

## Project WTH (Wind To Hydrogen)

AFVTech signs contract with Basin Electric Power Cooperative (BEPC) of North Dakota. AFVTech is currently working on a vehicle conversion project with BEPC and the Energy & Environmental Research Center (EERC) at the University of North Dakota, to develop a hydrogen vehicle conversion system for a new and innovative Wind-to-Hydrogen Pilot Project. BEPC along with the EERC and several other partners is developing a hydrogen vehicle fueling station that will be powered by wind turbines. This project will produce hydrogen through the electrolysis of water, making it a non-polluting sustainable source of hydrogen. The Wind to Hydrogen Program is a 2-year study on the benefits of using renewable Hydrogen. During this study, AFVTech will be collecting data to understand the durability, overall performance and emissions of a Hydrogen fueled vehicle. This study plays an important role in Hydrogen vehicles being subjected to sub-zero conditions. The study will also determine what modifications will be needed (if any) to maximize efficiency for a production vehicle. The following is a list of the major project partners and participants:

Basin Electric Power Cooperative (BEPC)

U.S. Senator Byron Dorgan ND

US Dept of Energy

North Dakota State University

University of North Dakota, Energy and Environmental Research Center (UNDEERC)

NDSU Reasearch Extension Center

Central Power Cooperative

Verendrye Electric Cooperative

Ryan Chevrolet

AFVTech Inc.

North Dakota Dept. of Transportation

North Dakota Detp. of Commerce

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The H2ICE conversion system designed for this project, will allow hydrogen to be used in an existing internal combustion engine (ICE) and will also allow the vehicle to operate on either E85 (ethanol/gasoline blend) or gasoline when hydrogen

is not available. "Efficient utilization of the existing hydrogen infrastructure that is currently available is what lead us to develop and patent our H2ICE Bi-Fuel conversion system," says Kevin Fern, President of AFVTech, Inc. located in Avondale Arizona. Mr. Fern further stated "Partnering with BEPC and the EERC in North Dakota has given us another opportunity to further prove our concept and move it into the market outside of our local community."

{tab=The numbers}

## The Numbers

Stats on the H2ICE prototype Standard FTP test:

Normally aspirated, NON-SUPERCHARGED!

Emissions goal tier 2 bin 3

Actual emissions data

H/C .009 GPM

CO .09 GPM

NOX .031 GPM

CO2 3.230 GPM CO2 Level is .004% of a Gasoline vehicle

23 mpgge combined city and highway, a/c off

18 mpgge combined city and highway a/c on

31 mpgge highway only a/c off

29 mpgge highway only a/c on

0-50 mph 12.5 seconds

0-60 mph 16.7 seconds

Top speed 90+ mph

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Basin Electric Power Co-operative

University of North Dakota EERC

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