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### **Idea to convert Slope gas into electricity gains listeners**

*Power utility, Native corporation refloat the concept to legislators seeking to cut rural energy costs.*

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By Lisa Demer

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An idea studied years ago by an oil company for producing vast stores of North Slope natural gas without building a giant pipeline has emerged again, this time before state legislators trying to find relief for residents crushed by heating and electricity costs.

Why not convert the natural gas into electricity and transmit it around the state by wires, including to rural and Interior Alaska?

Officials with a rural power utility and a Alaska Native corporation that includes a former subsidiary of Arco Alaska have been pitching the proposal for the last month. The effort has roots in a recent Commonwealth North study called "Energy for a Sustainable Alaska: The Rural Conundrum."

On Tuesday, the utility and the Native corporation presented the idea to a small group of legislators in Anchorage as a cost-effective answer. The talk drew a sizable crowd that included power company representatives from Anchorage and the Mat-Su.

"We haven't considered electric heat as a viable energy source in this state and that's where we've missed the boat," Meera Kohler, president and chief executive of the Alaska Village Electric Cooperative, told lawmakers. "We've never really had an all-Alaska solution."

In rural Alaska, almost 80 percent of the energy used to heat homes comes from burning diesel fuel, which is far more expensive than natural gas, she said. The average cost for a gallon of diesel fuel bought by the nonprofit cooperative last year was \$4.27, triple what it was in 2002, she said. The retail price in rural villages is \$6 to \$10 a gallon, she said.

For the poorest rural residents, home energy costs absorbed almost half their household income in 2008, according to a study by the Institute of Social and Economic Research cited by Kohler. In Anchorage, the lowest income group spent around 9 percent on home energy, while in other large communities and road-system towns, the figure was about 18 percent.

And rural Alaska residents use less than half as much energy as those whose power comes from natural gas or hydro sources, she said.

A solution could come from natural gas, but not through a pipeline, legislators were told.

A scientist who once worked for the Arco Alaska subsidiary that studied the idea is Robert Jacobsen, an astrophysicist who now is vice president of science and technology for Marsh Creek, an Alaska

Native joint venture. Arco was one of Alaska's major oil producers until it was sold in 2000 to what is now Conoco Phillips.

Jacobsen said that decades ago, Arco studied whether electricity produced from a natural-gas-fueled power plant on the North Slope could be transmitted south and sold at competitive rates. The project made sense financially, he said. But politically, the state of Alaska was fixated on a natural gas pipeline, and Arco didn't want to get crossways with the government, he said.

"So we canned it," he said.

While the Parnell administration is still pushing construction of a pipeline to bring North Slope gas to commercial markets, Jacobsen said the window for that opportunity may have closed with cheap natural gas from shale deposits in the Lower 48 and by Asian markets likely to develop their own gas fields.

The system he is promoting would involve building a natural-gas-fueled North Slope power plant, a high voltage direct current (HVDC) power line, plus converter stations to transform the DC power to AC, or alternating current, so it can be used by consumers. A power plant designed for the Arctic, converter stations in Fairbanks and Anchorage, and an 860-mile high-voltage DC power line would cost just under \$4 billion, he said.

With power lines of at least 300 miles in length, direct current transmission is an economical and stable method, he said. And technological advances since the late-1990s make an electricity distribution system off a big HVDC line affordable, he said.

A quick analysis by his company, Marsh Creek, and ABB, a global company that works in power and automation technology, indicated a system could deliver electricity from the North Slope to the Railbelt for 9.3 cents a kilowatt hour, much less than what customers are now paying in Fairbanks.

At that price, electric heat becomes cost effective, Jacobsen said.

Similar costs for bringing the electricity to rural communities weren't included.

Kohler, the utility cooperative executive, said backers probably will request \$2 million to \$3 million from the Legislature for a detailed study.

The reborn idea has emerged too quickly to have generated much reaction. Chugach Electric Association is still analyzing the concept. A utility trade group doesn't yet have a position. A Conoco Phillips spokeswoman, Natalie Lowman, said the oil producer, with much of the North Slope gas reserves, couldn't speculate on whether such a project was viable.

"However, we continue to search for commercially viable ways to get Alaska North Slope natural gas to new markets," she said in an e-mail Tuesday.

Sen. Bill Wielechowski, D-Anchorage, heard a presentation to a Commonwealth North group a month ago and was so intrigued, he arranged for Tuesday's session. He and Joe Thomas, D-Fairbanks, said they'd like to see a study.

The state needs to find a way to get cheaper power to rural Alaska and the Interior, Wielechowski said.

"Those communities are suffering and they are not going to be there for much longer if we continue to go the way we are going."