

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

Clean Cities Maps Its Strategy for a Decade of Success

*Strengthening coalitions,
cultivating niche markets*



PLUS:
Washington Day Highlights
Cargo Fleets Deliver Clean Air

INSIDE:
**Propane
Vehicle Rally**



Dear Readers,

Welcome to the pre-conference issue of *Alternative Fuel News*. We have an action-packed week planned for the Seventh National Clean Cities Conference in Philadelphia, especially designed for all Clean Cities coalitions and industry stakeholders. This year's conference will feature discussions and "car talks" on a variety of alternative fuel subjects, as well as a few new activities that are certain to create plenty of excitement. Highlights include "The Great Diesel Debate" and inspirational thoughts from motivational speaker and comic/impressionist, Terry Braverman. Also, media personality Bill Nye will host the children's ScienceFest, a celebration of alternative transportation innovations for our next generation car buyer.

Our AFV Expo promises the biggest and best to date. And, thanks to our conference sponsors, we all can experience the spirit of Philadelphia with activities such as the Mummers Strut Lunch Munch, Invention Convention at the Franklin Institute of Science, Franklin Feast, and—for the early risers—a "Streets" of Philadelphia run/walk. Or you can sway to the sounds of the

Philadelphia Boys Choir, tap your toes to the Legends of Jazz, or dance the night away and enjoy the city's skyline at "The Eighth Floor Reception." For more details about the conference, check out our Web site, www.ccities.doe.gov/conference.shtml.

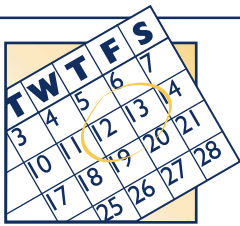
At the conference, we will highlight progress made toward achieving our goals—goals to increase the number of alternative fuel vehicles (AFVs), the amount of alternative fuel used, and the number of strong, self-sustaining Clean Cities coalitions. We announced these goals at the first Clean Cities Washington Day meeting held in March 2000. This March at Washington Day 2001, we unveiled new strategic approaches and offered new tools to help coalitions reach those goals. You can learn more about the new Clean Cities strategic plan and Washington Day 2001 in our cover story.

Also featured in this issue is an article about heavy-duty truck cab comfort units, or "anti-idling devices." These small, auxiliary power units provide truck operators with a cost-effective, efficient way to heat and cool their cabs—without running the engine, wasting fuel, and emitting additional pollutants. For more on ways to "discourage idle behavior," please see our feature on page 7.

Best wishes, and as usual, enjoy the issue.

Shelley Launey, Director

Clean Cities Program
U.S. Department of Energy



Upcoming Conferences and Events

7th National Clean Cities Conference and Exposition (see page 16)

May 13–16, 2001
Pennsylvania Convention Center
Philadelphia, Pennsylvania
Contact: Clean Cities Hotline @ 800-224-8437

2001 Tour de Sol

May 19–26, 2001
From Waterbury, Connecticut, to Albany, New York, to Boston, Massachusetts
Contact: Northeastern Sustainable Energy Association @ 413-774-6051

FutureTruck 2001 Competition (see page 8)

June 4–13, 2001
General Motors Proving Ground
Milford, Michigan
Contact: Kristen De La Rosa @ 512-481-8876

17th Annual International Fuel Ethanol Workshop and Trade Show

"Where Practical Application and Research Meet to Improve Grain and Cellulose Ethanol Production"
June 19–22, 2001
Radisson Hotel Riverfront
St. Paul, Minnesota
Contact: Bryan & Bryan Inc. @ 719-942-4353



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Clean Cities Strategy

Strengthening coalitions, cultivating niche markets

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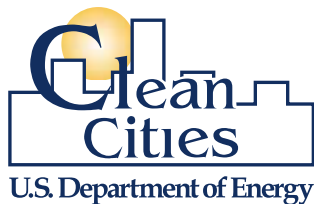
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AFV USER funds three new projects
Second-round rebate funding
Buyer's Guide adds electric bikes, low-speed vehicles, and hybrids

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Philadelphia prepares for 7th Clean Cities gala



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Clean Cities Maps Its Strategy for a Decade of Success



National Clean Cities Program Director Shelley Launey addresses the Washington Day audience.

The Clean Cities' vision of the future is one of strong, vibrant, self-sustaining coalitions and niche markets in which alternative fuel vehicle (AFV) fleets operate 100% of the time on alternative fuel. It's a vision that includes 1 million AFVs on the road, using 1 billion gasoline gallon equivalents of alternative fuel. It is also a vision that could become reality. At Clean Cities Washington Day 2001, program staff and industry partners unveiled the specific strategies designed to help local coalitions build a viable national alternative fuels market.

The strategies presented at Washington Day 2001 are a result of stakeholder input at the first-ever Clean Cities Washington Day, held on March 15, 2000. At that meeting, Clean Cities Program staff announced three new long-term goals, designed to advance the most fundamental purpose behind Clean Cities—to promote AFVs and increase alternative fuel use:

- 1 million AFVs on the road (using alternative fuel) by 2010,
- 1 billion gallons of alternative fuel used in AFVs annually by 2010,
- 75% of Clean Cities coalitions self-sustaining by 2005.

To reach these goals, each Clean Cities coalition must increase AFVs in its region by 17 percent annually, with an

average fuel consumption rate per vehicle of 850 gasoline-gallon equivalents (gge). It's an ambitious goal, but coalitions have a variety of new tools, services, and behind-the-scenes support mechanisms to help.

Washington Day 2001 provided a forum for Clean Cities staff and industry partners to discuss strategies to achieve the three Clean Cities goals, as well as future plans. The strategies are grouped into five main program areas:

1. Strong existing coalitions,
2. Self-sustaining niche markets,
3. Increased funding for AFV and infrastructure projects,
4. Legislative incentives for AFV purchases and infrastructure development,
5. Mandates and/or alternatives to the Energy Policy Act of 1992 (EPAct).

Of the five program areas, the first two offer greatest opportunities for influence by the Clean Cities Program. Success in the other three depends largely on legislative action, policy, and the hard work of Clean Cities' industry partners (see box, page 5). At Washington Day 2001, Clean Cities Director Shelley Launey unveiled the program's new strategic plan, which outlines DOE's efforts to help strengthen coalitions and build self-sustaining niche markets.

Stronger Coalitions

The desire for strong existing coalitions clearly extends from the Clean Cities goal to see 75% of coalitions "self-sustaining by 2005." According to the Clean Cities plan, one key to coalition strength is effective leadership from its coordinator. The coordinator is a person who is usually asked to wear many hats. Various roles can include facilitator, marketer, motivator, grant writer, organizer, researcher, liaison, mediator, public affairs specialist, manager, and fundraiser. Those responsibilities are difficult enough for any full-time person, but especially for a coordinator who works only part-time. Of the 80 Clean Cities coalitions nationwide, only about 15 percent have full-time coordinators.

Another source of strength is a diverse base of stakeholders. Coalitions should seek the active involvement of fuel providers, local and state governments, private fleet operators, and auto dealers. Other potential participants might be metropolitan planning organizations, large corporations, public relations firms, nonprofit organizations, airport management, universities, and local fire departments.

A thriving board of directors, composed of individuals with diverse backgrounds beyond alternative fuels, can make an enormous difference in building a sustainable coalition. Board members often donate money, actively promote the organization, and solicit funds on its behalf. Strong boards have members who tend to stay longer than one term and provide organizational continuity. They take an active part in setting goals and objectives and evaluating coalition progress.

Clean Cities will offer new training workshops to educate state and local policymakers and incorporate as a non-profit organization. Additional strategies under the "strong existing coalitions" heading include building fleet

customer prospects, developing markets for alternative fuels, grant writing, and using existing outreach services such as the Clean Cities Hotline. All are described in the plan. The Clean Cities Program will offer training workshops in some of these areas in all six DOE regions, in 2001-02.

Filling a Niche

Niche market fleets, which often travel contained routes and are fueled at a central location, offer an enormous opportunity for alternative fuels. And high-mileage fleets can benefit from considerable cost savings using alternative fuel. Clean Cities coalitions have already identified several potentially successful niche markets, including airports, transit agencies, cargo and delivery companies, and government fleets. Although a wide variety of vehicle types can comprise a single niche, those vehicles can share an infrastructure, which helps ensure the success and longevity of the market.



Warren Grez, NREL/PIX 00091

Airport vehicles make up one niche market, along with government, transit, and cargo/delivery fleets.

In the Clean Cities strategic plan, the term “self-sustaining niche markets” implies economic interdependence in a given area. The prevalence of AFVs should help ensure local demand for trained technicians and a fueling infrastructure. The availability of those services, in turn, makes the purchase of AFVs more attractive. When it works, the market becomes economically self-sustaining, with little or no government involvement.

The plan includes a host of new numerical data on fuel use

and the numbers of vehicles that comprise all four targeted niche markets (see table, page 6). Gathered from various sources including the U.S. Environmental Protection Agency, U.S. Census Bureau, trade publications, and studies by consulting firms, the information will be extremely useful for gauging market potential within individual coalition regions.

Washington Day 2001 Highlights the Latest AFV Market Strategies

In addition to the Clean Cities strategic plan, Washington Day attendees learned about the activities that DOE’s alternative fuel industry partners have initiated to address Clean Cities priorities and drive the program closer to its goals.

Kateri Callahan of the Electric Vehicle Association of the Americas and Paul Kerkhoven of the Natural Gas Vehicle Coalition tackled legislative incentives for AFV purchases and infrastructure development. They discussed recent events on Capitol Hill and reviewed potential upcoming legislation to encourage AFV and fuel-efficient vehicle purchases as well as alternative fuel infrastructure investments. For their presentations and more on possible legislation, check out the Clean Cities Web site at www.cities.doe.gov/whats_new.shtml.



Ruth Horton, New York State Energy Research and Development Authority; Greg Zilberfarb, Ford Motor Company; Amy Engel, Greater Long Island Clean Cities Coalition Coordinator

To address increased funding for AFVs and infrastructure projects, Doug Howell of the Environmental and Energy Study Institute and Jake Plante of the Federal Aviation Administration (FAA) discussed two of the largest grant programs available—DOT’s

Congestion Mitigation and Air Quality Improvement program (CMAQ) grants and FAA’s AIR 21 grants for airport projects. Coalitions must work closely with their local metropolitan planning organizations to ensure CMAQ funds are used to support alternative fuel projects, said Howell.

An open-microphone “mini-town hall meeting,” held in the afternoon, prompted an informal dialogue among all participants about topics such as the state of the natural gas industry, public access vs. niche market infrastructure, upgrading aging fuel stations, alternative fuels used as blends, and administrative expenses in DOE State Energy Program grants.

For more information on any of the topics discussed at Washington Day 2001, please call the Clean Cities Hotline at 800-CCITIES.



Michael Klinkner of East Bay Clean Cities talks with Carol Butler, Executive Director, National Clean Cities, Inc.

Clean Cities coalitions will probably recognize some of the specific niche market strategies contained in the plan. But these “tried and true” activities, such as Advancing the AFV Choice events, coupled with new tools and strategies will help ensure sustainable AFV niche markets. Other niche market development strategies include Tiger Teams, large-scale project funding, and a renewed focus on fleets required to purchase AFVs by the Energy Policy Act of 1992 (EPA).

Clean Cities Tiger Teams are teams of experts, assembled by DOE, to assist coalitions with technical problems. Their expertise includes vehicle operations issues such as performance, safety, technician training, and driver acceptance; and fueling infrastructure issues such as station design and siting, and working with fuel providers. Tiger Teams can also help evaluate potential market opportunities and determine project feasibility. Coalitions are expected to exhaust other resources before applying for Tiger Team assistance. More information is available at www.ccities.doe.gov/tiger.html.

Coalitions are encouraged to pursue large-scale AFV-related projects, with the support of certain public sources of funding. One source is the federal government’s new AIR 21 Program, which will provide as much as \$2 million each to 10 airports, for AFV projects. Another, larger source is the U.S. Department of Transportation’s Congestion Mitigation and Air Quality Improvement Program (CMAQ), which has provided more than \$270 million to more than 200 AFV projects since 1991.

Working with EPA-mandated fleets, such as federal and state governments, is not a new concept for Clean Cities. Federal agencies, however, must comply with a new executive order, signed last year, which requires federal fleets to use alternative fuel in their AFVs more than 50 percent of the time by 2005. And although EPA does not require state fleets to actually use alternative fuel in their AFVs, many states have authorized alternative fuel

refueling policies or have taken the initiative to mandate alternative fuel refueling policies.

As stated in the Clean Cities plan, these mandated fleets offer coalitions an opportunity to build a refueling infrastructure network in which stations are ensured significant throughput. And although local governments are not covered by EPA mandates, as school buses are often an effective AFV application. The Clean Cities plan encourages coalitions to identify all government fleet operators, but especially those affected by federal legislation, and hold a niche-specific Advancing the AFV Choice event to help them choose vehicles and to develop a fueling infrastructure.

Among the new tools to assist coalitions in obtaining funds is a national database of CMAQ-funded alternative fuel projects. With support from a DOE grant, the Environmental and Energy Study Institute is analyzing national trends and creating the database help Clean Cities coalitions determine how CMAQ funds are allocated. Current data is more difficult to use due to the different reporting styles of state and local governments.

The Clean Cities plan also highlights the products and tools for cultivating niche markets, which resemble the ones available in the “strong existing coalitions” program area (described earlier). Educational workshops, for example, will offer training in specific niches, such as airports. Other new tools include educational software on alternative fuel school buses and a shuttle bus tool kit for coalitions interested in airport shuttle projects. Communications resources such as fact sheets and case studies are also available in print and via the Clean Cities Web site, www.ccities.doe.gov.

The Clean Cities strategic plan was distributed to all Washington Day 2001 participants and was mailed to coalition coordinators who were unable to attend. An electronic copy of the plan is posted on the Clean Cities Web site at www.ccities.doe.gov/whats_new.shtml.

AFVs and Alternative Fuels

The Clean Cities Plan now includes selected nationwide numerical data covering all niche markets.

Airport Shuttle Buses

Shuttle Type	Number of Shuttles	Annual Fuel Use Per Vehicle Type (million gal)
Door-to-door	7,500	44
On-airport (heavy-duty)	2,500	28
Off-airport parking (heavy-duty)	2,000	11
Hotel (light-duty)	2,250	6
Rental car (heavy-duty)	2,000	11
Regional (heavy-duty)	300	3
Airside (heavy-duty)	400	3
Total	16,950	106

Transit Bus Information

Transit Bus Size	Number of Buses	Annual Fuel Use Per Vehicle Type (million gal)
Less than 35 feet	11,000	43
35-40 feet	13,600	119
More than 40 feet	50,000	500
Total	74,600	662

Freight/Delivery Truck Information

Truck Size	Number of Trucks	Annual Fuel Use Per Vehicle Type (million gal)
Light-duty	4,800,000	5,000
Medium-duty	160,000	300
Heavy-duty	140,000	520
Total	5,180,000	5,820

Discouraging Idle Behavior

Most people don't think about how their favorite pair of shoes found its way to the shelf at the shoe store—or how their favorite brand of ice cream made it to their grocer's freezer. But neither commodity—nor thousands of others—would be possible without long-haul trucks.

Nationwide, about 480,000 long-haul, heavy-duty trucks (Classes 7 and 8) deliver goods from one place to another. Many travel hundreds of miles daily and frequently stop overnight. Sleeper cabs provide drivers with spacious and comfortable accommodations, but to keep the engine warm in the winter and maintain the cab's climate control conditions, most drivers leave the engine idling. According to Argonne National Laboratory (ANL) estimates, the average truck sits idling for up to 1,800 hours each year—an equivalent of 75 straight days.

Just one hour of idling burns a gallon of diesel fuel. Collectively, that's more than 800 million gallons of diesel lost each year, ANL says. Idling reduces fuel economy and wears the engine, requiring operators to invest more in maintenance and repair. It also pollutes the air. ANL estimates that each year, long haul heavy-duty trucks produce 10 million tons of carbon dioxide, about 60,000 tons of nitrogen oxides, and nearly 100,000 tons of carbon monoxide just by idling.

Truck operators must stay warm in the winter and cool during the summer, but now there is an alternative to idling. "Anti-idling devices" include direct-fired burners for cab and engine block heating; thermal storage devices for heating and cooling; and auxiliary power units for heating, cooling, and electrical power. These devices use



Comstock

only 10% to 15% of the fuel a diesel truck engine uses to heat the engine or run cab heating and air conditioning. They are commercially available, easy to install, efficient, and relatively inexpensive to operate.

By burning less fuel, cab comfort units dramatically reduce harmful emissions and, perhaps more important to cost-conscious drivers, they can save the average long-haul truck operator as much as \$1,900 each year in fuel costs alone. Less time idling also means less wear on the engine, which enables operators to save on preventative maintenance and repair costs as well.

Despite the benefits, truck operators are still reluctant to pay the initial cost of cab comfort units, which are typically about \$3,000. But ANL estimates that the significant fuel and maintenance savings will help operators see a return on their investment after just one year of use.

DOE has launched a program to promote the use of cab comfort units. The message: Don't Idle Your Profits Away! DOE's Office of Heavy Vehicle Technologies (OHVT) created an exhibit booth to showcase cab comfort technology and communicate the anti-idling message to truck operators at truck shows.

"Some truck drivers think our efforts are designed to make them suffer in unheated or uncooled cabs," said OHVT's Sid Diamond. "That is not at all our intent. Our goal is to show drivers that they really don't need a 600-horsepower diesel engine to run their trucks' climate control units and appliances. Today there are a number of options that provide more energy efficient, cost-effective, and environmentally friendly solutions to control cab comfort and safety."

For more information on cab comfort units, including a list of manufacturers, check out the Clean Cities Web site at www.cities.doe.gov/anti-idling.html. For more information on OHVT, visit www.trucks.doe.gov.

*Just one hour of idling
burns a gallon of
diesel fuel. Collectively,
that's more than
800 million gallons of
diesel lost each year.*



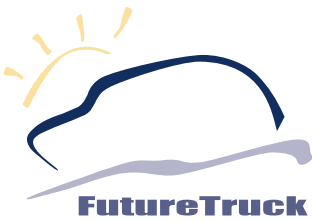
Pony Pack, Inc., NREU/PIX 09172

Devices like the Pony Pack effectively warm truck cabs and eliminate unnecessary idling. Some units also offer cab-cooling, engine-warming, and battery-charging.



General Motors, NREL/PIX 09973

FutureTruck Students Rise to the Challenge



Sport utility vehicles (SUVs) have emerged as the most popular single vehicle class in the United States. But they generally use more fuel and produce greater exhaust emissions than pas-

senger cars. They're big, and getting bigger, in terms of both popularity and physical size. There's no doubt that SUVs are here to stay. The challenge is to create an SUV that meets the needs of the future, with better fuel efficiency and lower emissions, while retaining the comfort and performance that consumers have grown to expect.

Fifteen teams of university students are rising to meet the challenge through FutureTruck, a four-year competition sponsored by DOE and General Motors (GM). Through FutureTruck, university students are building the SUV of the future, using advanced technologies such as fuel cells, light-weight materials, innovative powertrain strategies,

and alternative fuels. GM is supplying seed money, prize money, vehicles (Chevrolet Suburbans), and facilities for testing and evaluation. Ford Motor Company will become the automotive sponsor in 2002 and 2003.

FutureTruck student teams compete in a series of performance events including acceleration, trailer tow performance, off-road handling, and on-road fuel economy; as well as static design events, such as consumer acceptability and engineering design. The vehicles are tested for full fuel cycle analysis, and each team must also prepare a written and oral technical presentation.

Last year marked the start of the four-year FutureTruck competition. With less than five months to modify their vehicles, students managed to increase on-road fuel efficiency of their Chevrolet Suburbans by 13%, and reduce greenhouse gas emissions by 25% (compared to stock vehicles). For more on last year's FutureTruck competition, see *AFN Vol. 4, No. 2*, or visit www.futuretruck.org.

FutureTruck Teams

- Concordia University
- Cornell University
- George Washington University
- Georgia Institute of Technology
- Michigan Technological University
- Ohio State University
- Pennsylvania State University
- Texas Tech University
- University of California, Davis
- University of Idaho
- University of Maryland
- University of Tennessee
- University of Wisconsin, Madison
- Virginia Tech
- West Virginia University



General Motors, NREL/PIX 09974

University of Wisconsin-Madison students angle their way through the Catch Basin at FutureTruck 2000, held at the GM Desert Proving Grounds in Mesa, Ariz.

What's it like to be a student participating in FutureTruck? "It's inspiring," said Steve Gurski, team leader for Virginia Tech. "In FutureTruck there's always a new challenge that no one has ever met before." According to Gurski, undergraduate students and their team leaders spend as many as 30 hours per week on their vehicles. Team leaders—typically graduate students—spend even more time. They also help leverage funds and support for the project, write reports and waivers, and direct resources to help solve problems when necessary. Team leaders ensure that the team, and the vehicle, are ready for the June competition.

For many students, FutureTruck is a life-changing experience. "I got involved because of the toys, not realizing what a difference it would make in my career," said Michael Ogburn, last year's team leader for Virginia Tech. "Three years of playing with cars and trucks left me so aware of my passion to make a difference in the struggle to save the planet, that it makes my head spin to imagine doing anything else," he said.

The FutureTruck 2001 competition will be held June 4-13. Events will be held at the GM Proving Ground in Milford, Mich. Teams will then travel to Washington D.C. for an awards ceremony and vehicle display on Capitol Hill.



General Motors, NREL/PIX 09975

Virginia Tech engineering students have equipped their Suburban with hydrogen fuel cell power.

FutureTruck 2001 Headline Sponsors

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- BP-Amoco
- Cisco Systems
- Delphi Automotive Systems
- Goodyear Tire and Rubber Company
- Governors' Ethanol Coalition
- Illinois Department of Commerce and Community Affairs
- MathWorks
- National Instruments
- Natural Resources Canada
- National Science Foundation
- Newark Electronics
- Renewable Fuels Association

Facilitating the Next Generation of Natural Gas Trucks

The new Next Generation Natural Gas Vehicle (NGNGV) Program, sponsored by DOE and the National Renewable Energy Laboratory, will develop natural gas-powered trucks with significantly lowered exhaust emissions, for commercial development in the next several years.

The NGNGV Program vision is to build one new medium-duty (Class 3-6) CNG truck, and one new heavy-duty (Class 7-8) LNG truck by 2004, using technologies to reduce emissions of particulate matter as well as oxides of nitrogen (NOx). Typical NOx levels for today's low-emission natural gas trucks are in the range of 2-2.5 grams per brake-horsepower. The program has targeted NOx emissions of roughly one quarter of that level, at .5 grams.

Specific technological advances may take the form of improved engine-combustion designs, new dual-fuel systems, and better catalytic treatment of exhaust. The program is expected to draw interest from original equipment manufacturers as well as suppliers of sensors, engine-control systems, and fuel-air delivery systems. Information is available from Kevin Walkowicz at 303-275-4492, or at www.ctts.nrel.gov/ngngv.



A government-industry working group met to discuss the NGNGV program in Diamond Bar, Calif., on March 13, 2001.

Alliance to Help Boost Green Vehicle Market

DOE is working with government and industry to help build a stronger market for "green" vehicles. A potential alliance of federal agencies, state and local governments, vehicle manufacturers, environmental groups, fuel associations, and universities has met several times to discuss joint efforts to increase demand for clean and efficient vehicles. The group's top priorities include market research to help define target audiences and shape public messages and an outreach campaign to alert the public of its clean vehicle choices. Stay tuned to AFN for more information on green vehicle activities.

Propane Vehicle RALLY

The great American road rally was alive and well in early February as more than 20 propane powered vehicles converged on the Propane Vehicle Conference and Exposition in Kansas City, Missouri. The vehicles began their journeys at various locations throughout the West and Midwest, traveling along major interstates and stopping at propane refueling stations along the way. At each stop, drivers gave out information about the road rally and propane vehicles, and had a chance to interact with the public. They also collected signatures from the people they met during the rally into a logbook. Rally drivers traveled a combined total of more than 4600 miles and passed through 11 states and Monterrey, Mexico.

Approximately 27 government entities, associations, and companies worked together to make the road rally and propane conference a success. Sponsors included several Clean Cities coalitions, propane associations, propane distributors, and vehicle manufacturers. Ernie Oakes, the Regional Clean Cities Program Manager for the Department of Energy/Denver Regional Office applauded the venture and said, "The rally showed local communities that the propane industry and automobile manufacturers

are working together to bring a cleaner auto fuel to the general public for use in their everyday lives."

Participating in the event were representatives of both government and private industry, from Nebraska, Minnesota, Iowa, Colorado, Utah, Wyoming, Texas, Oklahoma, Kansas, Missouri, South Dakota, and Monterrey, Mexico. The rally was the first event of its kind featuring dedicated propane vehicles.

On Monday, February 5, the rally participants arrived in Kansas City just in time for the Propane Vehicle Conference and Exposition. The conference featured displays from the major auto manufacturers, propane distributors, and propane associations. Lead vehicles from each leg of the rally were driven onto the conference floor, where they remained on display throughout the conference. The signatures that were collected at the road rally stops were also on display during the conference.



Photos from Ferrelgas Inc., NREL/PIX 09938



NREL/PIX 09939

Below: Ivan Jacques of Salt Lake City refuels a Ford Excursion.



NREL/PIX 09940



NREL/PIX 09941

Top: Byron Smith of AmeriGas (left), with Steve Millin and Deb Kielian of Denver Metro Clean Cities. Above: A refueling stop by Schwan's Sales Enterprises of Minnesota.



NREL/PIX 09942



NREL/PIX 09943

Left: A police escort leads propane vehicles into downtown Kansas City. Above: Ferrelgas fleet manager Scott Beeson (left) chats with Wayne Register of Georgia Gas Equipment, Inc.



Niche Markets

Delivering Clean Air, Right to Your Door

Every day they travel from warehouses and local businesses to neighborhood stores and homes, delivering everything from flowers and dry-cleaned clothes to pizza and newspapers. Without delivery vehicles, we'd go without many of the amenities we've grown to depend on. And with e-commerce enabling Web users to order groceries and even the latest videos on-line, more and more consumers enjoy the convenience of home delivery.

As high-fuel use, high-mileage vehicles operating in small, defined geographic regions, delivery vehicles are ideal candidates for alternative fuels. According to the Census Bureau's most recent vehicle inventory and use survey, more than 5 million light-, medium-, and heavy-duty trucks are involved in cargo and freight delivery. More important, however, is that these vehicles use approximately 5.8 billion gallons of fuel each year—obviously big potential for significant alternative fuel use (and significant petroleum displacement).

Several highly successful alternative fuel vehicle (AFV) delivery fleets — from large, national corporations like United Parcel Service to smaller, regional companies such as Salt Lake City's Newspaper Agency Corporation and Flower Patch, Inc.—are currently featured on the Clean Cities success stories Web site. Below are several other delivery companies that are also enjoying the benefits of AFV use.

McShan Florist, Dallas: The Dallas-Fort Worth Clean Cities Coalition recently recognized McShan for operating an almost 100% alternative fuel fleet. Twenty-five of the company's delivery vans (or 80% of its entire fleet) run on compressed natural gas (CNG). The vans refuel at local public stations, and owner Bruce McShan offers creative incentives to encourage drivers to fuel with CNG. McShan decided to start using CNG 10 years ago, and has enjoyed significant savings associated with CNG.

Connie's Pizza, Chicago: Since 1997, Connie's Pizza has been delivering pizza throughout the Chicago area, using CNG vehicles. Of the company's 50 vehicles, 18 are CNG Chevy S-10 pickups. Connie's also owns slow-fill compres-

sors that refill vehicles overnight. According to Ivan Matsunaga at Connie's Pizza, the company initiated its AFV effort to comply with an Illinois Environmental Protection Agency rule that requires private fleets to purchase a certain number of AFVs. But there are other benefits. According to Matsunaga, it's the right thing to do environmentally, and the company benefits from the long-term economic advantage of using a less expensive fuel.

Schwan's Sales Enterprises, Marshall, Minn.: Schwan's Sales Enterprises manufactures, markets, and distributes frozen food to commercial and non-commercial customers in communities nationwide. An experienced AFV user, Schwan's has relied on propane for more than 22 years. Owner Marvin Schwan decided to convert his fleet to propane in response to gasoline shortages and unstable prices in the late 1970s. Today, the company's fleet is more than 90% alternative-fueled. Of its 7,500 vehicles, more than 7,000 are dedicated propane medium-duty vehicles. And with AFVs in 48 states, Schwan's is no stranger to the Clean Cities Program. The company is a

Clean Cities stakeholder in the Atlanta, Colorado Springs, Evansville (Indiana), and California's Northwest Riverside County, as well as New York's Capital District, Central Oklahoma, Vermont, and the Alamo Area coalition in Texas.

According to Alan Macht, director of fleet operations, company AFVs travel about 190 million miles and consume 45 million gallons of propane annually. To ensure its success, Schwan's has taken a proactive approach to driver education, providing training in refueling and vehicle operations. Vehicles are refueled at the 600 Schwan's depots located across the country. According to Macht, the drivers have been pleased with vehicle performance. Because Schwan's truck operators are commissioned sales people, they have a higher stake in the vehicles. If their trucks don't function, drivers don't make money. As for expanding its AFV fleet, Macht said the company will first focus on larger urban, non-attainment areas.

For more information about niche markets for alternative fuels, or to share your fleet's success story, visit the Clean Cities Web site at www.ccities.doe.gov/success.shtml.



Cargo and delivery vehicles, such as the nationwide fleet operated by UPS, constitute one of the four niche markets targeted by the Clean Cities Program.

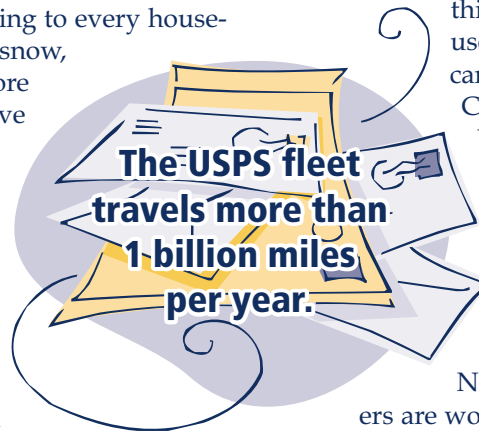


United Parcel Service, NREUPIX 07053, 07054

USPS Delivers Clean Air and Energy Security

The United States Postal Service (USPS) is the nation's ultimate delivery fleet. Its vehicles travel more than 1 billion miles per year, collecting mail from more than 312,000 street mail collection boxes and delivering to every household in the country. And through rain, snow, sleet, and hail, the USPS does much more than deliver mail. With 33,691 alternative fuel vehicles (AFVs) expected on the road by the end of the year, the USPS continues to be a leader in the drive to help strengthen our nation's energy security and clean the air.

By the end of the year, the USPS delivery fleet will include nearly 28,700 AFVs, most of which will be flexible fuel vehicles (FFVs). More than half of the projected 21,275 FFVs are already on the road; approximately 1,000 vehicles roll off the assembly line each month and are immediately placed into service. More than 7,300 USPS delivery vehicles are powered by compressed natural gas (CNG), and 52 vehicles



use propane. Meanwhile, 523 electric vehicles (EVs) are expected to be on the road by the end of the year.

But there's more to USPS operation than delivery—some 4,519 AFVs either haul mail or are used for administrative business. For example, by the end of this year, 20 medium-duty EVs will be used to haul mail, while postal employees can drive any of the 3,838 FFVs or 659 CNG vehicles to conduct administrative business.

"We are working closely with the alternative fuel industry to increase the use of each alternative fuel represented in the postal fleet," said Marguerite Downey, USPS Alternative Fuel Program Manager. "For example, the National Ethanol Vehicle Coalition and others are working with us to establish E85 pumps at fueling stations in communities where we are currently concentrating our FFVs. We are confident that our efforts will lead to continued expansion of alternative fuel usage in our own fleet, as well as neighboring fleets and individual drivers," she said.



From the Automakers

Hybrids are Big at Detroit's Auto Show

Hybrid sport utility vehicles (SUVs) took to the stage at the North American International Auto Show, held in Detroit in January. With the Honda Insight and Toyota Prius already on the streets and interest in energy efficiency on the rise, several automakers used the auto show as a forum to showcase their upcoming plans to bring advanced technology vehicles to market.

Ford Motor Company announced its plans for a hybrid Explorer, which will debut sometime after the Escape hybrid is introduced in 2003. Ford showcased the hybrid Escape at the Los Angeles International Auto Show a week before the show in Detroit. The Escape, expected to get 40 miles per gallon, will use an electric motor for propulsion and a four-cylinder gasoline engine. The Explorer will use a six-cylinder engine with electric assist. Both models will feature integrated starter-generator technology that automatically shuts off the engine when the vehicle stops, such as at a traffic light. The Explorer hybrid will also employ a regenerative braking system for its 42-volt battery used to provide an acceleration boost at start up. A smaller 12-volt battery will supplement power to run devices such as



DaimlerChrysler PowerBox hybrid-electric concept SUV

DaimlerChrysler

lamps and radios. For more information, check out Ford's hybrid Web site: www.hybridford.com.

Among the newest concepts DaimlerChrysler unveiled at the Detroit auto show was the Dodge PowerBox, a hybrid-electric SUV. Unlike other hybrid SUVs, the PowerBox combines a supercharged V-6 engine that uses compressed natural gas (CNG) and an electric motor to supplement power and increase efficiency. A large SUV, the PowerBox concept has room for eight passengers, comparable in size to the gasoline-powered Dodge Durango, but with 60% better fuel economy. And because it's pow-

ered primarily by CNG, the PowerBox runs cleaner, with near zero emissions. For more information, visit www.daimlerchrysler.com.

Building on last year's Precept hybrid concept vehicle, General Motors unveiled its new hybrid propulsion system, the ParadiGM, which the company will be able to apply to a variety of vehicles, from passenger sedans to SUVs and trucks to commercial vehicles. The ParadiGM system combines a conventional V-6 or an inline four-cylinder engine with two electric motors and a battery pack to provide increased efficiency. The first hybrid application will be a mid-size SUV with fuel economy 20% better than its conventionally powered counterparts. GM's hybrid SUV is expected to debut in 2004; the company announced that at least 7,000 vehicles will be produced in the first year. More hybrids may follow, depending on market demand. For more information on GM's ParadiGM system, visit www.gm.com.

For more information on all of the vehicles showcased at the Detroit Auto Show, check out www2.naias.com.

Honda Civic GX receives California's AT-PZEV certification

The California Air Resources Board (CARB) in late December granted American Honda Motor Company partial zero-emissions vehicle (PZEV) certification for its natural-gas-powered Civic GX.

The rating came just weeks before the 2001 model car, described by the manufacturer as "cleanest on earth," hit the U.S. market.

The standard, which falls under the super ultra-low emissions vehicle (SULEV) provision of CARB's recently released ZEV mandate, requires vehicles to support 15-year, 150,000 mile emission system durability. They must also have zero evaporative emissions. Under this stringent SULEV requirement, the Civic GX is now the first advanced-technology, partial-zero emission vehicle (AT-PZEV) says Stephen Ellis, American Honda's Manager of Alternative Fuel Vehicles.



Honda Civic GX natural gas vehicle

American Honda Motor Co., NREL/PIX 03995

An AT-PZEV gets distinct recognition and greater credits because it has a reduced "full cycle" emissions impact. "Being the first to receive AT-PZEV status is nice for Honda and the near-zero emission Civic GX. It also proves the value of natural gas as a long-term alternative to gasoline," Ellis says.

Approved in January, CARB's new ZEV rule will require the sale of an estimated 4,650 full-size model year 2003 electric cars in California, and a comparable number of other super-clean and advanced technology vehicles as well. The ZEV minimums will rise to about 22,000 vehicles in 2010, and 50,000 in 2018. The SULEV provision allows car manufacturers to receive partial credits with PZEVs, including AT-PZEVs such as the Civic GX.



DaimlerChrysler 4-passenger NEV

DaimlerChrysler

DaimlerChrysler Adds Neighborhood Electric Vehicles to Its Portfolio

DaimlerChrysler announced its acquisition of Global Electric MotorCars (GEM), becoming the first major automaker to sell neighborhood electric vehicles (NEVs) in the United States.

GEM, based in North Dakota, produces two- and four-passenger NEVs that can be licensed for use on public roads. The vehicles recharge in about eight hours using 110-volt household alternative current. NEVs have a maximum speed of 25 mph and are well suited for niche applications including local governments, parking enforcement, university and business campuses, and planned communities. The city of Denver, for example, through its "Take Charge" program, provides three NEVs for city employees to use for business downtown.

"DaimlerChrysler is excited about the emerging market of neighborhood electric vehicles and the opportunities that GEM affords," said Mike Clement, Director of Alternative Fuel Sales and Marketing. "This acquisition fits well with DaimlerChrysler's alternative fuel vehicle strategy."



Clean Cities Roundup

Animals Need Clean Air, Too

The animals—and their keepers—at the Tulsa Zoo can all breathe a little easier, thanks to the zoo's electric vehicles. The zoo uses two electric Ford Rangers and three electric "trikes" (bicycles with three wheels) to travel from building to building. The pickups are also used in daily grounds-keeping activities. The Tulsa Zoo is a division of Tulsa Parks, a member of the Tulsa Area Clean Cities Coalition.



PhotoDisc

Birmingham Boasts Natural Gas Buses

The Birmingham Jefferson County Transit Authority (BJCTA) has joined a growing number of transit agencies across the country in a commitment to use compressed natural gas (CNG) buses. The BJCTA is 57% alternative-fueled; of its 77 buses, 43 use CNG. According to Mark Bond, Director of Fleet Operations for City Transit (a BJCTA contractor), drivers are particularly pleased with the new buses' power and acceleration. Each of the CNG buses is clearly marked as a clean fuel vehicle, to help inform Birmingham residents of their transportation choices. The city of Birmingham is working towards a Clean Cities designation.

Oklahoma Utility Nears 100% Alternative Fuel Use

Oklahoma Natural Gas (ONG) is closing in on 100% alternative fuel use. Of the utility's 1,120 vehicles, more than 800 (or 71.4%) run on natural gas. According to ONG's John Siska, last year the fleet used approximately 500,000 gallons of natural gas, and it plans to use more. "Our goal is to reach 100% of our fleet," said Siska. "Any vehicle that can possibly be converted and is close to refueling will either be converted or replaced with an original equipment vehicle," he said. Last year, *Natural Gas Fuels* ranked ONG third on its list of the top utility natural gas fleets, and the utility tied for first in alternative fuel vehicle projections. ONG is an active member of the Clean Cities coalitions of central Oklahoma and the Tulsa area.

Three New Coalitions Join Clean Cities Program

By summer 2001, more than 80 coalitions will be part of the Clean Cities network. Each new coalition is the first in its state to join the Clean Cities Program.

Triangle Clean Cities, which serves the Raleigh-Durham-Chapel Hill region of North Carolina, was designated the 80th Clean Cities coalition on March 19. Because the event was within driving distance from Washington, DC, several members of DOE's Clean Cities team showed their support for the coalition and for AFVs by driving the more than 250 miles to North Carolina in a natural gas vehicle and a propane vehicle. The Triangle Clean Cities Coalition's designation celebration, held at North Carolina State University, was part of an event staged to help advance fuel choices in the area. With flexible fuel vehicles (FFVs) making up a majority of the region's more than 1,700 vehicles, the coalition remains active in promoting the increased use of E85. Last year, then-Governor Jim Hunt issued a proclamation announcing his support for the Triangle Clean Cities effort and mandating E85 use in state fleets whenever possible.



John Farley, NREUPX 09972

The Clean Cities AFV Road Rally Team pauses before the drive to Raleigh, N.C., for official designation of the Triangle Clean Cities Coalition. From left: Shelley Launey, Director, National Clean Cities Program; T.G. Powell; Marcy Road, Deputy Director; Adrian Farley.

The Twin Cities Clean Cities Coalition (TC4) will become the 81st member of the program on May 31, 2001. The TC4, in conjunction with the Minnesota E85 team, has been successful in building an alternative fuel infrastructure network, and last year celebrated the opening of the region's 50th publicly accessible E85 station. With its partners, the TC4 has also initiated a large-scale educational and outreach effort to promote E85 use by the public, and has set specific fuel use and fuel sales goals to help target its efforts.

The Vermont Clean Vehicles Coalition is planning a designation ceremony for this summer. The coalition serves one of the most rural Clean Cities regions of the country. It has promoted alternative fuels for several years, and has received significant media attention for having placed AFVs in fleets throughout the state. The coalition is also unique in terms of active participation by government leaders, including both of Vermont's U.S. Senators, its congressional representative, and its governor.



Federal News

DOE Names Alternative Fuel Infrastructure Project Recipients

DOE's Federal AFV USER Program recently awarded funds for three separate projects, designed to increase the availability of alternative fuels such as E85 and compressed natural gas (CNG). The successful entries were chosen from proposals submitted in response to a solicitation in June 2000.

The Federal AFV USER Program supports the expansion of alternative fuel infrastructure by encouraging the placement and use of federally owned AFVs in six specific cities: San Francisco; Denver; Albuquerque; Minneapolis-St. Paul; Salt Lake City; and Melbourne-Titusville, Fla.

Roughly \$266,000 in federal funding was awarded for the three projects, which have a combined total value of \$812,000 including the cost share contributed by non-federal partners. Each partner's contribution was at least 50%. Generally, the projects will support fleet managers and alternative fuel vehicle (AFV) buyers. They include:

- The Twin Cities AFV USER project, "Using the Federal Fleet to Model the E85 Way," a customer education and marketing project that promotes the use of E85 fuel, \$214,000;
- Pinnacle CNG Co.'s DOE/Lawrence Livermore National Laboratory (LLNL) CNG Refueling Station, for the installation and operation of a CNG fueling station at LLNL, \$465,000; and
- The Technological Research and Development Authority's deployment of ethanol fuel infrastructure for federal fleets in Melbourne-Titusville, for the installation and operation of an E85 fueling station at the Kennedy Space Center, \$184,000.

Because federal fleets are required by Executive Order 13149 to reduce petroleum consumption, DOE is targeting infrastructure and promotion projects to benefit them. Although the primary intent of the projects is to support the federal fleet, they were also evaluated by their potential to provide alternative fuel to state and local government fleets, commercial fleets, and the public.

For more information, visit <http://www.ott.doe.gov/afvuser/>, <http://ev.inel.gov/sop>, or contact Mike Anderson, andersmr@id.doe.gov, (208) 526-7418.

Second-round Rebate Funding Now Available

Coalitions that received rebates from Clean Cities alternative fuel vehicle (AFV) program in 2000 may be eligible for a second wave of funding. To qualify, coalitions have to

have exhausted the money granted in the first round of rebates.

Formed to help coalitions reduce the cost of AFVs, the program offers rebates of \$2,000 per vehicle to coalition stakeholders who purchase AFVs. Under the terms of the deal, the funding must be used to buy dedicated original equipment manufacturer (OEM) alternative fuel vehicles.

For more information, contact your Department of Energy (DOE) Regional Clean Cities manager.

Fleet Buyer's Guide Adds Electric Bikes, Hybrids, Neighborhood Electric Vehicles

Electric bikes, hybrid cars, and neighborhood electric vehicles were recently added to DOE's *Clean Cities Alternative Fuel Vehicle Fleet Buyer's Guide*. The site walks fleet managers through a step-by-step process that helps them identify whether Energy Policy Act (EPAct) regulations apply to them, and, if so, helps them make informed alternative fuel vehicle (AFV) purchase decisions.

Although electric bikes, HEVs, and neighborhood electric vehicles don't qualify for EPAct credit, they were added to the Web site because many fleets are interested in purchasing them. Currently the Buyer's Guide has specifications and information on two HEVs, eight neighborhood electric vehicles, and more than a dozen electric bikes. Although the site was developed to assist fleets, the public is welcome to use it.

Visit www.fleets.doe.gov, and click on the link for Advanced Technology Vehicles.

Where in the World are Alternative Fuels?

The redesigned Clean Cities International Web site answers that and many other questions about Clean Cities around the world. The site, which features a special section in Spanish, is packed with detailed information about the program, the countries and cities involved, new publications, upcoming international events, and much more. Modeled after DOE's Clean Cities Program, Clean Cities International works with governments, non-governmental organizations, and the U.S. alternative fuel industry to help establish foundations for viable alternative fuel markets in other interested countries. Visit the site at www.ccities.doe.gov/international.

Philadelphia to Host Clean Cities Conference

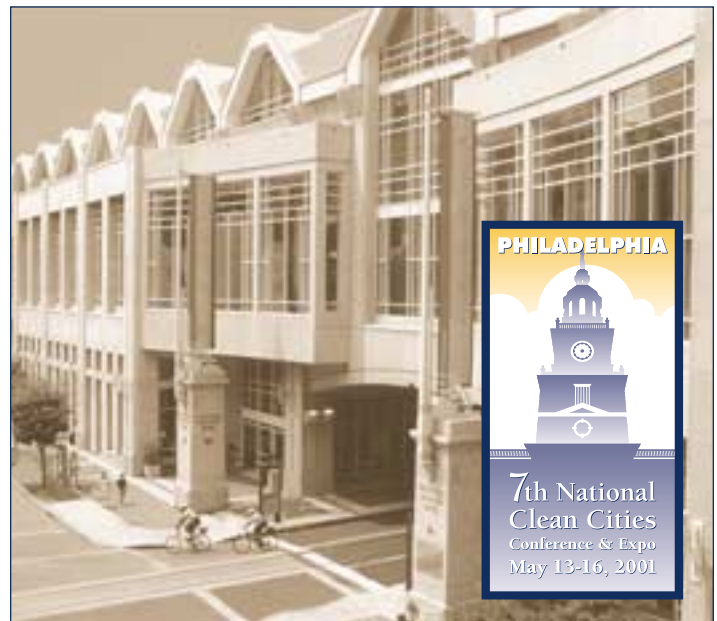
Mid-May Meeting to Rev Up the Alternate Fuels Market

Mark your calendars for the 7th National Clean Cities Conference and Expo, May 13-16, at the Pennsylvania Convention Center in Philadelphia. The four-day event will showcase how vehicles powered by electricity, natural gas, propane or ethanol can reduce pollution and America's reliance on imported oil.

Highlights for this year's conference include:

- A ScienceFest aimed at area fourth and fifth graders featuring General Motors' environmental science adviser, Bill Nye, best known for his antics on his self-titled children's television show. ScienceFest will also offer EPA-sponsored transportation sessions and an electricity presentation by the Franklin Institute;
- A Ride 'n' Drive for media and conference attendees, which will put a variety of alternative fueled vehicles (AFVs) on the streets of Philadelphia; and
- The nation's largest display of commercially available AFVs. The display will be open to the public for the first time on May 14.

To register or for more information, visit www.ccities.doe.gov/conference.shtml, e-mail kimberly_taylor@nrel.gov, or call the Clean Cities Hotline at (800) 224-8437.



The Pennsylvania Convention Center in Philadelphia will host the 7th National Clean Cities Conference, May 13-16.