NM Company To Develop Wind To Hydrogen Power Plant

SUSAN MONTOYA BRYAN Associated Press Writer - July 15, 2009

ALBUQUERQUE, N.M. (AP) — A New Mexico-based energy technology company announced plans Wednesday to develop in southern New Mexico what it calls the world's first utility-scale, zero-emissions hydrogen power plant.

Jetstream Wind Inc. officials said the $219 million plant would use electricity from wind, solar and other renewable energy sources to separate water into hydrogen and oxygen. The hydrogen would then be burned in a turbine — similar to those used by natural gas-fired power plants — to generate enough electricity to power about 6,000 homes and businesses.

The 10-megwatt plant also would be capable of capturing and storing oxygen in liquid and gaseous forms for use in the medical field or other secondary markets.

"Basically, it's a scaled-up model of eighth-grade science," Jetstream Wind CEO Henry Herman said. "In eighth grade we took DC batteries, ran cables into water and produced hydrogen gas. All we're doing is utilizing that on a much larger scale."

The U.S. Department of Energy's National Renewable Energy Laboratory in Colorado has been experimenting for the past two years with producing hydrogen from solar and wind sources, and it's possible that technology can be transferred to utility-scale projects, said George Sverdrup, the lab's program manager.

Sverdrup and other industry experts said the key is building a plant that's cost-effective, both for the developer and utilities purchasing the power.

While renewable energy projects have become increasingly cost-competitive with traditional power plants, some experts said the projected per-kilowatt cost of Jetstream Wind's plant is more than four times higher than conventional renewable sources.

"But you have to start somewhere with a lot of these technologies and over time these things decline in costs," said Mike Taylor, director of research and education at the Solar Electric Power Association in Washington, D.C.

Jetstream Wind believes it can provide consistent power to the grid using renewable sources without any of the emissions that come with generating hydrogen from fossil fuels. The potential of renewable-to-hydrogen power plants is being proven through tests like those at NREL, Herman said, and it wasn't until recently that the technologies needed to make it work were even available.

"We're the first company that had the foresight to jump on creating a combinatory system and putting the pieces together to make it viable for the public and for electrical generation," he said.

Citing proprietary concerns, Herman provided few technical details about the inner workings of Jetsteam Wind's proposed plant.

The challenge to harnessing the electricity-producing power of the hydrogen molecule is finding a way to store the molecules until they're needed to turn a power plant's turbine, said Mike Smith, president and chief operating officer of Air Liquide Advanced Technologies in Delaware.

"No one, at least at this point, has found a truly cost-effective way to store large amounts of gaseous hydrogen so it can be used for future demand," he said, adding that many scientists are trying to come up with such a solution.

Ground was broken on JetStream Wind's project earlier this month in Truth or Consequences, N.M., but the company expects it will take more than a year to build once the permitting process is complete. The plant is expected to generate about 150 construction jobs and 30 permanent jobs.

The project is being privately financed. Herman would not elaborate on who has contributed.

Aside from the Truth or Consequences plant, two more plants are planned for American Indian pueblos in New Mexico and one is planned for Hawaii. Eventually, Herman said he would like to see renewable hydrogen plants around the world.

Herman acknowledged the challenges to developing such plants, including opposition from competing sources like coal. However, he said his company is interested in partnering with natural gas-fired plants since burning hydrogen is similar to burning natural gas to generate electricity.

"If we have a choice to go to a better system I think very shortly people are going to support a new system that actually is cleaner, better and cheaper for everyone," he said.

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