FUELS & FLEETS

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Gas-Fueled Biodiesel

Biodiesel Industries Plant in Texas Powered By Natural Gas Pumped from a City Landfill

A new Biodiesel Industries plant in Denton, Texas is being billed as the world's first fully renewable biodiesel facility, as it will use farm- and restaurant waste-derived feedstocks, with process power coming from landfill natural gas.

The City of Denton helped fund the project and has committed to taking 300,000 gallons of pure diesel per year, to be used to blend B20 for a fleet of some 386 refuse and other trucks, and buses. Plant capacity is 3 million gallons of B100 per year.

Biodiesel Industries' plant in Denton, Texas

"This project is the first of its kind," Biodiesel Industries president Russ Teall says in a release.

"All of the energy needs of the facility, including all process heat and power, will be provided by renewable landfill gas from the City of Denton."

Teall's Denton plant comes on line as biodiesel is becoming a scarce commodity: "Manufacturers are

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Traction

DoE, OEMs Ink Many Many Millions in H2, Fuel Cell Vehicle Deals At the National Hydrogen Association's Annual Gala in Washington

An $88 million development pact between General Motors and the Department of Energy was just one of the major OEM contracts signed at the National Hydrogen Association's annual meeting in Washington.

NHA claimed the biggest-ever assemblage of hydrogen vehicles in one place, with more than a dozen ride-and-drive cars, and buses, fueling at a local Shell — the nation's first public pump at a retail station.

Natural gas vehicle experts made the point that they should be helping drive the H2 bandwagon, as most hydrogen today is made from natural gas; likewise most hydrogen for the near tomorrow.

NGV firms claim hardware and expertise to safely handle gaseous fuel — and bring it to the road.

More on Pages 6-7

DoE's Sam Bodman commits the agency to hydrogen.

Inside this Issue...

Update on Sweden

It's not just biogas. Sweden boasts big incentives for natural gas vehicle operators, and is increasing its supply base via LNG imports to three cities and a possible pipeline from Germany.

All this as Volvo is reducing the price premiums on its NGVs.

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Gaseous Fuels

Corn Cob Enabler

Agricultural Waste Products Could Be Basis For ANG: Low-Pressure Natural Gas Storage

Researchers at the University of Missouri (MU) are looking for partners for low pressure storage technologies for natural gas wherein one of the storage media is derived from corn cob agricultural waste.

They hope that ANG – adsorbed natural gas – will challenge CNG in the marketplace. It's seen as a market enabler, eliminating the clumsy voluminous tanks that have reduced trunk space and otherwise made NGVs unattractive. Energy required for compression would be dramatically reduced too.

Vehicle Tests Later This Year

The target is for 150 grams of natural gas to be stored per liter of corn cob-derived medium at just 500 psi, say MU's Peter Pfeifer and colleagues. So-called Van der Waals attraction in the nanoporous materials "forces natural gas into liquid-like dense fluid." Only 20 grams of CNG can be stored at 500 psi, Pfeifer says.

Calixarenes, an even cheaper medium than cob waste, could store up to 100 grams of methane per liter at 500 psi.

"The calixarene," Pfeifer says, "may go into tanks for methane recovery from landfills, where a small tank volume is less critical, and the high premium will be on loading the tank at low pressure (e.g. 50 psi instead of 500 psi) and on low manufacturing costs."

The ANG project is known as ALL-CRAFT, for Alliance for Collaborative Research in Alternative Fuel Technology. It's an outgrowth of work pioneered at Atlanta Gas Light and by the University of Alicante, in Spain. Doug Horne of AGL, who now heads the Clean Vehicle Education Foundation (CVEF), consults, as does Francisco Rodríguez-Reinoso of the University of Alicante, an editor of the journal *Carbon* and a long-standing collaborator of MU's Pfeifer. Olive pits have been used to make the ANG adsorbent too.

Missouri Corn Cobs Could Carry the Country

ALL-CRAFT partners further include the Midwest Research Institute and the Kansas City Clean Cities chapter, through which a dedicated-CNG Honda Civic GX operated by Kansas City is to be fitted with an ANG fuel system for tests to commence late this year.

There is enough corn waste in Missouri alone, the MU researchers say, to provide raw material for fuel storage for all of the cars in the United States.

"Yes, you read this right," Pfeifer told *F&F* last week. "Although Missouri is behind Nebraska, Iowa, and Illinois in terms of corn production, the Missouri corn by itself will be enough.

"I was amazed myself when I did the calculation."

The MU team is also looking to apply adsorbed fuel technology to hydrogen.

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Closing the Gaps

The Interstate Clean Transportation Corridor is working to close what it calls "critical infrastructure gaps" for natural gas fueling. ICTC gave word last week of new stations in Barstow and Temecula, Calif., for both liquefied and compressed natural gas vehicle fuel.

Ground was broken on the Barstow station bridging Los Angeles and Las Vegas last week (it's to open in July) and Downs Energy has issued a purchase order for construction of a station at its cardlock in Temecula — marking "the first time that natural gas fueling has been added to this type of automated cardlock facility," says ICTC administrator Gladstein, Neandross & Associates.

Watch for news of "a critical gap closure project in Santa Clarita" too. Gladstein-Neandross also advises that nearly $3 million is being made available in California to offset the cost of natural gas-fueled truck engines.

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Air Buses to Accommodate Airbus

North American Bus Industries is close to a final contract, to be worth $4.2 million, to supply six Model 60-BRT low floor buses for the Los Angeles International Airport.

"The new higher-capacity airfield buses are needed to accommodate new aircraft that will begin service at LAX next fall," airport authorities say in reference to the new Airbus A380, the biggest airliner ever, that's entering service late in the year.

The buses will be able to accommodate as many as 140 passengers and their carry-on baggage, up from 60 to 80 passengers in today's airfield vehicles.

The new NABIs will have CNG fuel systems installed by Alabama's Fab Industries.

An option could double the number of 60-foot buses to 12 and the value of the business to NABI to $8.4 million.

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