

**BASIN ELECTRIC  
POWER COOPERATIVE**

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PHONE: 701/223-0441  
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**RECEIVED**

**JUN 30 2008**

**SOUTH DAKOTA PUBLIC  
UTILITIES COMMISSION**

June 24, 2008

Mr. Gary Hanson, Chairman  
SD Public Utilities Commission  
Capitol Building, 1<sup>st</sup> Floor  
500 East Capitol Avenue  
Pierre, SD 57501

Dear Mr. Hanson:

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

Enclosed are 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**

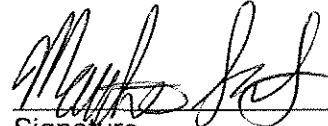
I hereby certify that the following list contains the names and last address of each designated state agency and/or state official given notice of filing of the Basin Electric Power Cooperative Ten-Year Plan pursuant to the Rules and Regulations of the South Dakota Public Utilities Commission governing the Energy Facilities Plans. 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 South Dakota Public Utilities Commission.

Name

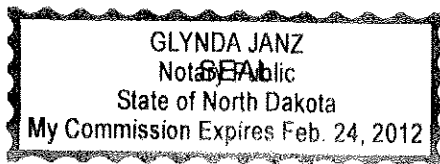
Last Known Address


See Exhibit A Attached

See Exhibit A Attached

  
\_\_\_\_\_  
Signature

On this 24<sup>th</sup> day of June, 2008, Matthew Stoltz known to me,  
under oath deposed and said the above Affidavit of Mailing is true and correct.



  
\_\_\_\_\_  
Notary Public

Mail to:       Public Utilities Commission  
                  500 E. Capitol Ave.; Capitol Building  
                  Pierre, SD 57501

## **Exhibit A**

Mr. William Even  
Secretary  
SD Department of Agriculture  
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Pierre, SD 57501

Mr. Larry Long  
Attorney General  
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Pierre, SD 57501

Mr. Paul Kinsman  
Secretary  
SD Department of Revenue & Regulation  
445 East Capitol Avenue  
Pierre, SD 57501

Mr. Rick Melmer  
Secretary  
SD Department of Education  
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Pierre, SD 57501

Ms. Michele Farris  
Manager  
South Dakota Dept. of Energy Management  
523 E. Capitol Ave.  
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Mr. Jeff Vonk, Secretary  
SD Department of Game, Fish & Parks  
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Ms. Doneen Hollingsworth  
Secretary  
SD State Department of Health  
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Mr. Roger Campbell  
Commissioner  
SD Tribal Government Relations  
711 E. Wells Avenue  
Pierre, SD 57501

Ms. Pam Roberts  
Secretary  
SD Department of Labor  
700 Governors Drive  
Pierre, SD 57501

Mr. James Fry  
Director  
SD Legislative Research Council  
500 East Capitol Avenue  
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Mr. Steven Pirner, Secretary  
SD Department of Environment &  
Natural Resources  
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Mr. Jarrod Johnson, Commissioner  
SD Department of Schools &  
Public Lands  
500 East Capitol Avenue  
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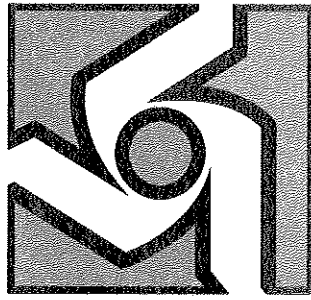
Mr. Darin Bergquist, Secretary  
SD Department of Transportation  
Becker-Hansen Building  
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Pierre, SD 57501

Mr. John White  
State Engineer  
Joe Foss Building  
523 East Capitol Ave.  
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Mr. Bruce Lindholm, Program Manager  
SD Office of Aeronautics  
Becker Hansen Building  
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Mr. Richard Benda, Secretary  
SD Department of Tourism &  
State Development  
711 E. Wells Avenue  
Pierre, SD 57501

Mr. Derric Iles  
State Geologist  
SD Geological Surveys  
414 E. Clark Street  
Vermillion, SD 57069-2390



**BASIN ELECTRIC  
POWER COOPERATIVE**

# **SOUTH DAKOTA TEN-YEAR PLAN**

**2008**

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**Spirit Mound Station**

1. Located six miles north of Vermillion, SD, was declared available for commercial operation in June, 1978.
2. The station is composed of two combustion turbines, fired with number 2 fuel oil obtained from Midwest markets. The nameplate capacity of each unit is 60 MW; the units currently have a net rating of 60 MW each.
3. Spirit Mound Station was constructed primarily as a peaking unit to be used as reserves during outages of other Basin Electric or Mid-Continent Area Power Pool (MAPP) resources. Therefore, operation of the station is limited. Net generating production in 2006 was 428 MW hours (MWh) and 6,753 MWh in 2007.
4. Spirit Mound Station does not require water for production of electricity.
5. Spirit Mound Station consumed 43,840 gallons of fuel oil during 2006, and 629,823 gallons during 2007.
6. A projected service removal date for Spirit Mound Station has not been determined.

**Prairie Winds Chamberlain Project**

1. Located at Chamberlain, SD, was declared available for commercial operation in January, 2002.
2. The project is composed of two wind turbines – 1.3 MW each.
3. The Chamberlain project was constructed as part of Basin Electric's overall power supply to serve its members.
4. The Chamberlain project does not require water for production of electricity.
5. This is a wind power project and therefore no fuel is consumed.
6. A projected service removal date for the Chamberlain wind turbines has not been determined.

**Groton Peaking Station (Unit 1)**

1. Located near Groton, SD, was declared available for commercial operation in June, 2006.

2. The station is composed of one 95 MW gas fired combustion turbine.
3. The Groton Peaking Station produced 77,953 MWh in 2007.
4. The Groton Peaking Station does not require water for production of electricity.
5. The fuel source is natural gas. The Groton Peaking Station consumed 3,786,476 Dkt in 2007.
6. A projected service removal date for the Groton Peaking Station has not been determined.

#### **20:10:21:05**

#### **PROPOSED ENERGY CONVERSION FACILITIES**

Basin Electric is currently proceeding with the construction of a 300 MW combined-cycle power plant named "Deer Creek Station" which is located near White, SD and is scheduled to be in-service the spring of 2012. Basin Electric is also currently proceeding with the testing of the Groton Peaking Station (Unit 2) located near Groton, SD. The unit consists of one 95 MW gas fired combustion turbine to become commercial in June of 2008. Additionally, Basin Electric is evaluating the development of new generating resources (coal, gas, and wind) to meet Basin Electric's forecasted load growth.

#### **20:10:21:06**

#### **EXISTING TRANSMISSION FACILITIES**

<u>Location</u>	<u>Type</u>	<u>Conductor</u>	<u>Voltage</u>
Leland Olds-Groton-Watertown, SD	Steel Tower	2183.5 MCM	345 kV
Leland Olds-Ft. Thompson, SD	Steel Tower	2183.5 MCM	345 kV
Antelope Valley-Broadland	Steel Tower	2-2306 MCM	345/500 kV*
Philip-Philip Tap, SD	Wood Pole	954 MCM	230 kV
Broadland-Huron, SD	Steel Tower	2306 MCM	230 kV
Groton, SD Substation			345/115 kV
Spearfish-Yellow Creek, SD	Wood/Steel Pole	1272 MCM	230 kV



Yellow Creek, SD- Osage, WY	Wood/Steel Pole	1272 MCM	230 kV
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New Underwood- Rapid City DC Tie	Wood/Steel Pole	1272 MCM	230 kV
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Retirement dates on these facilities are indeterminate.

\*The Antelope Valley-Broadland transmission line is constructed for 500 kV operation but is currently being operated at 345 kV. Operation at 500 kV is planned if an Antelope Valley Station Unit 3 is constructed.

#### **20:10:21:07**      **PROPOSED TRANSMISSION FACILITIES**

Results of the Deer Creek Station study and other studies supporting the analysis of future generation resources and area load growth (refer to section 20:10:21:05) will identify transmission improvements necessary to support the interconnection of new resources and network loads.

#### **20:10:21:08**      **COORDINATION OF PLANS**

Basin Electric provides capacity and energy above WAPA's allocations to those preference customer cooperatives who have executed electric service contracts with Basin Electric. In order to provide service Basin Electric must augment WAPA's existing transmission system. Existing transmission facilities listed in section 20:10:21:06 are coordinated facilities which tie into WAPA's existing transmission system. The Miles City, MT, to New Underwood, SD, line constructed by WAPA is also a coordinated transmission line which provides service to Basin Electric, Montana-Dakota Utilities Co. and WAPA customers. The Groton 345/115 kV substation constructed by Basin Electric provides Northwestern Energy and Heartland Consumers Power District with additional capacity in the Aberdeen-Groton area. The Rapid City Asynchronous Tie and associated transmission facilities are coordinated with Black Hills Power, Inc. and the Western Area Power Administration.

#### **20:10:21:09**      **SINGLE REGIONAL PLAN**

The Spearfish-Yellow Creek and Yellow Creek-Osage 230 kV lines are part of a regional plan with Black Hills Power, Inc. to provide transmission service and electric power to consumers of Basin Electric's member cooperatives and Black Hills Power, Inc. in the Spearfish-Deadwood-Rapid City-Hot Springs area of South Dakota. Also, in joint effort with Black Hills Power, Inc., the Rapid City Asynchronous Tie is part of a single regional plan.

**20:10:21:10**

**SUBMISSION OF REGIONAL PLAN**

Future joint transmission studies between Basin Electric and Black Hills Power, Inc., which show the potential need for transmission to support the northeast area of Wyoming and the Black Hills area of South Dakota, will be submitted to the commission.

**20:10:21:11**

**UTILITY RELATIONSHIPS**

**Coordinated Planning**

Basin Electric Power Cooperative, Powder River Energy Corporation, and Black Hills Power, Incorporated filed with the FERC a joint open access transmission system tariff (OATT) titled the Common Use System Tariff effective October 15, 2003. The Administration Agreement for the Common Use System Tariff provides for the establishment of a Coordinating Committee to jointly oversee the planning, coordination and construction of facilities in the service area of the tariff. The previous transmission agreement, between the parties titled Agreement for Transmission Service and the Common Use of Transmission Systems, dated January 1, 1986, also provided for this type of coordinated planning. Examples of this coordinated planning include the Spearfish to Yellow Creek 230 kV line, the Yellow Creek to Osage 230 kV line, and the Rapid City Asynchronous Tie.

Member cooperatives of Basin Electric have a common service area with MDU in the western half of North Dakota and a portion of South Dakota. In order to avoid the duplication of transmission facilities, an agreement was entered into on January 1, 1972, which provides for joint construction and use 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. The agreement calls for the sharing of facilities on the basis of each utility's respective projected loads. The following facilities represent a partial listing of coordinated planning with MDU.

- a) Leland Olds-Mallard 230 kV Line
- b) Logan (ND)-Tioga (ND) 230 kV Line
- c) Miles City (MT)-Baker (MT)-Bowman (ND)-Hettinger (ND)-Bison (SD)-New Underwood (SD) 230 kV Line
- d) Wishek (ND) Junction 230/115 kV Substation
- e) Northwest Mandan (ND)-New Salem (ND) 115 kV Line
- f) Medora (ND) 230/41.6 kV Substation
- g) Dawson (ND) 230/41.6 kV Substation (Herbert Weber)
- h) Dickinson 230/115/41.6 kV Substation
- i) Antelope Valley-Charlie Creek (ND) 345 kV Line
- j) Logan (ND)-Kenmare (ND) 115 kV Line
- k) Dickinson (ND)-Hettinger (ND) 115 kV Line

- l) Whitlock (SD) 230/41.6 kV Substation
- m) Glenham (SD) 230/115/41.6 kV Substation Addition

The Miles City-Hettinger-New Underwood, SD, 230 kV line is another example of coordinated 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.

#### Mid-Continent Area Power Pool (MAPP)

The Midwest Reliability Organization (MRO) operates as a Regional Reliability Council to further the reliability and other benefits of interconnected operations among a large number of entities engaged in the electric utility business in the Mid-Continent Area Power Pool (MAPP) region. 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 Subcommittee (TPSC), which coordinates MAPP's ten-year plan and MAPP's Attachment K to the FERC 890 rule, has formed four sub-regional working groups whose primary purpose is to perform coordinated transmission planning. The sub-regional planning groups are:

- Missouri Basin
- Northern MAPP
- Nebraska
- Iowa Transmission Working Group

The Missouri Basin Sub-Regional Planning Group includes utilities in the North and South Dakota area. The Northern MAPP Sub-Regional Planning Group includes utilities in northeastern North Dakota and western Minnesota. In compliance with NERC planning standards, the working groups are required to develop a coordinated ten-year plan for MAPP every two years for their specific regions. These ten-year plans evaluate 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.

#### 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.

#### 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.

#### **20:10:21:12**

#### **EFFORTS TO MINIMIZE ADVERSE EFFECTS**

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 South 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 the 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.

#### **20:10:21:13**            **EFFORTS RELATING TO LOAD MANAGEMENT**

Throughout the Basin Electric service area, local rural electric cooperatives maintain load management plans that vary from voluntary peak alert programs to very sophisticated central control systems.

Basin Electric staff offers some technical assistance and assists in efforts to coordinate energy management and/or load management programs to best benefit the entire Basin Electric service area.

Basin Electric staff emphasizes the wise use and management of available resources to provide the most economical supply of energy to the consumer, rather than only a conservation or peak shaving program.

#### **20:10:21:14**            **LIST OF REPORTS**

No reports at this time.

#### **20:10:21:15**            **CHANGES IN STATUS OF FACILITIES**

No change in the status of facilities.

#### **20:10:21:16**            **PROJECTED ELECTRIC DEMAND**

1. Exhibits 1 and 2 represent Basin Electric's historical and projected sales to its Class A members. These exhibits represent Basin Electric's supplemental power supply responsibility to the Class A 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 the Western Area Power Administration.

An econometric based Power Requirements Study (PRS) was completed in early 2007. The econometric forecasting system in the PRS is a bottom up process that begins by developing econometric equations and forecasts for each distribution cooperative. The total system consists of approximately 200 forecasting equations and over 500 explanatory variables. Annual and monthly forecasts of energy and demand are conducted for a 17 year period. The distribution cooperative forecasts are combined up 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, and Woods & Poole Economics, Inc., and the Department of Energy, Wn D.C.

Exhibits 3 and 4 provide a geographical breakdown by state of the Basin Electric sales indicated in Exhibits 1 and 2.

2. 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, Montana, approximately along the South Dakota-Wyoming, Nebraska-Wyoming, and Colorado-Kansas borders.

As a result of this, Basin Electric must construct additional generating capacity or purchase capacity and energy on both sides of the ties in order to serve its member load requirements.

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

- a) Leland Olds Generating 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 221 MW. Leland Olds Unit 2 was placed in service on December 15, 1975 with a net capacity of 448 MW.

- b) 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.
- c) Spirit Mound Station: Basin Electric placed in service on June 30, 1978, two oil-fired combustion turbines. The combined winter rating of the two units is 120 MW (net) and the summer rating is 104 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.
- d) Neal IV: Basin Electric and Northwest Iowa Power Cooperative (NIPCO), one of Basin Electric's member cooperatives negotiated a new power supply contract which provides that NIPCO will sell to Basin Electric NIPCO's 33 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.
- e) Laramie River Station: Basin Electric, together with five other consumer-owned power supply entities, began construction in July 1976 on the Laramie River Station near Wheatland, in southeast Wyoming. The station's three units became fully operational in November 1982. As project manager and operating agent for the Missouri Basin Power Project (MBPP), Basin Electric 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. During 2000 the maximum output rating of each of these units was increased by 18-20 MW. This increased output capability will be used in emergency situations to maintain system reliability. The amount of power that Basin Electric receives from the east side unit is 38 MW (net).
- f) 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. Basin Electric has sold 66 MW of participation power from AVS Unit 2 to Montana-Dakota

Utilities Co. The contract terminates on November 1, 2006. Basin Electric has also sold 98 MW of participation power from AVS #1 and #2 to the Montana Power Company. This sale is for the November through April periods through 2010. The remaining AVS power is available for use by Basin Electric to serve its member cooperatives' increasing loads. Unit 1 began commercial operation on July 1, 1984 and Unit 2 began partial commercial operation on June 1, 1986.

- g) Chamberlain Wind Project: Basin Electric, in partnership with East River Electric Power Cooperative, has constructed a wind energy project near Chamberlain, South Dakota. The 2.6 megawatt capacity turbines were placed into commercial service in January 2002. The energy is delivered to members as part of Basin Electric's overall power supply.
- h) 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 turbines were placed into commercial service in February 2002. The energy is delivered to members as part of Basin Electric's overall power supply.
- i) Wisdom Unit 2: Basin Electric partnered with Cornbelt Electric 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.
- j) Groton Peaking Station Unit 1: Basin Electric commissioned the 95 MW Groton Unit 1 in 2006. This unit provides peaking power.
- k) 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-term duration of these arrangements no specifics are provided.
- l) Long Term Resource: Basin Electric entered into a long-term purchase agreement with Florida Power & Light Energy to meet contractual power supply obligations. A 40 megawatt wind energy project is located just west of Edgeley, ND, a 49.5 MW wind energy project is located near Wilton, ND, and a 40 megawatt wind energy project is located near Highmore SD. Basin Electric also entered into a long-term purchase agreement with the City of Madison which provides 10MW of peaking power from a diesel unit at Madison, SD. Finally, Basin Electric has a purchase power agreement with Ormat Industries at four 5.5 MW waste heat recovery units. Three sites are in SD; near Wetonka, Crocker, and Esteline. The fourth site is in North Dakota.



- m) Future Power Supply: For discussion of future power supply please refer to Section 20:10:21:05 (Proposed Energy Conversion Facilities).

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

- a) Laramie River Station: The Laramie River Station capacity that Basin Electric will receive from the two west-side units is 671 MW (net).
- b) Miles City DC Tie: Basin Electric and WAPA have jointly constructed a 200 MW back-to-back, AC-DC-AC tie at Miles City, MT. This tie 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.
- c) 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 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%.
- d) 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 68 MW winter.
- e) Dry Fork Station: Basin Electric is developing a 390 MW (net) coal fired power plant located 10 miles north of Gillette, WY. This project is named "The Dry Fork Station" and the projected in-service date is 2011.

The projected load values contained in Exhibits 1 through 4 were obtained from the econometric based PRS. 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 Exhibits 5 and 6.

**20:10:21:17**

**CHANGES IN ELECTRIC ENERGY DEMAND**

**BASIN ELECTRIC PROJECTED SOUTH DAKOTA WINTER DEMAND INCREASES**

<u>Year</u>	<u>MW</u>	<u>% Increases</u>
2007/2008	26.8	5.5
2008/2009	23.6	4.6
2009/2010	40.6	7.6
2010/2011	21.7	3.8
2011/2012	21.7	3.6
2012/2013	23.6	3.8
2013/2014	24.7	3.8
2014/2015	24.5	3.7
2015/2016	27.3	4.0
2016/2017	26.5	3.7

**20:10:21:18**

**MAP OF SERVICE AREA**

Exhibit 7 is a map of Basin Electric's service area.

## **LIST OF EXHIBITS**

1. Summer Loads
2. Winter Loads
3. Summer Loads by States
4. Winter Loads by States
5. Eastern System Summer Season Load-Resources
6. Eastern System Winter Season Load-Resources
7. Basin Electric Service Area Map

**NOTE:** Resource values used in Exhibits 5 and 6 are based on actual or estimated results of Uniform Rating of Generating Equipment (URGE) tests, whereas the values referred to in the narrative are generally net or estimated net capacities for each plant. All east-side generator capabilities are on a net at-plant basis. The total responsibility includes adjustments for losses, diversity and reserves.

**BASIN ELECTRIC RESPONSIBILITY TO MEMBER COOPERATIVES**Summer Loads  
(MW)

1998		1138
1999		1195
2000		1273
2001		1380
2002		1480
2003		1541
2004		1554
2005		1722
2006		1947
2007	Historical	2052

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2008	Projected	2362
2009		2582
2010		2722
2011		2884
2012		2996
2013		3141
2014		3253
2015		3352
2016		3420
2017		3484

**BASIN ELECTRIC RESPONSIBILITY TO MEMBER COOPERATIVES**Winter Loads  
(MW)

1998/99		1133
1999/00		1084
2000/01		1250
2001/02		1193
2002/03		1362
2003/04		1518
2004/05		1599
2005/06		1725
2006/07		1949
2007/08	Historical	2216

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2008/09	Projected	2426
2009/10		2615
2010/11		2764
2011/12		2861
2012/13		3004
2013/14		3118
2014/15		3212
2015/16		3294
2016/17		3354
2017/18		3416

# BASIN ELECTRIC MEMBER LOADS BY STATE

## Summer Peak Demand (MW)

### Historical

<u>Year</u>	<u>ND</u>	<u>%</u>	<u>SD</u>	<u>%</u>	<u>MN</u>	<u>%</u>	<u>IA</u>	<u>%</u>	<u>NE</u>	<u>%</u>	<u>MT</u>	<u>%</u>	<u>CO/WY</u>	<u>%</u>	<u>Total</u>
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	247.1	21.7	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	257.7	21.6	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	282.3	22.2	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	299.8	21.7	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	330.1	22.3	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	367.9	23.9	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	401.4	25.8	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	428.0	24.9	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	492.2	25.3	1946.9
2007	451.9	22.0	460.8	22.5	91.6	4.5	186.1	9.1	261.6	12.8	75.4	3.7	524.0	25.5	2051.5

### Projected

<u>Year</u>	<u>ND</u>	<u>%</u>	<u>SD</u>	<u>%</u>	<u>MN</u>	<u>%</u>	<u>IA</u>	<u>%</u>	<u>NE</u>	<u>%</u>	<u>MT</u>	<u>%</u>	<u>CO/WY</u>	<u>%</u>	<u>Total</u>
2008	510.7	21.6	509.8	21.6	136.1	5.8	237.2	10.0	256.6	10.9	116.3	4.9	595.0	25.2	2361.5
2009	576.7	22.3	534.3	20.7	191.1	7.4	264.2	10.2	258.7	10.0	126.1	4.9	631.1	24.4	2582.2
2010	628.2	23.1	570.7	21.0	216.5	8.0	266.1	9.8	260.9	9.6	136.6	5.0	642.8	23.6	2721.9
2011	652.6	22.6	592.8	20.6	240.3	8.3	270.6	9.4	262.8	9.1	152.2	5.3	712.5	24.7	2883.7
2012	670.7	22.4	614.8	20.5	266.1	8.9	272.5	9.1	260.7	8.7	158.8	5.3	751.8	25.1	2995.6
2013	700.7	22.3	638.8	20.3	290.7	9.3	275.1	8.8	262.5	8.4	165.9	5.3	807.6	25.7	3141.4
2014	710.8	21.8	664.0	20.4	316.0	9.7	277.2	8.5	264.1	8.1	167.8	5.2	853.3	26.2	3253.2
2015	718.4	21.4	689.2	20.6	340.8	10.2	279.5	8.3	265.7	7.9	169.1	5.0	889.1	26.5	3351.8
2016	725.6	21.2	716.9	21.0	368.0	10.8	282.6	8.3	265.9	7.8	170.9	5.0	889.8	26.0	3419.7
2017	732.1	21.0	743.8	21.3	393.7	11.3	285.6	8.2	266.9	7.7	172.2	4.9	889.5	25.5	3483.9

## BASIN ELECTRIC MEMBER LOADS BY STATE

### Winter Peak Demand (MW)

#### Historical

<u>Year</u>	<u>ND</u>	<u>%</u>	<u>SD</u>	<u>%</u>	<u>MN</u>	<u>%</u>	<u>IA</u>	<u>%</u>	<u>NE</u>	<u>%</u>	<u>MT</u>	<u>%</u>	<u>CO/WY</u>	<u>%</u>	<u>Total</u>
1998/99	331.3	29.2	291.8	25.8	47.8	4.2	109.2	9.6	37.0	3.3	30.4	2.7	285.5	25.2	1133.1
1990/00	312.3	28.8	269.3	24.8	47.9	4.4	102.3	9.4	31.0	2.9	28.0	2.6	292.9	27.0	1083.8
2000/01	342.1	27.4	328.0	26.2	57.4	4.6	124.6	10.0	42.5	3.4	33.6	2.7	321.9	25.8	1250.0
2001/02	312.5	26.2	300.4	25.2	47.1	3.9	108.4	9.1	37.4	3.1	34.9	2.9	352.6	29.5	1193.4
2002/03	376.7	27.7	342.3	25.1	54.0	4.0	127.8	9.4	35.7	2.6	55.0	4.0	370.6	27.2	1362.2
2003/04	416.9	27.5	393.8	25.9	59.7	3.9	134.2	8.8	35.6	2.3	62.4	4.1	415.7	27.4	1518.4
2004/05	437.9	27.4	416.6	26.1	62.7	3.9	138.7	8.7	43.5	2.7	64.0	4.0	435.6	27.2	1598.9
2005/06	462.6	26.8	414.7	24.0	65.8	3.8	186.6	10.8	48.4	2.8	72.2	4.2	474.3	27.5	1724.6
2006/07	494.6	25.4	484.4	24.9	111.0	5.7	211.5	10.9	50.0	2.6	73.5	3.8	524.3	26.9	1949.2
2007/08	571.4	25.8	511.2	23.1	128.9	5.8	256.3	11.6	45.0	2.0	97.4	4.4	605.5	27.3	2215.6

#### Projected

<u>Year</u>	<u>ND</u>	<u>%</u>	<u>SD</u>	<u>%</u>	<u>MN</u>	<u>%</u>	<u>IA</u>	<u>%</u>	<u>NE</u>	<u>%</u>	<u>MT</u>	<u>%</u>	<u>CO/WY</u>	<u>%</u>	<u>Total</u>
2008/09	626.8	25.8	534.8	22.0	163.7	6.7	284.1	11.7	45.7	1.9	116.7	4.8	654.4	27.0	2426.2
2009/10	702.8	26.9	575.4	22.0	191.9	7.3	286.4	11.0	46.5	1.8	131.5	5.0	680.4	26.0	2614.8
2010/11	731.5	26.5	597.1	21.6	210.5	7.6	291.6	10.5	47.2	1.7	139.3	5.0	746.8	27.0	2764.1
2011/12	752.1	26.3	618.8	21.6	230.7	8.1	294.2	10.3	47.8	1.7	157.6	5.5	759.4	26.5	2860.6
2012/13	785.8	26.2	642.4	21.4	249.9	8.3	296.9	9.9	48.4	1.6	165.6	5.5	814.5	27.1	3003.5
2013/14	796.9	25.6	667.1	21.4	269.8	8.7	299.4	9.6	48.9	1.6	167.8	5.4	867.8	27.8	3117.7
2014/15	804.6	25.0	691.6	21.5	289.1	9.0	302.2	9.4	49.5	1.5	169.0	5.3	906.1	28.2	3212.2
2015/16	812.6	24.7	718.9	21.8	310.6	9.4	305.9	9.3	50.0	1.5	171.0	5.3	925.0	28.1	3294.1
2016/17	819.4	24.4	745.4	22.2	330.7	9.9	309.5	9.2	50.5	1.5	172.3	5.1	926.6	27.6	3354.2
2017/18	826.1	24.2	772.5	22.6	351.2	10.3	313.0	9.2	50.9	1.5	173.4	5.1	929.0	27.2	3416.0

## BASIN ELECTRIC EASTERN SYSTEM LOAD-RESOURCES

### Summer Season

	<u>Members' Load Projections</u>	<u>Contracted Sales to Others</u>	<u>Losses, Diversity, and Reserves</u>	<u>Total Responsibility</u>
2008	1892	0	303	2195
2009	2071	0	331	2402
2010	2193	0	351	2544
2011	2280	0	365	2645
2012	2347	0	376	2723
2013	2433	0	389	2822
2014	2494	0	399	2893
2015	2549	0	408	2957
2016	2603	0	416	3019
2017	2661	0	426	3087

### Resources

	<u>Leland Olds</u>	<u>Laramie River</u>	<u>Spirit Mound</u>	<u>Antelope Valley</u>	<u>Neal IV</u>	<u>Wisdom</u>	<u>Groton</u>	<u>Madison</u>	<u>Purchases</u>	<u>Wind Accreditation</u>	<u>Waste Heat Recovery</u>	<u>Total Resources</u>
2008	669	38	104	900	33	39	192	10	30	12	22	2049
2009	669	48	104	900	33	39	192	10	30	18	39	2082
2010	669	48	104	900	33	39	192	10	30	18	44	2087
2011	669	48	104	900	33	39	192	10	30	18	44	2087
2012	669	48	104	900	33	39	192	10	30	18	44	2087
2013	669	48	104	900	33	39	192	10	30	18	44	2087
2014	669	48	104	900	33	39	192	10	0	18	44	2087
2015	669	48	104	900	33	39	192	10	0	18	44	2087
2016	669	48	104	900	33	39	192	10	0	18	44	2087
2017	669	48	104	900	33	39	192	10	0	18	44	2087



## BASIN ELECTRIC EASTERN SYSTEM LOAD-RESOURCES

### Winter Season

	<u>Members' Load Projections</u>	<u>Contracted Sales to Others</u>	<u>Losses, Diversity, and Reserves</u>	<u>Total Responsibility</u>
2008/09	1866	98	336	2300
2009/10	2028	98	363	2489
2010/11	2107	0	377	2484
2011/12	2188	0	372	2560
2012/13	2273	0	386	2659
2013/14	2330	0	396	2726
2014/15	2383	0	405	2788
2015/16	2438	0	414	2852
2016/17	2493	0	424	2917
2017/18	2546	0	433	2979

### Resources

	<u>Leland Olds</u>	<u>Laramie River</u>	<u>Spirit Mound</u>	<u>Antelope Valley</u>	<u>Neal IV</u>	<u>Wisdom</u>	<u>Groton</u>	<u>Madison</u>	<u>Purchases</u>	<u>Wind Accreditation</u>	<u>Waste Heat Recovery</u>	<u>WAPA Peaking</u>	<u>Total Resources</u>
2008/09	669	38	120	900	33	40	192	10	30	35	22	279	2444
2009/10	669	48	120	900	33	40	192	10	30	35	44	279	2465
2010/11	669	48	120	900	33	40	192	10	30	35	44	276	2456
2011/12	669	48	120	900	33	40	192	10	30	35	44	276	2456
2012/13	669	48	120	900	33	40	192	10	30	35	44	276	2456
2013/14	669	48	120	900	33	40	192	10	30	35	44	276	2456
2014/15	669	48	120	900	33	40	192	10	0	35	44	276	2425
2015/16	669	48	120	900	33	40	192	10	0	35	44	276	2425
2016/17	669	48	120	900	33	40	192	10	0	35	44	276	2425
2017/18	669	48	120	900	33	40	192	10	0	35	44	276	2425

