Direct Testimony and Exhibits
Mark Lux

Before the South Dakota Public Utilities Commission
of the State of South Dakota

In the Matter of the Petition for Declaratory
Ruling of Black Hills Power, Inc.

Docket No. EL 11- _____

April 28, 2011

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Exhibits

I. INTRODUCTION AND QUALIFICATIONS

Q. WHAT IS YOUR NAME AND BUSINESS ADDRESS?

A. My name is Mark Lux. My business address is 1515 Wynkoop, Suite 500, Denver, Colorado 80202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CONTEXT?

A. I am currently employed by Black Hills Service Company, a wholly-owned subsidiary of Black Hills Corporation ("Black Hills Corporation"), as Vice President and General Manager, Regulated and Non-Regulated Generation. In that role, I am responsible for the operation and construction of the electrical power generation and coal mining assets owned by Black Hills Corporation subsidiaries, including Black Hills Power, Inc. ("Black Hills Power" or the "Company").

Q. ON WHOSE BEHALF ARE YOU APPEARING IN THIS APPLICATION?

A. I am appearing on behalf of Black Hills Power.

Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE.

A. I received a Bachelor of Science degree with honors in Mechanical Engineering from the South Dakota School of Mines and Technology in 1987. I have more than 25 years of experience working in the mining and electrical power industry, in both nuclear and fossil fuel power generation, including operating experience and power plant construction experience. I have been involved in the development, engineering, construction and commissioning of the Wygen III plant as well as other coal fired power plants owned by subsidiaries of Black Hills

Corporation, including Neil Simpson II, Wygen I and Wygen II. I am also responsible for the Independent Power Production ("IPP") of Black Hills Corporation and have experience in the project development and construction of IPP generation resources.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to provide a detailed description of the proposed Butte Wind Farm project (the "Project") and discuss the proposed cost estimate. I will also present the construction timeline and the estimated operation and maintenance costs for the Project.

II. DESCRIPTION OF THE PROJECT

Q. PLEASE DESCRIBE THE PROJECT THAT IS THE SUBJECT OF THE PETITION FOR DECLARATORY RULING IN THIS PROCEEDING.

A. The proposed Project will likely consist of seven to twelve wind turbines (depending on selected manufacturer) and the associated balance of plant and other facilities with an expected nameplate capacity rating of approximately 20 MW. The Company has obtained bids from turbine manufacturers and is currently involved in further negotiations with two manufacturers to provide turbines to the site. The Project will be located north of Belle Fourche, South Dakota, in Butte County. Black Hills Power, Inc. will own the Project.

Q. WILL THE CONSTRUCTION OF TRANSMISSION BE NECESSARY TO INTERCONNECT THE PROJECT?

A. Yes. The Company will build a 69kV transmission line into the Project. The total length of the transmission line will be approximately three miles, and will be built to interconnect with the Company's 69kV radial line going to Belle Creek, Montana. The Developer has procured rights of way for the transmission line from affected landowners. These rights will be assigned to the Company upon exercise of the option described in the testimony of Richard Kinzley.

Q. UNDER THE SOUTH DAKOTA RENEWABLE ENERGY OBJECTIVE, HOW WOULD THE PROJECT BE DEFINED?

A. The energy generated by the Project will constitute renewable energy that could apply to the South Dakota renewable energy objective set forth in SDCL 49-34A-101.

Q. IS THERE A MAP SHOWING THE GENERAL AND SPECIFIC AREA WHERE THE PROJECT WILL BE CONSTRUCTED?

A. Yes. A general vicinity map is attached to this testimony as Exhibit ML-1. A map showing the Project area itself is attached as Exhibit ML-2.

Q. WHAT ARE THE MAJOR COMPONENTS OF THE PROJECT?

A. The major components of the Project include:

1. 7-12 wind turbine generators;
2. A 34.5kV/69kV project collection substation (a step up transformer and other ancillary equipment);

3. 69kV interconnection facilities;

4. 69kV transmission line of approximately three miles in length;

5. Sitework, including without limitation access roads, crane pads and laydown areas;

6. Foundations for the wind turbine generators; and

7. Electrical collection system.

Q. PLEASE DESCRIBE YOUR ROLE REGARDING THE PROJECT?

A. My role on the BHP Wind Project will be similar to the role I played in the construction of Neil Simpson II, Wygen I, Wygen II and Wygen III. As part of the project development team for the Project, I am responsible for supporting the overall project development and responsible for the management of the construction of the Project and the transmission line. In that role, I oversee the preparation of plans and specifications, oversee the competitive bid process, manage the selection and sourcing of equipment, and manage the construction project. My role in the Project will be the same role I currently have in the construction of the wind project for Black Hills/Colorado Electric Utility Company, LP (BH/Colorado) located east of Walsenburg, Colorado, in Huerfano County, and in the construction of two LMS 100 units for BH/Colorado at the Pueblo Airport Generation Station, in Pueblo, Colorado.

III. CONSTRUCTION MILESTONES

Q. WHO WILL BE RESPONSIBLE FOR CONSTRUCTION OF THE PROJECT?

A. The Project will be owned by Black Hills Power, Inc. As noted later in my testimony, the construction of the Project will be managed by Black Hills Service Company, LLC.

Q. WHAT ARE THE EXPECTED CONSTRUCTION MILESTONES FOR THE PROJECT?

A. The expected construction milestones are set forth in Exhibit ML-3. It is expected that the Project will be in service by the end of 2012.

IV. ESTIMATED PROJECT COSTS

Q. DESCRIBE THE ANTICIPATED COSTS ASSOCIATED WITH THE PROJECT.

A. The total construction cost of the Project is estimated at $38 million. The budgeted cost estimates are as set forth below:

	Total
Engineering	$780,000
Wind Turbine Generators	$19,330,000
Other Equipment and Collection Substation	$2,587,000
Construction Contracts & Project Management	$8,298,000
Transmission and Interconnection Facility	$3,452,000
Indirect Costs	$3,338,000
Contingency	$214,000
Total	$38,000,000

Attached as Exhibit ML-4 is a detailed estimate of the construction cost of the Project.

The total construction cost of the Project, excluding transmission and interconnection facility costs, is $34.5 million. The estimated cost of construction based upon a name plate estimate of 19,200 to 21,000 kV is $1,643 to $1,797 per kW.

Q. IS THE COMPANY'S ESTIMATED COSTS OF CONSTRUCTION CONSISTENT WITH THE INDUSTRY STANDARDS FOR TYPICAL COSTS TO CONSTRUCT A WIND PROJECT?

Yes. The Company's estimated cost of construction of $1,643 to $1,797 per kW is in line with the analysis of construction costs for the Colorado wind project. The construction cost estimate for the BH/Colorado wind project is $1,828 per kW. Concentric Energy Advisors, Inc. ("Concentric") reviewed the BH/Colorado wind project estimated costs and compared those estimated costs to the cost to construct similar energy resources available to the market. Concentric determined that the proposed BH/Colorado wind project can be constructed at a reasonable cost compared to the cost of similar eligible energy resources available in the market. Attached hereto as Exhibit ML-5 is the Concentric analysis that was filed with the Colorado Public Utilities Commission. In addition, the Company's estimate of these anticipated costs is supported by the recently announced asset purchase agreement by Northwestern Energy regarding a wind project in Judith Basin

County in Montana, which had a purchase price of $1,947 per kW. See Exhibit ML-6.

Q. DID THE COMPANY OBTAIN ANY CONSTRUCTION COST ESTIMATES?

A. The Company requested construction costs estimates from Black & Veatch, the engineer of record. Black & Veatch has determined the following construction cost estimates: low case $37.4 million; base case $41.4 million, and high case $44.1 million.

Q. HOW CONFIDENT ARE YOU OF THE UPDATED COST ESTIMATES?

A. We are confident of these estimates. Many of the major components will be fixed price contracts.

In addition, we are confident of these anticipated costs because of our experience in constructing Neil Simpson II, Wygen I, Wygen II, Wygen III, and other power plants owned by subsidiaries of Black Hills Corporation and our experience in planning the construction of the wind project located east of Walsenburg, Colorado. The BH/Colorado wind project presently is before the Colorado Public Utilities Commission for requested approval of a Certificate of Public Convenience and Necessity.

Our main risk at this point is being able to complete the construction project on schedule, which is largely contingent on a timely decision in this docket and on the timely delivery of the wind turbine generators. At this time, everything is on schedule; however, any delay in scheduling could result in increased costs and the

potential loss of the production tax credits and bonus depreciation currently available to the Company as discussed further in the testimony of Kyle White.

Q. WHO IS MANAGING THE CONSTRUCTION OF THE PROJECT?

A. The construction of the Project is being managed by Black Hills Service Company, LLC ("BHSC"). Black Hills Electric Generation, LLC ("BHEG"), a sister company to BHSC, originally managed the construction of many generation facilities, and that same team of people now do the construction management through BHSC. Over the years, BHSC and BHEG have managed the construction of 18 generation building projects representing approximately 1,736 MW, including Neil Simpson II, Wygen I, Wygen II and Wygen III, as well as other affiliated power plants. A summary of the experience of BHSC and BHEG constructing power plants is shown on Exhibit ML-7. The coal fired power plants built at the Neil Simpson Energy Complex ("NSEC") have consistently been built on time and these plants have achieved an availability rate higher than the industry average.

In addition, BHSC is managing the construction of the 29.04 MW wind project planned for Huerfano County, Colorado.

BHSC's roles in the self-build capacity include coordinating the selection and procurement of equipment for the plant, managing the construction, start-up and commissioning of the plant, managing costs, implementing safety programs and procedures and maintaining the project cost and schedule. Through its experience managing self-built projects, BHSC has developed project management expertise,

relationships with technology providers, a positive reputation in the market place, and relationships with bidding vendors, all of which allow for efficient contracting and management of power plant construction projects. BHSC provides these services to Black Hills Power at its cost, without any profit mark-up.

Q. WHAT OTHER OPTIONS ARE AVAILABLE FOR THE MANAGEMENT OF A WIND PROJECT?

A. The alternative to self-building power plants or wind projects is to hire a third party to assume the management of the construction project. This construction management strategy is referred to as Engineer, Procure, Construct, or an EPC build strategy. Based upon the information we have received from our engineers, as well as others in the industry, and based upon our own experience, EPC built projects typically cost 15-20 percent more than self-build options. This increased cost is because the EPC contractor bears all the risk of the project cost and will therefore build a risk premium into the total project cost.

Q. WHAT HAVE BEEN RESULTS OF BHSC WHEN IT SELF-BUILDS COAL-FIRED POWER PLANTS?

A. Each power plant that BHEG/BHSC have built at the NSEC were built on schedule and at or below budget.

Q. DESCRIBE THE PROCESS BY WHICH YOU INTEND TO SECURE CONTRACTS FOR THE CONSTRUCTION OF THE PROJECT.

A. At the time we were considering the possible construction of the Project, we determined that the recent recession and other factors associated with the wind

industry represented an opportunity to purchase wind project components at significantly lower prices.

BHSC has hired Black & Veatch as the engineer of record for the Project. Black & Veatch prepared the specifications for the wind turbine generators, and after BHSC reviewed and approved these specifications, four turbine manufacturers were asked to bid. Black & Veatch reviewed those bids and provided to BHSC a recommendation for the supplier of wind turbines, including design, fabrication, and delivery of the wind turbines to the site. Likewise, the Company expects to use the bid/negotiate process for the step up transformer. The Company likely will use Requests for Proposals ("RFPs") that will be submitted to various vendors for the remaining major components and construction contracts of the Project. Black & Veatch and BHSC will review the bid proposals submitted by the vendors. All successful bidders will be required to provide security for their performance, and no affiliates or subsidiaries of BHSC, Black Hills Power, or Black Hills Corporation will be allowed to submit bid proposals. In general, only fixed price contracts will be accepted.

V. OPERATIONS AND MAINTENANCE EXPENSES

Q. DESCRIBE THE ESTIMATED ANNUAL OPERATIONS AND MAINTENANCE EXPENSES OF THE PROJECT AND HOW YOU ARRIVED AT THESE FORECASTS.

A. We have estimated the total annual operation and maintenance costs for the Project to be $1,224,388. The forecast is included as Exhibit ML-8. This forecast

includes some items that are contractual (the payments to landowners, the Company's share of real estate taxes, and the turbine maintenance agreements). The forecast also utilizes information relating to the BH/Colorado wind project, and information from internal and external sources regarding estimated costs for electric regulation, taxes and insurance.

Q. WHAT EXPENSES ARE INCLUDED IN THAT FIGURE?

A. That figure includes primarily (i) regulation and integration costs, (ii) the cost of operating and maintenance costs regarding the turbines, (iii) other maintenance and repairs to the Project, (iv) lease payments relating to the ground lease, (v) insurance, (vi) the Company's portion of real estate taxes, and (vii) utilities and rent.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.