



**BASIN ELECTRIC  
POWER COOPERATIVE**

# **SOUTH DAKOTA TEN-YEAR PLAN**

**July, 2002**

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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 2000 was 5,223 MW hours (MWh) and 3,103 MWh in 2001.
4. Spirit Mound Station does not require water for production of electricity.
5. Spirit Mound Station consumed 503,708 gallons of fuel oil during 2000, and 314,220 gallons during 2001.
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**

No activities are proposed for energy conversion facilities at this time.

**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

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**

Basin Electric and Black Hills Power & Light are proposing a 200 MW asynchronous tie near Rapid City, South Dakota. The 200 MW Rapid City DC Tie will be connected to the eastern system through a new 15 mile 230 kV line to Western Area Power Administrations New Underwood substation. The connection to the west system will be made at a new substation called "South Rapid City", tapping the Rapid City-Hot Springs 230 kV line, approximately 5 miles south of Rapid City. The new RCAT substation will be connected to the west system through a new 5 mile 230 kV line connected to the new South Rapid City substation.

Area load growth in Northeastern Wyoming is increasing due to development of coalbed methane production. The 200 MW Rapid City Asynchronous Tie will enable schedules from the eastern interconnection to serve coalbed methane load.

**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 proposed Rapid City Asynchronous Tie and associated transmission facilities will be coordinated with Black Hills Power & Light 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 and Light Company to provide transmission service and electric power to consumers of Basin Electric's member cooperatives and Black Hills Power and Light in the Spearfish-Deadwood-Rapid City-Hot Springs area of South Dakota. Also, in joint effort with Black Hills Power and Light Company, the proposed Rapid City Asynchronous Tie is also 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 and Light, 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.

**Coordinated Planning**

Basin Electric and Black Hills Power and Light Company executed an Agreement for Transmission Service and the Common Use of Transmission Systems dated January 1, 1986. In addition to the use of each others transmission system, this agreement provides for the establishment of a "high voltage planning committee" to jointly plan, coordinate and construct joint facilities to service areas which overlap both utilities. The Spearfish-Yellow Creek 230 kV line, Yellow Creek-Osage 230 kV lines and the proposed Rapid City Asynchronous Tie are examples of coordinated planning.

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 five sub-regional working groups whose primary purpose is to perform coordinated transmission planning. The five sub-regional planning groups are:

- Red River Valley
- Missouri Basin
- Upper Mississippi Valley
- Nebraska
- Iowa Transmission Working Group

The Missouri Basin Sub-Regional Planning Group includes utilities in the North and South Dakota area. The Red River Valley 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.



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 1999. 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) Prairie Winds Chamberlain 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) 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.
- i) Future Power Supply: None

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 and Light are proposing a 200 MW asynchronous tie at Rapid City, SD. This tie will enable 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 projected load values contained in Exhibits 1 through 4 were obtained from the econometric based PRS completed in 1999. 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>
2001/2002	-33.6	-10.2
2002/2003	84.6	28.7
2003/2004	6.6	1.7
2004/2005	7.1	1.8
2005/2006	9.9	2.5
2006/2007	8.2	2.0
2007/2008	9.2	2.2
2008/2009	8.8	2.1
2009/2010	8.6	2.0
2010/2011	10.9	2.5

**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)

1992		749
1993		826
1994		893
1995		1005
1996		985
1997		1078
1998		1138
1999		1195
2000		1271
2001	Historical	1381

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2002	Projected	1357
2003		1427
2004		1533
2005		1585
2006		1643
2007		1677
2008		1694
2009		1721
2010		1749
2011		1784



# **BASIN ELECTRIC RESPONSIBILITY TO MEMBER COOPERATIVES**

## Winter Loads (MW)

1992/93		1002
1993/94		1060
1994/95		923
1995/96		1107
1996/97		1140
1997/98		1063
1998/99		1133
1999/00		1084
2000/01		1250
2001/02	Historical	1193

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2002/03	Projected	1438
2003/04		1553
2004/05		1607
2005/06		1670
2006/07		1718
2007/08		1735
2008/09		1761
2009/10		1793
2010/11		1832
2011/12		1858

# 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>
1992	184.2	24.6	159.8	21.3	25.8	3.4	40.0	5.3	111.6	14.9	18.1	2.4	210.0	28.1	749.4
1993	179.3	21.7	194.0	23.5	32.0	3.9	54.1	6.6	131.6	15.9	16.9	2.0	217.7	26.4	825.6
1994	169.8	19.0	187.0	21.0	36.8	4.1	72.7	8.1	189.0	21.2	16.5	1.8	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	24.1	52.5	4.4	102.2	8.6	197.4	16.5	28.7	2.4	257.7	21.6	1194.9
2000	292.6	23.0	301.7	23.7	53.9	4.2	96.7	7.6	214.9	16.9	28.9	2.3	282.3	22.2	1271.0
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

### 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>
2002	279.6	20.6	300.7	22.2	52.5	3.9	97.0	7.2	250.9	18.5	34.9	2.6	340.9	25.1	1356.5
2003	300.3	21.0	305.2	21.4	53.3	3.7	99.6	7.0	250.3	17.5	40.7	2.9	377.8	26.5	1427.2
2004	312.1	20.4	310.7	20.3	54.3	3.5	101.3	6.6	248.2	16.2	43.9	2.9	462.9	30.2	1533.4
2005	314.9	19.9	316.5	20.0	55.4	3.5	103.0	6.5	250.0	15.8	44.3	2.8	500.6	31.6	1584.9
2006	318.8	19.4	324.7	19.8	56.7	3.5	105.0	6.4	254.4	15.5	45.6	2.8	537.9	32.7	1643.2
2007	321.9	19.2	331.5	19.8	57.9	3.5	107.2	6.4	258.3	15.4	46.3	2.8	553.9	33.0	1676.9
2008	325.7	19.2	339.1	20.0	59.1	3.5	100.6	5.9	260.1	15.4	47.1	2.8	562.0	33.2	1693.6
2009	328.9	19.1	346.4	20.1	60.4	3.5	102.3	5.9	263.1	15.3	47.9	2.8	571.9	33.2	1720.9
2010	332.3	19.0	353.4	20.2	61.5	3.5	104.4	6.0	264.4	15.1	48.7	2.8	583.7	33.4	1748.5
2011	336.5	18.9	362.5	20.3	63.0	3.5	107.2	6.0	268.3	15.0	50.3	2.8	595.8	33.4	1783.6

# 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>
1992/93	287.9	28.7	272.9	27.2	40.8	4.1	71.6	7.1	33.5	3.3	33.4	3.3	261.8	26.3	1001.9
1993/94	292.2	27.6	301.7	28.5	47.2	4.4	93.1	8.8	34.0	3.2	29.0	2.7	262.8	24.8	1060.0
1994/95	264.3	28.7	236.6	25.6	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	322.3	27.0	294.4	24.7	47.3	4.0	100.8	8.4	37.7	3.2	32.6	2.7	339.9	28.5	1193.4

### 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>
2002/03	380.6	26.5	379.0	26.4	62.5	4.3	127.2	8.8	41.6	2.9	43.7	3.0	403.6	28.1	1438.3
2003/04	400.6	25.8	385.6	24.8	63.7	4.1	129.5	8.3	42.1	2.7	49.2	3.2	482.7	31.1	1553.3
2004/05	404.2	25.2	392.7	24.4	64.9	4.0	131.7	8.2	42.3	2.6	49.7	3.1	521.2	32.4	1606.8
2005/06	409.1	24.5	402.6	24.1	66.5	4.0	134.1	8.0	42.9	2.6	51.2	3.1	563.4	33.7	1669.9
2006/07	413.0	24.0	410.8	23.9	67.8	3.9	136.8	8.0	43.8	2.6	52.1	3.0	593.3	34.5	1717.6
2007/08	417.7	24.1	420.0	24.2	69.2	4.0	130.5	7.5	44.4	2.6	53.1	3.1	599.7	34.6	1734.6
2008/09	421.7	23.9	428.8	24.3	70.8	4.0	132.6	7.5	45.1	2.6	54.0	3.1	608.2	34.5	1761.2
2009/10	426.0	23.8	437.4	24.4	72.1	4.0	135.3	7.5	45.5	2.5	54.9	3.1	621.9	34.7	1793.1
2010/11	431.4	23.6	448.3	24.5	73.9	4.0	138.9	7.6	46.5	2.5	56.8	3.1	635.9	34.7	1831.6
2011/12	435.5	23.4	457.3	24.6	75.3	4.1	141.8	7.6	46.8	2.5	57.8	3.1	643.6	34.6	1858.2

## 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>
2003	1132	217	275	1624
2004	1145	189	272	1606
2005	1159	189	275	1623
2006	1178	164	278	1620
2007	1193	54	273	1520
2008	1200	54	274	1528
2009	1216	54	278	1548
2010	1232	54	281	1567
2011	1252	0	275	1527
2012	1267	0	279	1546

### Resources

	<u>Leland Olds</u>	<u>Laramie River</u>	<u>Spirit Mound</u>	<u>Antelope Valley</u>	<u>Neal IV</u>	<u>Total Resources</u>
2003	669	46	104	900	33	1752
2004	669	46	104	900	33	1752
2005	669	46	104	900	33	1752
2006	669	46	104	900	33	1752
2007	669	46	104	900	33	1752
2008	669	46	104	900	33	1752
2009	669	46	104	900	33	1752
2010	669	46	104	900	33	1752
2011	669	46	104	900	33	1752
2012	669	46	104	900	33	1752

## 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>
2002/03	1125	337	266	1728
2003/04	1138	287	267	1692
2004/05	1153	287	270	1710
2005/06	1173	252	271	1696
2006/07	1191	160	267	1618
2007/08	1200	152	269	1621
2008/09	1217	152	272	1641
2009/10	1235	152	276	1663
2010/11	1258	152	280	1690
2011/12	1276	0	255	1531

### 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>Total Resources</u>
2002/03	669	46	120	900	33	269	2037
2003/04	669	46	120	900	33	269	2037
2004/05	669	46	120	900	33	269	2037
2005/06	669	46	120	900	33	269	2037
2006/07	669	46	120	900	33	269	2037
2007/08	669	46	120	900	33	269	2037
2008/09	669	46	120	900	33	269	2037
2009/10	669	46	120	900	33	269	2037
2010/11	669	46	120	900	33	269	2037
2011/12	669	46	120	900	33	269	2037

