2023 NEBRASKA POWER ASSOCIATION
LOAD AND CAPABILITY REPORT

August 2023

Table of Contents

2023 Nebraska Power Association Load and Capability Report

1. Executive Summary

Utilizing Existing and Committed resources, Exhibit 1 depicts the statewide deficit occurring in 2027 based on the State's minimum load obligation. The statewide deficit based on the State's minimum load obligation in last year's report occurred after the end of the twenty-year study period. Exhibit 2 contains the corresponding load and capability data in tabular format. The updated deficit year differs from last year's report due to significant loads being added by a few larger utilities. Some related new generation is proposed to be added, but is categorized as "Studied" and "Unspecified." This generation is therefore not included in the Exhibit 1 results.

If the proposed Studied resources are added to the Existing and Committed resources, the statewide deficit occurs in 2038. Last year's report with all resource categories included depicted a surplus of 566 MW at the end of the twenty-year study period. The acceleration of the deficit year is due primarily to significant loads being added.

2. Introduction

This report is the annual statewide load and capability report prepared by the Nebraska Power Association (NPA) for the Nebraska Power Review Board (NPRB), in accordance with subsection (3) of the statute below. It provides the sum of Nebraska's utilities' peak demand forecasts and resources over a 20-year period (2023-2042).

State Statute (70-1025) Requirement

70-1025. Power supply plan; contents; filing; annual report.(1) The representative organization shall file with the board a coordinated long-range power supply plan containing the following information:(a) The identification of all electric generation plants operating or authorized for construction within the state that have a rated capacity of at least twenty-five thousand kilowatts;(b) The identification of all transmission lines located or authorized for construction within the state that have a rated capacity of at least two hundred thirty kilovolts; and(c) The identification of all additional planned electric generation and transmission requirements needed to serve estimated power supply demands within the state for a period of twenty years.(2) Beginning in 1986, the representative organization shall file with the board the coordinated long-range power supply plan specified in subsection (1) of this section, and the board shall determine the date on which such report is to be filed, except that such report shall not be required to be filed more often than biennially.(3) An annual load and capability report shall be filed with the board by the representative organization. The report shall include statewide utility load forecasts and the resources available to satisfy the loads over a twenty-year period. The annual load and capability report shall be filed on dates specified by the board. Source Laws 1981, LB 302, § 3; Laws 1986, LB 948, § 1.

In January of 2023, the NPRB and the NPA agreed to additional information being provided beginning with the 2023 Annual Load and Capability report. Those additional items include:

1) How each utility with a zero-carbon or carbon neutral goal approved by its governing body planned to meet the goal (such as decommissioning fossil fuel facilities, etc.). (See Section 11, Nebraska Utility Decarbonization Goals)

2) Address what would happen, or need to happen, if all generation facilities over 60 years old were to be suddenly removed from service. (See Section 15, Resource Life Considerations)

3) Number of units or percentage of capacity that are currently dual fuel. (See Section 6, Winter Loads and Winter Generating Capability Data)

4) The number of facilities and capacity that have onsite fuel storage. Fuel storage data will be in aggregate, providing

ranges for information such as coal pile storage, etc. No fuel storage information for any individual facility will be identified. (See Section 6, Winter Loads and Winter Generating Capability Data)

5) What percentage or megawatts of total statewide capacity that is capable of ramping up from startup to reach maximum capacity during certain ranges of time (e.g., 0-15 minutes, 16-60 minutes, 61 minutes to four hours, greater than four hours). The submitted generating unit data will be based on the physical characteristics and capabilities of the units and will not include any external or other subjective factors that may influence the units. (See Section 7, Generator Ramp Rate Time to Maximum Capacity)

6) Show system stress periods for the aggregate of the large in-state electric suppliers (LES, NPPD and OPPD, and others as applicable) for both the summer and winter peaks, and the aggregate resources that were available to meet the load requirements during those stress periods. Include historical data on stress periods, and what generating capacity was available to meet the load demand. Stress periods will be defined as the statewide summer peak hour and the statewide winter peak hour of the most recent summer and winter seasons for the aggregation of LES, NPPD, and OPPD. The data provided for these two periods will include aggregated load consumption data, generator production data, and generator availability data for LES, NPPD and OPPD. Additionally, the report will include sensitivity analysis of the stress periods by evaluating the potential impact of selected extreme event scenarios (e.g., extreme weather conditions, extreme localized events). (See Section 8, System Stress Periods)

7) Include the winter peak loads and aggregate winter accreditation of units. (See Section 6, Winter Loads and Winter Generating Capability Data)

8) Charts showing the statewide fuel diversity (coal, diesel, hydro, landfill gas, natural gas, nuclear, solar, wind and storage batteries), showing the percentage of the State's generation resources in each category by nameplate capacity, accredited capacity, and the previous year's energy

production. (See Section 9, Statewide Fuel Diversity)

9) Perform an aggregate calculation based on non-public historical GADS data showing the combined estimated forced outage rate (EFOR) or demand forced outage rate (FORd) for LES, NPPD and OPPD. Compare the result to the SPP regional EFOR or FORd rate to demonstrate how Nebraska's largest generation resources are performing in comparison to the overall SPP. SPP is considering using EFORd and EFORd' for the performance based accreditation process. Consequently, EFORd and EFORd' will also be acceptable metrics for LES, NPPD and OPPD to use for comparison purposes. (See Section 3, Demand and Capacity Expectations)

10) A brief (i.e., one or two paragraph) assessment of reasonably anticipated changes to the grid that might complement or complicate resource adequacy. Examples might include greater penetration of electric vehicles or federal regulatory policies. (See Section 4, Forward Looking Grid Changes)

Information for some of these items has been included in previous reports due to prior requests by the NPRB.

3. Demand and Capacity Expectations

Peak Demand Forecast

The current combined statewide forecast of non-coincident peak demand is derived by summing the demand forecasts for each individual utility. Each utility supplied a peak demand forecast and a load and capability table. The peak demand values represent the P50 value, a statistical level of confidence suggesting the expectation that this demand may be exceeded with 50% probability. Over the twenty-year period of 2023 through 2042, the average annual compounded peak demand growth rate for the State is projected at 1.5% per year (individual utilities range from -0.4%/yr to 2.6%/yr). The escalation rate that was shown in last year's report for 2022 through 2041 was 0.4%. It should be noted that several of the Nebraska utilities continue to be approached by potential customers regarding the utility's ability to interconnect large, new loads. Many times the nature of the requests are vague, with uncertain timing and magnitude. These unverified or speculative large loads are not included in the utilities' demand forecasts submitted to SPP but are included in this report. The inclusion of these large loads here is intended to reflect the potential impacts to statewide demand and capacity expectations for planning purposes but remain too uncertain to include in more specific balancing authority resource planning.

Resource Adequacy

A core responsibility of Nebraska's utilities is to plan for sufficient resources to reliably and predictably serve current and future customer electric demand. Utilities must plan to have sufficient resources to supply power under a variety of stressed grid conditions, such as unexpected generator outages, extreme weather events, and periods of low renewable production.

To mitigate system risks and support reliability, Nebraska utilities participate in a larger regional reserve sharing pool, known as the Southwest Power Pool (SPP). This pool connects many different types of generation resources across a large geographic area with the goal of enhancing system reliability and resiliency. Participating members are required to maintain enough capacity to meet their individual system peak demands, plus a specified Planning Reserve Margin (PRM) above their peak demand, to achieve an acceptable level of regional reliability.

The regional PRM is set through intensive resource adequacy simulations which consider a variety of system conditions and risks. These simulations are the basis of SPP's Loss of Load Expectation (LOLE) study, updated every two years to incorporate changes in the regional resource mix, updated weather variability, fleet reliability data, and enhancements to its modeling methodology. The most recent LOLE Study, completed in 2021, indicated a need for the regional PRM to increase from 12% to 15% for the summer season. The 2023 NPA Report utilizes 15% for the full 20-year reporting period.

In May of 2023, SPP's Supply Adequacy Working Group (SAWG), voted on revised SPP requirements that would also establish a separate winter PRM. While the winter PRM is initially set at 15%, the same as the summer requirement, this value is expected to increase to account for the increased electric system risks experienced during the winter season. The exact winter PRM requirement will be informed by the results of SPP's 2023 LOLE study, which is currently in progress and expected to be completed by the end of 2023. Nebraska utilities have multiple members actively engaged in the SAWG and regional policy development.

The statewide capacity required to meet SPP's current 15% PRM is significantly higher than the Nebraska load requirement. This amount of capacity equates to 969 MW in 2023 and 1,331 MW by 2042.

Resource Accreditation

Resources being utilized to meet regional resource adequacy requirements must qualify through an SPP administered accreditation process which evaluates the effectiveness of individual resources to meet system resource adequacy needs. There are multiple processes for accrediting resources based on the type of resource.

Thermal resources are currently accredited based on their peak generating capability, tested during defined summer conditions. Generators must conduct this peak test once every 5 years and must prove that they can reach 90% of this amount every year. There is no consideration of individual unit reliability within this accreditation method.

SPP's SAWG is actively developing policy that will modify the accreditation policy for thermal resources. The policy under consideration is called Performance Based Accreditation (PBA) and will take into account the historical reliability of individual generators, reducing the accreditation value of generators that have higher forced outage rates. This is expected to incent reliability enhancements for poorly performing generators while also rewarding more reliable units. Since the accreditation value of generators is implicit in calculation of the regional PRM, it is expected that moving to the PBA approach will reduce the regional PRM while maintaining reliability and more equitably valuing the capabilities of individual generators. A modified version of Equivalent Forced Outage Rate – Demand (EFORd') is currently being considered as the basis for PBA. This metric captures the forced outage rates of generation during their demand periods, while using start reliability to measure the performance of units with very low capacity factors. Benchmarking information for LES, NPPD, and OPPD will be available in future years as SPP is able to develop a robust set of data reflecting the final policy.

Variable energy resources, such as wind and solar, are currently accredited according to their production during a utility's peak load hours. The current process utilizes the 60^{th} percentile of production during the top 3% of load conditions. In other words, the resource must meet or exceed the accreditation value 60% of the time during top load hours.

The current accreditation methodology for variable energy resources does not account for the diminishing marginal resource adequacy value of these resources with their increasing penetration on the electric system. To properly account for this, SPP is in the process of moving to the Effective Load Carrying Capability (ELCC) method for accreditation. ELCC accounts for historical weather variability across the region and periods of regionally low renewable generation.

ELCC and PBA are currently being reviewed by SPP's SAWG. The current direction of this committee is to implement both PBA and ELCC starting in the summer of 2026; however, at the time of this report, the recommendation by SAWG will need to proceed through multiple higher level committees at SPP.

4. Forward Looking Grid Changes

Many potential future challenges confront Nebraska utilities in addition to those posed by new and changing SPP requirements, the potential for large load additions, and the pursuit of decarbonization goals. For example, in May of this year the U.S. Environmental Protection Agency (EPA) proposed new CO_2 regulations for new and existing coal and natural gas power plants. For existing coal units, the regulations would require either various retirement date commitments, co-firing with natural gas and/or the installation of Carbon Capture and Sequestration (CCS). For applicable natural gas units, the requirements would include co-firing with clean hydrogen or the installation of CCS systems. Given that these regulations include compliance dates ranging from 2032 to 2040, and that even partial operation on hydrogen or effective CCS technologies do not yet exist as commercially viable options, meeting these requirements would no doubt be difficult.

At the same time, there is also support at the national level to electrify more end-user processes, shifting loads to electricity and thereby reducing the related CO_2 emissions. Some of the primary applications are electrifying transportation and converting building heating from natural gas. Transformations like these pose a challenge to Nebraska utilities, as they add to already growing energy demands and resource adequacy needs. Although some of these changes may materialize at a slower pace in Nebraska compared to elsewhere around the country, they appear to continually be gaining momentum.

5. Resources

Existing/Committed

The State has an “Existing” in-service summer accreditable generating resource capability of 7,688 MW. This is slightly down from 7,701 MW shown in the previous 2022 report. The changes were mostly decreases in wind accreditation. There are 680 MW nameplate, or 649 MW accredited, of “Committed” resources included in this report. Committed projects have Nebraska Power Review Board approval if required. (PURPA qualifying and non-utility renewable projects do not need NPRB approval).

There are several additional Committed projects either currently in development or recently placed in service within Nebraska:

- The 1.0 MW Norfolk Battery Energy Storage System has recently been commissioned.
- The OPPD 1.0 MW BRIGHT Battery system was completed and began operation in 2023
- Addition of 23.3 MW of Behind-The-Meter renewable generation is forecasted to be added between 2023 and 2024.
- Construction of OPPD’s new dual fuel generation, the 150 MW Standing Bear Lake facility and the 442 MW Turtle Creek facility, are expected to be completed in 2024. These resources are part of the 2020 SPP Generation Interconnection (GI) Queue Cluster Study which is currently delayed for completion until 2024 and may identify new regional transmission expansion requirements be built prior to operation.
- Construction of OPPD’s 81 MW (55.5 MW accredited) Platteview solar project is expected to be completed to meet Summer 2024 accreditation. This resource is part of the 2020 SPP Generation Interconnection (GI) Queue Cluster Study which is currently delayed for completion until 2024 and may identify new regional transmission expansion requirements be built prior to operation.

Planned

“Planned” resources are units for which utilities have authorized expenditures for engineering analysis, an architect/engineer, or permitting, but do not have required NPRB approval, or do not have a contractual commitment.

There is no planned accredited generation for development within Nebraska at this time.

Studied

Resources identified as “Studied” for this report provide a perspective of future resource requirements beyond existing, committed, and planned resources. For any future years when existing, committed, and planned resources would not meet a utility’s Minimum Obligation, each utility establishes studied resources in a quantity to meet this deficit gap.

These Studied resources are identified as renewable, base load, intermediate, peaking, or unspecified resources considering current and future needs. The result is a listing of the preferable mix of renewable, base load, intermediate, peaking, or unspecified resources for each year. The summation of studied resources will provide the basis for the NPRB and the state's utilities to understand the forecasted future need by year and by resource type. This can be used as a joint planning document and a tool for coordinated, long-range power supply planning.

There are 2013 MW of accredited "Studied" resources that include 598 MW of renewable resources (solar and wind), 242 MW of batteries, 32 MW of Demand Response (DR), 750 MW of thermal CTs, and 391 MW of unspecified capacity.

Committed/Planned/Studied Exhibits

Exhibit 3 shows the statewide load and capability chart inclusive of 7,688 MW of accredited Existing, 649 MW accredited Committed, and 2,013 MW of accredited Studied resources. Some existing wind renewables are currently shown with no accredited capability due to the small accreditation values allowable under SPP's Criteria (explained in next section). Exhibit 4 is the corresponding load and capability table. As intended, these exhibits show how the Minimum Obligation can be met with the addition of Studied resources, until 2038.

The Committed, Planned, and Studied nameplate capability resources are summarized in Exhibit 5, (which includes 33.33 MW of nameplate Behind-The-Meter).

6. Winter Loads and Winter Generating Capability Data

Exhibit 1 “Winter” along with Exhibit 2 “Winter” provide a snapshot of the existing and committed winter load and capability. The 2023/24 winter reserve margin is 40.4%. Under winter conditions the State experiences a deficit in 2029. The winter load and capability calculations include reduced demand from each utility’s summer peak values, reduced WAPA allocations, gas-fired units that are off-line in the absence of firm winter fuel contracts, and lower winter accreditation of solar resources. Exhibit 3 “Winter” along with Exhibit 4 “Winter” add planned and studied resources to the previous exhibits.

The “Dual Fuel Resources” (Exhibit 9) winter pie chart illustrates that 1,046 MW (87 units) or 15% of the winter accredited MW’s are dual fuel. Statewide existing winter generating units are shown in Exhibit 7 “Winter”. Many of the dual fuel generating units are very small internal combustion or reciprocating units.

NPPD, OPPD and LES coal units amounting to 3,569 MW (12 total units) have onsite storage with an average of 37 days of storage available as shown in Exhibit 10. Also, 1,418 MW (65 units) of diesel units or natural gas units with diesel fuel oil as a back-up fuel have diesel fuel storage on site. The average diesel fuel storage length is 2 days at full generator output. This is shown on the pie chart “Average Days on Site Fuel by Type” for winter accredited capacity.

7. Generation Ramp Rate Time to Maximum Capacity

The generation ramp rate time to maximum capacity is shown in Exhibit 11. The ramp rate categories are defined by the Energy Information Administration (EIA) in their EIA 860 information gathering. These four ramp rate categories range from 0-10 minutes to over 12+ hours. 775 MW of in-state resources can ramp to full load in 0 -10 minutes, 1,016 MW can ramp to full load in 10 – 60 minutes, 2,485 MW can ramp to full load in 1 – 12 hours, and 2,875 MW can ramp to full load in 12+ hours.

The generating unit data is based on the physical characteristics and capabilities of the units and do not include any subjective factors.

8. System Stress Periods

Exhibit 12 displays the peak load, available generation, and actual generation for the aggregate of LES, NPPD and OPPD during the most recent statewide summer peak hour and winter peak hour. This historical information indicates that these utilities had available resources that exceeded the summer and winter peak loads, but that the actual generation from these resources was less than the summer and winter peak loads. At first glance, this difference might appear to be problematic, but it is actually an illustration of the successful operation of the SPP Integrated Marketplace generation dispatch functionality since other available, deliverable, and economical generation in the SPP footprint was being utilized to serve the Nebraska load that was in excess of the Nebraska generation that was being dispatched.

A sensitivity analysis (Exhibit 13) was performed on the summer peak hour and winter peak hour stress periods by simulating the removal of all of the State's generators that are capable of using only natural gas as a fuel source. This represents the loss of more than 500 MW of accredited generating capacity. The results indicate that during the two stress periods, the State would still have sufficient generating capacity to meet its own load, not including any regional generating capability that would be available through the relationship with SPP. Arguably, losing access to all of the State's natural gas pipeline and supply resources is an extreme scenario, but it is prudent to consider these types of situations.

9. Statewide Fuel Diversity

The Resource Mix (Nameplate and Accredited) pie charts (see Exhibits 14 and 15) illustrate the statewide fuel diversity (coal, diesel, hydro, landfill gas, natural gas, nuclear, solar, wind and storage batteries), showing the MW ratings and percentage of the State's generation resources in each category. The MWh by Fuel pie chart (see Exhibit 16) shows the 2022 annual energy production for these resources.

10. Non-Utility Resources

The Nebraska Department of Environment and Energy tracks renewable developments within the State on its website. At this time there are no new non-utility wind developments to report being added since last year's report. Previously reported non-utility resources are summarized below.

Non-utility wind purchases are summarized as follows. This information is gathered from publicly available industry publications and newspapers and may not be complete. These projects also do not represent retail choice, as they are not directly attributed to serving retail customers within the state. The 318 MW (nameplate rated) Rattlesnake Creek wind facility began commercial operation in December 2018. Energy and capacity from this facility are purchased by Meta and Adobe Systems. Meta procures energy from Rattlesnake Creek for their data facility in Sarpy County. The WEC Energy Group (an electric generation and distribution and natural gas delivery holding company), based in Milwaukee, Wisconsin, signed a Purchase and Sale Agreement for 80% of the Upstream Wind Energy Center (202.5 MW nameplate) located just north of the City of Neligh. Invenergy, the developer, has retained a 20% interest in the project which went commercial in the first part of 2019. The J.M. Smucker Company and Vail Resorts have Power Purchase Agreements in place to purchase energy from the 230 MW (nameplate) Plum Creek Wind Project in Wayne County which went commercial in July 2020. Smucker's purchase is for 60 MW while Vail Resorts will purchase 310,000 MWh annually for 12 years. The Milligan 1 300 MW wind plant built in Saline County by EDF Renewables went commercial in May 2021. It was announced that the generated energy would be sold into the Southwest Power Pool. Hormel Foods has announced a Power Purchase Agreement for wind energy from a new wind plant near Milligan (Milligan 3), located in Saline County 60 miles southwest of Lincoln which now has a projected completion date of December 2024. This wind plant has a planned capacity of 73.4 MW (nameplate) of power. The 300 MW Thunderhead Wind Energy Center was built in Antelope and Wheeler counties and began producing energy in late 2022. NextEra's 250 MW Little Blue Wind Project located in Webster and Franklin Counties became commercial in December 2021. No information on off-takers is available. The 300 MW Haystack Wind Farm built by Oersted in Wayne County (5 MW wind turbines) went commercial in 2022. Hormel, Target, and PepsiCo are the off-takers.

11. Nebraska Utility Decarbonization Goals

Most power utilities across the nation are addressing decarbonization and are actively evaluating specific goals or have put in place plans to meet these goals 20 to 30 years in the future. Each utility is necessarily unique in their approach, seeking to balance reliability/resiliency, affordability, and sustainability while meeting customer expectations and adhering to their specific market (SPP) rules, regarding resource adequacy. Additionally, as technology is expected to advance rapidly, each plan represents a directional path that will continually adapt with evolving conditions.

The following are the current decarbonization goals for the utilities that have established goals. These goals will be under continual evaluation:

<u>NPPD</u>

In 2021, NPPD's Board of Directors established a strategic directive (SD-05) to achieve net-zero carbon emissions from generation resources by 2050. This will be achieved by continuing the use of proven, reliable generation until alternative, reliable sources of generation are developed and by using certified offsets, energy efficiency projects, lower or zero carbon emission generation resources, beneficial electrification projects, or other economic and practical technologies that help NPPD meet the adopted goal at costs that are equal to, or lower than, then current resources.

In addition, NPPD is presently finalizing their Integrated Resource Plan (IRP), which is due for completion in fall of 2023. The IRP will incorporate SD-05 and will provide directionally correct insight to the most favorable approach to adding resources and reducing carbon emissions under various scenarios. Specific resource decisions will require additional analysis. At this time NPPD has no plans to retire or decommission any of its existing generation units.

<u>OPPD</u>

In 2019 OPPD's Board of Directors adopted a goal in its Strategic Directives of achieving net-zero carbon production by 2050 while balancing affordability and reliability. As part of developing plans to meet this goal, OPPD conducted its Pathways to Decarbonization study in 2021. The study focused on identifying potential future resource changes while maintaining reliability and minimizing costs. OPPD incorporated the information resulting from its Pathways to Decarbonization study into its 2021 Integrated Resource Plan.

OPPD recognizes that a foundation of reliability and resiliency is essential for decarbonization. OPPD's Pathways to Decarbonization study included detailed, quantitative, and objective resource adequacy modeling through Loss of Load Expectation modeling. This modeling was essential in defining acceptable results from the study and in identifying how a mix of diverse resources can effectively work together to support a reliable system. The study found that firm dispatchable generation plays an essential role in supporting the system during low renewable periods and extreme conditions.

The study identified reduced coal generation and a mix of low-carbon natural gas generation (or dispatchable resources), renewable energy, energy storage, and community-wide energy efficiency as key elements of its strategy. The OPPD Pathways to Decarbonization Study results highlight a minimum incremental investment in 1,100 MW of solar, 500 MW of wind, and 150 MW of energy storage resources by 2030 growing to 3,000 MW of solar, 3,800 MW of wind, and 800 MW of energy storage resources by 2050. These are in addition to OPPD's current Power with Purpose (PWP) solar additions and are considered "no regret," as they are selected to be built across all load scenarios and pace of decarbonization scenarios. While the study's resources required by 2030 are more certain than those required by 2050, the study indicated the intent to monitor the environment and regularly update its plans to reflect current and emerging technologies.

The Pathways to Decarbonization Study was a macro-level analysis of OPPD's service territory and the SPP system. In 2022, OPPD began its Near Term Generation Study to continue to develop more specific and detailed plans on its transition while also ensuring resource and energy adequacy. At the May 2023 Board Meeting, OPPD leadership presented a recommendation to the board for up to 2.5 gigawatts of new near-term generation. The additional generation is needed to support newly requested and unprecedented growth to OPPD's service territory currently underway and yet to come. OPPD expects to add load to its system at a rate of 100 MW per year for the next 5 to 6 years.

The mix of energy resources recommended in the near term is consistent with the options identified in OPPD's Pathways to Decarbonization. This recommended portfolio expansion includes renewables (1,000-1,500 MW of wind and/or solar), energy storage (up to 125 MW of 4-hour equivalent), dispatchable thermal (600-950 MW of dual fuel combustion turbine), demand response (32+ MW), and added fuel oil capacity and storage at existing facilities (approximately 320 MW). The resources in this portfolio expansion are expected to serve 90% of the new energy demand with renewable generation. These resources will continue to allow OPPD to provide reliable, affordable, and environmentally sensitive energy to its customers. The capacity expansion modeling that informed this recommendation imposed requirements for least cost as well as local and regional resource adequacy in the process of resource selection.

<u>MEAN</u>

In January 2020, the MEAN Board of Directors approved a resolution establishing MEAN's 2050 Vision, with a goal of achieving a carbon neutral resource portfolio by the year 2050. MEAN's 2022 Integrated Resource Plan forms the initial direction for future actions and resource decisions to realize the 2050 Vision. Following the IRP's direction, MEAN staff is working in collaboration with Participants to construct policies around resource planning, portfolio optimization, and emissions reduction to achieve the 2050 carbon neutral goal.

MEAN's IRP analysis and modeling favored a plan that would meet future MEAN capacity and energy needs by incorporating additional renewable resources into the portfolio. Renewable resource portfolios offered comparatively low costs in several scenarios as well as the potential to create local benefits for MEAN communities. The Board recommended portfolios for future resource needs as identified in the IRP include natural gas combined cycle with carbon capture, landfill gas, hydropower, wind with energy storage, and solar with energy storage.

Portfolio diversification remains a very high priority for MEAN to balance the need for reliability with the desire for decarbonization.

LES

After participating in a yearlong educational series on establishing a new carbon reduction goal and soliciting public opinion, the LES Administrative Board in November 2020 adopted a goal that LES believes to be one of the more aggressive utility decarbonization goals in the United States. This new goal will aim to achieve net-zero carbon dioxide production from LES' generation portfolio by 2040.

LES completed a new Integrated Resource Plan (IRP) in 2022, a blueprint developed every five years to help forecast when power resources will be needed, what the optimal resource mix may look like and how LES will bring it together to best serve its customers in the future. Based on the results of the IRP analysis, LES laid out an initial plan for achieving its corporate decarbonization goal. This initial plan included the following steps:

- Maintain LES' allotment of Tier 1 wind – currently just exceeding the SPP Tier 1 limit – and seek to develop its allowed amount of Tier 1 solar resources.
- Continue the Sustainable Energy Program, a collection of energy efficiency and demand response resources that represents a cost-effective alternative to building new generation.
- Seek to maintain LES' existing fleet of natural gas resources, representing both a low-cost and, because they rarely operate, relatively low-emissions foundation of its future portfolio.
- Continually watch for the right time to either retire or upgrade its existing coal resources with carbon capture technology. The financial impact of these coal plant decisions is considerable, both when (i) retiring them too early, while they still bring considerable financial value to LES, and (ii) retiring them too late, when the market forces and/or environmental regulations make them less economically viable.

Based on the future load projections, this preliminary plan would bring LES within approximately 200 MW of meeting its SPP resource requirements in 2041, covering its peak load plus an additional reserve margin of 15%. As of right now, LES intends to leave this gap unprescribed, looking to identify the best choices in the future as more information becomes available. LES believes this preliminary decarbonization plan strikes a balance, closing enough of the gap to make the goal attainable, while still recognizing that additional decisions will be required as the future unfolds.

Hastings Utilities

Hastings Utilities does not have decarbonization goals at this time. Hastings plans to continue to monitor the energy market and all of its resources available.

City of Grand Island Utilities

Grand Island does not have any formal decarbonization goals. Retirement of Platte Generating Station (100 MW coal unit) is being considered within the next eight to ten years due to economics as well as the age of the unit and the variable nature of the market it operates in. Options that are being considered for replacement are natural gas fired reciprocating engines with back up diesel supply combined with various sizes of utility grade solar. Grand Island Utilities is intending to build a 9.9 MW solar project to be online by the end of 2024. City Council approval for this project is anticipated later this summer. Federal grant dollars are anticipated to lower the cost of this facility.

City of Fremont Utilities

At this point, Fremont has no plans on retiring/decommissioning any of its coal or natural gas units. Unfortunately, there is nothing more to report at this point due to too many unknowns.

12. Renewable and Demand Side Resources

The State has 2,132 MW of commercially operating renewable nameplate resources for the peak of 2023. There is also 114 MW of accredited in-state hydro for Nebraska's use not included in this total. These amounts do not include any wind which may be installed by developers in Nebraska for export to load outside the state. Due to its intermittency, Nebraska utilities rely upon wind for only a small percentage of its full nameplate rating to meet peak load conditions. Correspondingly, SPP has criteria for wind and solar to determine the specific accreditable capacity percentage. The criteria are based on actual performance of solar and wind facilities and how successfully they produce energy during actual utility peak load hours. The rating is determined by following SPP's criteria to calculate the accredited rating for the facility. The accredited rating based on actual performance generally requires a minimum of 3 years' history. SPP criteria allows for a 5% accreditation rating for new wind installations with less than 3 years history and a 10% accreditation rating for solar.

Demand side resources are loads that can be reduced, shifted, turned-off or taken off the grid with the goal of lowering the overall load utilities have to serve. Ideally this load is best reduced to correspond to utilities' peak load hours. The advantage for utilities is the demand reduction will reduce the need for adding accredited generation in current or future years.

Exhibit 6.1 shows the Statewide Renewable Generation by Nameplate. Exhibit 7.1 shows the Statewide Renewable and Greenhouse Gas Mitigating Resources.

Included below are summaries of the utilities in regard to their renewable and/or non-carbon emitting resources and demand side programs.

<u>NPPD</u>
NPPD owns or has agreements with these non-carbon resources:

- 558 MW of hydroelectric generation, including the Western Area Power Administration agreement.
- 770 MW of nuclear power at Cooper Nuclear Station.
- 320 MW of nameplate wind (NPPD's share).

For 2022, non-carbon generation resources were approximately 50% of NPPD's Native Load Energy Sales from the resources discussed above. Most of the non-carbon generation is due to nuclear.

NPPD and Monolith Materials, Inc. executed a Letter of Intent ("the LOI") outlining the interest of the parties to supply Renewable Energy Credits ("REC") for Monolith's facilities. Pursuant to the LOI, the District solicited bids from renewable energy developers in 2021. The LOI contemplates that the District would enter into power purchase agreements with the renewable energy resource developers and for the District and Monolith to enter into agreements that would provide the methodology for reimbursement of the District's cost of purchasing such energy and REC. Due to numerous uncertainties including potential federal legislation, supply chain issues, regulatory approvals and other factors, the District and Monolith continue to evaluate the process for the purchase of renewable energy and REC.

NPPD's Demand Side Management program consists of Demand Response and Energy Efficiency. NPPD presently has a successful demand response program, called the Demand Waiver Program, to reduce summer billable peaks. The majority of savings in this program are due to irrigation load control by various wholesale customers, which accounted for approximately 638 MW of demand reduction from NPPD's billable peak during the summer of 2022. Another 5 MW of demand reduction was realized from other sources.

NPPD implemented an interruptible rate, Special Power Product #8, allowing qualified large end-use customers (served by wholesale or retail) to curtail demand during NPPD specified peak periods. NPPD is anticipating more customers to take advantage of this rate in the future.

NPPD has a series of energy efficiency and demand-side management initiatives under the EnergyWise℠ name. Annually, these programs have sought to achieve a first-year savings of more than 12,000 MWh and demand reductions greater than 2 MW. Accumulated first year energy savings through 2022 are 395 GWh and demand reductions are 64 MW.

<u>OPPD</u>

OPPD values a diverse resource mix as a means of achieving its mission of providing affordable, reliable, and environmentally sensitive energy services to its customers. At the close of 2022, OPPD met 36.4% of retail customer electrical energy sales with wind energy, energy from landfill gas, hydro energy, and solar energy. OPPD's renewable portfolio at 2022 year-end consisted of 971.7 MW of wind by nameplate, 5 MW of nameplate solar, 6.3 MW of landfill gas generation as well as purchased hydro power.

OPPD announced a new 81 MW (nameplate) utility-scale solar facility in Saunders County south of Yutan. Platteview Solar will consist of an approximately 500-acre facility and is targeted for accredited operation in 2024. This is the first step toward OPPD's Power with Purpose intended goal of 600 MW of utility scale solar power.

OPPD received Power Review Board approval of state's first utility-scale battery storage facility. This resource will be utilized as a generation and transmission asset providing energy arbitrage, voltage support and various other functions, with a power rating of 1 MW and a storage capacity of 2 MWh. The project was partially funded through the BRIGHT grant from the Nebraska Environmental Trust and became operational in 2023.

As described in the Decarbonization section of this report, the OPPD Board of Directors will consider at its August 2023 meeting a recommendation from staff to adopt a Near Term Resource expansion plan that includes an additional 1,000-1,500 MW of renewable wind and/or solar facilities, up to 125 MW of 4-hour equivalent battery storage, and a minimum of 32 MW of future demand response capacity by 2030. Specific projects will be determined through future feasibility and siting analysis and planned in conjunction with Power Review Board authorization.

OPPD's demand side resource programs can achieve over 119.9 MW of peak load reduction ability as of the summer of 2023. Existing programs consist of a customer air conditioner management program, thermostat control, lighting incentive programs, and various innovative energy efficiency projects. Additionally, OPPD can reduce its demand with assistance from a number of large customers who utilize OPPD's curtailable rate options. During summer peak days, any demand reductions from these customers are coordinated with OPPD in advance of the peak afternoon hours.

Demand side resource programs have enjoyed the support of OPPD stakeholders. OPPD will continue to grow its demand side programs in the next 10 years. Essential benefits of this increase in demand side programs include helping OPPD to maintain its SPP reserve requirements. To grow its demand side resource portfolio, OPPD will increase existing programs and promote additional programs. OPPD will build its demand side resource portfolio in a manner which is cost effective and takes into account customer expectations.

OPPD makes available a net-metering rate to all consumers that have a qualified generator. The qualified generator must be interconnected behind the consumer's service meter located on their premises and may consist of one or more sources as long as the aggregate nameplate capacity of all generators is 100 kW or less AC nameplate capacity. The qualified generator must use as its energy source methane, wind, solar, biomass, hydropower or geothermal.

MEAN

In serving the needs of its total membership, MEAN's system-wide resource portfolio includes 49% non-carbon resources on the basis of nameplate capacity, consisting of 31% WAPA hydro allocations, 14% renewables (wind, small hydro, and landfill gas), and 4% nuclear. Portfolio diversification remains a high priority for MEAN to balance the need for reliability with the desire for decarbonization.

As a member driven and member owned utility, MEAN procures renewable energy assets at the direction of its owners. Currently, MEAN maintains a Green Energy Program, which allow member communities to subscribe for purchase of a requested amount of renewable energy on an annual basis. This allows each community to tailor its resource portfolio to meet its specific demands and obligations as individual municipal utilities have renewable goals that can range from 0% to 100% of energy requirements. MEAN annually surveys its owners to determine individual goals for renewable energy requirements. When there are significant changes in demand for renewable energy, the MEAN Board considers the approval of new renewable purchases. MEAN's Green Energy Program is currently fully subscribed, and the Board has approved power purchase agreements for additional carbon free energy.

In 2019, MEAN surveyed member communities regarding interest in installation of community-owned solar assets. On behalf of these communities, MEAN released a Request for Proposals for community-owned solar facilities. The interested communities were required to supply a controlled site adequate for the project size and would contract directly with the solar developer. MEAN would administer and negotiate the contract and assist members in sizing and specifications of the installation. The aggregated Request for Proposals was pursued as the increased volume of solar installation required of the combined projects provided advantageous pricing compared to a standalone project in one community. The RFP was released in July 2021 and bids received in September 2021. After evaluation of bids and consultation with members, MEAN awarded the bid to eight of its Nebraska member communities for a total of 9.76 MW-DC of community-sited and - owned solar facilities. Project installation is scheduled to begin in early Summer of 2023 with all commercial operation dates by Winter of 2023.

MEAN previously established a committee to focus on the integration of renewable resources within member communities. The increasing presence of renewable distributed generation offers unique opportunities that can benefit both MEAN and local residents. In 2017 and again in 2019, MEAN revised its Renewable Distributed Generation policy to increase the size of allowable community owned and locally-sited renewable energy resources. Should Participant communities desire a larger allowance for community-owned renewables, the Board can take up the issue for an increase in this limitation. MEAN communities have also expressed interest in the installation of alternate distributed generation technologies, such as fuel cells, cogeneration facilities, and energy storage. Under evolving policy, projects may be incorporated into MEAN's load and resource balance into the future and would ultimately decrease the need for other resources.

MEAN has identified the investigation of new MEAN-contracted generation opportunities located in Participant communities as a goal in MEAN's Strategic Plan and also as a portfolio preference in the IRP. MEAN initiated discussion on this concept with the Membership as it relates to potential solar facilities, and policy updates were approved in 2022 by the Power Supply Committee and the MEAN Board of Directors to accommodate MEAN Distributed Generation resources located in MEAN member communities. As communities are installing generation under the Renewable Distribution Generation Policy, there is potential to concurrently install Distributed Generation directly owned or contracted to MEAN, provided participating communities have sufficient space available for lease to MEAN and the facilities are sized below the threshold that would require an interconnection study. This concept has numerous benefits: renewable resources generating directly on member distribution systems, lower interconnection costs, incremental sizing for resource portfolio changes, potential savings on property leases, public appeal, and grid modernization with distributed generation and micro-grid systems. To date, three Nebraska members have expressed interest in allowing MEAN to install 12.38 MW-DC of MEAN contracted solar within their community. Project installation for these projects are expected to follow the community solar projects mentioned previously, with installation to begin in early Summer of 2023 with commercial operation dates of Winter 2023. In addition to these communities, MEAN will continue to explore opportunities with several additional members to potentially host MEAN contracted solar for further project expansion.

MEAN has utilized a variety of demand side management tools to help reduce load and energy requirements. MEAN presently administers an ENERGYsmart commercial LED lighting program, which includes cash incentives paid directly to commercial customers to help cover the cost of lighting upgrades and replacements. This program is available to commercial businesses of MEAN long-term power participants. In 2019, MEAN initiated additional energy efficiency incentives offered to residential end-use customers of its Participants. These new programs include rebates for programmable thermostats, residential insulation, and HVAC tune-ups. In May of 2021, the Board again approved an expansion of this program to include a residential heat pump program. MEAN staff continues to evaluate the benefits of additional energy efficiency and demand side management options to decrease demand-related costs for MEAN and its participants. Discussions are planned with the Board and Committees regarding an incentive program for residential vehicle chargers.

LES

Over the last decade-plus, LES' renewable footprint has grown significantly. On a nameplate basis, approximately 34% of LES' resources are renewable (primarily wind and hydro), with 35% fueled by natural gas and 31% by coal. From 2010 – 2022 LES reduced its carbon dioxide emissions by 36%.

LES' Sustainable Energy Program (SEP) offers customers and contractors incentives for energy-efficient installations and upgrades at their home or business. First adopted in 2009, the SEP now offsets the energy use of about 15,000 average Lincoln homes.

Under the Peak Rewards program, LES leverages residential customers' own smart thermostats to pre-cool spaces prior to the initiation of an LES-controlled demand response event, allowing for a reduction in summer peak demand while still maintaining residential comfort. LES introduced a new one-year demand response pilot program under the umbrella of Peak Rewards in 2021, incentivizing plug-in electric vehicle owners to also avoid charging during peak load periods.

LES has two programs that support customers wishing to pursue their own renewable generation. Under LES' net-metering rate rider, customers can install a 25-kW or smaller renewable generator to serve their homes or small businesses. LES also has a renewable generation rate for customers interested in generating and selling all output to the utility rather than serving a home or small business. Systems greater than 25 kW up to 100 kW will qualify for this rate. Customers under each rate receive a one-time capacity payment based on the value of the avoided generating capacity on system peak. The energy payment amount for new installations is based on LES' existing retail rates and is scheduled to be reduced as predetermined, total service area renewable-installation thresholds are met over time.

In August 2014, LES launched the SunShares program, allowing customers to voluntarily support a local community solar project through their monthly bill. This program led to LES contracting for a local, approximately 5-MW_{DC}/4-MW_{AC} solar facility, which began commercial operation in June 2016. The facility represents the first utility-scale solar project in Nebraska and is still one of the largest projects in the region.

The community solar project also supports LES' virtual net metering program. As part of this program, customers receive a credit on their monthly bill based on their level of enrollment and the actual output of the facility. Enrollment began in December 2016, with the first credits appearing on bills in January 2017. The enrollment fee was originally a one-time, upfront payment, but in 2019 LES also added the option for customers to pay the associated fee over 36 months via their normal LES bill. The program will run for nearly 20 years, coinciding with the life of the solar project contract.

Hastings Utilities

Hastings Utilities has no formal renewable energy goals but will monitor the economics and interest of renewable energy. Hastings Utilities will work with customers who are interested in pursuing renewable energy to find mutual benefit for a successful project. Hastings Utilities worked with its customer, Central Community College, to implement a 1.7 MW wind turbine on the Hastings CCC campus.

Hastings Utilities has completed the construction of a 1.5 MW Community Solar Project to respond to customer requests for renewable energy. Customers can participate by purchase of solar panels or solar shares. The project was completed in September of 2019. Phase 2 of the community solar farm is planned to be online spring of 2024. The size of the expansion is still being evaluated.

City of Grand Island Utilities

Grand Island currently participates in five wind farms with an approximate total amount of 31 MW (nameplate).

Grand Island Utilities approved its first small scale residential solar installation in 2015. Changes were made to City Code to accommodate demand side resources with an expectation that more resources will follow. Since then, several smaller scale residential solar generators have been installed. Additional changes to City Code have been made to allow larger renewable generation facilities between 25 KW and 100 KW. Two facilities in this category are currently installed and operating.

In 2017, Grand Island Utilities signed a Power Purchase Agreement for a 1 MW behind the meter solar installation with Sol Systems. This facility went into service in 2018. A Request for Proposals was issued in February 2023 for the development of a 9.9 MW solar farm to be installed on City owned property. Eight proposals were received and evaluated. Contract details are being finalized with the preferred developer. City Council approval is anticipated later this summer with a substantial completion by the end of 2024.

City of Fremont Utilities

Fremont currently operates two solar arrays, which offers residents two options on the project. Electric customers can either purchase their own solar panels or purchase solar shares from the Community Solar Farm. Seventy six percent (76%), which can vary month to month, of the panels are either owned or purchased shares by the rate payers of Fremont. Solar array #1 is 1.32 MW and solar array #2 is 0.99 MW. Both have been in operation since 2018. In 2017 Fremont signed a Purchase Power Agreement with NextEra for 40.89 MW of wind energy from the Cottonwood Wind Farm in Webster County, NE. Fremont will continue to evaluate the needs for renewable energy.

13. SPP Generator Interconnection Queue

The SPP Generator Interconnection (GI) Queue process provides a means for planners and developers to submit new generation interconnection projects to SPP for validation, study, analysis and, ultimately, execution of a Generator Interconnection Agreement. This agreement is required for new generation to be able to connect to the regional transmission system and to be accredited to satisfy SPP PRM requirements. Potential transmission system upgrades required to support the new resources are identified during this process and the costs are allocated to those facilities causing the upgrades.

The continued declining costs of renewable generation technologies has led to a large influx of generation interconnection requests into the SPP GI study process in recent years. This growth in the volume of study requests, coupled with how they must be equally treated according to federal Open Access Transmission Tariff (OATT) requirements, has led to a significant backlog in the study process and has caused increased delays in this process. The current delay in this study process is approximately 4 to 5 years to complete the study from the time when the request was submitted depending on the specific study cluster. This is a national issue with RTOs, FERC, utilities, and industry groups working diligently to improve these processes to allow modern resources to connect to the transmission system and serve load in faster, more predictable timeframes.

A listing of the projects in the Queue from June 4 of this year for Nebraska shows around 1,830 nameplate megawatts for battery storage, 5,575 MW of solar, 4,573 MW of wind and 1,952 MW that is considered hybrid. For reference, there is at this time approximately 3,177 MW of nameplate wind installed in the State. Also listed are conventional combustion turbine and diesel generation amounting to 1,286 MW (over 2,000 less than shown in the 2022 report). Based on history, many or most of these proposed projects listed in the SPP Queue will not get built, but due to FERC policy requiring non-discriminatory and open access to the transmission grid, each request must be equally treated and evaluated.

14. Distributed Generation

Distributed generation is providing wholesale and retail power suppliers numerous new opportunities to interface with customers. Power purchase agreements with smaller wind developers are available to retail power suppliers in the magnitude of 1.5 to 10 MW. This is occurring due to agreements between the wholesale power suppliers and the retail power suppliers. These agreements allow for a portion of the retail power supplier's energy requirements to come from private renewable energy developers located behind the wholesale power supplier's meter.

With the decline in the cost of solar installations, the continuation of tax benefits and net metering rates, retail customers are installing small scale solar arrays. As these installations prove more cost effective and with the development of small energy storage, more of these installations are being constructed. These projects are being installed in both rural and residential applications. Also, larger solar array installations that are not eligible for net metering rates are being considered and installed. Many of these arrays are community solar projects. Lincoln Electric System contracted with a developer to install a 5 MW_{DC} (4 MW_{AC}) array where individuals can purchase shares. NPPD has retail communities with operating community solar facilities ranging in size from 100 kW to 9.7 MW. OPPD has a community solar facility sized at 5 MW, and OPPD's customers have already subscribed to the full production of this facility. Therefore, more private involvement with local utilities is providing additional opportunities to increase the utilization of renewable energy.

In addition, an NPPD retail community has recently commissioned a 1 MW / 2 MWh Battery Energy Storage System (BESS) to a community solar project. The BESS will be charged through generation provided by the solar unit and discharged to accomplish several goals, such as demand management, voltage support, and smoothing and shifting variable renewable energy generation. The BESS unit will store approximately the amount of electricity that a small home would use over the course of two months.

15. Resource Life Considerations

The Nebraska utilities are cognizant of the age their existing generating fleets and strive to maximize their viability and value while also recognizing that generating units will eventually reach the end of their useful lives. The diverse mix of nuclear, fossil fuel fired, and renewable resources presents an array of regulatory, economic, reliability, and contractual based factors that should be considered when performing resource life evaluations. Some of these considerations, an overview of generating unit ages, and the implications of age-related retirements are discussed below.

The Nuclear Regulatory Commission (NRC) determined in August 2014 that a new rule making was not required and confirmed that existing license renewals, where granted, provided a robust framework for second license renewals beyond the initial 20-year renewal term. In addition, no changes are needed to environmental regulations to allow for future license renewal activities.

Cooper Nuclear Station's (CNS) operating license is set to expire January 18, 2034. Although NPPD has not fully studied a second operating license renewal, for purposes of this report, it is assumed CNS will continue to operate through the end of the study period.

NPPD's listed North Platte and Columbus hydro facilities operate under a Federal Energy Regulatory Commission license. The North Platte facility is presently operating under a 40-year license, with the license requiring renewal in 2038. The Columbus Hydro facility received a new 30-year operating license, with the license requiring renewal in 2047. Given the focus on carbon free generation resources, NPPD and Loup are assuming these facilities will continue to be maintained and licensed and will remain an essential part of NPPD's generation mix for an extended period of time.

In August of 2022 the OPPD Board of Directors approved the staff recommended extension of its North Omaha Station in its current state until at least 2026. OPPD had previously planned on converting units 4 and 5 from coal to natural gas and retiring units 1, 2, and 3 at the end of 2023. The continued operation of these facilities will mitigate risks associated with the delayed SPP GI study process for OPPD's new Turtle Creek and Standing Bear Lake stations. OPPD seeks to have certainty on its ability to interconnect and generate from these two new dual fuel facilities prior to converting North Omaha Station, which demonstrates OPPD's commitment to ensuring reliability and resiliency for its system

The wind plants included in this report are shown at the life listed in the various power purchase agreements (PPA), usually 20 or 25 years. Most agreements have an option for life extension. Utilities will decide whether to exercise those options when the PPAs near their end. In order for those utilities to maintain their renewable and/or carbon reduction goals these utilities will have to either exercise those options or develop other renewable resources.

Nebraska's existing generating resources are listed by unit in Exhibit 7. Nebraska has 7,688 MW of existing resources. 1,303 MW or 17% of that total are greater than 50 years old today. Another 3,603 MW or 47% are 41 to 50 years old today. Most of these units have no planned retirement date. By 2042 approximately 4,906 MW will reach 60 years of age in this 20-year study. Each utility will make its own determination on the life of its generating plants taking into account many factors, including economics. At this time, there are no plans to retire these older units unless stated in the report. Utilities may face increased environmental restrictions that could require the retirement of older fossil units. This could advance the statewide deficit date several years earlier.

For illustration purposes only, if a 60-year in-service life for fossil units is arbitrarily chosen, the state would show a deficit with existing and committed units in 2023 throughout the study period, while a 70-year life of plant would show a state deficit beginning in 2027. Exhibit 8 shows the 60-year in-service life chart. Since a statewide deficit occurs in 2023 for a 60-year retirement date, utilities would most likely need to acquire short term capacity or evaluate methods to re-rate their units on an accelerated timeframe to alleviate the deficit. This 60-year unit retirement example is considered conservative since fossil units are capable of operating for more than 70 years. Each utility will make their own determination on the life of their generating plants taking into account many factors, including economics. At this time, there are no plans to retire these older units unless stated in the report.

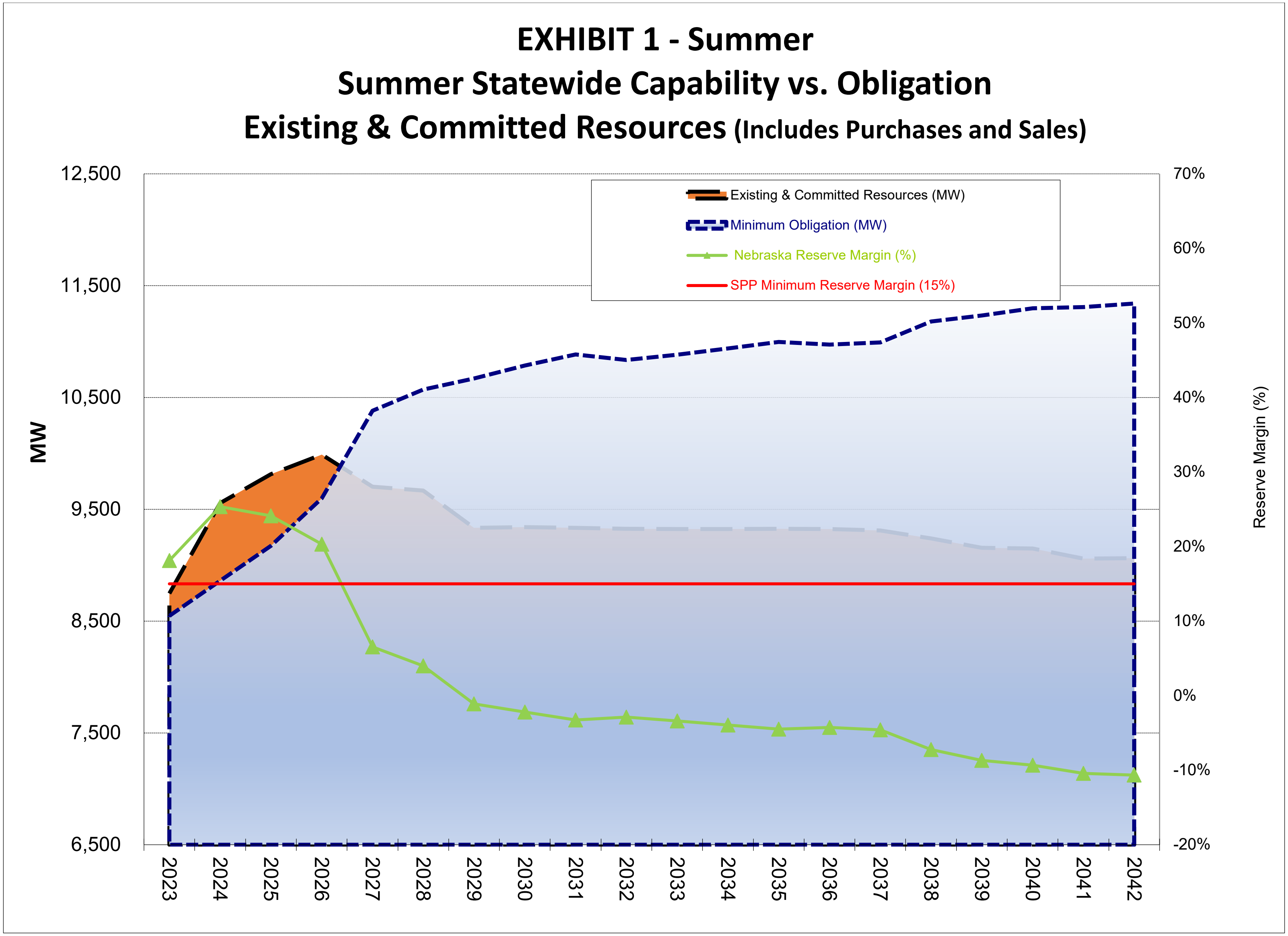


EXHIBIT 1 - Summer
Summer Statewide Capability vs. Obligation
Existing & Committed Resources (Includes Purchases and Sales)
Existing & Committed Resources (MW)
Minimum Obligation (MW)
Nebraska Reserve Margin (%)
SPP Minimum Reserve Margin (15%)
MW
Reserve Margin (%)
12,500
11,500
10,500
9,500
8,500
7,500
6,500
70%
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042

EXHIBIT 2

NEBRASKA STATEWIDE

Existing & Committed, Load & Generating Capability in Megawatts

Summer Conditions (June 1 to September 30)

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	% Change
1 Annual System Demand	7,577	7,851	8,124	8,494	9,174	9,339	9,425	9,526	9,611	9,569	9,610	9,660	9,709	9,690	9,705	9,869	9,916	9,973	9,981	10,009	1.5%
2 Firm Power Purchases - Total	1,181	1,187	1,188	1,189	1,184	1,185	1,186	1,187	1,188	1,190	1,191	1,192	1,193	1,194	1,195	1,196	1,198	1,199	1,200	1,201	
3 Firm Power Sales - Total	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	
4 Annual Net Peak Demand (1-2+3)	6,459	6,726	6,998	7,366	8,053	8,216	8,301	8,401	8,485	8,441	8,482	8,530	8,578	8,558	8,572	8,735	8,781	8,836	8,844	8,871	
5 Net Generating Capability (owned)	7,688	8,186	8,430	8,402	8,120	8,124	8,127	8,130	8,123	8,115	8,115	8,115	8,115	8,112	8,098	8,023	7,938	7,939	7,859	7,859	
6 Firm Capacity Purchases	1,250	1,284	1,143	1,221	1,221	1,183	843	845	843	842	838	838	838	839	839	840	840	833	821	825	
7 Firm Capacity Sales	1,309	1,038	886	761	761	761	759	759	759	759	759	759	759	759	759	759	759	759	759	759	
8 Adjusted Net Capability (5+6-7)	7,629	8,432	8,687	8,862	8,580	8,545	8,211	8,216	8,207	8,197	8,194	8,194	8,194	8,192	8,178	8,104	8,019	8,013	7,921	7,925	
9 Net Reserve Capacity Obligation (4 x .15	969	1,009	1,050	1,105	1,208	1,232	1,245	1,260	1,273	1,266	1,272	1,279	1,287	1,284	1,286	1,310	1,317	1,325	1,327	1,331	
10 Total Firm Capacity Obligation (4+9)	7,428	7,735	8,048	8,471	9,260	9,448	9,547	9,661	9,757	9,708	9,754	9,809	9,865	9,841	9,858	10,045	10,098	10,161	10,170	10,201	
11 Surplus or Deficit (-) @ Minimum Obligat	201.8	696.3	639.0	390.6	-680.2	-903.2	-1,335.9	-1,445.0	-1,550.0	-1,510.2	-1,560.3	-1,615.4	-1,671.5	-1,649.4	-1,679.9	-1,940.5	-2,078.9	-2,148.5	-2,249.0	-2,276.1	
12 Nebraska Reserve Margin ((8-4)/4)	18.1%	25.4%	24.1%	20.3%	6.6%	4.0%	-1.1%	-2.2%	-3.3%	-2.9%	-3.4%	-3.9%	-4.5%	-4.3%	-4.6%	-7.2%	-8.7%	-9.3%	-10.4%	-10.7%	
13 Nebraska Capacity Margin ((8-4)/8)	15.3%	20.2%	19.4%	16.9%	6.2%	3.9%	-1.1%	-2.3%	-3.4%	-3.0%	-3.5%	-4.1%	-4.7%	-4.5%	-4.8%	-7.8%	-9.5%	-10.3%	-11.6%	-11.9%	
Committed Resources (MW) (8+2-3)	8,748	9,557	9,813	9,989	9,702	9,668	9,335	9,341	9,334	9,325	9,322	9,324	9,325	9,324	9,311	9,239	9,155	9,150	9,059	9,064	
Minimum Obligation (MW) (1+9)	8,546	8,860	9,174	9,598	10,382	10,571	10,671	10,786	10,884	10,835	10,883	10,939	10,996	10,974	10,991	11,179	11,234	11,298	11,308	11,340	
SPP Minimum Reserve Margin	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	
SPP Minimum Capacity Margin	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	
First Year of Deficit - Minimum	9999	9999	9999	9999	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	
First Year of Defict - Planned							2029	2030	2031	2032	2033										

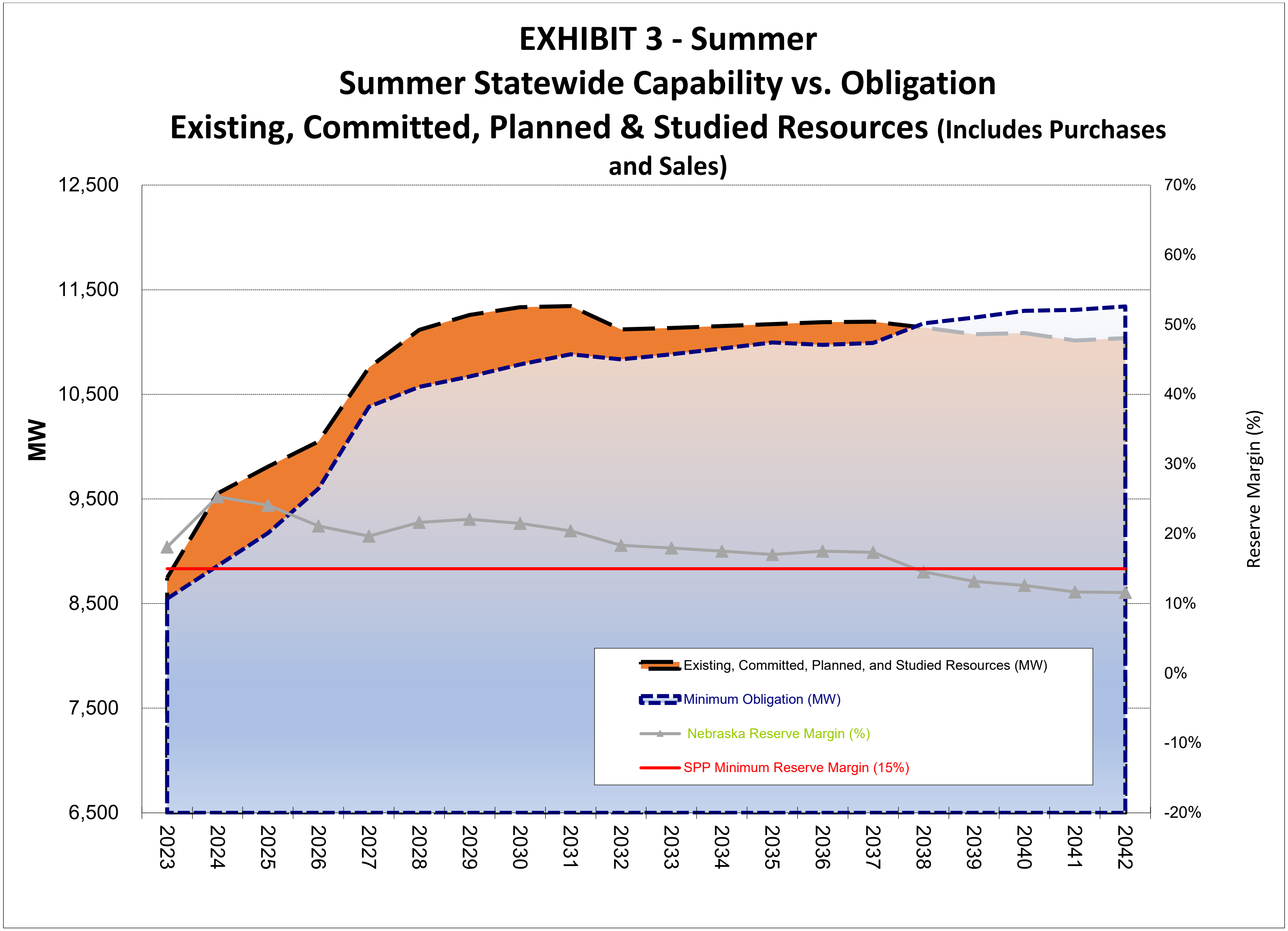


EXHIBIT 3 - Summer
Summer Statewide Capability vs. Obligation
Existing, Committed, Planned & Studied Resources (Includes Purchases and Sales)
MW
Reserve Margin (%)
12,500
11,500
10,500
9,500
8,500
7,500
6,500
70%
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
Existing, Committed, Planned, and Studied Resources (MW)
Minimum Obligation (MW)
Nebraska Reserve Margin (%)
SPP Minimum Reserve Margin (15%)

EXHIBIT 4

NEBRASKA STATEWIDE

Committed, Planned & Studied Load & Generating Capability in Megawatts

Summer Conditions (June 1 to September 30)

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
1 Annual System Demand	7,577	7,851	8,124	8,494	9,174	9,339	9,425	9,526	9,611	9,569	9,610	9,660	9,709	9,690	9,705	9,869	9,916	9,973	9,981	10,009
2 Firm Power Purchases - Total	1,181	1,187	1,188	1,189	1,184	1,185	1,186	1,187	1,188	1,190	1,191	1,192	1,193	1,194	1,195	1,196	1,198	1,199	1,200	1,201
3 Firm Power Sales - Total	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
4 Annual Net Peak Demand (1-2+3)	6,459	6,726	6,998	7,366	8,053	8,216	8,301	8,401	8,485	8,441	8,482	8,530	8,578	8,558	8,572	8,735	8,781	8,836	8,844	8,871
5 Net Generating Capability (owned)	7,688	8,183	8,427	8,462	9,175	9,572	10,052	10,123	10,133	9,909	9,927	9,944	9,962	9,977	9,981	9,924	9,857	9,876	9,814	9,832
6 Firm Capacity Purchases	1,250	1,284	1,143	1,221	1,221	1,183	843	845	843	842	838	838	838	839	839	840	840	833	821	825
7 Firm Capacity Sales	1,309	1,038	886	761	761	761	759	759	759	759	759	759	759	759	759	759	759	759	759	759
8 Adjusted Net Capability (5+6-7)	7,629	8,429	8,684	8,922	9,635	9,994	10,136	10,209	10,217	9,992	10,006	10,023	10,041	10,057	10,061	10,005	9,938	9,950	9,876	9,898
9 Net Reserve Capacity Obligation (4 x .15)	969	1,009	1,050	1,105	1,208	1,232	1,245	1,260	1,273	1,266	1,272	1,279	1,287	1,284	1,286	1,310	1,317	1,325	1,327	1,331
10 Total Firm Capacity Obligation (4+9)	7,428	7,735	8,048	8,471	9,260	9,448	9,547	9,661	9,757	9,708	9,754	9,809	9,865	9,841	9,858	10,045	10,098	10,161	10,170	10,201
11 Surplus or Deficit (-) @ Minimum Obligation (8-10)	201.8	693.5	636.1	451.1	374.7	545.7	589.5	547.7	459.9	284.2	251.5	214.0	175.6	215.4	202.7	-39.9	-160.1	-211.9	-294.0	-302.8
12 Nebraska Reserve Margin ((8-4)/4)	18.1%	25.3%	24.1%	21.1%	19.7%	21.6%	22.1%	21.5%	20.4%	18.4%	18.0%	17.5%	17.0%	17.5%	17.4%	14.5%	13.2%	12.6%	11.7%	11.6%
13 Nebraska Capacity Margin ((8-4)/8)	15.3%	20.2%	19.4%	17.4%	16.4%	17.8%	18.1%	17.7%	17.0%	15.5%	15.2%	14.9%	14.6%	14.9%	14.8%	12.7%	11.6%	11.2%	10.5%	10.4%
Committed, Planned and Studied Resources (MW) (8+2-3)	8,748	9,554	9,810	10,050	10,757	11,117	11,260	11,334	11,344	11,119	11,134	11,153	11,172	11,189	11,194	11,139	11,074	11,086	11,014	11,037
Minimum Obligation (MW) (1+9)	8,546	8,860	9,174	9,598	10,382	10,571	10,671	10,786	10,884	10,835	10,883	10,939	10,996	10,974	10,991	11,179	11,234	11,298	11,308	11,340

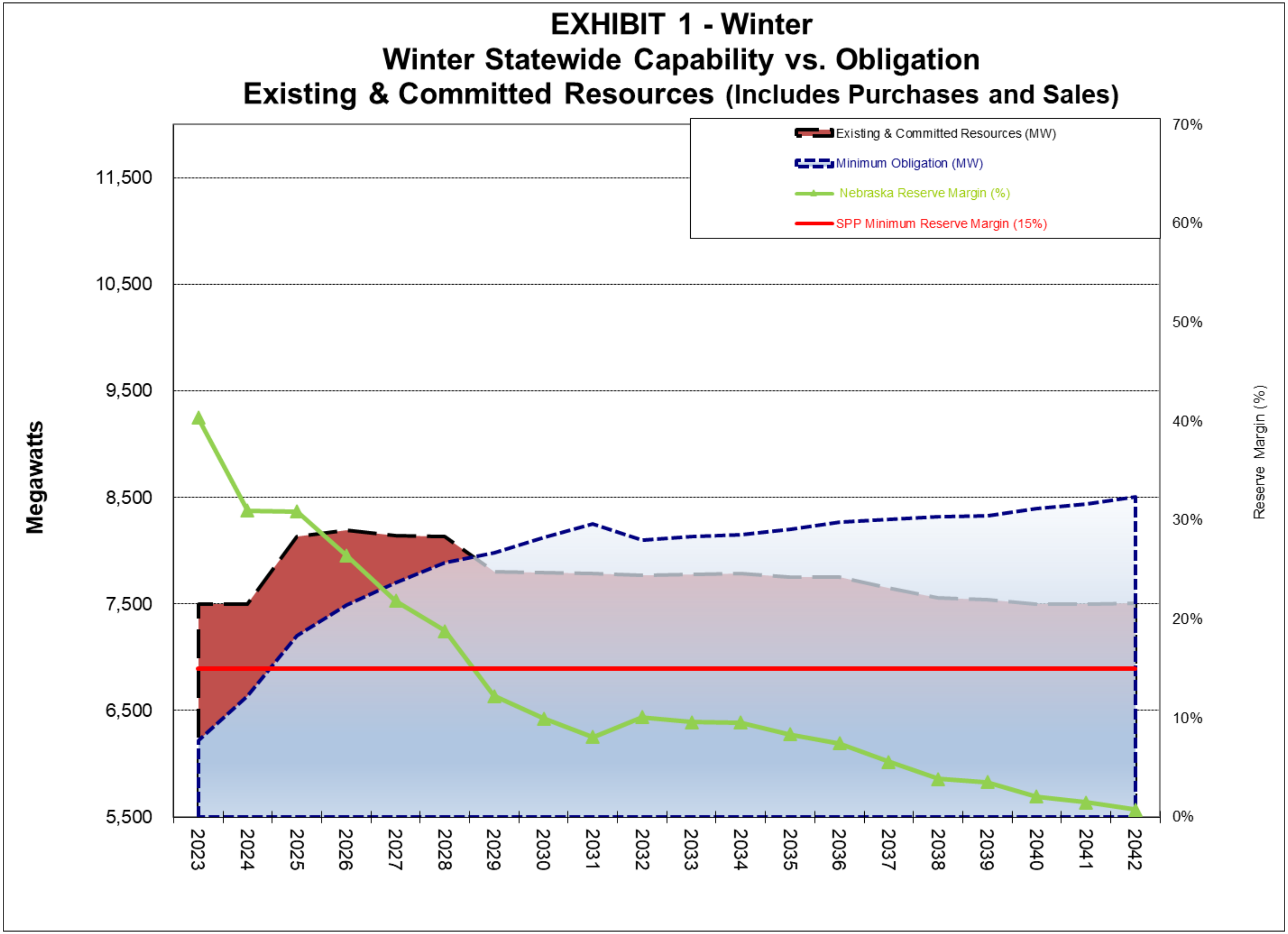


EXHIBIT 1 - Winter
Winter Statewide Capability vs. Obligation
Existing & Committed Resources (Includes Purchases and Sales)
Existing & Committed Resources (MW)
Minimum Obligation (MW)
Nebraska Reserve Margin (%)
SPP Minimum Reserve Margin (15%)
Megawatts
11,500
10,500
9,500
8,500
7,500
6,500
5,500
70%
60%
50%
40%
30%
20%
10%
0%
Reserve Margin (%)
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042

EXHIBIT 2

NEBRASKA STATEWIDE

Existing & Committed, Load & Generating Capability in Megawatts
Winter Conditions (Dec 1 to Mar 31)

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	% Change
1 Annual System Demand	5,465	5,827	6,318	6,570	6,755	6,915	6,996	7,125	7,232	7,099	7,130	7,141	7,188	7,247	7,267	7,293	7,297	7,358	7,397	7,453	1.6%
2 Firm Power Purchases - Total	483	483	484	484	478	478	478	479	479	480	481	481	482	482	483	483	484	485	485	486	
3 Firm Power Sales - Total	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	
4 Annual Net Peak Demand (1-2+3)	5,036	5,398	5,888	6,140	6,331	6,490	6,572	6,699	6,806	6,672	6,704	6,714	6,760	6,818	6,838	6,864	6,866	6,927	6,966	7,021	
5 Net Generating Capability (owned)	7,089	7,137	7,730	7,359	7,358	7,358	7,358	7,348	7,338	7,337	7,337	7,346	7,317	7,317	7,211	7,118	7,114	7,071	7,071	7,071	
6 Firm Capacity Purchases	1,136	968	860	1,166	1,116	1,112	773	774	774	764	764	764	764	764	764	764	750	753	753	758	
7 Firm Capacity Sales	1,156	1,034	883	758	758	758	754	754	754	754	754	754	754	754	754	754	754	754	754	754	
8 Adjusted Net Capability (5+6-7)	7,069	7,071	7,707	7,766	7,716	7,712	7,377	7,368	7,358	7,347	7,347	7,356	7,327	7,327	7,221	7,128	7,110	7,071	7,071	7,076	
9 Net Reserve Capacity Obligation (4 x .15)	755	810	883	921	950	974	986	1,005	1,021	1,001	1,006	1,007	1,014	1,023	1,026	1,030	1,030	1,039	1,045	1,053	
10 Total Firm Capacity Obligation (4+9)	5,791	6,207	6,771	7,061	7,281	7,464	7,557	7,704	7,827	7,673	7,709	7,721	7,774	7,841	7,864	7,893	7,896	7,966	8,010	8,074	
11 Surplus or Deficit (-) @ Minimum Obligation (8-10)	1,277.7	863.5	935.8	705.6	435.2	247.9	-180.2	-336.1	-469.4	-325.9	-361.8	-365.1	-446.9	-513.8	-643.1	-765.6	-786.2	-895.4	-939.9	-998.4	
12 Nebraska Reserve Margin ((8-4)/4)	40.4%	31.0%	30.9%	26.5%	21.9%	18.8%	12.3%	10.0%	8.1%	10.1%	9.6%	9.6%	8.4%	7.5%	5.6%	3.8%	3.5%	2.1%	1.5%	0.8%	
13 Nebraska Capacity Margin ((8-4)/8)	28.8%	23.7%	23.6%	20.9%	17.9%	15.8%	10.9%	9.1%	7.5%	9.2%	8.8%	8.7%	7.7%	6.9%	5.3%	3.7%	3.4%	2.0%	1.5%	0.8%	
Committed Resources (MW) (8+2-3)	7,498	7,501	8,137	8,197	8,140	8,136	7,802	7,793	7,783	7,774	7,774	7,783	7,755	7,755	7,650	7,557	7,541	7,502	7,502	7,508	
Minimum Obligation (MW) (1+9)	6,220	6,637	7,201	7,491	7,705	7,888	7,982	8,129	8,253	8,100	8,136	8,148	8,202	8,269	8,293	8,323	8,327	8,397	8,442	8,506	
SPP Minimum Reserve Margin	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	
SPP Minimum Capacity Margin	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	13%	

EXHIBIT 3
Winter Statewide Capability vs. Obligation
Existing, Committed, Planned & Studied Resources
(Includes Purchases and Sales)

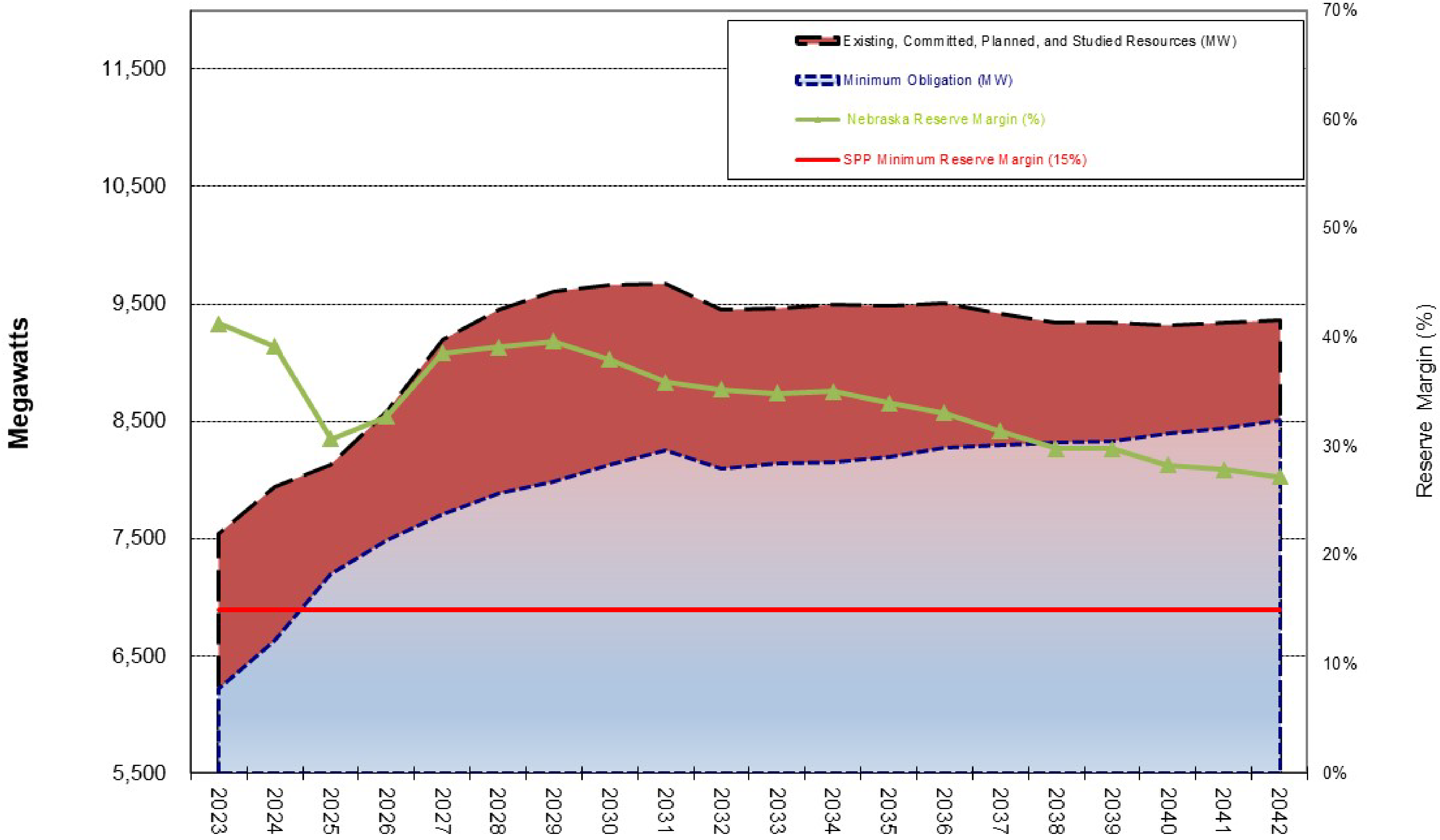


EXHIBIT 4
NEBRASKA STATEWIDE
Committed, Planned & Studied Load & Generating Capability in Megawatts

Winter Conditions (Dec 1 to Mar 31)

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
1 Annual System Demand	5,465	5,827	6,318	6,570	6,755	6,915	6,996	7,125	7,232	7,099	7,130	7,141	7,188	7,247	7,267	7,293	7,297	7,358	7,397	7,453
2 Firm Power Purchases - Total	483	483	484	484	478	478	478	479	479	480	481	481	482	482	483	483	484	485	485	486
3 Firm Power Sales - Total	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
4 Annual Net Peak Demand (1-2+3)	5,036	5,398	5,888	6,140	6,331	6,490	6,572	6,699	6,806	6,672	6,704	6,714	6,760	6,818	6,838	6,864	6,866	6,927	6,966	7,021
5 Net Generating Capability (owned)	7,134	7,579	7,719	7,742	8,416	8,676	9,157	9,221	9,229	9,013	9,031	9,057	9,045	9,063	8,975	8,900	8,914	8,889	8,908	8,926
6 Firm Capacity Purchases	1,136	968	860	1,166	1,116	1,112	773	774	774	764	764	764	764	764	764	764	750	753	753	758
7 Firm Capacity Sales	1,156	1,034	883	758	758	758	754	754	754	754	754	754	754	754	754	754	754	754	754	754
8 Adjusted Net Capability (5+6-7)	7,114	7,512	7,696	8,150	8,774	9,030	9,176	9,241	9,248	9,023	9,040	9,066	9,055	9,073	8,985	8,910	8,910	8,888	8,907	8,930
9 Net Reserve Capacity Obligation	755	810	883	921	950	974	986	1,005	1,021	1,001	1,006	1,007	1,014	1,023	1,026	1,030	1,030	1,039	1,045	1,053
10 Total Firm Capacity Obligation (4+9)	5,791	6,207	6,771	7,061	7,281	7,464	7,557	7,704	7,827	7,673	7,709	7,721	7,774	7,841	7,864	7,893	7,896	7,966	8,010	8,074
11 Surplus or Deficit (-) @ Minimum Obligation (8-10)	1,323.2	1,305.1	924.9	1,089.0	1,493.3	1,565.9	1,618.7	1,537.1	1,421.4	1,349.7	1,331.3	1,345.5	1,281.4	1,232.2	1,120.8	1,016.3	1,013.8	922.4	896.4	856.2
12 Nebraska Reserve Margin ((8-4)/4)	41.3%	39.2%	30.7%	32.7%	38.6%	39.1%	39.6%	37.9%	35.9%	35.2%	34.9%	35.0%	34.0%	33.1%	31.4%	29.8%	29.8%	28.3%	27.9%	27.2%
13 Nebraska Capacity Margin ((8-4)/8)	29.2%	28.1%	23.5%	24.7%	27.8%	28.1%	28.4%	27.5%	26.4%	26.1%	25.8%	25.9%	25.3%	24.9%	23.9%	23.0%	22.9%	22.1%	21.8%	21.4%
Committed, Planned and Studied Resources (MW) (8+2-3)	7,544	7,942	8,126	8,580	9,198	9,454	9,601	9,667	9,674	9,449	9,467	9,494	9,483	9,501	9,414	9,339	9,341	9,319	9,338	9,362
Minimum Obligation (MW) (1+9)	6,220	6,637	7,201	7,491	7,705	7,888	7,982	8,129	8,253	8,100	8,136	8,148	8,202	8,269	8,293	8,323	8,327	8,397	8,442	8,506

EXHIBIT 5

Committed, Planned and Studied Resources, MW

Energy Resources	Unit Name	Unit Status	Duty Cycle	Unit Type	Fuel Type	Commercial Operation Date	End of Contract/ Retire Date	Behind the Meter	Nameplate Capacity	Accredited Capacity 2023	Accredited Capacity 2024	Accredited Capacity 2025	Accredited Capacity 2026	Accredited Capacity 2027	Accredited Capacity 2028	Accredited Capacity 2029	Accredited Capacity 2030	Accredited Capacity 2031	Accredited Capacity 2032	Accredited Capacity 2033	Accredited Capacity 2034	Accredited Capacity 2035	Accredited Capacity 2036	Accredited Capacity 2037	Accredited Capacity 2038	Accredited Capacity 2039	Accredited Capacity 2040	Accredited Capacity 2041	Accredited Capacity 2042
Grand Island	Grand Island Solar II	P	I	S	SUN	2024		Y	9.99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NPPD	Future Unspecified	S				2027		N						364.5	378.2	360.3	373.6	390.8	175.3	192.8	210.3	228	245.7	263.6	281.6	299.7	318	336.4	354.8
NPPD	Custer PPD - Prairie Hills Wind	C	I	WT	WND	2024	2048	Y	8																				
NPPD	Howard Greeley RPPD - St Paul North Solar	C	I	S	SUN	2024	2048	Y	0.999																				
NPPD	Southern PD Franklin County Wind	C	I	WT	WND	2023	2047	Y	5.64																				
NPPD	Polk Co RPPD Solar	C	I	S	SUN	2024	2048	Y	0.999																				
NPPD	Ogallala Solar	C	I	S	SUN	2023	2047	Y	1.5																				
NPPD	York Solar	C	I	S	SUN	2023	2047	Y	3.2																				
NPPD	Norris PPD - Tobias Solar	C	I	S	SUN	2024	2048	Y	0.999																				
NPPD	Norris PPD - Diller Solar	C	I	S	SUN	2024	2048	Y	0.999																				
NPPD	Norris PPD - Hoag Solar	C	I	S	SUN	2024	2048	Y	0.999																				
OPPD	Future Solar	S	I	S	SUN			N	750	0	0	0	0	323.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4	455.4
OPPD	Future Wind	S	I	WT	WND			N	750	0	0	0	57	57	57	95	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5	142.5
OPPD	Future Thermal CT	S	I	CT	NG/DFO			N	750	0	0	0	0	300	300	750	750	750	750	750	750	750	750	750	750	750	750	750	750
OPPD	Future DR	S	DR	DR	DR			Y	32	0	0	0	6.4	12.8	19.2	25.6	32	32	32	32	32	32	32	32	32	32	32	32	32
OPPD	Future Battery	S	I	ES	ES			N	242	0	0	0	0	0	242	242	242	242	242	242	242	242	242	242	242	242	242	242	242
OPPD	Standing Bear Lake #1	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Standing Bear Lake #2	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Standing Bear Lake #3	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Standing Bear Lake #4	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Standing Bear Lake #5	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Standing Bear Lake #6	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Standing Bear Lake #7	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Standing Bear Lake #8	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Standing Bear Lake #9	C	P	GT	NG/DFO	2024		N	17.22	0	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8	16.8
OPPD	Turtle Creek #1	C	P	GT	NG/DFO	2024		N	222	0	151.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05
OPPD	Turtle Creek #2	C	P	GT	NG/DFO	2024		N	222	0	151.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05	221.05
OPPD	Platteview Solar	C	I	S	SUN	2023	2042	N	81	0	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7	55.7
Total																													**19**

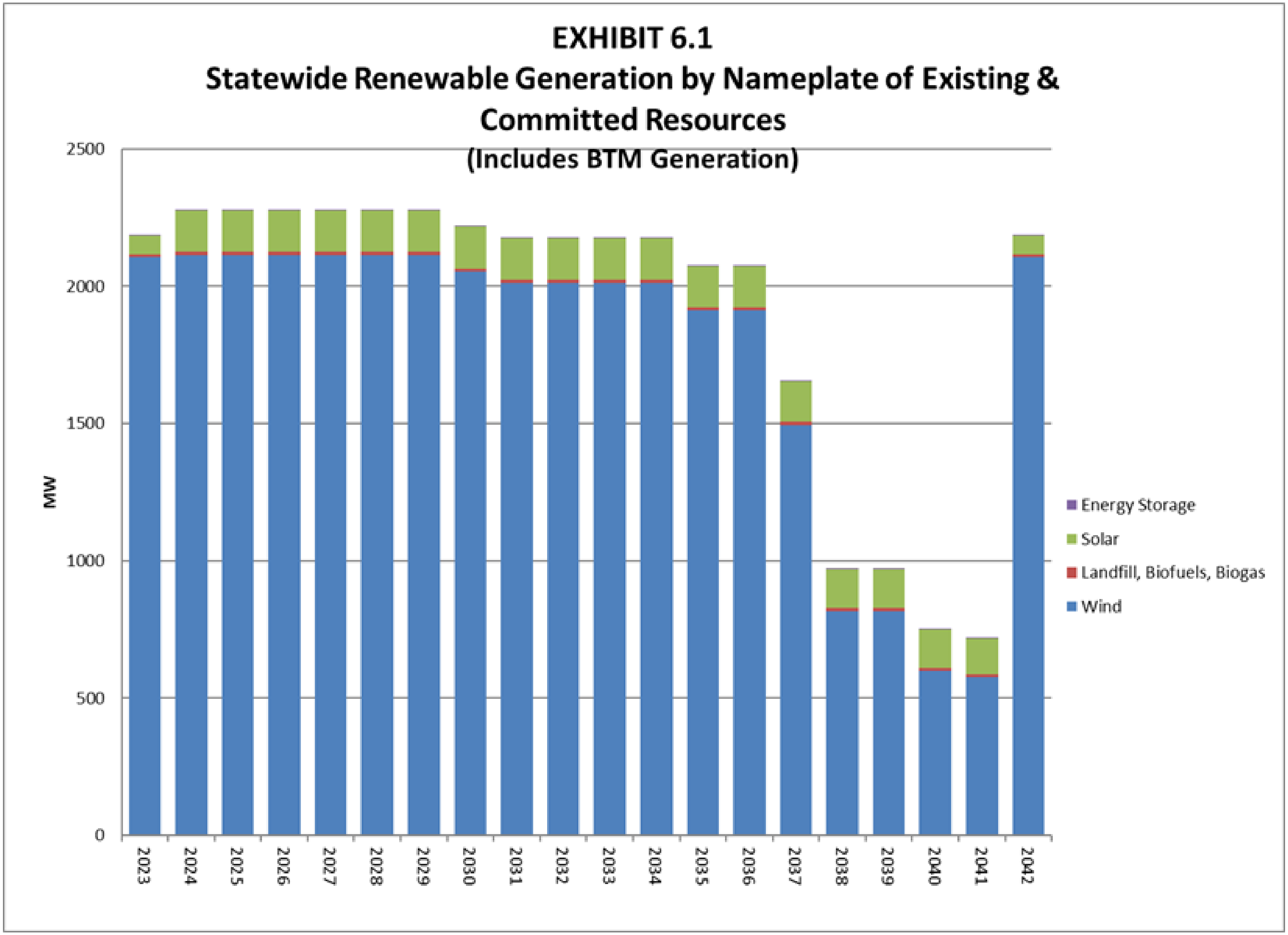


EXHIBIT 6.1
Statewide Renewable Generation by Nameplate of Existing & Committed Resources
(Includes BTM Generation)
MW
2500
2000
1500
1000
500
0
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
Energy Storage
Solar
Landfill, Biofuels, Biogas
Wind

EXHIBIT 7 - Summer

2023 Statewide Existing Generating Capability Data

Utility	Unit Name	Unit Status	Duty Cycle	Unit Type	Fuel Type	Commercial Operation Date	On Site Fuel Storage (Y/N)	Behind the Meter	Nameplate Capacity	Accredited Capacity 2023
Beatrice	Cottonwood Wind Farm Beatrice	E	I	WT	WND	2017	N	N	16.10	1.98
Falls City	Falls City #7	E	P	RE	NG/DFO	1972	Y	N	6	5
Falls City	Falls City #8	E	P	RE	NG/DFO	1981	Y	N	6	5.30
Falls City	Falls City #9	E	P	RE	NG/DFO	2018	Y	N	9.30	9.20
Fremont	Fremont Unit 6	E	B	ST	SUB/NG	1958	Y	N	16.86	16.57
Fremont	Fremont Unit 7	E	B	ST	SUB/NG	1963	Y	N	22.01	20.25
Fremont	Fremont Unit 8	E	B	ST	SUB/NG	1976	Y	N	85.25	86.23
Fremont	Fremont CT	E	P	CT	NG/DFO	2003	Y	N	37.55	37.56
Fremont	Fremont Cottonwood Wind	E	I	WT	WND	2018	N	N	40.36	15.30
Grand Island	Burdick GT1	E	P	GT	NG/DFO	1968	Y	N	13	13
Grand Island	Burdick GT2	E	P	GT	NG/DFO	2003	Y	N	34	34
Grand Island	Burdick GT3	E	P	GT	NG/DFO	2003	Y	N	34	34
Grand Island	Platte Generating Station	E	B	ST	SUB	1982	Y	N	100	100
Grand Island	Prairie Breeze 3 Wind	E	I	WT	WND	2016	N	N	36	0
Hastings	CCC Hastings Wind	E	I	WT	WND	2016	N	N	2	0
Hastings	DHPC-#1	E	P	GT	NG/DFO	1972	Y	N	18	18
Hastings	Hastings-NDS#4	E	P	ST	NG/DFO	1957	Y	N	15.50	16
Hastings	Hastings-NDS#5	E	P	ST	NG/DFO	1967	Y	N	23.60	24
Hastings	Whelan Energy Center #1	E	B	ST	SUB	1981	Y	N	76	76
Hastings	Whelan Energy Center #2	E	B	ST	SUB	2011	Y	N	220	220
LES	Laramie River Station	E	B	ST	SUB	1982	Y	N	198	198
LES	J St	E	P	GT	NG/DFO	1972	Y	N	29	29
LES	Rokeby 1	E	P	GT	NG/DFO	1975	Y	N	71	71
LES	Rokeby 2	E	P	GT	NG/DFO	1997	Y	N	90	90
LES	Rokeby 3	E	P	GT	NG/DFO	2001	Y	N	94	94
LES	TBS CT1/CC1	E	P	CC	NG/DFO	2003	Y	N	119	118.50
LES	TBS CT 3	E	P	GT	NG/DFO	2003	Y	N	45	45.40
LES	WSEC4	E	B	ST	SUB	2007	Y	N	104	104
LES	Rokeby Black Start	E	E	RE	DFO	1997	Y	N	3	0
LES	TBS Black Start	E	E	RE	DFO	2004	Y	N	2	0
LES	Landfill Gas Generator	E	B	RE	LFG	2014	N	N	5	5
LES	Arbuckle Mountain Wind	E	I	WT	WND	2016	N	N	100	14
LES	Buckeye Wind	E	I	WT	WND	2016	N	N	100	63
LES	Prairie Breeze 2 Wind	E	I	WT	WND	2016	N	N	73.40	17
MEAN	Alliance #1	E	P	RE	DFO	2002	Y	N	1.83	1.87
MEAN	Alliance #2	E	P	RE	DFO	2002	Y	N	1.83	1.86
MEAN	Alliance #3	E	P	RE	DFO	2002	Y	N	1.83	1.82
MEAN	Ansley #2	E	P	RE	NG/DFO	1972	Y	N	0.91	0.75
MEAN	Ansley #3	E	P	RE	NG/DFO	1968	Y	N	0.68	0.60
MEAN	Benklemen	E	P	RE	NG/DFO	1968	Y	N	0.90	0.79
MEAN	Broken Bow #2	E	P	RE	NG/DFO	1971	Y	N	3.50	3.23
MEAN	Broken Bow #4	E	P	RE	NG/DFO	1949	Y	N	1	1
MEAN	Broken Bow #5	E	P	RE	NG/DFO	1959	Y	N	1	0.99
MEAN	Broken Bow #6	E	P	RE	NG/DFO	1961	Y	N	2.25	1.91
MEAN	Burwell #2	E	P	RE	NG/DFO	1962	Y	N	1.37	0.79
MEAN	Burwell #3	E	P	RE	NG/DFO	1967	Y	N	1.14	1.07
MEAN	Burwell #4	E	P	RE	NG/DFO	1972	Y	N	0.90	1.16
MEAN	Callaway #3	E	P	RE	DFO	1958	Y	N	0.50	0.49
MEAN	Callaway #4	E	P	RE	DFO	2004	Y	N	0.40	0.38
MEAN	Chappell #5	E	P	RE	DFO	1982	Y	N	1	1
MEAN	Crete #7	E	P	RE	NG/DFO	1972	Y	N	6	6.15
MEAN	Curtis #1	E	P	RE	NG/DFO	1975	Y	N	1.36	1.29
MEAN	Curtis #2	E	P	RE	NG/DFO	1969	Y	N	1.14	1.08
MEAN	Curtis #4	E	P	RE	NG/DFO	1955	Y	N	0.90	0.70
MEAN	Kimball #1	E	P	RE	NG/DFO	1955	Y	N	0.59	0
MEAN	Kimball #2	E	P	RE	NG/DFO	1956	Y	N	0.51	0
MEAN	Kimball #3	E	P	RE	NG/DFO	1959	Y	N	0.67	0
MEAN	Kimball #4	E	P	RE	NG/DFO	1960	Y	N	0.65	0
MEAN	Kimball #5	E	P	RE	NG/DFO	1951	Y	N	0.41	0
MEAN	Kimball #6	E	P	RE	NG/DFO	1975	Y	N	2.17	2.17
MEAN	Oxford #2	E	P	RE	NG/DFO	1952	Y	N	0.68	0.64
MEAN	Oxford #3	E	P	RE	NG/DFO	1956	Y	N	0.90	0.90
MEAN	Oxford #4	E	P	RE	NG/DFO	1956	Y	N	0.68	0.64
MEAN	Oxford #5	E	P	RE	DFO	1972	Y	N	1.37	1.27
MEAN	Pender #1	E	P	RE	NG/DFO	1968	Y	N	1.63	1.60
MEAN	Pender #2	E	P	RE	NG/DFO	1973	Y	N	1.57	1.70
MEAN	Pender #3	E	P	RE	DFO	1953	Y	N	0.56	0
MEAN	Pender #4	E	P	RE	DFO	1961	Y	N	0.90	0.70
MEAN	Red Cloud #2	E	P	RE	NG/DFO	1953	Y	N	0.98	0.65
MEAN	Red Cloud #3	E	P	RE	NG/DFO	1960	Y	N	1.36	0.88
MEAN	Red Cloud #4	E	P	RE	NG/DFO	1968	Y	N	1.37	0.90
MEAN	Red Cloud #5	E	P	RE	NG/DFO	1974	Y	N	2.28	1.78
MEAN	Stuart #1	E	P	RE	NG/DFO	1965	Y	N	0.68	0.72
MEAN	Stuart #4	E	P	RE	NG/DFO	1996	Y	N	0.78	0.82
MEAN	West Point #2	E	P	RE	NG/DFO	1947	Y	N	2.31	2.20
MEAN	West Point #3	E	P	RE	NG/DFO	1959	Y	N	1.25	1.12
MEAN	West Point #4	E	P	RE	NG/DFO	1965	Y	N	0.90	0.83
MEAN	Wisner #4	E	P	RE	DFO	2008	Y	N	1.50	1
MEAN	Wisner #5	E	P	RE	DFO	2008	Y	N	2	1
Nebraska City	Nebraska City #5	E	P	RE	NG/DFO	1964	Y	N	2	1.62
Nebraska City	Nebraska City #6	E	P	RE	NG/DFO	1967	Y	N	2.10	1.51
Nebraska City	Nebraska City #7	E	P	RE	NG/DFO	1969	Y	N	2.10	1.46
Nebraska City	Nebraska City #8	E	P	RE	NG/DFO	1970	Y	N	4.10	3.51
Nebraska City	Nebraska City #9	E	P	RE	NG/DFO	1974	Y	N	6.40	5.58
Nebraska City	Nebraska City #10	E	P	RE	NG/DFO	1979	Y	N	6.50	5.80
Nebraska City	Nebraska City #11	E	P	RE	NG/DFO	1998	Y	N	4.60	3.95
Nebraska City	Nebraska City #12	E	P	RE	NG/DFO	1998	Y	N	4.60	4.02
NELIGH	Neligh #1	E	P	RE	OBL	2012	Y	N	1.80	1.80
NELIGH	Neligh #2	E	P	RE	OBL	2012	Y	N	1.79	1.79
NELIGH	Neligh #3	E	P	RE	OBL	2012	Y	N	1.80	1.80
NELIGH	Neligh #4	E	P	RE	OBL	2012	Y	N	0.34	0.34
Northeastern NPPD	Cottonwood	E	I	WT	WND	2018	N	N	17.50	6

EXHIBIT 7 - Summer

2023 Statewide Existing Generating Capability Data

Utility	Unit Name	Unit Status	Duty Cycle	Unit Type	Fuel Type	Commercial Operation Date	On Site Fuel Storage (Y/N)	Behind the Meter	Nameplate Capacity	Accredited Capacity 2023
NPPD (contd)	ADM	E	B	ST	SUB	2009	Y	N	71.40	67.10
NPPD	Ainsworth Wind	E	I	WT	WND	2005	N	N	59	4
NPPD	Auburn #1	E	P	RE	NG/DFO	1982	Y	N	2	2
NPPD	Auburn #2	E	P	RE	NG/DFO	1949	Y	N	1	1
NPPD	Auburn #4	E	P	RE	NG/DFO	1993	Y	N	3.75	3
NPPD	Auburn #5	E	P	RE	NG/DFO	1973	Y	N	3.35	3
NPPD	Auburn #6	E	P	RE	NG/DFO	1967	Y	N	2.75	2
NPPD	Auburn #7	E	P	RE	NG/DFO	1987	Y	N	5.60	5
NPPD	Beatrice Power Station	E	I	CC	NG	2005	N	N	247	220
NPPD	Belleville 4	E	P	RE	NG/DFO	1955	Y	N	0	0
NPPD	Belleville 5	E	P	RE	NG/DFO	1961	Y	N	1.75	1.30
NPPD	Belleville 6	E	P	RE	NG/DFO	1966	Y	N	3.75	2.60
NPPD	Belleville 7	E	P	RE	NG/DFO	1971	Y	N	5.13	3.30
NPPD	Belleville 8	E	P	RE	NG/DFO	2006	Y	N	3	3
NPPD	Broken Bow Wind	E	I	WT	WND	2013	N	N	80	8.29
NPPD	Broken Bow II Wind	E	I	WT	WND	2014	N	N	73	4
NPPD	Cambridge	E	P	RE	DFO	1972	Y	N	4	3
NPPD	Canaday	E	P	ST	NG	1958	N	N	108.80	99.30
NPPD	Columbus 1	E	B	H	WAT	1936	Y	N	15.20	15
NPPD	Columbus 2	E	B	H	WAT	1936	Y	N	15.20	15
NPPD	Columbus 3	E	B	H	WAT	1936	Y	N	15	15
NPPD	Cooper	E	B	ST	NUC	1974	N	N	801	769
NPPD	Crofton Bluffs Wind	E	I	WT	WND	2013	N	N	42	3.63
NPPD	David City 1	E	P	RE	NG/DFO	1960	Y	N	2	1
NPPD	David City 2	E	P	RE	DFO	1949	Y	N	1	1
NPPD	David City 3	E	P	RE	NG/DFO	1955	Y	N	1	0.90
NPPD	David City 4	E	P	RE	NG/DFO	1966	Y	N	2	2
NPPD	David City 5	E	P	RE	DFO	1996	Y	N	1.60	1.33
NPPD	David City 6	E	P	RE	DFO	1996	Y	N	1.60	0
NPPD	David City 7	E	P	RE	DFO	1996	Y	N	2	1
NPPD	Elkhorn Ridge Wind	E	I	WT	WND	2009	N	N	80	4.50
NPPD	Franklin 1	E	P	RE	NG/DFO	1963	Y	N	0.68	0.92
NPPD	Franklin 2	E	P	RE	NG/DFO	1974	Y	N	1.37	1
NPPD	Franklin 3	E	P	RE	NG/DFO	1968	Y	N	1.14	1
NPPD	Franklin 4	E	P	RE	NG/DFO	1955	Y	N	0.90	0.83
NPPD	Gentleman 1	E	B	ST	SUB	1979	Y	N	681.30	665
NPPD	Gentleman 2	E	B	ST	SUB	1982	Y	N	681.30	700
NPPD	Hallam	E	P	GT	DFO	1973	Y	N	56.70	42.90
NPPD	Hebron	E	P	GT	NG	1973	N	N	56.70	42.05
NPPD	Kearney	E	B	H	WAT	1921	N	N	1.50	0
NPPD	Kingsley (CNPPID)	E	B	H	WAT	1985	Y	N	42	42
NPPD	Laredo Ridge Wind	E	I	WT	WND	2011	N	N	80	10.89
NPPD	Madison 1	E	P	RE	NG/DFO	1969	Y	N	2.07	1
NPPD	Madison 2	E	P	RE	NG/DFO	1959	Y	N	1.36	1
NPPD	Madison 3	E	P	RE	NG/DFO	1953	Y	N	1.14	1
NPPD	Madison 4	E	P	RE	DFO	1946	Y	N	1.37	0.70
NPPD	McCook	E	P	GT	DFO	1973	Y	N	57	41
NPPD	Monroe	E	B	H	WAT	1936	N	N	8.40	3
NPPD	North Platte 1	E	B	H	WAT	1935	Y	N	13.10	12
NPPD	North Platte 2	E	B	H	WAT	1935	Y	N	13	12
NPPD	Ord 1	E	P	RE	NG/DFO	1973	Y	N	5	5
NPPD	Ord 2	E	P	RE	NG/DFO	1966	Y	N	1.50	1
NPPD	Ord 3	E	P	RE	NG/DFO	1963	Y	N	2.50	2
NPPD	Ord 4	E	P	RE	DFO	1997	Y	N	1.45	1.40
NPPD	Ord 5	E	P	RE	DFO	1997	Y	N	1.45	1.40
NPPD	Sheldon 1	E	B	ST	SUB	1961	Y	N	108.80	104
NPPD	Sheldon 2	E	B	ST	SUB	1965	Y	N	120	112
NPPD	Springview Wind	E	I	WT	WND	2012	N	N	3	0
NPPD	Steele Flats Wind	E	I	WT	WND	2013	N	N	75	22.20
NPPD	Wahoo #1	E	P	RE	NG/DFO	1960	Y	N	2.10	1.70
NPPD	Wahoo #3	E	P	RE	NG/DFO	1973	Y	N	4.42	3.60
NPPD	Wahoo #5	E	P	RE	NG/DFO	1952	Y	N	2.19	1.80
NPPD	Wahoo #6	E	P	RE	NG/DFO	1969	Y	N	4	3
NPPD	Western Sugar	E	B	ST	SUB	2014	Y	N	5	0
NPPD	Wilber 4	E	P	RE	DFO	1949	Y	N	0.90	0.78
NPPD	Wilber 5	E	P	RE	DFO	1958	Y	N	0.78	0.59
NPPD	Wilber 6	E	P	RE	DFO	1997	Y	N	1.60	1.53
OPPD	Jones St. #1	E	P	GT	DFO	1973	Y	N	61.20	61.20
OPPD	Jones St. #2	E	P	GT	DFO	1973	Y	N	62.20	62.20
OPPD	Tecumseh #1	E	P	RE	DFO	1949	Y	N	0.60	0.60
OPPD	Tecumseh #2	E	P	RE	DFO	1968	Y	N	1	1
OPPD	Tecumseh #3	E	P	RE	DFO	1952	Y	N	1	1
OPPD	Tecumseh #4	E	P	RE	DFO	1960	Y	N	1.20	1.20
OPPD	Tecumseh #5	E	P	RE	DFO	1993	Y	N	2.30	2.30
OPPD	Elk City Station #1-4	E	B	RE	LFG	2002	N	N	3.09	3.09
OPPD	Elk City Station #5-8	E	B	RE	LFG	2006	N	N	3	3
OPPD	Cass County #1	E	P	GT	NG	2003	N	N	162	162
OPPD	Cass County #2	E	P	GT	NG	2003	N	N	162	162
OPPD	North Omaha #1	E	B	ST	NG	1954	N	N	63	63
OPPD	North Omaha #2	E	B	ST	NG	1957	N	N	71.80	83.40
OPPD	North Omaha #3	E	B	ST	NG	1959	N	N	92.50	92.50
OPPD	Sarpy County #1	E	P	GT	NG/DFO	1972	Y	N	55.40	54.90
OPPD	Sarpy County #2	E	P	GT	NG/DFO	1972	Y	N	55.90	57.10
OPPD	Sarpy County #3	E	P	GT	NG/DFO	1996	Y	N	107.80	107.80
OPPD	Sarpy County #4	E	P	GT	NG/DFO	2000	Y	N	48.70	48.70
OPPD	Sarpy County #5	E	P	GT	NG/DFO	2000	Y	N	47.90	47.90
OPPD	Nebraska City #1	E	B	ST	SUB	1979	Y	N	650	650
OPPD	Nebraska City #2	E	B	ST	SUB	2009	Y	N	691	687
OPPD	North Omaha #4 (NG)	E	P	ST	NG	1963	N	N	106	0
OPPD	North Omaha #4 (Coal)	E	B	ST	SUB/NG	1963	Y	N	118	118
OPPD	North Omaha #5 (NG)	E	P	ST	NG	1968	Y	N	172	0
OPPD	North Omaha #5 (Coal)	E	B	ST	SUB/NG	1968	Y	N	216.20	206.20
OPPD	*Rattlesnake Creek Wind	E	I	S	WND	2019	N	N	318	0
OPPD	Flat Water Wind	E	I	WT	WND	2011	N	N	60	11
OPPD	Grande Prairie Wind	E	I	WT	WND	2016	N	N	400	70.60
OPPD	Petersburg Wind	E	I	WT	WND	2012	N	N	40.50	8
OPPD	Prairie Breeze Wind	E	I	WT	WND	2014	N	N	201	43
OPPD	Sholes Wind	E	I	WT	WND	2019	N	N	160	70.20
SCRIBNER	Scribner #1	E	P	RE	OBL	2020	N	N	1.88	1.50
SCRIBNER	Scribner #2	E	P	RE	OBL	2020	N	N	1.88	1.50
South Sioux City	Cotttonwood Wind	E	I	WT	WND	2020	N	N	15.60	7.40
South Sioux City	NG Generation Plant	E	P	GT	NG	2023	N	N	4.95	0
WAKEFIELD	Wakefield 2	E	P	RE	NG/DFO	1955	Y	N	0.50	0.50
WAKEFIELD	Wakefield 4	E	P	RE	NG/DFO	1961	Y	N	0.80	0.80
WAKEFIELD	Wakefield 5	E	P	RE	NG/DFO	1966	Y	N	1.20	1.20
WAKEFIELD	Wakefield 6	E	P	RE	NG/DFO	1971	Y	N	1.10	1.10
WAYNE	Wayne 1	E	P	RE	DFO	1951	Y	N	0.75	0.70
WAYNE	Wayne 3	E	P	RE	DFO	1956	Y	N	1.90	1.90
WAYNE	Wayne 4	E	P	RE	DFO	1960	Y	N	2.10	2.10
WAYNE	Wayne 5	E	P	RE	DFO	1966	Y	N	3.50	3.30
WAYNE	Wayne 6	E	P	RE	DFO	1968	Y	N	5.30	5.20
WAYNE	Wayne 7	E	P	RE	DFO	1998	Y	N	3.25	3.20
WAYNE	Wayne 8	E	P	RE	DFO	1998	Y	N	4	4
Total									**13,369**	**7,688**

EXHIBIT 7 - Winter

2023 Winter Statewide Existing Generating Capability Data

Utility	Unit Name	Unit Status	Duty Cycle	Unit Type	Fuel Type	Commercial Operation Date	On Site Fuel Storage (Y/N)	Behind the Meter	Nameplate Capacity	Accredited Capacity 2023
Beatrice	Cottonwood Wind Farm Beatrice	E	I	WT	WND	2017	N	N	16.10	1.98
Falls City	Falls City #7	E	P	RE	NG/DFO	1972	Y	N	6	5
Falls City	Falls City #8	E	P	RE	NG/DFO	1981	Y	N	6	5.30
Falls City	Falls City #9	E	P	RE	NG/DFO	2018	Y	N	9.30	9.20
Fremont	Fremont Unit 6	E	B	ST	SUB/NG	1958	Y	N	16.86	16.86
Fremont	Fremont Unit 7	E	B	ST	SUB/NG	1963	Y	N	22.01	22.01
Fremont	Fremont Unit 8	E	B	ST	SUB/NG	1976	Y	N	85.25	85.25
Fremont	Fremont CT	E	P	CT	NG/DFO	2003	Y	N	37.55	37.55
Fremont	Fremont Cottonwood Wind	E	I	WT	WND	2018	N	N	40.36	12.10
Grand Island	Burdick GT1	E	P	GT	NG/DFO	1968	Y	N	13	13
Grand Island	Burdick GT2	E	P	GT	NG/DFO	2003	Y	N	34	34
Grand Island	Burdick GT3	E	P	GT	NG/DFO	2003	Y	N	34	34
Grand Island	Platte Generating Station	E	B	ST	SUB	1982	Y	N	100	100
Grand Island	Prairie Breeze 3 Wind	E	I	WT	WND	2016	N	N	36	0
Hastings	CCC Hastings Wind	E	I	WT	WND	2016	N	N	2	0
Hastings	DHPC-#1	E	P	GT	NG/DFO	1972	Y	N	18	18
Hastings	Hastings-NDS#4	E	P	ST	NG/DFO	1957	Y	N	15.50	
Hastings	Hastings-NDS#5	E	P	ST	NG/DFO	1967	Y	N	23.60	
Hastings	Whelan Energy Center #1	E	B	ST	SUB	1981	Y	N	76	76
Hastings	Whelan Energy Center #2	E	B	ST	SUB	2011	Y	N	220	220
LES	Laramie River Station	E	B	ST	SUB	1982	Y	N	198	198
LES	J St	E	P	GT	NG/DFO	1972	Y	N	29	29
LES	Rokeby 1	E	P	GT	NG/DFO	1975	Y	N	71	71
LES	Rokeby 2	E	P	GT	NG/DFO	1997	Y	N	90	90
LES	Rokeby 3	E	P	GT	NG/DFO	2001	Y	N	94	94
LES	TBS CT1/CC1	E	P	CC	NG/DFO	2003	Y	N	119	118.50
LES	TBS CT 3	E	P	GT	NG/DFO	2003	Y	N	45	45.4
LES	WSEC4	E	B	ST	SUB	2007	Y	N	104	104
LES	Rokeby Black Start	E	E	RE	DFO	1997	Y	N	3	0
LES	TBS Black Start	E	E	RE	DFO	2004	Y	N	2	0
LES	Landfill Gas Generator	E	B	RE	LFG	2014	N	N	5	5
LES	Arbuckle Mountain Wind	E	I	WT	WND	2016	N	N	100	29
LES	Buckeye Wind	E	I	WT	WND	2016	N	N	100	22.20
LES	Prairie Breeze 2 Wind	E	I	WT	WND	2016	N	N	73.40	21
MEAN	Alliance #1	E	P	RE	DFO	2002	Y	N	1.83	1.87
MEAN	Alliance #2	E	P	RE	DFO	2002	Y	N	1.83	1.86
MEAN	Alliance #3	E	P	RE	DFO	2002	Y	N	1.83	1.82
MEAN	Ansley #2	E	P	RE	NG/DFO	1972	Y	N	0.91	0.75
MEAN	Ansley #3	E	P	RE	NG/DFO	1968	Y	N	0.68	0.60
MEAN	Benklemen	E	P	RE	NG/DFO	1968	Y	N	0.90	0.79
MEAN	Broken Bow #2	E	P	RE	NG/DFO	1971	Y	N	3.50	3.23
MEAN	Broken Bow #4	E	P	RE	NG/DFO	1949	Y	N	1	1
MEAN	Broken Bow #5	E	P	RE	NG/DFO	1959	Y	N	1	0.99
MEAN	Broken Bow #6	E	P	RE	NG/DFO	1961	Y	N	2.25	1.91
MEAN	Burwell #2	E	P	RE	NG/DFO	1962	Y	N	1.37	0.79
MEAN	Burwell #3	E	P	RE	NG/DFO	1967	Y	N	1.14	1.07
MEAN	Burwell #4	E	P	RE	NG/DFO	1972	Y	N	0.90	1.16
MEAN	Callaway #3	E	P	RE	DFO	1958	Y	N	0.50	0.49
MEAN	Callaway #4	E	P	RE	DFO	2004	Y	N	0.40	0.38
MEAN	Chappell #5	E	P	RE	DFO	1982	Y	N	1	1
MEAN	Crete #7	E	P	RE	NG/DFO	1972	Y	N	6	6.15
MEAN	Curtis #1	E	P	RE	NG/DFO	1975	Y	N	1.36	1.29
MEAN	Curtis #2	E	P	RE	NG/DFO	1969	Y	N	1.14	1.08
MEAN	Curtis #4	E	P	RE	NG/DFO	1955	Y	N	0.90	0.70
MEAN	Kimball #1	E	P	RE	NG/DFO	1955	Y	N	0.59	0
MEAN	Kimball #2	E	P	RE	NG/DFO	1956	Y	N	0.51	0
MEAN	Kimball #3	E	P	RE	NG/DFO	1959	Y	N	0.67	0
MEAN	Kimball #4	E	P	RE	NG/DFO	1960	Y	N	0.65	0
MEAN	Kimball #5	E	P	RE	NG/DFO	1951	Y	N	0.41	0
MEAN	Kimball #6	E	P	RE	NG/DFO	1975	Y	N	2.17	2.17
MEAN	Oxford #2	E	P	RE	NG/DFO	1952	Y	N	0.68	0.64
MEAN	Oxford #3	E	P	RE	NG/DFO	1956	Y	N	0.90	0.90
MEAN	Oxford #4	E	P	RE	NG/DFO	1956	Y	N	0.68	0.64
MEAN	Oxford #5	E	P	RE	DFO	1972	Y	N	1.37	1.27
MEAN	Pender #1	E	P	RE	NG/DFO	1968	Y	N	1.63	1.60
MEAN	Pender #2	E	P	RE	NG/DFO	1973	Y	N	1.57	1.70
MEAN	Pender #3	E	P	RE	DFO	1953	Y	N	0.56	0
MEAN	Pender #4	E	P	RE	DFO	1961	Y	N	0.90	0.70
MEAN	Red Cloud #2	E	P	RE	NG/DFO	1953	Y	N	0.98	0.65
MEAN	Red Cloud #3	E	P	RE	NG/DFO	1960	Y	N	1.36	0.88
MEAN	Red Cloud #4	E	P	RE	NG/DFO	1968	Y	N	1.37	0.90
MEAN	Red Cloud #5	E	P	RE	NG/DFO	1974	Y	N	2.28	1.78
MEAN	Stuart #1	E	P	RE	NG/DFO	1965	Y	N	0.68	0.72
MEAN	Stuart #4	E	P	RE	NG/DFO	1996	Y	N	0.78	0.82
MEAN	West Point #2	E	P	RE	NG/DFO	1947	Y	N	2.31	2.20
MEAN	West Point #3	E	P	RE	NG/DFO	1959	Y	N	1.25	1.12
MEAN	West Point #4	E	P	RE	NG/DFO	1965	Y	N	0.90	0.83
MEAN	Wisner #4	E	P	RE	DFO	2008	Y	N	1.50	1
MEAN	Wisner #5	E	P	RE	DFO	2008	Y	N	2	1
Nebraska City	Nebraska City #5	E	P	RE	NG/DFO	1964	Y	N	2	1.62
Nebraska City	Nebraska City #6	E	P	RE	NG/DFO	1967	Y	N	2.10	1.51
Nebraska City	Nebraska City #7	E	P	RE	NG/DFO	1969	Y	N	2.10	1.46
Nebraska City	Nebraska City #8	E	P	RE	NG/DFO	1970	Y	N	4.10	3.51
Nebraska City	Nebraska City #9	E	P	RE	NG/DFO	1974	Y	N	6.40	5.58
Nebraska City	Nebraska City #10	E	P	RE	NG/DFO	1979	Y	N	6.50	5.80
Nebraska City	Nebraska City #11	E	P	RE	NG/DFO	1998	Y	N	4.60	3.95
Nebraska City	Nebraska City #12	E	P	RE	NG/DFO	1998	Y	N	4.60	4.02
NELIGH	Neligh #1	E	P	RE	OBL	2012	Y	N	1.80	1.80
NELIGH	Neligh #2	E	P	RE	OBL	2012	Y	N	1.79	1.79
NELIGH	Neligh #3	E	P	RE	OBL	2012	Y	N	1.80	1.80
NELIGH	Neligh #4	E	P	RE	OBL	2012	Y	N	0.34	0.34
Northeastern NPPD	Cottonwood	E	I	WT	WND	2018	N	N	17.50	6

EXHIBIT 7 - Winter

2023 Winter Statewide Existing Generating Capability Data

Utility	Unit Name	Unit Status	Duty Cycle	Unit Type	Fuel Type	Commercial Operation Date	On Site Fuel Storage (Y/N)	Behind the Meter	Nameplate Capacity	Accredited Capacity 2023
NPPD (contd)	ADM	E	B	ST	SUB	2009	Y	N	67.10	67.10
NPPD	Ainsworth Wind	E	I	WT	WND	2005	N	N	6	10
NPPD	Auburn #1	E	P	RE	NG/DFO	1982	Y	N	2	2
NPPD	Auburn #2	E	P	RE	NG/DFO	1949	Y	N	1	1
NPPD	Auburn #4	E	P	RE	NG/DFO	1993	Y	N	3	3
NPPD	Auburn #5	E	P	RE	NG/DFO	1973	Y	N	3	3
NPPD	Auburn #6	E	P	RE	NG/DFO	1967	Y	N	2	2
NPPD	Auburn #7	E	P	RE	NG/DFO	1987	Y	N	5	5
NPPD	Beatrice Power Station	E	I	CC	NG	2005	N	N	220	220
NPPD	Belleville 4	E	P	RE	NG/DFO	1955	Y	N	0	0
NPPD	Belleville 5	E	P	RE	NG/DFO	1961	Y	N	1.30	1.30
NPPD	Belleville 6	E	P	RE	NG/DFO	1966	Y	N	2.60	2.60
NPPD	Belleville 7	E	P	RE	NG/DFO	1971	Y	N	3.30	3.30
NPPD	Belleville 8	E	P	RE	NG/DFO	2006	Y	N	2.80	2.80
NPPD	Broken Bow Wind	E	I	WT	WND	2013	N	N	12.19	14.19
NPPD	Broken Bow II Wind	E	I	WT	WND	2014	N	N	13	12
NPPD	Cambridge	E	P	RE	DFO	1972	Y	N	3	3
NPPD	Canaday	E	P	ST	NG	1958	N	N	99	99
NPPD	Columbus 1	E	B	H	WAT	1936	Y	N	15	15
NPPD	Columbus 2	E	B	H	WAT	1936	Y	N	15	15
NPPD	Columbus 3	E	B	H	WAT	1936	Y	N	15	15
NPPD	Cooper	E	B	ST	NUC	1974	N	N	770	768.51
NPPD	Crofton Bluffs Wind	E	I	WT	WND	2013	N	N	8.04	5.76
NPPD	David City 1	E	P	RE	NG/DFO	1960	Y	N	1.30	1.30
NPPD	David City 2	E	P	RE	DFO	1949	Y	N	0.80	0.80
NPPD	David City 3	E	P	RE	NG/DFO	1955	Y	N	0.90	0.90
NPPD	David City 4	E	P	RE	NG/DFO	1966	Y	N	1.80	1.80
NPPD	David City 5	E	P	RE	DFO	1996	Y	N	1	1
NPPD	David City 6	E	P	RE	DFO	1996	Y	N	1.33	0
NPPD	David City 7	E	P	RE	DFO	1996	Y	N	1.34	1.34
NPPD	Elkhorn Ridge Wind	E	I	WT	WND	2009	N	N	8.66	8.34
NPPD	Franklin 1	E	P	RE	NG/DFO	1963	Y	N	1	1
NPPD	Franklin 2	E	P	RE	NG/DFO	1974	Y	N	1	1
NPPD	Franklin 3	E	P	RE	NG/DFO	1968	Y	N	1	1
NPPD	Franklin 4	E	P	RE	NG/DFO	1955	Y	N	1	1
NPPD	Gentleman 1	E	B	ST	SUB	1979	Y	N	665	665
NPPD	Gentleman 2	E	B	ST	SUB	1982	Y	N	700	700
NPPD	Hallam	E	P	GT	DFO	1973	Y	N	41.95	42.90
NPPD	Hebron	E	P	GT	NG	1973	N	N	42	42
NPPD	Kearney	E	B	H	WAT	1921	N	N	0	0
NPPD	Kingsley (CNPPID)	E	B	H	WAT	1985	Y	N	41.67	41.67
NPPD	Laredo Ridge Wind	E	I	WT	WND	2011	N	N	16.29	16.20
NPPD	Madison 1	E	P	RE	NG/DFO	1969	Y	N	1.70	1.30
NPPD	Madison 2	E	P	RE	NG/DFO	1959	Y	N	0.95	1
NPPD	Madison 3	E	P	RE	NG/DFO	1953	Y	N	0.85	1
NPPD	Madison 4	E	P	RE	DFO	1946	Y	N	0.50	0.70
NPPD	McCook	E	P	GT	DFO	1973	Y	N	40	41
NPPD	Monroe	E	B	H	WAT	1936	N	N	3	3
NPPD	North Platte 1	E	B	H	WAT	1935	Y	N	12	12
NPPD	North Platte 2	E	B	H	WAT	1935	Y	N	12	12
NPPD	Ord 1	E	P	RE	NG/DFO	1973	Y	N	5	5
NPPD	Ord 2	E	P	RE	NG/DFO	1966	Y	N	1	1
NPPD	Ord 3	E	P	RE	NG/DFO	1963	Y	N	2	2
NPPD	Ord 4	E	P	RE	DFO	1997	Y	N	1.40	1.40
NPPD	Ord 5	E	P	RE	DFO	1997	Y	N	1.40	1.40
NPPD	Sheldon 1	E	B	ST	SUB	1961	Y	N	104	104
NPPD	Sheldon 2	E	B	ST	SUB	1965	Y	N	113	112
NPPD	Springview Wind	E	I	WT	WND	2012	N	N	0.41	0.48
NPPD	Steele Flats Wind	E	I	WT	WND	2013	N	N	24.48	16.02
NPPD	Wahoo #1	E	P	RE	NG/DFO	1960	Y	N	1.70	1.70
NPPD	Wahoo #3	E	P	RE	NG/DFO	1973	Y	N	3.60	3.60
NPPD	Wahoo #5	E	P	RE	NG/DFO	1952	Y	N	1.80	1.80
NPPD	Wahoo #6	E	P	RE	NG/DFO	1969	Y	N	2.90	2.90
NPPD	Western Sugar	E	B	ST	SUB	2014	Y	N	4.55	4.55
NPPD	Wilber 4	E	P	RE	DFO	1949	Y	N	0.78	0.78
NPPD	Wilber 5	E	P	RE	DFO	1958	Y	N	0.59	0.59
NPPD	Wilber 6	E	P	RE	DFO	1997	Y	N	2	2
OPPD	BRIGHT Battery	E	I	ES	ES	2022	N	N	1	0
OPPD	Jones St. #1	E	P	GT	DFO	1973	Y	N	61.20	61.20
OPPD	Jones St. #2	E	P	GT	DFO	1973	Y	N	62.20	62.20
OPPD	Tecumseh #1	E	P	RE	DFO	1949	Y	N	0.60	0.60
OPPD	Tecumseh #2	E	P	RE	DFO	1968	Y	N	1	1
OPPD	Tecumseh #3	E	P	RE	DFO	1952	Y	N	1	1
OPPD	Tecumseh #4	E	P	RE	DFO	1960	Y	N	1.20	1.20
OPPD	Tecumseh #5	E	P	RE	DFO	1993	Y	N	2.30	2.30
OPPD	Elk City Station #1-4	E	B	RE	LFG	2002	N	N	3.09	3.09
OPPD	Elk City Station #5-8	E	B	RE	LFG	2006	N	N	3	3
OPPD	Cass County #1	E	P	GT	NG	2003	N	N	162	0
OPPD	Cass County #2	E	P	GT	NG	2003	N	N	162	0
OPPD	North Omaha #1	E	B	ST	NG	1954	N	N	63	0
OPPD	North Omaha #2	E	B	ST	NG	1957	N	N	71.80	0
OPPD	North Omaha #3	E	B	ST	NG	1959	N	N	92.50	0
OPPD	Sarpy County #1	E	P	GT	NG/DFO	1972	Y	N	55.40	54.90
OPPD	Sarpy County #2	E	P	GT	NG/DFO	1972	Y	N	55.90	57.10
OPPD	Sarpy County #3	E	P	GT	NG/DFO	1996	Y	N	107.80	107.80
OPPD	Sarpy County #4	E	P	GT	NG/DFO	2000	Y	N	48.70	48.70
OPPD	Sarpy County #5	E	P	GT	NG/DFO	2000	Y	N	47.90	47.90
OPPD	Nebraska City #1	E	B	ST	SUB	1979	Y	N	650	650
OPPD	Nebraska City #2	E	B	ST	SUB	2009	Y	N	691	687
OPPD	North Omaha #4 (NG)	E	P	ST	NG	1963	N	N	106	0
OPPD	North Omaha #4 (Coal)	E	B	ST	SUB/NG	1963	Y	N	118	102
OPPD	North Omaha #5 (NG)	E	P	ST	NG	1968	Y	N	172	0
OPPD	North Omaha #5 (Coal)	E	B	ST	SUB/NG	1968	Y	N	216.20	174.90
OPPD	*Rattlesnake Creek Wind	E	I	S	WND	2019	N	N	318	0
OPPD	Flat Water Wind	E	I	WT	WND	2011	N	N	60	8
OPPD	Grande Prairie Wind	E	I	WT	WND	2016	N	N	400	109.60
OPPD	Petersburg Wind	E	I	WT	WND	2012	N	N	40.50	14.70
OPPD	Prairie Breeze Wind	E	I	WT	WND	2014	N	N	201	78
OPPD	Sholes Wind	E	I	WT	WND	2019	N	N	160	93
SCRIBNER	Scribner #1	E	P	RE	OBL	2020	N	N	1.88	1.50
SCRIBNER	Scribner #2	E	P	RE	OBL	2020	N	N	1.88	1.50
South Sioux City	Cotttonwood Wind	E	I	WT	WND	2020	N	N	15.60	1
South Sioux City	NG Generation Plant	E	P	GT	NG	2023	N	N	4.95	0
WAKEFIELD	Wakefield 2	E	P	RE	NG/DFO	1955	Y	N	0.50	0.50
WAKEFIELD	Wakefield 4	E	P	RE	NG/DFO	1961	Y	N	0.80	0.80
WAKEFIELD	Wakefield 5	E	P	RE	NG/DFO	1966	Y	N	1.20	1.20
WAKEFIELD	Wakefield 6	E	P	RE	NG/DFO	1971	Y	N	1.10	1.10
WAYNE	Wayne 1	E	P	RE	DFO	1951	Y	N	0.75	0.70
WAYNE	Wayne 3	E	P	RE	DFO	1956	Y	N	1.90	1.90
WAYNE	Wayne 4	E	P	RE	DFO	1960	Y	N	2.10	2.10
WAYNE	Wayne 5	E	P	RE	DFO	1966	Y	N	3.50	3.30
WAYNE	Wayne 6	E	P	RE	DFO	1968	Y	N	5.30	5.20
WAYNE	Wayne 7	E	P	RE	DFO	1998	Y	N	3.25	3.20
WAYNE	Wayne 8	E	P	RE	DFO	1998	Y	N	4	4
Total									**13,096**	**7,089**

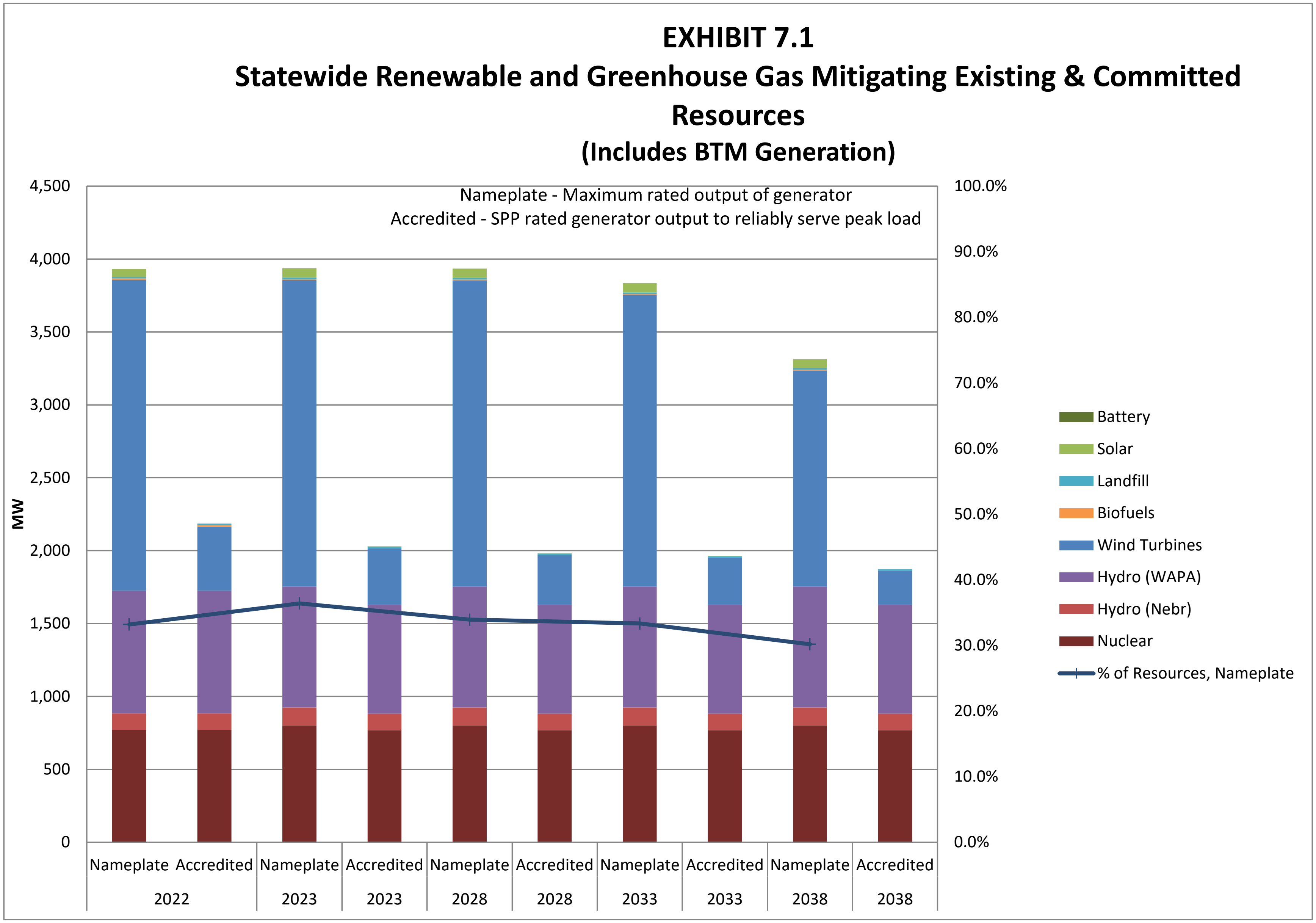


EXHIBIT 7.1
Statewide Renewable and Greenhouse Gas Mitigating Existing & Committed Resources
(Includes BTM Generation)
Nameplate - Maximum rated output of generator
Accredited - SPP rated generator output to reliably serve peak load
MW
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Nameplate
Accredited
2022
Nameplate
2023
Accredited
2023
Nameplate
2028
Accredited
2028
Nameplate
2033
Accredited
2033
Nameplate
2038
Accredited
2038
Battery
Solar
Landfill
Biofuels
Wind Turbines
Hydro (WAPA)
Hydro (Nebr)
Nuclear
% of Resources, Nameplate

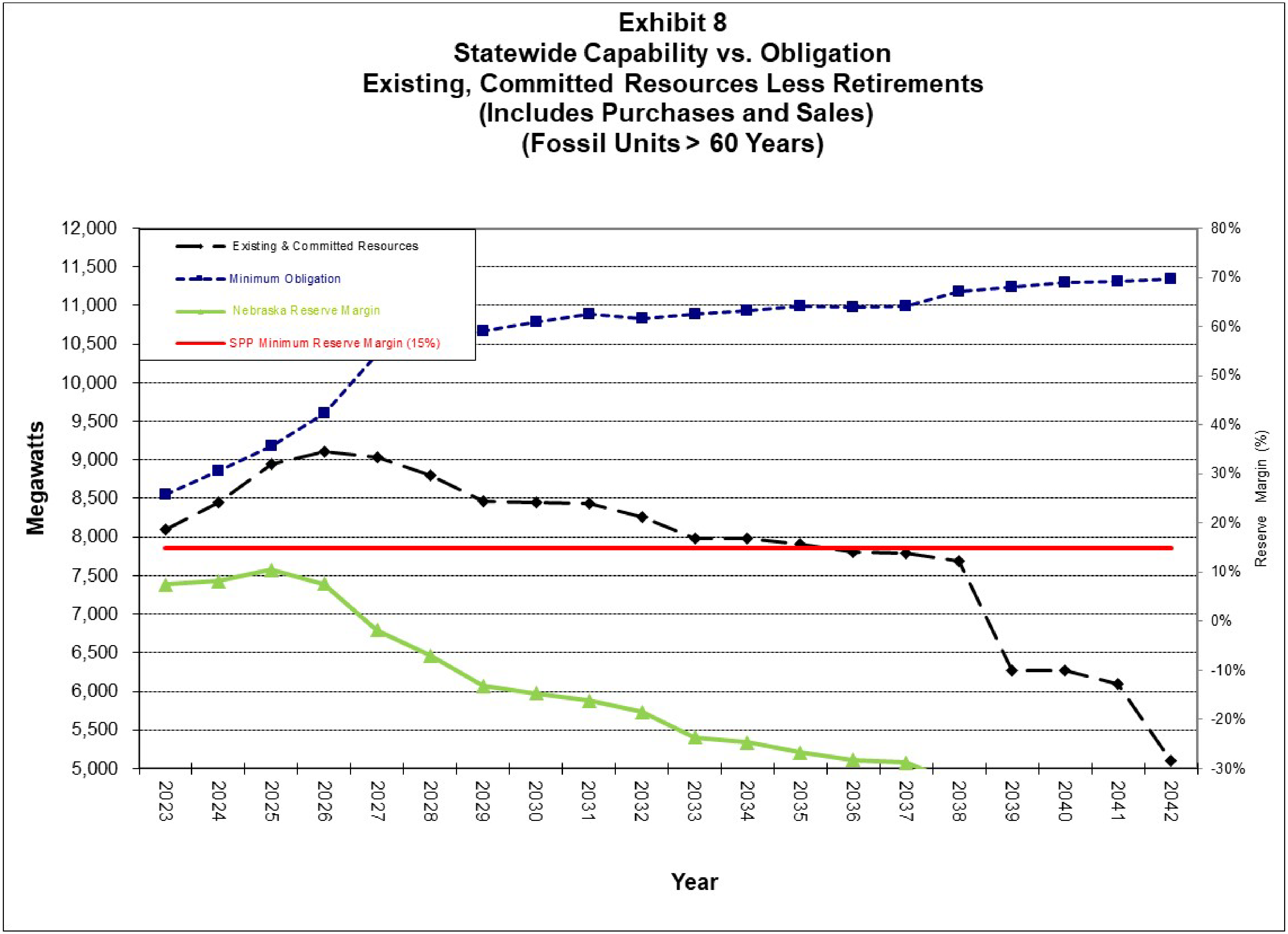


Exhibit 8
Statewide Capability vs. Obligation
Existing, Committed Resources Less Retirements
(Includes Purchases and Sales)
(Fossil Units > 60 Years)
Existing & Committed Resources
Minimum Obligation
Nebraska Reserve Margin
SPP Minimum Reserve Margin (15%)
Megawatts
12,000
11,500
11,000
10,500
10,000
9,500
9,000
8,500
8,000
7,500
7,000
6,500
6,000
5,500
5,000
Reserve Margin (%)
80%
70%
60%
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
Year

Exhibit 9

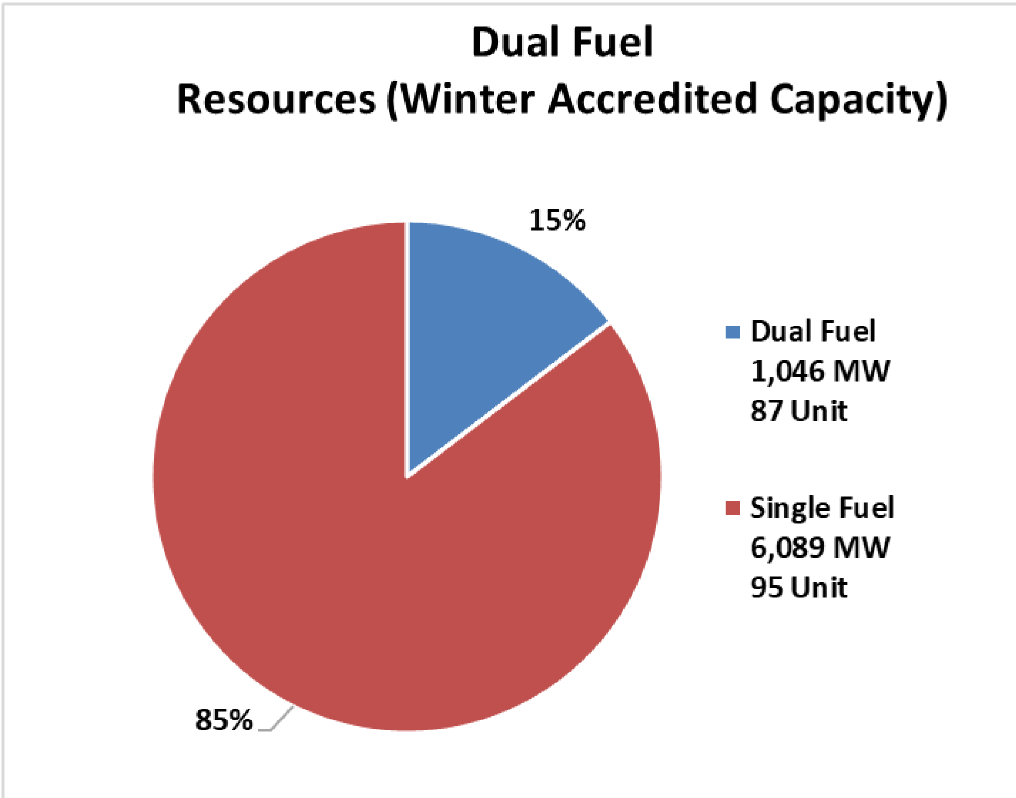


Exhibit 10

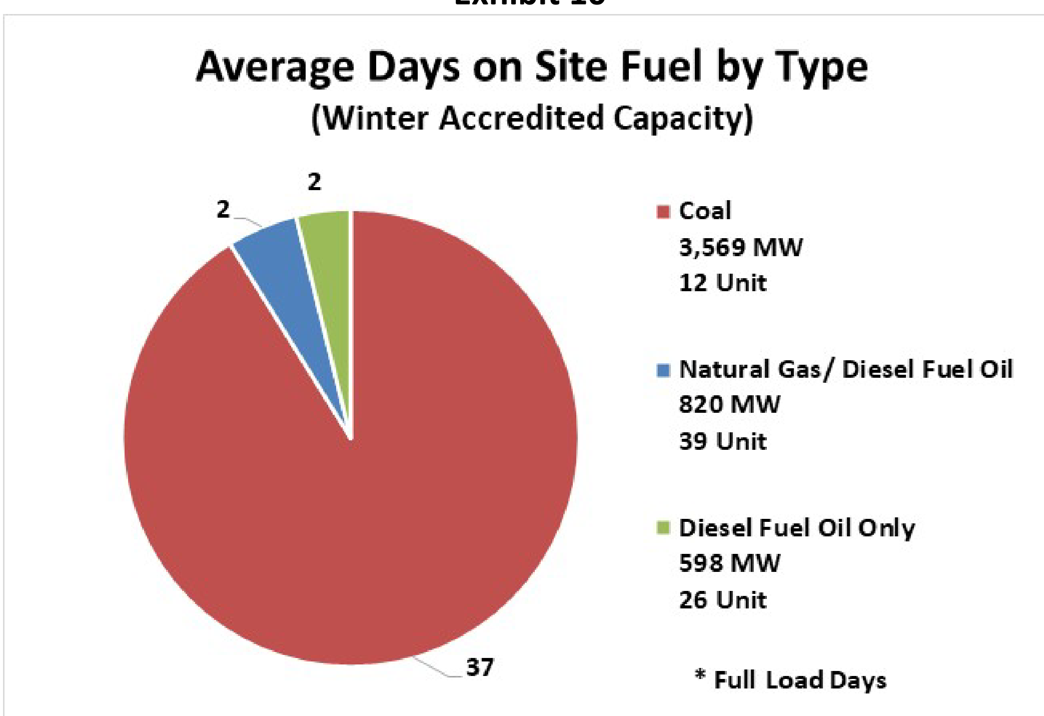


Exhibit 11

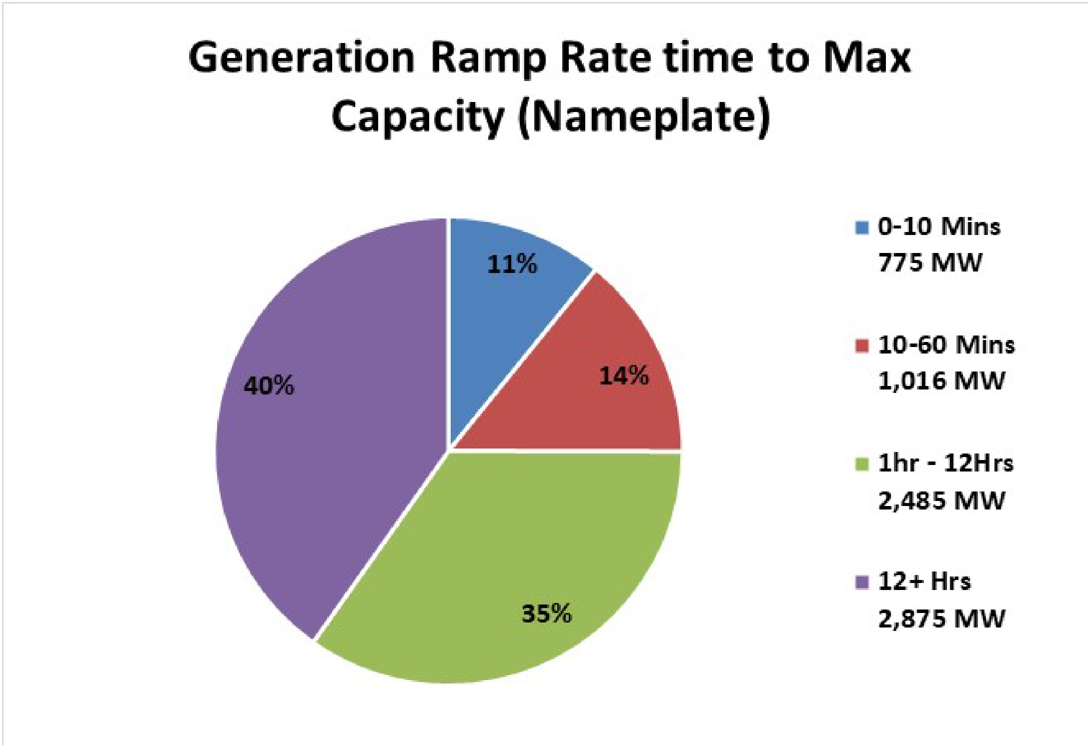

Generation Ramp Rate time to Max Capacity (Nameplate)
11%
14%
35%
40%
0-10 Mins 775 MW
10-60 Mins 1,016 MW
1hr - 12Hrs 2,485 MW
12+ Hrs 2,875 MW

Exhibit 12

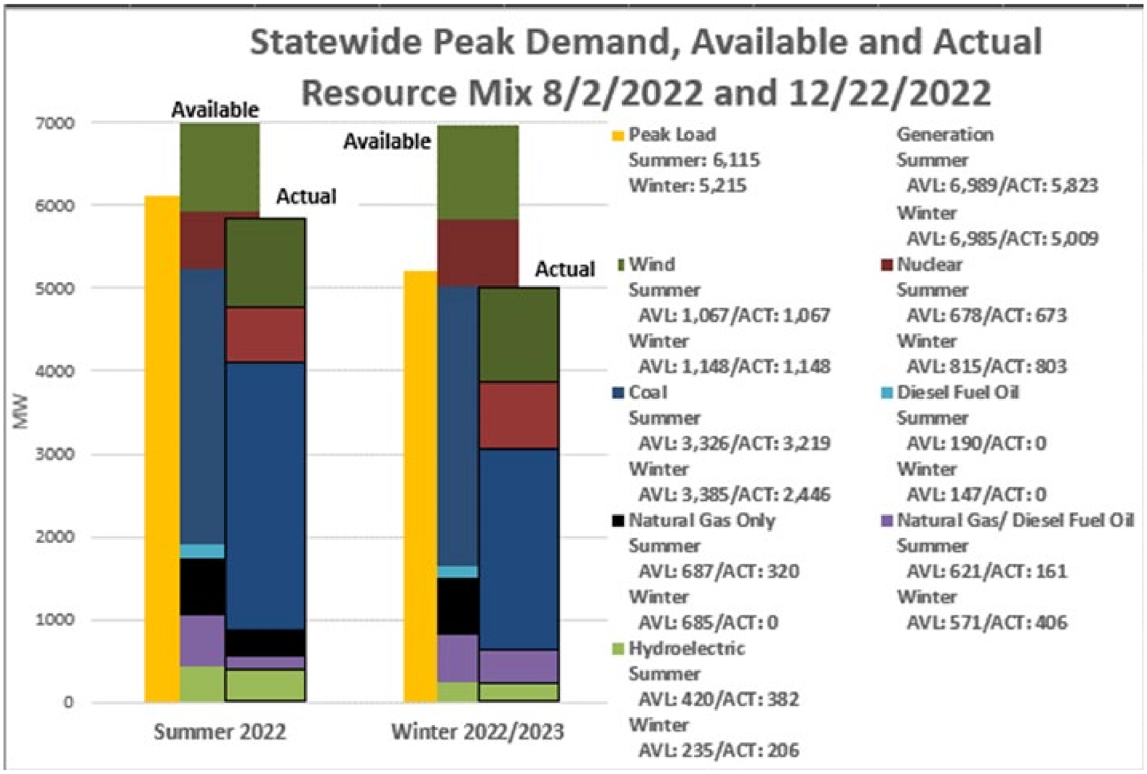


Exhibit 13

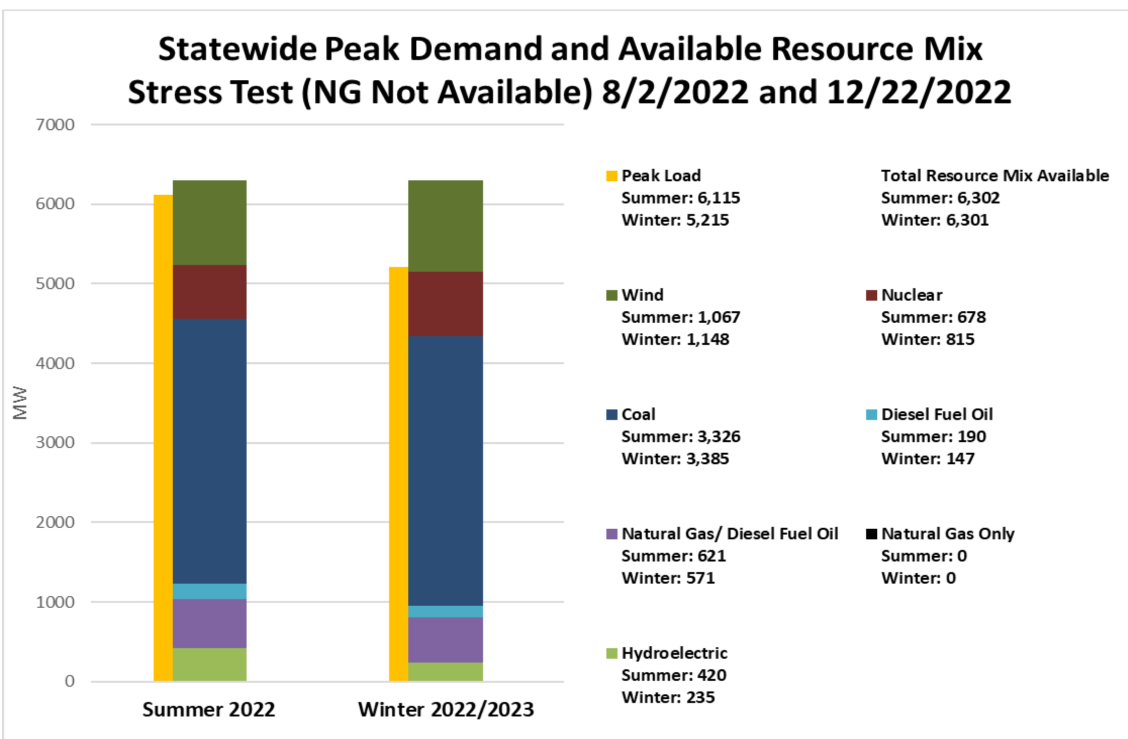


Exhibit 14

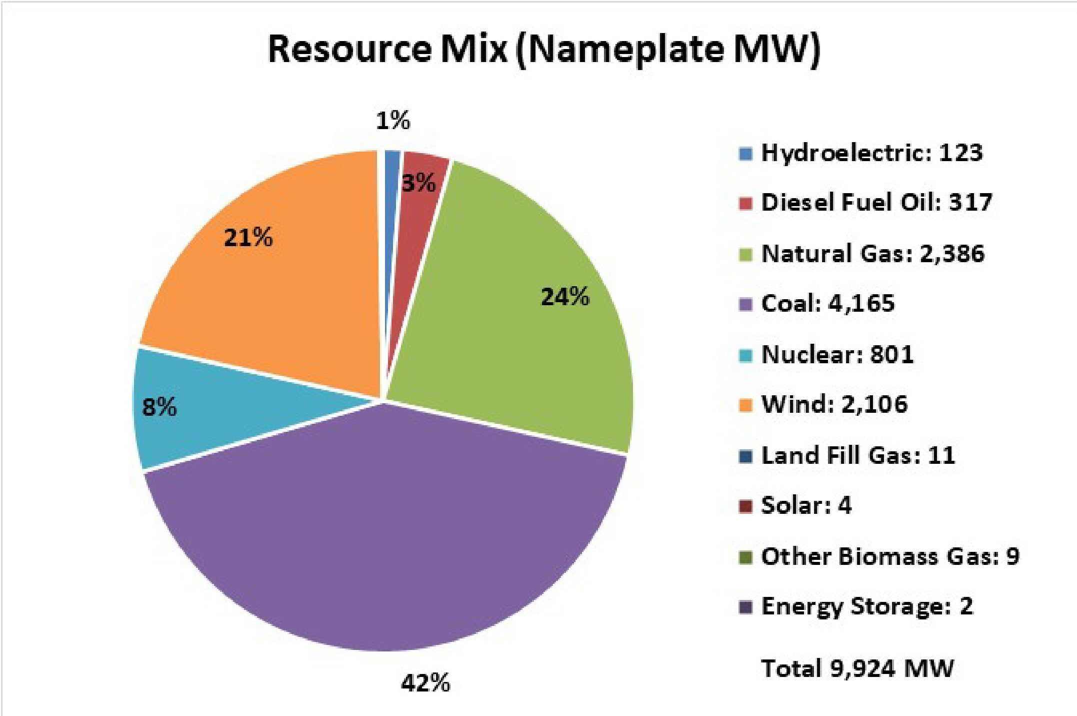


Exhibit 15

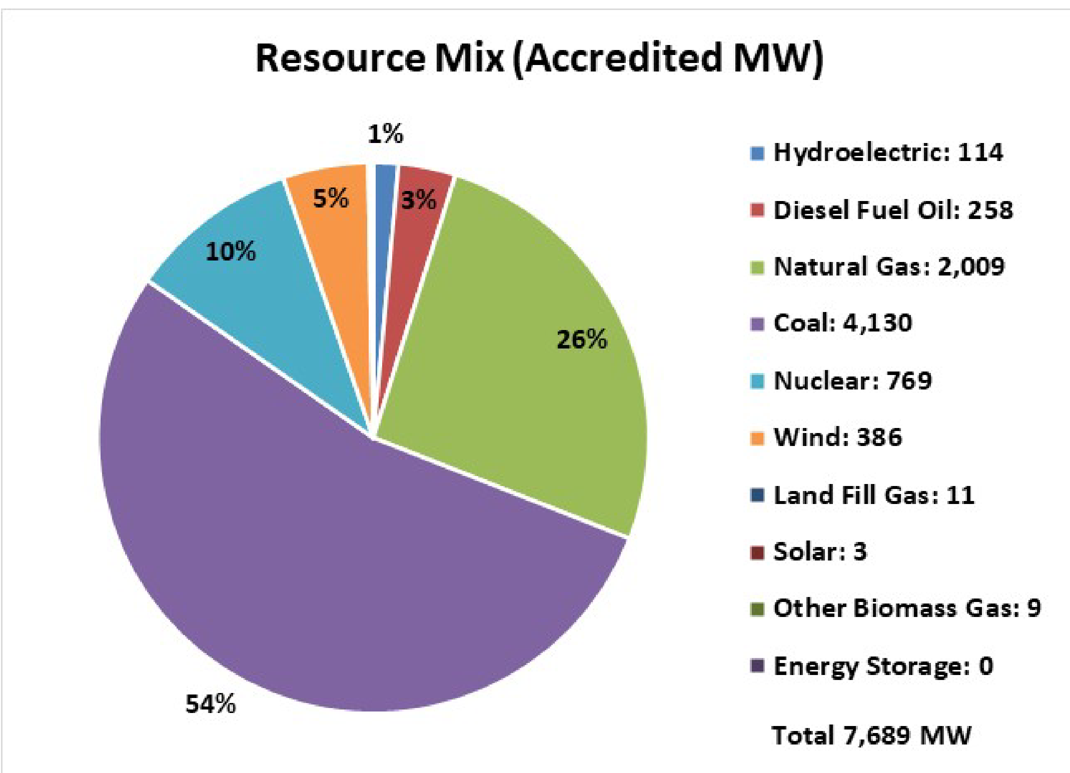
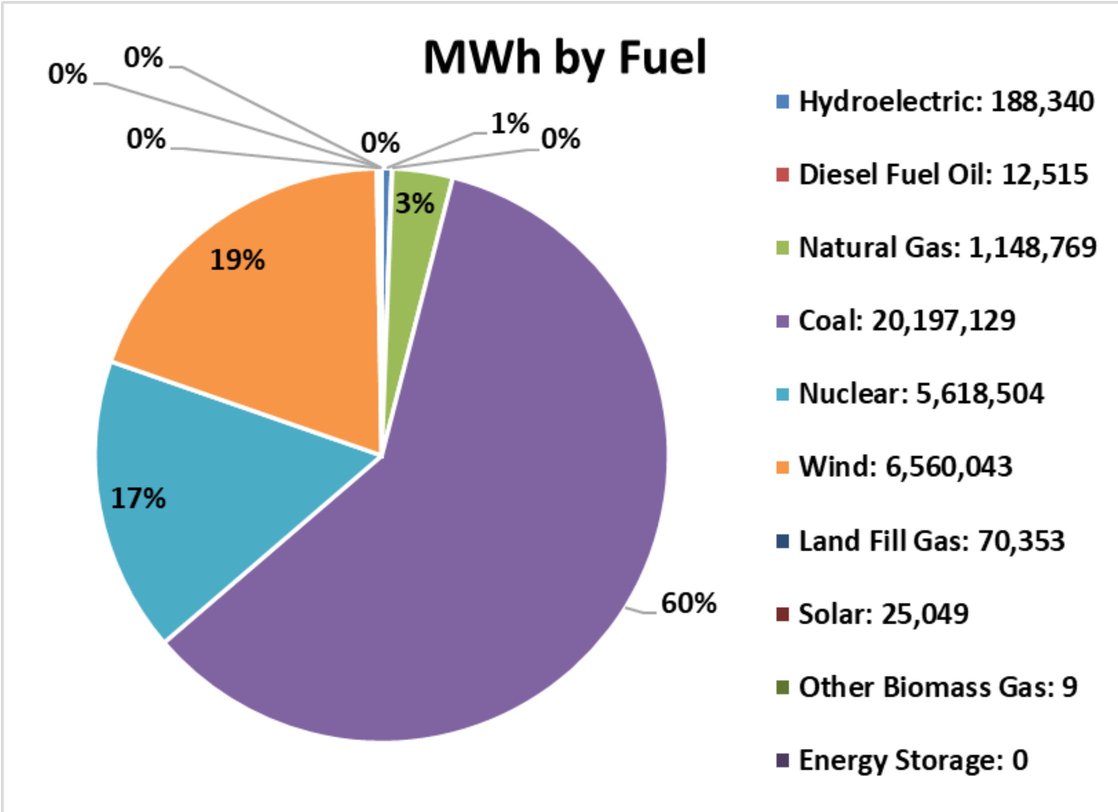


Exhibit 16


MWh by Fuel
0%
0%
0%
0%
1%
0%
3%
19%
17%
60%
Hydroelectric: 188,340
Diesel Fuel Oil: 12,515
Natural Gas: 1,148,769
Coal: 20,197,129
Nuclear: 5,618,504
Wind: 6,560,043
Land Fill Gas: 70,353
Solar: 25,049
Other Biomass Gas: 9
Energy Storage: 0