Developers say proposed wind farm project could help power Anchorage, reducing strain on gas

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Developers of a huge wind farm proposed for construction near Anchorage say it could help provide a much-needed boost to the area's

energy needs, and will be most productive when it's most needed, when temperatures drop and demand for energy soars.

They say it could have provided 20% of the electricity used in the city during the recent extreme cold snap, reducing the strain on natural gas if it had already been built and was producing power.

The estimated power from the project, called Little Mount Susitna Wind, could have given Southcentral Alaska more breathing room during a critical period when natural gas supplies threatened to run short during the severe cold that began in late January and ended early this month, they said.

"When wind is available, gas assets can catch up," said Matt Perkins, a co-founder of Alaska Renewables, the company behind the wind farm.

For more than a year the company has employed meteorological stations to study the wind at the site, about 35 miles northwest of Anchorage, across Cook Inlet. The 120-megawatt project being reviewed calls for the construction of 30 turbines on land that would be leased from the state, the developers say.

It could cost hundreds of millions of dollars to build. First wind power would be delivered as early as 2027, with full supply achieved in 2028 as the project is completed, if things go according to plan.

For the most part, the project should not be noticeable from Anchorage, the developers have said.

Chugach Electric Association said it has confirmed that annually, the project could provide about 20% of the utility's electric production, Chugach Electric spokeswoman Julie Hasquet said in an email.

The utility has also determined, based on data from Alaska Renewables, that during the cold snap the site would have provided "above-average production," Hasquet said. That wind power "could have helped reduce gas requirements" on the energy system from Homer to Fairbanks, she said.

That view is in line with statements by Alaska Renewables that the wind farm site receives more wind as temperatures drop in Anchorage, due in part to the area's geographic characteristics.

The observations about the project come at a critical time.

Natural gas from Cook Inlet, the source of power and heat for decades across the region, could begin to run short as early as next year, forcing utilities to import costly liquefied natural gas, officials in the energy industry have said.

The Regulatory Commission of Alaska has expressed alarm that the problem could lead to power interruptions if utilities can't close the gap. It has warned that alternatives, such as renewable power projects like the wind farm, may not come online as quickly as expected.

The cold stretch in Anchorage underscored those concerns. Temperatures plunged well below zero across Southcentral Alaska and led to record deliveries of natural gas by Enstar as people cranked up thermostats in their homes and offices.

At the time, two wells at a natural gas storage reservoir in Cook Inlet experienced production problems, reducing the gas available to meet that demand and bringing the reservoir "extremely close" to losing gas deliverability, the president of Enstar told Alaska lawmakers.

Chugach Electric said that Little Mount Susitna Wind, once fully

operational, could replace gas use by about 3.5 billion cubic feet annually. That's one-fourth of the gas used in 2022 by Chugach Electric, which also relies heavily on hydropower.

The utility selected Alaska Renewables about two years ago for a research phase, after issuing a request for competitive proposals for renewable projects. The utility's goals included diversifying Chugach's power supply to preserve gas, without increasing members' rates.

Alaska Renewables co-founder Andrew McDonnell, a former oceanographer at the University of Alaska Fairbanks, said he studied historical wind data available at the university, as well as data from other sources, to select the Little Mount Susitna site.

Alaska Renewables is handling the work to develop the wind farm. Chugach Electric is working with the company to study how the wind farm's power could be integrated into the Railbelt grid, Perkins said.

Alaska Renewables is also studying the development of other potentially large wind farms in Alaska, including one near Fairbanks, based on McDonnell's research.

'Ideally' located

The Little Mount Susitna Wind farm is "ideally situated" for producing wind power, McDonnell said.

"The colder it gets in Anchorage, the windier it gets on Little Mount Susitna, so that translates to enhanced power production during those times," he said.

The farm should produce "at or near its maximum power rating during these coldest periods of gas system and grid stress," the company said in

a statement.

Deep winter cold spells are "often associated with high pressure in the Interior spilling towards lower pressure in the Gulf of Alaska," Chugach Electric said in a statement. "When this occurs, the wind is funneled through the LMS area, even when the air may be calm around Anchorage."

The wind farm site lies about half a mile above sea level, well above the cold air and calm winds settling in the Susitna River Valley that's barely above sea level at that point, said Rick Thoman, Alaska climate specialist at the University of Alaska Fairbanks. The site is about 7 miles west of Mount Susitna, commonly called Sleeping Lady.

"Overall, it's a pretty exposed, windy area year-round, but especially in winter when Anchorage could really use the power," Thoman said. "Almost always it will be a productive power generator."

Lou Bowers, a meteorologist and consultant working on the project, said wind farms typically perform better in winter than summer, in part because colder air is denser, pushing the blades more, he said. Storms in winter are also generally more frequent and stronger than in the summer.

During the cold snap, the wind speed at the site averaged about 18 mph, he said. Wind power output then was about 50% higher than it would be year-round, he said.

The performance would have been "quite good," Bowers said.

2027 not 'set in stone'

Perkins said the project is on the verge of reaching important milestones, including that a primary investor should be announced soon.

"We ran a competitive process to identify the best investment partners and are evaluating several options," Perkins said.

McDonnell said 2027 for first wind power is not a "set-in-stone date." It could potentially take a year longer than expected, he said.

McDonnell said various steps will need to be taken, including construction to improve roads and a barge landing, and installing the substation, power lines and other electrical infrastructure to deliver electricity to Chugach Electric.

Power purchase agreements with utilities also need to be completed, he said.

Perkins and McDonnell say there's room for expansion at Little Mount Susitna, beyond what's currently being studied.

Many more turbines could be added, significantly boosting wind power from the site beyond what's currently being pursued, they say.