

Presented by: Sheri Haugen-Hoffart, Commissioner
Public Service Commission

Before: Advanced Nuclear Energy Committee
The Honorable Dale Patten, Chair

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TESTIMONY

Good morning, Mr. Chairman. I am Commissioner Sheri Haugen-Hoffart. I appreciate the opportunity to speak to you today on behalf of the North Dakota Public Service Commission, and to provide our thoughts on future energy demand growth in our state, as well as the role nuclear energy may play in meeting our energy needs.

Our role as a regulatory stakeholder gives the Public Service Commission a unique view of the efforts our investor-owned public utilities are engaging in to meet the energy demands of North Dakota and the surrounding states. The consistent applications we receive related to new construction of electric generation, transmission, and distribution infrastructure certainly support an assumption that energy demand continues to grow in our state. This assumption is confirmed when you look at the data.

While our narrow scope of regulatory authority does give the Public Service Commission some insight into energy demand in our state, publicly available data provides a more complete picture of just how much the demand for energy has grown over the last 25 years. According to information from the Energy Information Administration (EIA), retail sales of energy in North Dakota grew by 243% between

the years of 1998 and 2023, with most of that growth attributed to commercial and industrial customers. The growth in retail sales between 2018 and 2023 alone exceeded all growth in retail sales between the years 1986 and 2008 by more than two million megawatt hours. Although retail sales are not an exact metric in measuring demand growth, it is reasonable to assume that demand growth follows a near similar trajectory to growth in retail sales.

Demand does not appear to be slowing either. Based on publicly available reports, North Dakota utility companies are forecasting significant continued growth in demand. Our cooperative utilities are expecting significant growth, with both Basin and Minnkota 2024-2050 forecasts predicting an annual growth of 3.3%, which represents an incredibly high growth rate for any electric utility. Meanwhile, our investor-owned utilities have forecasted a significant, but manageable, annual growth rate between 0.5% and 1%.

As I shift now to discussing potential solutions to address this growing demand, I want to emphasize that North Dakota remains on firm ground to address our growing energy demand. Our state's natural resources represent 800 years of energy production capability. Our coal industry produces the largest source of reliable energy generated in our state. Likewise, investments in technology to harness natural gas for energy generation, and continued investment in wind energy provide North Dakota with a well-diversified portfolio of energy generation to continue to meet our energy needs.

Nuclear energy has the potential to be a capable addition to our state's diverse energy generating industry. First, nuclear power plants are a reliable

generation source capable of operating at a high-capacity rate. Second, nuclear energy produces zero carbon emissions. Nuclear energy currently accounts for 50% of the nation's carbon-free electricity. Once constructed, nuclear power plants produce energy with very low production costs. Finally, nuclear power plants have the potential to bring jobs to North Dakota. Each nuclear power plant employs an average of 500 to 800 workers. It is important to note that technological breakthroughs, such as the current focus on small modular reactors, would likely negate at least some of the employment potential in our state.

While there is promise with nuclear power, there are also other factors that must be weighed when evaluating its potential in our state. While such factors are not directly related to the overall concept of nuclear energy production, they are matters that need to be addressed and considered. First, the storage of spent nuclear fuel is a major issue that must be solved. There is no long-term/permanent storage in the United States and no plans for one to exist. Until this part of the problem is resolved, any nuclear facility risks unknown and uncapped costs for storing the spent fuel onsite, whether the plant is operational or not.

Second, the cost to construct a new nuclear facility is very high relative to other resource types. The cost to construct a new nuclear facility is in the range of \$5,000-\$25,000 per kilowatt of capacity. Compared to a cost of \$1,000-\$3,000 per kilowatt of capacity to construct a new natural gas generating facility, there are concerns regarding the economic feasibility of nuclear generation in North Dakota.

Third, the construction timeline of a nuclear facility is significantly more than other types of generation. When factoring in the time it takes to navigate federal

permitting processes, construction typically takes five to ten years or more for a new plant. This is significantly longer than the one to two years it takes for even a large-scale natural gas plant. Finally, nuclear production cannot ramp up or down as well as coal or natural gas facilities. Coal has a medium amount of ramp/load following ability, while natural gas has maximum ability to ramp up or down.

In closing, our state must continue to look for and evaluate potential solutions to meet our future energy demands. Nuclear energy must be part of that conversation. There is certainly potential in nuclear power to be part of the diversified energy portfolio in our state, especially given the technological advances being made. However, as the technology evolves, now is the time to look at our own regulatory framework and how to best employ it should nuclear become a viable option in our state. Thank you for your time today, and I will stand for any questions.