

Clean Cities Now

Repaving the Road for Electric Vehicles



Moving Ahead 2010

Coalition educates 700 citizens about green vehicle options



Considering Conversions

A time- and cost-effective fleet solution

Coordinators Share Coalition Success Stories

Gross Vehicle Weight Rating Defined



U.S. Department of Energy



Dennis Smith



Linda Bluestein

Dear Readers,

Renewed interest in electric vehicles at the local and national level has government officials, automakers, and other original equipment manufacturers (OEMs) asking what they need to do to get ready. To explore this question, Clean Cities hosted the Plug-In Vehicle and Infrastructure Workshop at U.S. Department of Energy (DOE) headquarters in July. The focus of the event: To discuss lessons learned and figure out how to launch electric vehicles into the mainstream market. This issue's feature article summarizes the day's discussions and shares lessons learned.

Despite the buzz surrounding electric vehicles, we haven't forgotten our other alternative fuels. Our Technology Spotlight details the benefits of propane conversions and what you need to know to take advantage of this cost-effective option in your fleet, and our Coalition News section covers an array of examples of successful applications of alternative fuel and advanced vehicles.

Speaking of Coalition News, we're excited to announce every article in this key department was written by coordinators. From here on out, they'll tell their stories in their own words. Thanks to the coordinators who submitted articles for this issue. We look forward to seeing what the rest of you have to say in future issues.

As usual, this issue also explains the functions of one of Clean Cities' many helpful online tools, celebrates the accomplishments one of our 87 outstanding coordinators, answers frequently asked technical questions, and points you to new resources available on the Alternative Fuels and Advanced Vehicles Data Center.

We hope you enjoy this issue. Let us know what you think at cleancities@nrel.gov.



Dennis A. Smith
National Clean Cities Director

Linda Bluestein
National Clean Cities Co-Director

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Program News

Clean Cities Sparks New National Parks Initiative

Clean Cities is working with the National Park Service (NPS) to accelerate the deployment of alternative fuel and energy-efficient vehicles in national parks across the country. The goal of the partnership is to reduce petroleum use, improve air quality, curb congestion, and educate visitors about alternative fuels and advanced vehicles.

Clean Cities is providing technical, financial, and project implementation support to initiate projects at Grand Teton, Mammoth Cave, and Yellowstone National Parks. The projects include:

- Replacing interpretative and ranger vehicles with hybrids in Grand Teton.
- Adding five new dedicated propane school buses, five electric utility vehicles, one dedicated propane pickup, and one bi-fuel propane pickup to the a Mammoth Cave fleet.



Clean Cities and NPS are teaming to curb petroleum use and congestion and to educate visitors about clean vehicles in national parks.

- Adding two hybrid electric/flexible-fuel shuttle buses and a solar-powered electric utility vehicle to a Yellowstone fleet.

“We are excited to be working closely with NPS to reduce petroleum consumption in our national parks and to

have the opportunity to educate park visitors about the benefits of alternative fuels and fuel economy measures,” says Clean Cities Director Dennis Smith.



Tool Tips

Clean Cities develops a wide variety of tools to help fleets, fuel providers, and consumers find ways to employ alternative fuels, advanced vehicles, and fuel economy measures. To see all the tools go to www.afdc.energy.gov/tools.

Mobile FuelEconomy.gov

Curious about the fuel economy of light-duty vehicles while on the go? FuelEconomy.gov offers a mobile application that allows handheld device users to quickly and easily access pertinent hybrid electric, alternative fuel, and conventional vehicle information.

Access is easy. Just type in <http://fueleconomy.gov/m>, and choose the model year of the vehicle you are curious about. Next, choose the make, the model, and finally the engine and transmission type. In seconds, the mobile tool will tell you the car's city, highway, and combined miles per gallon and its annual fuel cost, petroleum usage, and carbon footprint.

To compare vehicles, click “Add another car” and enter the specs of the next vehicle. The results will appear above the previous

FuelEconomy.gov's mobile tool estimates the miles-per-gallon of passenger vehicles. iStock

vehicles you looked up. To delete a vehicle from the screen, simply click “Remove this car,” or clear the screen and begin again by clicking “Restart.”

For a quick look at ethanol-capable vehicles, this tool, which is based on FuelEconomy.gov's “Find a Car” Web section, features a “Find a Flex-Fuel Vehicle” (FFV) link on the opening page. Just enter the applicable information to pull up information about specific FFVs.

For more information on fuel economy and how to improve it in your personal and fleet vehicles, visit www.fueleconomy.gov.





Technology Spotlight

Propane Conversions and Light-Duty Vehicles

A Convenient and Cost-Effective Option for Fleets

Although original equipment manufacturers (OEMs) have offered only a few light-duty propane vehicle models over the past 10 years, propane vehicles remain among the nation's most widely available alternative fuel vehicles (AFVs). The reason: Converting conventional gasoline vehicles to run on propane can be a convenient and cost-effective fleet option.

Fleets can choose from two types of propane conversions: vapor injection and liquid injection. In a vapor injection system, liquid propane is controlled by a reducer, which converts liquid to vapor and draws the vapor into the combustion chamber. Liquid propane injection (LPI) systems, on the other hand, deliver the propane fuel to the combustion chamber in liquid form.

Fleet managers are attracted to the price of propane conversions, which ranges from \$4,000 to \$12,000 per light-duty vehicle. Currently, the federal Qualified Alternative Fuel Motor Vehicle Tax Credit can offset much of this cost, and many states offer additional incentives.

“With propane conversions, entire fleets can be quickly and cost effectively transformed into AFV fleets,” says Steve Whaley of Alliance AutoGas, a propane conversion system and infrastructure supplier.

Converting vehicles to run on propane requires thoughtful consideration and a solid knowledge of current regulations. That's because making changes to vehicles and engines can potentially increase exhaust or evaporative emissions. Therefore it's critical that fleet managers only consider conversion systems that are certified by the U.S. Environmental Protection Agency (EPA) or the California Air Resources Board (CARB). Equally critical is

Remote Fill

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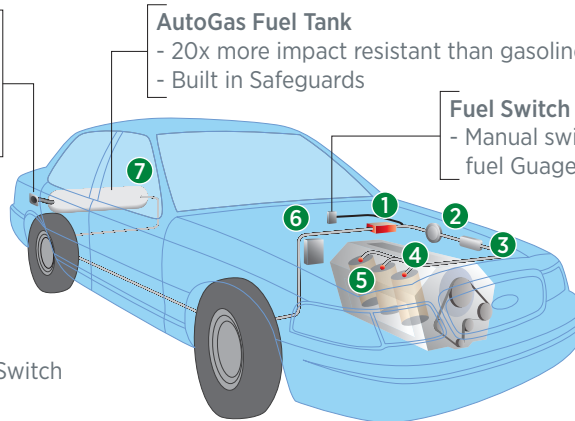
AutoGas Fuel Tank

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- Built in Safeguards

Fuel Switch on Dash

- Manual switch & AutoGas fuel Gauge

- 1 VSI ECM
- 2 Reducer
- 3 Filter Unit
- 4 Injector Rail
- 5 OEM Injector
- 6 Fuel Selector Switch
- 7 Tank



The Alliance AutoGas: Prins Vapor Sequential Injection System. Courtesy of Alliance AutoGas

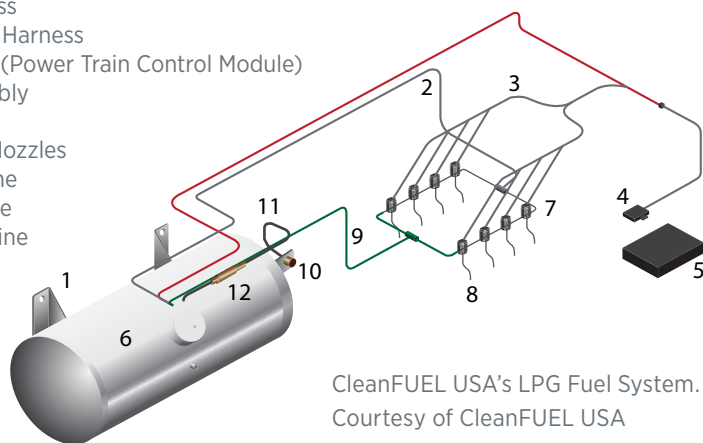
having vehicle conversions completed by qualified technicians.

The certification process can be rigorous for conversion companies. For this reason, there are relatively few companies that offer certified conversions. However, as of September 2010, EPA is considering changes to conversion regulations that could streamline the federal certification process. The changes are expected to be announced in late 2010. For more information, see www.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm.

Light-duty cars, pickups, and sport utility vehicles are good candidates for propane conversions (as are medium-duty delivery trucks, shuttle buses, and step vans). Conversion companies typically offer a limited selection of certified models with specific engine types—though some may seek additional certifications if high fleet demand potential exists.

Depending on its design, a converted vehicle either operates solely on propane (dedicated) or can switch between propane and gasoline (bi-fuel). An

- 1 - LPG Tank with Multivalves
- 2 - Injector Return Line
- 3 - LPI Injector Harness
- 4 - OEM Vehicle Main Harness
- 5 - OEM Vehicle PCM (Power Train Control Module)
- 6 - Fuel Pump Assembly
- 7 - Injector Rails
- 8 - Injector Delivery Nozzles
- 9 - Injector Supply Line
- 10 - Fuel Fill Receptacle
- 11 - Remote Fuel Fill Line
- 12 - In-Line Fuel Filter



CleanFUEL USA's LPG Fuel System. Courtesy of CleanFUEL USA

evaluation of the fleet's needs, including how far vehicles will travel from propane fueling infrastructure, can determine whether dedicated or bi-fuel systems are best suited for the application.

Two companies that offer EPA-certified conversions are Alliance AutoGas and CleanFUEL USA. Each specializes in a different type of propane technology. Alliance AutoGas offers a vapor injection system manufactured by American Alternative Fuel. It converts certain light-duty gasoline vehicles to bi-fuel operation at an Alliance AutoGas conversion site or at a fleet's facility.

"Nothing is taken off the vehicle, and—besides the fuel tank—the components that are added can fit into a 12-×12-×14-in. box," says Alliance AutoGas' Whaley.

CleanFUEL USA converts certain vehicles equipped with General Motors' 6.0-liter gasoline engine to use a LPI system. The LPI conversion results in a dedicated propane vehicle, which is ideal for fleets that have constant access to propane fueling infrastructure. "LPI vehicles perform like gasoline vehicles," says Crystelle Markley of CleanFUEL USA.

Whether converting to a vapor injection or an LPI system, conversion companies can provide fleets with evaluation and technical support, as well as infrastructure assistance.

Propane is domestically produced, clean burning, high performing, widely available, and affordable—a proven alternative transportation solution. Propane conversions continue to provide fleets with a variety of cost-effective vehicle choices. Says Markley: "The future for propane is very bright."

see "Spotlight" on p12 >

Each Technology Spotlight article details an alternative fuel or advanced vehicle technology and companies that offer it. Clean Cities does not endorse the technologies or companies featured in these articles.

Coordinator Profile

Kelly Gilbert Drives Kansas City to a Green Future



Kelly Gilbert.
Courtesy of Kelly Gilbert

Kansas City Regional Clean Cities Coalition (KCRCCC) Director Kelly Gilbert has only been doing her job for a few months, but you'd never guess it by her impressive list of accomplishments. From launching ambitious new programs to fundraising millions, Gilbert is off to an exceptional start.

"Kelly served as coordinator for about a year before becoming director," says Sandra Loi, a Clean Cities project leader at the National Renewable Energy Laboratory. "And even though she's relatively new, she hit the ground running and hasn't stopped since. She's extraordinarily driven—her tireless efforts have already made a significant impact on the use of alternative fuels in the region."

Gilbert spearheaded an ambitious proposal that led to a whopping \$15 million American Recovery and Reinvestment Act award. The grant provides funding for the installation of 27 alternative fueling stations, as well as the deployment of more than 350 alternative fuel and advanced technology vehicles. Gilbert coordinated the grant with 17 partners, together dubbed the Midwest Region Alternative Fuels Project.

"I'm delighted about our project's selection and feel privileged to contribute to the alternative fuels movement during this time of change," Gilbert says. "Now is the time to make 'alternative' fuels ordinary and every day. As a country, we can't afford to wait any longer."

Gilbert also co-chairs the Greater Kansas City Plug-In Readiness Initiative to help prepare the metro area for plug-in electric vehicles—both pure electric and hybrid electric. The initiative aims to increase public awareness and consumer confidence about plug-in vehicles; develop government policies and incentives to support their use; and build an extensive charging infrastructure in homes, workplaces, public locales, and fleet facilities.

"Plug-in vehicles will bring many benefits to the communities that embrace them," Gilbert says. "The sooner we prepare for plug-in vehicles, the sooner we'll benefit—both environmentally and economically."

What's on the horizon? In addition to planning a variety of upcoming alternative fuel events, Gilbert recently rolled out the new Green Fleet Initiative. Slated for launch in October, the program is designed to help fleet managers in Kansas and western Missouri develop and implement policies for greening their fleets. A regional rating system will recognize fleets that make significant progress toward their environmental goals, with a focus on reducing emissions and petroleum consumption while increasing the use of advanced technologies.

"The development of a regional rating system will make it easy to identify the leaders in using green transportation technologies," Gilbert says. "And the related public recognition can serve as a badge of pride for organizations and businesses doing their part for a clean energy future."

How has she accomplished so much so quickly? Gilbert credits forward-thinking fleet managers and policy makers as well as her employer, the Metropolitan Energy Center, for laying the groundwork and giving her free rein.

Feature

DOE Workshop Readies Communities for Plug-in Vehicles and Infrastructure

Clean Cities Coalitions Positioned for Key Role in Early Deployment

“Fortune favors the prepared.” That’s good advice for plug-in vehicle stakeholders. Plug-in electric vehicles (PEVs) are on the verge of nationwide introduction, and community preparation will determine the success of their initial deployment. To accelerate this process, DOE brought key stakeholders together for a Plug-in Vehicle and Infrastructure Community Readiness Workshop on July 22 in Washington, D.C., and Webcasted it simultaneously.

Automakers are introducing plug-in vehicles to target markets in 2010 and will release some throughout the country by 2011. PEV technologies include all-electric vehicles (EVs), such as the Nissan LEAF and Ford Transit Connect, and plug-in hybrid electric vehicles (PHEVs), such as the Chevrolet Volt. “Electric cars are here,” said David Sandalow, DOE Assistant Secretary for Policy and International Affairs, to kick off the workshop.

Although the models are current and the technologies improved, the plug-in electric vehicle concept has been around awhile. Many stakeholders have accumulated valuable experience with previous generations of PEVs and infrastructure and early introductions of the current generation. The workshop provided a forum to share these experiences with the goal of spurring effective community deployment of plug-in technologies. The workshop also allowed participants to tell DOE what they think the federal government should do to accelerate deployment. The 150 onsite and 750 Webcast participants represented automakers, utilities, government agencies, technology companies, industry and government associations, nonprofit organizations, and Clean Cities coalitions.



Vehicle and infrastructure deployment are just the first considerations in the widespread market launch of PEVs.

The workshop’s morning session covered best practices in community planning and partnerships related to PEV and infrastructure deployment and included a panel discussion and audience participation. One theme that emerged was the importance of streamlining permitting processes for the installation of electric-charging infrastructure. Other important issues included ensuring that government incentives cover EVs and PHEVs, tackling the challenges of standardizing charging infrastructure, and synchronizing a city’s plug-in infrastructure preparation with the arrival of the vehicles.

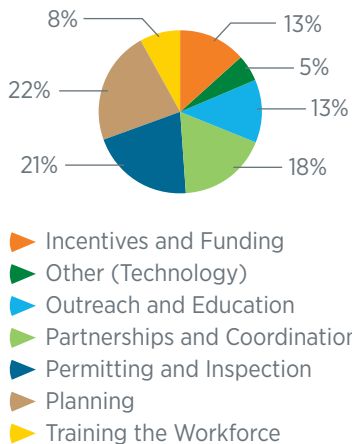
Tucson Clean Cities Coordinator Colleen Crowninshield participated in the planning and partnerships panel and highlighted the ability of Clean Cities coalitions to bring partners together,



disseminate information, and move transportation projects forward. For emphasis, Donald Hillebrand, director of the Center for Transportation Research at Argonne National Laboratory, summarized the planning and partnerships discussion by saying, “We can pretty much follow the Clean Cities model on this.”

The first discussion in the afternoon focused on automakers and dealers. The panel stressed the importance of PEVs being profitable, affordable, and capable of meeting customer expectations.

Comment Card Categories



Participants submitted PEV deployment actions that could be taken in their communities in the next six months. Shown are the categories of recommendations.

Additional recommendations included focusing on consumer education, initiating the plug-in infrastructure using home charging, and stimulating vehicle demand through government fleet purchases.

The final discussion addressed the utility viewpoint. The panel emphasized that the grid is capable of accommodating PEVs if adequate, timely vehicle distribution and charging-pattern data are available. Level 3 (fast) charging was specifically identified as requiring additional study.

This workshop was just one early step among the many steps needed to deploy plug-in vehicles nationwide. To identify next steps, participants were asked to submit actions that could be taken in their communities in the next six months to facilitate deployment. The chart above shows the types of actions recommended.

DOE has invested \$400 million in cost-shared American Recovery and Reinvestment Act of 2009 funds to deploy thousands of PEVs in communities nationwide, install charging infrastructure, provide workforce development, and collect data. DOE is planning additional strategies, based in part on input from this workshop, and has identified the following near-term actions:

EVs in the Real World

Workshop participants were asked to share their PEV experiences. The following are examples of responses received from Clean Cities coalitions.

Alamo Area Clean Cities

The Alamo Area Clean Cities coalition developed a workgroup to lead PEV deployment in San Antonio. Partners included the City of San Antonio, local utility CPS Energy, private companies, Alamo City Electric Auto Association, and others. The group addresses issues such as education and outreach, infrastructure development partnerships, and city codes. As a result of the workgroup's efforts, San Antonio changed its permitting process for Level 2 charging in homes. Another result was the development of a Texas-wide PEV workgroup.

Lesson learned: It is important to form partnerships and a centralized workgroup to coordinate PEV efforts and resources.

Philadelphia Clean Cities

To initiate a PEV action plan for Philadelphia, the local Clean Cities coalition contacted the city's sustainability director repeatedly but received no response. The coalition subsequently organized a PEV workshop. City councilors who attended the workshop were informed about the sustainability director's unresponsiveness, and, within one week, the sustainability director made contact and expressed interest in developing a PEV plan.

Lesson learned: Go directly to the top if an official who should be facilitating PEV initiatives is being unresponsive.

- Post a workshop summary (www.eere.energy.gov/cleancities/plugin_vehicle_infrastructure.html)
- Continue to host quarterly Webinars addressing plug-in vehicle issues (www.eere.energy.gov/cleancities/toolbox/webinars.html)
- Build a database of national initiatives related to plug-in vehicle deployment
- Update the Clean Cities Vehicle Buyer's Guide with new plug-in vehicle models
- Update the GREET Fleet Footprint Calculator with information about area-specific electricity sources so communities can understand the emission profiles of their plug-in vehicles
- Work with automakers to demonstrate plug-in vehicles to target communities and provide additional outreach and education on vehicles and infrastructure.

Clean Cities coalitions will also have many opportunities to take action. "Coalitions are ideally positioned because they have the experience and partnerships to deploy new vehicle technologies quickly and successfully," says Clean Cities Co-Director Linda Bluestein. Coalitions can provide outreach and education, for example, by helping car dealers teach consumers about plug-in vehicle products. They can also form committees to spearhead local vehicle and infrastructure initiatives. "If they are not already, coalitions should act now to make an impact on early plug-in electric vehicle deployment," says Bluestein.

Visit www.eere.energy.gov/cleancities/plugin_vehicle_infrastructure.html to watch the archived video of the workshop and read summary notes. For more on PEVs, visit the Alternative Fuels and Advanced Vehicles Data Center's Electric Drive Vehicle pages at www.afdc.energy.gov/afdc/vehicles/electric.html.

Coalition News



MIDWEST REGION

Maggie Striz Calnin
Greater Lansing Area Clean Cities

Clearing the Air, One School District at a Time

The Greater Lansing Area Clean Cities (GLACC) is reducing local petroleum consumption by engaging local school district bus fleets.

Since 2007, we've been promoting our "Clear the Air for School Kids" program, which informs local school districts about school bus emissions

and encourages them to reduce school bus idling time, use cleaner fuels, and install emission solutions. We've also worked with statewide school bus company Dean Transportation and Grand Ledge Public Schools to replace older buses with cleaner, more efficient buses and to install emission solutions on nearly 300 buses that carry about 10,000 special education students and 5,000 general education students daily. The EPA's National Clean Diesel Funding Assistance Program awarded GLACC more than \$1 million in American Recovery and Reinvestment Act funding to expand the program.

The project will be in full swing in time for the 2010–2011 school year. Six Grand Ledge Public School buses are being replaced with buses that reduce

nitrogen oxide and particulate matter pollution, and four Dean Transportation buses are being replaced with diesel hybrid-electric buses that use less fuel and reduce emissions. Diesel emission reduction equipment is being installed on 286 Dean Transportation buses.

We're excited to manage this project. It meets our mission of improving air quality and reducing petroleum dependence through local actions. Grand Ledge Public Schools and Dean Transportation are also better able to meet their own goals of providing safe, convenient transportation to school kids. These cleaner buses will reduce childhood exposure to harmful pollutants and save school fuel budgets.



WEST REGION

Vandana Bali, San Francisco Clean Cities

Turn Off Your Engine: Idling Wastes Money and Hurts Children

Last spring, San Francisco Clean Cities (SFCC) partnered with the American Lung Association in California, San Francisco Unified School District (SFUSD), SF Environment, San Francisco Bicycle Coalition, and Environment Now to conduct a three-month idle

reduction campaign at six area elementary schools.

California's air quality is among the worst in the nation. Idling contributes to outdoor air pollution, is linked to increases in indoor air pollution, stunts children's lung development, and wastes fuel. The goals of the "Turn Off Your Engines: Idling Wastes Money and Hurts Children" campaign were to inform drivers about the costs of idling in school zones and to persuade them to change their behavior.

Through our partnership with SFUSD, we obtained written permission from school principals to conduct an on-site campaign. For 36 hours over a two-week period, representatives observed driver behavior at each site six different times, timing how long drivers idled their vehicles and compiling vehicle make and type (school bus, passenger car) data. One of every four drivers idled for more than 30 seconds; some idled for as long as 10 minutes—an alarming observation.

As part of the campaign, we also developed a one-page flyer, an idle reduction fact sheet, and talking points for the outreach team that informed drivers about why they should turn off their engines. We then returned to each school, outfitted in bright green vests, to distribute 422 flyers—translated into three languages: English, Spanish, and Chinese—to drivers. More importantly, we spoke with 208 drivers about the downside of vehicle idling—dirty, unhealthy air, wasted fuel, and wasted money that could be better spent on their children's school lunches.

We intend to continue to raise awareness about idling and expand this campaign to schools throughout the city. Our coalition has applied for regional and statewide grants to raise idle reduction awareness.



San Francisco's "Turn Off Your Engine" campaign included the distribution of this flyer to school-zone drivers. Courtesy of SFCC, UrbanPeacock.com



SOUTHEAST REGION

Jonathan Overly, East Tennessee Clean Fuels

Fun Run Raises Awareness, Educates Community About Air Quality Issues

The East Tennessee Clean Fuels Coalition hosted its seventh annual Run for Clean Air in Knoxville on April 11. The event featured a 5-kilometer (3.2-mile) run/walk in the Sequoyah Hills along the Tennessee River, as well as activities to raise air quality awareness. Participants

enjoyed a live band, food, door prizes, and the opportunity to drive and ride in hybrid vehicles.

More than 15 AFVs were on display, including Terex's hybrid bucket truck; a Roush Propane Ford F-150; Cub Cadet propane mowers; a Ford Fusion hybrid; and compressed natural gas, biodiesel, and E85-capable flexible fuel vehicles (FFVs). Children were invited to enter the Clean Air Kids Zone to participate in educational hands-on activities.

This event is critical to our region since air quality issues heavily impact East Tennessee. Knoxville was recently ranked by the Asthma and Allergy Foundation of America as the fourth worst city in the United States for asthmatics. The EPA also designates Knoxville and a handful of surrounding counties as a nonattainment area for ozone and particulate matter-2.5. This is Tennessee's largest contiguous nonattainment area.



More than 350 athletes ran for clean air in East Tennessee's awareness-raising event. Courtesy of East Tennessee Clean Fuels Coalition

More than 350 people participated in this year's run. Several local businesses—including the title sponsor Alstom—recognize the importance of clean air. Many coalition partners helped to make the event a success by bringing vehicles, serving as volunteers, or helping spread the word. Much work remains, but this event is helping East Tennesseans learn how they can make a difference for their community and their country.

Our community is passionate about the environment. We hold this event to combine enjoying our beautiful outdoors with learning about how to make the community a little cleaner—one family or person at a time. We are trying to put some tools in citizens' hands to help them realize how they can make a difference for cleaner air. Their actions improve local air quality, help develop green jobs, and improve energy security.



SOUTH CENTRAL REGION

Pamela Burns

Dallas-Fort Worth Clean Cities

Dallas-Fort Worth Clean Cities Hosts Successful Propane Mower Event

On June 29, Dallas-Fort Worth Clean Cities teamed with Heritage Propane's Jim Coker to host a propane lawn mower demonstration at the Meadowbrook Recreation Center in Arlington, Texas. Approximately 100 attendees from professional landscaping companies, park departments, public school districts,

private schools, universities, and large private companies attended the event, which included lunch and a presentation that educated attendees about benefits of propane lawn equipment.

Also during the event, the Propane Council of Texas announced that it secured funding to reopen the Propane Lawn Mower Rebate Program, which offers a \$1,000 rebate for the purchase or conversion of a commercial propane lawn mower (with a limit of five per entity). This rebate, coupled with fuel savings of using propane over conventional fuel, makes the payback on these mowers between one and two years.

After the presentation, Bob-Cat, Ferris, and Toro gave participants the

opportunity to test several models of commercial propane mowers.

A local news station covered the event, citing propane's importance to the region's air quality, which is currently in nonattainment for ozone but just missed meeting the standard by 0.01 parts per million last year.

Propane mowers are increasing in popularity in Dallas-Fort Worth. The North Texas Tollway Authority, which manages the region's toll lanes, uses them on its property and contracts with a landscape company that uses these mowers. A local school district is committed to turning its entire lawn mower fleet and some of its trucks to propane.



MID-ATLANTIC REGION

Sam Spofforth, Clean Fuels Ohio

Moving Ahead 2010 Educates 700 Attendees About Alternative Transportation Options

On May 2-4, 2010, Clean Fuels Ohio partnered with Ohio State University (OSU) to host “Moving Ahead 2010: Sustainable Transportation Solutions for the 21st Century,” a national conference on OSU’s campus featuring more

than 80 state and national sustainable transportation experts. The three-day conference drew nearly 700 attendees from industry, government, academia, media, and the general public. In addition to 22 breakout sessions featuring dozens of experts, keynote addresses were delivered by David Sandalow, assistant secretary for Policy and Energy at DOE; Robert Hirsch, noted oil supply expert; John Mendel, executive vice president of American Honda Motor Co.; and many more.

The conference included a vendor exposition and vehicle showcase that featured Honda, AmeriGas, Azure Dynamics, Bosch, ECOtality, Kirk Energy, MedCorp, Navistar, Natural Drive, the Propane Education and Research Council, Shocking Solutions, Toyota, and others. Conference attendees were also invited to participate in a half-day ride-and-drive featuring more than 30 vehicles that included all-, plug-in, and hybrid electric vehicles, as well as natural gas-, propane-, and hydrogen-powered cars and trucks.

Clean Fuels Ohio is now working with OSU to plan Moving Ahead 2011 and Moving Ahead 2012.



Automakers displayed alternative fuel and advanced technology vehicles at Moving Ahead 2010. Courtesy of Clean Fuels Ohio

NORTHWEST REGION

Sheble McConnellogue, Northern Colorado Clean Cities

Kids Event Teaches the Next Generation about Alternative Options

Northern Colorado Clean Cities (NCCC) is spreading the message of alternative fuels to a new generation of drivers. On May 13, NCCC held its Clean Tech and Carbon Tools event to teach elementary school kids about energy and ecology. More than 100 students attended the event, which was held at the Poudre Learning Center, a nature education and preservation organization in Greeley, Colo.



Colorado Corn taught Colorado kids about E85 and FFVs at NCCC’s Clean Tech and Carbon Tools event. Courtesy of Colorado Corn



Kids spent the morning browsing the more than 10 carbon-reduction and transportation exhibits, touring Colorado Corn’s E85 vehicle, hearing about soy biobased products from the United Soybean Board, and learning about the environmental and economic benefits of using alternative fuels. The children were also taught how to check tire pressure to get the get maximum vehicle fuel economy. Although they enjoyed all the exhibits, the kids’ favorite was NCCC volunteer Mary Carhart’s solar oven that cooked rice, chicken, and chocolate chip cookies.

After the kids left that afternoon, we held our quarterly meeting that was attended by NCCC members from organizations such as Rocky Mountain National Park, City of Greeley, and the City of Fort Collins. During the meeting, Susan Innis of Colorado Carbon Fund shared the program’s reduction of more than 34 million pounds of carbon and presented new funding opportunities for carbon-reducing projects around Colorado. To offset our footprint from the event, we purchased 1.5 tons of carbon offsets from the Colorado Carbon Fund.

The day was a great success. Annual events such as these help us spread the word about environmentally friendly options to a diverse group of Coloradans.

Coordinator headshots used in Coalition News articles courtesy of the authors.



NORTHEAST REGION

Karen Glitman
State of Vermont
Clean Cities

Eco Driving Workshops Teach Fleets How To Drive More Efficiently

As part of our commitment to reducing petroleum consumption, Vermont Clean Cities, which is housed at the University of Vermont Transportation Research Center, developed a two-hour Eco Driving Workshop designed to instruct participants about how to drive more fuel efficiently.

Efficient driving habits can reduce fuel use and cut tailpipe emissions—they are both ecologically friendly and economically sound practices. The workshop was held in the towns of Jericho and Thetford to teach eco-driving techniques to more than 200 Central Vermont Public Service employees. The workshop featured interactive lessons and provided attendees the opportunity to use the techniques they learned by performing road tests of their own vehicles and using a scan gauge to measure their miles per gallon. The goal was to show attendees how eco-driving techniques can improve vehicle performance.

The success of the workshop has spurred preliminary conversations with area driver education teachers. The goal is to introduce the program to the driver education curriculum, either case-by-case or statewide.

Share Your News

Each issue of Clean Cities Now features Coalition News articles written by coordinators representing each region. If you're interested in writing an article, contact heather.proc@nrel.gov with your story idea. If we choose your idea, we'll contact you with writing guidelines and deadlines. Your coalition will be paid \$300 upon completion of the article.

Ask the Technical Response Service



Do you have questions about alternative fuels, fuel economy measures, or advanced vehicles? The Clean Cities Technical Response Service (TRS) will help you find answers. For more information about the topics in this column or anything in the Clean Cities portfolio, e-mail technicalresponse@icfi.com, or call 800-254-6735.

Q: What is gross vehicle weight rating (GVWR) and how does it differentiate light-, medium-, and heavy-duty vehicles?

A: GVWR is the actual weight of a vehicle plus its maximum carrying capacity, which includes passengers, fuel, and cargo. GVWR is expressed in pounds (lb).

Vehicles are classified as light-, medium-, or heavy-duty based on GVWR, but the specific weight ranges for these classifications vary based on the agency or organization. For example, federal emissions standards may depend on one set of ranges and state vehicle registration fees may depend on another. There is no universal GVWR range to define light-, medium-, and heavy-duty vehicles.

For the purpose of emissions standards, the U.S. Environmental Protection Agency generally uses the GVWR of 8,500 lb to separate light-duty from heavy-duty. The California Air Resources Board vehicle emissions regulations use a similar division, adding a medium-duty classification for 8,500 lb to 14,000 lb GVWR. Some states use similar definitions for vehicle registrations; others consider vehicles with GVWR of 8,501 lb to 26,000 lb to be medium-duty.

Trucks are often grouped into eight weight classes: Class 1 through Class 8, as determined by the vehicle manufacturer. Class 2 and Class 8 are further broken down into 2a, 2b, 8a, and 8b, depending on the GVWR. Generally, the light-duty truck category includes Class 1, 2, and 3 vehicles; medium-duty truck includes Class 4, 5, and 6 vehicles; and Class 7 and 8 vehicles make up the heavy-

duty truck category. Again, this can vary by manufacturer.

To apply for grants, claim tax credits, or register a vehicle, refer to the agency- or organization-specific guidelines.



UL recently announced fuel dispenser equipment it certified for E85 use. Courtesy of Weick Media Services

Q: What is the status of the Underwriters Laboratories (UL) certification process for E85 fuel dispensers?

A: In June, UL certified an entire fuel dispensing system for E85, which is a blend of 85% ethanol and 15% gasoline. This announcement comes after several years of testing by UL. For the latest information and details about the certified equipment, see the Technology Bulletin at www.afdc.energy.gov/afdc/technology_bulletin_0307.html.

For more information about alternative energy or energy efficiencies, you can also contact the EERE Info Center at 1-877-337-3463 or www.eere.energy.gov/informationcenter.

Resources



Clean Cities provides online tools and print resources for coordinators and stakeholders. Find all of these new documents and updated resources at www.afdc.energy.gov.

Online Resources

- **Electric Drive Vehicle Pages:** Explore and compare electric drive technologies on the updated hybrid electric, plug-in hybrid electric, and electric vehicle pages on the Alternative Fuels and Advanced Vehicle Data Center (AFDC) Web site (www.afdc.energy.gov/afdc/vehicles/electric). These pages offer new information about vehicle basics, availability, safety, charging, research, and a glimpse into the future of the electric drive industry.
- **Spanish Resources Pages:** Looking to expand your reach? Check out the AFDC's Spanish Resources page (www.afdc.energy.gov/afdc/info_resources.html). Not only does the page include translated versions of alternative fuel fact sheets and links to fuel economy resources in Spanish, it offers the option to toggle from English to Spanish to help non-Spanish-speaking coordinators and stakeholders easily find and distribute the right information.

New Documents

- **Handbook for Handling, Storing, and Dispensing E85:** Thinking about installing E85 infrastructure onsite? New to using E85 in your fleet? If so, this handbook (www.afdc.energy.gov/afdc/pdfs/48162.pdf) can help. It provides the basics on the proper and safe use of this alternative fuel, as well as information on policy, fuel properties, equipment specifications, and more. This edition also lists equipment UL has certified for E85 use.

Clean Cities' Guide to Alternative Fuel and Advanced Medium- and Heavy-Duty Vehicles:

If you're replacing old or adding new heavy-duty vehicles to your fleet, consult this buyer's guide (www.afdc.energy.gov/afdc/pdfs/47984.pdf). It provides brief overviews of individual medium- and heavy-duty vehicles by application and summarizes alternative fuel power sources, including engines, microturbines, and fuel cells, and hybrid propulsion systems. It is also available for heavy-duty applications and explains which chassis are compatible with these systems.



> Spotlight from p5



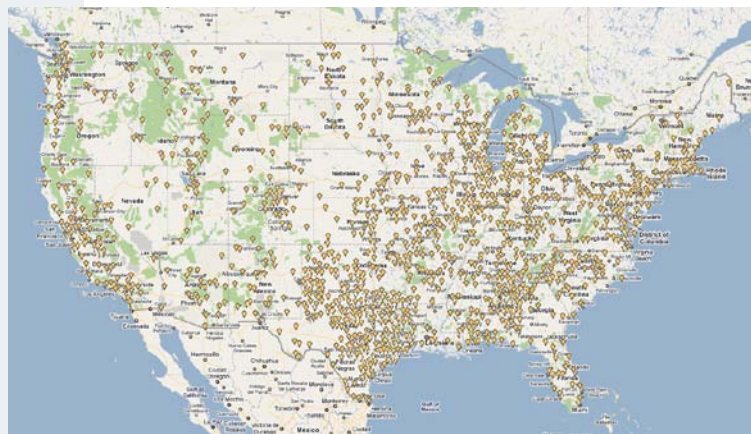
Learn More

Visit the following Web sites to learn more about propane and conversion companies.

The **Alternative Fuels and Advanced Vehicles Data Center** (www.afdc.energy.gov) includes information about propane fuel, vehicles, and infrastructure, as well as links to propane conversion companies and other relevant organizations.

The **EPA Alternative Fuel Conversion** (www.epa.gov/otaq/consumer/fuels/altfuels/altfuels.htm) Web site links to useful resources, including conversion company contact information. Use the Document Index System (www.epa.gov/dis) to search for certification documentation. Fleets are encouraged to contact conversion companies directly for the most current information.

The **CARB Alternative Fuel Retrofit Systems Program** (www.arb.ca.gov/msprog/aftermkt/altfuel/altfuel.htm) Web site links to a list of certified conversion systems.



There are more than 2,400 propane fueling stations throughout the United States. Courtesy of Alternative Fueling Station Locator (www.afdc.energy.gov/afdc/locator/stations)

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

EERE Information Center
1-877-EERE-INF (1-877-337-3463)
www.eere.energy.gov/informationcenter

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