NGV Workshop Highlights the Business Case for Natural Gas Vehicles

On August 14, 2008, Virginia Clean Cities along with the Clean Vehicle Education Foundation hosted the “Compelling Case for NGVs” Workshop at the College of William & Mary’s Sadler Center in Williamsburg, Virginia.

Workshop content included:
- NGVs 101 - A Market and Technology Overview
- Available Natural Gas Vehicles & Engines
- Fuel Station Development Considerations and Ownership & Operations Options
- Federal, State and Local Incentives and Grants
- Fleet Users Panel
- CNG Component Costs, Calculating Simple Payback & Life-Cycle Analysis

Presentations are now posted to the website on the NGV Workshop page. Other helpful resources include:
- American City & County magazine supplement addressing NGV applications (includes vendors list)
- Available Natural Gas Vehicles and Engines (OEM as well as SVM retrofit systems)
- Federal Tax Incentives Summary Sheet
- Fact Sheet: Federal Incentive for Natural Gas Vehicles
- Fact Sheet: Federal Incentive for Alternative Fuel Infrastructure
- Fact Sheet: Federal Incentive for Alternative Fuel Use/Sale
- CNG Cylinder Safety Inspection Information

Many thanks to all of the sponsors who made the workshop possible:
- NGVAmerica
- Clean Vehicle Education Foundation
- William & Mary
- Clean Energy
- Air & Gas Technologies, Inc.
- American Honda
- Emissions Solutions, Inc.
- Bauer Compressors Inc.
- American Clean Skies Foundation
- BAF Technologies / BAF Equipment
- Greenfield Compression
- Universal Air Products Corporation

Canola Biodiesel Field Day

Field day demonstrates small scale model that allows farmers to produce their own fuel

Hybrid Update:

HRT receives 10 new hybrid electric transit buses.

ASTM Approves Biodiesel Blend Specs

Three sets of biodiesel specs approved. Hopes are they will bolster automaker support.
SE Forward Fuels Fix!

The SE Forward Fuels Fix is a quarterly “ezine” publication of the southeast DOE region Clean Cities coordinators. The Fix contains articles from each of the coalitions from VA, KY, TN, NC, SC, GA, AL, and FL discussing actions taking place throughout the Southeast related to alternative fuels and advanced transportation technologies.

The inaugural edition includes stories on projects from most of the designated coalitions, a public refueling stations “matrix” where you can find a current listing of public stations in each state broken down by all major types of alternative fuels, a pictures page with snapshots of recent happenings throughout the southeast, a “get to know the coordinator” piece, and a write-up from our regional leader providing input on southern or U.S. wide Clean Cites Program on-goings. The publications has something of a southern-fried flair, so watch out for terminology distinct to the southeast.

We hope you enjoy the publication! Visit the publications page on the Clean Cities website, or visit the website home for The Fix at http://www.sealtfuels.org.

The ezine was the idea of Jonathan Overly, of the East Tennessee Clean Fuels Coalition. He approached us for help, and we were happy to step up as we see a need for a publication that focuses on southeast-wide alternative fuels and advanced technology deployment projects.

This summer edition is our first stab at creating a useful information sharing mechanism. If you have suggestions or comments, please send them to us.

Additionally, we are in the process of creating a new look for the publication that gives it more of a professional feel. An official website home is also in the works.

One way we hope to include our stakeholders is through opportunities to contribute stories, features of impressive stakeholder projects, and advertisement opportunities. A rate card is available for those that wish to consider advertising in The Fix. Your message will be seen by 10,000 readers with a stake in moving forward with addressing our nations energy obstacles throughout the southeast.

Clean School Bus Project Reaches Milestone

We have reached a project milestone: diesel exhaust after-treatment devices have been installed on school buses in the Dragon Run watershed. This is a time for celebration and recognition of some key supporters.

Gloucester, Middlesex, King and Queen, and Essex Counties retrofit 71 total older model school buses with diesel oxidation catalysts in early August in order to clean up diesel exhaust emissions.

Another component of the grant program is a biodiesel buy-down program which aims to equalize the cost of biodiesel to that of petroleum diesel in order to encourage use and familiarize fleets with the alternative fuel. Gloucester County has been using biodiesel since 2007, and has served as a great example for the other school districts.

Numerous project partners and money from the Clean School Bus USA program of the U.S. Environmental Protection Agency and a grant from the Virginia Department of Environmental Quality made it possible.

We are currently working on a press event where we will feature the Dragon Run, the project partners and some elected officials. Perhaps you are working on a project with similar goals that we can include in the event. Let us know!

To learn more about diesel oxidation catalysts, please visit the EPA Clean School Bus site at http://www.epa.gov/cleanschoolbus/

Hydrogen Seminars focus on Decision Maker Education

The Department of Mines, Minerals and Energy and Virginia Clean Cities received a Department of Energy grant to raise awareness of hydrogen and fuel cell technologies, provide examples of what state and local government can do, and show how decision makers can support the development and use of hydrogen and fuel cell technologies. The objectives of the project are to provide hydrogen and fuel cell technology learning opportunities through seminars, multi-media and video resources, technical support, and demonstrations to local and state government decision makers.

Half-day seminars will focus on three areas: 1) “hydrogen 101”; 2) discussing how state and local leaders can identify early market opportunities and applications and support a hydrogen economy in Virginia; and 3) field trips and demonstrations.

The first seminar will take place as a pre-conference workshop of the Commonwealth of Virginia’s Energy and Sustainability Conference (COVES). Workshop content will focus on:

- Our current energy system
- What is hydrogen?
- What is a fuel cell?
- Hydrogen production, storage, distribution, and use
- Environmental, energy, and economic implications
- Safety
- The future of hydrogen and fuel cells
- How local and state government can support emerging hydrogen markets
- Examples of hydrogen technology and emerging markets
- Drive the Chevrolet Equinox Fuel Cell Vehicle!

Who should attend? Decision makers and leaders in government, commerce and community: local and state agencies, leaders and staff involved in energy, environment, transportation, first response, emergency preparedness, code enforcement, conservation, communications, homeland security...

Read about the many other exciting project elements, project partners, and opportunities on the website.
Virginia State University, under the leadership of Dr. Harbans Bhardwaj, has been working on a project utilizing locally-produced canola to manufacture biodiesel. Dr. Bhardwaj and partners have grown six acres of canola at two farmer’s fields for two harvest seasons, harvested the seed, crushed and extracted the oil, evaluated the oil for traits, and converted the oil to biodiesel using a small portable reactor. The finished B20 has been used in two Kubota farm tractors. All of this was demonstrated at an impressive field day held in Lanexa, Virginia.

The field day began with an introduction from Dr. Bhardwaj who explained the project and its goals, which are to diversify Virginia’s agriculture, enhance the agricultural economy through production of value-added products and development of a self-supporting and sustainable farming system. After the introductions were complete, the host farmer demonstrated the process of harvesting the canola (picture shown above).

A demonstration of the BioPro 190 and the Fuelmeister, both small portable biodiesel reactors, was next on the agenda. Both representatives explained the process of taking the extracted oil, combining it with an alcohol and catalyst (lye and methanol in their case), and the reaction that produces the end products of biodiesel, glycerin, etc. Both reactors claim to produce the same end result, but one is much more automated and also more expensive. There are still many precautions that must be taken prior to taking on the heavy job of producing biodiesel, many of which are documented in the DEQ Biodiesel Environmental Compliance Primer.

The last agenda item was a discussion of how the canola meal can be used and a demonstration of an oilseed crusher which is used to extract oil out of soybean and canola seed.
**Natural Gas Update**

**Charter Bus Services of Virginia Sees Big Savings During First Month of Service using CNG buses**

John Fitzgerald, President of Charter Bus Services of Virginia, Inc., reported they spent $6,000 in CNG fuel costs over the last month since putting their transit buses into service. This is compared to diesel fuel which would have totaled $15,000!

**E85 Update**

**Station Update - New E85 Stations Coming to VA-MD-DC**

“Public” locations in Virginia (Most have restricted access)

- Navy Exchange Quarters K
  801 S. Joyce Street, Arlington, VA 22204
  (703) 979-0405
  Hrs: M-F: 5:30a-7:30p; Sat 7:30a-6p; Sun 9:30a-6p

- Naval Station Norfolk
  Bldg U-113 Bellinger Blvd, Norfolk, VA 23511
  Access: (with base access privilege and ID)

- Naval Station Norfolk
  Bldg U-113 Bellinger Blvd, Norfolk, VA 23511
  Access: (with base access privilege and ID)

- AAFES Post Exchange Defense Supply Ctr
  8000 Jefferson Davis Hwy, Richmond, VA
  22134
  Access with DSCR security clearance

“Public” locations in Maryland (Some have restricted access)

- Towncenter Chevron
  12301 Middlebrook Road
  Germantown MD 20874
  Expected opening September 2008

- Germantown Chevron
  20510 Frederick Road
  Germantown MD 20876
  Expected opening August 2008

- Montgomery County
  8710 Brookville Road
  Silver Spring, MD 20724

- Perry Point
  Rt. 40 and Rt. 222
  Perryville, MD 20724

Pending locations in DC

- Watergate Chevron
  2643 Virginia Ave. NW
  Washington DC 20037
  No opening date

**Pending locations in Virginia**

- Country Store
  Stop In Food Stores Inc
  1220 Seminole Trail
  Charlotte, VA 22901
  (434) 973-1005

**Pending locations in Maryland**

- Towncenter Chevron
  12301 Middlebrook Road
  Germantown MD 20874
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  Germantown MD 20876
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**Pending locations in DC**

- Watergate Chevron
  2643 Virginia Ave. NW
  Washington DC 20037
  No opening date

Grant money still available!
EPRI, GM, Dominion Collaborate on Plug-in R&D


Dominion is one of 34 utilities to team with the Electric Power Research Institute (EPRI) to facilitate integration of plug-in hybrid vehicles (PHEVs) seamlessly into the grid.

This collaboration is part of a larger energy conversation plan Dominion released in July which is expected to save customers more than $1 billion over 15 years. A key component of the plan is the installation of “smart grid” technologies that will enhance the electric distribution system to meet increasing demand and expectations of customers. Expected investments are projected at $600 million to replace all existing electric meters with Advanced Metering Infrastructure (AMI).

Other programs included in the plan include incentives for: construction of Energy Star® homes, installation of energy-efficient lighting, energy audits, residents who allow Dominion to cycle their air-conditioners and heat pumps during peak demand periods, power cost monitors, heat pump upgrades, improve HVAC units, and refrigerator turn-in program.

Dominion estimates 12 million tons of carbon dioxide emissions will be avoided over the 15 years, and electricity savings could reach 2.6 million megawatt-hours by 2013 as a result of the improvements.

To read the environmental assessment of plug-in hybrids, visit the [EPRI](http://my.epri.com) website

ASTM Approves Biodiesel Blend Specs


The long-awaited ASTM specifications for biodiesel blends were voted on and approved by the ASTM International D02 Main Committee in late June.

Three key sets of biodiesel specifications that should bolster automaker support include changes to the existing B100 biodiesel blend stock specification (ASTM D6751), specifications to include up to 5% biodiesel in conventional petrodiesel specification (ASTM D975) and a new specification for blends of between 6 percent to 20 percent for on and off road diesel.

A blend specification for B20 blends has been requested for numerous years by automakers. The spec should help engine manufacturers in design and testing of engines to optimize performance.

A fourth set of ASTM specifications were also approved for inclusion of B5 in heating oil.

EPA Approves E85 Conversion


On May 14, 2008, the EPA issued a Certificate of Conformity to Flex Fuel U.S., LLC for the conversion of specific 2006 model year Chrysler and Dodge vehicles to operate on E85.

The certificate allows the conversion of up to 100 vehicles that are part of the model year 2006 Chrysler test group #6CXXV05.7E0. Models included in this test group are the 2006 Dodge Magnum, Magnum AWD, and Charger with certain 5.7L engines as well as the 2006 Chrysler 300/SRT-8 and 300 AWD with the same 5.7L engine.

The Flex-BOX SMART KIT is technology Flex Fuel U.S., LLC uses to allow EPA approved vehicles to run on a combination of gasoline and ethanol. Read more about the system at [http://flexfuelus.com/](http://flexfuelus.com/)
Clean Cities is a government-industry partnership designed to reduce petroleum consumption in the transportation sector by advancing the use of alternative fuels and vehicles, idle reduction technologies, hybrid electric vehicles, fuel blends, and fuel economy. Virginia Clean Cities is one of almost 90 coalitions across the U.S. that help meet the objectives of improving air quality, developing regional economic opportunities, and reducing the use of imported petroleum.

Sponsors & Strategic Partners

Calendar of Upcoming Events

Alternative Fuel and Advanced Technology Vehicle Related Events

2008 Commonwealth of Virginia Energy and Sustainability (COVES) Conference

and

Hydrogen: Promising Energy Security

September 17-19, 2008 Greater Richmond Convention Center, Richmond, VA
www.hrccc.org
Test drive the GM Equinox Fuel Cell Vehicle!

HRAEE 5th Annual Environmental Education Conference

September 11, 2008 Virginia Aquarium
Email Holly Carson at holly.carson@norfolk.gov

Algae Biofuel Summit 2008

September 17-19, 2008 New Delhi, India
www.algaebiofuelsummit.com/

Woody Bioenergy in Virginia: Rural Focus
September 4, 2008 Abington, VA - South West Virginia Higher Education Center

Virginia Environmental Assembly
September 26 & 27, 2008 Virginia Commonwealth University, Richmond, VA

Woody Bioenergy in Virginia: Urban/Suburban Focus
September 29, 2008 Petersburg, VA - Virginia State University

Northern Virginia Community College AFV Day Odyssey
September 20, 2008 NOVA’s Alexandria Campus
11 am - 3 pm
Email Heather Neikirk at hneikirk@nvcc.edu

National Hydrogen Association Fall Forum: Hydrogen from Renewables
September 22-24, 2008 Golden, Colorado
http://www.hydrogenassociation.org

31st World Energy Engineering Congress Conference and Expo
October 1-3, 2008 Washington, DC
http://www.energycongress.com

TAFMA Meeting sponsored by VaCC - Topic TBD
October 15, 2008

NAAEE 37th Annual Conference
October 15-18, 2008 Wichita, Kansas
www.naaee.org/conference/2008-conference

Green Living Expo
October 5, 2008 Norfolk, Virginia
Email Donna Agresto-Seavey at donna@sinclairstations.com

If there is an event our readers may enjoy, please send an email to Chelsea at cjenkins@hrccc.org so we can add the event to our calendar and our website.