

US EPA ARCHIVE DOCUMENT

Bio-Methane for Transportation GROWING AMERICA'S GREEN ECONOMY WITH RESEARCH AND INNOVATION

2007 EPA P3 Award Winner

Got manure? Is it "udderly" fantastic?



These could become common expressions asked when traveling by car or bus. A team of students at Western Washington University's (WWU) Vehicle Research Institute certainly hopes so. WWU won a 2007 P3 Award for converting a car to run on biomethane supplied by a pilot waste digester system built at a local farm. At that time the students had calculated that it would take the poop from 17 cows to fill the tank with biomethane. The P3 Award is funding the continued research to convert a bus to run on biomethane as well as refinement of the fuel conversion process.

The pilot plant collects manure at the Vander Haak farm which is broken down in an anaerobic digester. As the bugs breakdown the waste, methane and other gases are generated. The gases are then run through a scrubber to remove contaminants. The clean biomethane is collected and compressed and is then ready to burn in a combustion engine, where it produces about 95 percent less carbon than a traditionally fueled engine, according WWU. WWU successfully teamed with Puget

Sound Clean Air Agency and submitted an application to DOE for stimulus funding for a number of clean energy projects which included WWU's biomethane process and bus conversions. The 15 million dollar grant includes \$500,000. for WWU's research. The additional funding will assist with the upgrade of WWU's biomethane refinery with electronic controls, a larger tank array, a refueling station, and the conversion of three buses.

As a result of P3 and DOE stimulus funding, next spring Whatcom County residents could be riding a bus powered by cow manure. Part of the project will include the conversion of several buses from Bellair Charters, a local Bellingham business.

"The buses will be converted from diesel fuel to biomethane with engines from Northwest Cummins and will produce 23 times less carbon dioxide than they did previously and will essentially become carbon negative once they have the new engines installed," said VRI Director Eric Leonhardt in a WWU press release. "Cow manure, a renewable resource, would ordinarily just add its greenhouse gases to the atmosphere." WWU estimates that Whatcom County alone could produce enough biomethane to run every car, truck, bus and piece of farm equipment in the county.

WWU's current timeline is to have the first of the Bellair bus conversions in place and ready for service for Winter Olympics in Vancouver.



Total EPA Investment
\$85,000

Return on EPA Investment
Technology demonstrated at pilot scale. P3 Award helped leverage additional awards. Start up company being considered.

OTHER AWARDS:
DOE Clean Cities Recovery Act Award
Athena group: The Brilliant Award
Washington State University Extension
WSU Agricultural Resource Center
Paul Allen Family Foundation
Whatcom County Public Utility District #1
BP Cherry Point

OTHER LINKS:
EPA Project reports:
<http://www.epa.gov/ncer/biomethane>

EPA P3 site:
<http://www.epa.gov/P3>

CONTACT: Cynthia Nolt-Helms, EPA P3
Program Manager, (202) 343-9693
nolt-helms.cynthia@epa.gov

