



INDUSTRIAL COMMISSION OF NORTH DAKOTA

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Governor

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Attorney General

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Agriculture Commissioner

NEWS

May 28, 2019

New study predicts 20-year growth period for electricity in western North Dakota

North Dakota will need significantly more power generation in the next 20 years as electricity consumption is projected to increase by up to 70 percent, driven largely by continued expansion of oil and gas activity in western North Dakota, according to a new Power Forecast 19 (PF19) completed by Barr Engineering.

The expanded activity will include more drilling rigs, pipelines, refineries and other related facilities needed to produce and move oil and gas to markets. Population growth needed to staff those activities and associated services was also considered in this analysis.

The new forecast was reviewed by North Dakota Industrial Commission (NDIC) members at their regular meeting today. The NDIC consists of Gov. Doug Burgum as chairman, Attorney General Wayne Stenehjem and Agriculture Commissioner Doug Goehring.

“The purpose of this study is to estimate future electrical consumption primarily within the oil-producing counties, and also to support utilities as they develop plans that include generation sources that best match the types of loads and capacity factors involved in the production and transportation of oil and natural gas,” Commission members said in a joint statement. The NDIC oversees the North Dakota Transmission Authority, which commissioned Barr Engineering to develop the PF19 forecast.

Barr Engineering provided a low scenario and a consensus scenario regarding the need for more generation in the state to power the growing oil and gas industry. The scenarios are based on models, which include variations in commodity prices, regulations, technology advancements and other potential factors.

The new forecast estimates electric consumption to increase by an overall growth rate of approximately 44 percent (low scenario) to 71 percent (consensus scenario) over the 20-year planning horizon. By 2038, total electric energy consumption is predicted to reach between 15,000 gigawatt-hours (GWh) and 18,000 GWh. Compared to the baseline, this represents an increase of between 4,600 GWh and 7,500 GWh.

North Dakota currently has a baseload generating capacity of 4,390 megawatts, not including the lignite-based Heskett Station, which is scheduled to close in 2021. The new forecast predicts that somewhere between 670 and 1,000 megawatts of new generating capacity will need to be built in the next 20 years to meet the oil and gas industry’s growing consumption rate. The generating facilities will need to work together to meet a consistently high load from the production and processing activity in the Bakken. A megawatt of electric capacity is enough to serve approximately 800 residential customers.

While historically, lignite-based power plants in North Dakota have produced baseload electricity, the study indicates that utilities will have some flexibility when it comes to meeting this growth in electricity consumption. Existing coal-fired plants could be shifted to appropriate markets, and natural gas-fired combined cycle plants could be built. Also, intermittent sources such as wind can be combined with natural gas generation to provide additional electricity.

This new study supersedes a similar study that was completed in 2012. The data used in the 2019 study came from public sources including the North Dakota Pipeline Authority (NDPA) and North Dakota State University (NDSU). The NDPA provided industry projections for oil and gas production, while NDSU provided population projections.

Barr Engineering developed a model based on commodity production, commercial and industrial usage of electricity and population growth to make predictions throughout the 20-year planning horizon.

The North Dakota Transmission Authority was created by the North Dakota Legislative Assembly in 2005 at the request of the NDIC. John Weeda is the director of the NDTA.

A complete copy of the study is available at <http://www.nd.gov/ndic/ic-press/Power%20Forecast%202019.pdf>

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