resources are needed. MCEA notes that when the model incorporated environmental externalities, it did not select a conservation program in 2017 that had previously been selected. That specific conservation program had been selected by IRP-Manager because it was the lowest cost next resource available, not because it was cost-effective. When IRP-Manager considered environmental externalities, the model selected a purchase from Manitoba Hydro (MHEB) in addition to selecting the BSPII project. IRP-Manager then used the MHEB purchase to back down existing generation to reduce emissions and save the environmental externality costs. As a result, IRP-Manager had sufficient additional capacity so that the previously selected conservation program in 2017 was no longer needed for capacity reasons. Since it had not been a cost-effective program initially, it is logical that the model would not select the program. Again, this is a result of fully integrated analysis demonstrating that alternatives are not isolated opportunities. Alternatives and existing facilities have cost and benefit interactions on each other that can only be incorporated through a fully integrated model.

MCEA questions whether Otter Tail considered the risks of future carbon constraints in developing its resource plan. As they have likewise stated in the other resource plan dockets, MCEA suggests that the best way to plan for a future with some level of carbon restrictions, albeit uncertain as to timing and amount, is for the Commission to adopt the \$8/ton "CO_2 Adder" adopted by the California Public Utilities Commission and for the Commission to require utilities to assess a much higher range of costs than that adopted by the Commission.

[21] See Comments of MCEA, et al, page 13.

[22] The objective function will be to either minimize revenue requirements or to minimize revenue requirements and environmental externalities, depending upon the specific optimization run being completed.

As the Commission is fully aware, Minnesota long ago adopted CO_2 "adders." Although the nomenclatures differ - be it "environmental costs," "externalities," "CO_2 proxy costs," a "carbon tax," etc., the purpose is fundamentally the same – to increase the cost of supply-side energy sources so as to provide quantitative evidence in the resource selection process when comparing alternative supply-side and demand-side resources.

The statute that gave rise to adoption of the environmental cost, or externality values in Minnesota is Minn. Stat. § 216B.2422, subd. 3(a). That statute provides in part that:

> A utility *shall* use the values established by the commission in conjunction with other external factors, including socioeconomic costs, when evaluating and selecting resource options in *all* proceedings before the commission, including resource plan and certificate of need proceedings.

(Emphasis added).

In what is one of the longest contested administrative hearings on record, the Commission established environmental cost values in 1997 for the following emissions: sulfur dioxide, nitrogen oxides, volatile organic compounds, particulates, and carbon dioxide.[23] Between November 1994 and May 1995, the Office of Administrative Hearings, on behalf of the Commission, conducted some 27 days of evidentiary hearings, with more than 50 witnesses, and more than six days of public hearings. More than 22 parties, including three state agencies (not including the Commission), participated in the hearing by filing direct testimony, rebuttal testimony, and sur-rebuttal testimony. All parties were given the opportunity to provide written briefs and to present oral arguments. The CO_2 values adopted by the Commission were based on, among other things, careful review of the Intergovernmental Panel on Climate Change research and the peer review process, as well as research on CO_2 values by other scientific review panels.[24] While the Commission fully acknowledged the uncertainty inherent in the data, it believed that it should do what was "practicable," as it found the statute required.[25]

For CO_2, the Commission established a range of $0.30 to $3.10 per ton. Following requests for reconsideration, the Commission removed externality values for CO_2 originating outside of Minnesota's borders.[26] Some of the same commenting

---

[23] *Order Establishing Ranges of Environmental Cost Values for Certain Pollutants Associated with Electricity Generation, In re the Quantification of Environmental Costs*, MPUC Docket E-999/CI-93-583, December 16, 1996, 1996 WL 773354.

[24] At the time of adoption, the Commission stated that the "IGCC reports are the most authoritative sources of information on climate change issues." *Order Establishing Ranges of Environmental Cost Values for Certain Pollutants Associated with Electricity Generation, In re the Quantification of Environmental Costs*, 1996 WL 773354, at 29.

[25] *In re the Quantification of Environmental Costs*, 578 N.W.2d 794 (Minn. Ct. App. 1998), at 800.

[26] Due to the practicality of requiring utilities not located in Minnesota to apply the values, the lack of additional analytical benefit in applying the values as CO2 is a global, not local, concern, and for reasons of state comity, the Commission determined that it was unnecessary for plants located outside of Minnesota to apply CO2 externality values. *In re the Quantification of Environmental Costs*, 578 N.W.2d at 797.

environmental organizations providing comments in this docket challenged the Commission's decision on CO_2, which was upheld by the Court of Appeals.[27]

Since adoption of the externalities by the Commission, utilities have been required by the statute to use these "hedge values" – including CO_2 – in their resource plan and related matters, and the costs have been escalated annually according to the change in the gross domestic product deflator or industrial production index. Because the externality values adopted by the Commission have not shown pulverized coal plants to be uncompetitive when compared to other resources, MCEA now claims that the externality values adopted through one of the most rigorously contested cases ever taken on by the Commission are "wholly inadequate" and should be disregarded. We caution the Commission against engaging in such an outcome-oriented exercise.

As they have urged in the resource plan dockets of other utilities, the MCEA proposed solution is for this Commission to adopt the \$8/ton CO_2 adder adopted by the California Public Utilities Commission. Without the least bit of irony, MCEA argues that the California adder values are "by far the most well-supported," having apparently had the benefit of "an elaborate and inclusive process, complete with written testimony, hearings, briefing and argument by multiple parties."

Based on that process – in a state with its own unique circumstances, and in which neither this Commission nor any of the utilities it regulates participated – MCEA is confident that the adder for CO_2 should be more appropriately set at \$8/ton (or higher) versus the range adopted by the Commission. In effect, MCEA urges the Commission to disregard the extensive process and judicial review that form the basis of the existing externality values – which are intended for the very same purposes as is the California CO_2 Adder – in favor of applying values adopted in another jurisdiction in which Minnesota regulatory agencies, Otter Tail, or no other Minnesota utility had a meaningful opportunity to participate.

Otter Tail believes that such an approach is unnecessary in this resource plan. Indeed, it would seem unprecedented. To the extent that this Commission no longer has confidence that the values it adopted in 1997 after a thoroughly exhaustive hearing – and which values have been continually escalated – are no longer robust or reflect the best information, it is incumbent on the Commission to undertake its own proceeding in which these issues are once again reviewed and tested, so as to determine whether and the extent to which changes need to be made. In such a proceeding, the methods, assumptions and evidence that may have been introduced and examined in California, as well as in all other similar proceedings throughout the country, can be appropriately reviewed by all parties and the utilities that serve Minnesota customers, and be fully evaluated by this Commission.

In their comments, MCEA points to the study that Otter Tail[28] commissioned the consulting firm of Burns & McDonnell to prepare that evaluates, on a generic basis, the

[27] *In re the Quantification of Environmental Costs*, 578 N.W.2d 794.

economics of baseload generation alternative technologies, including alternatives that examined various carbon-constrained scenarios.[29]

MCEA has suggested that they are prepared to show - in the certificate of need proceeding for transmission lines – that the 600 MW of wind backed up by 600 MW of natural gas is the least cost alternative. While Otter Tail looks forward to the discussion in that docket, it is important to keep in mind a couple of preliminary matters. First, the Burns & McDonnell report was not intended to be used specifically within the context of the resource plan. The question presented in the Burns & McDonnell report was to evaluate the impacts of a carbon tax on baseload generation technologies. The question that Otter Tail asks in the context of its Resource Plan is not simply what is the least cost resource on a busbar basis, but instead what is the optimal and least cost mix of competing resources to meet Otter Tail ratepayers' needs.

Second, the report confirmed that the lowest cost technology option, even when applying the Commission's externality values for CO_2, was the 600 MW sub-critical pulverized coal technology, followed by 600 MW super-critical pulverized coal, followed by a combination of 600 MW of wind plus 600 MW of natural gas combined cycle gas turbine (necessary as backup when the wind wasn't blowing). The other technologies for baseload energy, including biomass and Integrated Gasification Combined Cycle, were confirmed to be uneconomical when compared to pulverized coal alternatives, by significant margins, again, even with the CO_2 externality value applied. As a result, the "break-even" point for public power entities is \$14/ton of CO_2, significantly higher than the \$8/ton hedge value that the MCEA urges this Commission to adopt.

Last, the Burns & McDonnell report assumes a natural gas forecast of \$7.00/MMBtu for 2011, a conservative estimate. To the extent that gas prices exceed \$7.00 in 2011, the spread in the price of the technologies will become even greater. Given projections and concern over natural gas pricing and supplies in the years ahead, Otter Tail, with a responsibility to provide its ratepayers with reliable and low cost power, takes very seriously any suggestion that the best resource scenario for its future baseload energy needs is one that depends heavily on natural gas. Skepticism is warranted when such a suggestion would place consumers at a risk of substantially higher and much more volatile electricity prices, as well as increasing the risk of fuel supply adequacy during peak times. Such a risk of high natural gas prices would probably fall directly on ratepayers through the fuel adjustment clause in rates. Otter Tail believes it is a better idea to protect the ratepayer from such risks, by among other things, installing timely baseload capacity like BSPII, which was selected as part of a least-cost plan using a fully integrated capacity expansion model.

Otter Tail operates a single system that serves ratepayers in three states. There are efficiencies gained by all ratepayers by planning and operating the system as a single

---

[28] Along with the other applicants seeking certification of high voltage transmission lines in western Minnesota, MPUC Docket No. ET9/CN-05-619.

[29] A copy of the Burns & McDonnell report is attached here as Attachment 1 and incorporated here by reference for illustrative purposes.

system. The North Dakota Century Code Chapter 49-02-23 prohibits the use of environmental externality values or other numerical values assigned to represent environmental costs that have not been internalized or alleged costs of complying with future environmental laws or regulations that have not yet been enacted. The BSPII project satisfies both Minnesota and North Dakota laws. The IRP-Manager model selected the BSPII project when considering the environmental externality values as required in Minnesota as well as without the environmental externality values as required in North Dakota. To segregate the Otter Tail resource plan into individual state border jurisdictions with specific facilities dedicated to each state results in duplicity of resources[30] and additional administrative costs. It would be illogical to use BSPII to serve ratepayers in North and South Dakota, but not be able to use such a resource to serve the Company's Minnesota ratepayers.

Otter Tail takes very seriously its responsibilities to its ratepayers. MCEA is focused solely on the BSPII project, without taking the larger resource planning role into focus. Since 1990, Otter Tail has improved the heat rates at each of its existing baseload facilities including Big Stone Plant (7.8%), Coyote (2.3%), Hoot Lake #2 (2.7%), and Hoot Lake #3 (5.8%). These changes not only reduce fuel usage and emissions, they reduce costs for consumers. At the end of 2005, Otter Tail retired the coal-fired Hoot Lake #1 unit. The Hoot Lake #2 and #3 units currently have accounting lives that end within the planning period. The BSPII project will be the most efficient and lowest emission baseload facility within Otter Tail. Additionally, as previously described, the BSPII project provides the opportunity to incrementally add scrubbing capability to BSPI at a reduced cost, lowering emissions further. Otter Tail has demonstrated its commitment to reducing emissions from existing facilities and will continue to do so in the future.

In summary, the Otter Tail resource plan incorporates the environmental externality values as adopted by the Commission and as Otter Tail is required to use. The Commission has established its environmental values and has updated them as recently as April 2005. If the Commission believes that it is necessary to update its values for CO_2 or any other emission, Otter Tail will follow such a standard. In the meantime, the Otter Tail resource plan satisfies the requirements under Minnesota law while simultaneously meeting the requirements of the other states in which Otter Tail operates.

REPLY COMMENTS TO THE COMMENTS OF THE DEPARTMENT OF COMMERCE

The Department filed comments January 3, 2006. Otter Tail commends the Department staff for their work in this docket. The Department waded through massive amounts of input data and potential issues, culminating in a focused approach to key concerns that they identified.

[30] By operating as a single system, the system in total requires fewer resources because of diversity in the loads of the three state jurisdictions.

Embedded with the Department's general discussion were several items that Otter Tail was requested to address in its reply comments. The Department noted that the Company's 2003 and 2004 energy and peak demand forecasts were identical, which the Department considered highly unusual.[31] The answer is that the data was from the same forecast. Otter Tail did not develop new forecasts in the intervening time period.

The Department requested that Otter Tail address the basis for the significant increase in the Company's forecasts in 2003. The increase took place because of a change in forecast methodology, as the Department had recommended in the Company's previous resource plan filing. Prior to this forecast, Otter Tail had used SHAPES-PC, an end-use forecasting software package. The Department had noted a number of difficulties that Otter Tail was experiencing with the model. One of these was the tendency for the forecast to flatten out or even go negative with time. SHAPES-PC was forward-looking only, and did not look backward at historical data or trends. Based on the Commission's Order with respect to the Company's last resource plan filing,[32] Otter Tail hired a consultant to develop econometric forecast models for the Company.[33] The econometric based forecast eliminated the flattening out of the long-range forecast, which obviously means a higher forecast. So the characteristic the Department is asking about is the result of a forecasting change the Department requested.

The Department raised a couple of issues with the IRP-Manger model.[34] First, the Department suggests that the model is limited because if it finds an alternative that is cost-effective, it cannot delay that alternative until some future time on the basis that it may become more cost-effective. This is a logic that Otter Tail does not follow. If something is cost-effective at the time and the logical resource to implement, it would seem obvious that it should be implemented. It wouldn't appear logical to implement something that is not cost-effective in order to save a cost-effective alternative for later. The benefits of doing the alternative sooner rather than later would still be present at a later time.

The Department also pointed out an issue that Otter Tail has raised with the model. IRP-Manager cannot handle the MAPP 15% requirement exactly as it is administered. Nor can any planning model that Otter Tail has ever tested or investigated. The MAPP reserve requirement has a backward looking feature that is not present in any other region of the U.S., and software suppliers construct their packages to address the typical situation. It is usually not a significant issue with the analysis. It simply requires the user to manually track reserves to ensure all requirements have been met. The utility's off-season is the period that is impacted. For Otter Tail, a winter peaking utility, the reserve requirement of approximately 100 MW is set by the winter peak. Otter Tail is therefore obligated to carry that 100 MW reserve through the summer season, but the model will calculate a reserve requirement of 15% of the summer peak during the summer season.

[31] See Comments of the Minnesota Department of Commerce, page 5.
[32] Docket No. E017/RP-02-1168.
[33] See Application for Resource Plan Approval, page 5-1.
[34] See Comments of the Minnesota Department of Commerce, page 12.

As previously stated, Otter Tail has not seen a model in existence that handles the MAPP methodology completely.

As a result of their review, The Department made a number of recommendations, mostly aimed a removing some uncertainties in areas where they felt the resource plan had not been sufficiently demonstrated. On March 13, 2006 the Department and Otter Tail met to discuss and clarify the issues raised by the Department. A number of the issues were resolved during the conference call. There were some remaining issues which Department staff felt needed further analysis. Otter Tail agreed to complete additional IRP-Manager model runs to address those issues to verify that the resource plan had adequately addressed those concerns. The Department's recommendations and the responses and resulting analysis are shown below.

DEPARTMENT RECOMMENDATIONS FOR OTP'S REPLY COMMENTS

1. *Otter Tail should clarify its position regarding the addition of the resources necessary to enable renewable resources to effectively compete in IRP-Manager's capacity expansion function within all years of the resource plan time horizon.*

Otter Tail had gained information and experience as a result of hundreds of shorter analysis runs that were completed prior to the commencement of the development of the IRP-Manager optimization runs. This information was used to pre-select spot market capacity purchases in the first few years of the planning period. The IRP-Manager model takes 5 – 6 days to complete a single optimized analysis run, and making use of this prior knowledge allows the model to use less time in completing a run. As a result of the discussions, the additional analysis that was completed incorporated allowing the model to select spot market capacity purchases in the near term. Further explanation is included in item #2 below.

2. *Otter Tail should provide an additional IRP-Manager scenario optimized under the assumption of no, low, and high environmental costs that includes the following:*

- *enough DSM to comply with CIP statutory spending requirements;*
- *eliminate the MHEBAGC unit after the date on which the underlying contract lapsed;*
- *make peaking, intermediate, renewable, and bridge purchases available in the 2005-2010 time frame;*
- *eliminate the Potlatch unit if the contract negotiations have not been successful;*
- *eliminate the Enbridge Wind Farm unit;*
- *build in generic replacement units (e.g., wind) to enable OTP to meet the REO, if needed; and*
- *eliminate the market sales unit.*

The resource plan as submitted does meet the CIP statutory spending requirements over the entire planning period. The expenditures average 1.57% of estimated MN retail revenue over the entire planning period. Existing programs that have already been

proven to be cost-effective in the CIP process were embedded within the model, rather than have the model re-analyze those programs. It was not possible for the Department to be able to determine the total DSM expenditures because of this. The estimated expenditures did fluctuate on a year-by-year basis. However, Otter Tail suggested that these could easily be changed by rearranging market program implementation assumptions, and that the CIP process was the more appropriate venue for fine-tuning conservation programs. The Department concurred with this.

The Enbridge Wind Farm had originally been modeled at a generic market price, since at the time of the analysis the contractual pricing arrangements had not yet been finalized. The Enbridge Wind Farm was removed from the model. In its place, 10 – 20 MW wind farm blocks were provided as alternatives for IRP-Manager, at prices around the price range information that Otter Tail has been receiving from developers. Changes were made to also allow the model to select spot market peaking capacity purchases in the 2008-2010 time period. Spot market capacity purchases were pre-modeled for 2006-2007 because it would not be possible to develop generating resources prior to 2008. All combustion turbine models were made available beginning in 2009, which was estimated to be the earliest that commercial operation could begin following resource plan approval from the Commission.

The Potlatch Cogeneration facility was kept in the model. Otter Tail has a long history with this facility, purchasing the output under a series of two-year agreements since 1992. In late 2004, the facility was purchased by another entity in a deal that also included the purchase of the oriented strand board plant on the same site. A one-year purchase agreement was executed for 2005. Since then, another agreement has been reached through April 2007. The new owner is still becoming familiar with the operation and looking for methods to improve the efficiency and operation of the facility. Due to a number of uncertainties on their part, they are not yet ready to sign a long-term contract.[35] Because of the long history with this facility, Otter Tail has maintained it within the resource plan. Otter Tail does plan on counting the output from this facility as part of its REO compliance. If the facility should shut down in the future, Otter Tail has the option to purchase the facility or may have to purchase its biomass component from other facilities, or utilities with surplus biomass. The amount of energy purchased annually by Otter Tail from this facility represents about 0.9% of annual sales so it is not an ominously large component of the Company's REO compliance plan. That is roughly equivalent to the annual output from a 20 MW wind farm.

The Department expressed concern about the impact of wholesale sales to the spot market and the potential impact that such sales might have on the selection of resources. Otter Tail took steps in the development of the resource plan to ensure that the model was not adding resources solely to make wholesale transactions, but evidently not to the satisfaction of the Department. As a member of MISO, Otter Tail is obligated to offer

[35] Due to the rise in fuel prices, the wood waste that was previously a disposal issue and led to the construction of the cogeneration facility has now become a commodity with a market value. The facility owner needs to acquire wood waste beyond what is available on-site and potential costs might negatively impact the facility.

any available energy resources to the MISO market. Otter Tail felt that it was important to model the real operating world to incorporate the impacts into the resource plan. As part of the development of the resource plan, Otter Tail had restricted the model to selecting no more than 120 MW of the BSPII project since Otter Tail only had rights to 116 MW at the time. As more resources are added to the system, it is a natural result that more wholesale spot market transactions will occur. These transactions are likely to be at periods of light system loading, and need to be incorporated into the analysis.

In the resource plan development, IRP-Manager identified selection of 115 MW of the BSPII project as cost-effective. This means that the unit was cheaper than acquiring needed energy elsewhere. IRP-Manager also selected the last available 5 MW of capacity as the lowest cost capacity option. The indications to Otter Tail were that IRP-Manager was selecting BSPII for a variety of factors, not the wholesale market. As part of its analysis, Otter Tail also conducted a sensitivity analysis to determine if the IRP-Manager model would select more of the BSPII project if available.[36] The model did not select more of the project indicating that the wholesale market was not the key driving force behind the selection of BSPII.

Otter Tail did agree to turn off the spot market sales in the additional IRP-Manager runs to demonstrate that BSPII was not being selected in order to make wholesale transactions.

One additional change was made to the IRP-Manager input data set. At the time of its resource plan filing on June 30, 2005 Otter Tail had been contacted by a number of parties investigating projects that had the potential for large load additions to the Otter Tail system. Otter Tail included this additional information in the proprietary version of the resource plan filing provided to the Commission. Potential large new loads do not represent an unusual occurrence, as the Company is frequently contacted about possible projects. Many times, these projects never come about or are served by another entity if they are built. What was unusual in this instance is the number of potential new projects, potentially increasing the odds that Otter Tail might see one or more of these projects come to fruition.

In recent months, Otter Tail has been notified that several of these projects are moving forward and that Otter Tail will see some new load. The projects involve a new ethanol plant, an expansion to an existing ethanol plant, an expansion to an agricultural processing facility, and a pipeline expansion project. These are all relatively high load factor additions. The IRP-Manager base case was updated to include an additional 23 MW of winter season demand, 24 MW of summer season demand, and annual energy requirements of approximately 129,000 MWh.

3. *OTP should select a preferred plan based on resources that were selected using some level of environmental costs, or detail why OTP chose not to.*

Otter Tail believed that it had done so in its resource plan. The IRP-Manager optimization results incorporating both low and high environmental externality values are

[36] See Application for Resource Plan Approval, page 9-7.

identified beginning on page 9-6 of the filing. The key change made by IRP-Manager until 2014 when incorporating the environmental externality values was to select a purchase from MHEB in addition to selecting all 120 MW of the BSPII project. IRP-Manager added surplus capacity beyond what was needed on the logical assumption that acquiring the MHEB purchase would back off existing generation and reduce emissions. This is a false and illogical result when compared to reality.

As previously mentioned, the ability of IRP-Manager to sell surplus energy into the MISO market was restricted in order to prevent IRP-Manager from selecting the BSPII project solely for making wholesale transactions. As a result, the model incorrectly concludes that by purchasing energy from MHEB, existing resources will generate less electricity and emissions will be reduced. Otter Tail explained in prior pages of this filing that an obligation of its membership in MISO is to offer any unused energy resources into the MISO market. Since these are coal-fired resources with low variable operating costs, in most hours it is likely that the units would be fully dispatched to serve loads elsewhere in MISO and the perceived environmental benefits determined by IRP-Manager do not exist.

Some parties may argue that this generation will offset generation elsewhere in MISO, and thus savings will take place somewhere in MISO. But there is no way of knowing what the offset generation will be. It could be natural gas-fired facilities, or even hydroelectric from MHEB. One can logically conclude from the Commission's Order[37] establishing the environmental externality values that it is the intent that environmental benefits as a result of the use of environmental externalities should accrue to the benefit of the residents of Minnesota. The values to be used are at their maximum in the Twin Cities metropolitan area, reduced somewhat for facilities located on the fringe of the Twin Cities metropolitan area, are reduced even further for the rural areas of the state, and are eliminated for facilities located beyond 200 miles from the state's borders. It was clearly not the Commission's intent to have Minnesota residents pay higher electricity bills through the use of environmental externalities to reduce emissions in Illinois, Indiana, Ohio, Pennsylvania, and elsewhere in MISO remote from Minnesota.

While the IRP-Manager model made logical choices within the construct that was defined for the model, real world operation would eliminate the perceived benefits. Otter Tail therefore chose to select the preferred resource plan as developed by IRP-Manager without the incorporation of environmental externality values.

Finally, North Dakota law prohibits Otter Tail from selecting resources using environmental externality values or any other values to represent environmental issues for which legislation has not yet been enacted.[38] The resource plan submitted by Otter Tail complied with the requirements for both Minnesota and North Dakota.

RECOMMENDATIONS FOR OTP'S NEXT IRP

[37] Docket No. E-999/CI-93-583
[38] See North Dakota Century Code 49-02-23.

1. *OTP should consider changing the way it models its DSM as discussed in the body of these comments.*

Otter Tail believes that this is now a non-issue. The Department was concerned that the Company's resource plan did not meet the state mandatory spending requirements. The Department was also concerned that the current resource plan filing had lower levels of DSM than in the Company's last filing.

As previously discussed, the Department was unable to determine the full level of DSM in the resource plan because some DSM was embedded within the model as part of existing cost-effective programs already in place. The model then evaluated additional DSM opportunities. In total, the preferred resource plan as included in the filing meets the spending requirement at an average of 1.57% of Minnesota retail revenue over the entire 2006-2020 planning period. Thus the plan does comply with the minimum spending requirement of the statute.

Historically, Otter Tail has not been able to use IRP-Manager to select sufficient DSM to meet the statutory spending requirements because the Company's capacity and energy needs were relatively small and alternative opportunity costs were low. Over the years, Otter Tail tried a variety of methods to incorporate DSM approximations into IRP-Manager. The Department was not satisfied with any of these methods. In the 2002 filing, the DSM listed in the resource plan was simply the updated DSM potential determined in the latest targeted study. There was no cost-effectiveness evaluation involved, only a proxy amount of DSM to ensure that the model met the minimum spending requirement. It is not valid to compare the current resource plan filing with the Company's prior resource plan filings because the current filing is the Company's first one in which all DSM included in the plan has already been evaluated and implemented through CIP or was selected by IRP-Manager in the development of the resource plan.

2. *OTP should include a review of the current price and price trends of allowances and/or credits for SO_2, NO_x, and CO_2. This discussion should include a comparison with the cost of implementing control technologies under consideration for emission reductions in SO_2, NO_x, and CO_2.*

Otter Tail has already been doing this, so the Company will include such information in its next resource plan filing. The Company can identify current situations that demonstrate the Company is performing such activity. The Coyote Station is already operating its scrubber harder than is necessary to meet emission requirements. This activity is justified, because the additional costs for scrubbing harder are lower than the market prices for SO_2 allowances. As discussed earlier in these comments, the Co-owners of the Big Stone I unit have made a decision to participate in a joint scrubber when the BSPII unit is constructed. The incremental cost of participating in a joint scrubber is justified by the value of SO_2 allowances.

Results of Additional IRP-Manager Runs

The additional IRP-Manager runs were completed with the purpose of addressing the issues raised by the Department to satisfy their concerns. In general, the additional optimization runs verified the results of the original analysis involved with Otter Tail's resource plan filing. While the need for BSPII was again affirmed, the additional results did indicate further analysis is necessary for the Company's next resource plan filing with respect to wind generation.

In general, the following observations were made from the results:

- IRP-Manager picked the exact same DSM measures as in the resource plan filed by Otter Tail, except one DSM program (300DRE – Low Flow Showerhead) was implemented one year earlier, in 2010. This would add net peak demand savings of about 21 kW in the winter and 7 kW in the summer over the 15-year resource plan.
- The original resource plan included a single LM6000 combustion turbine in 2013. That turbine was moved up to 2010 in the supplemental runs due to the new load addition previously mentioned causing a need for more capacity.
- The supplemental runs would add a second LM6000 in 2018 due to the increased load causing a need for more capacity.
- As in the original resource plan, IRP-Manager selected two small IGCC units in 2018. Two smaller units were modeled to give IRP-Manager more flexibility in the selection of resources. In reality, it is more likely that a single larger unit would be constructed if that were still the optimum resource at that time.
- Even without any wholesale transaction sales opportunities, IRP-manager selected 110 MW of BSPII, even with the inclusion of up to 200 MW of new wind generation. In the original resource plan filing, 120 MW was selected. Otter Tail currently has rights to 116 MW of the proposed project. As with IRP-Manager moving up the 2013 LM6000 to 2013, Otter Tail believes that there is an opportunity for a better optimized plan run that would purchase spot market capacity in 2011, move up the LM6000 to 2012 or 2011 and incorporate all of the BSPII project available to Otter Tail. Time limitations do not allow the opportunity to verify this. The current 116 MW of Otter Tail share of the BSPII project is well within the accuracy range of the model results ranging between 110 MW and 120 MW.
- IRP-Manager did select spot market capacity purchases in the near term to meet capacity requirements. In the original resource planning analysis Otter Tail had pre-selected these purchases based on past experience.
- IRP-Manager did not select additional combinations of wind and combustion turbines for backup as the Department suggested might happen.
- IRP-Manager did select up to 200 MW of wind if the model is allowed unrestricted access to the MISO market to backup the wind, and the MISO prices are at an economic level. Time does not allow the necessary analysis to determine what the economic price level is at this time. The addition of the new retail load into the model alleviated some of the minimum load problems that

wind generation was causing in the original optimization runs.[39] It would be logical to expect the model to select more wind than the 110.5 MW included in the original resource plan filing. But even at this level of wind, IRP-Manager still selected the BSPII project as part of a least-cost plan.

The biggest uncertainty is in the model selection of wind generation. The resource plan as filed included adding 110.5 MW of wind resources. This latest IRP-manager run selected up to 200 MW of wind generation. The modeling of the spot market capacity purchases, with associated spot market energy, provided much more energy availability to the model from the MISO market. This resulted in IRP-Manager selecting more wind, and using unrestricted spot market energy to fill in when the energy from the wind generation was at reduced amounts. This may or may not be an unrealistic scenario.

Using the MISO market to backup wind generation avoids any startup and operating costs of combustion turbines. However, the results are highly sensitive to the MISO market price and the availability of MISO spot market energy delivery to the Otter Tail system and load. Finally, there is the mechanism for handling wind generation in the daily MISO market. Since April 1, 2005 MISO has been operating the Day-2 spot market for energy. All Otter Tail Designated Network Resources are bid into the market and the Otter Tail load is bid into the day-ahead market for the next day. Wind generation is not included in this process since the output is unknown. Variances between scheduled energy and actual energy result in additional charges. To avoid these charges, wind generation goes into the real-time market and receives the real-time LMP price. This price may be above or below the price for serving Otter Tail load that was received from the day-ahead market process. The price spread between day-ahead and real-time markets does swing from negative to positive and thus may have a positive or negative impact on the economics of wind generation. The market has been in place for barely one year, and the first 4-5 months provide questionable data as the MISO participants were on a steep learning curve in the marketplace. This is another item that Otter Tail needs to investigate as more data is gathered, and include in a resource plan.

Therefore, Otter Tail suggests that the amount of wind generation in the resource plan is at least 110.5 MW as originally filed and may be higher, even with the BSPII project. Otter Tail proposes in its next resource plan to conduct the following analysis:

- Discuss with MISO staff and transmission planning personnel practical limits on the amount of MISO energy that realistically could be imported from outside the Otter Tail system to backup wind generation;
- Obtain updated price forecasts for the MISO market into the future;
- Determine the price spread between the day-ahead and real-time markets and the potential impact on wind generation; and
- If the day-ahead and real-time market price spread negatively impacts wind generation, research methods for mitigating the impact in the bidding process.

[39] See Application for Resource Plan Approval, page 9-8.

In summary, the additional IRP-Manager runs demonstrated that the Otter Tail resource plan was robust and completed in a manner that accurately addresses the potential issues and concerns raised by the Department.

REQUEST FOR WAIVER OF TIMING REQUIREMENTS FOR FILING THE COMPANY'S NEXT RESOURCE PLAN

Otter Tail is requesting an extension of the filing date for the Company's next resource plan from July 1, 2007 to July 1, 2008. The Company believes such an extension would be in the public interest, avoid unnecessary usage of all parties' resources, and provide sufficient time for Otter Tail to incorporate new analysis and planning tools.

The provisions of Minn. Rules Part 7829.322 establish three requirements that the Commission must consider in order to grant a variance to its rules. In this case, the rule that Otter Tail is seeking to vary is Part 7843.0300. This request meets the three part standard set forth in Rule 7829.3200.

1. *Enforcement of the rule would impose an excessive burden upon the applicant or others affected by the rule.*

All parties expend considerable resources to prepare, review and adjudicate a resource plan. The resource planning process takes well over a year to complete, and that time period continues to elongate, as there are increasing amounts of issues and requirements that must be addressed. By the time the Commission has had time to address the current filing and issue an Order, it is likely that there will be less than a year available before the next filing is due. Otter Tail is in the process of evaluating resource planning models with the intention of migrating to a new software platform for the next resource plan filing. This is a process that was started in late 2005, and has been narrowed down to two software packages for consideration. It does take time to bring new software in-house and to get new databases established.

The current resource plan filing includes the Company's planned participation in the BSPII project. A Certificate of Need has already been filed in Minnesota for the associated transmission facilities to be constructed within the state. A filing for a siting permit has been made in South Dakota for the BSPII project. Many of the participants in this docket are also involved in those two dockets, and that involvement will extend beyond the timing of this resource plan. It would clearly place a burden on the resources of all parties to be involved in these multiple dockets simultaneously.

2. *Granting of the variance would not adversely affect the public interest.*

There appears to be little public benefit accruing to customers or other stakeholders as a result of preparing and filing a 2007 resource plan versus a 2008 resource plan. The most

significant issues in the long-range plan are being addressed in the instant filing, and hopefully will not need to be present in the next filing. In addition, the changed circumstance filing requirement of Minn. Rules Part 7843.0500 subp. 5 will also serve to protect the public interest should any intervening circumstance significantly influence Otter Tail's proposed plan for meeting future customer electricity needs.

3. Granting an extension will not conflict with standards imposed by law.

There are no other provisions of Minn. Rules Chapter 7843 or any provision of Chapter 216B that would make a one-year extension improper of would lead to a conflict of any legal standards. The Commission has recognized the benefit of granting such an extension to Otter Tail three times in the past.

Otter Tail respectfully requests that the Commission grant a waiver allowing Otter Tail to file its next resource plan on July 1, 2008.

CONCLUSION

Otter Tail respectfully requests the Commission approve the Company's 2006 – 2020 integrated resource plan as filed. This request is made with the following considerations:

- Otter Tail developed the resource plan using a capacity expansion planning package that fully integrates consideration of supply-side and demand-side alternatives in accordance with the Commission's Order in Docket No. E017/RP-02-1168.
- The resource plan meets and exceeds the minimum spending requirements for conservation improvement contained in Minn. Stat. §216B.241.
- The resource plan includes a plan for complying with the Renewable Energy Objective, across the Company's entire three-state service territory, contained in MN Stat. §216B.1691.
- The resource plan includes consideration of the environmental externality values established by the Commission under MN Stat. §216B.2422 and Docket No. E999/CI-93-583, and periodically updated.
- The resource plan complies with the North Dakota Century Code 49-02-23, prohibiting the selection of resources using environmental externality values or values used to represent potential legislation that has not yet been enacted.
- The resource plan includes the addition of emission controls on the Big Stone I unit, which will reduce SO_2 and NO_x emissions, and includes the best demonstrated technology for mercury removal from units firing subbituminous coal.[40]
- The resource plan reduces the dependence upon spot market and wholesale market energy to meet customer needs.

[40] EPA Memorandum from Jim Eddinger, dated March 15, 2005, citing that for subbituminous units that are not under water restrictions, best demonstrated technology is a fabric filter in combination with a wet flue gas desulfurization system.

- The resource plan includes the intent to install at least 110.5 MW of new wind generation.

Otter Tail personnel are available to answer any questions by Commission Staff.

Respectfully submitted,

Bryan D. Morlock, P.E.
Manager, Resource Planning

EXHIBITS

1. Copy of Otter Tail RFP for renewable resources.
2. Copy of MPCA letter to Otter Tail concerning Hoot Lake #3 and BART.
3. Copy of Otter Tail letter to Excelsior Energy requesting a capacity and energy proposal from the Mesaba Project.