

2017 NEBRASKA POWER ASSOCIATION LOAD AND CAPABILITY REPORT

August 2017

2017 Nebraska Power Association Load and Capability Report

Executive Summary

In summary, based on existing and committed resources, the statewide deficit occurs after 2036 for the Minimum Obligation as shown in Exhibit 1. The "Minimum Obligation" line is the statewide obligation based on the 50/50 forecast (normal weather) and the minimum 12% reserve margin of the Southwest Power Pool (SPP) Reserve Sharing Pool. The statewide deficit for the Minimum Obligation in the 2016 report showed a State deficit occurring after 2035. Exhibit 2 is the corresponding load and capability data in tabular format.

Introduction

This report is the Nebraska Power Association (NPA) annual load and capability report, as per Item 3 in the statute below. It provides the sum of Nebraska's utilities peak demand forecasts and resources over a 20-year period (2017-2036).

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.

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 based on the loads having a 50/50 probability of being higher or lower. Over the twenty-year period of 2017 through 2036, the average annual compounded peak demand growth rate for the State is projected at 0.40% per year (individual utility ranges)

from -0.1%/yr. to 1.2%/yr.). This is a higher escalation rate than was shown in last year's report (0.29%) for 2016 through 2035.

Planning Reserve Margin Requirement/Reserve Sharing Pool

In addition to the load requirements of the State's customers, the state utilities must also maintain reserves above their peak demand forecast ("Minimum Obligation"). This is a reserve requirement of the SPP Reserve Sharing Pool. All SPP Reserve Sharing members must maintain the specified reserve requirement in order to assist each other in the case of emergencies such as unit outages. The reserve requirement of the pool is reduced by having a reserve sharing pool, instead of individual utilities carrying the entirety of their own reserves to protect them from the loss of their largest unit on their system. The 2017 NPA L&C Report utilizes the proposed SPP planning reserve margin of 12% for the 20 year period. More detail is included in a later section.

The capacity required to meet the SPP planning reserve margin is a significant resource capability over and above the Nebraska load requirement. This amount of capacity equates to 715 MW in 2017 and 755 MW by 2036.

Resources

Existing/Committed

The State has an "Existing" in-service summer accreditable generating resource capability of 7,425 MW. This is down from 7,730 MW shown in the previous report. This reduction is mostly the net effect of OPPD retiring Ft. Calhoun (482 MW), accrediting North Omaha 1 and 2 (65 MW and 91 MW) on natural gas and showing 28 more MW of accredited wind.

There are 108 MW of "Committed" nameplate resources included in this report (the projects have Nebraska Power Review Board approval if required – PURPA qualifying projects do not need NPRB approval). This consists of 58.1 MW coming from the Cottonwood Wind Farm in 2018 (Fremont and others) along with 50 MW from Grand Island's Prairie Hills Wind Farm in 2019.

Planned

"Planned" resources are units that utilities have authorized expenditures for engineering analysis, an architect/engineer, or permitting, but do not have NPRB approval-if that approval is required. There are currently no planned resources scheduled.

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 based on

renewable, base load, intermediate, and peaking resources considering current and future needs. The result is a listing of the preferable mix of renewable, base load, intermediate and peaking resources for each year. The summation of studied resources will provide the basis for the NPRB and the state 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 839 MW of "Studied" resources that include 454 MW of nameplate renewable (wind) resources, 75 MW of base load capacity, 0 MW of intermediate capacity, and 310 MW of peaking capacity by 2036.

Committed/Planned/Studied Exhibits

Exhibit 3 shows the statewide load and capability chart considering 7,425 MW of Existing, 108 MW of Committed (nameplate), 0 MW Planned, and 839 MW of Studied resources. Some existing wind renewables are currently shown at "zero" 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 the studied resources.

The Committed, Planned, and Studied accredited capability resources are summarized in Exhibit 5. Exhibit 6 summarizes the Existing, Committed, Planned, and Studied renewable resources.

Non-Carbon, Renewable and Demand Side Resources

The State has 1,543 MW of commercially operating renewable nameplate resources by the peak of 2017 of which 23 MW are behind the utility meter (not net metered) as shown in Exhibit 6. Another 14 MW of committed behind the meter renewable resources could be commercial by the end of 2017. These amounts do not include any wind which may be installed by developers in Nebraska for export to load outside the state. Wind and solar generation with its intermittency is relied upon by Nebraska utilities for only a small percentage of its full nameplate rating to meet peak load conditions. Correspondingly, for wind and solar the SPP has criteria to determine this 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 as determined by following the criteria's methodology is used as the SPP accredited rating for the facility. The accredited rating based on actual performance requires a minimum of 3 year's history. SPP criteria allows for a 5% accreditation rating for new wind installations with less than 3 years history and 10% for solar. Even with low accredited capacity ratings, wind and solar generation resources are desirable for being emission-free and having a zero fuel cost. Nebraska utilities are adding renewables to take advantage of these attributes.

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 regards to their renewable and/or sustainable goals and demand side programs.

<u>NPPD</u>

NPPD's Board of Directors has set a goal of 10% new renewable energy by 2020. With the inclusion of NPPD's wholesale and retail customers' Qualifying Local Generation (QLG), it is expected that NPPD will reach approximately 12% renewables by 2020.

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 569 MW of demand reduction from NPPD's billable peak during the summer of 2016. Another 67 MW of demand reduction was realized from other sources.

In 2008, NPPD developed and implemented a series of energy efficiency and demand-side management initiatives under the EnergyWiseSM 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 2016 are 205,200 MWh and demand reductions are 35 MW.

In addition to the renewables discussed above, NPPD owns or has agreements with these non-carbon resources:

- 554 MW of hydroelectric generation, including the Western Area Power Administration agreement.
- 765 MW of nuclear power at our Cooper Nuclear Station. The output was increased by approximately 5 MW with the replacement of the high pressure turbine to a more efficient model.
- Monolith Materials have broken ground on Phase 1 of its Olive Creek Facility by Sheldon Station. This facility will produce carbon black. NPPD plans to convert the Unit 2 boiler to burn hydrogen rich tail gas after Monolith completes Phase 2 of its facility. The Monolith Materials load and the Unit 2 conversion will be included in the reporting after successful completion of Phase 1.

<u>OPPD</u>

OPPD values a diverse fuel mix for generating electricity as a means of promoting reliability and affordability of its product. OPPD recognizes renewables offer an option to maintain or expand its fuel diversity, help address environmental issues and meet customers' desire for sustainable energy.

At the close of 2016 OPPD met 16.0% of retail customer electrical energy requirements with wind energy and energy from landfill gas. OPPD's renewable portfolio at 2016 year-end consisted of 412 MW of wind by nameplate and 6.3 MW of landfill gas generation.

The Grande Prairie wind facility located in northeast Holt County, Nebraska began commercial operation in December 2016 with OPPD taking receipt of the energy beginning July 2017. With 812 MW of wind in OPPD's portfolio, OPPD will be utilizing renewable energy at percentages in-line with the more aggressive mandated renewable standards found across the nation.

OPPD's demand side resource programs can achieve over 100 MW of peak load reduction ability as of the summer of 2017. Existing programs consist of a customer air conditioner management program, 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. Benefits of this increase in demand side programs include helping OPPD to maintain its SPP reserve requirements after retiring the Ft Calhoun Station in late 2016. To grow its demand side resource portfolio, OPPD will increase existing programs and promote additional program types. OPPD will build its demand side resource portfolio in manners which are cost effective and take 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 25 kW or less. The qualified generator must use as its energy source methane, wind, solar, biomass, hydropower or geothermal.

<u>MEAN</u>

As a member driven and member owned utility, MEAN procures renewable energy assets at the behest of its owners. MEAN annually surveys its owners to determine individual goals for renewable energy requirements. Should there be significant changes in demand for renewable energy, MEAN would ask the Board to approve new renewable purchases. Currently, MEAN has enough renewable generation to satisfy owner demand, with additional energy to satisfy any future demand in the nearer term. As such, MEAN has exceeded self-established goals for renewable energy, where individual municipal utilities have renewable goals that can range from 0% to 100% of energy requirements. In serving the needs of its customers, MEAN's current resource portfolio includes 10% renewables and 32% WAPA hydro allocations.

In 2017, MEAN anticipates a further increase in its renewables. While MEAN will decommission its 10.5 MW wind project near Kimball, NE, MEAN will simultaneously increase its wind resource pool by contracting with Sandhills Energy LLC, who plans to build a 30 MW wind farm at the existing Kimball site.

MEAN is currently looking into community solar garden type installations to satisfy community demands for localized green initiatives. MEAN recently 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. MEAN is currently in the process of talking with interested communities.

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 longterm power participants. Incentives are allocated in the order that applications are received and approved and will be continued until the annual limit of \$75,000 is exhausted. MEAN continues to look for new ways to incent energy efficiency for its member communities to help reduce power obligations from MEAN.

LES

The LES Administrative Board adopted a five-year sustainability target in late 2011, seeking to meet LES' projected demand growth with renewable generation and demand-side management programs. The five-year projected demand growth is derived from LES' annual long-range load forecasts.

Based on the 2016 forecast, the projected total demand growth through 2021 is 25 MW. LES has 82.8 MW of sustainable generation and demand reduction resources planned through the end of the current five-year target period. Future projects primarily consist of anticipated increases in the accredited capacity ratings of new wind facilities. Contributions from LES' Sustainable Energy Program (SEP) beyond 2017 are not included in the future projections. Decisions regarding the future of the SEP are yet to be made, pending the completion of LES' 2017 Integrated Resource Planning process.

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. In addition, customers under each rate will also 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 early 2017, LES reached this first milestone, with applications exceeding 1 MW.

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-MWDC/4-MWAC solar facility, which began commercial operation in June 2016. The facility represents the first utility-scale solar project in Nebraska, and is one of the largest projects in the region. A dedication of the facility was held in September 2016 with site tours for LES customers and employees.

In conjunction with the dedication, LES formally announced a new virtual net metering program. As part of this program, in exchange for a one-time, upfront enrollment fee, 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 program will run for nearly 20 years, coinciding with the life of the solar project contract.

The new solar facility further enhances LES' already diverse and balanced portfolio. On a nameplate basis, one-third of LES' resources are fueled by coal, one-third fueled from natural gas, and one-third are renewables (primarily wind and hydro). LES believes this diversity and balance in its resource portfolio are beneficial as they may provide a hedge against future environmental regulations and volatility in fuel prices. In 2017, energy production from renewable sources is expected to be equivalent to 49 percent of LES' retail sales.

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 our customer, Central Community College, to implement a 1.7 MW wind turbine on the Hastings CCC campus.

City of Grand Island Utilities

Grand Island does not have any formal renewable/sustainable goals. The Grand Island City Council has directed the Utilities Department to explore opportunities as they develop. Grand Island Utilities recently signed a Power Purchase Agreement with Sempra for the full output (50 MW) of Prairie Hills Wind Farm in Custer County, NE. This wind farm is expected to be online by the end of 2019.

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 more small scale residential solar generators have been installed.

Grand Island Utilities anticipates a Power Purchase Agreement for a 1 MW behind the meter solar installation in the near future. A Non-Disclosure Agreement has been signed. Contract discussions will continue.

City of Fremont Utilities

In the fall of 2016, Fremont signed a Purchase Power Agreement with NextEra for 40.6 MW of wind energy from the Cottonwood Wind Farm in Webster County, NE. Fremont is offering residents two options on a solar project. Electric customers can either purchase their own solar panels or purchase solar shares from Fremont's first Community Solar Farm of approximately 1 MW in size.

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 that are located behind the wholesale power supplier's meter.

Next, 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 installations 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 interested in developing community solar array installations in sizes from 100 kW to 4.5 MW AC. Therefore, more private involvement with local utilities is providing additional opportunities to increase the utilization of renewable energy.

Exhibit 6 lists all of the Nebraska renewable resources, with two columns identifying whether the resource is "Behind the Meter – Utility" or "Behind the Meter – Non Utility". Behind the Meter – Utility resources are those who have a signed Power Purchase contract or are owned by the utility. Exhibit 6A shows just Behind the Meter renewable resources, again classified between utility and non-utility.

Attached in Appendix A and listed by utility, is the Nebraska Net Metering Report as required by Nebraska Revised Statue 70-2005. The report highlights the number of net meter installations, the estimated amount of rated generating capacity and energy produced by the customer-generator.

Resource Life Considerations

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, they have assumed CNS continues to operate through 2036. In June 2016, the OPPD board made the decision to cease operation of the Ft Calhoun Station by the end of 2016. As directed by the OPPD Board the Ft Calhoun nuclear facility ceased operation in October 2016 and has begun decommissioning activities.

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.

The wind farms 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 goals these utilities will have to either exercise those options or develop other renewable resources.

Nebraska's existing generator capability resources are listed by unit in Exhibit 7. Nebraska has 7,425 MW of existing resources. 861 MW or 12% of that total are greater than 50 years old today. Another 1,685 MW or 23% are 41 to 50 years old today. Most of these units have no planned retirement date. By 2036 approximately 2546 MW will reach 60 years of age in this 20 year study.

Although Nebraska has sufficient generating resources until beyond 2036 as shown in Exhibits 1 & 2, utilities are facing increased environmental restrictions that could require the retirement of older fossil units. This could advance the statewide need date several years earlier.

For illustration purposes only, if a 60 year in-service life for fossil units is arbitrarily chosen as an example, the state would show a deficit in 2023, while a 70 year life of plant would show a state deficit in 2031. This example is considered overly conservative since fossil units are capable of operating for more than 60 - 70 years. Each utility will make their own determination on the life of their generating plants taking into account many economic factors. At this time, there are no plans to retire these older units unless stated in the report.

SPP Considerations

The SPP 2017 10-Year Assessment (ITP10, ten years into the future) was approved by the SPP Board of Directors on January, 31, 2017.

The 2017 ITP10 is a value based planning approach that will analyze the 10 year Transmission System, and identify 100kV and above grid solutions to needs stemming from; (a) resolving criteria violations identified through reliability analysis; (b) meeting policy mandates, goals and targets; (c) mitigating transmission system congestion; (d) improving access to markets; (e) needs arising from instability of the transmission system and (f) the staging of transmission expansion. The assessment is not intended to review each consecutive year in the planning horizon, but only the horizon year.

Scenarios or futures include:

- Regional 111d Solution (SPP regional plan)
- State 111d Solution (each state would have its own compliance plan)
- No 111d Implementation

The final recommended portfolio, approved by the SPP Board, included no new transmission projects in Nebraska.

In July 2016, the SPP Board approved the recommendation of the Transmission Planning Improvement Task Force, to replace the current three-year ITP study cycle with a planning cycle producing an annual report. The recommendation included removal of the ITP20 assessment from the planning process and combining of the ITPNT and ITP10 assessments into a single study with a 10-year outlook. The assessment will also incorporate the TPL-001 short circuit and portions of the TPL-001 steady-state assessments. The ITP study will assess years 2, 5 and 10 for reliability, public policy, compliance, operational and economic needs.

The planning cycle will consist of scope development and model building for approximately 12 months and a planning assessment period of approximately 12 months.

The scope development and model building for the succeeding cycle will begin concurrently with the planning assessment period of the proceeding study, resulting in a 12-month overlap that will produce a report annually at the completion of each cycle. This planning cycle will result in an annual assessment report with a set of recommended transmission projects.

The next ITP assessment, under the revised study process, is scheduled to begin in July of 2017, and is expected to be finalized in October of 2019.

SPP Supply Adequacy Working Group

The Supply Adequacy Working Group (SAWG) was formed in the second half of 2016 and is responsible for policies and processes to ensure reliable supply of capacity to meet demand and supply adequacy requirements in SPP. The SAWG was preceded in part by the Capacity Margin Task Force (CMTF) and several key policies and processes were established through their work and approved by the SPP Board in 2016. Among these are definitions of which entities are responsible for carrying reserves, how much reserves are required, a methodology to ensure accountability for those reserves and a deliverability study for acquiring additional reserves. In consideration of how much reserves are required SPP reduced its capacity margin requirement from 12% to 10.7%. The 10.7% capacity margin equates to a 12% reserve margin. SPP submitted a FERC filing on March 30, 2017 to implement all of the tariff revisions, effective June 1, 2017. On May 31, FERC issued a deficiency letter on the filing, which requires a response from SPP within 30 days. SPP responded to this deficiency letter on June 30. Once SPP's revisions to their tariff are approved by the FERC, SPP will utilize the term "planning reserve margin" to define the requirement placed on load responsible entities.

SPP Transmission Projects

Listed below are some of the larger SPP Transmission Projects affecting Nebraska with Notice to Construct. These projects promoted by Nebraska utilities specifically help in reliability issues, power flows, and mitigate stability problems, while also helping to address economic and public policy needs in Nebraska and in the SPP region.

- 1) NPPD Gentleman-Cherry County-Holt County 345 kV Transmission Project (r-Plan)
- 2) NPPD Stegall Scottsbluff 115 kV Transmission Project
- 3) NPPD Muddy Creek-Ord 115 kV Transmission Project

Other Considerations

Environmental

Nebraska utilities continue to monitor any Environmental Protection Agency (EPA) rule changes and updates specifically with:

- National Ambient Air Quality Standards (NAAQS)
 - Ozone NAAQS lowered to 70 parts per billion (ppb) in October 2015.
 Currently all areas in Nebraska are in compliance with new standard.
 - Sulfur Dioxide (SO2) NAAQS issued in 2010 with implementation starting in 2016. Some units can show compliance through modeling while others will need to install ground level monitors to show compliance.
- Cross State Air Pollution Rule (CSAPR)
 - o Implemented in 2015, NOX, SO2 limits for each utility
 - CSAPR II reallocated seasonal NOx allowances, but did not affect Nebraska utilities. A future CSAPR update may result in stricter allocations for Nebraska based on new ozone and particulate matter NAAQS.
- Regional Haze Rule (RHR)
 - Entering phase 2 of the RHR. Will require states to demonstrate they are meeting their reasonable progress goals. This may require some power plants to install additional controls deemed not necessary by phase 1.
- Coal Combustion Residuals Regulations
 - The rule became effective on October 19, 2015. Recent congressional rulemaking will allow the NDEQ to take over the CCR permitting process. NDEQ is currently evaluating if they want to take over the program.
- 316(b) Cooling Water Intake Regulations
 - Requires controls by 2021, or as dictated by a facilities NPDES permit, to limit the amount of fish impinged (pulled against screen) and entrained (pulled through the condenser) at the cooling water intake structure.
- Carbon Pollution Emission Guidelines for New Stationary Sources: Electricity Generating Units (Currently in the courts system)
 - Limits new coal fired units to 1,400 lbs CO2/MWh and new natural gas combined cycle units to 1,000 lbs CO2/MWh
- EPA's final Clean Power Plan
 - President Trump signed an executive order in March 2017 mandating the EPA to review the clean power plan and the new source performance standards for new fossil power plants. The legal actions regarding the CPP have been stayed allowing the EPA to recommend whether the CPP should be repealed or if it should repealed and replaced.

Each of these rules can affect each utility differently depending on the make-up of their generation resources. The full impact of these regulations on the viability of existing resources in the State of Nebraska will be site and unit specific. Nebraska utilities have taken these rules and regulations as currently known into account when determining future availability of their generation resources.

Legislative

The Nebraska legislature did not pass any bills in the most recent 2017 session that related to generating resources; however, it is planning to conduct several studies that are of interest to the industry. These are:

- LR 125 Interim study to examine public power in Nebraska
- LR 211 Interim study to examine giving consumers a choice among electricity supply options and greater information concerning their service and billing options
- LR 239 Interim study to examine issues related to solar energy development in Nebraska
- LR 245 Interim study to examine issues raised by LB 504, 2017, related to placing a moratorium on industrial development of wind energy projects



								EXH	IBIT 2												EXHIBIT 2 NEBRASKA STATEWIDE													
							NEBF	RASKA	STAT	EWID	E																							
					<u>Com</u>	mitteo	Load	& Gener	rating C	apabilit	y in Me	gawatts																						
						Summ	er Cond	litions (June 1	o Septe	ember 3	<u>0)</u>																						
Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036														
1 Annual System Demand	7,023	7,147	7,173	7,150	7,175	7,184	7,200	7,208	7,236	7,255	7,277	7,289	7,323	7,355	7,385	7,404	7,447	7,477	7,513	7,541	0.4%													
2 Firm Power Purchases - Total	1,176	1,248	1,287	1,273	1,271	1,274	1,277	1,281	1,283	1,288	1,291	1,294	1,298	1,302	1,306	1,309	1,313	1,316	1,320	1,325														
			_						_			_																						
3 Firm Power Sales - Total	<u> </u>	148	150	109	95	78	78	77	78	78	78	78	78	78	78	78	79	79	79	79														
4 Annual Net Peak	5 958	6 047	6.036	5 986	5 999	5 987	6 000	6 004	6.030	6 045	6.063	6 072	6 103	6 130	6 156	6 173	6 2 1 2	6 239	6 272	6 2 9 4														
Demand (1-2+3)	0,000	0,011	0,000	0,000	0,000	0,001	0,000	0,001	0,000	0,010	0,000	0,012	0,100	0,100	0,100	0,110	0,212	0,200	0,212	0,201														
	_	_				_	-	-			-				-	-	_			-														
5 Net Generating Cap-	7,425	7,502	7,510	7,510	7,510	7,283	7,323	7,264	7,289	7,288	7,288	7,288	7,284	7,284	7,273	7,267	7,261	7,261	7,261	7,246														
ability (owned)																																		
6 Firm Capacity Purchases	932	841	810	774	792	724	686	688	689	689	691	692	689	691	691	692	688	690	691	693														
-Total																																		
	000	000	005	040	000	700	700	740	740	74.0	740	740	74.0	740	74.0	740	70.4	70.4	70.4	704														
-Total	888	808	805	810	830	768	768	/18	/18	/16	/16	716	712	712	710	710	704	704	704	704														
8 Adjusted Net Capability	7,469	7,535	7,515	7,475	7,472	7,239	7,242	7,234	7,261	7,261	7,262	7,264	7,261	7,263	7,253	7,249	7,244	7,246	7,248	7,235														
(5+6-7)																																		
9 Net Reserve Capacity	715	726	724	718	720	718	720	720	724	725	728	729	732	736	739	741	745	749	753	755														
Obligation (4 x 0.12)					0			0		0	0	0																						
10 Total Firm Capacity	6,673	6,773	6,760	6,704	6,719	6,705	6,720	6,724	6,754	6,770	6,791	6,801	6,835	6,866	6,895	6,914	6,957	6,988	7,025	7,049														
Obligation (4+9)																																		
11 Surplus or Deficit (-) Capacity	796	762	755	771	753	534	522	510	507	491	471	463	426	397	358	335	287	258	223	186														
@ Minimum Obligation (8-10)																																		
12 Nobrocko Poconio Mersin (10.4)	25 40/	24 60/	21 E0/	24 00/	24 60/	20.00/	20 70/	20 50/	20 40/	20 10/	10.00/	10 60/	10.00/	10 = 0/	17 00/	17 40/	16 60/	16 10/	15 60/	15.00/														
13 Nebraska Capacity Margin ((8-4)	∠5.4% 20.2%	∠4.0% 19.7%	∠4.5% 19.7%	24.9% 19.9%	24.0% 19.7%	20.9% 17.3%	∠∪./% 17.1%	∠∪.5% 17.0%	∠0.4% 17.0%	∠0.1% 16.7%	19.8%	19.0%	15.0%	15.6%	15.1%	14.8%	14.2%	13.9%	13.5%	13.0%														
To restaska Capacity margin ((0-4	20.2 /0	13.770	13.770	13.370	13.770	17.070	17.170	17.070	17.070	10.7 /0	10.070	10.770	10.070	10.0 /0	10.170	1.0 /0	17.2 /0	10.070	10.070	10.070														
Committed Resources (MW)	8,534	8,635	8,653	8,639	8,648	8,436	8,441	8,438	8,466	8,471	8,476	8,481	8,481	8,487	8,481	8,480	8,479	8,483	8,489	8,482														
Minimum Obligation (MW)	7,738	7,873	7,897	7,869	7,894	7,902	7,920	7,928	7,959	7,980	8,004	8,018	8,056	8,091	8,123	8,145	8,192	8,225	8,266	8,296														



		-						EXHIBI	Т4											
						١	IEBRA	SKA ST	TATEW	IDE										
			<u>Co</u>	ommitte	ed, Pla	nned 8	Studie	ed Load	& Gene	rating C	apability	in Mega	watts							
					<u>s</u>	ummer	Conditio	ons (Jun	e 1 to Se	ptembe	<u>r 30)</u>									
Year	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
1 Annual System Demand	7,023	7,147	7,173	7,150	7,175	7,184	7,200	7,208	7,236	7,255	7,277	7,289	7,323	7,355	7,385	7,404	7,447	7,477	7,513	7,541
2 Firm Power Purchases - Total	1,176	1,248	1,287	1,273	1,271	1,274	1,277	1,281	1,283	1,288	1,291	1,294	1,298	1,302	1,306	1,309	1,313	1,316	1,320	1,325
3 Firm Power Sales - Total	111	148	150	109	95	78	78	77	78	78	78	78	78	78	78	78	79	79	79	79
4 Annual Net Peak Demand (1-2+3)	5,958	6,047	6,036	5,986	5,999	5,987	6,000	6,004	6,030	6,045	6,063	6,072	6,103	6,130	6,156	6,173	6,212	6,239	6,272	6,294
5 Net Generating Cap- ability (owned)	7,425	7,504	7,520	7,520	7,520	7,616	7,656	7,646	7,672	7,696	7,696	7,696	7,691	7,691	7,681	7,675	7,668	7,668	7,668	7,653
6 Firm Capacity Purchases -Total	932	841	810	774	792	724	686	688	689	689	691	692	689	691	691	692	688	690	691	693
7 Firm Capacity Sales -Total	888	808	805	810	830	768	768	718	718	716	716	716	712	712	710	710	704	704	704	704
8 Adjusted Net Capability (5+6-7)	7,469	7,537	7,525	7,484	7,482	7,572	7,574	7,616	7,643	7,668	7,670	7,671	7,669	7,670	7,661	7,657	7,652	7,654	7,656	7,642
9 Net Reserve Capacity Obligation (4 x 0.12)	715	726	724	718	720	718	720	720	724	725	728	729	732	736	739	741	745	749	753	755
10 Total Firm Capacity Obligation (4+9)	6,673	6,773	6,760	6,705	6,718	6,705	6,720	6,724	6,754	6,770	6,791	6,801	6,836	6,866	6,895	6,913	6,957	6,988	7,024	7,049
11 Surplus or Deficit (-) Capacity @ Minimum Obligation (8-10)	796	764	765	780	763	866	854	892	890	898	879	870	833	804	766	743	695	666	631	593
12 Nebraska Reserve Margin ((8-4)/4) 13 Nebraska Capacity Margin ((8-4)/8)	25.4% 20.2%	24.6% 19.8%	24.7% 19.8%	25.0% 20.0%	24.7% 19.8%	26.5% 20.9%	26.2% 20.8%	26.9% 21.2%	26.8% 21.1%	26.9% 21.2%	26.5% 20.9%	26.3% 20.8%	25.7% 20.4%	25.1% 20.1%	24.4% 19.6%	24.0% 19.4%	23.2% 18.8%	22.7% 18.5%	22.1% 18.1%	21.4% 17.6%
Committed, Planned and Studied Resources (MW) Minimum Obligation (MW)	8,804 7,738	8,908 7,873	8,943 7,897	8,939 7,869	8,949 7,894	9,085 7,902	9,089 7,920	9,144 7,928	9,172 7,959	9,203 7,980	9,205 8.004	9,209 8.018	9,202 8.056	9,203 8.091	9,189 8,123	9,184 8,145	9,173 8,192	9,171 8,225	9,171 8,266	9,156

											EX	HIBIT	Γ5																		
		_	-	-	(<u>Co</u>	mm	itte	<u>d, P</u>	lanne	d ar	nd St	udie	d R	eso	urce	<u>s, MV</u>	<u>v</u>													_
Utility	<u>Unit Name</u>	New Existing	Committed	Planned	Studied	Duty Cycle	Unit Type	Fuel Type	Behind Meter	Capacity, Thermal Units	<u>2017</u>	2018	2019	202	0 <u>202</u>	<u>1 202</u>	<u>2 2023</u>	<u>3 2024</u>	2025	<u>2026</u>	<u>2027</u>	2028	<u>2029</u>	<u>2030</u>	<u>2031</u>	2032	<u>2033</u>	2034	2035	<u>2036</u>	
Fremont	Future Base	1			s	в	-	NG	-	25.0	0	0	0	0	0	0	0	0	0	25	25	25	25	25	25	25	25	25	25	25	H
	Cottonwood Wind Farm w.others		С			R	R	W			0	58.1	58.1	58.	1 58.	1 58.	1 58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	58.1	
Fremont	Total									25.0	0	0	0	0	0	0	0	0	0	25	25	25	25	25	25	25	25	25	25	25	H
Grand Island	Prairie Hills Wind Farm		С			R	R	w			0	0.0	50.0	50.0	50.	0 50.	0 50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	
Grand Island	Total									0.0	0	0	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	
Hastings	CCC Hastings Wind	F				R	R	w	v		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
Hastings	Total	-	-			1	K	vv			2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	-	
150		_	_		-		_	-	_																						
LES	Future Peak				S] P				0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Н
		_								0.0																					
MEAN	Future Peak				s	P	_		_	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Future Intermediate	_			S		_	_	-	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Future Base Sandhills/Kimball Wind LLC				S		-	-	-	50.0	0	0	0	0	0	0	0	50	50	50	50	50	50	50	50	50	50	50	50	50	Н
MEAN	Total	L	_			1				50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	Н
NPPD	CNS HP Turbine Replacement	Е				в	N	UR	_	5.0	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	Loup Creston Ridge (#2)		С			R	R	W	Y		6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	
	Southern NE RPPD Wind	-	С			R	R	W	Y		0.0	9.2	9.2	9.2	9.2	2 9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	
	Scottsbluff Community Solar	E					R	S	Y		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
	Koarpov Community Solar	-	c				R	s c	Y		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
	City of Central City Solar Park (2)		c			R	R	s	Y		0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
	City of Gothenburg Solar		C			R	R	S	Y		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
	City of Holdrege Housing Proj Solar		С			R	R	S	Y		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	
	City of Lexington Solar		С			R	R	S	Y		3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	
	Custer PPD - Sunny Delight Solar	Е				R	R	S	Y		0.3	0.3	0.3	0.3	0.3	3 0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	
	Aurora Water Treatment Solar		C			R	R	S	Y		0.5	0.5	0.5	0.5	0.5	5 0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
	Fairmont Area Wind Farm		C		· ·		R	W	Y		6.9	6.9	6.9	6.9	6.9) 6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	
	Future Renewable	-			5		R	VV		0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Future Intermediate				s	Ŀ	-	-	-	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Future Base				S	В				0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NPPD	Total									5.0	24	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	
OPPD		-					-		-					-																	
	Grande Prairie Wind	E	1			R	R	W		0.0	400	400	400	400	400	J 400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	
	Future Peak				s	P	-	-		310.0	0	0	0	0	0	310	310	310	310	310	310	310	310	310	310	310	310	310	310	310	
	Future Intermediate				Ŭ	Τì	-	-	-	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Future Renewable				s	R	R	W			0	0	160	160) 16	0 160) 160	160	160	160	160	160	160	160	160	160	160	160	160	160	
	Future Renewable				s	R	R	W			0	0	0	0	0	264	4 264	264	264	264	264	264	264	264	264	264	264	264	264	264	
OPPD	Total			_						310.0	400	400	560	560) 56() 113	4 1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	1134	L
	Nebraska Grand Total	-	-		_	_	-	-	-	390	424	439	649	649	649	9 122	3 1223	3 1273	1273	1298	1298	1298	1298	1298	1298	1298	1298	1298	1298	1298	#
Unit Type	Fuel type	-	-	-	-	-	-	-	-	-		-	-	-				-	-	-	-	-		-	-			-			
H-Hydro	HS-Run of River	No E	Behind	Mete	r Res	sourc	es In	cludeo	4		<u>2017</u>	<u>2018</u>	<u>2019</u>	202	0 202	1 202	2 2023	<u>3 2024</u>	2025	2026	2027	2028	<u>2029</u>	<u>2030</u>	<u>2031</u>	2032	2033	2034	2035	2036	
D-Diesel	NG-Natural Gas	_					_	N	lew E	Existing	405	405	405	405	5 40	5 405	5 405	405	405	405	405	405	405	405	405	405	405	405	405	405	Н
N-Nuclear	0-0il	-			-	-	-	_	Cor	nmitted	0	58	108	108	3 10	3 108	3 108	108	108	108	108	108	108	108	108	108	108	108	108	108	H
CI-Combustion Turbine	Coal-Coal	-			-	-	Pla	nner	P	ranned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Н
C-Pulverized Coal	UR-Iranium	-	-	-	-	-	Fid	uture	Ren	ewable	0	30	100	100	0) 45/	1 454	454	454	454	454	454	454	454	454	454	454	454	454	454	Н
R-Renewable	Wind-Wind	-	-	-	-		+		Futu	re Peak	0	0	0	0		310) 310	310	310	310	310	310	310	310	310	310	310	310	310	310	
	L-Landfill Gas						Fu	ture	Interr	nediate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S-Solar								Futu	re Base	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	0	0	<u>0</u>	50	50	75	75	75	75	75	75	75	75	75	75	75	0
	On Line by Summer of 201	7								TOTAL	405	493	703	703	3 703	3 127	7 1277	1327	1327	1352	1352	1352	1352	1352	1352	1352	1352	1352	1352	1352	

										_	E	XHIE	BIT 6																	
	İ	-	1	1	1	1		-		Rer	newa	ble i	Reso	burce	<u>s</u>															
Utility	<u>Unit Name</u>	Existing	Committed	Planned	Studied	Unit Type	Behind Meter- Utility	Behind Meter-Non Utility	Fuel Type	Nameplate, Yearly Values are Nameplate	<u>2017</u>	<u>2018</u>	2019	2020	2021	2022	<u>2023</u>	2024	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	2032	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>
Fremont	Cottonwood Wind Farm		с			R			Wind	40.6	0	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6	40.6
Grand Is	Prairie Breeze 3 Wind	Е				R			Wind	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8	35.8
Grand Is	Prairie Hills Wind Farm		С			R			Wind	50.0	0	0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Hastings	CCC Hastings Wind	E				R	Y		Wind	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
LES	Salt Valley Wind	E		_		R	Ŷ		Wind	1.3	1.32	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LES	Arbuckle Mtn. Wind	F				R			Wind	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	100	100	0.0
LES	Buckeye Wind	E				R			Wind	100.2	100.2	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	0
LES	Prairie Breeze 2 Wind	Е				R			Wind	73.4	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	0
LES	LES Community Solar	Е				R	Y		S	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
MEAN	Kimball Wind (Retired)	Е				R			Wind	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEAN	Sandhills/Kimball Wind		_		s	R			Wind	30.0	0.0	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
NPPD	Cottonwood wind Farm	-	C	-		R			Wind	17.5	0.0	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5
NPPD	Ainsworth Wind	F				R			Wind	59.4	59.4 80	59	59	59	59	59	59	59	59	80	80	80	0	0	0	0	0	0	0	0
NPPD	Laredo Ridge Wind	E				R			Wind	80.0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	0	0	0	0	0	0
NPPD	Springview Wind	Е		1		R			Wind	3.0	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	0	0	0	0	0
NPPD	Broken Bow Wind	Е				R			Wind	80.0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	0	0	0	0	0
NPPD	Broken Bow II Wind	Е				R			Wind	73.1	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
NPPD	Crofton Bluffs Wind	Е				R			Wind	42.0	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	0	0	0	0	0
NPPD	Steele Flats Wind	E			_	R			Wind	75.0	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
NPPD	Future Renewable	-			s	R	~		Wind	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NPPD	Loup Creston Ridge (#1)	E				R	Y		Wind	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
NPPD	Southern NE RPRD Wind	-	С			R	v		Wind	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
NPPD	Scottsbluff Community Solar	Е	Ŭ			R	Y		S	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NPPD	Venango Community Solar	E				R	Y		S	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NPPD	Kearney Community Solar		С			R	Y		s	5.7	0	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
NPPD	City of Central City Solar Park	Е				R	Y		S	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
NPPD	City of Central City Solar Park (2)		С			R	Y		S	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
NPPD	City of Gothenburg Solar		С	_		R	Y		S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NPPD	City of Holdrege Housing Proj Solar	_	C			R	Y		S	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NPPD	City of Lexington Solar	E	C	_		R	Y		S	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
NPPD	Custer PPD - Sterner Solar	F		-		R	v		с С	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NPPD	Custer PPD - Blowers Solar	E				R	Y		s	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NPPD	Custer PPD - JDRM LLC Solar	E				R	Y		S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NPPD	Custer PPD - B&R LLC Solar	Е				R	Y		S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NPPD	Custer PPD - Pandorf Solar	Е				R	Y		S	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
NPPD	Aurora Water Treatment Solar		С	_		R	Y		S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NPPD	Fairmont Area Wind Farm	-	С	-	-	R	Y		Wind	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
		E	-	1	-	R			BD	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
OPPD	Elk City Landfill	E	-	+	-	R			L	6.3	6.3	6.3	6.3	6.3 n	6.3	6.3	6.3	6.3 A	6.3 n	6.3	6.3	6.3	6.3	6.3	6.3 A	6.3	6.3 A	6.3	6.3 n	6.3
OPPD	Flat Water Wind	E	1	+	1	R			Wind	60.0	60	60	60	60	60	60	60	60	60	60	60	60	60	60	0	0	0	0	0	0
OPPD	Petersburg Wind	E				R			Wind	40.5	40.5	41	41	41	41	41	41	41	41	41	41	41	41	41	41	0	0	0	0	0
OPPD	Prairie Breeze Wind	Е				R			Wind	200.6	201	201	201	201	201	201	201	201	201	201	201	201	201	201	201	201	201	201	201	201
OPPD	Grande Prairie Wind	Е				R			Wind	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400
OPPD	Future Renewable				S	R			Wind	160	0	0	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160	160
OPPD	Future Renewable			1	s	R			Wind	264	0	0	0	0	0	264	264	264	264	264	264	264	264	264	264	264	264	264	264	264
SSC	South Sioux City Solar	_	С			R	Y		S	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Nebraska Grand Total									2134.5	1557	1660	1869	1869	1869	2133	2133	2133	2133	2073	2073	2073	1993	1993	1853	1688	1688	1683	1683	1410
Unit Type	Fuel type																													
k-Renewable	wing-Wind	No E	senino	a Mete	er Res	source	es Incl	uded		Frieting	2017 1520	2018	1520	2020	2021	2022	1520	1520	2025	2026	2027	2028	2029	1391	1241	2032	2033	2034	2035	2036
	BD-Biodiesel	-		-						Committed	0	58	108	108	108	108	108	108	108	108	108	108	108	108	108	10/5	1075	108	108	108
	S-Solar									Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
										Studied	0	<u>30</u>	190	<u>190</u>	<u>190</u>	<u>454</u>	454	454	454	454	454	454	454	454	454	454	454	454	454	454
										TOTAL	1520	1608	1818	1818	1818	2082	2082	2082	2082	2023	2023	2023	1042	1042	1902	1627	1637	1633	1633	1350

											EX	HIBI	T 6A																	
	Behind Meter Resources																													
Utility	<u>Unit Name</u>	Existing	Committed	Planned	Studied	Unit Type	Behind Meter - Utility	Behind Meter - Non Utility	Fuel Type	Nameplate, Yearly Values are Nameplate	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Hastings	Hastings CCC Wind	F		-		•	v		Wind	17	17	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
LES	Salt Valley Wind	E			1	R	Y		Wind	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LES	LES Community Solar	E				R	Y		S	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
LES	LES Service	Е	1	İ.		R		Y	S	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LES	University Nebraska Lincoln	Е				R		Y	s	0.036	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
LES	Novartis	Е				R		Y	S	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LES	Sandhills Publishing	Е				R		Y	S	0.003	0.003	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LES	Lincoln Police Station	Е				R		Y	S	0.010	0.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LES	EZ Go, 1	Е				R		Y	Wind	0.0004	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LES	EZ Go, 2	Ε				R		Y	Wind	0.0004	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LES	1900 Saltillo Road	Е				R		Y	S	0.080	0.080	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LES	Data Security Inc.	Е				R		Y	S	0.060	0.060	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LES	Empyrean Brewing Co	Е				R		Y	S	0.080	0.080	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LES	Lazlo Inc.	Е			_	R		Y	S	0.060	0.060	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
LES	Theresa Stret Digester	Е			-	R		Y	OBG	0.900	0.900	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
LES	Capitol Beach Comm Solar	_	С		_	R		Y	S	0.096	0.0	0.096	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NPPD	Creston Ridge Wind	E			_	R	Y		Wind	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
NPPD	Loup Creston Ridge (#2)	Е			_	R	Y		Wind	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
NPPD	Southern NE RPPD Wind	_	С		_	R	Y		Wind	9.2	0	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2	9.2
NPPD	Scottsbluff Community Solar	E			-	R	Y		S	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NPPD	Venango Community Solar	E			-	R	Ŷ		S	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
NPPD	Kearney Community Solar	-	L L		-	R	Y		5	5.7	0	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
	City of Central City Solar Park	E	6		-	R	Y		5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	City of Cethanburg Solar Park (2)				-		T V		3 6	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
NPPD	City of Holdrogo Houring Proi Solar				-		T V		3 e	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NPPD	City of Lexington Solar		C		-		v	-	6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
NPPD	Custer PPD - Sterner Solar	F	Ť		-	R	Y		s	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NPPD	Custer PPD - Sunny Delight Solar	E	1	1	1	R	Y	-	s	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NPPD	Custer PPD - Blowers Solar	E		ŀ		R	· Y		S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NPPD	Custer PPD - JDRM LLC Solar	E	t –	t	1	R	Ŷ	-	S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NPPD	Custer PPD - B&R LLC Solar	Е	1	İ.		R	Y		S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
NPPD	Custer PPD - Pandorf Solar	Е	1	İ.		R	Y		S	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
NPPD	Aurora Water Treatment Solar		С			R	Y		s	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NPPD	Fairmont Area Wind Farm		С			R	Y		Wind	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9
SSC	South Sioux City Solar		С			R	Y		S	2.0	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	BTM Nebraska Grand Total									53.2	38	53	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52
Unit Type	Fuel type		-	-	-	-							-										-	-		-				
R-Renewable	Wind-Wind			-	-						2017	2018	<u>201</u> 9	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
	L-Landfill Gas									Existing	24	24	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
	BD-Biodiesel									Committed	14	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
	S-Solar									Planned	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	OBG - Other Biomass Gas, including diges	ster								Studied	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	0	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	0	<u>0</u>	<u>0</u>
										TOTAL	38	53	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52



					Commercial Operation	Summer Accredited	Summer Utility
Utility	<u>Unit Name</u>	Duty Cycle	Unit Type	Fuel Type	Date	Capacity	Capacity
Falls City	Falls City #7	P	IC	NG/DFO	1972	5.90	
	Falls City #8	Р	IC	NG/DFO	1981	<u>6.00</u>	
Falls City	Total						11.9
Fremont	Fremont #6	В	ST	SUB/NG	1958	15.50	
	Fremont #7	В	ST	SUB/NG	1963	21.00	
	Fremont #8	В	ST	SUB/NG	1976	82.00	
	СТ	Р	GT	NG/DFO	2003	<u>36.00</u>	
Fremont	Total						154.5
Grand Island	Burdick #3	Р	ST	NG	1972	54.00	
	Burdick GT1	Р	GT	NG/DFO	1968	13.00	
	Burdick GT2	Р	GT	NG/DFO	2003	34.00	
	Burdick GT3	Р	GT	NG/DFO	2003	34.00	
	Platte Generating Station	В	ST	SUB	1982	100.00	
	Prairie Breeze 3 Wind		wт	WND	2016	<u>0.00</u>	
Grand Island	Total						235.0
Hastings	CCC Hastings Wind	1.1	WТ	WND	2016	0.00	
	DHPC-#1	Р	GT	NG/DFO	1972	18.00	
	Hastings-NDS#4	Р	ST	NG/DFO	1957	16.00	
	Hastings-NDS#5	Р	ST	NG/DFO	1967	24.00	
	Whelan Energy Center #1	В	ST	SUB	1981	76.00	
	Whelan Energy Center #2	В	ST	SUB	2011	<u>220.00</u>	
Hastings	Total						354.0
LES	Arbuckle Mtn. Wind	1.1	ΨТ	WND	2016	5.00	
	Buckeye Wind	1	wт	WND	2016	5.01	
	J St	Р	GT	NG/DFO	1972	29.00	
	Landfill Gas	В	IC	LFG	2014	4.80	
	Laramie River #1	В	ST	SUB	1982	188.69	
	LES Community Solar	В	PV	SUN	2016	0.00	
	Prairie Breeze 2 Wind		wт	WND	2016	3.70	
	Rokeby 1	Р	GT	NG/DFO	1975	72.00	
	Rokeby 2	Р	GT	NG/DFO	1997	89.00	
	Rokeby 3	Р	GT	NG/DFO	2001	94.00	
	Salt Valley Wind	<u> </u>	WT	WND	1999	0.00	
	Terry Bundy	Р	CS	NG/DFO	2003	120.50	
	Terry Bundy	Р	GI	NG/DFO	2003	47.10	
. 50	Walter Scott #4	в	SI	SOB	2007	<u>102.60</u>	704.4
LES	Iotal						761.4
MEAN	Alliance #1	Р	IC	DFO	2002	1.848	
	Alliance #2	Р	IC	DFO	2002	1.849	
	Alliance #3	Р	IC	DFO	2002	1.849	
	Ansley #2	P	IC	NG/DFO	1972	0.85	
	Ansley #3	P	IC	NG/DFO	1968	0.50	
	Benkelman #1	Р	IC	NG/DFO	1968	0.79	
	Broken Bow #2	Р	IC	NG/DFO	1971	3.50	
	Broken Bow #4	P		NG/DFO	1949	0.80	
	Broken Bow #5	P		NG/DFO	1959	1.00	
	Broken Bow #6	P		NG/DFO	1961	2.12	
	Burwell#1	P		NG/DFO	1962	1.21	
		Р D			1907	0.00	
		г D			1072	0.00	
	Callaway #3	г D		DEO	2004	0.49	
	Channell #3	г D			2004 1082	1 10	
	Crete #7	г D			1072	6 085	
	Curtis #2	P		NG/DFO	1975	0.80	
	Curtis #3	P	IC.	NG/DFO	1969	1 00	
	Curtis #4	P		NG/DFO	1955	1.20	
		•					

					Commercial	Summer	Summer
					Operation	Accredited	Utility
Utility	<u>Unit Name</u>	Duty Cycle	<u>Unit Type</u>	Fuel Type	Date_	<u>Capacity</u>	Capacity
	Kimball #1	Р	IC	NG/DFO	1955	1.00	
	Kimball #2	Р	IC	NG/DFO	1956	0.90	
	Kimball #3	Р	IC	NG/DFO	1959	1.00	
	Kimball #4	Р	IC	NG/DFO	1960	0.90	
	Kimball #5	Р	IC	NG/DFO	1951	0.70	
	Kimball #6	Р	IC	NG/DFO	1975	3.50	
	Oxford #2	Р	IC	NG/DFO	1952	0.65	
	Oxford #3	Р	IC	NG/DFO	1956	0.90	
	Oxford #4	Р	IC	NG/DFO	1956	0.68	
	Oxford #5	Р	IC	DFO	1972	1.21	
	Pender #1	Р	IC	DFO	1967	1.263	
	Pender #2	Р	IC	NG/DFO	1973	1.925	
	Pender #3	Р	IC	DFO	1953	0.491	
	Pender #4	Р	IC	DFO	1961	0.821	
	Red Cloud #2	Р	IC	NG/DFO	1953	0.696	
	Red Cloud #3	P	iC	NG/DFO	1960	1.001	
	Red Cloud #4	P	IC	NG/DFO	1968	1.001	
	Red Cloud #5	P	IC	NG/DFO	1974	1.502	
	Stuart #1	P	IC	NG/DFO	1965	0.721	
	Stuart #5	P	IC.	NG/DEO	1996	0.822	
	West Point #2	P	IC	NG/DEO	1947	0.761	
	West Point #3	P	IC	NG/DEO	1959	1 171	
	West Point #4	P	IC	NG/DEO	1965	2 148	
MEAN	Total	•	10		1000	2.140	55.0
	lotal						00.0
NPPD	ADM	В	ST	SUB	2009	53.31	
	Ainsworth Wind		WT	WND	2005	9.34	
	Auburn #1	P	IC	NG/DEO	1982	2 10	
	Auburn #2	P	IC	NG/DEO	1949	0.00	
	Auburn #4	P	IC	NG/DEO	1993	3.60	
	Auburn #5	P	IC	NG/DEO	1973	3.30	
	Auburn #6	P	IC	NG/DEO	1967	2 50	
	Auburn #7	P	IC	NG/DEO	1987	4.80	
	Beatrice Power Station		20	NG	2005	220.00	
	Belleville 4	P	IC		1955	0.00	
	Belleville 5	P		NG/DEO	1961	1.40	
	Belleville 6	P		NG/DFO	1966	2.50	
	Belleville 7	P		NG/DFO	1900	2.30	
		I D		NG/DFO	2006	2.30	
	Broken Bow Wind	Г 1	WT		2000	2.00	
	Broken Bow II Wind		WT	WND	2013	2.47	
	Combridge				2014	3.47	
	Cambridge	г	IC OT	DFO	1972	3.00	
	Calladay		31	NG	1956	99.30	
	Columbus 1			WAT	1930	15.00	
	Columbus 2	В	HY	WAT	1936	15.00	
		в	HY	VV A I	1936	15.00	
	Cooper	. в	51	NUC	19/4	765.00	
	Crotton Blutts Wind	I T	W I		2013	4.17	
	David City 1	Р	IC	NG/DFO	1960	1.30	
	David City 2	P -	IC	DFO	1949	0.80	
	David City 3	P -	IC	NG/DFO	1955	0.90	
	David City 4	P -	IC	NG/DFO	1966	1.80	
	David City 5	Р	IC	DFO	1996	1.33	

					Commercial	Summer	Summer
					Operation	Accredited	Utility
Utility	<u>Unit Name</u>	Duty Cycle	<u>Unit Type</u>	Fuel Type	Date_	<u>Capacity</u>	<u>Capacity</u>
NPPD (contd)	David City 6	Р	IC	DFO	1996	1.33	
	David City 7	Р	IC	DFO	1996	1.34	
	Elkhorn Ridge Wind		WT	WND	2009	7.65	
	Emerson #2	Р	IC	NG/DFO	1968	1.40	
	Emerson #3	Р	IC	NG/DFO	1948	0.00	
	Emerson #4	Р	IC	NG/DFO	1958	0.20	
	Franklin 1	Р	IC	NG/DFO	1963	0.65	
	Franklin 2	Р	IC	NG/DFO	1974	1.35	
	Franklin 3	Р	IC	NG/DFO	1968	1.05	
	Franklin 4	Р	IC	NG/DFO	1955	0.70	
	Gentleman 1	В	ST	SUB	1979	665.00	
	Gentleman 2	В	ST	SUB	1982	700.00	
	Hallam (Black Start)	Р	GT	DFO	1973	42.90	
	Hebron	Р	GT	NG	1973	41.50	
	Jeffrey 1 (CNPPID)	В	HY	WAT	1940	0.00	
	Jeffrey 2 (CNPPID)	В	HY	WAT	1940	0.00	
	Johnson I 1 (CNPPID)	В	HY	WAT	1940	0.00	
	Johnson I 2 (CNPPID)	В	HY	WAT	1940	0.00	
	Johnson II (CNPPID)	В	HY	WAT	1940	0.00	
	Kearnev	В	HY	WAT	1921	0.00	
	Kingslev(Blk St) (CNPPID)	в	НҮ	WAT	1985	37.50	
	Laredo Ridge Wind	- ī	wт	WND	2011	14.80	
	Madison 1	P	IC	NG/DFO	1969	1.70	
	Madison 2	P	IC	NG/DFO	1959	0.95	
	Madison 3	P	IC.	NG/DEO	1953	0.85	
	Madison 4	P	IC.	DEO	1946	0.50	
	McCook(Black Start)	P	GT	DEO	1973	40.90	
	Monroe	B	HY	WAT	1936	3.00	
	North Platte 1(Black Start)	B	ну	WAT	1935	10.00	
	North Platte 2(Black Start)	B	ну	WAT	1935	10.00	
	Ord 1	P	IC.	NG/DEO	1973	5.00	
	Ord 2	P	IC	NG/DEO	1966	1.00	
	Ord 3	P	IC	NG/DEO	1963	2.00	
	Ord 4	P			1905	1.40	
	Ord 5	P		DEO	1997	1.40	
	Sheldon 1	B	ST	SUB	1961	100 00	
	Sheldon 2	B	ST ST	SUB	1965	115.00	
	Spencer 1	B	ну	WAT	1903	0.80	
	Spencer 2	B	ну	WAT	1952	0.00	
	Springview Wind		WT	WND	2012	0.35	
	Stoole Elats Wind		WT	WND	2012	18 30	
	Waboo #1	P			1960	1 70	
	Wahoo #3	P		NG/DFO	1900	3.60	
	Waboo #5	P		NG/DFO	1973	1.80	
	Wahoo #6	Г			1952	2.00	
	Wakofield 2	Г			1909	2.90	
		r D			1955	0.54	
		r D			1901	0.09	
		P			1900	1.08	
		P			1971	1.13	
	Wayne 1	P		DFO	1951	0.75	
	Wayne 3	P		DFO	1956	1.75	
	Wayne 4	P		DFO	1960	1.85	
		Р Р		DEO	1966	3.25	
	vvayne 6	Р Ч	IC IC	DFO	1968	4.90	
NPPD (contd)	vvayne /	Р Р	IC	DFO	1998	3.25	
	vvayne 8	Р	IC ar	DFO	1998	3.25	
	vvestern Sugar	В	SI	SUB	2014	4.55	
	Wilber 4	P	IC	DFO	1949	0.78	
	Wilber 5	P	IC	DFO	1958	0.59	
	Wilber 6	Р	IC	DFO	1997	1.57	_
NPPD	Total						3,117.0

					Commercial Operation	Summer Accredited	Summer Utility
Utility	<u>Unit Name</u>	Duty Cycle	<u>Unit Type</u>	Fuel Type	<u>Date</u>	<u>Capacity</u>	<u>Capacity</u>
Nebraska City	Nebraska City #5 Black start	Р	IC	NG/DFO	1964	1.60	
	Nebraska City #6	Р	IC	NG/DFO	1967	1.50	
	Nebraska City #7	Р	IC	NG/DFO	1969	1.50	
	Nebraska City #8	Р	IC	NG/DFO	1970	3.50	
	Nebraska City #9	Р	IC	NG/DFO	1974	5.60	
	Nebraska City #10	Р	IC	NG/DFO	1979	5.80	
	Nebraska City #11	Р	IC	NG/DFO	1998	4.00	
	Nebraska City #12	Р	IC	NG/DFO	1998	4.00	
Nebraska City	Total						27.5
NELIGH	Neligh	Р	IC	OBL	2012	1.80	
	Neligh	Р	IC	OBL	2012	1.78	
	Neligh	Р	IC	OBL	2012	1.77	
	Neligh	Р	IC	OBL	2012	0.38	
Neligh	Total						5.7
OPPD	Cass County #1	Р	GT	NG	2003	161.70	
••••	Cass County #2	P	GT	NG	2003	161.10	
	Elk City Station #1-4	В	IC	LFG	2002	3.17	
	Elk City Station #5-8	в	IC	LFG	2006	3.11	
	Flat Water Wind	1.1	WT	WND	2011	7.98	
	Fort Calhoun #1	В	ST	NUC	1973	0.00	
	Grande Prairie Wind	1.1	WT	WND	2016	0.00	
	Jones St. #1	Р	GT	DFO	1973	61.30	
	Jones St. #2	Р	GT	DFO	1973	61.30	
	Nebraska City #1	В	ST	SUB	1979	655.90	
	Nebraska City #2	В	ST	SUB	2009	664.20	
	North Omaha #1	В	ST	NG	1954	64.80	
	North Omaha #2	В	ST	NG	1957	90.80	
	North Omaha #3	В	ST	NG	1959	86.00	
	North Omaha #4	В	ST	SUB/NG	1963	99.10	
	North Omaha #5	В	ST	SUB/NG	1968	216.70	
	Petersburg Wind	1.1	WT	WND	2012	7.01	
	Prairie Breeze Wind	1.1	wт	WND	2014	36.31	
	Sarpy County #1	Р	GT	NG/DFO	1972	55.30	
	Sarpy County #2	Р	GT	NG/DFO	1972	56.40	
	Sarpy County #3	Р	GT	NG/DFO	1996	107.70	
	Sarpy County #4	Р	GT	NG/DFO	2000	49.00	
	Sarpy County #5	P	GT	NG/DFO	2000	48.10	
	Tecumseh #1	P	IC	DFO	1949	0.60	
	Tecumseh #2	P	IC	DFO	1968	1.40	
	Tecumseh #3	P	IC	DFO	1952	1.00	
	Tecumseh #4	P	IC	DFO	1960	1.20	
	Tecumseh #5	P	IC	DFO	1993	2.30	
	Valley Wind Turbine #1	i i	ŴT	WND	2001	0.00	
OPPD	Total						2,703.5

2,703.5

UtilityUnit NameDuty CycleUnit TypeFuel TypeDateAccreditedSumm CapacityCaNebraska Grand TotalFuel Type*DateTOTALDuty CycleFuel Type*B-BaseNUC-UraniumOBL-BiodieselI-IntermediateNG-Natural GasWAT-HydroP-PeakingDFO-Distillate Fuel OilLFG-Landfill GasUnit Type*SUB-Subbituminous CoalWND-WindIC-Internal Combustion, ReciprocatingST-Steam Turbine, does not include combined cycleST-Steam Turbine, does not include combined cycleGT-Combustion Turbine, including aeroderivativesCS-Combined Cycle, single shaft (combustion turbineand steam turbine share single generator)CA-Combined Cycle, Combustion Turbine, CT-Combined Cycle, Combustion Turbine part	
UtilityUnit NameDuty CycleUnit TypeFuel TypeDateCapacityCaNebraska Grand TotalFuel Type*TOTALDuty CycleFuel Type*B-BaseNUC-UraniumOBL-BiodieselI-IntermediateNG-Natural GasWAT-HydroP-PeakingDFO-Distillate Fuel OilLFG-Landfill GasUnit Type*SUB-Subbituminous CoalWND-WindIC-Internal Combustion, ReciprocatingST-Steam Turbine, does not include combined cycleGT-Combustion Turbine, including aeroderivativesCS-Combined Cycle, single shaft (combustion turbineand steam turbine share single generator)CA-Combined Cycle, Steam partCT-Combined Cycle, Steam partCT-Combined Cycle, Combustion Turbine part	er Utility
Nebraska Grand Total Fuel Type* Duty Cycle Fuel Type* B-Base NUC-Uranium OBL-Biodiese! I-Intermediate NG-Natural Gas WAT-Hydro P-Peaking DFO-Distillate Fuel Oil LFG-Landfill Gas Vnit Type* SUB-Subbituminous Coal WND-Wind IC-Internal Combustion Keciprocating ST-Steam Turbine, does not include combined cycle GT-Combustion Turbine, does not include combined cycle GT-Combined Cycle, staft (combustion turbine turbine) and steam turbine shart single generator) CA-Combined Cycle, Staft (combustion Turbine part	<u>pacity</u>
Duty CycleFuel Type*B-BaseNUC-UraniumOBL-BiodieselI-IntermediateNG-Natural GasWAT-HydroP-PeakingDFO-Distillate Fuel OilLFG-Landfill GasUnit Type*SUB-Subbituminous CoalWND-WindIC-Internal Combustion, ReciprocatingST-Steam Turbine, does not include combined cycleST-Steam Turbine, does not include combined cycleGT-Combustion Turbine, including aeroderivativesGS-Combined Cycle, stude shartIcombustion turbineAnd steam turbine share single generator)CA-Combined Cycle, Steam partCT-Combined Cycle, Steam S	7,425.4
B-Base NUC-Uranium OBL-Biodiesel I-Intermediate NG-Natural Gas WAT-Hydro P-Peaking DFO-Distillate Fuel Oil LFG-Landfill Gas <u>Unit Type*</u> SUB-Subbituminous Coal WND-Wind IC-Internal Combustion, Reciprocating ST-Steam Turbine, does not include combined cycle GT-Combustion Turbine, including aeroderivatives CS-Combined Cycle, single shaft (combustion turbine and steam turbine share single generator) CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part CT-Combined Cycle, Combustion Turbine part CT-Combined Cycle, Combustion Turbine part	
I-Intermediate NG-Natural Gas WAT-Hydro P-Peaking DFO-Distillate Fuel Oil LFG-Landfill Gas Unit Type* SUB-Subbituminous Coal WND-Wind IC-Internal Combustion, Reciprocating ST-Steam Turbine, does not include combined cycle GT-Combustion Turbine, including aeroderivatives CS-Combined Cycle, single shaft (combustion turbine) and steam turbine share single generator) CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part CT-Combined Cycle, Combustion Turbine part CT-Combined Cycle, Combustion Turbine part	
P-Peaking DFO-Distillate Fuel Oil LFG-Landfill Gas Unit Type* SUB-Subbituminous Coal WND-Wind IC-Internal Combustion, Reciprocating ST-Steam Turbine, does not include combined cycle GT-Combustion Turbine, including aeroderivatives CS-Combined Cycle, single shaft (combustion turbine and steam turbine share single generator) CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part	
Unit Type*SUB-Subbituminous CoalWND-WindIC-Internal Combustion, ReciprocatingST-Steam Turbine, does not include combined cycleGT-Combustion Turbine, including aeroderivativesCS-Combined Cycle, single shaft (combustion turbineand steam turbine share single generator)CA-Combined Cycle, Steam partCT-Combined Cycle, Combustion Turbine part	
IC-Internal Combustion, Reciprocating ST-Steam Turbine, does not include combined cycle GT-Combustion Turbine, including aeroderivatives CS-Combined Cycle, single shaft (combustion turbine and steam turbine share single generator) CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part	
ST-Steam Turbine, does not include combined cycle GT-Combustion Turbine, including aeroderivatives CS-Combined Cycle, single shaft (combustion turbine and steam turbine share single generator) CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part	
GT-Combustion Turbine, including aeroderivatives CS-Combined Cycle, single shaft (combustion turbine and steam turbine share single generator) CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part	
CS-Combined Cycle, single shaft (combustion turbine and steam turbine share single generator) CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part	
and steam turbine share single generator) CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part	
CA-Combined Cycle, Steam part CT-Combined Cycle, Combustion Turbine part	
CT-Combined Cycle, Combustion Turbine part	
HY-Hydro	
PV-Photovoltaic	
WT-Wind Turbine	
FC-Fuel Cell	
WH-Waste Heat, used for combined cycle ST without supplemental firing	



APPENDIX: A

Nebraska Net Metering Report

2016

			TOTAL ESTIMATED NET	TOTAL ESTIMATED AMOUNT OF ENERGY
		TOTAL ESTIMATED	KILOWATT-HOURS	PRODUCED BY THE
	TOTAL	RATED GENERATING	RECEIVED FROM	CUSTOMER-
	NUMBER		CUSTOMER-	GENERATORS (kilowatt-
Alliance				nours) 122.40
Ansley	zero	0.0	0.00	122.40
Arapahoe	zero			
Arnold	zero			
Auburn	zero			
Bartley	zero			
Battle Creek	zero			
Bayard	zero			
Beatrice	zero			
Beaver City	zero			
Benkelman	zero			
Blue Hill	zero			
Bradshaw	zero			
Brainard	zero			
Bridgeport	zero			
Broken Bow	zero			
Burt County PPD	17	196.8	61,598.00	140,685.00
Burwell	zero	10	45.470.00	10,001,00
Butler PPD	3	48	15,179.00	46,031.00
Callaway	zero			
Cambridge	zero			
	zero	40	25.55	EE 000 00
	2 1	42	20.00	365,000,00
	700	200	303,000.00	365,000.00
Chappen Cherry-Todd Electric	2610			
	zero			
Chester	zero			
Chimney Rock PPD	2	21	20.808.00	33.009.00
Cornhusker PPD	5	70.4	38.053.00	56,994,00
Cozad	zero		,	,
Crete	1	4.32	0.00	6,700.00
Cuming County PPD	2	22.74	9,894.00	16,928.00
Curtis	1	9.36	0.00	1,600.00
Custer PPD	4	77.42	41,460.00	77,449.00
Davenport	zero			
David City	zero			
Dawson PPD	9	82.16	22,127.00	65,553.00
Decatur	zero			
Deshler	zero			
DeWitt	zero			
Dorchester	zero			
Elk Creek	zero	0	4 5 40 00	10,000,00
	7000	Э	1,340.00	12,032.00
Endicott	2010			
Endicoll	1	25	6 572 00	68 800 00
Fairmont	70	20	0,012.00	00,000.00
Falls City	zero			
Franklin	zero			
Fremont	1	6.45	1.823.00	9.332.00
Friend	zero		, -	-,
Gering	2	2.4	0.00	11.066.00
Gilead	zero			
Giltner	zero			
Gothenburg	zero			
Grand Island	3	34.8	6,000.00	n/a
Grant	zero			
Greenwood	zero			
Hampton	zero			
Hastings	2	9	0.00	4,006.00

	TOTAL NUMBER OF OF	TOTAL ESTIMATED RATED GENERATING CAPACITY OF QUALIFIED FACILITES (kilowatts)	TOTAL ESTIMATED NET KILOWATT-HOURS RECEIVED FROM CUSTOMER- GENERATOR	TOTAL ESTIMATED AMOUNT OF ENERGY PRODUCED BY THE CUSTOMER- GENERATORS (kilowatt- bours)
Hebron	zero		OLINEIRATOR	nouisj
Heminaford	zero			
Hickman	zero			
High West Energy, Inc.	zero			
Highline Electric Assoc.	1	4.4	0.00	2,000.00
Hildreth	zero			
Holbrook	zero			
Holdrege	zero			
Howard Greeley Rural				
PPD Llubball	zero			
	Zero			
	2010			
Indianola	zero			
K.B.R. Rural PPD	3	7.2	1,135,00	14,694,00
Kimball	zero	1.2	1,100.00	11,001.00
LaCreek Electric				
Assoc. Inc.	zero			
	zero			
Leigh	zero			
Lexington	zero			
System	56	386	209,948.00	401,998.00
Lodgepole	zero			
Loup River PPD	5	94.00	44,882.00	86,175.00
Loup Valley Rural PPD	zero			
Loop valicy Rular T D	Zero			
Lyons	zero			
Madison	1	10	0.00	-
McCook PPD	1	5	0.00	10.089.00
Midwest Electric				.,
Membership Corp.	4	64	2,892.00	34,183.00
Minden	2	27.5	0.00	9,296.00
Mitchell	zero			
Morrill	zero			
Mullen	zero			
Nebraska City	1	3.5	1,012.00	17,155.00
Nebraska PPD	53	378.8	33,240.00	519,161.00
Neligh	zero			
Nelson	zero			
Inc.	zero			
Niobrara Valley				
Electric Membership	2	18	8,274.00	28,648.00
Norris PPD	44	396.21	0.00	511,250.00
North Central PPD	2	26.5	16,268.00	24,500.00
North Platte	2	8	367.00	9,480.00
Northeast NE PPD	7	87	39,606.00	unknown
Northwest Rural PPD	9	97.5	13,801.00	89,392.00
Omaha PPD	80	538	32,857.00	755,406.00
Outord	1	3.5	930.00	6,132.00
Oxiora Dophondlo Durol	zero			
Fannanule Rural				
Membership	л	35	10 577 00	16 500 00
Pender	70		10,077.00	10,500.00
Perennial PPD	5	63.7	15.898.00	44 931 00
Pierce	1	7.5	0.00	1,620.00

	TOTAL NUMBER	TOTAL ESTIMATED RATED GENERATING CAPACITY OF QUALIFIED	TOTAL ESTIMATED NET KILOWATT-HOURS RECEIVED FROM CUSTOMER-	TOTAL ESTIMATED AMOUNT OF ENERGY PRODUCED BY THE CUSTOMER- GENERATORS (kilowatt-
UTILITY	OF QF	FACILITES (kilowatts)	GENERATOR	hours)
Plainview	zero			
Polk	zero			
Polk County Rural				
PPD	1	10	5,053.00	5,445.00
Prague	zero			
Randolph	zero			
Red Cloud	1	5	196.00	14,280.00
Reynolds	zero			
Rolling Hills Electric				
Coop.Inc.	zero			
Roosevelt PPD	7	46.6	25,268.00	37,932.00
St. Paul	1	3	963.00	4,012.00
Sargent	zero			
Schuyler	zero			
Scribner	zero			
Seward	2	24	5,771.00	20,580.00
Seward County PPD	4	73.4	30,687.00	60,221.00
Shickley	zero			
Sidney	1	1.05	33.74	unknown
Snyder	zero			
South Central PPD	2	25	12,227.00	30,818.00
South Sioux City	0	0	0.00	-
Southern PPD	17	166	94,583.00	262,546.00
Southwest PPD	1	1.9	0.00	2,824.00
Spalding	zero			
Spencer	zero			
Stanton Co. PPD	2	16	7,450.00	21,000.00
Stratton	zero			
Stromsburg	zero			
Stuart	zero			
Superior	1	2.4	748.00	748.00
Sutton	zero			
Syracuse	zero			
Talmage	zero			
Tecumseh	zero			
Trenton	zero			
Twin Valley PPD	1	2.4	581.00	2,942.00
Valentine	zero			
Wahoo	2	6	1,200.00	7,000.00
Wakefield	zero			
Walthill	zero			
Wauneta	zero			
Wayne	zero			
West Point	2	29.4	848.00	5,845.00
Weston	zero			
Wheatbelt PPD	6	69.8	28,610.00	57,763.00
Wilber	zero			
Wilcox	zero			
Winside	zero			
Wisner	zero			
Wood River	zero			
Wymore	zero			
Wyrulec Company	zero			
Y-W Electric Assoc. Inc.	zero			
Total 2047	200	2 004 04	1 225 004 20	4 007 470 40
10tal 2017	390	3,004.91	1,235,991.30	4,087,473.40