

# **NREL, Xcel energy sign wind to hydrogen research agreement**

May 8 2006

---

The U.S. Department of Energy's, National Renewable Energy Laboratory and Xcel Energy recently signed a cooperative agreement for an innovative "wind to hydrogen" research, development and demonstration project. Researchers will analyze and compare hydrogen production from wind power and the electric grid. The hydrogen will be produced through electrolysis -- the process of splitting water into hydrogen and oxygen using electricity.

The agreement supports the President's Hydrogen Fuel Initiative, which seeks to develop the hydrogen, fuel cell and infrastructure technologies needed to make it practical and cost-effective for Americans to choose to use fuel cell vehicles by 2020.

The new wind-electrolysis system will be at NREL's National Wind Technology Center, where hydrogen will be produced, compressed and stored to be used as a vehicle fuel or to generate electricity. The project will compare electrolyzer technologies and researchers will examine issues related to system efficiency, integration, compression, storage, cost and the use of a mixture of hydrogen and natural gas.

"One unique feature of this system is the direct connection between the wind turbine and the electrolyzer, which will make the system more efficient," said Ben Kroposki, senior engineer at NREL's Center for Electric and Hydrogen Technologies and Systems.

"Xcel Energy is the nation's leading wind energy utility with 2,300

megawatts of capacity planned for our system by the end of next year," said Frank Novachek, director of Corporate Planning at Xcel Energy. "This project will help us explore how we can leverage clean, renewable, yet intermittent power sources like wind into a more valuable resource for our utility customers."

This partnership combines NREL's expertise in renewable energy and hydrogen with Xcel Energy's expertise in energy conversion, transmission, distribution and use. Minneapolis-based Xcel Energy plans to add 1,200 megawatts of wind energy capacity in Colorado, Minnesota and Texas by the end of 2007.

Xcel Energy plans to invest more than \$1.25 million in the project. NREL and the Department of Energy plan to invest approximately \$750,000.

Source: National Renewable Energy Laboratory

Citation: NREL, Xcel energy sign wind to hydrogen research agreement (2006, May 8) retrieved 20 March 2024 from <https://phys.org/news/2006-05-nrel-xcel-energy-hydrogen-agreement.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--