



**BASIN ELECTRIC  
POWER COOPERATIVE**

# **SOUTH DAKOTA TEN-YEAR PLAN**

**July, 2004**

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**20:10:21:04**

**EXISTING ENERGY CONVERSION FACILITIES**

**Spirit Mound Station**

1. Spirit Mound Station, located six miles north of Vermillion, SD, was declared available for commercial operation on June 30, 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 2002 was 1,151 MW hours (MWh) and 2,334 MWh in 2003.
4. Spirit Mound Station does not require water for production of electricity.
5. Spirit Mound Station consumed 125,832 gallons of fuel oil during 2002, and 242,514 gallons during 2003.
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. A projected service removal date for the Chamberlain wind turbines has not been determined.

**20:10:21:05**

**PROPOSED ENERGY CONVERSION FACILITIES**

Basin Electric is currently proceeding with the construction of four waste heat recovery units along the Northern Border Pipeline. The 5.7 MW units are being constructed in North Dakota and South Dakota. Basin Electric is also currently proceeding with the construction of the Groton Peaking Station to be located near Groton, SD. The plant will consist of one 100 MW gas fired combustion turbine to become commercial in the

summer of 2006. Associated with the addition of the combustion turbine will be a natural gas fuel supply pipeline of approximately 10 to 12 miles in length.

**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
New Underwood-Rapid City DC Tie	Wood/Steel Pole	1272 MCM	230 kV

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**

No transmission facilities construction is intended within the next five years.

**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 Public Service Company 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 Mid-Continent Area Power Pool (MAPP) operates as a Regional Reliability Council and Power Pool to further the reliability and other benefits of interconnected operations among a large number of entities engaged in the electric utility business in the 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, 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.

**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.

Basin Electric produces fly ash and other coal combustion byproducts at its generating stations and has developed innovative and marketable uses of these by-products. Fly ash is marketed for use in oil well cementing, soil stabilization, abandoned mine reclamation, concrete block manufacturing, grouting and redi-mix concrete production in North Dakota, South Dakota, Wyoming, Montana, Colorado and west coast states. The Cooperative will continue to promote and actively market these resources.

#### **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 2003. 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 222 MW. Leland Olds Unit 2 was placed in service on December 15, 1975 with a net capacity of 447 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 280 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 550 MW (net) 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 46 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) 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.
- k) Long Term Resource: Basin Electric entered into a long-term purchase agreement with Florida Power & Light Energy to meet contractual power supply obligations. This 40 megawatt wind energy project is located just west of Edgeley, ND and a 40 megawatt wind energy project located near Highmore SD. Basin Electric also entered into a long-term purchase agreement with the City of Madison which will provide 10MW of peaking power from a proposed diesel unit at Madison, SD.
- l) 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 678 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.

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>
2003/2004	384.4	25.5
2004/2005	396.2	25.1
2005/2006	405.5	24.4
2006/2007	414.6	24.3
2007/2008	417.1	23.9
2008/2009	429.2	24.6
2009/2010	436.2	24.8
2010/2011	445.1	24.8
2011/2012	448.3	24.4
2012/2013	456.5	24.3

**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)

1994		893
1995		1005
1996		985
1997		1078
1998		1138
1999		1195
2000		1273
2001		1380
2002		1480
2003	Historical	1541

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2004	Projected	1646
2005		1719
2006		1842
2007		1892
2008		1910
2009		1910
2010		1934
2011		1972
2012		2010
2013		2043

# **BASIN ELECTRIC RESPONSIBILITY TO MEMBER COOPERATIVES**

## Winter Loads (MW)

1994/95		923
1995/96		1107
1996/97		1140
1997/98		1063
1998/99		1133
1999/00		1084
2000/01		1250
2001/02		1193
2002/03		1377
2003/04	Historical	1514

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2004/05	Projected	1571
2005/06		1651
2006/07		1750
2007/08		1787
2008/09		1773
2009/10		1787
2010/11		1823
2011/12		1854
2012/13		1893
2013/14		1920

# 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>
1994	169.8	19.0	187.0	21.0	36.8	4.1	72.7	8.1	189.0	21.2	16.5	1.9	220.7	24.7	892.6
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	226.8	22.6	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	238.9	24.3	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	253.9	23.6	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	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	7.6	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	352.0	23.8	57.7	3.9	127.0	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

### 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>
2004	346.3	20.9	398.3	24.0	71.3	4.3	133.1	8.0	223.7	13.5	49.7	3.0	437.0	26.3	1659.2
2005	351.3	20.5	407.0	23.8	79.3	4.6	136.9	8.0	225.6	13.2	49.9	2.9	462.0	27.0	1712.0
2006	356.4	19.5	415.3	22.7	87.3	4.8	139.9	7.7	232.9	12.8	51.5	2.8	542.8	29.7	1826.1
2007	361.4	19.2	424.1	22.6	94.6	5.0	142.4	7.6	235.6	12.5	52.8	2.8	567.0	30.2	1877.9
2008	365.6	19.2	431.6	22.6	103.0	5.4	135.7	7.1	238.4	12.5	65.1	3.4	568.8	29.8	1908.5
2009	369.1	19.0	438.8	22.6	111.2	5.7	137.8	7.1	246.4	12.7	67.2	3.5	573.5	29.5	1944.0
2010	373.2	18.9	445.7	22.6	119.7	6.1	139.6	7.1	247.1	12.5	69.7	3.5	578.8	29.4	1973.8
2011	377.9	18.6	454.3	22.4	128.6	6.3	141.1	7.0	251.7	12.4	84.6	4.2	588.4	29.0	2026.7
2012	382.1	18.5	462.4	22.4	136.8	6.6	142.4	6.9	253.8	12.3	86.1	4.2	597.7	29.0	2061.2
2013	387.3	19.2	470.9	23.3	80.7	4.0	145.1	7.2	252.9	12.5	109.7	5.4	570.8	28.3	2017.4

# 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>
1994/95	264.3	28.7	236.6	25.7	37.9	4.1	74.6	8.1	28.8	3.1	25.6	2.8	254.6	27.6	922.5
1995/96	325.8	29.4	309.0	27.9	51.2	4.6	88.9	8.0	33.3	3.0	31.6	2.9	267.2	24.1	1107.0
1996/97	334.5	29.3	302.7	26.6	47.9	4.2	98.5	8.6	35.7	3.1	30.2	2.6	290.6	25.5	1140.0
1997/98	324.0	30.5	263.3	24.8	42.2	4.0	77.5	7.3	35.8	3.4	29.3	2.8	291.4	27.4	1063.4
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	300.3	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	365.9	26.6	356.1	25.9	56.6	4.1	124.4	9.0	36.7	2.7	41.1	3.0	396.3	28.8	1377.0
2003/04	383.3	25.6	384.1	25.7	65.4	4.4	134.6	9.0	37.1	2.5	45.3	3.0	445.6	29.8	1495.5

### 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>
2004/05	390.6	25.0	396.0	25.3	66.5	4.3	138.8	8.9	38.4	2.5	46.3	3.0	486.5	31.1	1563.1
2005/06	395.6	24.4	405.2	25.0	74.6	4.6	142.0	8.7	39.5	2.4	46.5	2.9	520.7	32.1	1624.1
2006/07	401.5	23.2	414.4	24.0	78.5	4.5	144.6	8.4	40.2	2.3	47.5	2.7	602.5	34.8	1729.3
2007/08	405.9	23.2	421.4	24.0	83.1	4.7	137.8	7.9	40.9	2.3	47.9	2.7	609.4	34.8	1752.6
2008/09	410.2	23.0	429.0	24.0	87.4	4.9	140.0	7.8	41.9	2.3	61.8	3.5	614.4	34.4	1784.7
2009/10	414.2	22.9	436.0	24.1	92.4	5.1	141.9	7.8	42.5	2.3	63.7	3.5	619.5	34.2	1810.0
2010/11	419.7	22.7	444.8	24.1	98.2	5.3	144.1	7.8	43.3	2.3	70.8	3.8	628.6	34.0	1849.1
2011/12	427.1	22.7	448.0	23.8	101.6	5.4	163.7	8.7	44.8	2.4	75.7	4.0	623.0	33.0	1884.5
2012/13	431.9	22.5	456.2	23.8	106.8	5.6	165.1	8.6	45.1	2.4	76.4	4.0	633.3	33.0	1917.1
2013/14	437.9	23.0	464.7	24.4	78.5	4.1	168.3	8.8	45.3	2.4	101.3	5.3	608.9	32.0	1904.7

## 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>
2005	1392	190	243	1825
2006	1417	165	245	1827
2007	1437	55	240	1732
2008	1456	54	243	1753
2009	1478	54	247	1779
2010	1494	54	249	1797
2011	1528	0	244	1772
2012	1545	0	247	1792
2013	1562	0	250	1812
2014	1580	0	253	1833

### Resources

	<u>Leland Olds</u>	<u>Laramie River</u>	<u>Spirit Mound</u>	<u>Antelope Valley</u>	<u>Neal IV</u>	<u>Cornbelt</u>	<u>Total Resources</u>
2005	669	46	104	900	32	39	1790
2006	669	46	104	900	32	39	1790
2007	669	46	104	900	32	39	1790
2008	669	46	104	900	32	39	1790
2009	669	47	104	900	32	39	1791
2010	669	46	104	900	32	39	1790
2011	669	46	104	900	32	39	1790
2012	669	46	104	900	32	39	1790
2013	669	46	104	900	32	39	1790
2014	669	46	104	900	32	39	1790

# 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>
2004/05	1229	285	247	1761
2005/06	1252	283	251	1786
2006/07	1270	197	250	1717
2007/08	1277	161	246	1684
2008/09	1307	153	251	1711
2009/10	1323	152	254	1729
2010/11	1348	54	239	1641
2011/12	1371	0	233	1604
2012/13	1390	0	236	1626
2013/14	1408	0	239	1647

## Resources

	<u>Leland Olds</u>	<u>Laramie River</u>	<u>Spirit Mound</u>	<u>Antelope Valley</u>	<u>Neal IV</u>	<u>WAPA Peaking</u>	<u>Cornbelt</u>	<u>Total Resources</u>
2004/05	669	46	120	900	32	269	40	2076
2005/06	669	46	120	900	32	269	40	2076
2006/07	669	46	120	900	32	269	40	2076
2007/08	669	46	120	900	32	269	40	2076
2008/09	669	47	120	900	32	269	40	2077
2009/10	669	46	120	900	32	269	40	2076
2010/11	669	46	120	900	32	269	40	2076
2011/12	669	46	120	900	32	269	40	2076
2012/13	659	46	120	900	32	269	40	2076
2013/14	669	46	120	900	32	269	40	2076

