

U.S. DEPARTMENT of ENERGY

# ALTERNATIVE FUEL NEWS

An Official Publication of the Clean Cities Network and the Alternative Fuels Data Center

From the Office of Energy Efficiency and Renewable Energy

## BUS Futures

A look at the choices for transit agencies



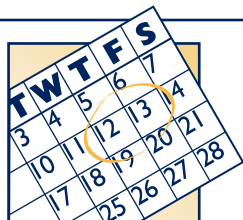
**Plus: Refuse Haulers  
Carry More Than Trash**

**Inside:**  
Prius hits  
U.S. market



Dear Clean Cities Stakeholders:

As we head into fall and the temperatures start to cool, the energy industry is heating up. The high price of oil and our nation's dependence on imports continue to make headlines, and for the first time in a long while, the issue of a national energy policy is making waves. October was also Energy Awareness Month, and Secretary Richardson kicked off the celebration at a press event at Department of Energy headquarters to announce the new model year 2001 Fuel Economy Guide. A variety of AFVs were also on display for the public and the press to see, including several of DOE's own AFVs and several common niche market AFVs.



## Upcoming Conferences and Events

### Environment and Energy Conference and Exposition

"Business Strategies for Sustainable Economic Growth"

November 27 - 28, 2000

Westin Harbour Castle Hotel

Toronto, Ontario, Canada

Contact: Globe Foundation of Canada @ 800-274-6097

### 2000 Congress of Cities and Exposition

December 5 - 9, 2000

John B. Hynes Convention Center

Boston, Massachusetts

Contact: J. Spargo and Associates @ 800-564-4220

### Clean Fuels 2001

January 30 - February 1, 2001

Las Mansion Hotel

San Antonio, Texas

Contact: Intertech Corporation @ 207-781-9612

### 5th Annual Propane Vehicle Conference & Exposition

February 4-6, 2001

Westin Crown Center

Kansas City, MO

Contact: RP Publishing, Inc. @ 303-863-0521, or  
info@rppublishing.com

### 23rd Symposium on Biotechnology for Fuels and Chemicals

May 6 - 9, 2001

Beaver Run Resort

Breckenridge CO

Contact: Megan Maguire, NREL, @ 303-275-4321

### The 7th National Clean Cities Conference

May 13-16, 2001

Pennsylvania Convention Center

Philadelphia, Pennsylvania

Contact: Clean Cities Hotline @ 800-224-8437

AFVs make a lot of sense for many niche markets, which have long been a focus of the Clean Cities Program. Among the program's highest priority niche market applications is transit, and specifically, transit buses. Many transit agencies, particularly those serving urban centers, have reached a fork in the road. Faced with record high diesel fuel prices and growing pressures from their local communities to reduce both the air and noise pollution resulting from their operations, many are investigating the alternatives to traditional diesel buses. Some are turning to natural gas and other alternative fuels, and a few are even evaluating new diesel-electric hybrid technologies. The good news is that at least 20% of all new bus orders are now compressed natural gas (CNG). Even so, there continues to be considerable outdated or inaccurate information circulating about the costs and benefits of alternative fuel transit buses, which we are working to counter. Our cover story for this issue examines transit agencies' options and describes what DOE and others have done to help agencies decide which path to follow.

Another heavy-duty vehicle niche application—refuse haulers—is also covered in this issue. A growing number of private and local government waste management fleets are looking to alternative fuels to help them clean up their operation and meet new local ordinances. An AFV refuse hauler can be a good economic investment and a good environmental neighbor at the same time. You can learn more about how some fleets are making the transition to alternative fuels in this issue's feature story.

Best wishes for a happy fall season, and as usual, enjoy the issue.

**Shelley Launey, Director**

Clean Cities Program

U.S. Department of Energy

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Wieck Photo Database



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Pierce Transit/PIX 04113

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# Transit Agencies: At a Fork in the Road

The black clouds of smoke forming the wake of a passing bus may soon be a thing of the past, in many communities, as urban area transit agencies are investigating options for replacing aging buses. Among the needs agencies must address are commercial availability of new buses, costs, safety, and more recently, growing pressure from the local community over public health issues. The U.S. Environmental Protection Agency and other organizations have linked the rising incidence of respiratory problems among children and the elderly in urban areas to smog and diesel vehicle emissions in many communities. A recent California study found a 14% increase in the number of asthma-related hospital visits among children in Sacramento on high smog days. And a study conducted at New York City's Mount Sinai Hospital found that asthma hospitalization rates for children in poor communities, where six of the city's eight bus depots are located, are up to 21 times higher than for children in more affluent neighborhoods.

Transit agencies are responding by examining alternatives to conventional diesel buses. Many have already successfully introduced cleaner alternatives, primarily compressed natural gas (CNG), into daily bus fleet operations. Unfortunately, though, rumors and unsubstantiated anecdotes circulating throughout the industry have made it difficult for other agencies to fairly evaluate alternative fuel options. Misinformation about the relative safety, cost, performance, and availability of various alternatives have complicated agency decisions. To help transit agencies and community leaders distinguish myth from fact, the Department of Energy published "Natural Gas Buses:

Separating Myth from Fact," (part of the Clean Cities Alternative Fuel Information Series) which addresses 15 common misconceptions about natural gas buses. For example, among the myths circulating through the media is one concerning the safety of CNG buses. The fact is that overall, there is no evidence that CNG buses pose any greater risk of fire or explosion than do diesel buses. In the event of a collision, CNG fuel tanks are much stronger and safer than either diesel or gasoline fuel tanks. Natural gas buses also have on-board detectors and other safety equipment specially designed to ensure safe operation.

INFORM, a New York-based nonprofit environmental research organization, has also presented the straight story to transit agency decision-makers. In a recently released report entitled "Bus Futures: New Technologies for Cleaner Cities," INFORM presents an analysis of the options available to transit agencies and offers several conclusions that are sure to bolster the efforts of Clean Cities coalitions.

"Bus Futures," the latest in a series of studies by INFORM on alternative transportation fuels and systems, compares the major bus engine technologies and fuels, their commercial readiness, their emissions, and their costs. Looking at conventional natural gas and diesel buses

## Recent public transit agency success stories

The **Greater Cleveland Regional Transit Authority (GCRTA)** operates 166 CNG buses, approximately 22% of its total fleet. Backed by the public and with support from the Northeast Ohio Clean Cities Coalition and East Ohio Gas Company, the GCRTA board voted this year to order another 45 CNG buses. The board is considering ordering 300 more by 2002, which would bring the fleet to 61% alternatively fueled operation.

The **Los Angeles Metropolitan Transit Authority (LAMTA)** is believed to be the world's largest CNG bus fleet. After celebrating the delivery of its 1,000th CNG bus earlier this year, the LAMTA board voted unanimously to continue moving forward with its natural gas program. An additional 370 CNG buses will bring the fleet total to 1,570 by next year. The local effort is also supported by a new South Coast Air Quality Management District rule requiring greater use of clean fuel in transit buses and refuse haulers.



AGL Resources/DOE

The **Metropolitan Atlanta Rapid Transit Authority (MARTA)** received its first 118 CNG buses in 1996, just in time for the Summer Olympics. Its new CNG refueling and maintenance facilities helped support almost 180 other CNG buses borrowed from other agencies for use during the Games. Following the great success of its first CNG buses and the tremendous positive public response, MARTA's board recently approved an accelerated CNG fleet conversion program—100% of all new bus purchases will be CNG (starting with 206 buses arriving later this year). Additional fueling and maintenance facilities are being built to accommodate MARTA's fleet.



Pierce Transit/PIX 04039

and hybrid-electric and fuel cell buses, INFORM collected data from interviews with transit agency personnel and industry experts and conducted a comprehensive review of reports, presentations, and other publications on vehicle technologies and fuels to help formulate its conclusions.

According to INFORM's report, the only fully commercial buses available today are those with conventional engines—fueled by either diesel or natural gas. Although hybrid and fuel cell buses offer promise and draw media attention, more testing and evaluation are needed to make them sound commercial options. As of the report's date of publication, only 50 hybrid electric buses and fewer than a dozen fuel cell buses had been tested in on-road demonstration projects; natural gas bus technologies have been tested, evaluated, and refined for more than 10 years.

INFORM also confirms that natural gas buses emit significantly fewer pollutants than their diesel counterparts—up to 86% less particulate matter, as much as 58% less nitrogen oxide, and very few toxins compared to the 40 toxic chemicals (half of which are suspected carcinogens) found in diesel exhaust. Although the promise of new particulate trap technologies and experimental low sulfur diesel fuel may tempt transit agencies to simply continue ordering diesel buses, neither is presently commercially available nationwide according to the report.

Finally, although cost remains a primary factor in many transit agency decisions, INFORM suggests that societal costs and benefits and the benefits of infrastructure investments should also weigh heavily into the decision making process. It is true that CNG buses are currently more expensive to purchase than diesel buses. Depots must also be retrofitted to accommodate the different vehicles and natural gas refueling facilities must be built. However, in many areas, natural gas is cheaper than diesel, which can result in significant fuel cost savings over time and reduce vehicle-related air pollution. INFORM cites asthma-related hospital medical costs, which are attributable in part to deteriorating air quality, and will cost the U.S. \$11 billion in 2000.

Natural gas is a good choice, according to INFORM, because it also offers applicability to future transportation technologies, including hybrids and fuel cells. Not only can it power its own internal combustion engines as well as hybrid electric natural gas buses, but it may also be used as a feedstock for hydrogen, a potential fuel in fuel cells. Investing in natural gas infrastructure can therefore help pave the way to future transit applications. "Based on this analysis, CNG buses are today's best option," said INFORM president Joanna Underwood. "They are commercially available, generate virtually no toxic

## The growing trend toward natural gas...

- Sixty-five transit agencies in the U.S. now operate natural gas buses and even more have them in their purchase plans.
- Thirty-one agencies have at least 20% of their fleets operating on natural gas.
- From 1992 to 1997, the amount of CNG transit bus fuel consumed increased by a factor of 23.
- The number of CNG transit buses in service is expected to climb to nearly 5,000 when current orders are filled.
- Below are a few of the transit fleets that have committed to purchasing only CNG buses going forward (no more diesel buses).

Albuquerque, NM	Salem, OR
Atlanta, GA	San Bernardino, CA
Gary, IN	San Diego, CA
Los Angeles, CA	Springfield, IL
New York City DOT, NY	State College, PA
N. Muskegon, MI	Syracuse, NY
Orange County, CA	Tacoma, WA
Port Huron, MI	Tempe, AZ
Reading, PA	

pollutants, and the infrastructure built to refuel these buses can be used eventually to refuel pollution-free, compressed hydrogen fuel cell buses," she said.

Regardless of the trends, transit agencies must choose a pathway. They face a continual need to replace buses in their fleets and the decisions made today will undoubtedly affect the future of their local communities. The INFORM study concludes that presently, CNG is the best available option for a credible pathway to a clean, safe transportation and energy future. For a copy of DOE's "Natural Gas Buses: Separating Myth from Fact," call the Clean Cities Hotline at 800-CCITIES. For more information about "Bus Futures: New Technologies for Cleaner Cities," check out INFORM's Web site: [www.informinc.org/busgate.htm](http://www.informinc.org/busgate.htm) or call 212-361-2400.



# Refuse Haulers Carry More Than Trash

CNG refuse hauler operated by the NYC Department of Sanitation



Warren Gretz, NREL/PIX 08785

A typical-looking refuse hauler lumbers its way through a suburban neighborhood, stopping at intervals to pick up trash. It looks like any of the usual diesel trucks that drive up and down the street, but there's something unusual. Instead of spewing a steady stream of sooty smoke, this truck runs without the familiar diesel cloud and pervading odor. This is not a refuse hauler of the future; it is a typical natural gas truck used today.

Cities receive more complaints about the pollution from diesel vehicles than any other pollutant. In an effort to help alleviate toxic air pollution in neighborhoods, cities are converting many of their fleets to clean-running natural gas vehicles. With cooperation from landfills, government agencies, engine/truck manufacturers, and natural gas organizations, many operations are making progress.

## Natural gas haulers in action

One of the most successful projects using natural gas refuse haulers began in Washington, PA, in 1991, when Waste Management Inc. (WMI) assumed operation of the town's primary landfill. Building on a grant from the Pennsylvania Department of Environmental Protection Alternative Fuels Incentive Grants Program and support from the U.S. Department of Energy, Gas Technology Institute (GTI, formerly GRI), Southwest Research Institute (SwRI), and Mack Trucks, Inc., the project blossomed into a clean-running operation.

Currently, the fleet operates 7 Mack liquefied natural gas (LNG) refuse trucks. According to Ben Wood, district manager for Waste Management, the trucks do the same work as—if not more than—the diesel trucks. Range is the main reason they cannot convert all the trucks to LNG. Many trucks in the fleet travel nearly 350 miles roundtrip and have no way to refuel on the route.

The fueling station at the Washington site is the first of its kind in the U.S. The trucks fill at the station with a single dispenser that fuels up to 30 gallons per minute from the 13,000 gal.-tank buried 8.5 feet underground. It's unique because it vents gas back from the station to a Columbia Gas pipeline, which ensures that the fuel is not vented to the environment.

According to Alissa Oppenheimer, a GTI technology manager, "What has come together at Waste Management is not only unique in terms of heavy, LNG vehicle technology and equipment, but it is also a working example of an environmentally sound heavy truck and waste services operation."

Another project started in 1992, when New York City purchased 6 CNG refuse haulers. According to Tim Harte, NYC Department of Sanitation manager, the new haulers were a big hit. "Our drivers are satisfied with the horsepower and speed. And the vehicles are quieter and cleaner, there's no diesel knock, and there are no fumes," said Harte. The drivers also reportedly enjoyed the lower engine noise—they are quiet enough to hear the radio on routes.

The average range of New York City's CNG trucks is about 61 miles, which has been acceptable because their routes tend to be short. The Department of Sanitation fuels the trucks about once every other day on the average. The department has added 10 more natural gas haulers since 1992. The fleet uses Crane Carrier Corporation LT484M, 25-cubic-yard capacity chassis with Cummins L10-240G engines on the older models, and the newer trucks have Detroit Diesel 50G and Caterpillar 3306 engines.

Most recently, Pacific Gas and Electric Corp. (PG&E) and WMI joined on a project that will replace 120 diesel-powered refuse haulers in WMI's San Diego fleet with new Mack trucks powered by LNG. Not only will the



Mack Trucks/PX 07159

This refuse hauler, operated by Waste Management in Washington, Pennsylvania, runs on a Mack E7 natural gas (LNG) engine.

Waste Management's LNG fueling station sits atop two buried, double-walled, vacuum-insulated storage tanks. The fueling station is unique in that it vents gas from the station to a Columbia Gas pipeline, thus reducing environmental impact.



Kevin Chandler, Battelle/PX 08263

project reduce emissions produced by WMI's fleet of refuse haulers; it will also allow the construction of a new power plant in San Diego. The companies noted that this project is the first to use emissions reductions from mobile sources to offset emissions from a major new stationary source.

"This project is a ground-breaking win-win strategy that helps bring the region the new sources of power it needs while improving San Diego's air quality," said PG&E National Energy Group (NEG) west region president and chief operating officer Thomas King. "We are very grateful to all of the regulatory agencies that worked with us to pioneer this new approach to emission control."

The trucks will be replaced over a period of 18 months. PG&E NEG will pay WMI the difference in cost between diesel-fueled engines and the LNG-powered engines. PG&E NEG will also pay for the construction of a new LNG fueling station. The companies will spend a combined \$33 million on the fleet conversion project, which is expected to reduce nitrogen oxide (NO<sub>x</sub>) emissions by more than 35 tons per year.

## Haulers on the market

Refuse hauling is one of the toughest vehicle duty cycles, requiring constant starts and stops at 900-1200 homes per day. To be effective, the truck must generate a lot of torque quickly, and run reliably at high operating temperatures. Many manufacturers offer natural gas options that can stand up to these rigors. Here are a few of the choices on the market:

Crane Carrier Corporation  
(chassis)  
Contact: Zack Williams, 918-836-1651  
[www.cranecarrier.com](http://www.cranecarrier.com)

Mack Truck, Inc.  
(chassis with E7 engine)  
Contact: Steve Ginter, 610-709-3259  
[www.macktrucks.com](http://www.macktrucks.com)

Caterpillar  
(engine)  
Contact: Jim Martin, 309-578-8350  
[www.cat.com](http://www.cat.com)

Cummins  
(engine)  
Contact: Vinod Duggal, 812-377-7338  
[www.cummins.com](http://www.cummins.com)

Deere  
(engine)  
Contact: Tom Cummings, 319-292-5220  
[www.deere.com](http://www.deere.com)

## Recent regulations in California

New federal and state clean air regulations are encouraging many fleet operators to purchase vehicles that reduce the fleet's impact on urban air quality. A recent ruling that is expected to make an important impact came from Southern California. The South Coast Air Quality Management District Governing Board adopted the first in a series of regulations that will gradually shift the region's refuse haulers, transit buses, and other vehicles from diesel to clean fuels or low emissions technology. "Now it's time for vehicle fleets—especially high-polluting diesel trucks and buses—to do their . . . share in reducing . . . toxic air pollution," said William A. Burke, from the South Coast Air Quality Management District. These rules respectively cover light- and medium duty vehicles, transit buses, and public and private waste hauling trucks.

With regulations and joint projects becoming more common, we could see a lot less belching, black smoke, and much quieter neighborhoods. For more information contact the National Alternative Fuels Hotline at 800-423-1DOE or check out [www.ccities.doe.gov/success.shtml](http://www.ccities.doe.gov/success.shtml) and click on "refuse haulers."



# Federal News

## DOE and EPA Help Clear the Air

DOE and EPA have partnered to help clear the air and help Clean Cities stakeholders understand the ins and outs of how Voluntary Mobile Source Emission Reduction Programs (VMEPs) can earn State Implementation Program (SIP) credits toward achieving attainment status. The agencies co-hosted a series of free workshops explaining how states and local governments can earn SIP credits for voluntary activities, like Clean Cities AFV projects, that reduce vehicle emissions. Under a 1997 EPA guidance, voluntary vehicle emission reduction activities can earn SIP credits if the emissions benefits are substantiated. Moreover, voluntary projects included in a state's SIP are eligible for funding through the Congestion Mitigation and Air Quality Improvement Program (CMAQ), a considerable resource for Clean Cities coalitions in non-attainment areas. The Federal Highway Administration also participated in the training and discussed the steps to obtain CMAQ dollars.

The workshops, which were held in Philadelphia, Atlanta, and New York City in August and September (a workshop will be held in Denver in November), provided attendees an overview of the SIP/VMEP process, including how it works, its deadlines, and the role for alternative fuels and voluntary activities. The workshops also offered a tutorial on the emissions reductions achieved by different AFVs—specifically, step-by-step instruction on using DOE/EPA's new computer-based AirCred tool, which calculates the emissions benefits of new original equipment manufactured vehicles. Developed by Argonne National Laboratory, in consultation with EPA, the tool has been approved by EPA for use by coalitions, metropolitan planning organizations, and state air quality planners.

"The workshops were helpful to Clean Cities because they helped define the role coordinators and stakeholders can play in the VMEP process," said Clean Cities Deputy

Director Marcy Rood. "We wanted to provide them with a roadmap to be players in their regions and be aware of guidelines to the emission reduction plans that are underway, which can ultimately lead coalitions to CMAQ funding."

For more information on VMEP or the AirCred tool, call the Clean Cities Hotline at 800-CCITIES or check out [www.ccities.doe.gov](http://www.ccities.doe.gov).

## DOE Issues Clean Cities Report Cards

Over the past seven years, Clean Cities coalitions have collectively deployed nearly 180,000 AFVs and developed a nationwide network of more than 5,300 alternative fuel stations. But how are individual coalitions faring in their own efforts to increase the number of AFVs on local roads and build the necessary infrastructure? Which coalitions are the most successful—the "cleanest" of the Clean Cities? To evaluate the national program's progress and develop measurable national goals for increasing the number of AFVs and related refueling stations, DOE Clean Cities staff established a metrics system to determine individual coalition's success to date and the growth rate needed for the national program to meet its goals. The system was used to compile a top ten list of the best performing Clean Cities coalitions. The list, first presented to a limited audience at the 2000 National Clean Cities Conference, has not been publicized...until now.

### The methodology

Using data collected in the annual coordinator surveys, coalitions were awarded points for each AFV on the road and each refueling station in use.

Vehicle points varied according to the type of vehicle and the alternative fuel used to power it. Medium- and heavy-duty vehicle acquisitions, for example, earned more points

## DOE Publishes Executive Order Guidance

Executive Order 13149, Greening the Government through Federal Fleet and Transportation Efficiency, directs federal agencies to lead the way in reducing vehicular petroleum consumption (see AFN, Vol. 4, No. 2). Specifically, each agency operating 20 or more vehicles in the United States must reduce its fleet's annual petroleum consumption by at least 20% by the end of fiscal year (FY) 2005, compared to FY 1999 petroleum consumption levels, through increases in fleet efficiency and the use of alternative fuels.

DOE, as directed by the Order, recently developed and published guidance to help agencies understand the Order's requirements. Available in hard copy and on the Web, the guidance suggests compliance strategies and demonstrates simple calculations for determining an agency's fuel efficiency and petroleum consumption. It also explains the reporting requirements and the Federal Automotive Statistical Tool (FAST), which will be used for reporting. For more information on the guidance, check out: [www.ott.doe.gov/epact/pdfs/eoguidance.pdf](http://www.ott.doe.gov/epact/pdfs/eoguidance.pdf) or call the National Alternative Fuels Hotline at 800-423-1DOE.



## The Top Ten

Dallas-Fort Worth Clean Cities captured the number one spot with a total of 7,000 AFVs and more than 150 alternative fuel stations. Maricopa Clean Cities in Arizona ranks second with nearly 4,700 AFVs and 105 alternative fuel stations (note: data does not include vehicles purchased in 2000). Clean Cities-Atlanta is third with nearly 3,000 AFVs and 217 stations. Central Oklahoma Clean Cities ranks fourth, with more than 1,200 AFVs and nearly 290 stations, and Salt Lake Clean Cities is fifth on the list, with nearly 2,800 AFVs and 210 stations.

Characteristics of the top performing Clean Cities include one or more of the following: a strong, active coordinator; strong utility involvement; and strong local and state incentives and support. It is also important to note that smaller cities with smaller vehicle populations and therefore fewer refueling stations may not fare as well as larger cities in this particular metrics system. But smaller coalitions making big strides do not go unnoticed. Coalitions of all sizes are nationally recognized through the coalition awards presented at the National Clean Cities Conference as well as in newsletter articles and success stories on the Clean Cities Web site. The numbers, however, are the most important measure of success. "Our top priority is to decrease the amount of petroleum we use as a nation," said National Clean Cities Director, Shelley Launey. "In the transportation sector, aside from discarding our vehicles entirely, the best way to reduce petroleum consumption is to use alternative fuels. Although there are lots of ways to characterize a successful Clean Cities coalition, the most important measure of success must be the number of AFVs—using alternative fuel—and the number of stations we have to support them," she said.



### The top ten list of the best performing Clean Cities

1. Dallas/Fort Worth, Texas – 101,382 points
2. Maricopa County, Arizona – 69,278 points
3. Atlanta, Georgia – 57,313 points
4. Central Oklahoma – 53,893 points
5. Salt Lake City, Utah – 52,524 points
6. Tulsa, Oklahoma – 51,820 points
7. Alamo Area, Texas – 45,071 points
8. San Diego, California – 40,565 points
9. Northeast Ohio – 40,315 points
10. Denver, Colorado – 34,088 points

than light-duty vehicle acquisitions because they typically require a greater initial investment and use more alternative fuel. According to Mike Laughlin, engineer, QSS Group, Inc., who developed the metrics system, similar reasoning was used to develop the point values for fuel type. "The vehicle point values were assigned to reflect the relative oil displacement potential and relative level of investment

required for CNG, propane, and electric vehicles," said Laughlin. "That is, it is currently more likely that a dedicated CNG vehicle purchase, for example, will result in more alternative fuel use than an ethanol flexible-fuel vehicle purchase, and the higher initial incremental cost for the CNG vehicle indicates that a commitment to alternative fuels is being made by that vehicle purchaser," he said. This system also reinforces the importance of the annual survey—without 100 percent participation from Clean Cities coalitions, DOE has an incomplete record of the program's progress and the vehicles and stations attributable to the Clean Cities activities. Inaccurate vehicle reporting and failure to submit the annual survey also affect coalitions' ranking.

Refueling station development earned coalitions significantly more points than vehicle acquisitions because refueling station development requires a significantly greater investment. Fuel type and station accessibility also affected the point values (see side box for point system).

Activities including coalition meetings, media coverage, and public outreach events were also considered in each evaluation, but while such activities are important to local AFV market growth, they did not weigh as heavily into the final scores as AFV and refueling station numbers.

### AFV Point System

Light-duty: CNG, LNG, Propane, Electric. . . . . 10 points  
 Light-duty: Methanol, Ethanol, Biodiesel,  
 Unspecified . . . . . 1 point  
 Heavy-duty: CNG, LNG, Propane, Electric,  
 Methanol, Ethanol . . . . . 20 points  
 Heavy-duty: Biodiesel, Unspecified . . . . . 3 points

### Alternative Fuel Station Point System

CNG, LNG, Public Propane, Ethanol . . . . . 200 points  
 Private Propane, Methanol, Biodiesel,  
 Public EV Charging . . . . . 100 points  
 Other Electric, Unspecified. . . . . 20 points  
*Station accessibility data was not collected until 1999*



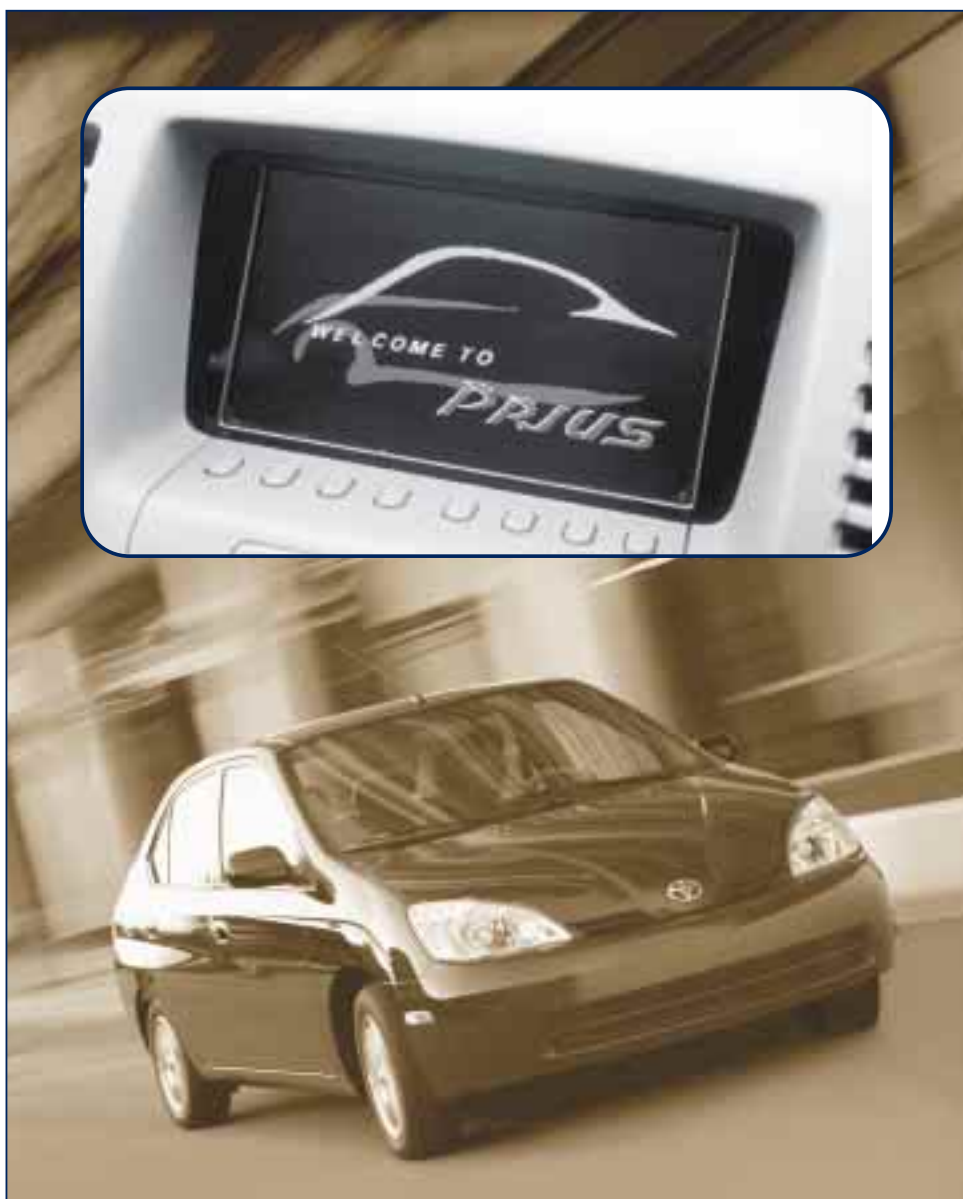
## From the Automakers

### Attention Niche Markets!

Among the vehicles in Ford Motor Company's model year 2001 (MY 2001) lineup is an AFV that's sure to be a hit in many Clean Cities. The new dedicated compressed natural gas (CNG) E-450 cutaway Econoline van, manufactured without a back panel to allow for the addition of a custom coach, is a perfect fit for many alternative fuel niche markets. Popular cutaway applications include hotel and airport shuttles, delivery vans, and school buses—each a high priority niche activity area identified by Clean Cities coalitions. "This cutaway, or cab and chassis version, of Ford's Econoline van series has been at the top of the request list for fleets interested in alternative fuels for several years," said Dennis Smith, Clean Cities Niche Market Specialist. According to Smith, Ford's new offering will benefit fleets in more ways than one. "Traditionally, these fleets are powered by diesel fuel. In comparison, this new dedicated CNG version will provide significant noise and emissions reductions, while reducing oil consumption," he said.

Powered by a 5.4-liter engine, the E-450 CNG cutaway comes with a four speed automatic transmission, a 176-inch wheelbase, and dual rear wheels. Three underbody tanks provide an estimated driving range of 125 to 150 miles, but customers can purchase two additional tanks to be installed through Ford's Qualified Vehicle Modifier program and extend the range to 250 miles. The new cutaway will be built at a Ford assembly plant in Lorain, Ohio and is targeted for ultra low emission vehicle certification.

For more information on Ford's new MY 2001 dedicated CNG cutaway Econoline van, call Ford's alternative fuels hotline at 877-ALT-FUEL or check out [www.fleet.ford.com/products\\_services/alternative\\_vehicles/default.asp](http://www.fleet.ford.com/products_services/alternative_vehicles/default.asp).



Now available in the U.S., the Toyota Prius hybrid-electric vehicle sports ultra-efficient fuel consumption while producing 58 hp and a constant 4,000 rpm. The dashboard screen in the Prius (inset) is high tech and user friendly.

### Toyota Prius Hits the U.S. Market

It was perfect timing. After initial success in Japan, Toyota announced the U.S. launch of its hybrid gasoline/electric Prius this summer, amidst a growing public interest in energy efficiency and environmental stewardship. The Prius uses both a 1.5-liter gasoline-powered internal combustion engine and a nickel metal hydride battery pack powering an electric motor to achieve 52 miles per gallon in city driving (614 miles/tank) and 45 miles per

gallon on the highway (531 miles/tank). The four-door/five passenger vehicle comes with an eight-year/100,000 mile battery and hybrid system warranty and a free seven-day/24 hour roadside assistance program. A certified super ultra low emission vehicle, the Prius has received several environmental awards, including the Sierra Club's Excellence in Environmental Engineering Award and the U.S. Environmental Protection Agency's First Annual Global Climate Protection Award.

Early adopters eager to experience the Prius, could pre-order the vehicle on Toyota's Web site starting in June, with vehicle deliveries beginning in late August. The Prius is already sold out until January and the waiting list continues to grow. For more information, check out [www.toyota.com](http://www.toyota.com).

**Do you own a hybrid vehicle? If you are one of the first to own and drive a Honda Insight or Toyota Prius and are interested in the formation of an Early Adopters' Club to share your experiences, information, and ideas, please let us know by sending an email to [fueleconomy@ornl.gov](mailto:fueleconomy@ornl.gov)**

## DOE Launches Its First Technology Snapshot

To help consumers understand "just what is a hybrid anyway?" DOE published the first in a series of "Technology Snapshots" to help answer questions, alleviate concerns, and spark interest in early adopters of hybrid vehicles. The debut brochure, sponsored in part by Toyota and featuring Prius, describes the new technology and how it works – in plain English. It also provides an overview of the vehicle's performance, emissions, and fuel economy as compared to its conventional gasoline powered counterparts. The Technology Snapshots will be available electronically on the Clean Cities Web site at [www.cities.doe.gov](http://www.cities.doe.gov). Printed copies will be available in limited numbers at Toyota dealerships that offer the Prius.



## Honda Civic GX Receives Top Green Car Rating

In an update to its model year 2000 *Green Book: The Environmental Guide to Cars & Trucks*, the American Council for an Energy Efficient Economy (ACEEE) awarded Honda's Civic GX, a dedicated compressed natural gas (CNG) powered vehicle, its highest green car rating. The GX, recently certified to California's super ultra low

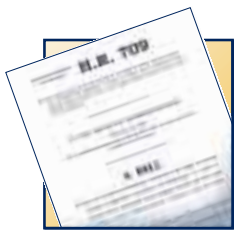
emission vehicle (SULEV) standard, now shares the top spot with General Motors' electric EV1. "The fact that two vehicles tie for the crown is significant since electric vehicles have previously dominated our greenest vehicle list," said John DeCicco, ACEEE Senior Associate and lead author of the *Green Book*.

ACEEE's Green Scores, which are based on emissions and fuel economy testing, account for tailpipe pollution and global warming impacts, including emissions from auto factories, petroleum refineries, and power plants in the case of electric vehicles. For more information on ACEEE's green car ratings and a preview of the *Green Book*, check out [www.GreenerCars.com](http://www.GreenerCars.com).



American Honda Motor Company, Inc./PIX 05469





# From the Hill

## Jeffords-Hatch Bill

A new bill proposed to Congress could open the door for more fleets to purchase alternative fuel vehicles. The Jeffords-Hatch Bill (S2591) is designed to encourage the purchase and use of alternative fuel vehicles (AFVs) that are powered by compressed natural gas, liquefied natural gas, propane, electricity, methanol, and hydrogen.

Currently, there are no existing national tax credits for purchase of vehicles that operate on alternative fuels. A 10% tax credit is provided for the cost of electric vehicles, up to a maximum credit of \$4,000. Minimal tax deductions, which are available for the purchase of alternative fuel vehicles under the Energy Policy Act, have seldom been utilized and begin to phase down in 2002. The new proposal would essentially extend the present credit for electric vehicles and provide a new seven-year tax credit of \$0.25 per gasoline gallon equivalent for alternative fuels sold nationwide. It would also establish a new tiered system of AFV purchase credits, which are proportional to the emissions of the vehicle. Eligibility would be restricted to extremely low-emission, dedicated vehicles.

The bill has been assigned to the Senate Finance subcommittee on Taxation and IRS oversight, with Senator Hatch as chairman. A hearing was held Tuesday, July 18, with testimony from five individuals, including Beverly Miller, director, Salt Lake Clean Cities. The original bill sponsors are looking for other sponsors at this time. They're also looking for other companion legislation for S 2591 to help carry the bill.

At press time, Congress had yet to include a version of S 2591 in a bill expected to be passed this session. For more information go to [www.thomas.loc.gov/home/thomas.html](http://www.thomas.loc.gov/home/thomas.html), or call J.J. Brown in Senator Hatch's office, at 202-224-9858.

## Senator Hatch, Clean Cities Champion

The Clean Cities logo may have a more established presence on Capitol Hill—not only on DOE fact sheets, reports, newsletters—but also on a briefcase toted by Utah Senator Orrin Hatch. Earlier this year, the Salt Lake Clean Cities Coalition (SLCCC) presented a Clean Cities briefcase to the Senator in recognition of his ongoing support for the program and alternative fuels.

On June 2, Senator Hatch joined Salt Lake City Mayor Ross Anderson and the SLCCC to celebrate the coalition's six recently awarded DOE State Energy Program grants. Energy Secretary Richardson announced the 2000 SEP awards at the Sixth National Clean Cities Conference in San Diego—SLCCC will receive \$550,000 for three niche market vehicle projects, two infrastructure construction projects, and the development of an AFV curriculum. In a press conference on the steps of Salt Lake City's city hall, Senator Hatch congratulated SLCCC stakeholders, presented certificates, and voiced his support for Clean Cities and alternative fuels. He also



Ernie Oakes of DOE presents Utah Senator Hatch with a special case for his ongoing support of Clean Cities and alternative fuels.

Photo courtesy of Alison Taylor

participated in the coalition's ride and drive, testing the power of a dedicated CNG vehicle behind the wheel of a Honda Civic GX.

The SLCCC, led by coordinator Beverly Miller, continues to work closely with Senator Hatch's staff on alternative fuel issues on both the national and local levels. For more information on SEP awards, check out the Clean Cities Web site at [www.ccities.doe.gov/support.shtml](http://www.ccities.doe.gov/support.shtml). For more information on SLCCC activities, call Salt Lake Clean Cities Coordinator Beverly Miller at 801-535-7736.



## From the States

### Honda's Civic GX Wins Votes Among State Fleets

Earlier this year, the city of Dallas made history by placing the largest order ever received for Honda's dedicated compressed natural gas (CNG) Civic GX. The city's 180 new vehicles will earn Dallas recognition as the world's largest Civic GX fleet. Recently certified as a super ultra low emission vehicle by the state of California, the GX is gaining popularity among state fleets.

To the north, the New York State Department of Transportation (NYSDOT) recently purchased 60 GXs, increasing its total GX fleet to 110. "We chose the Civic GX because our operators are happy with its performance and because we see natural gas as the cleanest, most cost-effective alternative fuel available," said Joe Darling, director of the equipment management division of the New York State Department of Transportation. The NYSDOT will use the GX for various tasks, such as construction inspection and administrative activities.

### Incentives Watch

For the past several months, Arizona's incentives program has been the hot topic of discussion among alternative fuel stakeholders nationwide. The pioneer program provided unprecedented savings for state residents when buying new AFVs or converting vehicles to run on alternative fuel. While many Arizonans used the opportunity to buy dedicated AFVs to help improve local air quality, several loopholes in the legislation prompted widespread abuse of the incentives and tapped the state treasury for far more than legislators initially projected. As a result, on Friday, October 20, Arizona legislators passed a one-year moratorium on the rebate program. At the time *Alternative Fuel News* went to print, state officials continued to meet in emergency sessions to address budget concerns and tighten loopholes in the legislation.

Alternative fuels is sure to be a key issue in the next legislative session as the state searches for ways to balance clean air efforts, oil savings, and economics. "What has happened in Arizona is truly unfortunate, but we are optimistic that Arizona officials will find a way to amend the legislation so that it serves its intended purpose—to promote the use of vehicles that operate on clean-burning, domestically produced alternative fuels," said David Rodgers, Director of the Department of Energy's Office of Technology Utilization. "AFV incentives programs do not have to break the bank. Alternative fuel stakeholders working with their state legislators can learn from the Arizona experience to develop an incentives package that will help build the local AFV market without straining the state budget," Rodgers said.



## Funding Opportunities

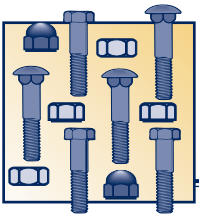
### AIR-21 Can Help Clean Cities Airport Projects Take Off

Airports have emerged at the top of most Clean Cities' niche activity center lists. With so many different types of vehicles servicing airports, such as shuttles, airport taxis, and airline ground support vehicles, the potential for successful alternative fuel programs seems sky-high. The Aviation Investment and Reform Act of the 21st Century (AIR-21), signed into law on April 5, 2000, builds on that potential.

AIR-21 establishes an inherently low emission vehicle program to be administered by the Department of Transportation, with funding of up to \$20 million for use at ten public airports in EPA-designated non-attainment areas. Grants of up to \$2 million can be used at each airport

to cover the incremental cost of dedicated on- and off-road alternative fuel vehicles operating on natural gas, propane, electricity, hydrogen, and M-85. Funding will also be available for alternative fuel refueling infrastructure construction. The official AIR-21 grant solicitation is expected to be published sometime soon in the Federal Register. For more information, go to the Federal Register Web site at [www.access.gpo.gov/su\\_docs/aces/aces140.html](http://www.access.gpo.gov/su_docs/aces/aces140.html).

DOE's Clean Cities Program has been coordinating with the Federal Aviation Administration in its efforts to host several workshops on implementing AFV programs at airports. The southwest regional airport AFV forum will be February 15-16 at Dallas-Fort Worth International Airport. For more information, please contact the Clean Airport Partnership at CAirportP@aol.com or 303-462-1647.



# Nuts and Bolts

## News from NCC Inc.

National Clean Cities, Incorporated (NCC Inc.), a separate and distinct organization from the Department of Energy's Clean Cities Program, recently celebrated its first anniversary as a 501(c)(3) non-profit organization. Since June 1999, NCC Inc. has grown to include 19 chapters and continues to initiate projects to assist Clean Cities coalitions. Here are a few of NCC Inc.'s ongoing activities:

### Legislative Outreach

Since March, NCC Inc. has coordinated an effort among alternative fuel groups to develop and support a consensus legislative package. The legislative working group, which includes Clean Cities coordinators, met in May at the National Clean Cities Conference and continues to meet regularly.

### Member Services

Clean Cities coalitions continue to join NCC Inc. at a steady rate. According to Executive Director Carol Butler, NCC Inc.'s membership goal for the coming year is 45 chapter coalitions.

Butler also stated that the Board of Directors is developing a list of services that NCC Inc. will offer members at reduced cost. In September, the Board approved making low cost directors' and officers' liability (D&O) insurance available to chapters. Coalitions can secure \$1 million in D&O insurance through NCC Inc.'s, agent for an annual premium of \$685.00. Butler will provide chapters with details on other offerings as they are approved.

NCC Inc. has also begun seeking new funding sources for AFV projects. Applications for more than \$5 million in grants have been submitted to government agencies, private foundations and other sources in the past few months. Ongoing research has identified additional funding sources for regional and national projects. Chapters will be invited to participate as new opportunities emerge.

### Organization Development

Board members have elected David Holloway as Chairperson and Joe Colaneri as Treasurer. Chairpersons for NCC Inc.'s operating committees include Education and Information (Gail Hendrickson), Government Relations (Tom Cummings and Rich Kolodziej), Market Development (Ken Stewart), Member Services (Jim Snider), Compensation (David Holloway), and Finance (Joe Colaneri).

Ex-Officio, non-voting members of the Board of Directors include Kent Igleheart, Clean Cities-Atlanta and Chairperson of NCC Inc.'s Board of Advisors; Peter Wolk,

NCC Inc. maintains both a Board of Directors and a Board of Advisors. Members of the first operating Board of Directors include;

- David Holloway, chairman  
University of Maryland
- Joe Colaneri,  
Propane Vehicle Coalition
- Tom Cummings,  
Deere Power Systems,
- Al Ebron,  
National Alternative Fuels Training Consortium
- Gail Hendrickson,  
Electric Vehicle Association of the Americas
- Rich Kolodziej,  
Natural Gas Vehicle Coalition
- Sam McCahon,  
National Biodiesel Board
- Terry Ryan,  
Ford Motor Company
- Jim Snider,  
DaimlerChrysler
- Ken Stewart,  
General Motors Corporation

NCC Inc. Corporate Secretary and Legal Counsel; and Carol Butler, NCC Inc. Executive Director.

Representing the chapter Clean Cities coalitions, NCC Inc.'s Board of Advisors are a major resource to NCC Inc. staff and the Board of Directors. Each member serves a one-year term. In addition to Igleheart, NCC Inc.'s Board of Advisors includes Carlon Bennett, Paso del Norte; Peter Casarella, Capitol Clean Cities of Connecticut; Melissa Howell, Commonwealth Clean Cities Partnership; and Beverly Miller, Salt Lake Clean Cities.

For information on how your coalition can become a chapter of NCC Inc. or to receive other information about NCC Inc. activities, contact Carol Butler at 703- 644-9955 or by email at [nccinc@earthlink.net](mailto:nccinc@earthlink.net). Look for updates about NCC Inc. in future issues of AFN and in other publications.

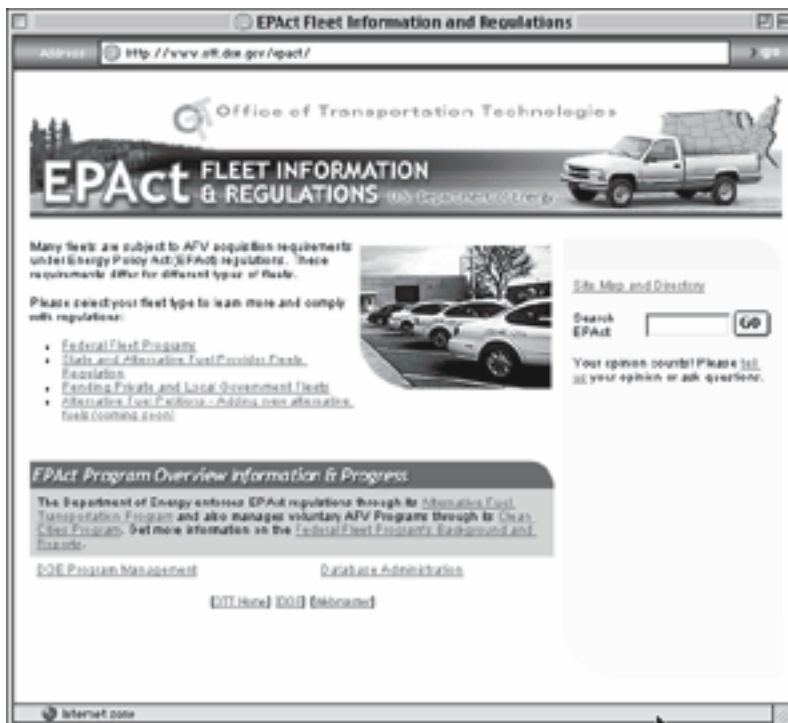




## On the Web

### Heavy-duty Information

Interested in learning about cutting-edge heavy-duty vehicle technologies that use alternative and advanced petroleum fuels? A new Web site at [www.ctts.nrel.gov/heavy\\_vehicle](http://www.ctts.nrel.gov/heavy_vehicle) features information about the heavy vehicle work conducted by the National Renewable Energy Laboratory in support of DOE's Office of Heavy Vehicle Technologies, which is part of the Office of Transportation Technologies. This new Web site provides information about the people and projects behind in-laboratory engine and fuels development, related technology commercialization, and the assessment of such technologies in today's heavy-duty marketplace.



### EPAct on the Web

Check out the new Energy Policy Act (EPAct) Web site at [www.ott.doe.gov/epact](http://www.ott.doe.gov/epact). It has important information for federal, state and alternative fuel provider, and private and local government fleets. These fleets may be required to purchase alternative fuel vehicles and report on alternative fuel vehicle acquisitions. This Web site highlights program information, resources, EPAct regulations, related documents, and events. State and alternative fuel provider fleets can use this online tool to file or edit a report, trade credits, get credits for acquiring biodiesel, and check current reporting status. The site also has links that allow federal fleets to complete and submit reports. Private and local government fleets can find out the status of the private and local government rulemaking that may require them to acquire AFVs. You will also be able to obtain information on filing alternative fuel petitions. This site attempts to make EPAct regulations easy to understand and compliance reports simple to submit—try it out!



Be informed! Search the entire collection of articles from the Alternative Fuel News. Check out <http://afdc3.nrel.gov/documents/altfuelnews/>. For more information about specific articles, contact the National Alternative Fuels Hotline at 800-423-1363.



## At the Pump

### Trillium Funds Los Angeles MTA Bus Refueling Site

Earlier this year, Trillium USA Inc. became the largest private CNG fueling service provider in the nation by extending its number of stations in the Los Angeles area. On March 23, the Board of the Los Angeles County Metropolitan Transit Authority (LA MTA) decided to exercise an option in its contract with Trillium for its public private partnership for CNG fueling facilities. The contract, now valued at \$35 million, marks the first of its kind. Trillium currently owns, operates, and maintains two CNG fueling stations for the LA MTA. Plans are in place for a third site in downtown Los Angeles. Each serves 200-240 buses and will dispense more than 3 million gallons of CNG each year.

Benefits cited by LA MTA for this contract included substantial cost savings as well as reduced design and construction schedules.

For more information go to [www.trillium-musa.com](http://www.trillium-musa.com).



### National Ethanol Vehicle Coalition Goes Out on its Own

After seven years under the tutelage of the Governors' Ethanol Coalition (GEC) and the National Corn Grower's Association (NCGA), the National Ethanol Vehicle Coalition is on its own.

While the coalition will continue activities to promote the use of E85 as a transportation fuel, it will do so as a new, incorporated, nonprofit organization. The new coalition's initial governing board of directors includes representatives from DaimlerChrysler Corporation, Ford Motor Company, General Motors Corporation, ethanol producers, state corn grower associations, biomass ethanol industry groups, and other ethanol advocates, in addition to the GEC and NCGA. For more information, call the National Ethanol Vehicle Coalition at 877-485-8595, email to [information@e85fuel.com](mailto:information@e85fuel.com), or check out [www.e85fuel.com](http://www.e85fuel.com).