

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

Creative Alliances

Fuel Success in Infrastructure Development



PLUS:
ProCon's LPG Vans
Technician Training

INSIDE:
Clean Cities
in Peru

 Dear Readers,

Lately, in the aftermath of September 11th, I have been thinking about commitment and sacrifice, and about how easy it is to talk about patriotism without ever having to make the smallest sacrifice. I have been thinking also about how easy it is to support a war on terrorism without ever understanding the connections among energy security, dependence on imported oil, vehicle and fuel use efficiency, and our policies affecting energy producing countries.

The Department of Energy launched the Clean Cities program almost nine years ago because we recognized that the Clean Cities concept could enhance energy security and decrease dependence on imported oil. From the beginning, commitment has been the linchpin of the Clean Cities program. We ask Clean Cities coalitions to sign Memorandums of Understanding (MOUs) with us and their stakeholders as a precondition for designation. The MOUs are based on individual stakeholder commitments. At the end of five years, we ask stakeholders to reconfirm their commitments. We track those commitments, and we hound coalitions mercilessly for status reports on commitments regarding alternative fuel vehicle acquisitions and new alternative fuel refueling sites.

I have been thinking about how easy it is to ask others to make commitments. So in December I bought myself a Christmas present—a dedicated alternative fuel vehicle. I experienced first hand the despair that came when Virginia's Department of Motor Vehicles refused to license it, the disappointment that came when I learned that Virginia had recently



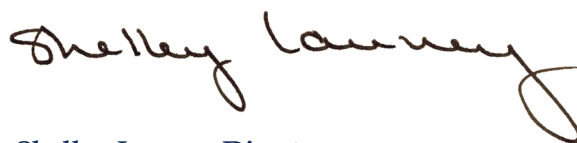
Shelley Launey with her CNG-powered Honda Civic GX.

repealed its financial incentives for AFV purchases, the anxiety that came from my first road trip where I had to plan and arrange in advance the refueling, and the anxiety that came when I went to the nearest refueling site (seven miles from home), and the compressor wasn't working.

But you know, with these experiences behind me (and probably before me), I am more committed than ever. I love my new car. I love having drivers pull up next to me at a stop light and give me a thumbs up. I love driving to work along Independence Avenue as I sometimes do in the wake of a hybrid electric Insight and thinking that I am part of a vision for a better future. And I like knowing that I am not asking anyone else to do something I wouldn't do myself.

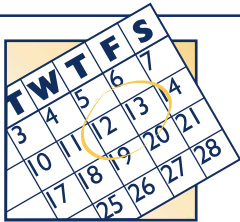
All nations need patriotic rhetoric. We need to rally round the flag in good times and bad, and we have certainly done this since September 11. But let's not kid ourselves about what is patriotism and what is rhetoric. Unless we are willing to make commitments—and sacrifices—we haven't really done much.

Sincerely,



Shelley Launey, Director

Clean Cities Program
U.S. Department of Energy



Upcoming Conferences and Events

National AFV Day Odyssey

April 11, 2002

Various locations nationwide

Contact: National Alternative Fuels

Training Consortium

304-293-7882

www.nationalafvodyyssey.org

8th National Clean Cities Conference

May 12–15, 2002

Oklahoma City, Okla.

Contact: Clean Cities Hotline

800-224-8437

International: 703-934-3069

Energy 2002: An Energy Workshop and Exposition

Palm Springs, Calif.

June 2–5, 2002

Sponsored by DOE's Federal Energy Management Program, U.S. DOE, U.S. GSA

www.energy2002.ee.doe.gov/Default.htm

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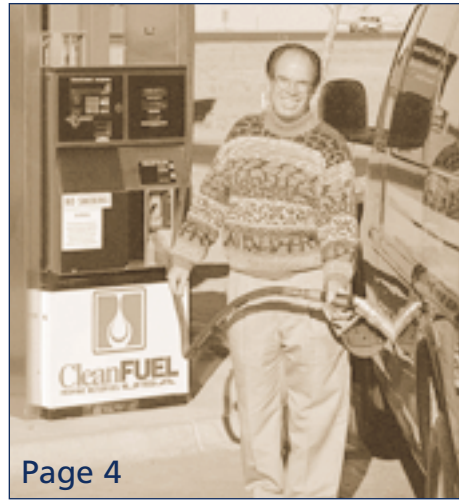
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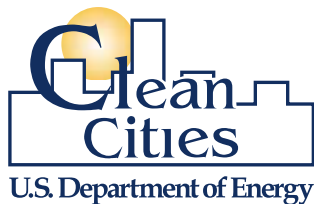
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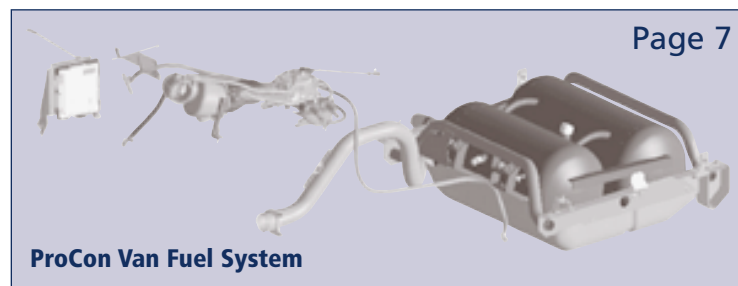


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ProCon Van Fuel System

On the cover: Major players in alternative fueling infrastructure development include ENRG, Inc. (top), which operates southern California fueling stations for Waste Management; CleanFUEL USA (right), with propane stations planned in four states; and Minnesota's E85 Team, which has built the nation's largest ethanol fueling network. See story, page 4.

Creative Alliances

Fuel Success in Infrastructure Development

The growing inventory of alternative fuel vehicles has created new markets for alternative fuels. Innovative businesses and organizations are recognizing the commercial potential of these markets, and are working in creative ways to develop new fueling infrastructure across the country. Infrastructure developers have employed unique approaches to capitalize on the market opportunity for alternative fuels. While the approaches differ, their stories teach a common lesson about the dynamics of the local market and the partnerships that can help ensure success.

Pick the Right Partners

CleanFUEL USA is an emerging network of propane fueling stations, with several pilot sites operating in Denver and many more anticipated in Colorado, California, Arizona, and Georgia. Approximately 30 new sites are

planned and funded, says Curtis Donaldson, founder of the network. Donaldson is president of Clean Fueling Technologies, a manufacturer of propane fuel dispensers and one of five equity partners in the group.

The network operates by installing its own branded pumps and signage—often alongside a major oil company brand—at existing service



Curtis Donaldson and Clean Fueling Technologies supply credit card-reading dispensers to the propane network.

Widely publicized promotions offered by Minnesota's E85 Team have persuaded many motorists to switch to E85 fuel.

stations. It provides transaction-processing technology, enabling sites to process standard credit cards 24 hours per day. "The experience becomes seamless to the consumer, like purchasing gasoline," says Donaldson. For its part, CleanFUEL USA receives a transaction fee.

CleanFUEL USA is a legal partnership, set up as a limited liability corporation in Delaware. Other equity partners are Georgia Gas Distributors, Delta Liquid Energy, and Mutual Propane—all independent propane marketers; and AmeriGas, a multistate propane distributor. Distributor Ferrellgas has signed up as a

dealer at several sites, and the network seeks to make similar arrangements with distributor Suburban Propane.

"Relationships are the key to this business," says Donaldson, who worked previously for Conoco setting up propane stations in the southwest. "You have to pick the right city and the right partners," he says. "Without that, it doesn't work on a sustainable basis."

Donaldson says the fragmented nature of propane distribution, like that of other alternative fuels, demands diversified players. Infrastructure builders should be creative in seeking support. "Pull in everyone you can locally, from the Ford or GM dealer to the Clean Cities coordinator," he advises. Ford Motor Company has been an unofficial "partner" in the CleanFUEL USA network, supplying site selection consulting, marketing materials, and a safety video.

In Denver, CleanFUEL USA's pilot sites are located at Conoco stations. "We let the dealer sell the fuel. They're the ones who know the market and the local fleets."



Left to right: Curtis Donaldson and CleanFUEL USA manager Tracy Eddy with partners Roger Toller and Steve Moore, both of Mutual Propane. Their Denver International Airport location is one 30 CleanFUEL USA propane sites planned or already on the ground in four states.

American Lung Association of Minnesota

When conflicts arise, it's good to have a neutral party in the group. The authority to lead derives partly from being neutral. —TIM GERLACH, MINNESOTA E85 TEAM

Meet on Neutral Ground

The Twin Cities region of Minnesota now boasts more than 60 public E85 stations thanks to a public-private partnership called the Minnesota E85 Team. Recently the state celebrated the sale of its one-millionth gallon of E85 statewide (see story, page 12). The effort to build E85 infrastructure in Minnesota has been enhanced by participation in three national programs:



Many Minnesota motorists have been introduced to ethanol at public auto shows, thanks to the efforts of the E85 Team.

- In 1998, DOE and Ford Motor Company selected the region as one of three national E85 Model Cities. The designation was part of a program to raise public awareness of E85 and improve its fueling network. Other designees were Denver and Chicago.
- In 1999, Minneapolis-St. Paul was chosen to participate in the Alternative Fuel Vehicle Utilization Supporting the Expansion of Refueling (AFV USER) Program, sponsored by DOE and the U.S. General Services Administration. That program aims to increase the use of alternative fuels by federal agency fleets based in six selected urban areas.
- In 2000, the area's clean air stakeholders (previously organized under the name Clean Fuels Minnesota) applied to DOE for an official Clean Cities designation. That designation was granted to the Twin Cities Clean Cities Coalition, now known as "TC4," in 2001.

Important local and state-level players are also engaged. What has helped keep the Minnesota E85 Team going is its expansive and diverse list of members. So says Tim Gerlach, director of Outdoor Programs for the American Lung Association of Minnesota (ALAMN) and unofficial leader of the team. "When you have a lot of work, it's great to have such good partners to help out," he says.

On the other hand, multiple viewpoints and agendas can cause problems. When conflicts arise, he says, it's good to have a neutral party in the group. On the E85 Team, that role has been filled effectively by the ALAMN, a nonprofit organization with no commercial interests or allegiances to specific fuels. The authority to lead derives in part from its neutrality.

"Somebody has to be able to say, let's do this, let's not do that," says Gerlach. "But you also have to recognize there will be times when not everyone will agree, and that's OK too."

The Minnesota team has chosen to focus on individual motorists, Gerlach says. "Sometimes it seems like a gigantic task to move consumer choice. We also target major fleets, but ultimately we have to convince consumers to switch, or we'll never get where we want to go."

An earlier account of the Minnesota E85 Team's success appeared in AFN Volume 4., No 4. See "E85 Grows in Popularity" at http://afdcweb.nrel.gov/documents/altfuelnews/4_4feature.html.

The Minnesota E85 Team Includes:

- American Lung Association of Minnesota
- Ford Motor Company
- Minnesota Coalition for Ethanol
- Minnesota Corn Growers Association
- Minnesota Department of Agriculture
- Minnesota Department of Commerce
- Minnesota Office of Environmental Assistance
- National Ethanol Vehicle Coalition
- U.S. Department of Energy

Sign up Anchor Tenants

Jim Harger began developing economic models for public-private funding of natural gas fueling stations in 1992, while working for Southern California Gas Company. He now applies that experience as vice president of marketing for ENRG, Inc. (formerly Pickens Fuel), which owns and operates more than 90 CNG fueling stations in California, Arizona, and Canada. To date, he and his team have developed more than 30 stations using public funds and/or public in-kind contributions such as land.

In his previous job, with the help of a \$100,000 grant from the Gas Research Institute, Harger helped to establish a CNG site for Waste Management, Inc. The site is divided by a fence, with a private time-fill system for Waste Management inside the gate, and a 24-hour card-lock-operated dispenser for other customers on the outside. Last year, the

Creative Alliances *(continued)*

site sold more than 400,000 gasoline-gallon equivalents (gge) to Waste Management, plus 20,000 gge to outside motorists and fleets. Outside sales will increase dramatically in 2002 due to a new fleet of CNG taxis serving Palm Springs International Airport—another public-private partnership orchestrated by Harger's team at ENRG.



At some ENRG stations, a gated fence permits service to an anchor tenant on the inside and to public motorists on the outside.

ENRG has built two public-access fueling sites for SunLine Transit in southern California's Coachella Valley. While LNG and CNG are sold to SunLine inside the gate, both fuels are available outside at 24-hour public-access fueling dispensers. More than 1 million gge of fuel was sold at the two sites in 2001. The stations were built with private capital from ENRG combined with public funds from the Petroleum Violation Escrow Account of California's South Coast Air Quality Management District, the Federal Transit



ENRG

CNG stations serving SunLine Transit in California were financed both by private capital and public funds.

Authority, and California's Carl Moyer Memorial Air Quality Standards Attainment Program.

Those experiences and others like them have confirmed one lesson, says Harger. "If you want to be successful, you have to have an anchor tenant." Elsewhere in the country, publicly accessible CNG stations have been "anchored" by shuttle bus operators, taxi fleets, and rental car companies. Airports are the most common locations for successful, publicly accessible CNG stations.

Failing to secure "load" in the form of an anchor tenant has been the demise of countless public CNG stations, he says. Many failed stations were built by public utilities that over-emphasized individual consumers. "People think if you build infrastructure, they will come," he says. "But that's not necessarily true."

Visit the ENRG Web site at www.enrgfuel.com.

Honda Partners with FuelMaker To Develop Home CNG Refueling

In yet another creative alliance, American Honda and Toronto-based FuelMaker have joined forces to advance the alternative fueling infrastructure beyond service stations. The extent of their common interests became apparent when Honda acquired a 20 percent equity stake in FuelMaker, which makes natural gas refueling appliances (RFAs).

The two companies have engaged in several joint promotions, including one now offered exclusively to Clean Cities stakeholders. Companies buying the CNG-powered Honda Civic GX receive discounts on the purchase of FuelMaker products. Details are available at www.fuelmaker.com/ccpromo.htm.

The Clean Cities promotion is geared to businesses, not individual motorists, says Steve Ellis of Honda. Even with substantial incentives, FuelMaker appliances are too expensive for most

individuals to purchase for home use. The company's lowest-priced unit costs more than \$6,000.

But Honda and FuelMaker are developing a "home RFA" for individual motorists, says Ellis. The unit now exists in prototype. It will draw its natural gas supply from utility lines, and will run on 110-volt AC household current. The residential RFA will be able to "slow-fill" a CNG passenger car in about eight hours.

"Honda felt the best way to make home refueling a reality was to invest in our partner, FuelMaker," says Ellis. With an anticipated pricetag of approximately \$1,000, the home RFA is expected on the market within two years.



A mockup of the Home Refueling Appliance now in development by FuelMaker and Honda.

Propane Proponents Create Dedicated LPG Vans

Two full-size propane vans have joined the list of dedicated alternative fuel vehicles available to support Clean Cities niche markets. The Propane Promotion Consortium (ProCon); Quantum Technologies Worldwide, Inc., and General Motors (GM), have partnered to develop and market dedicated propane passenger and cargo vans. The vehicles, GM's 2002 Chevy Express and GMC Savanna vans, are certified to California's ultra-low emission standards and offer a range of approximately 250 miles.

Traditionally, most propane vehicle customers have been responsible for the upfitting—once they buy the vehicle they need, they must have it converted to operate on propane. But this industry partnership, says ProCon Executive Director Tammy Fiebelkorn, makes the entire process seamless to customers and enables them to purchase dedicated, certified original equipment manufactured propane vehicles directly from their local GM dealerships.

GM provides and warrants the base vehicles, and Quantum performs the upfitting and warrants the propane fueling system. The vehicles are then shipped to GM dealers with the propane system already in place. To help ensure the project's success, Quantum also offers free training to GM dealers and local fleet technicians so customers can be assured that, once they buy the vehicles, adequate servicing is available.

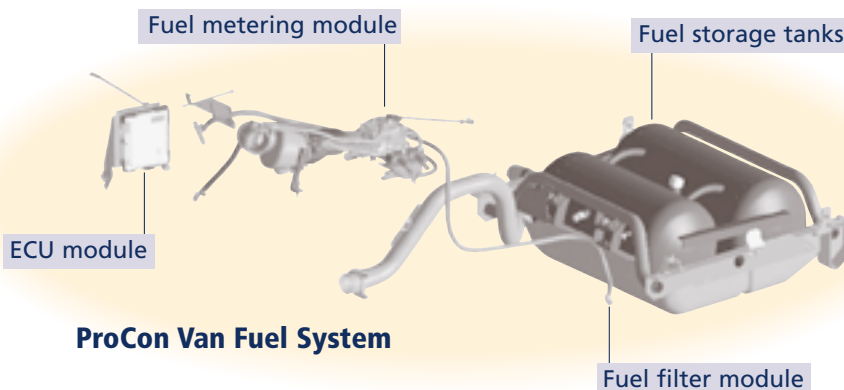
ProCon, a consortium of propane providers and equipment manufacturers, helped raise financing for the effort. ProCon members provide vehicle marketing services in their respective regions of the country. Additional support for the project came through

grants from the Propane Education and Research Council, Texas Alternative Fuels Council, and U.S. Department of Energy's Clean Cities Program.

As dedicated, original equipment manufactured vehicles, the Chevy Express and GMC Savanna qualify for Clean Cities rebate funding—although it's important to act fast, says Fiebelkorn. For 2002 model year vehicles, the ordering window closes on **April 12, 2002**. Production plans for subsequent model years have not been confirmed. For more information, including vehicle specifications, ordering guidelines, and other rebate and incentives information, please call Tammy Fiebelkorn at 303-651-0360 or visit the ProCon web site, www.e-solved.com/ProCon/ProCon_projects.html. Vehicle information is also available on the Quantum Technologies Web site, www.qtww.com/quantum_programs/ProCon.shtml.



Quantum Technologies



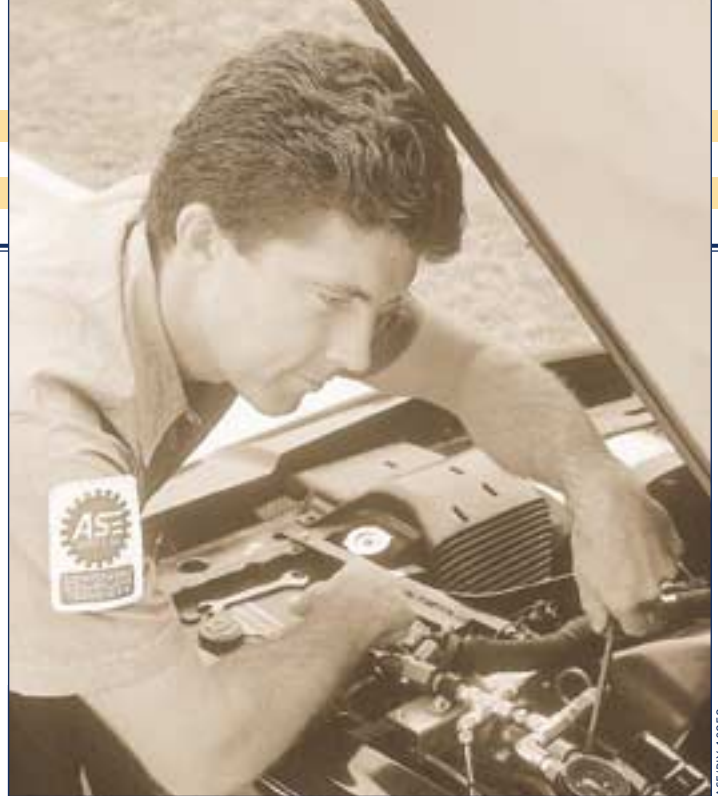
ProCon Van Fuel System

AFV EXPANSION CALLS FOR TECHNICIAN TRAINING

A healthy local market for alternative fuel vehicles (AFVs) depends on reliable vehicle suppliers, a solid base of AFV users, and a strong fueling infrastructure. These are among the more obvious requirements. Less apparent, but equally important, is the need for capable service technicians, prepared to handle the unique challenges found under the hoods of AFVs.

The proliferation of alternative fuels and AFVs is driving demand for new kinds of technician training. Considerable market expansion has occurred in CNG, propane, ethanol, and biodiesel, with more modest advances in battery-electric power. Electric vehicle (EV) technology has seen considerable growth, however, in off-road applications such as airport equipment.

With such a variety of technologies on the road, technicians can't expect to offer quality service without specialized training. So says technical specialist Bob Rodriguez of the Virginia-based National Institute for Automotive Service Excellence, which tests and certifies technicians and awards the familiar "ASE" patch worn in repair shops. Rodriguez also serves as administrative director of the non-profit Automotive Training Managers Council.



The National Institute for Automotive Service Excellence, purveyor of the ASE patch, now offers certification in CNG service.



When Dallas Area Rapid Transit orders new buses, the supplier must also include technician training.

"I wouldn't want to see a gasoline engine guy 'tinkering' with a CNG system without having had some training," says Rodriguez. Without it, a technician could be injured while servicing a high-pressure valve or fuel line. AFV service programs typically offer instruction in handling high-pressure gaseous fuels including CNG and propane. Another commonly offered course covers the inspection of high-pressure fuel cylinders for damage or deterioration.

Most of the technology found in AFVs is common to all vehicles. Like any auto technician, an AFV service tech needs diagnostic and mechanical skills, plus a grounding

in electronics, physics, and applied mathematics. For that reason, even at technical schools offering top-notch AFV training, course catalogues are often dominated by conventional class descriptions.

Can a technician specialize in AFV service? "I'd say that would be most common in a fleet situation," says instructor Larry DaShiell of the College of the Desert, located in Palm Desert, Calif. On a staff of technicians servicing many vehicles, one might take on the role of AFV specialist in addition to other duties.

In spite of its small size, the College of the Desert has earned a nationwide reputation as a leader in AFV tech training. The school has worked closely with SunLine Transit, southern California's AFV-centric public transit agency, to establish service standards for hydrogen-powered buses. That experience helps DaShiell's team to develop service procedures for fuel cell cars of the future.

Training in the workings of CNG vehicles, and in the design and maintenance of natural gas fueling stations, is offered by the Natural Gas Vehicle Institute (NGVI), based in Las Vegas. Many classes are open to the public, while private training is offered to clients including fleet operators and transit agencies. Its technician training classes cover CNG fueling systems in depth, but they do not include hands-on diagnosis of drivability problems. NGVI's training is officially endorsed by the Natural Gas Vehicle Coalition. For more information, please visit www.ngvi.com.

Training in the technology of alternative fuel buses happens in a world somewhat apart from that of light-duty vehicle service training. Many transit agencies secure training from OEMs; sometimes it's included in requests for proposals (RFPs) soliciting new buses.

As maintenance training manager for Dallas Area Rapid Transit (DART), Phil Simmons has sent some 175 technicians to school since 1998. Initially the training was provided by Chart Industries (formerly MVE), the manufacturer of LNG products and technology employed by DART; and by engine maker Cummins. After getting a firm handle on the technology, DART has assigned the task to its own staff trainers. But whenever an RFP is issued for new buses, technician training is part of the package, Simmons says.

AFV training providers often offer courses in non-road vehicles including airport equipment and material-handling equipment such as forklifts. One training center with a nationwide reputation in that arena is the Mid Del Technology Center, located in Midwest City, Okla. Mid Del Tec offers a course in non-road EVs, geared to airport ground-service equipment such as baggage tugs. Another course, not for technicians but for emergency response personnel, conveys how to deal with high voltage in the event of an EV collision accident.



Clean Airport Partnership/PIX 09/75

Some training providers specialize in non-road electric vehicles such as airport baggage equipment.

In most metropolitan areas, basic training in AFV service can be found without traveling very far. Local colleges and trade schools, along with a handful of state universities and privately operated schools, offer the lion's

share of AFV training. More than 50 such entities are listed on the Web site of DOE's Office of Transportation Technologies (OTT), at www.ott.doe.gov/education/training.html.

Many training centers adopt a "train-the-trainer" model. In this approach, students are usually on-staff instructors from colleges and large fleet operators. After being trained, they return home to share knowledge with their own staff. The train-the-trainer approach has been the foundation of the National Alternative Fuels Training Consortium (NAFTC), based at West Virginia University. NAFTC develops standard, competency-based AFV training. Since its inception in 1992, NAFTC-trained instructors have trained more than 3,000 AFV technicians around the country, and will soon train technicians abroad through Clean Cities International.

NAFTC also maintains a network of AFV training facilities nationwide. Most are community colleges; many also appear on the list of AFV service providers maintained by OTT. More information about the NAFTC and its approved training centers is available at <http://naftc.nrcce.wvu.edu>.

Another list of highly qualified AFV training providers is available from the National Automotive Technician Education Foundation (NATEF), which is a part of ASE—the National Institute for Automotive Service Excellence. NATEF evaluates training providers against a set of industry standards. To deserving providers it awards certification in Continuing Automotive Service Education (CASE). CASE-certified AFV training providers can be located at www.natef.org/certified.cfm.

FreedomCAR Makes Headlines at Detroit Auto Show

Auto shows provide a perfect forum for major industry announcements—new directions in concept vehicle development and rollouts of new model year production vehicles often make newspaper headlines. On January 9, at the North American International Auto Show in Detroit, Energy Secretary Spencer Abraham made a different kind of announcement that has drawn much attention.

Secretary Spencer introduced FreedomCAR, a new cooperative public-private research partnership. This initiative, to be led by the U.S. Department of Energy (DOE) in partnership with the U.S. Council for Automotive Research, marks a shift to a longer range, more expensive vision, with special emphasis on hydrogen fuel cells and hydrogen infrastructure.

The "CAR" in FreedomCAR stands for Cooperative Automotive Research. "Freedom" refers to the use of resulting technologies in vehicles that can free Americans from foreign oil, free communities from the vehicle pollution, and free Americans from dramatic swings in fuel prices, without requiring anyone to relinquish personal mobility or freedom of vehicle choice.

Although the FreedomCAR announcement has stirred excitement among the press and many others, it is important to remember that the program's vision is a long term one, say DOE officials. The transition to a hydrogen powered fuel cell transportation system requires significant research and investment in order to successfully overcome critical remaining barriers.

That's where Clean Cities comes in. Alternative fuel stakeholders face some of the same barriers that loom ahead for the commercialization of hydrogen fuel cell vehicles, such as convenient refueling infrastructure and incremental cost. Experience with fueling, storage, and distribution of a gaseous fuel like natural gas can help pave the way for other fuels like hydrogen. So the expanded use of alternative fuels now takes on even greater significance. Not only can alternative fuel vehicles address energy security and air quality issues today, but they can also create a pathway for use of hydrogen fuel cell vehicles in the future.

"By promoting alternative fuel vehicles in niche markets, where they can become a sustainable presence, we are also developing the experience and the infrastructure needed to support hydrogen fuel vehicles that will become available in the next ten to twenty years," said DOE's Tom Gross, Deputy Assistant Secretary for Transportation Technologies.

For more on the new FreedomCAR program, please visit www.energy.gov/HQPress/releases02/janpr/FreedomCarFactSheet.htm.



From the States

Beyond the EAct Mandate: A Success Story from New York State

In 1996, when New York officials learned that the state relied on foreign sources to supply 83% of its petroleum—a higher percentage than the national average—they knew they needed to take action. They turned to alternative fuel vehicles (AFVs), as transportation accounted for more than 40% of the state's energy needs.

Like most other states, New York must purchase AFVs to comply with Energy Policy Act (EAct) mandates (see below). Today there are more than 1,900 AFVs in the state fleet, including nearly 1,300 compressed natural gas (CNG) vehicles, more than 150 electric vehicles (EVs), and nearly 90 propane vehicles. New York exceeded its AFV acquisition requirements in 1998, 1999, 2000, and 2001—and shows no signs of losing its momentum. But even more impressive are the variety of state initiatives that help ensure these fleet vehicles are powered by alternative fuel.

The Energy Policy Act of 1992 (EAct) requires alternative fuel provider and state government fleets to acquire AFVs as a certain percentage of their annual light-duty vehicle acquisitions. The annual requirement for state governments reached a plateau of 75 percent in 2001. For more information about EAct, please visit www.ott.doe.gov/epact.

One of the keys to New York's success is the leadership and commitment from the highest levels of state government. Recognizing that AFVs and alternative fuels are critical to reducing dependence on imported petroleum and improving air quality, New York Governor George Pataki signed the \$1.75 billion Clean Water/Clean Air Bond Act in 1996. The Act, which includes \$230 million for air quality improvement projects, provides incentives to reduce the incremental cost of AFV purchases. In June 2001, Governor Pataki furthered his commitment to alternative fuels by signing Executive Order 111, which directs every state agency, regardless of fleet size or location, to increase its annual light-duty AFV acquisitions to 100% by 2010.

Strong political support has helped propel New York's AFV efforts, but building partnerships and bringing the right people to the table have also been critical to its success. Among the other provisions of the Clean Water/Clean

Air Bond Act was the creation of the New York Clean Fueled Vehicles Program. Housed in the state's Office of General Services, the program is charged with acquiring, testing, and evaluating AFVs used by the state fleet. In 1998, representatives of state agencies, authorities, and universities formed the Clean Fueled Vehicles Council (CFVC), a working group to implement the program.

In addition to enabling open communication and information sharing among New York's state fleets, the CFVC is helping fleets overcome the barriers to a successful transition to alternative fuel use. It works directly with AFV manufacturers to ensure vehicle availability. And, with assistance from utility companies and vehicle manufacturers, it offers driver and technician training, which are critical to ensuring greater alternative fuel use.

The CFVC is tackling alternative fuel infrastructure barriers by coordinating refueling station development with projected state fleet AFV acquisitions. In 1999, with assistance from utility companies and energy suppliers, the CFVC created a comprehensive infrastructure plan to address the state's immediate and long-term alternative fuel refueling needs. The two-phase plan focuses on CNG, since nearly 70 percent of the state's AFVs are natural gas vehicles. In the first phase, 30 low-volume FuelMakers were installed at Department of Transportation (DOT) facilities across the state—the DOT is currently upgrading six of these stations to allow high volume capability. The second phase involves a public/private partnership to cost-effectively build 16 high-volume, fast fill, publicly accessible CNG stations in urban locations and along heavily traveled roads. Until phase two is complete, however, portable, skid-mounted CNG compressor stations provide service to AFVs traveling through three key areas of the state.

The station development outlined in the plan will complement the 46 commercial natural gas stations, in addition to more than 100 propane stations and 22 electric recharging sites, located throughout the state. Information about all of New York's alternative fuel stations can be found on the web at www.ogs.state.ny.us/cleanfuels.

Fleets participating in the Clean Fueled Vehicles Program must semi-annually report information about their miles traveled and fuel use, which not only helps track program progress, but also discourages drivers from refueling bi-fuel AFVs with gasoline. The New York DOT has found that the alternative fuel program and incentives are working—a limited survey of fuel use in DOT vehicles

found that between 1999 and 2001, operating the gasoline-powered automobile fleet cost the department \$0.07 per mile, while the average cost of operating the natural gas-powered fleet, which includes automobiles, pickup trucks and vans, was just \$0.05 per mile.

But while the day-to-day cost analysis looks promising for alternative fuels, the CFVC has not lost sight of the underlying goal of the program: to reduce dependence on imported oil and improve air quality. "Because of Governor Pataki's commitment to the Clean Fueled Vehicles Program, New York State is protecting the environment and investing in our future," said Kenneth J. Ringler, Jr., Commissioner of the New York State Office of General Services. "We have established a blueprint for success that other states are following and we have earned three national awards in recognition of our program. We will continue to lead the nation in use and acquisition of clean fueled vehicles."

Although agencies are currently required to purchase their vehicles, the state is examining its options for leasing AFVs through the manufacturers and/or their authorized dealers—which may facilitate the introduction of greater

numbers of AFVs in the near future and ensure compliance with Governor Pataki's Executive Order 111.

For more information about New York's EPAct success and the Clean Fueled Vehicles Program, please call John Spano, Office of General Services Deputy Commissioner, at 518-474-5390.

Recognition of New York's AFV Efforts

New York State and the Clean Fueled Vehicles Council have received several awards (listed below) in honor of their proactive and innovative efforts to promote increase alternative fuel use by state fleet vehicles.

- Environmental Leadership Award, presented by the National Conference of State Fleet Administrators, 1999
- Natural Gas Vehicle Coalition's Ninth Annual Achievement Award, 2001
- Clean Cities National Partner Award, 2001

AFVs Hit the Fast Lane

Alternative fuel vehicles (AFVs) in Salt Lake City took to the road in record numbers on Dec. 12, as the city's Clean Cities Coalition helped announce the "Clean Commuter Lane" on Interstate 15. Thanks to a recent bill passed by the Utah State Legislature, individual drivers of AFVs can use I-15's High-Occupancy Vehicle (HOV) lane, which previously was reserved for cars with passengers. With a new \$5 license plate decal from the state's Department of Motor Vehicles, AFV owners may now enjoy the time-saving benefits of the HOV lane. More than 80 people attended the event, where they enjoyed refreshments, give-aways, a cash drawing, and an AFV caravan along I-15. Leading the way was local Clean Cities Coordinator Beverly Miller's Honda Civic GX (upper left), provided by American Honda. Speakers (clockwise from upper right) included Salt Lake City Mayor Rocky Anderson, Utah State Rep. Don Bush, and John Njord, executive director of the Utah Department of Transportation. Ford Motor Company sponsored the event and gave away one year of use of a bi-fuel gasoline/CNG pickup. For more information on Utah's Clean Commuter Lane legislation, email Jack Elizando at jacke@questar.com.





Federal News

Government Makes Biggest-ever Biodiesel Buy

The U.S. government has contracted to purchase approximately 1.5 million gallons of B20 fuel, and will make it available for use by many federal agencies at 17 sites across the country. The purchase is the largest single government procurement of biodiesel fuel to date.

In a newly streamlined process, biodiesel will be as easy to procure as petroleum diesel has been in the past. Agencies can now place orders for biodiesel against the Defense Energy Support Center (DESC) contract, rather than initiating individual deals with suppliers. The fuel will be supplied by World Energy Alternatives of Cambridge, Mass.

Fuel will be purchased in this way by various offices of the National Park Service, the U.S. Postal Service, the Department of Agriculture, the National Aeronautics & Space Administration, and the U.S. Marine Corp., among others. The military only uses biodiesel in administrative vehicles.

B20 is 20 percent biodiesel and 80 percent petroleum diesel. The purchase of B20 by regulated government agencies can help them earn AFV purchase credits defined by the Energy Policy Act of 1992 (EPAct), and meet petroleum reduction goals established by Executive Order 13149.

DESC is part of the Defense Logistics Agency (DLA), specializing in the management of energy needs for the U.S. Department of Defense. DESC also supports non-military agencies, and serves more than 4,000 government locations nationwide.

EPA Awards Grants to Cut Pollution



Tom LaRocque, NREL/PIX 110302

Real estate developer Burgwyn, Perry and Rose, in conjunction with the City and County of Denver, will operate a "shared car" program for residents of its Highland Gardens residential development in northwest Denver. Funded in part by EPA's Clean Air Transportation Communities grant, the program will include a CNG-fueled Ford Contour and other clean vehicles, says program manager Jake Wegmann (above). Information on the development is at www.rose-network.com/projects/highland.html.

For Federal Fleets in Minnesota, All the Signs Point to E85

A.J. Moses is on a mission. As a U.S. General Services Administration (GSA) employee working on the federal fleet program in the Twin Cities region of Minnesota, he wants to ensure that all of the region's flex-fuel vehicles (FFVs) are powered by E85. More than 400 federal FFVs drive in and around the Twin Cities—and with the nation's largest E85 refueling network, Moses sees little excuse for fueling those vehicles with gasoline.



Parking lot signage urges flex-fuel drivers to exercise their ethanol option.

Moses and co-worker Jeff Jensen represent GSA in the Twin Cities Clean Cities Coalition (TC4). (Jensen, an ardent E85 advocate, has converted his Harley Davidson motorcycle and riding lawnmower to operate on E85). Working with the American Lung Association of Minnesota, the TC4 coordinating

organization, they are reminding federal FFV drivers of their refueling options. New signs in parking lots and inside federal facilities urge drivers to "refuel flex-fuel vehicles with E85 motor fuel" as required by Executive Order 13149. The order, passed in April 2000, directs federal agencies to use alternative fuels to meet a majority of AFV fueling needs, and requires agencies to reduce their overall petroleum consumption by 20% by 2005.

The team is also reaching out to the region's federal agency decision makers and fleet managers to encourage greater use of E85, and Moses has created a database to track fuel usage and monitor their progress. "Personal visits are key," said Moses. "When we talk to people at all levels of an organization—key decision makers and people who manage the fleet—we tend to see movement. Fuel usage is increasing very slowly, but with each round of visits, we hope to see new faces at the pumps," he said.

With nearly 70 publicly accessible E85 refueling facilities in Minnesota, the TC4 and its partners have focused their efforts on FFV fleets as well as the public and individual drivers. In January 2002, they celebrated a milestone with the sale of the one-millionth gallon of Minnesota E85.

For more information about the federal fleet activities and Executive Order 13149, please visit www.ott.doe.gov/epact/federal_fleets.html. For more about the TC4 and Minnesota's E85 effort, please visit www.alamn.org/outdoor.



Clean Cities International News

Clean Cities Peru: Getting off the Ground

A reverse trade mission conducted Dec. 9-13 brought a Peruvian delegation to Southern California for a close-up look at natural gas vehicle (NGV) technologies. The participants, representing both public and private sectors in Lima and Pucallpa, Peru, met with key U.S. industry representatives and funding specialists from the U.S. Trade Development Association (TDA) and the Export-Import Bank. The visit was co-sponsored by TDA, the Gas Technology Institute, and the Clean Cities International team.

In a tour at IMPCO Technologies, the delegates handled and tested parts and equipment for NGVs being manufactured on the production line. In a single warehouse at NGV Ecotrans Group, they participated in a demonstration of a cross-section of NGVs, including a refuse hauler, school bus, city bus, and passenger cars and trucks. And at a Los Angeles Metropolitan Transit Authority compressed natural gas (CNG) refueling station, the delegation watched as a CNG bus was refueled in less than five minutes.

Courtesy of SunLine Transit Agency, the delegation traveled in a bus powered by hythane (a mixture of hydrogen and natural gas) and toured Sunline's facilities, which use natural gas and hythane in a variety of applications. In a stop at the College of the Desert Energy Technology Training Center, the delegates were treated to a demonstration of special training equipment, including a computer program that runs diagnostic tests on a natural gas engine to analyze its operation (see picture).

On July 3, 2001, U.S. Department of Energy and the Peru Ministry of Energy and Mines (MEM) signed a Memorandum of Understanding (MOU), establishing



Larry DaShiell, a professor at the College of the Desert Energy Technology Training Center, demonstrates a natural gas engine for the Peruvian delegation.

Mark Perry, Gas Technology Institute

a framework for collaboration on energy issues. To launch the MOU, Clean Cities International representatives participated in the MEM's "Clean Cities Peru" workshop held on July 12-13, 2001 in Lima, Peru.

The international partnership brings opportunities for U.S. alternative fuel vehicle and equipment providers to expand their business and generate economies of scale. One such example is a new relationship between Oklahoma-based DRV Energy, which specializes NGVs, CNG conversion kits, and compressor stations, and Peru's Aguaytia Energy—the two companies are now working together to expand the natural gas market in Lima.

As part of the trade mission follow-up, the Peruvian delegation plans to seek opportunities for expanded partnerships with Clean Cities and U.S. technical experts to train Peruvian drivers and mechanics in NGV and propane technologies.

For more information about the trip, visit www.ccities.doe.gov/international.





On the Web

Web Sites Aid Used AFV Sales

Now nearly 10 years old is federal legislation requiring certain government agencies to purchase AFVs. And with the passage of a decade, many AFVs are aging as well. Used vehicles—many well-maintained by professional fleet technicians—are entering the resale market in record numbers. The question is how to match buyers and sellers.

Answers are available at the U.S. Department of Energy's online Alternative Fuels Data Center. Its newly created vehicle resale page at www.afdc.doe.gov/afv/usedafv.html highlights the costs and benefits of purchasing used AFVs, and provides links to at least a dozen organizations offering them for sale.

One such organization is the U.S. General Services Administration (GSA). The GSA operates a fleet of more than 23,000 AFVs. Each year it sells 2,000-4,000 used AFVs at public auctions at various locations nationwide. Its Web site provides information on how to participate in GSA auctions, as well as information on vehicles expected to be available in the coming year. It is located at www.auto.auctions.gsa.gov/afv/index.cfm.

AFVs from GSA tend to be newer than those from other sources, says vehicle resale manager Lander Allin. "We're required to sell them when they reach a certain age or number of miles," he says. GSA vehicles are sold at three years or 36,000 miles, whichever comes first. When a vehicle accumulates 60,000 miles it is sold regardless of age, and vehicles reaching four years in age are sold irrespective of mileage.

Other organizations accessible via the AFDC's used AFV page include AFVmarket.com, a marketplace operated by EV Rental Cars and EV World, an online publication devoted to clean transportation. Another is the Natural Gas Vehicle Coalition, whose Web site lists several CNG and LNG powered vehicles. A third is the site operated by Ford Motor Company's department of Automotive Remarketing Services, which helps fleet operators sell their own used vehicles.

State Incentives Updated in Buyers Guide

DOE's online Fleet Buyers Guide features a freshly updated Incentives and Laws section, completed after the close of last year's state legislative sessions. Included are the latest state actions affecting AFVs, alternative fuels, and infrastructure. The process involved review of existing legislation in all 50 states plus the District of Columbia, Puerto Rico, and the Virgin Islands.

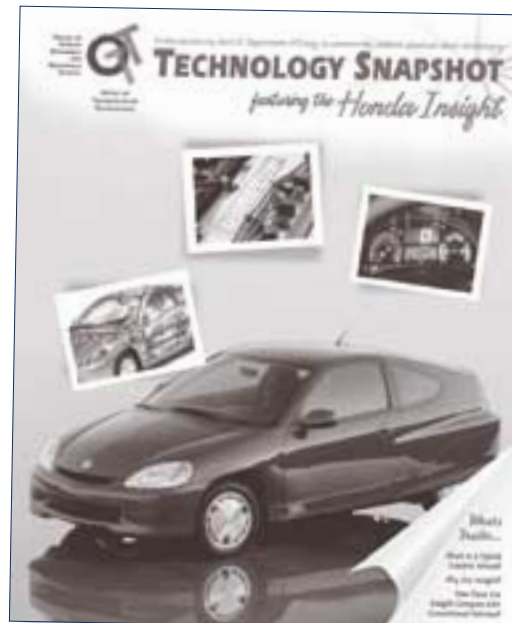
The Incentives and Laws section can be used as part of a vehicle-specific cost-analysis process, conducted in three steps in the Buyers Guide. First, the user identifies a vehicle. Then acquisition costs are entered along with manufacturer rebates, federal and state incentives, and other cost factors. Finally, the site calculates the incremental cost of buying and owning an AFV, compared to a conventionally fueled vehicle.

The Incentives and Laws section will be updated again after the conclusion of current state legislative sessions.

Honda Insight Tech Snapshot Available Online

The latest addition to DOE's Technology Snapshot series, available online, is a brochure on the hybrid-electric Honda Insight. The Technology Snapshot series was developed to introduce commercially available advanced transportation technologies to general consumers. Each brochure offers a plain-English outline of one vehicle, and explains how it differs from conventional vehicles in dealer showrooms. The Insight Snapshot joins the Toyota Prius Snapshot, which was produced in the fall of 2000, and will be followed later this year by a brochure on the hybrid-electric Honda Civic.

The Snapshots can be found on the Fuel Economy Guide Web site at www.fueleconomy.gov/feg/info.shtml#hybrids; and on DOE's Office of Transportation Technologies hybrid Web page at www.ott.doe.gov/hev. Visitors to the Alternative Fuel Data Center site, www.afdc.doe.gov, can find the Snapshot series by searching for "Technology Snapshot."





Clean Cities Roundup

Salt Lake's Gold Medal Vehicles

Olympic athletes and dignitaries in Salt Lake City breathed a little easier, thanks to the clean, alternative-fueled transportation provided by General Motors (GM). More than 200 GMC Savanna and Chevy Express bi-fuel natural gas vans transported athletes and their gear, as well as Olympic dignitaries, to and from events at the 2002 Olympic Winter Games in February.

With more than 100 natural gas refueling stations statewide, Utah stands out as an excellent showcase for alternative fuel vehicles (AFVs). The Salt Lake Clean Cities Coalition—the 2000 “Coordinator of the Year,” Beverly Miller, and more than 60 stakeholders including Clean Cities Hall of Famers, Questar Gas Company and The Newspaper Agency—also provides outstanding visibility and support for the increased use of AFVs.

The natural gas vans used at the Winter Olympics are available for resale at local GM dealers. For more information, please visit www.gmaltfuels.com or contact your GM AFV regional sales manager.

New Clean Cities Designations

Two new coalitions are set to join the official network of Clean Cities this spring. The Central Ohio Clean Fuels Coalition will celebrate its designation on Friday, April 12 in a ceremony at the newly renovated Statehouse Atrium in Columbus. The coalition, now a non-profit organization housed in Ohio State University's Center for Automotive Research, is working with several key niche markets, including school buses and state fleet vehicles.

DOE will designate the Granite State Clean Cities Coalition, serving the state of New Hampshire, on Friday, May 31. Granite State stakeholders have also focused their effort on several key niche markets, including transit, state fleets, and ski resorts. The coalition, which enjoys strong support from Governor Jeanne Shaheen and U.S. Senator Bob Smith, recently received \$1 million in funding to support a transit bus project at the University of New Hampshire.

MotorWeek to Focus on AFVs

MotorWeek, PBS's popular automotive TV show, is devoting an entire upcoming episode to alternative fuel vehicles (AFVs). Produced with funding from DOE, the show will air initially on PBS in advance of this year's National Clean Cities Conference, and will be shown again privately at the mid-May event. (See back cover for more information on the Clean Cities Conference.)

MotorWeek's alternative fuels episode will focus on all vehicles and fuels of interest to Clean Cities stakeholders, as well as hybrid-electric cars and hydrogen fuel cell technology. The production includes footage from last fall's Michelin Challenge Bibendum, an AFV rally running from southern California to Las Vegas. Check local TV listings for air times.

Manhattan Beer Delivers with CNG

On February 4, Manhattan Beer Distributors celebrated the rollout of fifteen new compressed natural gas (CNG) heavy-duty delivery vehicles and a new CNG refueling station to service them. The project, supported in part by the Clean Cities Program, earns Manhattan Beer the distinction of being the first private beverage delivery fleet in the Bronx, New York, to use heavy-duty natural gas vehicles. Other project partners included Bell Power Systems, ConEdison, Kingdom Group, New York City Department of Transportation, and New York State Energy Research and Development Authority. Event speakers included U.S. Representative Jose E. Serrano, who voiced his support for the expanded use of alternative fuels in urban areas, in particular, and officially entered his remarks in the Congressional record.



Bell Power Systems, represented by Alex Bell (right), was one of several partners in the project to make CNG fueling possible for private fleets in the Bronx. Bell is joined here by Mike Scarpino of DOE's Boston Regional Office.

Manhattan Beer operates a large facility in an industrialized and high-traffic area of the Bronx, and the company's own vehicles travel an average of sixty miles each day. With its new on-site CNG station, Manhattan Beer's new CNG trucks will displace about 540,000 gallons of diesel and reduce approximately 177 tons of emissions over the next fifteen years.

8TH NATIONAL CLEAN CITIES CONFERENCE

Stakeholders, Coordinators, and Cowboys Will Kick it Up a Notch in Oklahoma City

Cowboy poetry and the wit of Will Rogers will be part of the 8th National Clean Cities Conference, to be held May 12-15 in Oklahoma City. Along with a healthy sampling of the city's western heritage, this year's event will include hands-on technical seminars, a trade show and exposition, and presentations by high-profile speakers. Currently planned are:

- Opening remarks by David Garman, Assistant Secretary of DOE's Office of Energy Efficiency and Renewable Energy.
- A keynote address by James Woolsey, former director of the CIA and an advocate of alternative fuels and biomass energy.
- A new episode of PBS's *MotorWeek* featuring alternative fuel vehicles, introduced by the program's producer and host, John Davis.
- A discussion of "Invention and Innovation" by Dean Kamen, inventor of the Segway Human Transporter.

Returning is an event well-received at last year's Clean Cities Conference in Philadelphia. ScienceFest, sponsored by Oklahoma Gas & Electric and General Motors, helps kids understand how vehicle technology can improve



The Cox Convention Center will host the 8th National Clean Cities Conference.



A short walk away is the famous Myriad Botanical Gardens and Crystal Bridge Tropical Conservatory, with 17 acres of landscaped parkland.

the environment. Bill Nye, GM's Environmental Science Club Consultant, will appear on Monday, May 13.

Tuesday will begin with the Clean Cities Awards Breakfast, where the program's annual Partner Awards and Coalition Awards will be announced. The event will feature Doug Watson, an impersonator of Will Rogers, who was a native of Oklahoma. Tuesday's events will also include a performance by renowned cowboy poet and National Public Radio personality Baxter Black.

To register or get more information, please visit www.ccities.doe.gov/okconference.shtml; email kimberly_taylor@nrel.gov; or call the Clean Cities Hotline at 800-224-8437.