NPPD's initial response to "Nebraska Public Power's Competitiveness in the Regional Energy Market" (Report)

The Report is right on a few key facts and mistaken on others but wrong in its conclusions and recommendations.

1) Nebraska's public power generators compete effectively in the SPP Integrated Market.

- The Report correctly notes that the SPP Integrated Market (SPP IM) is based on the marginal cost of electricity—basically the cost of the fuel to produce the electricity and any variable operations and maintenance (VOM) costs due exclusively to generating the next unit of electricity. The SPP market is not designed to pay for other costs of generation such as labor, debt, capital, insurance, taxes, other administrative and general costs and any other costs associated with owning a generating plant. SPP's market, like most other regional electricity markets, is designed to collect marginal costs only for a majority of the electricity sold and assumes all other costs of owning the generating facilities are collected through electric rates from customers.

- The SPP IM generally ensures the lowest total variable cost, which is made up almost exclusively of fuel costs, for the entire system on a minute-to-minute basis throughout the year. The SPP IM, as currently configured, does not address how much new generation capacity should be added, when new capacity should be added, and what fuel source or sources should be used when generation is added. The SPP IM also must consider system reliability requirements which include: voltage support, management of operating reserves, and the "headroom" (energy available if forecasts are incorrect) needed, especially when high levels of renewable generation are online.

- The Report generally acknowledges this pricing concept and then completely contradicts it by claiming Nebraska's Public Power generators are not recovering their full production costs, let alone debt and capital from the market. Of course we don't. Neither does nearly anyone else in the SPP footprint, including wind generators when they create negative prices due to production tax credits, which are taxpayer subsidies that are often greater than the marginal cost of the electricity. The Report implies Nebraska's utilities are uniquely challenged because marginal costs are not fully recovering total production costs, but no other utility in SPP (or any other RTO market, whether investor owned, public power or cooperative) expects to cover its entire production costs, let alone total generation costs from a market designed to pay for the value of fuel and VOM only.

- As the Report notes on p.3, the "market determines the winners and losers of generation based on the marginal cost of production which does not include any fixed costs." Nevertheless, utilities with low fuel costs, such as NPPD, can make additional revenues in the market to cover all or a part of their fixed costs, if their marginal costs are below the market clearing price which changes frequently throughout the day. Wind and hydro have no fuel cost. Nuclear fuel is the next lowest cost per megawatt-hour. Powder River Basin coal from Wyoming is typically the next lowest fuel cost, especially for Nebraska power plants since they are relatively close to the coal production compared to other states in the SPP where the transportation costs for the fuel are significantly higher. Natural gas is typically the next lowest marginal cost depending on the type of natural gas plant. Natural gas can be cheaper than coal when power plants have long distances for their coal shipping costs. Nebraska has a locational advantage in this regard. An

examination of NPPD's 2015 Annual Financial Report, which the Report cites several times, shows NPPD's fuel costs per megawatt-hour of production are well below the marginal cost prices in the market and the average price NPPD received for surplus sales to the SPP. The Report fails to acknowledge these key facts supporting NPPD's competitiveness in the SPP market.

- The Report states Nebraska has a higher coal and nuclear mix in comparison to SPP's generation mix. But based on the fuel cost discussion above and table 1.2 in the Report, the marginal costs for coal and nuclear are considerably less than that of "cheap" natural gas/combined cycle. Total generation costs can also be lower depending on particular generating unit efficiencies and the price of natural gas which continues to show much greater volatility than coal or nuclear fuel. Natural gas prices can also experience sharp increases due to delivery constraints during high demand periods.

- Finally, NPPD would not be selling so much power into the market beyond the quantities produced for its own customers, if its generating resources were not competitive on marginal costs. During times when NPPD loads are lower, the market typically benefits from additional low cost energy that NPPD generators can provide to others. NPPD often generates above its load when baseloads are at minimums. In fact, 30% of NPPD's 2015 sales were above customer and contracted power needs thus proving the market values NPPD's generation fleet.

2) Nebraskans have benefitted from the $1 billion dollar savings SPP has estimated since the market went live in March of 2014.

- There are three basic sources of benefits. First, by creating a consolidated balancing area among NPPD and the other balancing area utilities, there is less generation needed to address the unexpected loss of generation or other supply and demand events than was needed when there were 16, separate balancing areas. Spreading these risks over a larger footprint with one balancing area reduces the total cost of managing these issues.

- Second, the Integrated Market has reduced the overall cost of generation by serving the entire market with the lowest cost fuel based on marginal costs.

- Third, the growing physical footprint of SPP increases opportunities to provide NPPD's low fuel cost energy to more customers and bring revenues above NPPD's marginal costs back to NPPD's customers to cover a portion of fixed costs.

3) Nebraska's electric rates, including industrial, are competitive.

- The Report's principal investigator is well aware the U.S. Energy Information Administration data on industrial revenue per kilowatt hour for Nebraska is significantly skewed upward by Nebraska's extensive amount of seasonal, agricultural irrigation pumping with electricity. Nebraska leads the Nation in irrigated acres and a significant percent of the acres rely on electricity, rather than fossil fuel to pump the water. NPPD is required to have resources available during the summer irrigation season, which has much higher load levels than other periods of the year. This seasonal load represents a much different resource need than most other entities in SPP.

- The EIA places irrigation in the industrial customer category. However, those knowledgeable about the characteristics of building infrastructure and other costs to serve seasonal irrigation

versus the characteristics of a typical industrial customer operating 24 x 7, understand the high amount of irrigation served by electrically powered pumping has a substantial impact on the average revenue per kWh, making Nebraska appear far less competitive than it actually is on true industrial rates. Dr. Goss, the principal investigator for the Report, was provided substantial evidence on this topic in response to a report he authored almost one year ago on the competitiveness of public power where he failed to recognize the impact of EIA including irrigation customers in the industrial class. Repeating misleading conclusions a year latter is yet another example of the fundamental weaknesses of the Report.

- NPPD's average revenue per kilowatt hour for industrial rates for 2015 was 5.64 cents per kWh. This is well below the national average which was 6.91 cents per kWh. In addition to competitive industrial rates, Nebraska's 2015 residential rates were 19.3% below the national average; commercial rates were 22.7% below; and total (all classes) rates were 16.8% below the national average. Many other Nebraska utilities have very competitive industrial rates for "typical" industrial customers.

4) Wind energy is reducing the amount of generation at coal-fired power plants, but they still provide value to the market.

- Wind generation is clearly increasing. Wind energy has no fuel cost and is receiving a tax subsidy for each megawatt hour produced which can exceed the marginal cost of energy, especially during low load periods and off peak hours. Wind generation is displacing some coal generation, yet coal remains the largest source of energy in the SPP footprint. NPPD is developing strategies to address keeping its coal generation competitive in this changing fuel mix. Other utilities with coal plants which are not as large and efficient as a Gentlemen Station, or that have much higher fuel costs, may reach a point where it is no longer cost effective to operate them.

- The larger the percentage of wind in SPP, the more challenging it becomes to "chase the wind" with certain conventional generation facilities which were designed to run at relatively constant levels of generation. While wind energy will continue to expand, dispatchable capacity must be available when the wind isn't blowing or can't be controlled to blow more to increase generation when the customers need it. There is a cost to having back-up generation. There are also fundamental needs to maintain voltage and other operational characteristics of the electric grid that cannot be met with wind generation.

- The Report casually assumes large-scale storage will back up wind, but there is no credible timeframe or cost estimate to support such a conclusion. A true bus bar cost of wind would include the cost of energy storage or the cost to have other types of generation available on short notice, such as natural gas, to cover times when renewables do not perform as projects. In short, wind cannot be the only source of generation. It only works in the electric system if there is a nearly equivalent amount of available and reliable generation ready to operate when wind is not generating. Conventional generation does not have this limitation.

- The addition of increasing amounts of wind generation, due to tax incentives, has contributed to lower market prices for energy in the SPP IM, as well as increased volatility of those prices. Wind generation alone is not capable of following and serving load in the integrated market. All types of generation are needed, including baseload, carbon-free nuclear and reliable coal units.

- The addition of renewables also affects reliability, which requires baseload or other generating resources (e.g. combined-cycle and peaking units) when the renewables are not producing. As

more new renewable generation is proposed, there is a need to ensure reliability with dependable resources necessary to meeting demand.

- While coal use is trending down nationally and in the SPP footprint, no credible source is suggesting coal will be eliminated as a generating source in the next several decades. Even President Obama's Clean Power Plan projects 30% of the Nation's electricity coming from coal in 2030. Since the West Coast and Northeast use nearly no coal, the average amount of coal in other regions will be higher than 30%. As the Report's Figure 1.2 on page 5 notes, nuclear and coal both have lower marginal costs than natural gas. Without the majority of these units, reliability will be a serious challenge in the SPP. In the last four years, coal-fired generation has provided more than 50 percent of all the electricity produced in SPP.

5) States with retail choice have higher electric rates.

- There is no clear explanation within the report as to where the "estimated" $250million in annual savings would be derived through retail choice. The authors state Nebraskans could save between 15 and 20 percent on their bills but without concrete evidence to prove how.

- The Report focuses on SPP's low-cost generation yet fails to acknowledge that none of the end-use customers served within the SPP footprint have retail choice. Figure 3.2 on page 20 of the Report indicates 17 states have adopted some form of retail choice, meaning end-use customers can choose their own power supplier. It does not acknowledge that eight states retail choice states cited have suspended or rescinded their retail choice. Nor does it acknowledge that all 17 of the states have higher average residential prices per kilowatt-hour than Nebraska, with a vast majority of them having residential average prices ranging from more than 20% higher to nearly double the price in Nebraska. Is this what Nebraskans really want?

- The Report also completely ignores the transition issues which have challenged states with retail choice. One transition issue would involve the divestiture of Nebraska's generation resources which were built and are maintained with ratepayer dollars. Replacing public power-owned assets with private assets or new, privately owned resources comes with new and different cost risks to ratepayers. The Report asserts shareholders will shoulder the risk instead of ratepayers. In practice, however, if this risk is placed upon shareholders, the company may cease to exist, leaving ratepayers with higher cost options. The cost of generation will always be borne by the ratepayers or taxpayers (e.g. taxpayers via production tax credits).

- Another issue not covered in the Report is the oversight necessary for transitioning to a retail choice business model. The initiative would require significant restructuring of the SPP IM and new regulatory responsibilities for state government in Nebraska to properly regulate the new market and its participants. Nebraska, like the majority of states, has "regulated markets" where the local utility has the legal obligation to serve all of the customers in its retail distribution area with rates that are cost-based and generally fair, reasonable and nondiscriminatory. Unlike other states, Nebraska electric customers also elect their power district board member, city council member or cooperative board member whose responsibilities include setting rates, making policy decisions and holding the utility accountable to the ratepayers it serves.