

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF THE APPLICATION
OF BLACK HILLS POWER, INC. FOR
AUTHORITY TO INCREASE ITS ELECTRIC
RATES**

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DOCKET NO. EL09-018

**DIRECT TESTIMONY OF CHRISTOPHER A. JAMES
ON BEHALF OF
THE RESIDENTIAL CONSUMERS COALITION
(Lilias Jarding, Bobbie Handley, Carla Kock, and
the South Dakota Peace and Justice Center)**

April 29, 2010

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- Exhibit CAJ-3 Cost of Energy Efficiency Compared to Costs of New Power Plants and Electricity Rates
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I. INTRODUCTION

Q. What are your name, position and business address?

A. My name is Christopher A. James. I am a Senior Associate at Synapse Energy Economics, Inc., 22 Pearl Street, Cambridge, MA 02139.

Q. Please describe Synapse Energy Economics.

A. Synapse Energy Economics (“Synapse”) is a research and consulting firm specializing in energy and environmental issues, including electric generation, transmission and distribution system reliability, market power, electricity market prices, stranded costs, efficiency, renewable energy, environmental quality, and nuclear power.

Synapse’s clients include state consumer advocates, public utilities commission staff, attorneys general, environmental organizations, federal government and utilities. A complete description of Synapse is available at our website, www.synapse-energy.com.

Q. Please summarize your educational background and recent work experience.

A. I graduated from the Worcester Polytechnic Institute in 1978 with a Bachelor of Science Degree in Mechanical Engineering. My undergraduate research focused on design and construction of a low-cost hyperbolic solar collector. In 1988, I received a Master of Arts Degree in Environmental Studies from Brown University. My graduate research focused on criteria and toxic emissions from medical waste incineration. I have also completed numerous EPA courses in air pollution science, combustion, continuous emissions monitors and boiler operation, and an environmental law course at the University of Hartford.

From 1984 to 2007, I worked for, in chronological order, the Rhode Island Department of Environmental Management; the U.S. Environmental Protection Agency (“EPA”), Seattle, Washington; and the Connecticut Department of Environmental Protection (“DEP”). I was Manager of Climate Change and Energy Program for the Connecticut DEP, and also served as Director of Air Planning. From 1999 to 2007, I served as the DEP representative to the Connecticut Energy Conservation Management Board, a statutorily created body responsible for the oversight, planning and administration of the state’s energy efficiency,

conservation and load management programs, currently funded at approximately \$87 million annually.

As Director of Air Planning for the Connecticut DEP, I was responsible for developing and implementing the state's air quality plans, referred to as state implementation plans or SIPs. Under my direction, air quality plans, policies and regulations were developed and implemented to ensure that Connecticut made progress to meet and attain National Ambient Air Quality Standards. The entire state of Connecticut is designated non-attainment for ozone and the southern part of the state is designated non-attainment for fine particulate ("PM_{2.5}"). Since Connecticut's non-attainment is partially caused by emissions from upwind sources, particularly electric generating plants, I worked frequently with regional planning organizations, such as the NESCAUM (Northeast States for Coordinated Air Use Management) and the Ozone Transport Commission, to agree upon and develop emissions control strategies that could be applied consistently across the states to ensure that emissions reductions were equitable, and to minimize the potential for one area to benefit economically from less stringent requirements.

I also served as co-chair of the National Association of Clean Air Agencies' global warming committee, co-chair of the New England Governors/Eastern Canadian Premiers' global warming committee, co-chair of the Regulatory Assistance Project's distributed resources collaborative, and co-chaired the NESCAUM collaborative to develop a model rule for environmental performance standards. I was the Connecticut staff lead for development of the Regional Greenhouse Gas Initiative; DEP staff lead on the Governor's Climate Change Coordinating Committee and the Connecticut DEP representative to the New England Demand Response Initiative. I was selected as one of two air regulators on the EPA/DOE Leadership Group to develop and implement the National Action Plan for Energy Efficiency.

I joined Synapse in August 2007. My recent clients have included Plains Justice, the Sierra Club, California Energy Commission, Maine Public Utilities Commission, the New Jersey Ratepayer Advocate, AARP, the National

Association of Clean Air Agencies, Environmental Defense, EPA and the Regulatory Assistance Project (in which I am working with Chinese air quality officials to reduce the environmental impacts from coal-fired power plants).

I have testified before state regulatory commissions in Connecticut, New Jersey, Iowa, and Wisconsin. I have submitted testimony to state regulatory commissions in Virginia and West Virginia. I have testified before legislative committees in Connecticut and New Hampshire. I have also participated in and presented testimony before state and Federal courts in cases involving violations of the Clean Air Act. These include asphalt plants, wood products facilities, aerospace production facilities and power plants. I was the EPA Region 10 technical lead for the first nationally coordinated enforcement actions of the Clean Air Act in 1991-92 against Louisiana-Pacific; in multimedia enforcement actions against two pulp mills in Alaska; and in several actions against power plants. Each of the power plant cases were settled prior to the remedy phase of the respective trials.

A copy of my current resume is attached as Exhibit CAJ-1.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of Lilius Jarding, Bobbie Handley, Carla Kock, and the South Dakota Peace and Justice Center (collectively, the Residential Consumers Coalition).

Q. Have you testified previously before this Commission?

A. No.

Q. What is the purpose of your testimony?

A. Synapse was retained by the Residential Consumers Coalition to assist in its evaluation of the Application of Black Hills Power for Authority to Increase Its Electric Rates, Docket No. EL09-018, which was filed with the South Dakota Public Utilities Commission on September 30, 2009.

This testimony presents the results of my analysis.

Q. Please summarize your conclusions.

A. My conclusions are as follows:

1. Black Hills Power (BHP) can provide reliable and affordable electricity to its customers without the generating output from Wygen 3;
2. The addition of Wygen 3 exposes BHP customers to unnecessary risks;
3. Modeling and analyses conducted by BHP through its 2007 Integrated Resource Plan omitted cost-effective energy efficiency measures and understated allowance costs for air pollutants and greenhouse gases. These omissions biased the results, and led to BHP's decision to build Wygen 3 and the current request to include Wygen 3 in its rate base;
4. BHP can reduce electricity bills by implementing energy efficiency and demand side measures. These measures reduce risk and volatility, and improve reliability (Exhibit CAJ-2 provides a description of the savings possible if South Dakota meets certain energy efficiency goals);
5. BHP can meet current and future customer demand more cost-effectively through energy efficiency, demand side measures and demand response.

As a result, I recommend that the South Dakota Public Utilities Commission (PUC) either deny BHP's request to recover the portion of costs associated with the addition of Wygen 3 that applies to BHP's customers, or to permit BHP to withdraw its request. I also recommend the following actions to improve BHP's integrated resource planning process and protect BHP customers from the costs and risks of unnecessary new generation:

1. BHP should be required to update and revise its 2007 Integrated Resource Plan (IRP) within the earlier of 90 days following completion of the hearings for docket EL09-018 or by September 30, 2010.

As part of the process of updating and revising the IRP, BHP should be required to incorporate resource scenarios based on the following, non-exhaustive list:

- a. BHP's pending energy efficiency potential study;
- b. The December 1, 2009 Energy Master Plan for South Dakota;
- c. South Dakota's renewable energy policy, including the state's renewable energy standard;
- d. The Midwestern Governors Association (MGA) 2009 Energy Security and Climate Stewardship Roadmap, including the Roadmap's goals for energy efficiency and renewable energy;
- e. The impacts of federal and/or regional greenhouse gas reduction plans;
and
- f. A reasonable range of prices for air emissions, including carbon dioxide, nitrogen oxides, sulfur oxides, and mercury, based on studies completed by the EPA, the DOE, MIT, and Synapse.

Input assumptions for BHP's updated and revised IRP should be developed with input from and reviewed by the PUC and relevant stakeholders, including the parties to this docket.

2. Commencing in 2010, BHP should be required to initiate a comprehensive energy efficiency program that includes measures across all customer classes in its South Dakota service territory. BHP should utilize its pending energy efficiency potential study, the December 1, 2009 Energy Master Plan for South Dakota, and other appropriate resources to prioritize the energy efficiency measures that should be implemented first. The societal, participant, and utility cost-benefit tests should be used to evaluate energy efficiency measures for cost effectiveness.
3. BHP should be required to develop a framework to cost-effectively achieve the commitment made by South Dakota Governor Rounds to the MGA goal of meeting 2 percent of South Dakota's annual energy sales through energy efficiency by 2015. In developing this framework, BHP should work cooperatively with South Dakota's other utilities, including rural electric

cooperatives and municipal utilities, to:

- g. Develop coordinated energy efficiency programs across all customer classes;
 - h. Efficiently and effectively administer such programs;
 - i. Share advertising to promote such programs across service territory boundaries;
 - j. Develop and apply consistent protocols to measure, evaluate, and verify energy savings; and
 - k. Ensure consistent reporting of energy savings to the PUC and other relevant stakeholders.
4. BHP should be required to develop a framework to cost-effectively achieve the commitment made by South Dakota Governor Rounds to the MGA goal of providing 10 percent of South Dakota's energy from renewable sources by 2015, increasing incrementally each year, to 30 percent by 2030.
5. The Commission can also help to avoid future BHP rate increase requests by limiting BHP's requests for cost recovery to the assumptions for emissions allowance prices and equipment that BHP includes in its IRP.

Q. Please explain how you conducted your investigations in this proceeding.

A. I have reviewed the application, testimony and exhibits filed by BHP in this proceeding. I have reviewed the information and documents, including confidential documents, provided by the Applicant in response to data requests submitted by Residential Consumers Coalition, the Black Hills Industrial Intervenors, and staff from the PUC. I also have reviewed public information related to the issues addressed in the Applicant's application, testimony and exhibits and in our testimony and exhibits.

II. BLACK HILLS POWER CAN PROVIDE RELIABLE AND AFFORDABLE ELECTRICITY TO ITS CUSTOMERS WITHOUT THE

GENERATING OUTPUT FROM WYGEN 3.

Q. Please describe the Wygen 3 generating unit and its application to BHP customers.

A. Wygen 3 is a new 100 megawatt (MW) coal-fired electric generating unit located near Gillette, Wyoming. Forty-eight (48) percent of the generating output from Wygen 3 will be provided to entities other than BHP customers. The direct testimony of Stuart Wevik (page 9, line 17 to page 10, line 2) describes BHP's assumption that 25% of Wygen 3's generating output will be sold to Montana-Dakota Utilities and 23 MW of Wygen 3's output will be provided to the city of Gillette, Wyoming.

BHP's submission to this Commission indicates that the remaining 52% of Wygen 3's generating output to be provided to customers in BHP service territory. Fifty-two (52) percent of Wygen 3's generating output represents the equivalent annual capacity of a 52 MW power plant.

Q. What analysis has BHP conducted to demonstrate the need to add the Wygen 3 generating unit to its rate base?

A. BHP completed an IRP in September 2007 (Exhibit JST-2). This plan includes an evaluation of future electricity demand through 2027 and discusses the resources BHP believes will be necessary to meet that demand. Based on the 2007 IRP, BHP forecasts a deficit in capacity resources. This deficit grows over the period analyzed by the IRP and led BHP to conclude that the addition of Wygen 3 is necessary. The IRP analysis forms the basis for BHP's decision to construct Wygen 3 and the current request to the PUC for an electric rate increase.

Q. Do you believe BHP has adequately evaluated current and future resources in its IRP?

A. No.

Q. Please explain.

A. An IRP should evaluate all resources, both supply and demand side, that may

influence electricity demand over the period covered. This evaluation should include known policies and requirements, and also develop assumptions for analysis of policies that are not certain today, but that have a reasonable probability of occurring and influencing electricity demand in the future. IRPs typically include a variety of sensitivity runs as a means to bound results. Today, policies that are evaluated by IRPs completed by utilities elsewhere in the U.S. include assumptions about retiring existing coal-fired generation, the penetration of plug-in hybrid electric vehicles, energy efficiency resources that account for a significant share of energy and capacity, and renewable energy that contributes 25 or 30 percent of total supply side resources. These “what if” assumptions help utility planners to assess the impacts of measures that today are believed to have a less than certain probability of occurring, but if realized would significantly affect a utility’s business as well as the operation of the regional electricity grid. Prudence guides utilities to adopt a precautionary principle to their long-term planning. IRPs forecast demand and illustrate resources that will be needed to satisfy that demand over a 10 to 20 year period.

To reflect on how significantly policies can change and have substantial effects, twenty years ago none of the states in the U.S. had restructured their electricity markets. Ten years ago, energy efficiency programs were restarting again after having been curtailed. Today, half of the states in the U.S. have restructured their markets, and utilities in traditional cost-recovery states often sell their output into restructured markets. Many states also require all cost-effective energy efficiency resources to be procured first. Utilities are recognizing the value of energy efficiency as a resource, and energy efficiency is treated equally to other resources for capacity purposes in New England and PJM. Utilities have cancelled plans to build new coal-fired generation and have announced plans to close existing coal plants (e.g. PacifiCorp). These are just a few examples of how electricity markets have been transformed in the last decade or so. There are ample reasons to believe that more changes will occur over the next ten years, as “smart grid” is further refined and defined and as the value of distributed resources, from both demand

and supply side, are recognized and deployed.

Q. What assumptions should BHP have included in its IRP that could have better accounted for these future policies and programs that will influence BHP's demand and the associated economics?

A. My analysis concludes that BHP's 2007 IRP did not appropriately consider all resources equally. Such an evaluation would have likely concluded that BHP could meet future customer electricity demand reliably and more cost-effectively through energy efficiency. During the time that BHP's 2007 IRP was being completed, the Western Governors Association had already completed a report on energy efficiency, and states neighboring South Dakota were implementing and increasing the effectiveness of their energy efficiency programs. It is highly likely that BHP was aware of these other efforts, since its affiliate companies, operating through Black Hills Energy, have business operations in these states. At least three additional scenarios should have been included in BHP's 2007 IRP, and should be included in any future IRP. These would be to evaluate:

1. The potential for energy efficiency program savings. At least two different scenarios should have been analyzed. The first would have been to evaluate the effects of an energy efficiency program that achieves energy savings equal to 1% of annual sales by 2015 and continuing thereafter. The second scenario would be consistent with the MGA goal to achieve energy savings equal to 2% of annual sales by 2015, and continuing thereafter;
2. The potential for renewable energy generation, for example, the MGA goal (consistent with South Dakota policy) to achieve 10% renewable resource generation by 2015, and incrementally rising to 30% by 2030, and
3. The potential for combined heat and power (CHP) resources.

Energy efficiency measures represent cost-effective means to reliably meet current and future electricity demand. The benefits of energy efficiency are both cumulative and persistent, meaning that the energy savings from measures installed today last over the entire life of the measure, and the benefits from

measures installed in subsequent years are added to those benefits that occur in the first year. Energy efficiency measures also provide an effective hedge against fluctuations in fuel prices and defer or avoid the need to build new transmission.

Renewable energy and CHP measures are forward looking investments that BHP should have evaluated to determine their potential to reduce risk, avoid the need to construct additional generating plants, assess the potential to fill in any gaps that may occur from retirement of other BHP generating units.

Q. Has BHP provided answers regarding why the additional scenarios 1-3 above were not included in its IRP?

A. Several data requests were issued to BHP regarding these three topics. These responses are included as Exhibit CAJ-7 and specifically referenced in the following section of my testimony.

Q. Please describe BHP's answers to the data requests.

A. I will address each scenario in the order shown above. When I discuss demand side measures (DSM), I mean both energy efficiency measures, which provide improved energy performance and reduced energy consumption over all hours, and conservation measures, which are implemented during peak hours to curtail demand.

Regarding issue 1, energy efficiency, BHP's response to Residential Consumers Coalition Data Request 38 reflects that no evaluation of the MGA goals was conducted since this commitment occurred a few months after the IRP was completed. While this is accurate as of the time the 2007 IRP was completed, the IRP also failed to evaluate a more conservative energy efficiency program whose savings would have accrued at one-half the rate of those included in the MGA goal.

BHP's response to Residential Consumers Coalition Data Request 26 indicated that no demand side resources were included in the IRP and that adjustments to load were made outside of the model BHP used to evaluate resource plans. It is

uncertain if or how this calculation was performed. BHP's response to Residential Consumers Coalition Data Request 15 answered that BHP does not maintain any data on DSM savings for the years 2000-2009 and BHP's response to Residential Consumers Coalition Data Request 9 answered that no DSM data were included for future years 2010-2027, the period of time covered by the IRP. BHP's Response to the Black Hills Industrial Intervenors Data Request 107 provides a summary of BHP's DSM programs and costs for 2006, 2007, 2008 and 2009 to date. BHP's heat pump measure produced energy savings of 88,441 kWh in 2009. BHP's water heating measure produced energy savings of 24,840 kWh in 2009. BHP's demand controller measure produced peak benefits of 50 kW in 2009. According to BHP's response to Residential Consumers Coalition Data Request 14, Attachment 14.1, BHP's sales during 2009 ranged from 132,000 MWh to almost 155,000 MWh each month, from January to November (December data were not available at the time the request was made). Based on BHP sales for the period from December 2008 through November 2009, the energy saved by BHP's energy efficiency measures is less than 0.01%.

However, based on responses provided by BHP to other data requests, from the Residential Consumers Coalition and from the Black Hills Industrial Intervenors, it is unclear what energy efficiency information BHP uses in its planning processes. BHP indicates in its response to Data Request 9 that BHP used historical data for DSM to adjust the load for modeling purposes in the IRP, but if such data do not exist, as BHP admits in its response to Data Request 15, then it is not clear as to what data were used by BHP to assess DSM. It appears to be unlikely that any adjustment for energy efficiency was made in the IRP. As described in the above paragraph, little energy savings have occurred to date from BHP's DSM measures. BHP's DSM program emphasizes marketing and advertising, which produce little if any measurable energy savings unless there are associated energy efficiency delivery mechanisms. Even if energy savings have occurred, there is no evidence of a BHP evaluation, monitoring and verification program that would help to determine the level of savings and certify the

reductions achieved.

Q. BHP claims that it operates DSM programs in its service territory. Have you analyzed this claim as part of your evaluation?

A. Yes. BHP's response to Residential Consumers Coalition Data Request 9 includes several attachments that provide additional detail regarding the scope and measures included in BHP's DSM programs. Also, Page 21 of the 2007 IRP indicates that 2.5 MW of savings from a curtailable load program are included in BHP's resource evaluation. Only two of these measures: that for electric heat pumps (Attachment 9.4) and that for electric water heating (Attachment 9.8) reflect energy savings. The goals of the heat pump and water heating programs are modest. The modest goals were not met for the electric heat pump program, whose objective was to reach 71 customers in 2004-05, 83 in 2006 and 100 in 2007.

BHP's other measures emphasize marketing and advertising, or describe measures that have direct benefits to the utility, but less so to customers. Direct load control measures can reduce the price paid by a utility during peak periods of electricity demand. However, if a utility receives an economic benefit from these measures, these should also be passed along to customers. Examples of such measures include the demand controller per Attachment 9.1 and the surge guard per Attachment 9.7. Regarding the curtailable load program, this is not energy efficiency but demand response. Participants in this program are customers who own on-site diesel generators, and then operate them in response to a request from BHP. Because this program involves operation of diesel generators, there are increased air pollutant and greenhouse gas emissions, with no net reduction in electricity demand.

Q. Please discuss issue number two: BHP's treatment of renewable resources in its IRP.

A. BHP's response to Residential Consumers Coalition Data Request 25 indicated that the 2007 IRP does not include an evaluation of South Dakota's renewable and

recycled energy goal to achieve a resource level of 10% by 2015.

Although not specifically indicated in the data request response, BHP appears to take the position that it has appropriately considered renewable resources in the 2007 IRP. At page VI (Exhibit JST-2), the IRP states that a “full range of renewable energy resources were examined.” Figure ES-1 on page IX shows the addition of less than five MW of wind resources in each of the years 2012, 2013, 2022 and 2027.

However, later sections of the IRP describe a renewable energy premium program being operated by BHP’s affiliate CLF&P. This program features a 20-year premium for the output from the 30 MW Happy Jack wind installation (JST-2, at page 4). The IRP states that BHP is well positioned in the event any of the three states in which it does business enacts a renewable portfolio standard (RPS). This BHP statement is revealing. It indicates that BHP views wind (and presumably all renewables) as alternatives, to be treated and analyzed differently from new coal-fired power plants. BHP is essentially admitting that it is not going to initiate development of renewable energy resources unless a state enacts an RPS.

Q. Please discuss issue number three: BHP’s treatment of combined heat and power (CHP) resources in its IRP.

A. Combined heat and power, also called co-generation, refers to the combined generation of electricity and thermal energy in a single system. BHP’s response to Residential Consumers Coalition Data Request 39 stated that the 2007 IRP did not include an evaluation of CHP resources. BHP indicated that it does not believe South Dakota has much potential for CHP due to the absence of industrial facilities in its service territory. BHP’s statement regarding CHP is unusual. CHP installations are not limited to the industrial sector. CHP installations also exist at universities and commercial applications, anywhere there is the potential to link process heating and/or cooling with the exhaust heat from a combustion source. BHP appears to have dismissed CHP without any basis for doing so.

Q. BHP President Thomas Ohlmacher indicates in his direct testimony on page

18 that there is no new information available that would have indicated to BHP that the choice should have been other than to build Wygen 3. Do you believe this statement to be accurate?

A. No.

Q. Please explain why you have these concerns.

A. This statement ignores several significant factors which influence demand. These factors should be included in any credible integrated resource plan.

1. BHP's IRP should have included the energy and capacity resources that would be realized from even a modest DSM program that achieves energy savings equal to 1% of annual electricity sales; a level that is considered to be a good program goal per ACEEE. Inclusion of this factor alone would have shown that Wygen 3 was unnecessary.
2. Since the IRP was completed, and prior to the development of witness Ohlmacher's testimony, Governor Rounds participated in the MGA commitment to achieve 2% of annual electricity sales through energy efficiency measures by 2015, and continuing thereafter. Prior to selecting the 2% goal, the MGA conducted several studies and reviewed the results of several others. The Energy Center of Wisconsin (ECW) and ACEEE conducted a follow-up study in March 2009 to provide a road map to states on how to achieve the MGA goal. The ECW/ACEEE study found that the MGA goal was achievable and that many studies of the potential for energy efficiency included a degree of conservatism. This finding would tend to understate the amount of savings that could be achieved from an energy efficiency program. Achieving the level of savings included in the MGA commitment would defer the need for Wygen 3 and other new generation for years if not decades.
3. BHP's 2007 IRP uses a CO₂ allowance price of \$2.30 per ton (Exhibit JST-2 at page vii). This low price masks and severely understates the risk to the operating costs of Wygen 3 and other coal units from future legislation to regulate greenhouse gas emissions (as explained in more detail in the testimony of David

Schlissel). A low carbon allowance price also underestimates the economic potential for energy efficiency and renewable energy resources. Increasing the projected cost of operating Wygen 3 and other fossil units to more realistic levels improves the comparative cost-effectiveness of demand side measures and renewable energy generation, meaning that even more significant improvements to South Dakota's energy consumption could occur, and that these improvements would still be less expensive than constructing new fossil-fuel power plants.

4. From a planning perspective, utilities should evaluate factors that may influence the operation of their resources and assess the risk of these events to occur in the future. BHP's 2007 IRP, with a 20-year planning horizon, should have analyzed the influences of domestic and international fuel markets and the chances that the estimates of available economically recoverable coal reserves may need to be restated. It would be both understandable and possible for the owner of the mine that provides coal to Wygen 3 to decide that they could enhance their revenue by accessing other domestic and/or international markets.
5. A comparison of costs between new power plants and energy efficiency reflects the benefits of energy efficiency. Exhibit CAJ-3 shows that energy efficiency costs are less than one-half the costs of new power plants, and much less than current South Dakota electricity rates. Information regarding the benefits of energy efficiency as compared to the costs of new power plants has been published and is publicly available.
6. BHP admits in its response to Residential Consumers Coalition Data Request 39 that BHP has not conducted any studies on the potential for CHP resources and that it doesn't believe such potential exists due to the nature of BHP customers. By combining electricity generation and useful thermal energy in a single system, overall thermal efficiencies of 85% can be achieved, compared to thermal efficiencies of less than 40% for conventional coal-fired power plants. Industrial and larger commercial customers benefit from having on-site generation that is appropriately sized for their demand, and the useful thermal energy extracted can help to meet process needs and provide heating and cooling for the building and

its occupants. Without actual data and information, it is difficult to understand BHP's conclusion. BHP customers include many commercial and industrial sources, as well as state agency and university buildings that are good potential candidates to benefit from CHP installations.

Q. Why is it significant if BHP has not adequately accounted for energy efficiency and demand side management in its resource planning?

A. In every state that I am aware of, energy efficiency is the most cost-effective resource. Many states recognize this through statutes, regulations and policies that require utilities to procure all cost-effective energy efficiency resources first, before a public service commission will review any proposed generator additions. These states recognize that energy efficiency costs less than building new power plants, reduces the need to run more expensive peaking power plants, defers or avoids the need for new transmission, and that its technical and economic potential can more than offset new electricity demand. These are among the prudence and ratepayer benefits that can occur by first attempting to ensure that energy efficiency measures are adequately developed before any new and expensive power plant addition is considered.

Even if the MGA commitment to 2% annual energy savings was not analyzed by the 2007 IRP, had BHP evaluated the effects of energy efficiency programs that achieve more modest energy savings equal to 1% of energy sales each year (a level that is considered reasonable today), I believe the results would have shown that Wygen 3 was not necessary, and that this level of energy efficiency would have revealed a lower cost and more reliable energy solution that would have provided better value to BHP's customers.

III. THE ADDITION OF WYGEN 3 EXPOSES BLACK HILLS POWER CUSTOMERS TO UNNECESSARY RISKS

Q. What current or future regulatory initiatives should be evaluated by BHP to determine their potential influence and effect on the operation of Wygen 3?

A. The Wygen 3 plant and BHP's operations are likely to be affected by several

current and planned future federal environmental regulations and by the energy policies and requirements adopted at the state level. These regulations and initiatives will affect BHP even though the point of regulation may be in another state, even a state not contiguous with South Dakota.

Q. Please describe these current and planned future regulations.

A. I will describe the environmental initiatives first. The EPA has several regulatory initiatives to remedy the results of flawed regulations promulgated by the previous EPA that were either vacated by various court actions and/or ignored recommendations made by consensus scientific panels. These include:

1. A replacement for the Clean Air Interstate Rule (CAIR) is expected to be proposed by EPA during the spring of 2010. The replacement rule will require additional reductions in emissions of oxides of nitrogen (NO_x) and sulfur dioxide (SO₂). The replacement rule is intended to address the U.S. District Court of Appeals decisions that first vacated CAIR and then remanded CAIR back to EPA in December 2008. Phase 1 of CAIR was allowed to go into effect while EPA committed to addressing the deficiencies noted by the Court. One of the key reasons for the Court's decision was EPA's failure to eliminate significant contributions of air pollution that one state causes or contributes to another.
2. New requirements to reduce mercury emissions from coal-fired power plants. The previously promulgated Clean Air Mercury Rule was ruled invalid because EPA had not followed appropriate scientific procedures as required by the Clean Air Act.
3. EPA plans to announce new and more stringent ambient air quality standards for ozone and fine particulate during 2010 and 2011. EPA has determined that the existing standards do not adequately protect public health.
4. EPA's endangerment finding for carbon dioxide provides a path for the agency to regulate greenhouse gas emissions. EPA has also promulgated a regulation that will require sources of greenhouse gases to report and record data regarding these emissions, and the Agency is considering additional regulations which could be

applied to electric generating units.

Q. Please describe energy policy initiatives that may influence BHP's operation.

A. Many states, including several in the Midwest, have policies and requirements today to substantially increase the share of resources to be provided by energy efficiency. These policies and requirements include: specific percentages of annual energy sales to be provided by energy efficiency, specific quantities of energy efficiency resources (in MW and/or MWh) and requirements to procure all cost-effective energy efficiency first before supply side resources are considered. The MGA commitment cited above is an example of a regional commitment to improve states' energy consumption. Several state specific commitments compliment the MGA effort. Illinois, Minnesota and Iowa have increased the quantity of energy saved through efficiency measures, and these states plan to continue and to increase this level of savings in the future.

Several of these same Midwestern states have also established renewable portfolio standards that plan to increase the quantity of electricity provided from renewable resources. These states have recognized the economic development opportunities from developing these resources and are knowingly weaning themselves from reliance on imported electricity and fossil fuels.

Q. What are the effects of these environmental and energy policies on the current and future BHP operations?

A. Forecasting precise effects of these policies is difficult today, since the emissions reductions required have not been established. However, it is clear, based on public statements by EPA Administrator Jackson and others within the Agency, that future regulations will be more stringent than the CAIR that was vacated by the U.S. District Court, and that the new mercury rule will require Maximum Achievable Control Technology (MACT). The new ozone and fine particulate standards will also be more stringent than the existing ambient air quality standards.

Regarding energy policy, states across the U.S. have embarked on programs that

significantly increase the quantities of energy saved through energy efficiency. These efforts are supported by studies that show that the electric sector emission reductions in a national greenhouse gas program can be achieved cost-effectively through energy efficiency measures and that over one-half of the recommended reductions can be achieved today using existing technology. The U.S. has barely scratched the surface in terms of significantly improving how energy is used and consumed.

Q. It could be argued that, since the results of these future programs cannot be predicted with absolute accuracy, that BHP should not be responsible for analyzing what might be considered uncertain effects in an IRP. Why should BHP consider the effects of the new environmental and energy programs that you have outlined?

A. Prudence, protection of ratepayers and viability of BHP's business all suggest that BHP should consider the effects of both known policies and the potential effects of those proposed. BHP's 2007 IRP looks out over a period that extends to 2027. A complete IRP should include scenarios based on a range of assumptions about the emissions trajectory and timing of new environmental regulations and include a range of estimates of energy efficiency and renewable energy resources. These scenarios would help to bound the results and provide utility planners with a range of solutions that can be evaluated.

Q. In this docket, BHP is requesting that the Commission approve a revenue increase of 26.6%. Based on the information that you have reviewed in this docket, do you believe there will be additional rate increases in the future?

A. Yes. I should also clarify that BHP's request in this docket is for an overall revenue increase of 26.6%, but for the residential ratepayer sector I am representing, the increase will actually be about 34%.

Q. Why do you believe BHP will have to request additional rate increases in the future?

A. There are several reasons to believe BHP will have to request further increases in

electricity rates in the future for its customers.

BHP's generation is almost totally comprised of one fuel: coal. That lack of diversity exposes BHP to market volatility that will affect fuel prices, by market forces domestically and globally that drive demand (such as the continuing economic expansion in developing countries such as China and India) and by environmental and energy policies in the U.S. that recognize the environmental and public health damages that are caused by the combustion of coal. BHP's business model is at odds with mainstream utilities in the United States.

Companies such as PacifiCorp (which owns generation in several Western states) have announced that they would cease construction of new coal plants, and PacifiCorp also recently announced the closure of its existing 600 MW Boardman coal plant in Oregon. Two utilities with business operations and customers in South Dakota lead the U.S. in total wind capacity. As of the end of 2007, Xcel Energy had 2,635 MW wind capacity, representing 9.3% of retail sales, while MidAmerican had 1,201 MW wind capacity, representing 4.7% of retail sales.

A second reason to expect additional rate increases in the future is related to how BHP has accounted for the environmental and public health costs from its coal burning. BHP's answer to Residential Consumers Coalition Data Request 29 indicates that the costs of emissions allowances will be passed through to BHP ratepayers. As noted earlier in my testimony and elaborated upon in the testimony of David Schlissel, BHP used very low CO₂ allowance price assumptions in its IRP. These low prices mask the risks associated with burning carbon intensive fuels and bias the IRP analysis towards new coal resources. However, when national greenhouse gas regulations are promulgated and/or regional greenhouse gas programs such as RGGI and the Western Climate Initiative become more developed, carbon allowance prices are expected to be much higher than the \$2.30 per ton allowance price that BHP has assumed.

Q. What advice do you have for the Commission in light of BHP's analysis and the likelihood that BHP will request additional rate increases in the future?

A. BHP can take steps today to diversify its portfolio, to increase demand side resources and to include cost-effective supply side resources, such as CHP, wind and biomass. I provide more detail of these recommendations in my concluding section. The Commission can also help to avoid future BHP rate increase requests by limiting BHP's requests for cost recovery to the assumptions for emissions allowance prices and equipment that BHP includes in its IRP. Utilities should be held accountable for their analyses. If a utility omits cost-effective resources such as energy efficiency and uses very low price assumptions about emissions allowance costs in order to bias results towards a new coal plant, the utility and its shareholders should be held to those assumptions in the future.

Q. Are there other effects related to the combustion of coal that should be considered as part of BHP's application for a rate increase?

A. Yes.

Q. Please describe.

A. There is one additional risk relevant to my testimony that could affect BHP's operation. This risk relates to the external economic effects related to the combustion of coal from power plants.

Q. What are the external economic effects related to the combustion of coal?

A. A recent report completed for the National Academies of Science entitled "Hidden Costs of Energy" describes external public health and environmental costs from fossil-fuel combustion.

Q. What does the "Hidden Costs of Energy" report find regarding the economic effects of power plants?

A. The report describes the external effects, those not directly included in the price of electricity, for coal-fired and natural gas-fired power plants. Each coal-fired power plant is estimated to cause an average of \$156 million in public health and environmental damages, with a mean damage level of 3.2 cents per kWh. The range of economic effects, weighted by the quantity of electricity generation, is

from 0.5 cents per kWh to greater than 12 cents per kWh. Note that these external economic effects are *only* for criteria air pollutants (those for which EPA has established public health standards). External economic effects from toxic air pollutants (such as mercury) and for greenhouse gases would be *in addition* to those described here.

For natural gas-fired plants, each power plant is estimated to cause an average of \$1.49 million in damages, for an average of 0.16 cents per kWh, with a range of less than 0.05 to about 1 cent per kWh.

Q. Why is the “Hidden Costs of Energy” report relevant to this case involving proposed rate increase for a new power plant?

A. The increased coal generation from Wygen 3 will also increase the quantity of air pollution emitted. The relevance of the “Hidden Costs of Energy” report here is that this increased air pollution will also impose additional public health and environmental costs upon all residents of South Dakota.

IV. BLACK HILLS POWER CAN REDUCE ELECTRICITY BILLS BY IMPLEMENTING ENERGY EFFICIENCY AND DEMAND SIDE MEASURES. THESE MEASURES ALSO REDUCE RISK AND VOLATILITY, AND IMPROVE RELIABILITY.

Q. What benefits could energy efficiency and demand side management provide to BHP customers and South Dakota?

A. Energy efficiency and demand side management can provide many benefits to South Dakota’s ratepayers and its economy.

South Dakota has substantial potential to increase the quantity of energy and capacity provided by energy efficiency. As shown in Exhibit CAJ-4, the average South Dakota customer uses 155 kWh more each month than customers in Minnesota, has electricity bills comparable to those in states with higher rates, and spends a higher percentage of their per capita income on electricity bills. Exhibit CAJ-5 shows that reducing energy consumption by 10 or 20% would save each

residential customer between \$837 and \$1,675 over 12 years, and each commercial customer between \$4,509 and \$9,018 over the same period.

Implementing energy efficiency programs also avoids the need to construct new power plants and frees up capacity on transmission lines that could then be used by new wind resources.

Q. What specific benefits could South Dakota receive from energy efficiency and demand side management programs?

A. There are several benefits that South Dakota could enjoy from developing its energy efficiency resources.

1. Energy efficiency programs can be developed to fit any load shape and size to provide savings during base loaded and peak periods. An energy efficiency “power plant” does not have to be 100% constructed before it begins to provide benefits. Energy savings and capacity benefits begin and accrue as soon as the first measures are installed. This is an important distinction between demand side and supply side measures. If for whatever reason, 100% of the financing for energy efficiency measures is not provided, energy and economic benefits are still realized, the benefits are cumulative, and they help to reduce consumers’ electric bills. By comparison, a conventional power plant must be 100% constructed before even 1 MW of generating output occurs.
2. Energy efficiency and hydroelectric generation are complementary resources. Energy efficiency can enhance the value of hydroelectric resources. By developing energy efficiency measures that provide benefits across all hours, the hydroelectric resource can be run more as a peaking or cycling resource and take advantage of the typically higher electricity prices that occur during these peak hours. Hydroelectric facilities can store water for several hours (except during times of spring flood, which are not typically coincident with periods of peak electricity demand). Energy efficiency could therefore enhance the value of South Dakota’s Oahe, Big Bend and Fort Randall hydroelectric plants.
3. Synapse recently completed a South Dakota Energy Efficiency potential study.

That report describes two scenarios: Scenario A assumes that South Dakota improves its energy efficiency program to achieve a 1% savings by 2012, continuing at this level in subsequent years. Scenario B assumes that South Dakota improves its energy efficiency program to meet the MGA commitment made by Governor Rounds in 2007. Scenario B increases the energy savings to 2% of annual energy sales by 2015 and maintains that level of savings in subsequent years. Exhibit CAJ- 2 provides the results of this analysis and provides data for each of the scenarios evaluated. Note that in both cases, the analysis assumes *no additional escalation of electricity rates*, and therefore understates the likely energy and economic benefits that would be realized. BHP's proposed 26.6% revenue increase was *not* factored into this calculation. Any electricity rate increase would also increase the value of energy savings to South Dakota customers.

To calculate the energy and economic benefits for BHP's service territory, I have assumed that the ratio of potential savings within BHP territory is the same as the proportion of BHP's share of the total statewide electricity sales. BHP's 2007 electricity sales totaled 1,485,977 MWh, compared to 10,603,000 MWh from all electric utilities. BHP's share is about 14% of the South Dakota total. For Scenario A, the statewide cumulative savings are calculated to be 6,396 GWh by 2020 and \$254 million in savings to South Dakota electric customers. BHP's share under Scenario A would be 896 GWh and \$35.5 million. This quantity of energy savings is larger than the 2005 generation from the Wygen 1 unit (with a rated capacity of 88 MW). Statewide, an energy efficiency program that achieved a level of 1% of annual energy savings by 2012 and then continued in subsequent years would provide capacity equivalent to twice the annual output from the Otter Tail Big Stone generating plant, or about 920 MW. BHP's 14% share of the 920 MW would be 128 MW, or more than twice the quantity of the Wygen 3 addition that is included in this request for an electric rate increase.

For Scenario B, the cumulative statewide savings are calculated to be 9,604 GWh by 2020 and \$392 million in economic savings to South Dakota electric customers.

BHP's respective share under Scenario B would be 1,344 GWh and about \$55 million. This quantity of energy savings is equivalent to about twice the 2005 generating output from Wygen 1. Statewide, an energy efficiency program that achieved a level of 2% of annual energy savings by 2015 and then continued in subsequent years would provide capacity equivalent to the annual output from the Otter Tail Big Stone generating plant, plus six times the annual output from the Ben French plant, or about 1267 MW. BHP's 14% share of the 1267 MW would be 177 MW, or more than three times the size of the Wygen 3 addition that is included in this request for an electric rate increase.

4. South Dakota Senate Bill 202 required the completion of an Energy Master Plan for state agencies. The Statewide Energy Auditing for the Energy Master Plan (EMP) was completed December 1, 2009. The EMP provides a comprehensive evaluation of the opportunities available across South Dakota government agencies, universities, and for leased buildings to reduce energy consumption. The report findings:
 - l. Identify 1,168 measures to reduce consumption. If implemented, the measures would achieve a 15.3% reduction in energy use.
 - m. Reflect that measures to achieve a 5% reduction would cost about \$2.9 million, save over \$1 million annually and have a 2.8 year payback, assuming electricity rates stay the same. Any escalation in electricity rates will shorten the payback period. Measures to achieve a 10% reduction in energy consumption are estimated to cost \$8.8 million, save \$2.1 million annually, and have a payback period of 4.1 years (again, assuming no escalation in electricity rates).
 - n. Conclude that if all state buildings were included in the audit (about 2/3 were included in this study) the additional energy saving measures that could be adopted would decrease energy consumption by over 20%.
5. State electricity contracts are procured through the Western Area Power Administration (WAPA). The electricity rate is based on consumption factor

(referred to as contract rate of delivery or CROD). If the level of consumption is exceeded, the WAPA contract applies a penalty that increases electricity rates for a minimum of six months. Black Hills State University (BHSU), which obtains supplemental power from BHP, routinely exceeds its CROD. The EMP notes that the WAPA CROD will have significant economic impact to universities in future (“culture does not connect energy use with operational costs”).

The EMP describes clear and highly cost-effective opportunities to reduce energy consumption within BHP’s service territory. In addition to the direct economic savings that would be achieved from reduced consumption, customers such as BHSU that are subject to a WAPA CROD would avoid a recurrence of penalties they have recently experienced.

V. BLACK HILLS POWER CAN MEET CURRENT AND FUTURE CUSTOMER DEMAND MORE COST-EFFECTIVELY THROUGH ENERGY EFFICIENCY, DEMAND SIDE MEASURES, AND DEMAND RESPONSE.

Q. Earlier you stated that BHP energy efficiency programs in South Dakota provide little energy savings and do not capture the potential savings that exist. What can BHP do to increase the quantity of energy saved from energy efficiency?

A. There are many measures that BHP could implement today that would reduce customer bills and defer or eliminate the need to add new generating resources. BHP can begin by implementing the same measures that its sister company, Black Hills Energy, is implementing today in Colorado. BHP can also work with other South Dakota utilities who have already begun to implement energy efficiency programs in their service territory.

Q. Please describe the Black Hills Energy program in Colorado.

A. Black Hills Corporation acquired Aquila in 2008 and now serves customers in Colorado through its Black Hills Energy subsidiary. Black Hills Energy (BHE) is operating an energy efficiency program in Colorado and also one in Iowa. BHE

has proposed to meet Colorado requirements to reduce energy consumption by at least 5% below 2006 levels by 2018. A Western Governors Association report found that it is feasible and cost-effective to reduce energy consumption 20% by 2020 through energy efficiency.

Q. Please describe the energy efficiency programs being implemented by other utilities in South Dakota.

A. Three major utilities serving South Dakota customers also have developed energy efficiency programs. Otter Tail Power, MidAmerican Energy, and Xcel Energy have each filed plans with the PUC to initiate energy efficiency programs, or have begun programs per PUC approval for their South Dakota customers. Otter Tail Power began a one-year pilot energy efficiency program per Docket EL07-011. Otter Tail plans to spend about \$160,000 annually to save 1,143,446 kWh annually and 416.2 kW in capacity. MidAmerican received PUC approval (Docket EL07-015) in March 2009 for a portfolio of energy efficiency programs proposed to be implemented over three years, spending about \$3 million to save 1.7 million kWh in energy and 601 kW in capacity. Xcel Energy has filed plans to spend about \$1 million in one year to save 4.56 million kWh of energy and 2,894 kW in capacity annually. While these other South Dakota programs are small and just developing, their proposed energy savings greatly exceed BHP's. As noted earlier in my testimony, BHP's energy savings from the three measures reported in their response to Data Request 9 from the Residential Consumers Coalition reflect savings of about 113,000 kWh in energy and 50 kW in capacity for 2009.

Q. What is the cost-effectiveness of energy efficiency programs that have been implemented in states that border South Dakota?

A. Data compiled from energy efficiency programs in states that border South Dakota reflect that the costs of saved energy are low: 1.8 cents per kWh in Iowa and 2.3 cents per kWh in Minnesota. Exhibit CAJ-6 provides recent data from actual energy efficiency programs implemented throughout the United States. These data reflect that as the level of energy savings increases, the cost of saved energy continues to decrease. Energy efficiency programs with aggressive savings goals

are highly cost-effective due to economies of scale, decreased share of total program costs from administration, and the substantial potential for significant energy savings. The costs shown in Exhibit CAJ-6 reflect those for the utility. If participants' costs are also included, such costs add about 1-2 cents per kWh. Total costs of saved energy, including utility plus participants costs, are still considerably lower than average South Dakota electricity rate and much lower than the costs of new generation (per Exhibit CAJ-3).

Q. Your earlier remarks indicate concern regarding BHP's current energy efficiency programs. What advice do you have for a utility whose energy efficiency program reflects small amounts of energy savings or whose measures do not appear to be very comprehensive.

A. BHP's position today is not unlike that of many utilities ten years ago. Due to efforts to restructure electricity markets, utilities across the United States ceased to fund energy efficiency, and essentially had to restart energy efficiency programs in the late 1990s. There are many important lessons that BHP can learn from these efforts.

Q. Please describe how BHP can take advantage of this experience.

A. There are two basic points I would recommend to BHP. First, conduct a comprehensive study of the technical, economic and achievable potential for energy efficiency in its service territory. Second, obtain input from customers and stakeholders on how to implement the results of the energy efficiency potential study.

Q. Has BHP conducted a study of the energy efficiency potential in its service territory?

A. BHP indicates that such a study has been or soon will be completed, but the full results have not been provided to the Residential Consumers Coalition. However, based on studies completed across the United States, I would expect the BHP study to also show that there are substantial and cost effective measures that can be implemented today to provide energy savings and to reduce the electricity bills

for BHP customers.

Q. Based on your experience, how do utilities implement the results of energy efficiency potential studies?

A. Energy efficiency studies assess the technical, economic and achievable potential savings that can occur from the implementation of energy efficiency measures across all customer classes. Technical potential refers to the maximum quantity of energy that could be displaced by energy efficiency measures without regard to the costs of these measures. Economic potential is a subset of technical potential, representing the energy that can be displaced by energy efficiency measures that are cost-effective compared to conventional supply side resources, such as the addition of new generation. Achievable potential is a subset of the economic potential, representing the maximum amount of energy that could be displaced assuming aggressive implementation.

Q. What recent energy efficiency potential studies have been completed in areas relevant to BHP's service territory?

A. A recent study completed by PacifiCorp in Wyoming reflected an achievable potential of 5% as a percentage of annual electricity sales at a levelized cost of 3 cents per kWh. A 2009 study completed by the Northwest Power Planning Council for several Northwestern states, including Montana, reflected an achievable potential of 21% as a percentage of annual electricity sales at a levelized cost of 3 cents per kWh.

Q. Referring to your second recommendation regarding energy efficiency potential, how could BHP implement the results of their yet to be released study?

A. Input from customers and stakeholders is important. Without having seen the actual study prepared for BHP, I will have to assume for discussion purposes in my testimony that the methodologies used to assess the potential for energy efficiency in BHP's service territory are consistent with those applied by other studies. While BHP may have little current experience in South Dakota with

implementing energy efficiency measures, it can take advantage of efforts by other utilities in South Dakota and nearby states. Stakeholder and customer input are important in the design of an energy efficiency program, but there are many forms in which this input can occur. The PUC could convene a formal process if it so wishes, BHP could convene a stakeholder process, or input could be gathered informally through workshops conducted in BHP's service territory. I would highly encourage and recommend that BHP talk with other South Dakota utilities already engaged in implementing energy efficiency, and also with Black Hills Energy staff in Colorado and Iowa. Such discussions will help to facilitate start-up of energy efficiency programs, and minimize the costs of program administration.

VI. RECOMMENDATIONS

Q. What recommendations do you have for the Commission regarding actions that should be taken with respect to BHP's request for an electric rate increase?

- A. I recommend that the Commission deny Black Hills Power's request for a rate increase to cover the costs associated with Wygen 3. I also recommend that:
1. BHP should be required to update and revise its Integrated Resource Plan within the earlier of 90 days following completion of the hearings for Docket EL09-018 or by September 30, 2010.
 2. As part of the process of updating and revising the IRP, BHP should incorporate resource scenarios based on the following, non-exhaustive list:
 - a. BHP's pending energy efficiency potential study;
 - b. The December 1, 2009 Energy Master Plan for South Dakota;
 - c. South Dakota's renewable energy policy, including the state's renewable energy standard;
 - d. The Midwestern Governors Association (MGA) 2009 Energy Security and Climate Stewardship Roadmap, including the Roadmap's goals for energy

efficiency and renewable energy;

- o. The impacts of federal and/or regional greenhouse gas reduction plans; and
- p. A reasonable range prices for air emissions, including carbon dioxide, nitrogen oxides, sulfur oxides, and mercury, based on studies completed by the EPA, the DOE, MIT, and Synapse.

Input assumptions for BHP's updated and revised IRP should be developed with input from and reviewed by the PUC and relevant stakeholders, including the parties to this docket.

- 3. Commencing in 2010, BHP should be required to initiate comprehensive energy efficiency programs across all customer classes in its South Dakota service territory. BHP should utilize its pending energy efficiency potential study, the December 1, 2009 Energy Master Plan for South Dakota, and other appropriate resources to prioritize the energy efficiency programs that should be implemented first. The societal, participant, and utility cost-benefit tests should be used to evaluate energy efficiency measures for cost effectiveness.
- 4. BHP should be required to develop a framework to cost effectively achieve the commitment made by Governor Rounds to the MGA goal of meeting 2 percent of South Dakota's annual energy sales through energy efficiency by 2015. In developing this framework, BHP should work with South Dakota's other utilities, including rural electric cooperatives and municipal utilities, to:
 - a. Develop coordinated energy efficiency programs across all customer classes;
 - b. Efficiently and effectively administer such programs;
 - c. Share advertising to promote such programs across service territory boundaries;
 - d. Develop and apply consistent protocols to measure, evaluate, and verify

energy savings; and

- e. Ensure consistent reporting of energy savings to the PUC and other relevant stakeholders.
5. BHP should be required develop a framework to cost effectively achieve the commitment made by Governor Rounds to the MGA goal of providing 10 percent of South Dakota's energy from renewable sources by 2015, increasing incrementally each year, to 30 percent by 2030.
 6. The Commission can also help to avoid future BHP rate increase requests by limiting BHP's requests for cost recovery to the assumptions for emissions allowance prices and equipment that BHP includes in their IRP.

Q. Does this complete your testimony?

A. Yes, it does.