**BASIN ELECTRIC POWER COOPERATIVE**

1717 EAST INTERSTATE AVENUE
BISMARCK, NORTH DAKOTA 58501-0564
PHONE: 701/223-0441
FAX: 701/224-5336



June 28, 2011

Mr. Tony Clark, Chairman
North Dakota Public Service Commission
Capitol Building
600 E. Boulevard Avenue
Bismarck, ND 58505

Dear Mr. Clark:

Pursuant to the requirements of the North Dakota Energy Conversion and Transmission Facility Siting Act, Basin Electric Power Cooperative hereby submits its Ten Year Plan.

Enclosed is an original and 10 copies of the plan.

Sincerely,

Ronald R. Harper
CEO & General Manager

vlw
ATTACHMENT

**STATE OF NORTH DAKOTA** )
)
**COUNTY OF BURLEIGH** )

**AFFIDAVIT OF MAILING**

I hereby certify that the following list contains the names and last address of each designated state agency and/or state official given notice of filing of the Basin Electric Power Cooperative Ten Year Plan pursuant to the Rules and Regulations of the North Dakota Public Service Commission governing the Siting of Energy Conversion and Transmission Facilities. I hereby certify that I have, by depositing letters of notice with the United States Postal Service, caused notice to be given all such state agencies and state officials that Basin Electric Power Cooperative has filed their Ten Year Plan with the North Dakota Public Services Commission.

| Name | Last Known Address |
|---|---|
| See Exhibit A Attached | See Exhibit A Attached |

Matthew Stoltz
Signature

On this 27th day of June, 2011, Matthew Stoltz known to me, under oath deposed and said the above Affidavit of Mailing is true and correct.

FAYE D. MILLER
Notary Public
State of North Dakota
My Commission Expires April 18, 2012

Faye D. Miller
Notary Public

Mail to: Public Service Commission
600 E. Blvd. Ave.; Capitol Building
Bismarck, ND 58505

# EXHIBIT A

Mr. Larry Taborsky
Director
ND Aeronautics Commission
P. O. Box 5020
Bismarck, ND 58502

Mr. Wayne Kutzer, Director
ND Dept. of Career & Tech. Education
State Capitol – 15th Floor
600 E. Boulevard Ave.; Dept. 270
Bismarck, ND 58505-0610

Mr. Jeff Engleson, Director
ND State Land Department
Energy Development Impact Office
P.O. Box 5523
Bismarck, ND 58506-5523

Dr. Terry Dwelle
State Health Officer
ND Department of Health
600 E. Boulevard Ave.
Bismarck, ND 58505-0200

Ms. Maren Daley
Director
Job Service of ND
1601 E. Century Ave.
Bismarck, ND 58503

Ms. Karlene Fine, Director
ND Industrial Commission
State Capitol – 14th Floor
600 E. Boulevard Ave.; Dept. 405
Bismarck, ND 58505-0840

Mr. Francis Ziegler
Director
ND Department of Transportation
608 E. Boulevard Ave.
Bismarck, ND 58505-0700

Mr. Wayne Stenehjem
ND Attorney General
State Capitol Building
600 E. Boulevard Ave.; Dept. 125
Bismarck, ND 58505

Mr. Paul Lucy, Director
ND Department of Commerce
Division of Economic Development
1600 E. Century Ave. Ste 2
Bismarck, ND 58503-0649

Mr. Doug Goehring
Commissioner
ND Department of Agriculture
600 E. Boulevard Ave.; Dept. 602
Bismarck, ND 58505

Mr. Tony Weiler
Commissioner
ND Department of Labor
600 E. Boulevard Ave.; Dept. 406
Bismarck, ND 58505-0340

Mr. Terry Steinwand
Director
ND Game & Fish Department
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

Ms. Carol K. Olson
Director
ND Department of Human Services
600 E. Boulevard Ave.; Dept. 325
Bismarck, ND 58505-0250

Mr. Merlan Paaverud
Director
ND State Historical Society
612 E. Boulevard Ave.
Bismarck, ND 58505

Mr. Mark Zimmerman
Director
ND Parks & Recreation Department
1600 E. Century Ave., Suite 3
Bismarck, ND 58503-0649

Mr. Lance Gaebe
Commissioner
ND State Land Department
P. O. Box 5523
Bismarck, ND 58506-5523

Mr. Scott Davis
Director
ND Indian Affairs Commission
600 E. Boulevard Ave.
Capitol Building – 1st Floor Judicial Wing
Bismarck, ND 58505-0300

Ms. Pam Sharp
Director
ND Office of Management & Budget
600 E. Boulevard Ave.
Department 110
Bismarck, ND 58505-0400

Mr. Gerald Sturn
District Director
ND Soil Conservation Committee
2718 Gateway Ave., Unit #104
Bismarck, ND 58503

Mr. Todd Sando
State Engineer
ND State Water Commission
900 East Boulevard; Dept. 770
Bismarck, ND 58505-0850

Mr. Edward Murphy
State Geologist
ND Geological Survey
600 E. Boulevard Ave.
Bismarck, ND 58505

BASIN ELECTRIC
POWER COOPERATIVE

# NORTH DAKOTA TEN-YEAR PLAN

2011

## TABLE OF CONTENTS

## INTRODUCTION

Basin Electric Power Cooperative is a regional rural electric wholesale power supplier headquartered at 1717 East Interstate Avenue, Bismarck, North Dakota. The region served by Basin Electric includes all or portions of nine states encompassing Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Minnesota, Iowa and New Mexico. Basin Electric owns and operates or otherwise jointly shares energy conversion and transmission facilities throughout this region. Basin Electric is the parent company to eight subsidiaries, Basin Cooperative Services, Dakota Gasification Company, Dakota Coal Company, Montana Limestone Company, Basin Telecommunications Inc, Souris Valley Pipeline LTD., PrairieWinds ND 1 Inc., and PrairieWinds SD 1 Inc. A ten-year plan for Dakota Gasification Company will be submitted under separate cover by Dakota Gasification Company.

## SECTION A: EXISTING ENERGY CONVERSION FACILITIES

Basin Electric owns all or portions of twelve existing energy conversion facilities. Four of these facilities are in North Dakota; the Antelope Valley Station near Beulah; the Leland Olds Station at Stanton; PrairieWinds 1 near Minot; and the Minot Wind Project near Minot. Other existing energy conversion facilities outside of North Dakota are the Laramie River Station at Wheatland, Wyoming; the Wyoming Distributed Generation in Wyoming; the Spirit Mound Station at Vermillion, South Dakota; the Chamberlain Wind Project at Chamberlain, South Dakota; the Groton Generation Station near Groton, South Dakota; Crow Lake Wind Project near White Lake, South Dakota; Wisdom Unit 2 at Spencer, Iowa; and the Culbertson Generation Station near Culbertson, Montana.

Basin Electric purchases all or portions of the output from Waste Heat Recovery Units located near St. Anthony, North Dakota; Zeeland, North Dakota; Killdeer, North Dakota and three other Heat Recovery Units located in South Dakota; one in Montana; and one in Minnesota; North Dakota 1 Wind Energy Center near Edgeley and Kulm, North Dakota; the Wilton Wind Energy Center near Wilton, North Dakota; the Baldwin Wind Project near Baldwin, North Dakota; the South Dakota Wind Energy Center near Highmore, South Dakota; the Day County Wind Farm near Groton, South Dakota; the Rosebud Sioux Indian Reservation Wind Turbine; the Pipestone, Minnesota School District Wind Turbine; a portion of Unit #4 of the George Neal Station near Salix, Iowa; the City of Madison, South Dakota Diesel Generators; Walter Scott Energy Center Units 3&4 near Council Bluffs, IA; Duane Arnold Energy Center near Palo, Iowa; Wisdom Station Units 1&2 near Spencer, Iowa; Spencer Combustion Turbine, Spencer, Iowa; Estherville, Iowa Diesel Generation; Pocahontas, Iowa Diesel Generation; Webster City, Iowa Combustion Turbine; and various wind facilities near Ayrshire, Iowa; Duncan/Klemme County, Iowa; Lakota, Iowa; and Superior, Iowa.

The most recent Energy Information Administration (EIA) Form No. 923 for the Antelope Valley Station and the Leland Olds Station are included as Exhibit 1.

## SECTION B: ENERGY CONVERSION FACILITIES UNDER CONSTRUCTION

Basin Electric is developing a 390 MW (net) coal fired power plant located 10 miles north of Gillette, WY. This project is named "Dry Fork Station" and the projected in-service date is August, 2011. Basin Electric is also developing the Deer Creek Station (300 MW) combined-cycle natural gas facility, located near White, SD. The commercial operation date is spring of 2012, construction began the summer of 2010.

## SECTION C: PROPOSED ENERGY CONVERSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS

No new energy facilities expected to be constructed within the ensuing five year period.

## SECTION D: PROPOSED ENERGY CONVERSION FACILITIES DURING THE NEXT TEN-YEAR TIME PERIOD

Basin Electric is evaluating the development of new generating resources (coal, gas, and wind) in the Dakotas to meet Basin Electric's forecasted load growth.

## SECTION E: EXISTING TRANSMISSION FACILITIES (ELECTRIC)

Basin Electric's transmission and related substation facilities in North Dakota and their associated commercial dates are listed in the following table:

a. Transmission Lines

| LINES - BY VOLTAGE | COMMERCIAL IN-SERVICE DATE |
|---|---|
| 69 kV Lines | |
| Leland Olds - Basin Electric Sub | 01/09/66 |
| 115 kV Lines | |
| Basin Electric Sub - Stanton Tap | 01/09/66 |
| Logan-Kenmare Line | 04/01/79 |
| Logan-Mallard Line | 04/01/79 |
| Charlie Creek-Squaw Gap | 12/31/82 |
| Squaw Gap-Richland | 12/31/82 |
| 230 kV Lines | |
| Leland Olds #1-Washburn Double Circuit | 01/09/66 |
| Leland Olds-Logan Line | 03/31/80 |

| | |
|---|---|
| Leland Olds #2 - Basin Electric Sub | 12/15/75 |
| Logan-Tioga | 05/01/82 |
| Tioga-Canadian Border (Estevan) | 05/01/82 |
| Belfield-Rhame | 04/07/10 |
| Williston-Tioga | 01/10/11 |

345 kV Lines

| | |
|---|---|
| Leland Olds-Groton-Watertown | 12/15/75 |
| Leland Olds-Ft. Thompson (SD) Line | 12/15/75 |
| Leland Olds-AVS North Line | 11/30/83 |
| Leland Olds-AVS South Line | 07/01/84 |
| Antelope Valley Station-Charlie Creek | 11/30/83 |

500 kV Lines

| | |
|---|---|
| Antelope Valley Station-Huron, SD (345 kV operation) | 07/01/84 |

b. Substations

| | |
|---|---|
| 115 kV Wm. J. Neal Station Switchyard | 04/01/52 |
| 230 kV Leland Olds Switchyard | 01/09/66 |
| 230 kV Washburn, ND Switchyard | 01/09/66 |
| 115 kV Stanton Tap Structure | 01/09/66 |
| 230/115/69 kV BEPC Substation | 01/09/66 |
| 345/230 kV Leland Olds Switchyard Addition | 12/15/75 |
| 230/115 kV Dickinson, ND Substation | 12/15/75 |
| 230/115 kV Logan Substation | 04/01/79 |
| 345/115 kV Charlie Creek Substation | 11/30/83 |
| 345 kV Antelope Valley Station Switchyard | 11/30/83 |
| 230/115 kV Neset Substation | 10/07/09 |
| 230 kV Rhame Substation | 04/07/10 |

c. Basin Electric does not anticipate retiring any of its existing transmission facilities within the next ten (10) years.

## SECTION F: EXISTING TRANSMISSION FACILITIES (PIPELINES)

Pipeline transmission facilities utilized by Basin Electric are water supply lines to the Leland Olds Station, Antelope Valley Station, and a 12 mile long natural gas fuel supply pipeline associated with the Groton Generation Station. The Leland Olds water line is approximately one-quarter mile in length and is located on plant site property owned by Basin Electric.

The water supply line for the Antelope Valley Station is a forty-two inch diameter steel-lined concrete pipe of approximately nine miles in length. The line runs directly north from the plant site to an intake structure and pumping station located on Lake

Sakakawea. This line was designed and constructed as a joint use facility for Basin Electric and the adjacent Great Plains Synfuels Plant. The State of North Dakota's Southwest water pipeline uses the same intake structure and pumping station as the AVS pipeline. The Basin Electric line was designed to have a maximum operating pressure of 160 PSI gauge and a flow rate of 30,000 GPM. The pipeline was constructed, with a minimum earth cover of 84 inches. The pipeline was placed in-service in 1984. A new parallel pipeline was installed in 2006, because of recurring failures of the existing line. The new line is steel pipe with the same design parameters. The old line will be maintained as a back-up facility. None of Basin Electric's pipeline facilities are projected for retirement within the next ten-year period.

## SECTION G: PROPOSED TRANSMISSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS (ELECTRIC)

Transmission studies are underway to analyze the required transmission improvements to accommodate network load growth. Results of these studies may indicate the need for additional load serving transmission facilities.

## SECTION H: PROPOSED TRANSMISSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS (PIPELINE)

Basin is constructing a 14-mile long natural gas pipeline in South Dakota to supply gas to the Deer Creek Station described in Section B.

## SECTION I: PROPOSED TRANSMISSION FACILITIES DURING THE NEXT TEN-YEAR TIME PERIOD (ELECTRIC AND PIPELINE)

Results of the resource development of new generating resources (refer to section D) will identify transmission improvements necessary to support the transmission service required by the new resources. Transmission studies are underway to analyze the required transmission improvements to accommodate network load growth. Results of these studies may indicate the need for additional load serving transmission facilities.

## SECTION J: REGIONAL COORDINATION

Mid-West Electric Consumers Association

Basin Electric Power Cooperative is a member of the Mid-West Electric Consumers Association (Mid-West). Mid-West, which was founded in 1958, is a regional coalition of consumer-owned electric utilities that purchase power from the federal multi-purpose projects in the Missouri River Basin. Mid-West's Water & Power Marketing Committee meets throughout the year to discuss and review planned additions of Mid-West member utilities.

Mid-Continent Area Power Pool

Basin Electric is a member of the Mid-Continent Area Power Pool (MAPP). Basin Electric participates on various committees which review the transmission adequacy and plans of area utilities as a function of the Mid-Continent Area Power Pool.

The Transmission Planning Committee (TPC), which coordinates MAPP's ten-year plan, has formed the Missouri Basin Sub-Regional Planning Group, whose primary purpose is to perform coordinated transmission planning.

The Missouri Basin Sub-Regional Planning Group includes utilities in the North and South Dakota area. In compliance with NERC planning standards, the group is required to develop a coordinated ten-year plan for MAPP every two years for their region. This ten-year plan evaluates the adequacy of existing interconnected systems to support load growth and provide an indication of the ability of the system to meet regional reliability criteria.

Basin Electric also participates on the Design Review Subcommittee which ensures that long term reliability of the MAPP system is not adversely affected by changes to generation and transmission facilities. Many other MAPP committees, in which Basin Electric is involved, also review the transmission, generation, and operations of the MAPP interconnected system.

## Coordination with Area Utilities

Western Area Power Administration

Basin Electric coordinates regional power supplies with the Western Area Power Administration. An example is the Miles City, Montana DC converter station. The station was built by the Western Area Power Administration (WAPA) to transfer electric power across the east/west transmission separation. Basin Electric has financed 40% of the cost of the station and contracted with WAPA for 40% of the capacity of the 200 MW station. This station enables Basin Electric to serve Central Montana Electric Power Cooperative, a Class A member with electrical loads primarily located west of the east-west separation.

Montana-Dakota Utilities Co.

Member cooperatives of Basin Electric have a common service area in the western half of North Dakota with Montana-Dakota Utilities Co. (MDU). To avoid duplication of transmission facilities, an agreement was entered into on January 1, 1972, providing for joint use and construction of transmission facilities. This agreement provides for studies to be performed every two years to determine what additional transmission will be required to meet area load growth. This agreement calls for the sharing of facilities on the basis of each utility's respective load projections.

The Tioga-Saskatchewan 230 kV line constructed by Basin Electric and Saskatchewan Power Corporation allows the purchase and sale of power among regional utilities. This line was reviewed with MDU and routed so that it could be tapped for future use by MDU and the member systems of Basin Electric. A result of this review was the Tioga 230/115 kV substation constructed by MDU and shared by Basin Electric.

The Miles City-Hettinger-New Underwood, SD, 230 kV line is another example of joint planning. This line was jointly planned and constructed with WAPA, MDU and Basin Electric. Basin Electric and MDU each have 25% capacity rights and WAPA owns and has capacity rights to 50% of the line.

Integrated System Transmission Tariff

Basin Electric Power Cooperative, WAPA and Heartland Consumers Power District have combined their transmission facilities to create the Integrated System (IS) transmission tariff. This tariff was created to facilitate the use of the transmission facilities of Basin Electric Power Cooperative, WAPA and Heartland Consumers Power District by other utilities required under FERC Order 888.

## SECTION K: ENVIRONMENTAL INFORMATION

The primary obligation of Basin Electric is to provide an adequate wholesale supply of dependable, low-cost electric power to its member systems, consistent with the public interest. In conjunction with this, Basin Electric endeavors to maximize the socio-economic benefits associated with electrical generation and transmission projects and to minimize negative impacts associated with these projects. This is particularly true with respect to protecting the agricultural lifestyle and productivity of this region.

The Cooperative remains committed to preserving and enhancing the ecological balance of this region for the benefit of future generations. It is the policy of Basin Electric that environmental impacts be monitored and steps taken to mitigate and alleviate adverse effects. Basin Electric has instituted a variety of programs designed to maximize the most efficient use of energy and to benefit the human, agricultural, and biological environments.

Projects proposed by Basin Electric adhere to the requirements of the Rural Utilities Service Environmental Policies and Procedures which describe the procedures for compliance with the provisions of the National Environmental Policy Act (NEPA). Through the NEPA process, Basin Electric encourages state, federal and public participation in proposed projects so that once potential impact issues are identified appropriate mitigation measures can be formulated with the assistance of the participants to minimize potential impacts. An Environmental Assessment is developed which includes a comprehensive discussion and evaluation of environmental issues and serves as a baseline document for subsequent environmental regulatory permits and a federal Environmental Impact Statement when required. The goal of this process is to select a facility location that best minimizes environmental, cultural and socio-economic impacts and engineering and construction costs.

Basin Electric adheres to the appropriate North Dakota statutes regulating industrial development projects such as electrical generating facilities and high voltage transmission lines and substations. In addition, it is Basin Electric's practice to inform affected state and federal agencies when prospective projects are identified to solicit their input early in the planning process.

Basin Electric utilizes a socio-economic impact management program to assist communities in addressing population growth associated with the construction of energy conversion facilities. Basin Electric follows an open-planning process to determine the specific negative and positive impacts that may develop in an area, and works closely with the local citizens and public officials on key issues. Once issues are defined, strategies are recommended to alleviate the adverse conditions. Basin Electric further provides public officials with the technical assistance to secure financing for public services and facilities needed to alleviate negative impacts.

## SECTION L: PROJECTED DEMAND FOR SERVICES

Exhibit 2 represents Basin Electric's sale to its Class A members. This exhibit represents Basin Electric's supplemental power supply responsibilities to its members. As a supplemental power supplier, Basin Electric is responsible for providing the members requirements in excess of the fixed amount of power they receive from WAPA and other sources.

An econometric based load forecast was completed in early 2011. The econometric forecasting system in the load forecast is a bottom up process that begins by developing econometric equations and forecasts for each distribution cooperative. The total system consists of approximately 350 forecasting equations and over 700 explanatory variables. Annual and monthly forecasts of energy and demand are conducted for a 15-year period. The distribution cooperative forecasts are combined to obtain the generation and transmission cooperative forecasts (G&T's). The G&T's power requirements are then separated into various power supply responsibilities. The Basin Electric components are combined to obtain the Basin Electric total power supply responsibility.

The modeling and forecasting is performed at Basin Electric. Throughout the modeling and forecasting process there is constant communication and review by member systems and the Rural Utilities Service (RUS) in Washington, D.C. The RUS is responsible to review and approve close to 1,000 distribution cooperative forecasts as well as large G&T systems forecasts such as Basin Electric. The RUS insures that state of the art methods and technologies are being used to produce short term and long-term forecasts. Historical energy data is combined with external data obtained from government and private sector sources as well as membership to form econometric forecasting equations. External projections of explanatory economic and demographic variables used in the forecasting process are obtained from the Food and Agricultural Policy Research Institute at the University of Missouri-Columbia, MO., Woods & Poole Economics, Inc., and the Department of Energy, Wn. D.C., as well as others.

Basin Electric's service area is electrically divided into western and eastern systems. These systems are separated by the east-west ties, which are boundaries that separate two major electrical regions of the United States. This boundary essentially runs south from Fort Peck, MT, approximately following the South Dakota-Wyoming, Nebraska-Wyoming, and Colorado-Kansas borders. As a result of this, Basin Electric must supply generating capacity and energy on both sides of the ties to serve its member-load requirements.

The resources available to Basin Electric to serve its members' east-side requirements are as follows:

1. Leland Olds Station: Leland Olds Unit 1 was placed in-service on January 9, 1966 and is a base-load thermal unit located near Stanton, ND with a net capacity of 222 MW. Leland Olds Unit 2 was placed in-service on December 15, 1975 with a net capacity of 447 MW. Basin Electric has committed to install emission control equipment at the Leland Olds Station which requires an increase to the station service. This equipment is anticipated to be installed in the fall of 2012 for Unit 2 and the spring of 2013 for Unit 1.

2. WAPA Peaking Capacity: In 1968 Basin Electric executed a long-term contract with the federal government for USBR (now WAPA) hydro peaking from the dams in the Missouri River Basin. This contract currently provides Basin Electric with 268.2 MW of winter peaking capacity at load, whereas an at-plant value includes losses on the Integrated System (IS).

3. Spirit Mound Station: Basin Electric placed in service two 60 MW (net) nameplate oil-fired combustion turbines on June 30, 1978. The combined winter rating of the two units is 120 MW (net) and the summer rating is 100 MW (net). The capacity is intended to be used primarily as reserves or replacement during initial outages of base-load units or during peak load periods when existing base-load units cannot meet the demand. The Spirit Mound Station is located near Vermillion, SD.

4. Laramie River Station: Basin Electric, together with five other consumer-owned power supply entities, began construction of the Laramie River Station near Wheatland in southeast Wyoming in July, 1976. The station's three units became fully operational on November 1, 1982, with Unit 1 at a net capacity of 570 MW; Unit 2 at a net capacity of 570 MW; and Unit 3 at a net capacity of 570 MW. The current rating of the units is due to turbine upgrades that occurred in 2007, 2008 and 2009. Basin Electric, as Project Manager and Operating Agent for the Missouri Basin Power Project, was assigned overall responsibility for the design, construction and operation of the power plant and related transmission. Units 2 and 3 of the Laramie River Station are electrically connected to the western system; Unit 1 is electrically connected to the eastern system. The amount of power Basin Electric receives from the eastern unit is 48 MW (net).

5. Antelope Valley Station: Basin Electric operates two 450 MW (net) thermal-generating units near Beulah, ND. Approximately 110+ MW of electric power for the Dakota Gasification Company Synfuels Plant facilities are supplied by the Antelope

Valley Station. Unit 1 began commercial operation on July 1, 1984 and Unit 2 began partial commercial operation on June 1, 1986.

6. Neal IV: Basin Electric and Northwest Iowa Power Cooperative (NIPCO), one of Basin Electric's member cooperative, negotiated a power supply contract which provides that NIPCO will sell to Basin Electric NIPCO's 31 MW of uncommitted capacity and associated energy from Unit No. 4 of the George Neal Generating Station (Neal IV). In return NIPCO entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to NIPCO all of NIPCO's capacity and energy requirements in excess of the power and energy available to NIPCO from the Western Area Power Administration.

   Basin Electric and Corn Belt Power Cooperative (Corn Belt), one of Basin Electric's member cooperatives, negotiated a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt's 73 MW of uncommitted capacity and associated energy from Unit No. 4 of the George Neal Generating Station (Neal IV). In return, Corn Belt entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt all of Corn Belt's capacity and energy requirements in excess of the power and energy available to Corn Belt from the Western Area Power Administration.

7. Chamberlain Wind Project: Basin Electric, in partnership with East River Power Cooperative, has constructed a wind energy project near Chamberlain, South Dakota. The 2.6 megawatt capacity project was placed into commercial service in January 2002. The energy is delivered to members as part of Basin Electric's overall power supply.

8. Minot Wind Project: Basin Electric, in partnership with Central Power Electric Cooperative, has constructed a wind energy project 14 miles south of Minot, North Dakota. The 2.6 megawatt capacity wind project was placed into commercial service in February 2002. Three additional turbines were added in December 2009 for a total output of 7.1 megawatts. The energy is delivered to members as part of Basin Electric's overall power supply.

9. PrairieWinds 1: Basin Electric, in partnership with PrairieWinds ND 1 Inc., has constructed a wind energy project of 77 turbines near Minot, North Dakota. The 115.5 MW capacity wind project was placed into commercial service in December, 2009.

10. Crow Lake Wind Project: Basin Electric, in partnership with Prairie Winds SD1 Inc., South Dakota Wind Partners and Mitchell Technical Institute, has constructed a wind energy project of 108 turbines near White Lake, South Dakota. The 162 MW capacity wind project was placed into commercial service. Basin Electric's subsidiary, Prairie Winds SD1, owns 100 turbines or 150 MW. Basin Electric has a purchase power contract for all 108 turbines or 162 MW from the Crow Lake Wind Project.

11. Walter Scott 3 and 4: Basin Electric and Corn Belt Power Cooperative (Corn Belt), one of Basin Electric's member cooperatives, negotiated a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt's 26 MW of uncommitted capacity and associated energy from Unit No. 3 and 42 MW of uncommitted capacity and associated energy from Unit No. 4 of the Walter Scott Energy Center. In return, Corn Belt entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt all of Corn Belt's capacity and energy requirements in excess of the power and energy available to Corn Belt from the Western Area Power Administration.

12. Duane Arnold Energy Center: Basin Electric and Corn Belt Power Cooperative (Corn Belt), one of Basin Electric's member cooperatives, negotiated with a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt's 62 MW of uncommitted capacity and associated energy from the Duane Arnold Energy Center. In return, Corn Belt entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt all of Corn Belt's capacity and energy requirements in excess of the power and energy available to Corn Belt from the Western Area Power Administration.

13. Wisdom Unit 1: Basin Electric and Corn Belt Power Cooperative (Corn Belt), one of Basin Electric's member cooperatives, negotiated a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt's 38 MW of uncommitted capacity and associated energy from the Earl F. Wisdom Unit 1. In return, Corn Belt entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt all of Corn Belt's capacity and energy requirements in excess of the power and energy available to Corn Belt from the Western Area Power Administration.

14. Wisdom Unit 2: Basin Electric partnered with Corn Belt Power Cooperative to build the 80 MW natural gas peaking unit near Spencer, Iowa. Basin Electric owns one half of the unit, which was placed in service in April 2004. Basin Electric purchases 87.5 % of Corn Belt's owned half in response to Corn Belt entering into a Wholesale Power Contract.

15. Groton Generation Station: Basin Electric commissioned Groton Unit 1 in 2006 and Unit 2 in 2008. These units provide peaking power. They each have winter ratings of 100 MW.

16. Culbertson Generation Station: Basin Electric commissioned Culbertson Unit 1 in 2010. The unit provides peaking power. The unit has a winter rating of 100 MW.

17. Other Short-Term Resources: Basin Electric has also entered into a number of short-term purchase agreements to meet contractual power supply obligations. Due to the relatively short duration of these arrangements no specifics are provided.

18. Long-Term Resource: Basin Electric has entered into a long-term purchase agreement with NextEra Energy Resources to meet contractual power supply obligations. A 40 megawatt wind energy project is located just west of Edgeley, ND; two 49.5 MW wind energy projects are located near Wilton, ND; a 40 megawatt wind

energy project is located near Highmore, SD; a 99 MW wind energy project is located near Groton, SD; and a 100 MW wind energy project is located near Baldwin, ND. Basin Electric also entered into a long-term purchase agreement with the City of Madison which provides 10 MW of peaking power from a diesel unit at Madison, SD. Basin Electric has a purchase power agreement with Ormat Industries for eight 5.5 MW waste heat recovery units. Three sites are in North Dakota near St. Anthony, Manning, and Zeeland. Three sites are in South Dakota, one in Montana and one in Minnesota. Basin Electric also purchases the output from the following generating facilities from its member cooperative Corn Belt, 25 MW from the Webster City, IA combustion turbine; 8.3 MW from the diesel generators at Estherville, IA; 3.8 MW from the diesel generators at Pocahontas, IA; 10 MW from the combustion turbine located at Spencer, IA; and from the following wind generating projects, 7.3 MW of Hancock County, 16.8 MW of Crosswinds, 10.5 MW from Lakota and 10.5 MW from Superior, all located within Iowa. Basin Electric also has long term purchases from Minnesota Power for 100 MW and 30 MW from Municipal Energy Agency of Nebraska.

19. Future Power Supply: For discussion of future power supply, please refer to Section B (Energy Conversion Facilities Under Construction) and Section D (Proposed Energy Conversion Facilities During the Next Ten-Year Time Period).

The resources available to Basin Electric to serve its members' west-side requirements are as follows:

1. Laramie River Station: The Laramie River Station capacity that Basin Electric will receive from the two west-side units is 675 MW (net).

2. Miles City DC Tie: Basin Electric and the Western Area Power Administration have jointly constructed a 200 MW back-to-back, AC-DC-AC tie built at Miles City, MT. This tie, which provides a 40% capacity entitlement, enables Basin Electric to serve Central Montana Electric Power Cooperative Inc., a Class A member with electrical loads located primarily west of the east-west ties, using capacity from east-side resources such as Antelope Valley Station.

3. Rapid City DC Tie: Basin Electric and Black Hills Power, Inc. have jointly constructed a 200 MW asynchronous tie at Rapid City, SD. This tie enables Basin Electric to serve new coalbed methane load growth in northeastern Wyoming located west of the east-west ties, using capacity and/or energy from east side resources such as Antelope Valley Station. The Basin Electric ownership percentage is 65% and the Black Hills Power, Inc. ownership percentage is 35%.

4. Wyoming Distributed Generation: The Wyoming Distributed Generation consists of 9 units located at 3 sites; Arvada, Hartzog and Barber Creek. These units are natural gas fired units with a total net output of 45 MW summer and 54 MW winter.

5. Dry Fork Station: Basin Electric is developing a 390 MW (net) coal fired power plant located 10 miles north of Gillette, Wyoming. This project is named Dry Fork Station and the projected in-service date is 2011. Basin Electric will own 92.9% of the station.

The load values contained in Exhibit 2 were obtained from the econometric based load forecast completed in 2011. These loads have been adjusted to an at-generator system coincident basis by allowing for reserves, on-peak losses and system diversity as outlined in Exhibit 3.

1. Basin Electric has no concentrated load centers due to the regional and rural nature of the total load. The fuel sources and transportation facilities for existing and future plants are as follows:

| Plant | Fuel Source | Transportation |
|---|---|---|
| Leland Olds Station | ND Lignite/Wyoming (PRB) Coal | Rail |
| Spirit Mound Station | Oil | Pipeline |
| Laramie River Station | Wyoming (PRB) Coal | Rail |
| Antelope Valley Station | ND Lignite/Wyoming (PRB) Coal | Mine Mouth/Rail |
| Minot Wind Project | Wind | N/A |
| Wyoming Distributed Generation | Natural Gas | Pipeline |
| Wisdom Unit 2 | Natural Gas/Fuel Oil | Pipeline |
| Chamberlain Wind Project | Wind | N/A |
| Groton Generation Station | Natural Gas | Pipeline |
| PrairieWinds 1 Wind Project | Wind | N/A |
| Crow Lake Wind Project | Wind | N/A |
| Culbertson Generation Station | Natural Gas | Pipeline |
| Deer Creek Station | Natural Gas | Pipeline |
| Dry Fork Station | Wyoming (PRB) Coal | Mine Mouth |

2. Pursuant to federal and state laws, Basin Electric will examine all alternatives capable of producing an adequate and reliable source of energy for its member cooperatives.

   Specific alternatives selected will be evaluated considering environmental, engineering and economic factors. Additional facilities, transmission and generation will be designed and operated in accordance with state and federal standards.

**EXHIBIT 1**

**U.S. Department of Energy Form EIA-923**
**(distributed only to the Public Services Commission)**

U.S. Department of Energy
Energy Information Administration
Form EIA-923

**EIA923 Power Plant Operations Report**

Year: **2010** Plant: **6469** **Antelope Valley**

Form Approval
OMB No. 1905-0129
Approval Expires 12/31/2010

NOTICE: This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to comply may result in criminal fines, civil penalties and other sanctions as provided by law. For further information concerning sanctions and data protections see the provision on sanctions and the provision concerning confidentiality of information in the instructions. **Title 18 USC 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.**

## SCHEDULE 1. IDENTIFICATION

### Survey Contact

| | | | |
|---|---|---|---|
| Contact | Joseph Leingang | Submit By | 300002472 |
| Title | Director of Fuels | Submit Date | 28-JUN-11 |
| Address | 1717 E. Interstate Avenue | Accept By | |
| | | Accept Date | |
| City/State/Zip | Bismarck ND 58503 | | |
| Email | jleingang@bepc.com | Phone (701) 557-5648 | Fax (701) 557-5144 |

### Supervisor of Contact Person for Survey

| | | | |
|---|---|---|---|
| Contact | Terry Retterath | | |
| Title | Industrial Engineer III | | |
| Address | 1717 E. Interstate Avenue | | |
| City/State/Zip | Bismarck ND 58503 | | |
| Email | tlrat@bepc.com | Phone (701) 223-0441 | Fax (701) 557-5144 |

### Report For

| | | | |
|---|---|---|---|
| Company Name | Basin Electric Power Coop | | |
| Plant Name | Antelope Valley | | |
| Plant ID | 6469 | Plant County | Mercer |
| Plant Address | Hwy 200 | | |
| Plant City | Beulah | Plant State | ND |

| | | |
|---|---|---|
| Regulated | [X] Yes | No |
| CHP | Yes | [X] No |
| CHP Efficiency | | |

**For contact detail go to http://www.eia.doe.gov/oss/forms.html#eia-923**

## SCHEDULE 6. NONUTILITY ANNUAL SOURCE AND DISPOSITION OF ELECTRICITY

(Instructions for SCHEDULE 6 are on page 13)

SCHEDULE 6 collects calendar year data (no monthly detail).
Annual data are due by March 30 following the reporting year.
Report all generation in **megawatthours (MWh)** rounded to a whole number.

| | |
|---|---|
| (1) Gross Generation (Annual) | (4) Station Use |
| (2) Other Incoming Electricity | (5) Direct Use |
| | (6) Total Facility Use (4 + 5) |
| | (7) Retail Sales to Ultimate Customers |
| | (8) Sales for Resale (MWh) |
| | (9) Other Outgoing Electricity |
| (3) Total Sources (1 + 2) | (10) Total Disposition (6 + 7 + 8+ 9) |

**Total Sources must equal Total Disposition (3 = 10)**

**Plants that cannot separate Station Use and Direct Use may enter zero in Station Use and the sum of Station Use and Direct Use in the Direct Use field.**

## SCHEDULE 7. ANNUAL REVENUES FROM SALES FOR RESALE

(Instruction for SCHEDULE 7 are on page 14.)

SCHEDULE 7 is to be completed by respondents who entered a positive amount on SCHEDULE 6, Disposition of Electricity, Item 8, Sales for Resale. Annual data are due by March 30 following the reporting year.

Sales for Resale is energy supplied to other electric utilities, cooperatives, municipalities, Federal and State electric agencies, or other entities for resale to end-use consumers.

Annual Revenues from Sales for Resale (in thousand dollars)

## SCHEDULE 8. ANNUAL ENVIRONMENTAL INFORMATION

SCHEDULE 8. PARTS A through F are filed annually and must be reported by steam-electric organic-fueled power plants with a total steam turbine capacity of 100 megawatts and above (only plants that reported boiler-level consumption on SCHEDULE 3. Part A.). All steam-electric organic-fueled power plants with a total steam turbine capacity of 10 megawatts and above are responsible for filing Schedule 8, Parts C, E, and F. Annual data are due by March 30 following the reporting year.

## SCHEDULE 8. PART A. ANNUAL BYPRODUCT DISPOSITION

(Instructions for SCHEDULE 8 PART A are on page 14)

Enter the quantity of combustion byproducts for the year by type of disposal (to nearest 0.1 thousand tons). Report sales of steam in million Btu (MMBtu). If actual data are not available, provide an estimated value.

No Byproducts

| Byproduct | Disposal | | | Sale or Beneficial Use | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | On-site Landfill | Disposal On-site Ponds | Disposal Off-site | Sold | Used On-site | Used Off-site | Storage Stored On-site | Stored Off-site | Total |
| Fly ash from standard boiler/PCD units | | | | | | | | | |
| Fly ash from units with dry FGD | | | 334.0 | | | | | | 334.0 |
| Fly ash from FBC units | | | | | | | | | |
| Bottom ash from standard boiler units | | | 139.8 | | | | | | 139.8 |
| Bottom (bed) ash from FBC units | | | | | | | | | |
| FGD Gypsum | | | 491.3 | 47.3 | | 93.1 | | | 631.7 |
| Other FGD byproducts | | | | | | | | | |
| Ash from coal gasification (IGCC) units | | | | | | | | | |
| Other (specify via footnote on Schedule 9) | | | | | | | | | |
| Steam Sales (MMBtu) | | | | | | | | | |

## SCHEDULE 8. PART B. FINANCIAL INFORMATION

(Instructions for SCHEDULE 8 PART B are on page15.)

If actual data are not available, provide an estimated value.

### Operation and Maintenance (O&M) Expenditures During Year (Thousand Dollars)

| Type | (1) Fly Ash | (2) Bottom Ash | (3) Flue Gas Desulfurization | (4) Water Pollution Abatement | (5) Other Pollution Abatement | (6) Total (1 + 2 + 3 + 4 + 5) |
|---|---|---|---|---|---|---|
| Collection | 1,761 | 625 | 13,336 | | 2,802 | 18,524 |
| Disposal | | | | | | 0 |
| Other | | | | | | 0 |

### Capital Expenditures for New Structures and Equipment During Year, Excluding Land and Interest Expense (Thousand Dollars)

| Type | (7) Air Pollution Abatement | (8) Water Pollution Abatement | (9) Solid/Contained Waste | (10) Other Pollution Abatement |
|---|---|---|---|---|
| Amount | 10,054 | | | |

### Byproduct Sales Revenue During Year (Thousand Dollars)

| Type | (11) Fly Ash | (12) Bottom Ash | (13) Fly and Bottom Ash Sold Intermingled | (14) Flue Gas Desulfurization | (15) Other Byproduct Revenue | (16) Total (11+12+13+14+15) |
|---|---|---|---|---|---|---|
| Amount | 142 | | | | | 142 |

## SCHEDULE 8. PART C. BOILER INFORMATION NITROGEN OXIDE EMISSION CONTROLS

(Instructions for SCHEDULE 8 PART C are on page 16.)

Complete a separate row for each boiler.

Note: The Boiler ID must match the Boiler ID as reported on Form EIA-860, "Annual Electric Generator Report."

No NOX Controls

| Boiler ID | NOx Control In-Service (hours) | NOx Emission Rate (lbs/MMBtu) | |
|---|---|---|---|
| | | Entire Year | May through September |
| B1 | 8,642 | .38 | .38 |
| B2 | 7,527 | .34 | .34 |

## SCHEDULE 8. PART D. COOLING SYSTEM INFORMATION, ANNUAL OPERATIONS

(Instructions for SCHEDULE 8 PART D are on page 16.)

Note: Cooling System ID must match the ID as reported on Form EIA-860, "Annual Electric Generator Report."
Complete a separate row for each cooling system.

| Cooling System ID | Status | Chlorine added to Cooling Water (1000 lbs) | Hours in Service | Average Annual Rate of Cooling Water (to nearest 0.1 $ft^3$/sec) | | | | Maximum Cooling Water Temperature at Intake (F) | | | Maximum Cooling Water Temperature at Discharge Outlet (F) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Diversion | Withdrawal | Discharge | Consumption | Estimation | Monthly Avg | Monthly Max | Monthly Avg | Monthly Max | Estimation |
| Month 1 | | | | | | | | | | | | | |
| CC1 | OP | 5 | 744 | 7.4 | 7.4 | 0 | 7.4 | 2 | 33 | 33 | | | 1 |
| CC2 | OP | 4 | 744 | 7.1 | 7.1 | 0 | 7.1 | 2 | 33 | 33 | | | 1 |
| Month 2 | | | | | | | | | | | | | |
| CC1 | OP | 4 | 672 | 7.6 | 7.6 | 0 | 7.6 | 2 | 33 | 34 | | | 1 |
| CC2 | OP | 4 | 629 | 6.7 | 6.7 | 0 | 6.7 | 2 | 33 | 34 | | | 1 |
| Month 3 | | | | | | | | | | | | | |
| CC1 | OP | 5 | 743 | 7.9 | 7.9 | 0 | 7.9 | 2 | 33 | 45 | | | 1 |
| CC2 | OP | 5 | 743 | 7.6 | 7.6 | 0 | 7.6 | 2 | 33 | 45 | | | 1 |
| Month 4 | | | | | | | | | | | | | |
| CC1 | OP | 5 | 696 | 8.2 | 8.2 | 0 | 8.2 | 2 | 49 | 60 | | | 1 |
| CC2 | OP | 3 | 385 | 4.2 | 4.2 | 0 | 4.2 | 2 | 49 | 60 | | | 1 |
| Month 5 | | | | | | | | | | | | | |
| CC1 | OP | 5 | 693 | 8.7 | 8.7 | 0 | 8.7 | 2 | 55 | 68 | | | 1 |
| CC2 | OP | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 55 | 68 | | | 1 |
| Month 6 | | | | | | | | | | | | | |
| CC1 | OP | 5 | 720 | 8.2 | 8.2 | 0 | 8.2 | 2 | 65 | 76 | | | 1 |
| CC2 | OP | 4 | 708 | 6.7 | 6.7 | 0 | 6.7 | 2 | 65 | 76 | | | 1 |
| Month 7 | | | | | | | | | | | | | |
| CC1 | OP | 5 | 744 | 8.5 | 8.5 | 0 | 8.5 | 2 | 73 | 78 | | | 1 |
| CC2 | OP | 5 | 744 | 8.2 | 8.2 | 0 | 8.2 | 2 | 73 | 78 | | | 1 |
| Month 8 | | | | | | | | | | | | | |
| CC1 | OP | 5 | 744 | 8.8 | 8.8 | 0 | 8.8 | 2 | 73 | 79 | | | 1 |
| CC2 | OP | 5 | 743 | 8.5 | 8.5 | 0 | 8.5 | 2 | 73 | 79 | | | 1 |
| Month 9 | | | | | | | | | | | | | |
| CC1 | OP | 4 | 720 | 7.4 | 7.4 | 0 | 7.4 | 2 | 59 | 65 | | | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CC2 | OP | 4 | 720 | 7.4 | 7.4 | 0 | 7.4 | 2 | 59 | 65 | 1 |
| Month 10 | | | | | | | | | | | |
| CC1 | OP | 5 | 690 | 7.4 | 7.4 | 0 | 7.4 | 2 | 45 | 57 | 1 |
| CC2 | OP | 4 | 694 | 7.1 | 7.1 | 0 | 7.1 | 2 | 45 | 57 | 1 |
| Month 11 | | | | | | | | | | | |
| CC1 | OP | 4 | 720 | 7.2 | 7.2 | 0 | 7.2 | 2 | 39 | 43 | 1 |
| CC2 | OP | 4 | 720 | 6.1 | 6.1 | 0 | 6.1 | 2 | 39 | 43 | 1 |
| Month 12 | | | | | | | | | | | |
| CC1 | OP | 4 | 737 | 7 | 7 | 0 | 7 | 2 | 34 | 36 | 1 |
| CC2 | OP | 5 | 744 | 7.3 | 7.3 | 0 | 7.3 | 2 | 34 | 36 | 1 |

## SCHEDULE 8. PART E . FLUE GAS PARTICULATE COLLECTION INFORMATION

(Instructions for SCHEDULE 8 PART E are on page 17)

Complete a separate row for each flue gas particulate collector.

Does not Apply

| Flue Gas Particulate Collector ID | Status | Hours in Service | Typical Particulate Emissions Rate (nearest 0.01 lb/MMBtu) | Removal Efficiency of Particulate Matter (nearest 0.1% by weight) At Annual Operating Factor | At 100% Load or Tested Efficiency | Date of Most Recent Efficiency Test (e.g., 12-2005) |
|---|---|---|---|---|---|---|
| BH1 | OP | 8,642 | .02 | 99.9 | 99.9 | 9-1983 |
| BH2 | OP | 7,527 | .01 | 99.9 | 99.9 | 8-1986 |

## SCHEDULE 8. PART F. FLUE GAS DESULFURIZATION UNIT INFORMATION, ANNUAL OPERATIONS

(Instructions for SCHEDULE 8 PART F are on page 19.)

Note: Flue Gas Desulfurization ID must match the ID as reported on Form EIA-860, "Annual Electric Generator Report."
Complete a separate row for each Flue Gas Desulfurization Unit.

### ANNUAL OPERATIONS

Does not Apply

| Flue Gas Desulfurization Unit ID | FGD Unit Status | Hours In Service | Quantity of FGD Sorbent Used (to nearest 0.1 thousand tons) | Electrical Energy Consumption (MWh) | Removal Efficiency of Sulfur Dioxide (nearest 0.1% by wt) At Annual Operating Factor | At 100% Load or Tested Efficiency | Date of Most Recent Efficiency Test (e.g., 12-2005) |
|---|---|---|---|---|---|---|---|
| FGD1 | OP | 8,642 | 49.4 | 23,825 | 83.7 | 63.9 | 9-1983 |
| FGD2 | OP | 7,527 | 36.4 | 24,665 | 84.4 | 85.8 | 8-1986 |

### OPERATION AND MAINTENANCE EXPENDITURES DURING YEAR, EXCLUDING ELECTRICITY (THOUSAND DOLLARS)

| Flue Gas Desulurization Unit ID | Feed Materials and Chemicals | Labor and Supervision | Waste Disposal | Maintenance, Materials and All Other Costs | Total |
|---|---|---|---|---|---|
| FGD1 | $4,085 | $1,887 | $376 | $118 | $6,466 |
| FGD2 | $3,011 | $1,887 | $376 | $1,598 | $6,872 |

U.S. Department of Energy
Energy Information Administration
Form EIA-923

**EIA923 Power Plant Operations Report**

Year: **2010** Plant: **6469** **Antelope Valley**

Form Approval
OMB No. 1905-0129
Approval Expires 12/31/2010

## Schedule 9 Comments

| Schedule | Part | Item | Comment |
|---|---|---|---|
| | | | |

## Error Log

| Purchase Type | Fuel | Schedule | Prime Mover | Equipment ID | Rpt Month | Supplier | | Error Number & Description/Override | Ranges |
|---|---|---|---|---|---|---|---|---|---|
| | | 8A | | | | | 801 | You have entered a cost for collection/disposal of fly ash on Schedule 8B, but have not entered a positive quantity of fly ash in any column on Schdule 8A. Please enter the quantity of fly ash associated with the costs in the appropriate row/column on Schedule 8A.<br>Default | |
| | | 8A | | | | | 808 | You have entered a cost for collection/disposal for FGD on Schedule 8B, but have not entered a positive quantity of FDG Gypsum or By-products in any column on Schdule 8A. Please enter the quantity of FGD byproduct or FGD Gypsum associated with the costs in the appropriate column on Schedule 8A.<br>Default | |
| | | 8A | | | | | 844 | Total volume of fly ash is an unexpectedly high or low portion of the combined total of fly ash and bottom ash; please check.<br>Default | |
| | | 8B | | | | | 808 | You have entered a cost for collection/disposal for FGD on Schedule 8B, but have not entered a positive quantity of FDG Gypsum or By-products in any column on Schdule 8A. Please enter the quantity of FGD byproduct or FGD Gypsum associated with the costs in the appropriate column on Schedule 8A.<br>Default | |
| | | 8B | | | | | 836 | Sales of Other Byproducts were reported on Schedule 8, Part A. Please enter the revenue in units of thousand dollars from those sales on Schedule 8B. Example: enter revenue of 5 million dollars as 5,000, not 5,000,000. | |

U.S. Department of Energy
Energy Information Administration
Form EIA-923

**EIA923 Power Plant Operations Report**

Year: **2010** Plant: **2817** **Leland Olds**

Form Approval
OMB No. 1905-0129
Approval Expires 12/31/2010

NOTICE: This report is mandatory under the Federal Energy Administration Act of 1974 (Public Law 93-275). Failure to comply may result in criminal fines, civil penalties and other sanctions as provided by law. For further information concerning sanctions and data protections see the provision on sanctions and the provision concerning confidentiality of information in the instructions. **Title 18 USC 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.**

## SCHEDULE 1. IDENTIFICATION

### Survey Contact

| | | | |
|---|---|---|---|
| Contact | Joseph Leingang | Submit By | 300002472 |
| Title | Director of Fuels | Submit Date | 27-JUN-11 |
| Address | 1717 E. Interstate Avenue | Accept By | |
| | | Accept Date | |
| City/State/Zip | Bismarck ND 58503 | | |
| Email | jleingang@bepc.com | Phone (701) 557-5648 | Fax (701) 557-5144 |

### Supervisor of Contact Person for Survey

| | | | |
|---|---|---|---|
| Contact | Terry Retterath | | |
| Title | Industrial Engineer III | | |
| Address | 1717 E. Interstate Avenue | | |
| City/State/Zip | Bismarck ND 58503 | | |
| Email | tlrat@bepc.com | Phone (701) 223-0441 | Fax (701) 557-5144 |

### Report For

| | | | |
|---|---|---|---|
| Company Name | Basin Electric Power Coop | | |
| Plant Name | Leland Olds | | |
| Plant ID | 2817 | Plant County | Mercer |
| Plant Address | Hwy 200 | | |
| Plant City | Stanton | Plant State | ND |

| | | |
|---|---|---|
| Regulated | [X] Yes | [ ] No |
| CHP | [ ] Yes | [X] No |
| CHP Efficiency | | |

**For contact detail go to http://www.eia.doe.gov/oss/forms.html#eia-923**

## SCHEDULE 6. NONUTILITY ANNUAL SOURCE AND DISPOSITION OF ELECTRICITY

(Instructions for SCHEDULE 6 are on page 13)

SCHEDULE 6 collects calendar year data (no monthly detail).
Annual data are due by March 30 following the reporting year.
Report all generation in **megawatthours (MWh)** rounded to a whole number.

| | |
|---|---|
| (1) Gross Generation (Annual) | (4) Station Use |
| (2) Other Incoming Electricity | (5) Direct Use |
| | (6) Total Facility Use (4 + 5) |
| | (7) Retail Sales to Ultimate Customers |
| | (8) Sales for Resale (MWh) |
| | (9) Other Outgoing Electricity |
| (3) Total Sources (1 + 2) | (10) Total Disposition (6 + 7 + 8+ 9) |

**Total Sources must equal Total Disposition (3 = 10)**

**Plants that cannot separate Station Use and Direct Use may enter zero in Station Use and the sum of Station Use and Direct Use in the Direct Use field.**

## SCHEDULE 7. ANNUAL REVENUES FROM SALES FOR RESALE

(Instruction for SCHEDULE 7 are on page 14.)

SCHEDULE 7 is to be completed by respondents who entered a positive amount on SCHEDULE 6, Disposition of Electricity, Item 8, Sales for Resale. Annual data are due by March 30 following the reporting year.

Sales for Resale is energy supplied to other electric utilities, cooperatives, municipalities, Federal and State electric agencies, or other entities for resale to end-use consumers.

Annual Revenues from Sales for Resale (in thousand dollars)

## SCHEDULE 8. ANNUAL ENVIRONMENTAL INFORMATION

SCHEDULE 8. PARTS A through F are filed annually and must be reported by steam-electric organic-fueled power plants with a total steam turbine capacity of 100 megawatts and above (only plants that reported boiler-level consumption on SCHEDULE 3. Part A.). All steam-electric organic-fueled power plants with a total steam turbine capacity of 10 megawatts and above are responsible for filing Schedule 8, Parts C, E, and F. Annual data are due by March 30 following the reporting year.

## SCHEDULE 8. PART A. ANNUAL BYPRODUCT DISPOSITION

(Instructions for SCHEDULE 8 PART A are on page 14)

Enter the quantity of combustion byproducts for the year by type of disposal (to nearest 0.1 thousand tons). Report sales of steam in million Btu (MMBtu). If actual data are not available, provide an estimated value.

No Byproducts

| Byproduct | Disposal | | | Sale or Beneficial Use | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | On-site Landfill | Disposal On-site Ponds | Disposal Off-site | Sold | Used On-site | Used Off-site | Storage Stored On-site | Stored Off-site | |
| Fly ash from standard boiler/PCD units | | | 104.5 | 17.6 | | | | | 122.1 |
| Fly ash from units with dry FGD | | | | | | | | | |
| Fly ash from FBC units | | | | | | | | | |
| Bottom ash from standard boiler units | | 133.6 | | 9.9 | | | | | 143.5 |
| Bottom (bed) ash from FBC units | | | | | | | | | |
| FGD Gypsum | | | | | | | | | |
| Other FGD byproducts | | | | | | | | | |
| Ash from coal gasification (IGCC) units | | | | | | | | | |
| Other (specify via footnote on Schedule 9) | | | | | | | | | |
| Steam Sales (MMBtu) | | | | | | | | | |

## SCHEDULE 8. PART B. FINANCIAL INFORMATION

(Instructions for SCHEDULE 8 PART B are on page15.)

If actual data are not available, provide an estimated value.

### Operation and Maintenance (O&M) Expenditures During Year (Thousand Dollars)

| Type | (1) Fly Ash | (2) Bottom Ash | (3) Flue Gas Desulfurization | (4) Water Pollution Abatement | (5) Other Pollution Abatement | (6) Total (1 + 2 + 3 + 4 + 5) |
|---|---|---|---|---|---|---|
| Collection | 572 | 404 | 0 | 0 | 4 | 980 |
| Disposal | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 |

### Capital Expenditures for New Structures and Equipment During Year, Excluding Land and Interest Expense (Thousand Dollars)

| Type | (7) Air Pollution Abatement | (8) Water Pollution Abatement | (9) Solid/Contained Waste | (10) Other Pollution Abatement |
|---|---|---|---|---|
| Amount | 6,522 | 0 | 76 | 0 |

### Byproduct Sales Revenue During Year (Thousand Dollars)

| Type | (11) Fly Ash | (12) Bottom Ash | (13) Fly and Bottom Ash Sold Intermingled | (14) Flue Gas Desulfurization | (15) Other Byproduct Revenue | (16) Total (11+12+13+14+15) |
|---|---|---|---|---|---|---|
| Amount | 1 | 1 | 0 | 0 | 0 | 2 |

## SCHEDULE 8. PART C. BOILER INFORMATION NITROGEN OXIDE EMISSION CONTROLS

(Instructions for SCHEDULE 8 PART C are on page 16.)

Complete a separate row for each boiler.

Note: The Boiler ID must match the Boiler ID as reported on Form EIA-860, "Annual Electric Generator Report."

No NOX Controls

| | | NOx Emission Rate (lbs/MMBtu) | |
|---|---|---|---|
| Boiler ID | NOx Control In-Service (hours) | Entire Year | May through September |
| 1 | 7,733 | .29 | .29 |
| 2 | 7,996 | .31 | .31 |

## SCHEDULE 8. PART D. COOLING SYSTEM INFORMATION, ANNUAL OPERATIONS

(Instructions for SCHEDULE 8 PART D are on page 16.)

Note: Cooling System ID must match the ID as reported on Form EIA-860, "Annual Electric Generator Report."
Complete a separate row for each cooling system.

| Cooling System ID | Status | Chlorine added to Cooling Water (1000 lbs) | Hours in Service | Average Annual Rate of Cooling Water (to nearest 0.1 $ft^3$/sec) | | | | Maximum Cooling Water Temperature at Intake (F) | | | Maximum Cooling Water Temperature at Discharge Outlet (F) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Diversion | Withdrawal | Discharge | Consumption | Estimation | Monthly Avg | Monthly Max | Monthly Avg | Monthly Max | Estimation |
| Month 1 | | | | | | | | | | | | | |
| 1 | OP | 0 | 744 | 106.8 | 106.8 | 106.7 | .2 | 2 | 37 | 38 | 62 | 70 | 1 |
| 2 | OP | 0 | 744 | 267.1 | 267.1 | 266.8 | .3 | 2 | 37 | 38 | 58 | 68 | 1 |
| Month 2 | | | | | | | | | | | | | |
| 1 | OP | 0 | 672 | 127.4 | 127.4 | 127.2 | .2 | 1 | 38 | 41 | 66 | 69 | 1 |
| 2 | OP | 0 | 672 | 302.5 | 302.5 | 302.2 | .3 | 1 | 38 | 41 | 65 | 70 | 1 |
| Month 3 | | | | | | | | | | | | | |
| 1 | OP | 0 | 743 | 153.2 | 153.2 | 153 | .2 | 2 | 41 | 46 | 68 | 75 | 1 |
| 2 | OP | 0 | 743 | 299.2 | 299.2 | 298.9 | .3 | 2 | 41 | 46 | 68 | 79 | 1 |
| Month 4 | | | | | | | | | | | | | |
| 1 | OP | 0 | 720 | 149.9 | 149.9 | 149.8 | .1 | 2 | 44 | 57 | 69 | 78 | 1 |
| 2 | OP | 0 | 720 | 286.1 | 286.1 | 285.7 | .4 | 2 | 44 | 57 | 71 | 85 | 1 |
| Month 5 | | | | | | | | | | | | | |
| 1 | OP | 0 | 744 | 126.8 | 126.8 | 126.6 | .2 | 2 | 46 | 56 | 73 | 84 | 1 |
| 2 | OP | 0 | 744 | 266.8 | 266.8 | 266.4 | .4 | 2 | 46 | 56 | 72 | 85 | 1 |
| Month 6 | | | | | | | | | | | | | |
| 1 | OP | 0 | 720 | 102.4 | 102.4 | 102.2 | .2 | 2 | 55 | 75 | 70 | 91 | 1 |
| 2 | OP | 0 | 720 | 234 | 234 | 233.7 | .3 | 2 | 55 | 75 | 80 | 97 | 1 |
| Month 7 | | | | | | | | | | | | | |
| 1 | OP | 0 | 744 | 95 | 95 | 94.9 | .1 | 2 | 59 | 73 | 81 | 91 | 1 |
| 2 | OP | 0 | 744 | 45.5 | 45.5 | 45.2 | .3 | 2 | 59 | 73 | 93 | 99 | 1 |
| Month 8 | | | | | | | | | | | | | |
| 1 | OP | 0 | 744 | 63.9 | 63.9 | 63.8 | .1 | 2 | 61 | 76 | 83 | 93 | 1 |
| 2 | OP | 0 | 744 | 37.4 | 37.4 | 37.1 | .3 | 2 | 61 | 76 | 90 | 100 | 1 |
| Month 9 | | | | | | | | | | | | | |
| 1 | OP | 0 | 720 | 10.7 | 10.7 | 10.6 | .1 | 2 | 59 | 65 | 63 | 92 | 1 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | OP | 0 | 720 | 182.2 | 182.2 | 182 | .2 | 2 | 59 | 65 | 89 | 99 | 1 |
| Month 10 | | | | | | | | | | | | | |
| 1 | OP | 0 | 744 | 125 | 125 | 124.9 | .1 | 2 | 58 | 62 | 75 | 88 | 1 |
| 2 | OP | 0 | 744 | 81.6 | 81.6 | 81.4 | .2 | 2 | 58 | 62 | 64 | 96 | 1 |
| Month 11 | | | | | | | | | | | | | |
| 1 | OP | 0 | 720 | 159.6 | 159.6 | 159.5 | .1 | 2 | 48 | 55 | 72 | 82 | 1 |
| 2 | OP | 0 | 720 | 141.1 | 141.1 | 140.8 | .3 | 2 | 48 | 55 | 86 | 98 | 1 |
| Month 12 | | | | | | | | | | | | | |
| 1 | OP | 0 | 744 | 160.7 | 160.7 | 160.6 | .1 | 2 | 39 | 48 | 67 | 74 | 1 |
| 2 | OP | 0 | 744 | 180.9 | 180.9 | 180.6 | .3 | 2 | 39 | 48 | 74 | 91 | 1 |

## SCHEDULE 8. PART E . FLUE GAS PARTICULATE COLLECTION INFORMATION

(Instructions for SCHEDULE 8 PART E are on page 17)

Complete a separate row for each flue gas particulate collector.

Does not Apply

| Flue Gas Particulate Collector ID | Status | Hours in Service | Typical Particulate Emissions Rate (nearest 0.01 1b/MMBtu) | Removal Efficiency of Particulate Matter (nearest 0.1% by weight) At Annual Operating Factor | At 100% Load or Tested Efficiency | Date of Most Recent Efficiency Test (e.g., 12-2005) |
|---|---|---|---|---|---|---|
| 1 | OP | 7,733 | .02 | 99.8 | 99.8 | 12-1974 |
| 2 | OP | 7,996 | .02 | 99.5 | 99.5 | 12-1976 |

## SCHEDULE 8. PART F. FLUE GAS DESULFURIZATION UNIT INFORMATION, ANNUAL OPERATIONS

(Instructions for SCHEDULE 8 PART F are on page 19.)

Note: Flue Gas Desulfurization ID must match the ID as reported on Form EIA-860, "Annual Electric Generator Report."
Complete a separate row for each Flue Gas Desulfurization Unit.

### ANNUAL OPERATIONS

[X] Does not Apply

| Flue Gas Desulfurization Unit ID | FGD Unit Status | Hours In Service | Quantity of FGD Sorbent Used (to nearest 0.1 thousand tons) | Electrical Energy Consumption (MWh) | Removal Efficiency of Sulfur Dioxide (nearest 0.1% by wt) At Annual Operating Factor | At 100% Load or Tested Efficiency | Date of Most Recent Efficiency Test (e.g., 12-2005) |
|---|---|---|---|---|---|---|---|

### OPERATION AND MAINTENANCE EXPENDITURES DURING YEAR, EXCLUDING ELECTRICITY (THOUSAND DOLLARS)

| Flue Gas Desulurization Unit ID | Feed Materials and Chemicals | Labor and Supervision | Waste Disposal | Maintenance, Materials and All Other Costs | Total |
|---|---|---|---|---|---|

U.S. Department of Energy
Energy Information Administration
Form EIA-923

**EIA923 Power Plant Operations Report**

Year: **2010** Plant: **2817** **Leland Olds**

Form Approval
OMB No. 1905-0129
Approval Expires 12/31/2010

## Schedule 9 Comments

| Schedule | Part | Item | Comment |
|---|---|---|---|

## Error Log

| Purchase Type | Fuel | Schedule | Prime Mover | Equipment ID | Rpt Month | Supplier | | Error Number & Description/Override | Ranges |
|---|---|---|---|---|---|---|---|---|---|
| | | 8A | | | | | 844 | Total volume of fly ash is an unexpectedly high or low portion of the combined total of fly ash and bottom ash; please check.<br>Default | |
| | | 8B | | | | | 833 | Sales of fly ash were reported on Schedule 8, Part A. Enter the revenue in units of thousand dolloars from those sales in Schedule 8B. Example: enter revenue of 5 million dollars as 5,000, not 5,000,000.<br>Default | |
| | | 8B | | | | | 834 | Sales of bottom ash were reported on Schedule 8, Part A. Please enter the revenue in units of thousand dollars from those sales on Schedule 8B. Example: enter revenue of 5 million dollars as 5,000, not 5,000,000.<br>Default | |
| | | 8B | | | | | 836 | Sales of Other Byproducts were reported on Schedule 8, Part A. Please enter the revenue in units of thousand dollars from those sales on Schedule 8B. Example: enter revenue of 5 million dollars as 5,000, not 5,000,000.<br>Default | |
| | | 8C | | 2 | | | 853 | Entire Year rate of NOX emissions per MMBtu of fuel burned falls outside of the typical range of 0.1 to 0.3 pounds per million Btu.<br>Default | |
| | | 8C | | 2 | | | 854 | May to September rate of NOX emissions per MMBtu of fuel burned falls outside of the typical range of 0.1 to 0.3 pounds per million Btu.<br>Default | |

**EXHIBIT 2**

**Summer/Winter Loads**

# Basin Electric Member Loads by State

Note: Historical 1995-2010 and Forecasted 2011-2025

**SUMMER Peak Demand (MW)**

| | ND | % | SD | % | MN | % | IA | % | NE | % | MT | % | CO | % | WY | % | BEPC TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1995 | 223.9 | 22.3% | 235.9 | 23.5% | 38.9 | 3.9% | 71.6 | 7.1% | 186.2 | 18.5% | 21.2 | 2.1% | 77.9 | 7.8% | 148.9 | 14.8% | 1004.5 |
| 1996 | 222.1 | 22.6% | 220.2 | 22.4% | 38.4 | 3.9% | 67.0 | 6.8% | 170.2 | 17.3% | 27.8 | 2.8% | 78.2 | 7.9% | 160.7 | 16.3% | 984.7 |
| 1997 | 244.0 | 22.6% | 239.0 | 22.2% | 41.3 | 3.8% | 77.6 | 7.2% | 195.5 | 18.1% | 26.8 | 2.5% | 82.3 | 7.6% | 171.6 | 15.9% | 1078.1 |
| 1998 | 248.7 | 21.8% | 273.0 | 24.0% | 47.1 | 4.1% | 83.2 | 7.3% | 211.3 | 18.6% | 28.1 | 2.5% | 84.3 | 7.4% | 162.8 | 14.3% | 1138.4 |
| 1999 | 267.9 | 22.4% | 288.5 | 24.2% | 52.5 | 4.4% | 102.2 | 8.6% | 197.4 | 16.5% | 28.3 | 2.4% | 83.9 | 7.0% | 173.8 | 14.6% | 1194.5 |
| 2000 | 292.6 | 23.0% | 301.7 | 23.7% | 53.9 | 4.2% | 98.7 | 7.8% | 214.9 | 16.9% | 28.9 | 2.3% | 82.4 | 6.5% | 199.9 | 15.7% | 1273.0 |
| 2001 | 306.5 | 22.2% | 342.5 | 24.8% | 58.0 | 4.2% | 116.0 | 8.4% | 227.3 | 16.5% | 30.3 | 2.2% | 81.9 | 5.9% | 217.9 | 15.8% | 1380.4 |
| 2002 | 315.3 | 21.3% | 351.9 | 23.8% | 57.7 | 3.9% | 127.1 | 8.6% | 253.5 | 17.1% | 43.9 | 3.0% | 94.6 | 6.4% | 235.5 | 15.9% | 1479.6 |
| 2003 | 353.0 | 22.9% | 345.5 | 22.4% | 57.8 | 3.8% | 121.4 | 7.9% | 239.1 | 15.5% | 55.9 | 3.6% | 114.0 | 7.4% | 253.9 | 16.5% | 1540.6 |
| 2004 | 328.8 | 21.2% | 353.9 | 22.8% | 55.4 | 3.6% | 119.0 | 7.7% | 233.4 | 15.0% | 61.8 | 4.0% | 130.1 | 8.4% | 271.3 | 17.5% | 1553.6 |
| 2005 | 356.6 | 20.7% | 400.1 | 23.2% | 62.0 | 3.6% | 131.1 | 7.6% | 269.7 | 15.7% | 74.2 | 4.3% | 131.6 | 7.6% | 296.4 | 17.2% | 1721.6 |
| 2006 | 400.0 | 20.5% | 440.4 | 22.6% | 71.4 | 3.7% | 187.9 | 9.7% | 272.9 | 14.0% | 82.0 | 4.2% | 134.3 | 6.9% | 358.0 | 18.4% | 1946.9 |
| 2007 | 451.9 | 21.9% | 460.8 | 22.3% | 91.6 | 4.4% | 186.1 | 9.0% | 261.6 | 12.7% | 86.4 | 4.2% | 135.2 | 6.6% | 388.9 | 18.9% | 2062.5 |
| 2008 | 464.6 | 22.5% | 420.7 | 20.4% | 87.5 | 4.2% | 177.0 | 8.6% | 270.1 | 13.1% | 73.8 | 3.6% | 142.2 | 6.9% | 426.4 | 20.7% | 2062.3 |
| 2009 | 448.3 | 21.4% | 437.5 | 20.9% | 101.6 | 4.9% | 201.0 | 9.6% | 231.5 | 11.1% | 64.8 | 3.1% | 145.4 | 7.0% | 400.1 | 19.1% | 2090.1 |
| 2010 | 509.1 | 20.5% | 472.3 | 19.0% | 181.0 | 7.3% | 459.1 | 18.5% | 237.9 | 9.6% | 69.6 | 2.8% | 145.4 | 5.9% | 407.1 | 16.4% | 2481.5 |
| 2011 | 548.5 | 21.1% | 546.2 | 21.0% | 137.5 | 5.3% | 454.3 | 17.5% | 240.7 | 9.2% | 84.5 | 3.2% | 187.6 | 7.2% | 403.4 | 15.5% | 2602.8 |
| 2012 | 658.6 | 23.8% | 552.6 | 20.0% | 144.9 | 5.2% | 469.0 | 17.0% | 242.6 | 8.8% | 106.7 | 3.9% | 187.6 | 6.8% | 402.7 | 14.6% | 2764.7 |
| 2013 | 707.6 | 25.1% | 550.7 | 19.6% | 147.1 | 5.2% | 472.9 | 16.8% | 247.5 | 8.8% | 100.6 | 3.6% | 187.6 | 6.7% | 400.9 | 14.2% | 2814.9 |
| 2014 | 808.3 | 26.1% | 646.4 | 20.9% | 152.6 | 4.9% | 478.7 | 15.5% | 251.9 | 8.1% | 169.2 | 5.5% | 187.6 | 6.1% | 398.7 | 12.9% | 3093.4 |
| 2015 | 868.7 | 27.3% | 654.6 | 20.6% | 159.2 | 5.0% | 485.1 | 15.2% | 255.0 | 8.0% | 173.5 | 5.4% | 187.6 | 5.9% | 399.8 | 12.6% | 3183.5 |
| 2016 | 943.2 | 28.7% | 665.0 | 20.2% | 167.1 | 5.1% | 492.6 | 15.0% | 257.4 | 7.8% | 175.4 | 5.3% | 187.6 | 5.7% | 397.8 | 12.1% | 3286.2 |
| 2017 | 1001.5 | 29.7% | 674.7 | 20.0% | 174.5 | 5.2% | 499.2 | 14.8% | 259.8 | 7.7% | 176.7 | 5.2% | 187.6 | 5.6% | 393.4 | 11.7% | 3367.3 |
| 2018 | 1065.2 | 30.8% | 684.8 | 19.8% | 182.2 | 5.3% | 506.0 | 14.6% | 262.3 | 7.6% | 178.1 | 5.2% | 187.6 | 5.4% | 390.5 | 11.3% | 3456.8 |
| 2019 | 1134.3 | 31.9% | 695.8 | 19.6% | 190.3 | 5.4% | 513.0 | 14.4% | 264.1 | 7.4% | 179.4 | 5.0% | 187.6 | 5.3% | 388.3 | 10.9% | 3552.9 |
| 2020 | 1219.5 | 33.3% | 705.2 | 19.3% | 196.9 | 5.4% | 519.3 | 14.2% | 263.9 | 7.2% | 180.4 | 4.9% | 187.6 | 5.1% | 386.9 | 10.6% | 3659.7 |
| 2021 | 1300.2 | 34.5% | 716.8 | 19.0% | 204.7 | 5.4% | 526.7 | 14.0% | 264.0 | 7.0% | 182.0 | 4.8% | 187.6 | 5.0% | 386.1 | 10.2% | 3768.1 |
| 2022 | 1387.3 | 35.7% | 727.7 | 18.7% | 212.6 | 5.5% | 533.7 | 13.7% | 264.6 | 6.8% | 183.1 | 4.7% | 187.6 | 4.8% | 385.5 | 9.9% | 3882.0 |
| 2023 | 1483.5 | 37.1% | 738.7 | 18.5% | 220.4 | 5.5% | 541.2 | 13.5% | 265.2 | 6.6% | 184.3 | 4.6% | 187.6 | 4.7% | 381.9 | 9.5% | 4002.7 |
| 2024 | 1590.0 | 38.5% | 750.0 | 18.1% | 228.2 | 5.5% | 548.8 | 13.3% | 267.8 | 6.5% | 185.5 | 4.5% | 187.6 | 4.5% | 375.3 | 9.1% | 4133.3 |
| 2025 | 1707.4 | 39.9% | 761.4 | 17.8% | 236.1 | 5.5% | 556.4 | 13.0% | 268.5 | 6.3% | 186.7 | 4.4% | 187.6 | 4.4% | 371.5 | 8.7% | 4275.7 |

**WINTER Peak Demand (MW)**

| | ND | % | SD | % | MN | % | IA | % | NE | % | MT | % | CO | % | WY | % | BEPC TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 95/96 | 325.8 | 29.4% | 309.0 | 27.9% | 51.2 | 4.6% | 88.9 | 8.0% | 33.3 | 3.0% | 31.6 | 2.9% | 77.4 | 7.0% | 189.9 | 17.2% | 1107.0 |
| 96/97 | 334.5 | 29.3% | 302.7 | 26.6% | 47.9 | 4.2% | 98.5 | 8.6% | 35.7 | 3.1% | 30.2 | 2.6% | 79.8 | 7.0% | 210.7 | 18.5% | 1140.0 |
| 97/98 | 324.0 | 30.5% | 263.3 | 24.8% | 42.2 | 4.0% | 77.5 | 7.3% | 35.8 | 3.4% | 29.3 | 2.8% | 83.5 | 7.9% | 207.9 | 19.6% | 1063.4 |
| 98/99 | 331.3 | 29.2% | 291.8 | 25.8% | 47.8 | 4.2% | 109.2 | 9.6% | 37.0 | 3.3% | 30.4 | 2.7% | 84.3 | 7.4% | 201.2 | 17.8% | 1133.1 |
| 99/00 | 312.3 | 28.8% | 269.3 | 24.8% | 47.9 | 4.4% | 102.3 | 9.4% | 31.0 | 2.9% | 28.0 | 2.6% | 83.9 | 7.7% | 209.0 | 19.3% | 1083.8 |
| 00/01 | 342.1 | 27.4% | 328.0 | 26.2% | 57.4 | 4.6% | 124.6 | 10.0% | 42.5 | 3.4% | 33.6 | 2.7% | 83.2 | 6.7% | 238.7 | 19.1% | 1250.0 |
| 01/02 | 312.5 | 26.2% | 300.4 | 25.2% | 47.1 | 3.9% | 108.4 | 9.1% | 37.4 | 3.1% | 34.9 | 2.9% | 82.4 | 6.9% | 270.3 | 22.6% | 1193.4 |
| 02/03 | 376.7 | 27.7% | 342.3 | 25.1% | 54.0 | 4.0% | 127.8 | 9.4% | 35.7 | 2.6% | 55.0 | 4.0% | 103.1 | 7.6% | 267.5 | 19.6% | 1362.2 |
| 03/04 | 416.9 | 27.5% | 393.8 | 25.9% | 59.7 | 3.9% | 134.2 | 8.8% | 35.6 | 2.3% | 62.4 | 4.1% | 122.5 | 8.1% | 293.2 | 19.3% | 1518.4 |
| 04/05 | 437.9 | 27.4% | 416.6 | 26.1% | 62.7 | 3.9% | 138.7 | 8.7% | 43.5 | 2.7% | 64.0 | 4.0% | 121.2 | 7.6% | 314.4 | 19.7% | 1598.9 |
| 05/06 | 462.6 | 26.8% | 414.7 | 24.0% | 65.8 | 3.8% | 186.6 | 10.8% | 48.4 | 2.8% | 72.2 | 4.2% | 120.8 | 7.0% | 353.4 | 20.5% | 1724.6 |
| 06/07 | 494.6 | 25.4% | 484.4 | 24.9% | 111.0 | 5.7% | 211.5 | 10.9% | 50.0 | 2.6% | 70.6 | 3.6% | 121.8 | 6.3% | 402.6 | 20.7% | 1946.4 |
| 07/08 | 562.7 | 26.3% | 524.3 | 24.5% | 113.3 | 5.3% | 231.7 | 10.8% | 50.0 | 2.3% | 80.7 | 3.8% | 123.5 | 5.8% | 454.0 | 21.2% | 2140.2 |
| 08/09 | 622.7 | 25.7% | 633.9 | 26.2% | 133.3 | 5.5% | 276.1 | 11.4% | 56.5 | 2.3% | 78.3 | 3.2% | 137.8 | 5.7% | 481.0 | 19.9% | 2419.5 |
| 09/10 | 627.3 | 23.5% | 618.6 | 23.2% | 169.0 | 6.3% | 517.7 | 19.4% | 58.8 | 2.2% | 73.6 | 2.8% | 137.2 | 5.1% | 468.4 | 17.5% | 2670.6 |
| 10/11 | 634.8 | 24.0% | 612.7 | 23.2% | 206.3 | 7.8% | 450.1 | 17.0% | 48.3 | 1.8% | 71.2 | 2.7% | 148.2 | 5.6% | 468.9 | 17.8% | 2640.6 |
| 11/12 | 712.1 | 25.1% | 640.5 | 22.5% | 191.3 | 6.7% | 499.4 | 17.6% | 55.0 | 1.9% | 114.5 | 4.0% | 185.9 | 6.5% | 442.2 | 15.6% | 2841.0 |
| 12/13 | 764.8 | 26.0% | 670.7 | 22.8% | 187.4 | 6.4% | 511.5 | 17.4% | 54.6 | 1.9% | 107.2 | 3.6% | 191.0 | 6.5% | 449.9 | 15.3% | 2937.1 |
| 13/14 | 876.3 | 28.9% | 650.9 | 21.5% | 198.5 | 6.6% | 510.0 | 16.8% | 55.3 | 1.8% | 114.9 | 3.8% | 185.9 | 6.1% | 438.1 | 14.5% | 3029.9 |
| 14/15 | 937.9 | 28.7% | 747.8 | 22.8% | 205.0 | 6.3% | 517.6 | 15.8% | 55.9 | 1.7% | 183.5 | 5.6% | 185.9 | 5.7% | 439.2 | 13.4% | 3272.8 |
| 15/16 | 1014.2 | 30.0% | 759.8 | 22.5% | 212.9 | 6.3% | 526.3 | 15.6% | 56.6 | 1.7% | 185.7 | 5.5% | 185.9 | 5.5% | 436.8 | 12.9% | 3378.4 |
| 16/17 | 1073.2 | 31.0% | 770.9 | 22.3% | 220.3 | 6.4% | 534.0 | 15.4% | 57.2 | 1.7% | 187.3 | 5.4% | 185.9 | 5.4% | 432.6 | 12.5% | 3461.4 |
| 17/18 | 1137.8 | 32.0% | 782.5 | 22.0% | 228.0 | 6.4% | 542.0 | 15.3% | 57.8 | 1.6% | 189.0 | 5.3% | 185.9 | 5.2% | 429.7 | 12.1% | 3552.8 |
| 18/19 | 1207.2 | 33.1% | 795.0 | 21.8% | 236.2 | 6.5% | 550.2 | 15.1% | 58.4 | 1.6% | 190.6 | 5.2% | 185.9 | 5.1% | 426.9 | 11.7% | 3650.3 |
| 19/20 | 1292.6 | 34.4% | 805.7 | 21.4% | 242.7 | 6.5% | 557.5 | 14.8% | 58.9 | 1.6% | 191.8 | 5.1% | 185.9 | 4.9% | 426.7 | 11.3% | 3761.8 |
| 20/21 | 1375.8 | 35.5% | 818.9 | 21.1% | 250.6 | 6.5% | 566.2 | 14.6% | 59.3 | 1.5% | 193.7 | 5.0% | 185.9 | 4.8% | 426.1 | 11.0% | 3876.6 |
| 21/22 | 1463.0 | 36.6% | 831.3 | 20.8% | 258.6 | 6.5% | 574.5 | 14.4% | 59.7 | 1.5% | 195.1 | 4.9% | 185.9 | 4.7% | 425.4 | 10.7% | 3993.6 |
| 22/23 | 1559.2 | 37.9% | 844.0 | 20.5% | 266.5 | 6.5% | 583.4 | 14.2% | 60.2 | 1.5% | 196.6 | 4.8% | 185.9 | 4.5% | 421.7 | 10.2% | 4117.5 |
| 23/24 | 1665.5 | 39.2% | 857.0 | 20.2% | 274.5 | 6.5% | 592.5 | 13.9% | 60.7 | 1.4% | 198.1 | 4.7% | 185.9 | 4.4% | 414.7 | 9.8% | 4248.9 |
| 24/25 | 1782.2 | 40.6% | 870.1 | 19.8% | 282.5 | 6.4% | 601.8 | 13.7% | 61.3 | 1.4% | 199.5 | 4.5% | 185.9 | 4.2% | 411.0 | 9.4% | 4394.4 |

**EXHIBIT 3**

**Eastern System Summer/Winter Load Resources**

## SUMMER SEASON

| | Members' Load Projections | Contracted Sales to Others | Losses, Diversity, and Reserves | Total Responsibility |
|---|---|---|---|---|
| 2011 | 2,040 | 312 | 301 | 2,653 |
| 2012 | 2,196 | 220 | 308 | 2,724 |
| 2013 | 2,244 | 210 | 314 | 2,768 |
| 2014 | 2,526 | 215 | 353 | 3,095 |
| 2015 | 2,614 | 215 | 365 | 3,194 |
| 2016 | 2,716 | 190 | 375 | 3,281 |
| 2017 | 2,799 | 190 | 386 | 3,375 |
| 2018 | 2,889 | 190 | 398 | 3,478 |
| 2019 | 2,985 | 190 | 412 | 3,586 |
| 2020 | 3,090 | 190 | 426 | 3,706 |

## WINTER SEASON

| | Members' Load Projections | Contracted Sales to Others | Losses, Diversity, and Reserves | Total Responsibility |
|---|---|---|---|---|
| 2011/12 | 2,190 | 241 | 303 | 2,734 |
| 2012/13 | 2,285 | 227 | 328 | 2,840 |
| 2013/14 | 2,381 | 207 | 342 | 2,930 |
| 2014/15 | 2,622 | 212 | 378 | 3,212 |
| 2015/16 | 2,728 | 187 | 389 | 3,305 |
| 2016/17 | 2,815 | 187 | 402 | 3,404 |
| 2017/18 | 2,908 | 187 | 416 | 3,510 |
| 2018/19 | 3,007 | 187 | 430 | 3,624 |
| 2019/20 | 3,117 | 187 | 447 | 3,751 |
| 2020/21 | 3,231 | 187 | 464 | 3,882 |

2011 Resources

| Summer Season | LOS | LRS | AVS | NEAL 4 | WS | Wisdom 1 | DAEC | SMS | Groton | Culbertson | Deer Creek | Wisdom 2 | Madison | Webster City | Estherville | Pocahontas | Spencer | Wind | Waste Heat | Purchases |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 0 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 135.3 |
| 2012 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 135.3 |
| 2013 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 135.3 |
| 2014 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 105.3 |
| 2015 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 105.3 |
| 2016 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 105.3 |
| 2017 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 105.3 |
| 2018 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 105.3 |
| 2019 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 105.3 |
| 2020 | 670 | 48 | 900 | 106 | 69 | 38 | 60 | 100 | 159 | 87 | 294 | 73 | 10 | 20.8 | 8.3 | 3.8 | 10 | 112.87 | 29.03 | 105.3 |

| Winter Season | LOS | LRS | AVS | NEAL 4 | WS | Wisdom 1 | DAEC | SMS | Groton | Culbertson | Deer Creek | Wisdom 2 | Madison | Webster City | Estherville | Pocahontas | Spencer | Wind | Waste Heat | Purchases |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011/12 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 0 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 135.3 |
| 2012/13 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 135.3 |
| 2013/14 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 135.3 |
| 2014/15 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 105.3 |
| 2015/16 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 105.3 |
| 2016/17 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 105.3 |
| 2017/18 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 105.3 |
| 2018/19 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 105.3 |
| 2019/20 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 105.3 |
| 2020/21 | 670 | 48 | 900 | 106 | 70 | 38 | 62 | 120 | 201 | 96 | 300 | 75 | 10 | 25 | 8.3 | 3.8 | 10 | 259.49 | 21.9 | 105.3 |