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Chairman Monson, members of the committee, on behalf of the Energy & Environmental Research Center (EERC) I appreciate this opportunity to offer comments regarding Senate Bill 2014. The North Dakota Industrial Commission (NDIC) has been a key partner in helping the EERC in its mission to lead the world in developing solutions to energy and environmental challenges. As of 2022, North Dakota was 8th in total energy production, producing 4.114 quads of energy – over 4 trillion BTUs. The state has the 3rd highest per capita GDP in the nation, has the 8th lowest retail electric prices, and is a global leader in numerous agricultural products. The success we have in feeding and powering the world can be tied directly back to the programs and funds overseen by the NDIC.

The NDIC oversees the entire technology development pathway, from invention and innovation in partnership with the State Energy Research Center, to research, development, and demonstration under the lignite, oil and gas, and renewable research councils, to commercialization under the Clean Sustainable Energy Authority. Through these programs, the EERC has been able to pursue several initiatives and partnerships to achieve successes for the State of North Dakota and its energy industry.

The EERC has leveraged competitive funding through the research councils to engage in work across many different energy sectors. Examples with the Lignite Research Program (LRP) include the exploration of lignite-derived value-added carbon products, rare earth elements and critical mineral extraction from lignite coal, as well as front-end engineering and design of postcombustion carbon capture for our lignite generation facilities. The Oil and Gas Research Program (OGRP) has been critical to supporting the Bakken Production Optimization Program, which has led to numerous innovations to increase efficiency while improving operations as well as the iPIPE program for pipeline monitoring and leak detection, and various flaring mitigation technologies. This past year, the Renewable Energy Program supported an EERC proposal to develop a Regional Electric Vehicle Infrastructure Resilience Plan (REVIR), which will provide the state and regional stakeholders with an actionable roadmap to address vulnerabilities in the grid as EV infrastructure is considered and developed.

With respect to the OGRP, I'd also like to highlight the significance of the Enhanced Oil Recovery Grant Program. These funds comes at a critical time to leverage support for additional innovation that will establish a pathway to demonstrate enhanced oil recovery (EOR) in Bakken shale. As current production methods are able to extract a small percentage of the estimated oil in place, EOR will be necessary to achieve greater utilization of this energy resource and extend the life of the play. Research has shown the technical feasibility of applying EOR techniques to produce incremental oil from shale. Additional work is needed to demonstrate incremental recovery at-scale in the field and provide certainty for largescale investment to commercialize EOR production. Now is the time to build on North Dakota's decades of leadership in this space and develop long-term opportunity for the Bakken Formation.

In addition to the research councils, the NDIC also oversees legislatively-directed initiatives. Pursuant to section 17 of House Bill 1014, enacted during the last legislative session, the EERC worked with the Lignite Energy Council to conduct a study regarding future lignite electrical

generation facilities. That study identified trends and analyzed load forecasts for our state and region, included rigorous analysis of policies and regulations impacting the lignite industry, identified current and prospective technology options for a new lignite-fired power plant, and explored potential for new market development and value-added products associated with lignite mining and power production. The EERC also worked with the Bank of North Dakota (BND) and North Dakota Tax Commissioner to develop a 20-year enhanced oil recovery forecast as part of the BND's sustainability study.

Finally, I'd add that the NDIC, through both the LRP and the OGRP, has been an important partner in the Plains CO_2 Reduction (PCOR) Partnership. This program, now in its third decade, has seen participation from over 200 companies in the energy industry, including most of those based in or doing business in North Dakota, ten states, and four Canadian provinces to advance regional characterization, validation, and commercial demonstration of carbon capture utilization and storage (CCUS) sites. The collaboration and technical assistance offered by the PCOR Partnership has resulted in 11 enhanced oil recovery projects, 6 dedicated storage projects, and 35 additional CCUS projects that have been announced. We appreciate the NDIC's continued support as this program enters its fourth phase of commercializing CCUS activity and enabling emissions reduction for fossil fuel production and other industrial sources.

In short, the work supported by the NDIC this past biennium and through the history of the research councils has been instrumental to the success of our energy industries, and will continue to play a critical role going forward to advance new opportunities and ensure the wise utilization of our energy resources for future generations of North Dakotans.