

# Clean Cities Now

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*Clean Cities Now* ([www.eere.energy.gov/cleancities/ccn](http://www.eere.energy.gov/cleancities/ccn)) is the official publication of *Clean Cities*, an initiative of the U.S. Department of Energy designed to reduce petroleum consumption in the transportation sector by advancing the use of alternative fuel vehicles, idle reduction technologies, hybrid electric vehicles, fuel blends, and fuel economy.

## Plugging in to the Next Stage in HEV Technology

The hybrid buzz has risen to a new pitch. The popularity of hybrid electric vehicles has set the stage for a new design receiving lots of attention—plug-in hybrid electric vehicles (PHEVs). Although not yet available commercially, PHEVs represent an innovative technology option. With PHEV technology, a portion of the vehicle's energy is provided from the electric grid via battery capacity and an electric plug for recharging. The technology combines the best of electric vehicles and conventional vehicles—the reduced petroleum consumption and emissions of an electric vehicle, together with the high range we expect from a conventional vehicle. And, going one step further, vehicle-to-grid PHEVs may someday make the energy exchange a two-way process, establishing each PHEV as a valuable part of the electricity grid.



The Sprinter van is a prototype plug-in hybrid vehicle developed by EPRI and DaimlerChrysler.

DaimlerChrysler

PHEVs are similar to conventional hybrid vehicles with two exceptions. First, the typical small battery pack in a hybrid is upgraded to a larger battery, perhaps supporting 20-60 miles of electric driving per charge (depending on battery size). Second, the vehicles can be plugged into a standard low-voltage home, office, or garage outlet to charge the battery without running the engine. PHEVs can also recharge from on-board sources, such as regenerative braking or the engine, similar to conventional hybrid electric vehicles. As the battery energy is consumed, the fuel engine assists with propulsion to ensure satisfactory operation at all times. PHEVs have on-board controls to prevent their batteries from being drawn outside their charge limitations, to protect battery life.

## Fuel Savings

The benefits of PHEV technology closely align with Clean Cities' mission by reducing consumption of imported petroleum. DOE analysts estimate that PHEVs will demonstrate a 50% reduction in fuel use over conventional vehicles when they are ready for market—possibly as early as 2010. One and a half million PHEVs on the road could save approximately 20 million barrels of oil annually. And today DaimlerChrysler estimates that its prototype plug-in hybrid Sprinter van will demonstrate up to 50% fuel economy improvement and a 20-mile, all-electric range. The Electric Power Research Institute (EPRI) estimates that 50% of all U.S. vehicles travel less than 25 miles a day, so many PHEVs could run primarily on electric power, thereby dramatically reducing their use of petroleum.

Another option, fueling PHEVs with alternative fuels—biodiesel or ethanol in the near-term or hydrogen in the long-term—would greatly reduce the need for petroleum in the vehicle fuel system.

## **Operational Cost Savings**

Fuel savings go hand-in-hand with cost savings. According to models run at the National Renewable Energy Laboratory (NREL), a fleet of PHEVs could see a nearly 50% reduction in operating costs over a fleet of conventional vehicles. Using the national average gasoline price of \$2.15 per gallon and electricity at \$.09 per kilowatt hour, the potential annual operating cost savings per vehicle is approximately \$600 for both gasoline and electricity costs. While the fuel cost savings are expected to be substantial, vehicle costs are still high. The major research challenges will center on lowering the capital cost, especially for the battery, and the resulting life cycle costs of PHEV technology to commercially viable levels

## **Reduced Emissions**

A plug-in hybrid traveling mostly on its electric motor has the potential to be cleaner than a vehicle running primarily on a gasoline engine. EPRI estimates that carbon dioxide (CO<sub>2</sub>) emissions for a plug-in hybrid compact sedan would be less than 200 grams per mile compared to a conventional vehicle with CO<sub>2</sub> emissions of approximately 320 grams per mile. While reduced PHEV tail-pipe emissions may be somewhat offset by increased utility emissions, utility emissions are easier to control at a central source than emissions from millions of individual vehicles. And, of course, there is the possibility that more and more power generation will come from cleaner renewable energy sources, reducing nearly all potentially harmful emissions from the PHEV life cycle.

## **Vehicle to Grid**

Plug-in hybrids with vehicle-to-grid capability have the potential to provide energy storage capacity for the utility grid. The storage capability of a fleet of vehicle-to-grid PHEVs could provide utilities with operational flexibility, including load leveling options, that does not exist today. The actual value of this feature is yet to be determined, but it has the potential to provide the PHEV owner a revenue stream. The vehicle might even be able to support the electrical demands of a home or business during a power outage.

## **Research and Development**

Developing PHEV technology is not without its challenges. The extra battery capacity adds weight, takes up space, and can be expensive. Battery life and recyclability are also a concern. Several DOE research projects are exploring PHEV system challenges. "We're researching ways to increase the viability of PHEVs," says Tony Markel a senior engineer on NREL's vehicle systems analysis team. "The battery will be used more extensively than those in today's hybrids. It is critical that the vehicle is intelligently engineered to account for this usage and also be cost effective. We are building collaborative relationships to address the technical barriers, which include battery life and cost." Most of the incremental costs are associated with the nickel-metal hydride or lithium ion batteries likely to be used in PHEVs. Those costs are expected to drop as the advanced batteries enter mass production.

## **On the Road, Today**

Though there's development yet to do, the prototype [DaimlerChrysler PHEV Sprinter](#) van is being demonstrated today. EPRI and DaimlerChrysler AG of Stuttgart, Germany, developed the prototype van. According to Mark Duvall, manager of technology development for EPRI, DaimlerChrysler in Stuttgart is extensively testing the vans before they are brought into the United States for fleet testing and evaluation. The first U.S. vehicle was shipped to Los Angeles in November, and three more are scheduled to be delivered in 2006. The vans have a nickel-metal hydride or a lithium ion battery pack and are available with the option of either a gasoline or a diesel engine.

In addition, one company (Energy CS) has developed a plug-in retrofit package for the Toyota Prius. However, according to Toyota, installation of the retrofit would void the Prius warranty and could jeopardize the vehicle's Advanced Technology Partial Zero Emission Vehicle status.

## Call to Action

While the technology is being perfected, efforts are underway to create a PHEV market that will catch the attention of vehicle manufacturers. PHEV supporters—local and state governments, utilities, and environmental, consumer, and business organizations—are launching “plug-in” campaigns. The efforts encourage rebates and incentives, soft fleet orders, petition drives, and endorsements. Austin, Texas, and Sarasota, Florida, are two cities that have developed PHEV municipal plans. In conjunction with the January 2006 National Council of Mayors meeting in Washington, D.C., PHEV supporters kicked off a national plug-in campaign designed to stimulate markets in 50 of the largest cities in the United States.

In the meantime, EPRI and DaimlerChrysler will continue the fleet testing of the Sprinter vans. Duvall says the second phase will include 30 more vehicles for fleet demonstration and testing in the United States and Germany. While many of the participants for the second phase of the fleet test have been designated, he encourages any fleets wishing to participate to contact EPRI.

For more information on hybrid electric and/or plug-in hybrid electric vehicles, visit the following websites:

- [DOE FreedomCAR and Vehicle Technologies Program’s Hybrid and Vehicle Systems](#)
- [Electric Power Research Institute](#)

## Coalition News

### Program Offers Idle Reduction APUs to Oregon Truckers

The Lane Regional Air Pollution Authority (LRAPA) developed a creative initiative to encourage the use of idle reduction technologies in Oregon. The [Everybody Wins Program](#) provides low-cost, rent-to-own leases on auxiliary power units (APUs), which provide power for heating, cooling, and other amenities without engine idling.

Unveiled in late 2004, the goal of the project is to develop infrastructure to support the APUs along Oregon’s Interstate 5 corridor. Everybody Wins recently completed phase one, which consisted of installing APUs in 100 heavy-duty trucks. It is now ramping up phase two, which calls for the installation of an additional 250 APUs. Phase two will also help fund a study to map the usage patterns of APUs already fitted into trucks.

Funding for the leases comes from the U.S. Environmental Protection Agency (EPA) and the Oregon Department of Energy. LRAPA recently received \$500,000 in EPA SmartWay Transport funding for phase two. The leases offer 60-month terms with zero-interest. At the end of the lease, the lessee owns the APU. To qualify, applicants must be Oregon-based fleets or owner-operators that meet a certain credit screening criteria.

“We are up to 20 trucks a month without advertising,” says Sharon Banks, manager of the Everybody Wins Program and the Eugene-Springfield area representative for the Columbia Willamette Clean Cities Coalition. “The feedback we are hearing is that this is a very popular program with the owner-operators,” she says. “After all, they are the ones who live in the truck and have to endure the hardship of anti-idling ordinances. They also feel the benefits of reduced idling more directly than company drivers, because they have to buy their own fuel.”

Banks hopes to continue to build the program and eventually set up a revolving fund to make the loan process more efficient.

## Clean Cities Questionnaire Closes in February

Attention coordinators: The [Clean Cities Annual Questionnaire](#) for 2005 will close February 28, 2006. If you haven't submitted your electronic survey, please do so as soon as possible. The results will be used to evaluate coalition progress in 2005. Coordinators planning to apply for 2006 State Energy Program, or SEP, grants must complete a questionnaire to qualify.

## Bonnie Raitt Concert Benefits East Tennessee Coalition

Musician Bonnie Raitt on December 10 performed a sold-out concert in Knoxville, Tennessee, and biodiesel benefited from some of the proceeds. The singer, who is touring the country in a bus fueled with B20, donated money earned from the sale of 50 tickets to the East Tennessee Clean Fuels Coalition (ETCFC) and the Tennessee Soybean Promotion Board (TSPB). The funds will be used to raise local awareness of biodiesel.

The strongly publicized event was organized by the National Biodiesel Board (NBB) and the Guacamole Fund, a nonprofit fundraising organization representing Raitt. Tickets ranged from \$150-\$300; the higher end tickets included a post-show reception with Raitt.

According to Jenna Higgins, NBB Director of Communications, the Biodiesel Board has helped Raitt, a long-time supporter of biodiesel, fuel her tours with B20. "We were looking for an opportunity to do a press event, and Knoxville was one of the stops we suggested. Bonnie's team agreed and offered to put together a benefit reception," says Higgins.

After expenses, the concert raised around \$4,000 for the ETCFC and the TSPB. The proceeds will most likely be spent jointly on public outreach messages. ETCFC coordinator Jonathan Overly says ideas include a wrap for a local bus, radio advertising, or ads in a regional or state magazine.

Higgins says the proceeds are well placed. "ETCFC and TSPB have been very proactive and successful with biodiesel in Tennessee, and we're so glad they could benefit from this event."

## Coordinator Project Review Scheduled for March

The next Clean Cities Project Review is scheduled for March 6-7, 2006 at the [Holiday Inn - Capitol](#) in Washington, D.C. All coordinators are invited to attend. The [agenda](#) includes a session on educating auto dealers about flexible fuel vehicles, a natural gas market overview, a biodiesel update, and more. To sign up, contact Adrian Farley ([adrian.farley@ee.doe.gov](mailto:adrian.farley@ee.doe.gov)) at the U.S. Department of Energy.

### Program News

## PERC, Clean Cities Announce Grant Awardees

The Propane Education and Research Council (PERC) and Clean Cities in mid-December announced the recipients of \$200,000 in propane engine development project grants.

Six organizations were selected to receive grants that range from \$25,000-\$40,000 (see table below). Although it was not required, recipients will match or provide in-kind funding that well exceeds the grant amount they receive. In total, the funding program will invest nearly \$5 million in propane industry development.



Downeast Transportation will use its \$35,000 grant to help purchase 12 propane buses for its Island Explorer shuttle service in Acadia National Park.

Acadia National Park

The funds will be used to install propane infrastructure, develop propane lawn equipment and auxiliary power units (APUs), purchase shuttle buses, convert park vehicles to run on propane, and more.

PERC and Clean Cities each contributed \$100,000 to the program, which was created to fund projects and document ways to successfully implement vehicle initiatives that increase the number of propane gallons sold, reduce America’s dependence on foreign oil, and decrease pollution caused by conventional vehicles.

Funding categories included airport development projects, on-road applications, idle reduction technologies, and lawn and garden equipment.

<b>Recipient</b>	<b>Project</b>	<b>Grant Amount</b>	<b>Match/In-Kind Amount</b>
City of Inglewood Inglewood, California	Install public-access propane refueling infrastructure and purchase seven new propane trucks.	\$35,000	\$507,110
Exmark Manufacturing Co. Beatrice, Nebraska	Pursue the development of propane-powered commercial lawn mowing equipment to reduce emissions.	\$25,000	\$118,630
New West Technologies Landover, Maryland	Investigate the market for tractor-installed propane, develop a preliminary design for an on-board propane APU system and identify funding resources for a pre-commercial propane-fueled APU and genset demonstration on long-haul tractors in the mid-Atlantic region.	\$30,000	\$20,986
County of Los Angeles Department of Public Works Los Angeles, California	Install a selective catalytic reduction on two new buses and at least five new street sweepers to reduce nitrogen oxide emissions by 50%-70%.	\$35,000	\$1,890,000
Downeast Transportation Ellsworth, Maine	Acquire 12 new propane buses for the Island Explorer transit system, a seasonal, propane-powered shuttle service for Acadia National Park and surrounding communities.	\$40,000	\$2,100,000
Xanterra Parks and Resorts Greenwood Village, Colorado	Convert 21 conventional vehicles to operate on propane gas and install two leased fueling centers in Yellowstone National Park.	\$35,000	\$53,700
Total		\$200,000	\$4,690,426

## **Clean Cities Moves to DOE’s FCVT Program**

On October 1, 2005, the U.S. Department of Energy’s (DOE) Office of Energy Efficiency and Renewable Energy reorganized some of its programs. As a result, Clean Cities moved from the Office of Weatherization and Intergovernmental Programs to the [FreedomCAR and Vehicle Technologies \(FCVT\) Program](#).

Clean Cities Director Shelley Launey welcomes the move. “This is a good fit,” says Launey. “We have a network of 88 coalitions dedicated to putting advanced transportation technologies and alternative fuels on the road. We can provide FCVT with a valuable mechanism to reach fleets and other end users who are critical to reducing petroleum use in the transportation sector.”

Additionally, Launey says that Clean Cities will benefit from closer ties to the research and development of technologies that are well aligned with the Clean Cities portfolio—alternative fuels, hybrids, idle reduction, and fuel economy. Coalitions can evaluate the market potential for various technologies and help influence those markets and the technology development strategy of the FCVT Program. Because the EAct programs are also housed in FCVT, Clean Cities will benefit from closer ties to those initiatives.

FCVT focuses its research and development in four technology subprograms—vehicle systems, engine and emission control, advanced materials, and fuels. Its two flagship partnerships, the FreedomCAR and Fuel Partnership and 21st Century Truck, are collaborations between manufacturers, DOE, and other federal agencies to reduce petroleum use and emissions in both personal and commercial vehicles. The DOE 2006 budget for FCVT is \$165.9 million. Clean Cities will serve as the deployment arm for all FCVT technologies.

## IRS Processes EAct of 2005 Incentives

Although the [tax incentives](#) outlined in the Energy Policy Act of 2005 became effective January 1, 2006, the Internal Revenue Service (IRS) is still in the regulatory process of implementing the benefits.

The IRS process is similar to that of other federal agencies. It begins with an Advance Notice of Proposed Rulemaking that announces that the IRS is considering regulatory action or a Notice of Proposed Rulemaking, which sets out the regulatory text and explains the rules and requests public comments. These documents are published in the [Federal Register](#). Details on proposed actions can also be found in the Plain English Regulations section of the IRS website. Each proposed regulation features a link for submitting comments.

Next, working groups are formed to determine procedures for instituting and distributing the tax incentives. Once a process is established, the IRS publishes guidance on how companies and individuals can apply for the benefits. For example, the IRS in January [released guidance](#) outlining how hybrid manufacturers can certify their vehicles to qualify for credits.

All told, the IRS regulatory process could take months or even years to complete. However, this is not a concern for companies and individuals filing for incentives. Tax benefits put into law are honored despite the date when the process is finalized.

For more information on the official regulatory process, visit the IRS website. For answers to business-related tax questions, contact the IRS at 800-829-4933. For individual, non-business queries, call 800-829-1040.

## Industry News

### Partnerships, New Bill Give Ethanol a Shot in the Arm

Blended in small doses into more than 30% of U.S. gasoline\*, ethanol is well established as an octane-boosting, clean-air additive. However, its use as an alternative fuel, typically as E85, accounts for barely 1% of ethanol used in the United States\*\*. Creative campaigns between automakers and fuel producers, aggressive legislation introduced by prominent senators, and the new energy policy could change that.

In a highly visible partnership, Ford Motor Company and VeraSun Energy have teamed up to promote availability and use of E85. The goals of the project are to get consumers to use E85 in their flexible fuel vehicles (FFVs) and urge and assist service stations to add E85 to their fuel offerings. The companies will also help connect station operators to state and federal resources, such as the new tax credits, or provide financial assistance of their own if needed. (Interested operators should contact VeraSun's Rick Eggebrecht at [rick@verasun.com](mailto:rick@verasun.com).)



Ford and VeraSun Energy and GM and Chevron have each teamed up to raise awareness of ethanol.

NREL/PIX 08900

The partnership is packed with ethanol experience. Ford has already produced more than 1 million FFVs and plans to produce up to 250,000 more FFVs in 2006. VeraSun, for its part, is the second largest ethanol producer in the country and is actively marketing "VE85," its own E85 blend.

Consumer education plays a key role in the tandem's efforts. Thanks in part to fuel economy standard credits for automakers producing FFVs, there are already about [6 million FFVs](#) on U.S. highways. But relatively few of those vehicles are fueled with E85, even where it is available.

"Getting the word out about the availability of E85 and FFVs is essential," says Bill Honnef, Vice President for Marketing at VeraSun Energy. "When we started our marketing efforts, we sought out and surveyed FFV owners and found that 70% of them were unaware that they owned a vehicle that could use E85."

To combat this, VeraSun, which until now has focused most of its business in the Midwest, will begin to market its VE85—and efforts to get more stations to offer it—nationwide. Additionally, Ford will train dealers about FFVs so they can educate potential FFV customers. Ford's training efforts will start in the Midwest and may expand to other areas of the country.

General Motors (GM) and Chevron recently announced a similar partnership to raise awareness of E85 and FFVs in California. GM plans to offer 50 to 100 flexible fuel Chevrolet Impalas and Silverados for consideration in California's competitive bid process. The FFVs will be used by CalTrans, the state's Department of Transportation. Chevron will build E85 infrastructure to support the vehicles and provide E85 to the stations. Pacific Ethanol, a California fuel provider will supply Chevron with the ethanol.

"We expect this effort will help us learn more about consumer acceptance of E85 as well as issues surrounding its production and distribution," says Greg Vesey, President of Chevron Technology Ventures.

In February, GM will also launch "Live Green Go Yellow," a campaign that will debut during the Olympics and continue through 2006 with print, web, and broadcast ads to raise E85 awareness with consumers, energy producers, and policy makers.

Meanwhile, another effort to increase the use of E85 is taking shape in Washington, D.C. Senators Richard Lugar (R-IN), Tom Harkin (D-IA), and Barack Obama (D-IL) in November introduced a bill (S. 1994) that would require all U.S.-marketed vehicles to be manufactured as FFVs within a decade. Compliance would occur in stages. Eighteen months after the bill passes, 10% of vehicles sold would be FFVs. This would increase by 10% each year to achieve full E85 compatibility in 10 years. Companion bills have been introduced in the House, and FFVs have been included in broader alternative vehicle mandate proposals.

The incremental cost of adding a fuel sensor to tell the vehicle's computer the ethanol-to-gasoline ratio of the fuel and upgrading the rest of the fuel system to resist corrosion can cost as little as \$200, and most automakers do not charge extra for their FFVs.

Finally, a tax incentive outlined in the Energy Policy Act of 2005 could accelerate the introduction of new E85 stations across the country. The tax credit provides 30% of the cost of installing alternative refueling property, up to \$30,000. According to Robert White, Project Director at the National Ethanol Vehicle Coalition, "The tax credit will make a tremendous difference. We envision the number of E85 stations increasing to as many as 2,000 by the end of 2006."

A second provision of EPAct of 2005 requires federal fleets to use alternative fuels in agency alternative fuel vehicles at all times. Considering that federal agencies had a combined inventory of more than 71,000 FFVs in fiscal year 2005, the legislation could lead to substantial growth in ethanol use. This new mandate goes hand-in-hand with Executive Order 13149, which requires federal agencies to reduce petroleum consumption by 20% as compared to their 1999 levels.

\* [Renewable Fuels Association's 2005 Ethanol Industry Outlook](#)

\*\* [Transportation Energy Data Book](#)

## Minnesota Feeling B2 Growing Pains

Minnesota's mandate for all state-sold diesel to contain 2% biodiesel hit a bump in the road.

After learning that biodiesel delivered to some Minnesota terminals did not meet specifications, the National Biodiesel Board (NBB) and Minnesota Biodiesel Council (MBC) called for a waiver from the state's B2 mandate. Enacted by the Minnesota Department of Commerce (MDOC), the waiver gave terminals until February 10, 2006, to test their biodiesel and re-supply if necessary.

In mid January, the associations released an action plan to increase quality control measures and ensure that only high-grade biodiesel is released into the state's diesel pool. The recommendations, which were presented to MDOC, include calling for all biodiesel producers to become accredited under "BQ-9000," the industry's quality assurance program. The plan also calls for enforcement procedures, such as suspensions and fines for producers who sell out-of-spec biodiesel, from the MDOC.

MDOC is currently considering the NBB and MBC recommendations. In the meantime, a diesel helpline was established through the University of Minnesota Center for Diesel Research (800-929-3437).

September 29, 2005, marked the official implementation date of the B2 requirement—the only one of its kind in the United States. As a result, Minnesota's three biodiesel plants are expected to lead the nation in biodiesel production by manufacturing more than 63 million gallons of biodiesel a year.

## Success Story

### Alabama Police Fleet Boasts 100% AFVs

Hoover, Alabama, supports alternative fuel vehicles. The city's fleet is comprised of approximately 160 flexible fuel vehicles (FFVs) that run on E85. Of the city's 160 FFVs, 104 are Chevrolet Tahoe police pursuit vehicles, making it the largest E85-fueled law enforcement fleet in the nation. The remaining 56 are administrative or public works vehicles.



All 104 vehicles in the Hoover, Alabama, police fleet are Chevrolet Tahoe FFVs. The cruisers run on E85 at all times.  
General Motors

The Hoover Police Department (HPD) operates the vehicles on E85 at all times. The FFVs are fueled onsite at the Hoover Public Safety Facility, which has two dispensers with two hoses each. The facility, which was built in 2004 with a grant from Central Alabama Clean Cities provided by Alabama Partners for Clean Air, is available for use by other public agencies.

Each HPD officer carries an E85 fueling card that is activated by a personal identification number. Information, such as miles between refueling and gallons of ethanol pumped, is collected with each swipe of a card. This information is used for analysis.

According to Jim Price, coordinator of the Central Alabama coalition, the HPD uses approximately 24,000 gallons of E85 a month. "The use of E85 is reducing air pollution and the city's dependency on foreign oil," says Hoover Mayor Tony Petelos.

HPD serves the sixth largest city in Alabama. Hoover has a population of almost 63,000 and is a suburb of Birmingham. The City of Hoover first became interested in FFVs for its police fleet in 2004 when the Central Alabama coalition arranged for the department to demo a Chevrolet Tahoe police vehicle. When considering the switch to the Chevrolet FFVs, Price says the HPD was particularly impressed with the higher-octane levels ethanol offers.

Price also says the department didn't have any problems with driver acceptance. "By the time the vehicles arrived, many of the officers had test-driven the demo vehicle and had received training from Dave Lindon, the city's fleet management director."

The City of Hoover supports the continued use of clean burning alternative fuels. In fact, it is currently pursuing the use of biodiesel in its heavy-duty duty vehicles.

## EPAct Update

### State Fleet Regulations Promote Alternative Fuel Use

Complying with EPAct isn't the only obligation state fleets have to comply with anymore. More and more fleets must also meet new transportation requirements instituted by their state governments.

State-mandated alternative fuel-related rulemaking is on the rise. Since 2004, more than 10 states throughout the country have instituted 15 new executive orders, statutes, and codes that require state fleets to use alternative fuels and vehicles. Two years ago, there were just 10 state mandates regarding alternative fuel use. Today, there are 25 mandates in 19 states.

According to Linda Bluestein, regulatory manager of the EPAct State and Alternative Fuel Provider Rule, states are standing up for petroleum displacement. "They are increasingly looking to alternative fuels and seeing how they can capitalize on alternatives to petroleum."

Of the 15 state mandates instituted since 2004, one-third of them require the use of alternative fuels in flexible fuel vehicles (FFVs) whenever possible. These laws couple nicely with EPAct, says Bluestein, because EPAct requires state fleets to acquire alternative fuel vehicles (AFVs). EPAct doesn't, however, require state fleets to use alternative fuels in their AFVs.

"DOE has always encouraged state fleets to use alternative fuels in their AFVs, although there is no requirement to do so," Bluestein says. "State fleets that purchase dedicated gaseous fuel vehicles have no choice but to use alternative fuels in their vehicles. But when 63% of all the vehicles acquired by state fleets in model year 2004 are FFVs, many vehicles end up running on gasoline."

That's because many states don't have the fueling infrastructure to support the vehicles. The new state mandates, Bluestein says, should stimulate the growth of E85 stations.

Biodiesel use in heavy-duty vehicles is also another requirement of several state mandates. "This is an easy way for states to displace petroleum," says Bluestein. "Biodiesel blends typically require no vehicle modification."

For a [detailed table](#) of alternative-fuel related state legislations, visit the EPAct website. For more information on incentives and laws, go to [Alternative Fuel Data Center](#) website.

To learn more about E85, visit the [E85 Fleet Toolkit](#), or download [The Handbook for Handling, Storing, and Dispensing E85](#). To read about biodiesel, download [Biodiesel Handling and Use Guidelines](#).



State fleets throughout the country are being required by law to use alternative fuels in state-operated vehicles.

NREL/PIX 13531

### CIVITAS Inspires Tucson Coordinator

“Inspiring”—that’s how Colleen Crowninshield sums up her November trip to the CIVITAS Forum in Nantes, France. The Tucson, Arizona, coordinator represented Clean Cities at the event as part of her 2005 Coordinator of the Year award.

Launched in 2002, [CIVITAS](#) is composed of more than 30 cities in the European Union and is a member and partner of Clean Cities International. The group’s goal is to support and evaluate the implementation of ambitious integrated sustainable urban transport strategies. The organization’s name is a play on the words “city, vitality, and sustainability.”

Crowninshield served as both teacher and student at the three-day event. She presented on the workings of Clean Cities, projects she’s implemented in Arizona, and U.S. progress made in the areas of biogas and hydrogen. “I went there to share ideas and experiences, but I feel like I brought back more than I gave,” she says. “From a coordinator’s perspective, the CIVITAS Forum offers so much. I really learned a lot.”

Three things really made an impression on Crowninshield. The first: “Europe hit the alternative fuels arena with a hard punch and is way ahead of the United States,” she says. “These countries have to be; their gasoline costs \$5-\$6 a gallon, and their air quality is really suffering.”

For these reasons, Crowninshield says, European governments are more enthusiastic about finding alternatives to petroleum-guzzling, carbon-emitting vehicles. Their dedication is evident in the CIVITAS 2005 budget, which was roughly \$25 million.

The second thing that struck Crowninshield was the way Europe seeks out ways other than alternative fuels to reduce petroleum consumption. For example, she was impressed by an innovative bike-share program implemented in Rotterdam, Netherlands. The city set up a system of quality bicycle lanes and sprinkled bike-rental stations throughout the metro area. Users subscribe to the service and receive a code they use to check out and return rental bikes. The bikes can be used throughout the city and returned to any station. The code makes the person responsible for the bicycle and virtually eliminates theft.

“The bike-share program is the perfect promotion of health and fitness, while showing consumers that they don’t have to rely on petroleum to get to and from work and play,” Crowninshield says. “The program offers the city three benefits: It reduces emissions, displaces petroleum, and removes vehicles from the crowded streets.”

The third thing Crowninshield learned from CIVITAS was that it is “extremely important” to have support from the top down. “The European Commission supports alternative fuel efforts with both hands and feet,” she says. “It is committed to petroleum independence and proud that its citizens are not considered “oilaholics.”

One of Crowninshield’s goals for 2006 is to fight for the support of Arizona legislators. “I believe it is imperative for Clean Cities to gain support from the top down before it is able to really make a difference with petroleum independence. I will commit time and effort to educate key officials and major employers about the importance of clean alternatives in Arizona.”

She says she is also committed to implementing ideas she gathered from CIVITAS. The first item on her list: sell the idea of a bike-share program to the city and county representatives. But Crowninshield isn’t the only one who walked away from the conference with new ideas. Since the conference, she has been coaching CIVITAS members from Bangalore, India, on the details of starting a weekly radio show to promote sustain-



CIVITAS is made up of more than 30 cities throughout the European Union.

ability. The Indians became interested in the concept after Crowninshield presented on her [Green Tuesdays](#) broadcast during the conference.

Although her run as Coordinator of the Year will end in May, Crowninshield plans to continue her association with CIVITAS and Clean Cities International. "I will do everything in my power to continue to be involved in and support CIVITAS," she says. "Even if I can't attend the annual forum, I will keep on sharing information with members over the Internet."

## New Resources

### **Alternative Fuel Price Report Compares Fuel Costs**

The Clean Cities Alternative Fuel Price Report for September 2005 ([www.eere.energy.gov/afdc/resources/pricereport/pdfs/afpr\\_09\\_01\\_05.pdf](http://www.eere.energy.gov/afdc/resources/pricereport/pdfs/afpr_09_01_05.pdf)) contains cost information on both alternative and conventional fuels from all regions of the United States. More than 600 pieces of data were collected from Clean Cities coordinators, fuel providers, regional offices, and other stakeholders to compile the report. A highlight: Nationwide, all alternative fuels, with the exception of biodiesel, were lower in price at the pump than conventional fuels. CNG was about \$.65 less than gasoline on a gallon equivalent basis, while E85 and propane were about \$.36 and \$.21 less, respectively, per gallon than gasoline.

### **Report Finds NOx Lower in B20 Buses vs. Diesel Buses**

The National Renewable Energy Laboratory recently published the RTD Biodiesel (B20) Transit Bus Evaluation: Interim Review Summary ([www.eere.energy.gov/afdc/pdfs/38364.pdf](http://www.eere.energy.gov/afdc/pdfs/38364.pdf)). The technical report summarizes the evaluation of nine mechanically identical 40-foot transit buses—five operated on B20 and four on conventional diesel—running the same route in Boulder, Colorado, from August 2004 to February 2005. Among the findings, the B20 buses demonstrated lower nitrogen oxide (NOx) emissions than the diesel-powered buses.

### **NBB Posts Site for Truckers**

The National Biodiesel Board has launched a website specifically for truck drivers. Biotrucker.com ([www.biotrucker.com](http://www.biotrucker.com)) includes updated information on biodiesel availability, trucker testimonials, technical information on the fuel, discussion boards, and current news from the biodiesel and trucking industries.

### **EPIC Launches Ethanol Site for Consumers**

The Ethanol Promotion and Information Council (EPIC), an alliance of ethanol producers and industry leaders, has released a new website, [www.drivingethanol.org](http://www.drivingethanol.org). The site includes basic information on ethanol as a transportation fuel, consumer facts, industry news, and a media site. Also included is a subsite on Indy racing that reminds readers that all Indy racecars will be running on 100% ethanol in 2007. concerns about energy, economic, and environmental security. The recommendations, which were forwarded to President Bush, focus on creating a renewable fuel security standard, supporting further fuel research and development, and offering commercialization and production incentives.

## A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, a cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

For more information contact: EERE Information Center 1-877-EERE-INF (1-877-337-3463)

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**Energy Efficiency and Renewable Energy**

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