Background

• **Nebraska Power Review Board (NPRB)**
  – State agency formed in 1963 to regulate Nebraska’s publicly owned electric utility industry
  – Five member Board approved by the Governor and confirmed by the Legislature

• **Nebraska Power Association (NPA)**
  – Voluntary organization of municipal, public power district, and cooperative electric utilities (166 members)
  – Formed in 1980 to address statewide electricity policies and issues. Administered by LES

• **State Statute 70-1025**
  – Requires an annual statewide report on electric demand and generation for a 20 year period
  – NPA is the designated entity to provide this report to the NPRB
Peak Demand Growth

- Average annual demand growth rate is 0.7% per year from 2019 through 2038

- This is higher than the 0.4% growth rate shown in last year’s report

- OPPD projected load growth
  - 1% growth in this year’s report vs 0.1% in last years

- Demand Reduction Factors
  - The majority of the other utilities are experiencing lower growth rates
  - Proliferation of more efficient end-use devices
  - Utility initiated demand side resource programs
  - Distributed generation
Existing Resources*

- **7,564 MW of Existing Resources:**
  - 1,132 MW Small Coal (<250 MW)
  - 3,012 MW Large Coal (>250 MW)
  - 770 MW Nuclear
  - 433 MW Renewables\(^1\)
  - 2,218 MW Peaking/Intermediate (gas & oil)

- **1,232 MW of Firm Power Purchases** \(^2\)
  - 846 MW WAPA Hydro Contracts
  - 386 MW Other Firm Power Contracts

- **52 MW of utility behind the meter nameplate generation**

<table>
<thead>
<tr>
<th>Accredited</th>
<th>Type</th>
<th>Nameplate</th>
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<tbody>
<tr>
<td>305</td>
<td>Wind</td>
<td>1623</td>
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<tr>
<td>111</td>
<td>In-state Hydro</td>
<td>111</td>
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<td>11</td>
<td>Landfill Gas</td>
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<td>6</td>
<td>Biodiesel</td>
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<tr>
<td>0</td>
<td>Solar</td>
<td>0</td>
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<tr>
<td>433</td>
<td>TOTAL</td>
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</table>

* In-Service by summer of 2019
\(^1\) Accredited capability
\(^2\) Capacity reserves are provided by the Firm Power provider
Existing Generating Fleet

Generation Unit Age Chart as of 2019

- Small Coal (<250 MW)
- Large Coal (>250 MW)
- Peak/Intermediate
- Nuclear
- Renewable (accredited)
### Committed, Planned and Studied Resources (MW)

<table>
<thead>
<tr>
<th></th>
<th>Renewables</th>
<th>Conventional</th>
<th>Unspecified</th>
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<tr>
<td>Committed</td>
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<tr>
<td>Planned</td>
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<tr>
<td>Studied</td>
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<td>25</td>
<td>850</td>
<td>875</td>
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<tr>
<td>Total</td>
<td>210</td>
<td>25</td>
<td>850</td>
<td>1085</td>
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</table>

*160 MW OPPD Sholes Wind Farm in 2019 and 50 MW Grand Island Prairie Hills Wind Farm in 2020

### SPP Generation Interconnection Queue for Nebraska

- ≈ 1,100 MW Battery Storage
- ≈ 2,000 MW Solar
- ≈ 10,000 MW Wind
OTHER NON-UTILITY WIND PROJECTS

- Power purchase by Facebook and Adobe from 318 MW Rattlesnake Creek wind project.

- WEC Energy Group Purchase and Sale Agreement for 80% of 202.5 MW Upstream Wind Energy Center in early 2019. Invenergy to retain 20% interest in project.

- J.M. Smucker Company 60 MW Power Purchase from 230 MW Plum Creek Wind Project in 2020

- Vail Resorts 310,000 annual MWh Power Purchase from Plum Creek Wind Project in 2020

- Hormel Foods 74 MW Power Purchase from Milligan 3 in 2020

1.) Information gathered from publicly available industry publications and newspapers. These projects do not represent retail choice.
EXHIBIT 1
Statewide Capability vs. Obligation
Committed Resources (Includes Purchases and Sales)

- Committed Resources (MW)
- Minimum Obligation (MW)
- Nebraska Reserve Margin (%)
- SPP Minimum Reserve Margin (12%)

Deficit Year
EXHIBIT 3
Statewide Capability vs. Obligation
Committed, Planned & Studied Resources (Includes Purchases and Sales)
Renewable and Greenhouse Gas Mitigating Resources

EXHIBIT 7.1
Statewide Renewable and Greenhouse Gas Mitigating Resources, MW

<table>
<thead>
<tr>
<th>Resource</th>
<th>2014</th>
<th>Accredited</th>
<th>2019</th>
<th>Accredited</th>
<th>2024</th>
<th>Accredited</th>
<th>2029</th>
<th>Accredited</th>
<th>2034</th>
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<td>Nuclear</td>
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<tr>
<td>% of All State Resources, Nameplate</td>
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</tbody>
</table>

Nameplate – maximum rated output of generator
Accredited – SPP rated generator output to reliably serve peak load
Conclusions

• Demand growth of 0.7% per year is higher than the 0.4% shown in last year’s report.

• Nebraska has sufficient existing and committed resources to meet its SPP Reserve Margin requirements through 2029.

• OPPD is experiencing load growth that may require future generating capacity modifications.

• Wind generation additions are expected to occur for the next several years in the absence of significant statewide demand growth.