



INDUSTRIAL COMMISSION OF NORTH DAKOTA

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Governor

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NEW

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N.D. Industrial Commission approves funding for three new Lignite Research & Development proposals

The North Dakota Industrial Commission (Commission) approved funding for three new small-scale lignite research and development (R&D) projects on Nov. 23. The three projects had been evaluated and recommended by the Lignite Research Council earlier in the month.

The R&D projects receiving funding from North Dakota's Lignite Research, Development & Marketing Program include a project to make non-flammable, low-cost building materials using products from coal. The companies behind the project include Semplastics in collaboration with the Energy and Environmental Research Center, along with BNI Energy and North American Coal Corp., which own lignite mines in North Dakota. The proposed contract is for four different projects that integrate coal and coal ash into plastics to create safe and strong building materials. The ultimate technological impact is to provide new, improved building materials out of lignite-based resources. The economic impact is to provide additional markets for lignite-based resources. The four projects are to be completed over a two-year time frame. The total budget is \$3.3 million with \$300,000 provided by the Commission from the Lignite Research Fund. The majority of the \$3.3 million will come from the U.S. Department of Energy with other funds coming from Semplastics as well as other research partners.

A second R&D project involves development of a small and affordable electrostatic oil cleaner and monitoring system that will allow power plant equipment to operate with a lower risk of failure due to lubricant contamination. The technology is intended to lower maintenance costs, extend lubricant life, reduce wasted oil and decrease downtime. Onsite field testing will be conducted at the Coyote Station south of Beulah and the Leland Olds Station near Stanton. The UND Institute for Energy Studies and the Electrostatic Lubrication Filtration (ELF) company will perform the proposed work. The total budget is \$351,948, with \$151,494 approved by the Commission to come from the Lignite Research Fund. That amount will be matched by \$200,454 in cash or in-kind contributions.

A third proposed project will use lignite-derived carbon materials for lithium-ion battery anodes. The UND Institute for Energy Studies is teaming up with Clean Republic LLC and North American Coal Corp. to develop and demonstrate an economic process for production of advanced anode materials for lithium-ion batteries using lignite-derived pitch and synthetic graphite as the main feedstock. This project has the potential of developing a manufacturing process in North Dakota that would use North Dakota-based feedstocks. The overall cost of the project is \$667,000 with \$75,000 being awarded by the Commission. The other funding sources include the U.S. Department of Energy along with North American Coal and Clean Republic.

In a joint statement, the three Commission members stated, "Improving the value of coal and coal-related products is important for diversifying the uses for our state's valuable natural resources as well as utilizing our energy infrastructure to its maximum potential." The Lignite Research, Development & Marketing Program is overseen by the Commission consisting of Gov. Doug Burgum as chairman, Attorney General Wayne Stenehjem and Agriculture Commissioner Doug Goehring.

Two other long-term projects were approved for funding.

The Plains CO₂ Reduction (PCOR) Partnership Project, which is in its 17th year, was approved for the release of \$500,000 in funding, which is part of a \$2 million grant that was previously approved by the Commission.

The Lignite Energy Council will proceed with a \$200,000 two-year grant for the continuation of the Council's annual education seminar. The grant will be matched by \$212,000 from the lignite industry. The annual teachers' seminar began in 1986 and has been held annually except in 2020 due to COVID-19. During the past year, the Lignite Energy Council successfully launched an online learning hub for educators and students known as Lignite Learn.

The Lignite Research Council recommended approval of all five proposals at its virtual meeting held Nov. 12.

The Commission is a partner with the regional lignite industry in the Lignite Research Program. State dollars are leveraged with industry investments for research and demonstration projects. Since 1987 when the partnership began, the state has invested more than \$90 million in lignite research funds. Total investment in more than 200-plus projects is in excess of \$750 million.

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