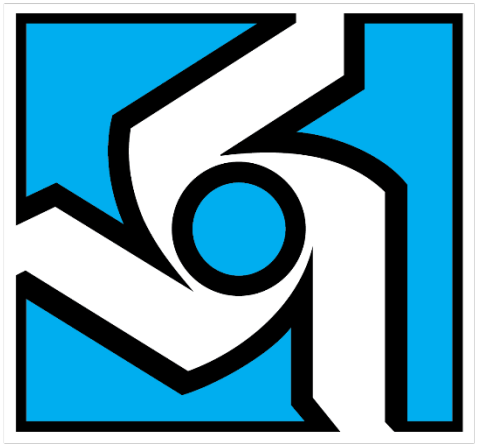

# BASIN ELECTRIC POWER COOPERATIVE

A Touchstone Energy® Cooperative 

# SOUTH DAKOTA TEN YEAR PLAN

**2022**

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## 20:10:21:04 - EXISTING ENERGY CONVERSION FACILITIES

Spirit Mound Station

1. Located six miles north of Vermillion, South Dakota and 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 67.5 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. Now the station is dispatched by the Southwest Power Pool during times of low generation available on the system. Therefore, operation of the station is limited. Net generating production in 2020 was 2,026 megawatt-hours (MWh) and 10,593 MWh in 2021.
4. Spirit Mound Station does not require water for production of electricity.
5. Spirit Mound Station consumed 224,780 gallons of fuel oil during 2020 and 994,306 gallons during 2021.
6. A projected date of removal from service for Spirit Mound Station has not been determined.
7. Since there are no retirement plans for the facility in the next 10 years, decommissioning plans do not need to be provided at this time.

Chamberlain Wind Project

1. Located at Chamberlain, South Dakota and declared available for commercial operation in January, 2002.
2. The project is composed of two 1.3 MW wind turbines.
3. The Chamberlain project was constructed as part of Basin Electric's overall power supply to serve its members. Net generating production in 2020 was 168 MWh and 0 MWh in 2021.
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 date of removal from service for the Chamberlain wind turbines has not been determined.
7. Since there are no retirement plans for the project in the next 10 years, decommissioning plans do not need to be provided at this time.

Groton Generation Station (Unit 1 & 2)

1. Located near Groton, South Dakota, Unit 1 was declared available for commercial operation in July, 2006 and Unit 2 was declared available for commercial operation in July, 2008.
2. The station is composed of two gas fired combustion turbines for a total winter rated net capability of 188 MW.
3. The Groton Generation Station produced 118,016 MWh in 2020 and 180,852 MWh in 2021.

4. The Groton Generation Station requires water for production of electricity. The Groton Generation Station used 3,241,876 gallons in 2020 and 4,743,760 gallons in 2021.
5. The fuel source is natural gas. The Groton Generation Station consumed 1,084 MMCF in 2020 and 1,774 MMCF in 20212021.
6. A projected date of removal from service for the Groton Generation Station has not been determined.
7. Since there are no retirement plans for the facility in the next 10 years, decommissioning plans do not need to be provided at this time.

Crow Lake Wind Project

1. Located near White Lake, South Dakota and was fully operational in February 2011.
2. The project consists of 108 1.59MW wind turbines for a total of 172MW.
3. The Crow Lake Wind project was constructed as part of Basin Electric's overall power supply to serve its members. Net generating production in 2020 was 483,719 MWh and 375,455 MWh in 2021.
4. The Crow Lake Wind 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 date of removal from service for the wind turbines has not been determined.
7. Since there are no retirement plans for the project in the next 10 years, decommissioning plans do not need to be provided at this time.

Deer Creek Station

1. Located near Brookings, South Dakota and declared available for commercial operation in August, 2012.
2. The station is composed of a gas fired 2x1 Combined Cycle Unit with Duct Firing, with a 297 net MW summer and winter rating.
3. The Deer Creek Station produced 756,397 MWh in 2020 and 585,524 MWh in 2021.
4. The Deer Creek Station requires water for production of electricity. The Deer Creek Station used 5,247,000 gallons of well water in 2020 and 6,343,000 gallons in 2021.
5. The fuel source is natural gas. The Deer Creek Station consumed 5,254 MMCF in 2020 and 3,757 MMCF in 2021.
6. A projected date of removal from service for the Deer Creek Station has not been determined.
7. Since there are no retirement plans for the facility in the next 10 years, decommissioning plans do not need to be provided at this time

## 20:10:21:05 - PROPOSED ENERGY CONVERSION FACILITIES

Basin Electric does not have any approved plans by the Board of Directors at this time for construction of a new generating facility, but is evaluating the development of new generating resources (gas, wind, solar, etc.) to meet Basin Electric's forecasted load growth as it materializes and continue to meet the needs of our membership. Because of load growth that is forecasted in the Bakken, Basin Electric intends to move forward with some new natural gas fired units in northwestern North Dakota with an anticipated

commercial operation date in 2025 and 2026, but is still analyzing which technology type(s) to proceed with. We have land at an existing facility and an adjacent land option has been purchased for the additional generation, and it is anticipated that staff will ask for Board authorization for these new resources later in 2022

Basin Electric, Dairyland, and ALLETE, Inc. are working together on the development of a natural gas combined cycle facility in Superior, Wisconsin. The proposed plant is estimated to have an installed capacity of 550-625 MW. Basin Electric announced ownership of 30% share of the project in September of 2021. The facility is intended to enable further development of intermittent renewable resources while ensuring continued reliability on each of the utility systems as well as in the upper Midwest. In January of 2020, the project received a Certificate of Public Convenience and Necessity (CPCN) from the Public Service Commission of Wisconsin (WI). The WI Department of Natural Resources is currently reviewing several permit applications for the project. The permit review process is expected to conclude, with the issuance of needed permits in the second half of 2022. The WI CPCN decision is currently under legal review in the Dane County Circuit Court. The project entered an application with MISO in June 2017 to include the plant in the August 2017 generator interconnection study group. The Generation Interconnection Agreement was executed by all parties in 2020. The in service date is currently estimated to be in 2027, but is subject to change until the necessary permits have been granted to the project.

**20:10:21:06 - EXISTING TRANSMISSION FACILITIES**

| Location | Type | Conductor | Voltage |
|---|---|---|---|
| Leland Olds-Groton | Steel Tower | 2183.5 MCM | 345 kV |
| Groton-Crocker | Steel Tower | 2183.5 MCM | 345 kV |
| Crocker-Watertown | Steel Tower | 2183.5 MCM | 345 kV |
| Leland Olds-Chappelle Creek | Steel Tower | 2183.5 MCM | 345 kV |
| Chappelle Creek -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 |
| 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 |
| Dry Creek Substation SD | | | 230/115 kV |
| Crocker Substation SD | | | 345 kV |
| Chappelle Creek Substation SD | | | 345 kV |
| Groton, SD Substation | | | 345/115 kV |
| Storla, SD Substation | | | 230/115 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 will be considered if that is the most cost effective method of increasing system capacity to accommodate future requests for transmission service along that path.

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

Basin Electric does not have any new transmission projects planned or proposed in South Dakota at this time. There are several generation interconnection requests under the Southwest Power Pool (SPP) generation interconnection queue that have requested interconnection to Basin Electric facilities, however, none of these have reached the point of a signed interconnection agreement at this time.

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

Basin Electric provides capacity and energy above the Western Area Power Administration's (WAPA) allocations to those preference customer cooperatives that 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, Montana, to New Underwood, South Dakota, 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 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.

On October 1, 2015 Basin Electric joined SPP. One of SPP's roles is the Planning Coordinator function. SPP performs this function through its Integrated Transmission Plan process.

**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.

SPP provides the regional plan for the Basin Electric facilities in the eastern interconnection required for FERC Order 890 and 1000.

**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**

Common Use System

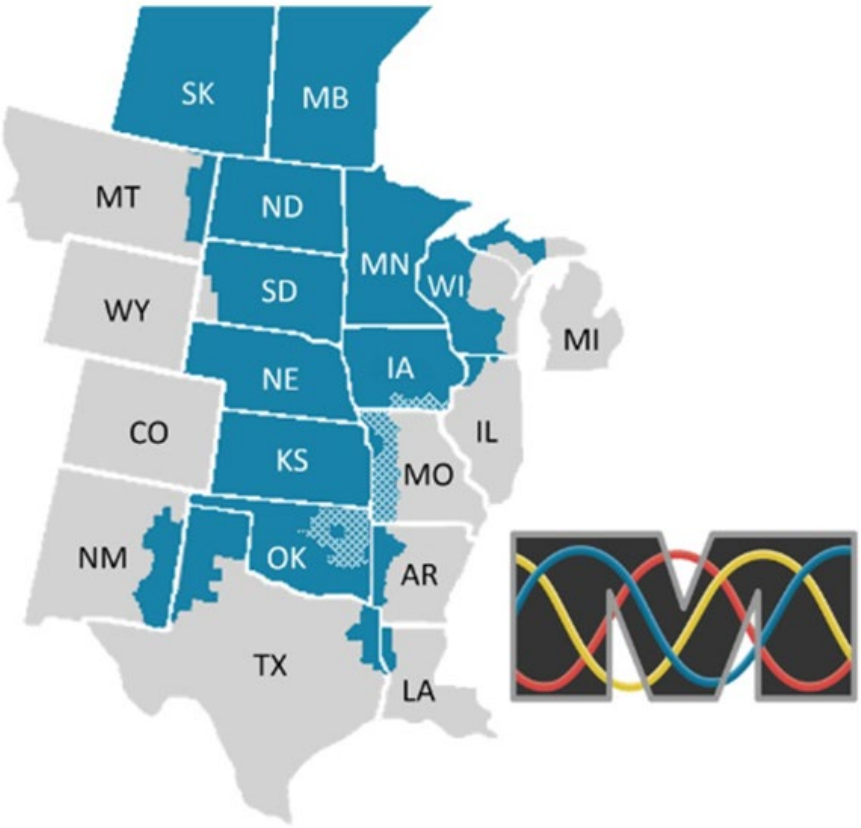
Basin Electric Power Cooperative, Powder River Energy Corporation, and Black Hills Power, Incorporated filed with the FERC a joint open access transmission system tariff (OATT) titled the Common Use System Tariff effective Oct. 15, 2003. The Administration Agreement for the Common Use System Tariff provides 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 Jan. 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.

Midwest Reliability Organization

Midwest Reliability Organization (MRO) is a non-profit organization dedicated to ensuring the reliability and security of the bulk power system (BPS) in the north central region of North America, including parts of both the United States and Canada. MRO is one of eight regional entities in North America operating under authority from regulators

in the United States through a delegation agreement with the North American Electric Reliability Corporation (NERC) and in Canada through arrangements with provincial regulators. The region includes more than 200 organizations that are involved in the production and delivery of electricity including municipal utilities, cooperatives, investor-owned utilities, transmission system operators, federal power marketing agencies, Canadian Crown Corporations, and independent power producers.

The primary responsibilities of MRO are to ensure compliance with mandatory Reliability Standards by entities who own, operate, or use the interconnected, international BPS, to conduct regional assessments of the grid's ability to meet the demands for electricity, and to analyze regional system events.




Southwest Power Pool

Basin Electric joined the Southwest Power Pool (SPP) in October 2015. SPP oversees the bulk electric grid and wholesale power market in the central United States on behalf of a diverse group of utilities and transmission companies in 14 states including South Dakota. SPP establishes practices for system design, planning, adequacy, regional transmission service tariff, interconnections, operation, reliability, market designs and efficiency, and market power mitigation that will help to assure efficient and reliable power supply among the systems in SPP and SPP transmission customers. Basin Electric participates on various committees and work groups as a function of SPP. The SPP planning and interconnection processes are the main avenue for transmission project development in South Dakota.

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 Pick-Sloan Missouri Basin Program. The Association is governed by a board comprised of four directors from each state, with representation balanced between types of consumer-owned systems, and they meet four times a year. Mid-West's Water & Power Planning Committee meets throughout the year to assure timely consideration of issues and develops technical information & policy recommendations for consideration by the board of directors.

## 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 that have a federal nexus adhere to the requirements of the associated Federal Agency's 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.

Clean air and clean water are important to our environment and future generations. Our region continues to rank as one of the areas with the cleanest air in the nation, and almost all of our generation resources were built with best available pollution control technologies at the time of their construction. Our generation resources have long histories of compliance with environmental standards. As this history demonstrates, our commitment to the environment and environmental compliance remains strong and is a core value of our cooperative.

Recent environmental projects at our main baseload generation facilities are discussed below follow by details of recent EPA rulemakings affecting integrated resource planning. The recent projects at our baseload generation facilities were initiated in response to EPA rulemakings. Basin Electric and subsidiaries have been proactive in meeting these new federal emissions standards ahead of schedule. Through year-end 2021, Basin Electric had invested $1.98 billion in environmental control technology. Approximately $177 million was invested in the operation and maintenance of those controls in 2021.

The following projects have been undertaken at our majority-owned coal-based facilities to ensure compliance with federal standards. It is important to note that all of Basin Electric facilities are in full compliance with all federal and state environmental standards and permits.

- Leland Olds Station: The first round of EPA's Regional Haze Rule required greater emission control through the installation of Best Available Retrofit Technology, or BART at Leland Olds. To achieve this, Basin Electric has installed wet limestone scrubbers in both units to control sulfur dioxide ($SO_2$) emissions. Unit 2's scrubber was commissioned in 2012; Unit 1's was commissioned in 2013. For nitrogen oxide ($NO_x$) control, BART required the installation of Selective Non-Catalytic Reduction (SNCR) technology on both units that were put into service in April of 2017. The BART compliance requirements were effective April 2017. Over-fire air combustion control has also been incorporated into both units at the Leland Olds Station. This technology introduces air high in the boiler, which reduces combustion temperatures. Since formation of $NO_x$ is in large part a function of temperature and oxygen availability, over-fire air technology reduces these emissions. A refined coal process had also been installed on both units to help with mercury and $NO_x$ reduction. However, this system has since been removed. A post-combustion sorbent injection system to provide additional mercury control was put in place in 2015. EPA finalized the Effluent Limitations Guidelines (ELG) rule on Sep. 30, 2015. The ELG rule sets limits for seven types of wastewater generated from power plants including a zero-discharge limit on bottoms ash transport water (BATW). As a result of this rule, a submerged flight conveyor system that will recycle BATW has been installed at Leland Olds. The 2015 Coal Combustion Residual Rule (CCR Rule) mandated the closure of unlined surface impoundments upon a specified triggering event. An update to this rule was finalized in 2020. The actions Leland Olds took to comply with the ELG rule also brought the facility into compliance with the CCR Rule.

• Laramie River Station: Over-fire air combustion control technology was incorporated into all three units at the Laramie River Station in 2009, 2010, and 2011 to aid in the reduction of $NO_x$ emissions. Low-$NO_x$ burners were incorporated into all three units at Laramie River between 2012, 2013, and 2014. Laramie River is also an affected BART facility which required additional $NO_x$ controls to be installed at Laramie River. A Selective Catalytic Reduction (SCR) system was installed on Unit 1 in 2019 and SNCRs on Units 2 and 3 in 2018. A refined coal process had also been installed in all three units at LRS to help with mercury and $NO_x$ reduction. However, this system has since been removed. A post-combustion mercury emission control system which injects activated carbon or another reagent was also installed on all units in 2015. Basin Electric is in the process of implementing a long-term compliance plan to comply with the CCR Rule at Laramie River. Compliance will consist of closing two and retrofitting three surface impoundments in accordance with deadlines promulgated by EPA.

• Antelope Valley Station: Designed to be environmentally sound, over $400 million have been invested in capital pollution control asset investments for Antelope Valley to date. The startup fuel has been switched from fuel oil to natural gas for both units. Under Further Reasonable Progress in the State of North Dakota's Regional Haze State Implementation Plan, AVS was required to install advanced overfire air technology and low-$NO_x$ burners for enhanced control of $NO_x$. Unit 1 was retrofitted in the spring of 2014 and Unit 2 in the spring of 2016. For $SO_2$ removal, the capacity of the lime slaking system for the Antelope Valley Station's dry scrubbers was enhanced. The dry scrubber utilizes a lime based slurry to remove up to 90% $SO_2$ emissions from flue gas as it passes through the dry scrubbers. The additional slaking capacity allows for more lime to be available should high sulfur lignite coal be burned. A refined coal process had also been installed in both units to help with mercury and $NO_x$ reduction. However, this system has since been removed. A post-combustion mercury emission control system has been installed at both units. Fabric filter bag houses capture and remove up to 99% of particulate matter. Each bag house contains more than 8,000, 35-foot tall bags. Antelope Valley is a "zero-discharge" facility; even water is used efficiently only leaving the plant site through evaporation.

## 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.

Basin Electric has a load management rate whereby four customers are participating - the City of Manning Municipal Light Plant, Iowa (6 MW), Cargill Wet Corn Mill Plant (4 MW) near Wahpeton, North Dakota, the City of Dike, Iowa (2.5 MW), and the Mountrail Williams Electric Cooperative Office Complex (4 MW) in Williston, North Dakota.

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

No reports at this time.

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

The oldest two turbines at the Minot Wind Projects were decommissioned in March of 2022.

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

1. Exhibit 1 represents Basin Electric's historical and projected sales to its Class A and D members. This exhibit represents Basin Electric's supplemental power supply responsibility to the Class A and D 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 and other sources.

   An econometric based load forecast was completed in early 2022. The econometric forecasting system in the load forecast is a bottom up process that begins by developing econometric equations and forecasts for each distribution cooperative. The total system consists of approximately 350 forecasting equations and over 700 explanatory variables. Annual and monthly forecasts of energy and demand are conducted for a 30+ 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. Historical energy data is combined with external data obtained from government and private sector sources as well as membership consultation 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, Missouri; Woods & Poole Economics, Inc.; IHS Markit, the US Department of Energy, Washington, D.C., along with various

other sources.

2. Basin Electric's service area is electrically divided into four assessment areas across two electrical interconnections. The majority of Basin Electric's system resides in the eastern interconnection consisting of the Southwest Power Pool (SPP) and Midcontinent Independent System Operator (MISO) assessment areas. In the western interconnection Basin Electric's system resides in the Northwest Power Pool (NWPP) and the Rocky Mountain Power Area (RMPA) assessment areas, which can be further broken down into the WAPA Upper Great Plains West (WAUW) and NorthWestern Energy (NWMT) Balancing Authority Area's (BAA) in the NWPP area and the WAPA Colorado-Missouri (WACM) and Pacificorp East (PACE) BAA's in the RMPA. These interconnections 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 across all 4 assessment areas.

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

   a) Leland Olds Station: Leland Olds Unit 1 was placed in-service on January 9, 1966 and is a base-load coal fueled unit located near Stanton, North Dakota, with a net capacity of 220 MW. Leland Olds Unit 2 is a coal fueled unit that was placed in-service on Dec. 15, 1975 and its net capacity is rated at 440 MW.

   b) Antelope Valley Station: Basin Electric operates two 450 MW (net) thermal-generating base load coal fired units near Beulah, North Dakota. Unit 1 began commercial operation on July 1, 1984 and Unit 2 began partial commercial operation on June 1, 1986.

   c) 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. In 2018, Heartland Consumer Power District sold their share of the Laramie River Station to Tri-State G&T, and in 2021 the Wyoming Municipal Power Agency sold their share to Basin Electric because they became an All-Requirements member of Basin Electric. So

today there are only 3 other owners of the Laramie River Station besides Basin Electric. The amount of power that Basin Electric receives from the east side unit is 92 MW (net).

d) Spirit Mound Station: Basin Electric placed in service on June 30, 1978, two fuel oil-fired combustion turbines. The combined net winter rating of the two units is 120 MW and the net summer rating is 95 MW. 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, South Dakota.

e) Earl F. Wisdom Unit 1: Basin Electric and Corn Belt Power Cooperative, one of Basin Electric's member cooperatives, negotiated a power supply contract which provides that Corn Belt Power will sell to Basin Electric Corn Belt Power's 38 MW of uncommitted capacity and associated energy from the Earl F. Wisdom Unit 1. In return, Corn Belt Power entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt Power all of Corn Belt Power's capacity and energy requirements in excess of the power and energy available to Corn Belt Power from the Western Area Power Administration. In accordance with the Utility Mercury and Air Toxics Standards (MATS), Unit 1 stopped burning coal in January of 2014. Corn Belt Power and Basin Electric completed a retrofit of Unit 1 to switch from coal to natural gas for fuel. This retrofit was completed in June of 2014.

f) Earl F. Wisdom Unit 2: Basin Electric partnered with Corn Belt Power Cooperative to build the 80 MW natural gas peaking unit near Spencer, Iowa. Basin Electric owns one half of the unit which was placed in service in April 2004. Basin Electric purchases 87.5% of Corn Belt Power's owned half in response to Corn Belt Power entering into a Wholesale Power Contract; therefore Basin Electric has 93.75% or 75 MW from the 80 MW combustion turbine.

g) Groton Generation Station: Basin Electric commissioned Groton Unit 1 in 2006 and Unit 2 in 2008. These LMS 100 natural gas units provide peaking power. Unit 1 has a net winter rating of 95 MW and Unit 2 has a net winter rating of 93 MW.

h) Culbertson Generation Station: Basin Electric commissioned Culbertson Unit 1 in 2010. The LMS 100 natural gas unit provides peaking power. The unit has a net winter rating of 98 MW.

i) Deer Creek Station: Basin Electric commissioned the Deer Creek Station in August, 2012. The unit is a combined-cycle natural gas facility that provides intermediate power. The unit has a net winter rating of 297 MW.

j) Pioneer Generation Station: The Pioneer Generation Station northwest of Williston, North Dakota was built to serve the increasing demand for electricity by member cooperatives in northwest North Dakota. Unit 1 started commercial operation in 2013, Unit 2 and Unit 3 started commercial operation in 2014, and twelve natural gas reciprocating internal combustion engines (RICE) referred to as units 11 through 22 started commercial operation in 2017. Each of the first three units have 45 MW of net generating capability and the twelve RICE units have a net generating capability of 8.9 MW each giving the station a total rating of approximately 242 MW. Unit 1 of Pioneer Generation Station features a clutch that allows the turbine to uncouple from the generator, allowing the generator to provide transmission system voltage support. This feature, if needed, is used to provide fast-acting reactive power which will stabilize the transmission system in the area.

k) Lonesome Creek Station: The Lonesome Creek Station is located near Watford City, North Dakota. Commercial Operation for Lonesome Creek Unit 1 began in December 2013, Units 2 and 3 in January 2015, Units 4 and 5 in March 2017, and Unit 6 in October 2021. Each unit consists of a LM 6000 natural gas combustion turbine and provides peaking power. Each unit has a net winter rating of 45 MW for a total station generating capability of 270 MW. Unit 1 has a synchronous clutch located between the combustion turbine and generator allowing the generator rotor to spin independent of the turbine providing voltage stability to the electric grid.

l) 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 project was placed into commercial service in January 2002. The energy is delivered to members as part of Basin Electric's overall power supply.

m) 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 first two turbines totaling 2.6 MW of generating capability were placed into commercial service in February 2002, and were recently decommissioned in March of 2022. Three additional turbines totaling 4.5 MW of generating capability were added in December 2009. The energy is delivered to members as part of Basin Electric's overall power supply.

n) PrairieWinds 1: Basin Electric has constructed a wind energy project of 77 turbines near Minot, North Dakota. The project has a generating capability of 115.5 MW and was placed into commercial service in December 2009.

o) Crow Lake Wind Project: Basin Electric has constructed a wind energy project of 108 turbines near White Lake, South Dakota. The project has

a generating capability of 172 MW and was placed into commercial service in 2011. Basin Electric owns 107 turbines or approximately 170.4 MW and has a purchase power contract with Mitchell Technical Institute for the power out of the last turbine.

p) WAPA Peaking Capacity: In 1968, Basin Electric executed a long-term contract with the federal government for United States Bureau of Reclamation (now WAPA) hydro peaking from the dams in the Missouri River Basin. This contract currently provides Basin Electric with 268.2 MW of winter peaking capacity at load and for Basin Electric to return a like amount of energy to Western during off-peak periods.

q) George 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 31 MW of uncommitted capacity and associated energy from Unit No. 4 of the George Neal Generating Station (Neal IV). In return NIPCO entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to NIPCO all of NIPCO's capacity and energy requirements in excess of the power and energy available to NIPCO from the Western Area Power Administration.

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

r) Walter Scott 3 and 4: Basin Electric and Corn Belt Power, one of Basin Electric's member cooperatives, negotiated a power supply contract which provides that Corn Belt will sell to Basin Electric Corn Belt Power's 26 MW of uncommitted capacity and associated energy from Unit No. 3 and 45 MW of uncommitted capacity and associated energy from Unit No. 4 of the Walter Scott Energy Center. In return, Corn Belt Power entered into a wholesale power contract with Basin Electric whereby Basin Electric will sell and deliver to Corn Belt Power all of Corn Belt Power's capacity and energy requirements in excess of the power and energy available to Corn Belt Power from the Western Area Power Administration.

s) Western Native American Purchase: Basin Electric receives a Native American Allocation of 39.9 MW in the winter and 41.1 MW in the

summer season. This allocation is a result of congressional action that made federal power available to the Native Americans.

t) Rapid City DC Tie: Basin Electric and Black Hills Power, Inc. have jointly constructed a 200 MW asynchronous tie at Rapid City, South Dakota. This tie enables Basin Electric to serve load located west of the east-west ties, using capacity and/or energy from east side resources and vice versa, load located east of the east-west ties, using capacity and/or energy from west side resources. The Basin Electric ownership percentage is 65% and the Black Hills Power, Inc. ownership percentage is 35%. Currently, Basin Electric has rights to 130 MW of the tie.

u) Stegall (David Hamil) DC Tie: Tri-State G&T Association constructed a 110 MW asynchronous tie at Stegall, Nebraska. Basin Electric has acquired all rights to this tie. This enables Basin Electric to serve load located west of the east-west ties, using capacity and/or energy from east side resources and vice versa.

v) Sidney DC Tie: Western Area Power Administration constructed a 200 MW asynchronous tie at Sidney, Nebraska. Basin Electric has acquired 50 MW of west to east rights to this tie. This enables Basin Electric to serve load located on the eastern system using capacity and/or energy from west side resources.

w) 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.

x) Long Term Resource: Basin Electric has entered into long-term purchase agreements to meet contractual power supply obligations.

i) Wind Purchases:
   a) 40 MW west of Edgeley, North Dakota
   b) Two 49.5 MW projects near Wilton, North Dakota
   c) 100 MW near Baldwin, North Dakota
   d) 40 MW near Highmore, South Dakota
   e) 94 MW near Pollock, South Dakota
   f) 99 MW near Groton, South Dakota
   g) 104 MW near Hebron, North Dakota
   h) 150 MW near Tioga, North Dakota
   i) Two 150 MW projects near New England, North Dakota
   j) 197.9 MW near Columbus, North Dakota
   k) 208 MW near Avon, South Dakota
   l) 142 MW near Tioga, North Dakota (term starting 1/2023)

ii) Solar Purchases:

a) 128 MW near Rapid City, South Dakota (COD milestone: 12/31/2022)
b) Two 75 MW projects near Baker, Montana (COD milestone: 12/20/2023)
c) 20 MW near Custer, Montana (COD milestone: 12/31/2023)
d) 20 MW near Rapid City, South Dakota (COD milestone: 12/31/2022)

iii) Peaking Purchases:
a) 10 MW City of Madison, South Dakota diesel generators
b) Eight 5.5 MW waste heat recover units from Ormat Technologies Inc (3 sites in South Dakota near Wetonka, Clark, and Estelline; 3 in North Dakota; 1 in Montana; 1 in Minnesota)
c) One 1.1 MW waste heat/steam letdown generator from Siouxland Energy Cooperative near Sioux Center, Iowa
d) 94.2 MW in purchases from CBPC
(1) 23.8 MW from Webster City, Iowa
(2) 11.1 MW from Estherville, Iowa
(3) 10 MW from Spencer, Iowa
(4) 49.3 MW from their share of the Superior, Lakota, Hancock, and Crosswinds wind projects in Iowa
e) ~70 MW from North Iowa Municipal Electric Cooperative Association's (NIMECA's) surplus capacity resources in Iowa

iv) Other Long Term PPAs:
a) Capacity Only
(1) 75-125 MW from Minnesota Power (6/2022-5/2025)
(2) 100 MW from Minnesota Power (6/2025-5/2028)
(3) 75 MW from Great River Energy (6/2020-5/2023)
(4) 50-80 MW from Manitoba Hydro (6/2023-5/2028)
(5) 75-175 MW from Dairyland Power Cooperative (6/2019-5/2023)
(6) 75 MW from Dairyland Power Cooperative (6/2023-5/2033)
(7) 150 MW from Missouri River Energy Services (ending 9/2023)
(8) 35-185 MW from Missouri River Energy Services (10/2020-9/2035)
(9) 75 MW from NRG Power Marketing (6/2023-5/2025)
(10) 101-151 MW from Evergy/Dogwood Energy Facility (6/2021-5/2024)
(11) 125 MW from The Energy Authority/Sheldon & Hallam Stations (6/2023-5/2026)

y) 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 receives from Units 2 and 3 on the west is 627 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, Montana. This tie, which provides 40% capacity entitlement, enables Basin Electric to serve Central Montana Electric Power Cooperative Inc., a Class A member with electrical loads located primarily west of the east-west ties, using capacity from east-side resources such as the Antelope Valley Station.

c) Wyoming Distributed Generation: The Wyoming Distributed Generation originally consisted of 9 peaking units located at 3 sites; Arvada, Hartzog and Barber Creek. One of the units at the Arvada site was retired in late 2021, so now there are 8 units in total across the three sites. These units are natural gas fired combustion turbines each with a net generating capability of 5 MW in the summer and 6 MW in the winter, for a total net generating capability of 40 MW summer and 48 MW winter. These units were released for commercial operation in 2002. These units currently are utilized for reserves for Basin Electric's west side electrical requirements.

d) Dry Fork Station: Basin Electric, together with the Wyoming Municipal Power Agency (WMPA) began construction of the Dry Fork Station near Gillette in northeast Wyoming in 2007. The station's single unit has a total net generating capability of 405 MW and became fully operational in November of 2011. Basin Electric owned 92.9% of the station until WMPA became a member of Basin Electric in late 2020 and sold their share of Dry Fork in early 2021 so that Basin Electric now owns 100% of the station.

e) Long Term PPAs :
   i) Firm Capacity and/or Firm Energy in NWPP
      a) 50-75 MW from MacQuarie Energy (formerly "Cargill"; 5/2020-12/2025)
      b) 100-150 MW from Morgan Stanley Capital Group (1/2019-12/2027)

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

The projected load values contained in Exhibit 1 were obtained from the econometric based load forecast. Loads in South Dakota are located in SPP, MISO Local Resource Zone 1, and RMRG assessment areas so Basin Electric's loads in each of these areas have been adjusted to an at-generator system

coincident basis by allowing for reserves, on-peak losses, and system diversity as outlined in Exhibit 2.

**20:10:21:17 - CHANGES IN ELECTRIC ENERGY DEMAND**

Exhibit 1 shows demand increases.

**20:10:21:18 - SERVICE AREA MAP**

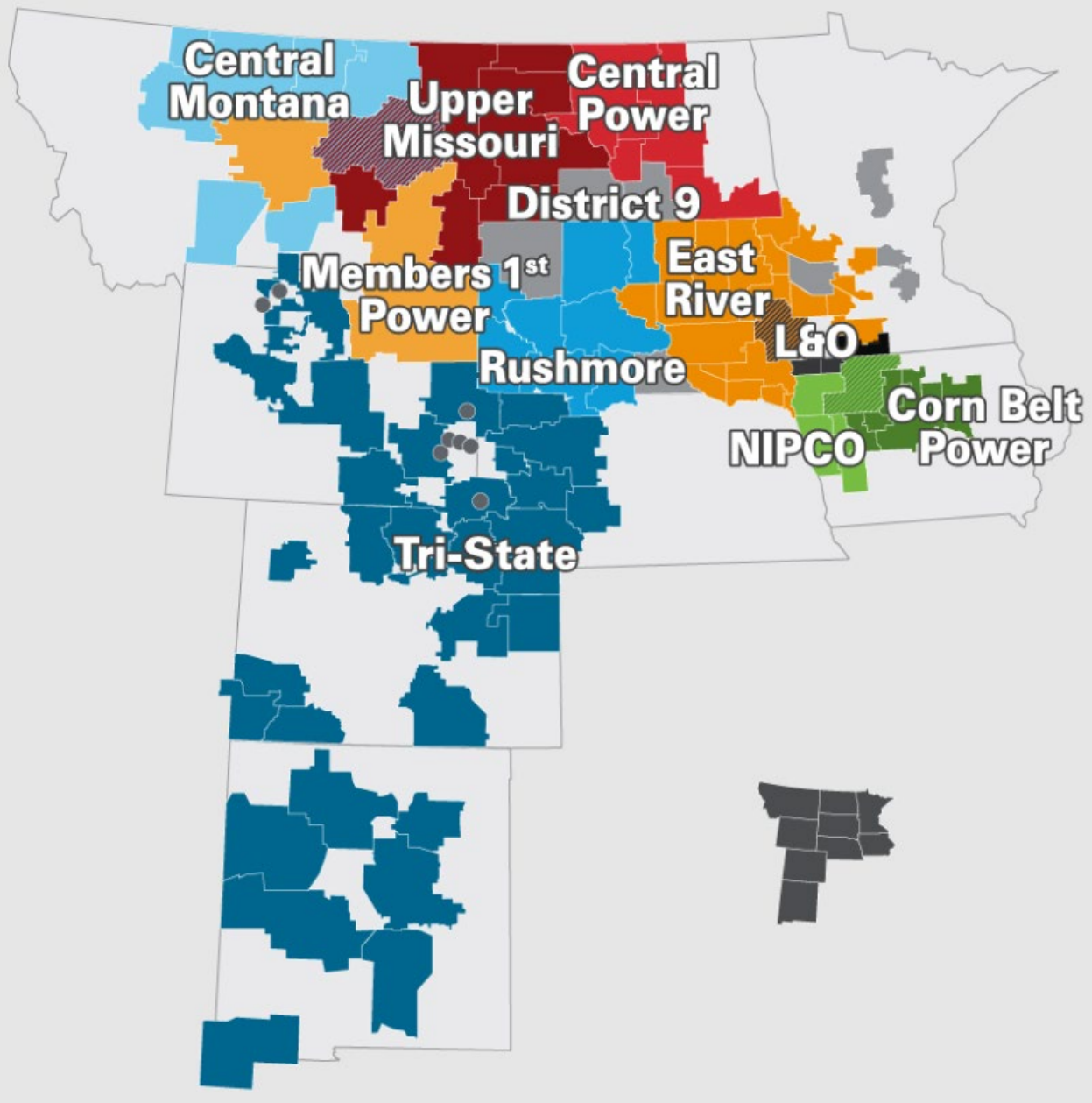

Central Montana
Upper Missouri
Central Power
District 9
Members 1st Power
East River
L&O
Rushmore
Corn Belt Power
NIPCO
Tri-State

**EXHIBIT 1 - SUMMER/WINTER LOADS BY STATE**

# Basin Electric Member Loads by State

Note: Historical 2000-2021 and Forecasted 2022-2032

**SUMMER Peak Demand (MW)**

| | ND | % | SD | % | MN | % | IA | % | NE | % | MT | % | CO | % | WY | % | BEPC TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2000 | 293 | 23.0% | 302 | 23.7% | 54 | 4.2% | 99 | 7.8% | 215 | 16.9% | 29 | 2.3% | 82 | 6.5% | 200 | 15.7% | 1,273 |
| 2001 | 307 | 22.2% | 343 | 24.8% | 58 | 4.2% | 116 | 8.4% | 227 | 16.5% | 30 | 2.2% | 82 | 5.9% | 218 | 15.8% | 1,380 |
| 2002 | 315 | 21.3% | 352 | 23.8% | 58 | 3.9% | 127 | 8.6% | 254 | 17.1% | 44 | 3.0% | 95 | 6.4% | 236 | 15.9% | 1,480 |
| 2003 | 353 | 22.9% | 346 | 22.4% | 58 | 3.8% | 121 | 7.9% | 239 | 15.5% | 56 | 3.6% | 114 | 7.4% | 254 | 16.5% | 1,541 |
| 2004 | 329 | 21.2% | 354 | 22.8% | 55 | 3.6% | 119 | 7.7% | 233 | 15.0% | 62 | 4.0% | 130 | 8.4% | 271 | 17.5% | 1,554 |
| 2005 | 357 | 20.7% | 400 | 23.2% | 62 | 3.6% | 131 | 7.6% | 270 | 15.7% | 74 | 4.3% | 132 | 7.6% | 296 | 17.2% | 1,722 |
| 2006 | 400 | 20.5% | 440 | 22.6% | 71 | 3.7% | 188 | 9.7% | 273 | 14.0% | 82 | 4.2% | 134 | 6.9% | 358 | 18.4% | 1,947 |
| 2007 | 452 | 21.9% | 461 | 22.3% | 92 | 4.4% | 186 | 9.0% | 262 | 12.7% | 86 | 4.2% | 135 | 6.6% | 389 | 18.9% | 2,063 |
| 2008 | 465 | 22.5% | 421 | 20.4% | 88 | 4.2% | 177 | 8.6% | 270 | 13.1% | 74 | 3.6% | 142 | 6.9% | 426 | 20.7% | 2,062 |
| 2009 | 448 | 21.4% | 438 | 20.9% | 102 | 4.9% | 201 | 9.6% | 232 | 11.1% | 65 | 3.1% | 145 | 7.0% | 400 | 19.1% | 2,090 |
| 2010 | 509 | 20.5% | 472 | 19.0% | 181 | 7.3% | 459 | 18.5% | 238 | 9.6% | 70 | 2.8% | 145 | 5.9% | 407 | 16.4% | 2,482 |
| 2011 | 543 | 20.8% | 548 | 21.0% | 169 | 6.5% | 460 | 17.7% | 280 | 10.8% | 69 | 2.7% | 140 | 5.4% | 396 | 15.2% | 2,607 |
| 2012 | 693 | 23.1% | 596 | 19.9% | 207 | 6.9% | 476 | 15.9% | 333 | 11.1% | 104 | 3.5% | 208 | 6.9% | 377 | 12.6% | 2,994 |
| 2013 | 812 | 26.5% | 572 | 18.7% | 224 | 7.3% | 460 | 15.0% | 299 | 9.8% | 147 | 4.8% | 180 | 5.9% | 370 | 12.1% | 3,063 |
| 2014 | 889 | 29.3% | 508 | 16.8% | 160 | 5.3% | 433 | 14.3% | 311 | 10.3% | 178 | 5.9% | 179 | 5.9% | 372 | 12.3% | 3,029 |
| 2015 | 1,187 | 34.7% | 587 | 17.2% | 212 | 6.2% | 425 | 12.4% | 274 | 8.0% | 186 | 5.4% | 195 | 5.7% | 356 | 10.4% | 3,421 |
| 2016 | 1,141 | 34.2% | 568 | 17.0% | 212 | 6.4% | 470 | 14.1% | 266 | 7.9% | 176 | 5.3% | 200 | 6.0% | 308 | 9.2% | 3,342 |
| 2017 | 1,244 | 34.8% | 585 | 16.3% | 234 | 6.5% | 471 | 13.2% | 293 | 8.2% | 244 | 6.8% | 199 | 5.6% | 309 | 8.6% | 3,578 |
| 2018 | 1,289 | 35.0% | 580 | 15.7% | 240 | 6.5% | 480 | 13.0% | 260 | 7.1% | 245 | 6.6% | 304 | 8.3% | 289 | 7.8% | 3,687 |
| 2019 | 1,425 | 37.7% | 579 | 15.3% | 239 | 6.3% | 480 | 12.7% | 259 | 6.9% | 250 | 6.6% | 278 | 7.4% | 272 | 7.2% | 3,783 |
| 2020 | 1,478 | 38.4% | 596 | 15.5% | 269 | 7.0% | 477 | 12.4% | 272 | 7.0% | 246 | 6.4% | 191 | 5.0% | 323 | 8.4% | 3,851 |
| 2021 | 1,539 | 36.9% | 673 | 16.1% | 299 | 7.2% | 497 | 11.9% | 317 | 7.6% | 262 | 6.3% | 202 | 4.8% | 380 | 9.1% | 4,169 |
| 2022 | 1,659 | 38.4% | 655 | 15.1% | 347 | 8.0% | 501 | 11.6% | 347 | 8.0% | 285 | 6.6% | 177 | 4.1% | 354 | 8.2% | 4,326 |
| 2023 | 2,094 | 43.4% | 669 | 13.9% | 359 | 7.4% | 523 | 10.8% | 347 | 7.2% | 310 | 6.4% | 178 | 3.7% | 345 | 7.2% | 4,825 |
| 2024 | 2,140 | 43.6% | 691 | 14.1% | 371 | 7.6% | 526 | 10.7% | 348 | 7.1% | 316 | 6.4% | 178 | 3.6% | 341 | 6.9% | 4,911 |
| 2025 | 2,180 | 43.7% | 702 | 14.1% | 380 | 7.6% | 539 | 10.8% | 348 | 7.0% | 323 | 6.5% | 178 | 3.6% | 339 | 6.8% | 4,988 |
| 2026 | 2,218 | 43.7% | 714 | 14.1% | 406 | 8.0% | 541 | 10.7% | 348 | 6.9% | 329 | 6.5% | 178 | 3.5% | 336 | 6.6% | 5,071 |
| 2027 | 2,245 | 43.7% | 726 | 14.1% | 415 | 8.1% | 544 | 10.6% | 349 | 6.8% | 341 | 6.6% | 178 | 3.5% | 336 | 6.5% | 5,133 |
| 2028 | 2,274 | 43.8% | 739 | 14.2% | 424 | 8.2% | 547 | 10.5% | 349 | 6.7% | 344 | 6.6% | 178 | 3.4% | 335 | 6.5% | 5,190 |
| 2029 | 2,299 | 43.9% | 751 | 14.3% | 433 | 8.3% | 550 | 10.5% | 350 | 6.7% | 347 | 6.6% | 178 | 3.4% | 332 | 6.3% | 5,239 |
| 2030 | 2,316 | 43.9% | 763 | 14.5% | 441 | 8.4% | 552 | 10.5% | 350 | 6.6% | 348 | 6.6% | 178 | 3.4% | 327 | 6.2% | 5,274 |
| 2031 | 2,338 | 44.0% | 774 | 14.6% | 448 | 8.4% | 554 | 10.4% | 351 | 6.6% | 349 | 6.6% | 178 | 3.3% | 326 | 6.1% | 5,318 |
| 2032 | 2,361 | 44.0% | 786 | 14.7% | 456 | 8.5% | 556 | 10.4% | 351 | 6.5% | 351 | 6.5% | 178 | 3.3% | 326 | 6.1% | 5,365 |

SD Summer Demand Changes

| | MW Change | % diff |
|---|---|---|
| 2000 to 2001 | 41 | 13.5% |
| 2001 to 2002 | 9 | 2.7% |
| 2002 to 2003 | -6 | -1.8% |
| 2003 to 2004 | 8 | 2.4% |
| 2004 to 2005 | 46 | 13.1% |
| 2005 to 2006 | 40 | 10.1% |
| 2006 to 2007 | 20 | 4.6% |
| 2007 to 2008 | -40 | -8.7% |
| 2008 to 2009 | 17 | 4.0% |
| 2009 to 2010 | 35 | 8.0% |
| 2010 to 2011 | 76 | 16.1% |
| 2011 to 2012 | 48 | 8.7% |
| 2012 to 2013 | -24 | -4.1% |
| 2013 to 2014 | -64 | -11.2% |
| 2014 to 2015 | 80 | 15.7% |
| 2015 to 2016 | -19 | -3.3% |
| 2016 to 2017 | 17 | 3.0% |
| 2017 to 2018 | -4 | -0.7% |
| 2018 to 2019 | -1 | -0.2% |
| 2019 to 2020 | 17 | 3.0% |
| 2020 to 2021 | 76 | 12.8% |
| 2021 to 2022 | -17 | -2.6% |
| 2022 to 2023 | 14 | 2.1% |
| 2023 to 2024 | 22 | 3.3% |
| 2024 to 2025 | 11 | 1.6% |
| 2025 to 2026 | 12 | 1.7% |
| 2026 to 2027 | 12 | 1.7% |
| 2027 to 2028 | 12 | 1.7% |
| 2028 to 2029 | 13 | 1.7% |
| 2029 to 2030 | 11 | 1.5% |
| 2030 to 2031 | 12 | 1.5% |
| 2031 to 2032 | 12 | 1.6% |

# Basin Electric Member Loads by State

Note: Historical 2000-2021 and Forecasted 2022-2032

**WINTER Peak Demand (MW)**

| | ND | % | SD | % | MN | % | IA | % | NE | % | MT | % | CO | % | WY | % | BEPC TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00/01 | 342 | 27.4% | 328 | 26.2% | 57 | 4.6% | 125 | 10.0% | 43 | 3.4% | 34 | 2.7% | 83 | 6.7% | 239 | 19.1% | 1,250 |
| 01/02 | 313 | 26.2% | 300 | 25.2% | 47 | 3.9% | 108 | 9.1% | 37 | 3.1% | 35 | 2.9% | 82 | 6.9% | 270 | 22.6% | 1,193 |
| 02/03 | 377 | 27.7% | 342 | 25.1% | 54 | 4.0% | 128 | 9.4% | 36 | 2.6% | 55 | 4.0% | 103 | 7.6% | 268 | 19.6% | 1,362 |
| 03/04 | 417 | 27.5% | 394 | 25.9% | 60 | 3.9% | 134 | 8.8% | 36 | 2.3% | 62 | 4.1% | 123 | 8.1% | 293 | 19.3% | 1,518 |
| 04/05 | 438 | 27.4% | 417 | 26.1% | 63 | 3.9% | 139 | 8.7% | 44 | 2.7% | 64 | 4.0% | 121 | 7.6% | 314 | 19.7% | 1,599 |
| 05/06 | 463 | 26.8% | 415 | 24.0% | 66 | 3.8% | 187 | 10.8% | 48 | 2.8% | 72 | 4.2% | 121 | 7.0% | 353 | 20.5% | 1,725 |
| 06/07 | 495 | 25.4% | 484 | 24.9% | 111 | 5.7% | 212 | 10.9% | 50 | 2.6% | 71 | 3.6% | 122 | 6.3% | 403 | 20.7% | 1,946 |
| 07/08 | 563 | 26.3% | 524 | 24.5% | 113 | 5.3% | 232 | 10.8% | 50 | 2.3% | 81 | 3.8% | 124 | 5.8% | 454 | 21.2% | 2,140 |
| 08/09 | 623 | 25.7% | 634 | 26.2% | 133 | 5.5% | 276 | 11.4% | 57 | 2.3% | 78 | 3.2% | 138 | 5.7% | 481 | 19.9% | 2,420 |
| 09/10 | 627 | 23.5% | 619 | 23.2% | 169 | 6.3% | 518 | 19.4% | 59 | 2.2% | 74 | 2.8% | 137 | 5.1% | 468 | 17.5% | 2,671 |
| 10/11 | 679 | 25.2% | 622 | 23.0% | 198 | 7.3% | 468 | 17.4% | 55 | 2.0% | 56 | 2.1% | 145 | 5.4% | 477 | 17.7% | 2,698 |
| 11/12 | 835 | 29.5% | 600 | 21.2% | 181 | 6.4% | 443 | 15.6% | 49 | 1.7% | 92 | 3.2% | 180 | 6.4% | 450 | 15.9% | 2,828 |
| 12/13 | 973 | 32.3% | 627 | 20.8% | 194 | 6.4% | 457 | 15.2% | 52 | 1.7% | 101 | 3.3% | 183 | 6.1% | 428 | 14.2% | 3,014 |
| 13/14 | 1,134 | 31.9% | 778 | 21.9% | 253 | 7.1% | 523 | 14.7% | 54 | 1.5% | 183 | 5.1% | 200 | 5.6% | 434 | 12.2% | 3,559 |
| 14/15 | 1,359 | 37.2% | 700 | 19.2% | 233 | 6.4% | 496 | 13.6% | 57 | 1.6% | 191 | 5.2% | 184 | 5.1% | 432 | 11.8% | 3,651 |
| 15/16 | 1,394 | 39.9% | 634 | 18.2% | 229 | 6.5% | 466 | 13.3% | 54 | 1.5% | 161 | 4.6% | 184 | 5.3% | 369 | 10.6% | 3,491 |
| 16/17 | 1,441 | 38.7% | 695 | 18.7% | 249 | 6.7% | 477 | 12.8% | 53 | 1.4% | 242 | 6.5% | 184 | 5.0% | 380 | 10.2% | 3,720 |
| 17/18 | 1,546 | 39.3% | 718 | 18.3% | 281 | 7.2% | 493 | 12.6% | 57 | 1.4% | 245 | 6.2% | 191 | 4.9% | 354 | 9.0% | 3,929 |
| 18/19 | 1,717 | 42.3% | 741 | 18.2% | 289 | 7.1% | 517 | 12.7% | 48 | 1.2% | 236 | 5.8% | 194 | 4.8% | 318 | 7.8% | 4,060 |
| 19/20 | 1,823 | 44.9% | 688 | 17.0% | 235 | 5.8% | 499 | 12.3% | 58 | 1.4% | 256 | 6.3% | 129 | 3.2% | 369 | 9.1% | 4,056 |
| 20/21 | 1,830 | 43.1% | 769 | 18.1% | 284 | 6.7% | 513 | 12.1% | 64 | 1.5% | 256 | 6.0% | 130 | 3.1% | 396 | 9.3% | 4,242 |
| 21/22 | 1,868 | 44.1% | 766 | 18.1% | 249 | 5.9% | 547 | 12.9% | 61 | 1.4% | 252 | 5.9% | 131 | 3.1% | 360 | 8.5% | 4,233 |
| 22/23 | 2,251 | 47.0% | 781 | 16.3% | 344 | 7.2% | 577 | 12.1% | 61 | 1.3% | 296 | 6.2% | 131 | 2.7% | 346 | 7.2% | 4,786 |
| 23/24 | 2,458 | 48.8% | 806 | 16.0% | 354 | 7.0% | 580 | 11.5% | 61 | 1.2% | 300 | 5.9% | 131 | 2.6% | 351 | 7.0% | 5,041 |
| 24/25 | 2,505 | 48.9% | 818 | 16.0% | 361 | 7.0% | 594 | 11.6% | 61 | 1.2% | 307 | 6.0% | 131 | 2.6% | 348 | 6.8% | 5,124 |
| 25/26 | 2,536 | 48.7% | 832 | 16.0% | 382 | 7.3% | 597 | 11.5% | 61 | 1.2% | 326 | 6.3% | 131 | 2.5% | 345 | 6.6% | 5,210 |
| 26/27 | 2,581 | 48.9% | 846 | 16.0% | 390 | 7.4% | 600 | 11.4% | 61 | 1.2% | 325 | 6.2% | 131 | 2.5% | 345 | 6.5% | 5,279 |
| 27/28 | 2,617 | 49.0% | 860 | 16.1% | 397 | 7.4% | 604 | 11.3% | 61 | 1.1% | 328 | 6.1% | 131 | 2.4% | 345 | 6.5% | 5,342 |
| 28/29 | 2,646 | 49.0% | 874 | 16.2% | 405 | 7.5% | 607 | 11.3% | 61 | 1.1% | 330 | 6.1% | 131 | 2.4% | 341 | 6.3% | 5,396 |
| 29/30 | 2,666 | 49.1% | 887 | 16.3% | 410 | 7.6% | 610 | 11.2% | 61 | 1.1% | 332 | 6.1% | 131 | 2.4% | 335 | 6.2% | 5,432 |
| 30/31 | 2,693 | 49.1% | 900 | 16.4% | 416 | 7.6% | 612 | 11.2% | 61 | 1.1% | 333 | 6.1% | 131 | 2.4% | 334 | 6.1% | 5,481 |
| 31/32 | 2,720 | 49.2% | 914 | 16.5% | 422 | 7.6% | 615 | 11.1% | 62 | 1.1% | 335 | 6.1% | 131 | 2.4% | 334 | 6.0% | 5,532 |

SD Winter Demand Changes

| | MW Change | % diff |
|---|---|---|
| 00/01 to 01/02 | -28 | -8.4% |
| 01/02 to 02/03 | 42 | 13.9% |
| 02/03 to 03/04 | 52 | 15.0% |
| 03/04 to 04/05 | 23 | 5.8% |
| 04/05 to 05/06 | -2 | -0.5% |
| 05/06 to 06/07 | 70 | 16.8% |
| 06/07 to 07/08 | 40 | 8.2% |
| 07/08 to 08/09 | 110 | 20.9% |
| 08/09 to 09/10 | -15 | -2.4% |
| 09/10 to 10/11 | 3 | 0.5% |
| 10/11 to 11/12 | -22 | -3.5% |
| 11/12 to 12/13 | 27 | 4.5% |
| 12/13 to 13/14 | 151 | 24.1% |
| 13/14 to 14/15 | -78 | -10.0% |
| 14/15 to 15/16 | -65 | -9.3% |
| 15/16 to 16/17 | 60 | 9.5% |
| 16/17 to 17/18 | 24 | 3.4% |
| 17/18 to 18/19 | 23 | 3.2% |
| 18/19 to 19/20 | -53 | -7.2% |
| 19/20 to 20/21 | 82 | 11.8% |
| 20/21 to 21/22 | -3 | -0.4% |
| 21/22 to 22/23 | 15 | 2.0% |
| 22/23 to 23/24 | 24 | 3.1% |
| 23/24 to 24/25 | 13 | 1.6% |
| 24/25 to 25/26 | 13 | 1.6% |
| 25/26 to 26/27 | 14 | 1.7% |
| 26/27 to 27/28 | 14 | 1.7% |
| 27/28 to 28/29 | 14 | 1.7% |
| 28/29 to 29/30 | 13 | 1.5% |
| 29/30 to 30/31 | 13 | 1.5% |
| 30/31 to 31/32 | 14 | 1.5% |

## EXHIBIT 2 - EASTERN SYSTEM SUMMER/WINTER LOAD RESOURCES

| SPP SUMMER SEASON | | | | | |
|---|---|---|---|---|---|
| | Members' Load Projections* | Contracted Sales to Others | Firm Purchases | Losses & Diversity | Total Responsibility |
| 2022 | 3,080 | 153 | -38 | 522 | 3,717 |
| 2023 | 3,553 | 153 | -38 | 714 | 4,382 |
| 2024 | 3,616 | 162 | -38 | 728 | 4,468 |
| 2025 | 3,683 | 162 | -38 | 741 | 4,548 |
| 2026 | 3,739 | 162 | -38 | 752 | 4,614 |
| 2027 | 3,789 | 162 | -38 | 762 | 4,674 |
| 2028 | 3,833 | 162 | -38 | 771 | 4,727 |
| 2029 | 3,873 | 162 | -38 | 778 | 4,775 |
| 2030 | 3,903 | 162 | -38 | 784 | 4,811 |
| 2031 | 3,939 | 162 | -38 | 791 | 4,854 |
| 2032 | 3,976 | 162 | -38 | 799 | 4,898 |

| SPP WINTER SEASON | | | | | |
|---|---|---|---|---|---|
| | Members' Load Projections* | Contracted Sales to Others | Firm Purchases | Losses & Diversity | Total Responsibility |
| 2022/23 | 3,389 | 156 | -312 | 578 | 3,811 |
| 2023/24 | 3,873 | 162 | -313 | 1,014 | 4,735 |
| 2024/25 | 3,949 | 162 | -313 | 1,035 | 4,833 |
| 2025/26 | 4,013 | 162 | -313 | 1,052 | 4,914 |
| 2026/27 | 4,072 | 162 | -313 | 1,068 | 4,988 |
| 2027/28 | 4,125 | 162 | -313 | 1,082 | 5,056 |
| 2028/29 | 4,172 | 162 | -313 | 1,095 | 5,116 |
| 2029/30 | 4,208 | 162 | -313 | 1,104 | 5,161 |
| 2030/31 | 4,250 | 162 | -313 | 1,116 | 5,214 |
| 2031/32 | 4,294 | 162 | -313 | 1,127 | 5,270 |

| RMPA SUMMER SEASON | | | | | |
|---|---|---|---|---|---|
| | Members' Load Projections* | Contracted Sales to Others | Firm Purchases | Losses & Diversity | Total Responsibility |
| 2022 | 571 | 309 | -39 | 134 | 976 |
| 2023 | 562 | 309 | -39 | 132 | 965 |
| 2024 | 558 | 309 | -39 | 132 | 960 |
| 2025 | 556 | 307 | -38 | 131 | 955 |
| 2026 | 554 | 307 | -38 | 130 | 953 |
| 2027 | 554 | 307 | -38 | 130 | 952 |
| 2028 | 553 | 307 | -38 | 130 | 952 |
| 2029 | 550 | 307 | -38 | 129 | 949 |
| 2030 | 546 | 307 | -38 | 128 | 943 |
| 2031 | 545 | 307 | -38 | 128 | 943 |
| 2032 | 545 | 307 | -38 | 128 | 942 |

| RMPA WINTER SEASON | | | | | |
|---|---|---|---|---|---|
| | Members' Load Projections* | Contracted Sales to Others | Firm Purchases | Losses & Diversity | Total Responsibility |
| 2022/23 | 541 | 309 | -41 | 126 | 935 |
| 2023/24 | 547 | 309 | -41 | 127 | 942 |
| 2024/25 | 545 | 307 | -41 | 126 | 937 |
| 2025/26 | 542 | 307 | -41 | 126 | 934 |
| 2026/27 | 542 | 307 | -41 | 126 | 934 |
| 2027/28 | 542 | 307 | -41 | 126 | 934 |
| 2028/29 | 539 | 307 | -41 | 125 | 930 |
| 2029/30 | 533 | 307 | -41 | 124 | 923 |
| 2030/31 | 532 | 307 | -41 | 123 | 922 |
| 2031/32 | 532 | 307 | -41 | 123 | 922 |

| MISO Z1 SUMMER SEASON | | | | | |
|---|---|---|---|---|---|
| | Members' Load Projections* | Contracted Sales to Others | Firm Purchases | Losses & Diversity | Total Responsibility |
| 2022 | 284 | 0 | 0 | 32 | 316 |
| 2023 | 295 | 0 | 0 | 31 | 326 |
| 2024 | 306 | 0 | 0 | 31 | 337 |
| 2025 | 313 | 0 | 0 | 31 | 344 |
| 2026 | 325 | 0 | 0 | 32 | 357 |
| 2027 | 333 | 0 | 0 | 33 | 366 |
| 2028 | 341 | 0 | 0 | 32 | 373 |
| 2029 | 349 | 0 | 0 | 32 | 381 |
| 2030 | 356 | 0 | 0 | 31 | 387 |
| 2031 | 363 | 0 | 0 | 31 | 394 |
| 2032 | 370 | 0 | 0 | 32 | 401 |

| MISO Z1 WINTER SEASON | | | | | |
|---|---|---|---|---|---|
| | Members' Load Projections* | Contracted Sales to Others | Firm Purchases | Losses & Diversity | Total Responsibility |
| 2022/23 | 311 | 0 | 0 | 34 | 345 |
| 2023/24 | 321 | 0 | 0 | 33 | 355 |
| 2024/25 | 328 | 0 | 0 | 33 | 361 |
| 2025/26 | 338 | 0 | 0 | 34 | 372 |
| 2026/27 | 345 | 0 | 0 | 35 | 380 |
| 2027/28 | 352 | 0 | 0 | 34 | 386 |
| 2028/29 | 360 | 0 | 0 | 34 | 394 |
| 2029/30 | 366 | 0 | 0 | 33 | 399 |
| 2030/31 | 372 | 0 | 0 | 33 | 405 |
| 2031/32 | 378 | 0 | 0 | 33 | 411 |

*** Load Projections include diversity adjustments to account for load levels at time of each assessment area's coincident peak**

## 2022 Resources

### Summer Season

| | SPP | | | | | | | | | | | | | | | | WECC - RMPA | | | MISO Z1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LOS[1] | LRS East | AVS[2] | Neal4 | Wisdom 1&2[1] | SMS | GGS | CGS | DCS | PGS | LCS | New Gas Gen | CBPC Peakers[1] | Wind | Waste Heat | Solar | SPP Purchases | LRS West | DFS | WY Distributed Gen | NTEC CCGT | MISO Z1 Purchases |
| 2022 | 660.0 | 92.0 | 900.0 | 104.0 | 105.2 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | - | 52.1 | 348.5 | 29.4 | - | 698.1 | 627.0 | 390.0 | 40.0 | - | 320.0 |
| 2023 | 660.0 | 92.0 | 900.0 | 104.0 | 105.2 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | - | 52.1 | 341.6 | 29.4 | - | 852.9 | 627.0 | 390.0 | 40.0 | - | 325.0 |
| 2024 | 660.0 | 92.0 | 900.0 | 104.0 | 105.2 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | - | 52.1 | 340.9 | 29.4 | 86.5 | 702.0 | 627.0 | 390.0 | 40.0 | - | 325.0 |
| 2025 | 660.0 | 92.0 | 900.0 | 104.0 | 105.2 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | 322.3 | 52.1 | 342.7 | 29.4 | 84.2 | 701.5 | 627.0 | 390.0 | 40.0 | - | 255.0 |
| 2026 | 660.0 | 92.0 | 900.0 | 104.0 | 69.0 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | 538.5 | 52.1 | 343.9 | 29.4 | 165.0 | 576.2 | 627.0 | 390.0 | 40.0 | - | 255.0 |
| 2027 | 660.0 | 92.0 | 900.0 | 104.0 | 69.0 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | 538.5 | 52.1 | 343.5 | 29.4 | 160.6 | 576.1 | 627.0 | 390.0 | 40.0 | 152.4 | 255.0 |
| 2028 | 660.0 | 92.0 | 900.0 | 104.0 | 69.0 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | 538.5 | 52.1 | 342.3 | 29.4 | 156.4 | 575.9 | 627.0 | 390.0 | 40.0 | 152.4 | 75.0 |
| 2029 | 660.0 | 92.0 | 900.0 | 104.0 | 69.0 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | 538.5 | 52.1 | 329.6 | 29.4 | 152.2 | 555.7 | 627.0 | 390.0 | 40.0 | 152.4 | 75.0 |
| 2030 | 660.0 | 92.0 | 900.0 | 104.0 | 69.0 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | 538.5 | 52.1 | 328.2 | 29.4 | 148.2 | 555.4 | 627.0 | 390.0 | 40.0 | 152.4 | 75.0 |
| 2031 | 440.0 | 92.0 | 900.0 | 104.0 | 69.0 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | 538.5 | 41.0 | 320.1 | 29.4 | 144.3 | 548.8 | 627.0 | 390.0 | 40.0 | 152.4 | 75.0 |
| 2032 | 440.0 | 92.0 | 900.0 | 104.0 | 69.0 | 99.6 | 170.0 | 85.0 | 297.0 | 232.8 | 240.0 | 538.5 | 41.0 | 318.5 | 9.9 | 140.5 | 548.6 | 627.0 | 390.0 | 40.0 | 152.4 | 75.0 |

### Winter Season

| | SPP | | | | | | | | | | | | | | | | WECC - RMPA | | | MISO Z1 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LOS[1] | LRS East | AVS[2] | Neal4 | Wisdom 1&2[1] | SMS | GGS | CGS | DCS | PGS | LCS | New Gas Gen | CBPC Peakers[1] | Wind | Waste Heat | Solar | SPP Purchases | LRS West | DFS | WY Distributed Gen | NTEC CCGT | MISO Z1 Purchases |
| 2022/23 | 660.0 | 92.0 | 900.0 | 104.0 | 111.9 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | - | 56.7 | 539.4 | 29.4 | - | 698.1 | 627.0 | 405.0 | 48.0 | - | 320.0 |
| 2023/24 | 660.0 | 92.0 | 900.0 | 104.0 | 111.9 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | - | 56.7 | 529.9 | 29.4 | 1.9 | 852.9 | 627.0 | 405.0 | 48.0 | - | 325.0 |
| 2024/25 | 660.0 | 92.0 | 900.0 | 104.0 | 111.9 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | - | 56.7 | 532.9 | 29.4 | 14.0 | 702.0 | 627.0 | 405.0 | 48.0 | - | 325.0 |
| 2025/26 | 660.0 | 92.0 | 900.0 | 104.0 | 75.0 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | 328.3 | 56.7 | 535.0 | 29.4 | 27.5 | 701.5 | 627.0 | 405.0 | 48.0 | - | 255.0 |
| 2026/27 | 660.0 | 92.0 | 900.0 | 104.0 | 75.0 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | 550.5 | 56.7 | 537.1 | 29.4 | 26.8 | 576.2 | 627.0 | 405.0 | 48.0 | 167.8 | 255.0 |
| 2027/28 | 660.0 | 92.0 | 900.0 | 104.0 | 75.0 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | 550.5 | 56.7 | 531.5 | 29.4 | 26.1 | 576.1 | 627.0 | 405.0 | 48.0 | 167.8 | 255.0 |
| 2028/29 | 660.0 | 92.0 | 900.0 | 104.0 | 75.0 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | 550.5 | 56.7 | 514.0 | 29.4 | 25.4 | 555.9 | 627.0 | 405.0 | 48.0 | 167.8 | 75.0 |
| 2029/30 | 660.0 | 92.0 | 900.0 | 104.0 | 75.0 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | 550.5 | 56.7 | 512.4 | 29.4 | 24.7 | 555.7 | 627.0 | 405.0 | 48.0 | 167.8 | 75.0 |
| 2030/31 | 440.0 | 92.0 | 900.0 | 104.0 | 75.0 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | 550.5 | 45.6 | 503.0 | 29.4 | 24.0 | 555.4 | 627.0 | 405.0 | 48.0 | 167.8 | 75.0 |
| 2031/32 | 440.0 | 92.0 | 900.0 | 104.0 | 75.0 | 120.0 | 188.0 | 95.0 | 297.0 | 241.8 | 270.0 | 550.5 | 45.6 | 500.9 | 9.9 | 23.4 | 548.8 | 627.0 | 405.0 | 48.0 | 167.8 | 75.0 |

Footnotes:

1) For planning purposes, the financial depreciable life of our generating units is used as their assumed remaining useful life, even though no formal retirement decisions have been made. Actual retirement decisions have to be made by BEPC's Board of Directors.

2) BEPC owns 24.166% of AVS unit 2 and leases the remaining portion from other owners. The original terms of the lease have been extended by 10 years through 2030.