



U.S. Department of Energy  
Energy Efficiency  
and Renewable Energy



# Joint Subcommittee on Fuel Efficient Vehicles and Transportation Funding

Virginia Clean Cities

Sept 12, 2007

Senate Room A

Virginia General Assembly

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## Hampton Roads Clean Cities Coalition

# AMERICAN ENERGY FOR TRANSPORTATION



[www.hrccc.org](http://www.hrccc.org)



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Clean  
Cities

## Clean Cities

National US DoE voluntary program to promote energy independence in transportation

90 Coalitions nationwide

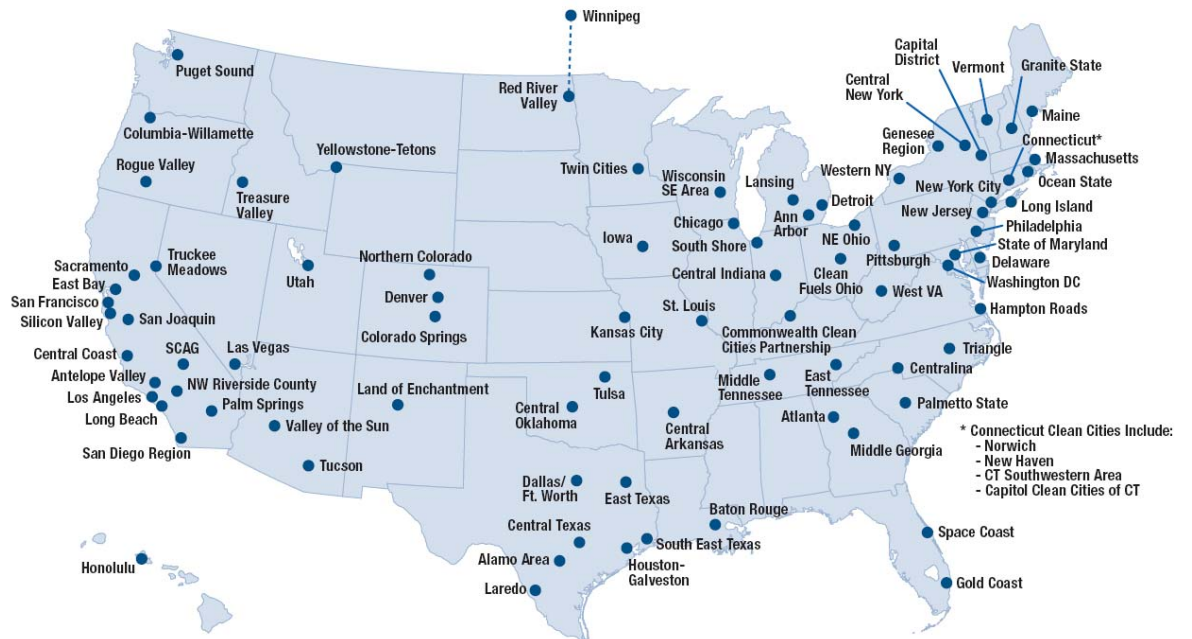
One designated Coalition in Virginia (Hampton Roads)

Statewide effort ongoing



**DoE Website:**  
<http://www.eere.energy.gov/cleancities/>  
**Virginia Clean Cities:**  
<http://www.hrccc.org>

Putting Alternative Fuel Vehicles on the Nation's Streets and Highways





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## Step One

*To foster greater fuel efficiency, win wider acceptance of new fuel-saving technology and encourage the use and production of renewable alternative fuels.*



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**Begins with Commonwealth leading by example**

Executive Order 48: A mechanism already in place





## Low Cost of a Biodiesel Blend

Price calculator for biodiesel blends				
	B2	B5	B10	B20
gallons:	100	100	100	100
petro gals:	98	95	90	80
bio gals:	2	5	10	20
petro price:	2.250	2.250	2.250	2.250
petro total:	220.50	213.75	202.50	180.00
bio price:	2.450	2.450	2.450	2.450
bio total:	4.90	12.25	24.50	49.00
total cost	225.40	226.00	227.00	229.00
avg price gal:	2.254	2.260	2.270	2.290
fed tax	0.244	0.244	0.244	0.244
va tax	0.175	0.175	0.175	0.175
total with tax	2.673	2.679	2.689	2.709

Compare the bottom green bar to the top green bar to see how much more it costs to use blends of biodiesel vs. conventional petroleum diesel at today's prices. It is easy to control the costs by varying the blend



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## Step One

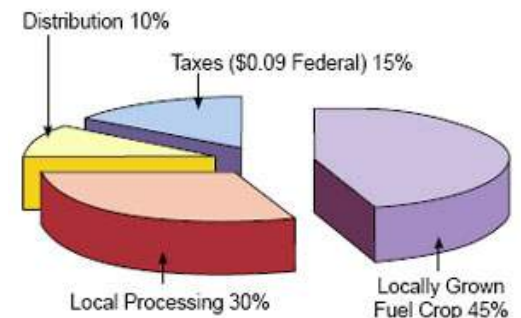
*To foster greater fuel efficiency, win wider acceptance of new fuel-saving technology and encourage the use and production of renewable alternative fuels.*

Not without a bit of economic pain

No silver bullet solutions



In the long term – nurturing the alternative energy industry we already have in Virginia, growing it and attracting new players should be considered an investment in our state's economy, environment, energy security and quality of life.



Potentially \$0.90 of every dollar stays local

Source: Virginia Tech Cooperative Extension.  
Publication Number 442-880. Available online:  
<http://www.ext.vt.edu/pubs/ageng/442-880/442-880.html>



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## Step Two

*To dedicate a source of funds to pay for Step One*

...

*So progress is possible even when economic winds are blowing in our faces instead of at our backs*





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## Step Two

*To dedicate a source of funds to pay for Step One.*

**Invest an “opportunity cost”**





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## Step Two

To dedicate a source of funds to pay for Step One.

Don't forget  
public access!!

**What is Ethanol?**

Ethanol can be produced not only from corn, barley, and wheat, but also from cellulose feedstocks such as corn cobs, rice straw, sugar cane bagasse, pulpwood, switchgrass, and municipal solid waste. Ethanol is usually blended with gasoline as E10 (10% ethanol and 90% gasoline) or E85 (up to 85% ethanol and 15% gasoline). E85 can only be used in flexible fuel vehicles (FFVs), which all domestic auto-makers offer. Visit [www.e85fuel.com](http://www.e85fuel.com) for a list of FFVs.

**What are the benefits of ethanol?**

Using E85 reduces petroleum consumption—Use of E85 will reduce overall use of petroleum and replace it with renewable-based fuel produced in the U.S.

E85 is better for the environment—E85 offers environmental benefits such as reducing carbon monoxide, volatile organic compounds, nitrogen oxides, and particulate matter emissions when compared to gas.

Flexible Fuel Vehicles (FFVs) are available and affordable—FFVs specifically designed to run on and FFVs are typically available as standard year, meet with little or no extra cost.

**E85 ETHANOL NOW AVAILABLE IN OUR NATION'S CAPITAL**

On June 28, 2007, General Motors, VeraSun Energy and Mid-Atlantic Petroleum opened the first E85 ethanol station in the nation's capital. The station is located at 1800 ...

Unrestricted Public Access E85 Stations VA, MD, DC	Private E85 Stations	Planned E85 Stations
<p><b>VIRGINIA</b> Navy Exchange Quarters K 801 S. Joyce Street, Arlington, VA 22204 (703) 979-2405 Hrs: M-F: 5:30a-7:30p; Sat: 7:00a-6p; Sun: 9:30a-6p</p> <p><b>MARYLAND</b> Chevron Service Center 3240 Fort Meade Road, Laurel, MD 20724 (410) 880-4740 Hours: 7a-7p M-F</p> <p>Quik-Mart Clegg Pointe 2042 Vined Street, Annapolis, MD 21401 (410) 571-9676 Hours: M-F: 5:30a-9p; Sat: 7a-9p</p> <p><b>WASHINGTON D.C.</b> Georgetown Chevron 2410 Wisconsin Ave. N.W., Washington, DC 20007 (202) 337-6277 Hours: 24/7</p> <p><b>Restricted Public Access</b></p> <p><b>VIRGINIA</b> Naval Station Norfolk Bldg U-113 Dellinger Blvd, Norfolk, VA 23511 Access: Public (with base access privilege and ID)</p> <p>Yorktown Naval Weapons Station Yorktown, VA 23091 Access: Public (with base access privilege and ID)</p> <p>AAAFES Post Exchange Defense Supply Ctr Richmond 8003 Jefferson Davis Highway, Richmond, VA 23114 Access: Public (with base access privilege and ID)</p> <p><b>MARYLAND</b> Montgomery County Agencies 10540 Carsons Branch Way Gaithersburg, MD 20855 (301) 717-0730 Hrs: 24/7 (call ahead if first visit—waiver req'd)</p>	<p><b>VIRGINIA</b> VA Office of Fleet Management Services 2002 Leigh Street, Richmond, VA Private Access—Virginia state fleet access only</p> <p>NASA Langley Research Center 2 East Aches Street, Hampton, VA 23061 Private Access—Large vehicles only</p> <p>Marine Corps Base—Quantico Quantico, VA 22134 Private Access</p> <p><b>MARYLAND</b> Andrews Air Force Base Andrews AFB, MD 20712 Private Access</p> <p>Baltimore State Office Center—DGS 301 W Preston Street, Baltimore, MD 21201 Private Access</p> <p>Goddard Space Flight Center 500 Conservation Road, Bldg 27, Greenbelt, MD 20771 Private Access</p> <p>Social Security Administration 6401 Security Blvd, Woodlawn, MD 21238 Private Access—Federal vehicles only</p> <p><b>WASHINGTON D.C.</b> DC Fleet Management Admin Fueling 1830 West Virginia Avenue NE, Washington, DC 20002 Private Access—District government only</p> <p>Bolling Air Force Base Washington, DC 20032 Private Access</p>	<p><b>VIRGINIA</b> VA Fleet Management Services—Private 2002 Leigh Street, Richmond, VA 23199</p> <p>VA Fleet Management Services—Private Williamsburg, VA 23186</p> <p>Fort Belvoir—Private Fort Belvoir, VA 22060</p> <p><b>MARYLAND</b> Townsetter Chevron—Public Germantown, MD 20874</p> <p>Congressional Sanoco—Public Rockville, MD 20850</p> <p>Takoma Park Tesco—Public Takoma Park, MD 20912</p> <p>Germantown Chevron—Public Germantown, MD 20876</p> <p>Fredericksburg Chevron—Public Frederick, MD 21702</p> <p>National Institutes of Health Bethesda, MD 20892</p> <p><b>WASHINGTON D.C.</b> Hagerman Chevron—Public Washington D.C. 20037</p> <p>Marine Barracks—Private Bethesda, MD 20890</p> <p>Planned sites listed above are subject to revision, please visit <a href="http://www.e85fuel.com">www.e85fuel.com</a> for the latest version. Disclaimer: Station information was compiled from a variety of sources including the Alternative Fuels Data Center, the National Ethanol Vehicle Coalition, and Clean Cities data.</p>



Do this:



*Example of a government fleet fueling facility in San Antonio TX. The fleet pumps are inside the fence. The alternative fuels, pictured, are publicly accessible.*

Or, better yet, do this:



*E85 is sold at a conventional fueling station that is used by the public and by government FFV fleets*

Don't do this:



*Fuel tank with remote dispensing installed in consumer-hostile industrial location enclosed in fenced perimeter.*



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## Step Two

*To dedicate a source of funds to pay for Step One.*



## Implement the Biofuels Production Incentive Fund and Grant Program

To increase the level of economic benefit accruing to the Commonwealth from local production of energy from locally produced feedstocks



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## Step Two

*To dedicate a source of funds to pay for Step One.*



**Use the new biofuels industry to finance incentives**

Again, all incentive programs come with a dose of pain





## VA Transportation Fuel Consumed

Annual quantities in thousand barrels

Year	Gasoline	Diesel	Jet	Ethanol***	Biodiesel* *
2002	90,030	24,930	9,955	1,480	12**
2003	91,498	25,375	11,461	1,951	24**
2004	92,953	29,027	16,754	2,056	60**
2005*	93,557	28,426	18,845	2,529	120**

Source: US Energy Information Administration

\*2005 totals are estimated; 2006 not available

\*\* Biodiesel consumption is an educated guess

\*\*\* Ethanol is included in gas totals and will be much higher in 2006-7

***3.9 billion gallons of gasoline used in VA in 2005 equals about 10 days of national consumption at the 2005 rate of 375 million gallons per day.***



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## Step Two

An innovative incentive that does not use motor fuels tax revenue:

Illinois drivers seeking relief from soaring gas prices are eligible for a \$1,000 rebate with the purchase of a new hybrid or other fuel efficient vehicle.

Under its Green Rewards program, the Treasurer's Office has committed \$2 million in rebates to make high-mileage hybrid vehicles, which run on gasoline and electricity, more affordable.

Participating banks and credit unions agree to accept a discounted deposit rate from the state for one year in exchange for providing the \$1,000 rebates to Illinois residents. The program is open to all banks and credit unions in Illinois.



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**Aside from quantifiable economic benefit, the benefits which are less obvious and difficult to quantify are of equally important value:**

How do you calculate the benefits to human and planetary health of cleaner air resulting from the reduced carbon dioxide and toxin emissions of a hybrid electric car, plug-in hybrid, hydrogen ICE or fuel-cell powered vehicle or a car or truck powered by compressed natural gas or propane?

What's the worth to a state of having enough local feedstock and biodiesel production capacity to supply even a limited amount of fuel for emergency and essential vehicles in the event of a short-term petroleum supply crisis?

If just 10 percent of petroleum was displaced in a decade or so by renewable alternative fuel sources, improved efficiency and advanced technology vehicles, how would petroleum prices, the economic and political power of unfriendly crude-oil producing nations, and the supply of precious non-renewable fossil fuels be affected?



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Clean  
Cities

The hardest question of all, though, is  
what is the potential cost of doing  
nothing?



## Virginia Clean Cities and the Hampton Roads Clean Cities Coalition

Improving Energy, Environmental and Economic Security

- Home
- Biodiesel
- Ethanol
- Hydrogen
- Natural Gas
- Propane
- Electricity
- Hybrid Electric
- Publications
- Tax Incentives
- Join Us

## Dragon Run Biodiesel Project



Photo Source: MPPDC, <http://www.mppdc.com/dragon/index.shtml>

Located in the Middle Peninsula of Virginia, the Dragon Run Watershed encompasses parts of Essex, King and Queen, Middlesex, and Gloucester Counties. "The Dragon Run Steering Committee, the Middle Peninsula Planning District Commission (MPPDC), and the Virginia Coastal Program are co-sponsoring the development of a Special Area Management Plan, or SAMP, for the Dragon Run Watershed." The SAMP's purpose is to "support and promote community-based efforts to preserve the cultural, historic, and natural character of the Dragon Run, while preserving property rights and the traditional uses within its watershed" (Source: MPPDC).

As part of the Dragon Run Special Area Management Plan managed by the Middle Peninsula Planning District Commission (MPPDC), a study titled "Opportunities for Sustainable Natural Resource-Based Development in the Dragon Run Watershed" (referred hereafter as the Yellow Wood study) was conducted in October 2005. The overall purpose of the project was to identify and explore economic development activities and opportunities that sustain traditional land uses while enhancing the natural resource base or at least minimizing adverse impacts. Seven areas were selected for further exploration, including biodiesel utilization (and vehicles. The Yellow Wood study found biodiesel utilization to be an example of enterprise that sustainable natural resource-based economic development for the Watershed, whether carried private sectors.

Photo: I Source

As a result, Virginia Clean Cities was contracted by the MPPDC to continue further exploration and present recommendations based on survey summaries and stakeholder interest detailing provide sustainable natural resource-based economic benefit to the watershed community on production of biodiesel as a cleaner, healthier, domestic alternative to fossil fuel.

Virginia Clean Cities is currently working on a variety of tasks related to this project, and will project completion in October 2007.



- Home
- Biodiesel
- Ethanol
- Hydrogen
- Natural Gas
- Propane
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## Virginia Hydrogen Economy Roundtable

Virginia Clean Cities coordinates the Virginia Hydrogen Economy Roundtable, representing participants from over thirty organizations, whose purpose is to determine the potential role for hydrogen systems in Virginia's energy future. The Roundtable completed work on "Virginia's Vision and Strategy for the Hydrogen Economy" and are now working on implementing the recommendations, such as [hydrogen teacher training workshops](#).



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[WWW.HRCCC.ORG](http://WWW.HRCCC.ORG)

## Virginia Clean Cities and the Hampton Roads Clean Cities Coalition

Improving Energy, Environmental and Economic Security

## VA-MD-DC E85 Infrastructure Project

**Objective:** Make E85 publicly available in up to 12 locations in Virginia, Maryland and DC by providing grant funds to station owners to help defray the cost of conversion.

**Where:**

- \* I-95 from Maryland to North Carolina
- \* I-64 from Charlottesville to Virginia Beach
- \* Near federal and state E85-capable fleets

**When:** By September 30, 2008

**How:**

- \* Define and develop E85 supply chain
- \* Partnerships with ethanol producers, fuel distributors/retailers, vehicle dealers, owners of fleet Flex Fuel Vehicles (FFV)
- \* General Motors Corporation is a key partner
- \* Grant money helps defray the capital costs and risk

**Grants and Tax Credits:**

- \* Up to \$20,000 in grants available per E85 hose
- \* 30% federal tax credit for infrastructure
- \* Grant money, tax incentives, GM marketing support and government fleet dedication can reduce capital cost and lower investment risk, especially when: an existing tank can be converted to E85, an additional tank can be added to a new build, and/or a large FFV fleet will agree to fuel at the facility.

**2-year Project Cost:**

- \* \$767,000 total project
- \* \$284,000 federal portion (37%; 1 of 13 competitive DOE awards)
- \* \$483,000 match (63%, sources: VA, MD, DC private)



### First E85 Station Opening



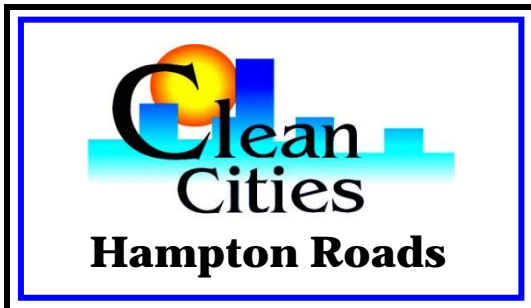
The first recipient of money from the Virginia-Maryland-DC E85 grant managed by Virginia Clean Cities will be Mid-Atlantic Petroleum Properties LLC for adding the renewable corn-based fuel to a station on Wisconsin Avenue in the tony Georgetown neighborhood of Washington DC. Mid-Atlantic converted an existing diesel tank at the Chevron-branded location, one of about 50 retail locations owned or supplied by the company. Owners Carlos and May-May Horcasitas have plans to add E85 soon to as many as five or six additional Mid-Atlantic stations within the Capital Beltway, mostly in DC.

Many thanks for making E85 publicly available in DC to Mid-Atlantic





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*Virginia Clean Cities organizes "Advancing the Choice" events which bring in expert speakers to discuss alternatives to imported petroleum fuels*



*Virginia Clean Cities' organized a ribbon cutting ceremony in honor of Hampton Roads' first public biodiesel pump opening and Virginia Beach Public Schools switch to B20 in over 200 school buses.*



*Virginia Clean Cities organizes "ride and drive" opportunities for the public to test drive various alternative fuel vehicles*



*Virginia Clean Cities staff speak at all types of events ranging from media events to conferences and K-12 educational forums.*