



A New "AFDC Update"

Hello, and welcome to the AFDC Update. For those of you not familiar with the Update, it is a quarterly newsletter published by the U.S. Department of Energy's (DOE) Alternative Fuels Data Center (AFDC). For any of you that have even glanced at previous issues of the Update, the changes we have made should be more than obvious and we hope you like what we have done.

First of all, we decided to change the variety and layout of information provided in the Update. Previous issues featured lengthy articles about alternative fuel research and demonstration projects being conducted for DOE by the National Renewable Energy Laboratory (NREL). This information is, as any future information will be, contained in reports prepared by NREL and made available on the AFDC web

If you have information to share with other Update readers, please forward it to the Center, along with your name and how you can be contacted for any needed detail.

site. We will let you know what is new through this newsletter.

As you will find in this issue, briefs of various alternative fuels information are provided by category.

We will also begin an additional service, the AFDC Express. The Express will provide important information on late-breaking issues via e-mail and fax. If you would like to receive these, you

should ensure that the Center has your correct information.

For those of you who have finished this editorial of sorts, fear not, it is the only one I will write. If any editorials appear in future issues, they will be from others in the alternative fuels industry. Enjoy the Update.

Lee Slezak
AFDC Program Manager
U.S. Department of Energy

DOE Evaluates Private and Local Fleet Role

The U.S. Department of Energy (DOE) is reviewing comments on the role private and local fleets should take in meeting the petroleum displacement goals of the Energy Policy Act of 1992 (EPAAct).

EPAAct opened the door to requiring certain private and local light-duty vehicle fleets to make alternative fuel vehicles (AFVs) 20% of their vehicle purchases in the 2002 model year, increasing up to 70% in 2005 and beyond. "We are actively looking for different options," said DOE program manager Kenneth Katz. "We're aware that mandates aren't exactly popular."

With the advanced notice of proposed rulemaking (ANOPR), published in the Federal Register on August 7, DOE sought comments on whether or not EPAAct's goals to replace 10% of the nation's petroleum motor fuel use by 2000 and 30% by 2010 are reasonable, what actions are necessary to achieve them, and what voluntary and incentive measures could be taken.

The Secretary of Energy can recommend to Congress other requirements or incentives for fuel suppliers, vehicle manufacturers, and drivers to increase and sustain the use of alternative fuels if DOE first determines that the private

(Continued on page 2)

IN THIS ISSUE

CMAQ Supports	
AFV Programs.....	2
Funding.....	3
How to Buy Time.....	3
Hot off the Press.....	4
From Motor City.....	5
Clean Cities Update.....	6
From the Capitals.....	6
On the Road.....	7



(Continued from page 1)

and local fleet mandates will not meet the petroleum displacement goals.

"We're open to comments on other nonregulatory programs to meet the goals," Katz said. Those comments could serve as the basis for a later request to Congress for an alternative fuel program. DOE also sought input on how to assess the impacts of fuel displacement on reducing oil imports, improving the national economy, and reducing greenhouse gas emissions.

Americans' lasting trend toward driving more miles in gas-

guzzling cars continues to support the law's mission. "A virtual one-to-one relationship exists between additional gasoline consumption and America's increased use of imported oil," states the ANOPR. "The U.S. consumes 4 million barrels per day more for transportation purposes alone than it produces; that gap is projected to rise to 9 million barrels per day by the year 2010."

According to a study released by DOE this year, methanol and propane would take the largest share of an equal-tax AFV market. Under current conditions, ethanol could account for 40% of alterna-

tive fuel use; this case would offer the greatest fuel import and greenhouse gas emissions reductions from light-duty vehicles, the report stated. DOE projects methanol and propane are more likely to be imported, largely from the Middle East.

For more information, call David Rodgers, 202-586-9171, or e-mail afv-deployment@hq.doe.gov. The rule and the transcripts from the public hearings can be found under "What's New" at the AFDC's Internet site, www.afdc.doe.gov.

CMAQ Funds Continue to Support AFV Programs

A program that has provided nearly \$291 million for alternative fuel projects since 1992 is expiring and up for reauthorization. The Department of Transportation's (DOT) Congestion Mitigation and Air Quality Improvement Program (CMAQ), part of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, is the largest source of alternative fuel funding available.

CMAQ disburses a total of about \$1 billion each year. Each state is guaranteed at least 0.5% of the annual apportionment, with

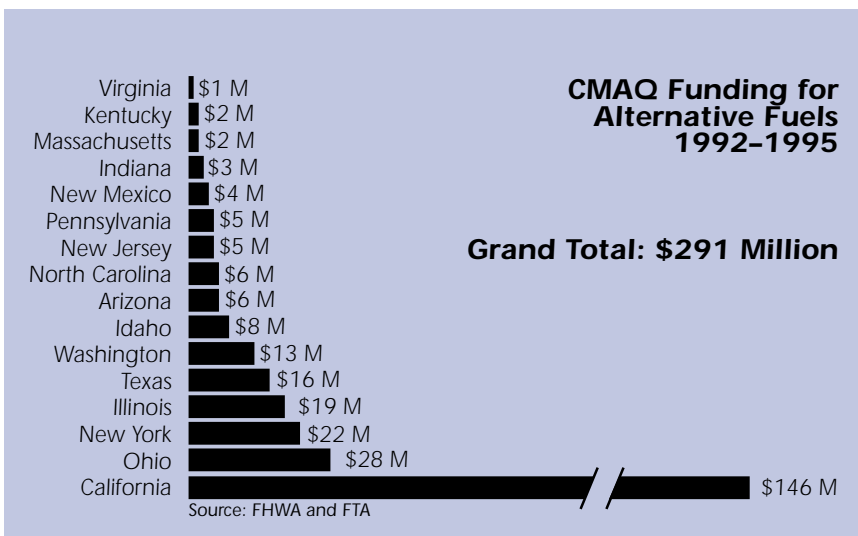
the rest allocated to states in nonattainment of federal carbon monoxide and ozone standards.

"What is surprising is the large percentage [of the funds] minimum apportionment states used on alternative fuel projects," said Michael Savonis, Air Quality Specialist for the Federal Highway Administration (FHA). For example, Idaho, which has no non-attainment areas, spent nearly 57% of its \$13.6 million on projects such as compressed natural gas (CNG) fueling and CNG buses. This project was recognized in

DOT's new CMAQ brochure *Innovations in Transportation and Air Quality: Twelve Exemplary Projects* for utilizing cleaner technology, creating financial partnerships, making the environment a priority, and bringing the public into the decision-making process. (For a copy of the brochure, call the FHA Hotline at 202-366-2069.)

ISTEA, which authorizes federal transit, highway, and safety programs, expires in October 1997, and DOT is currently in the process of evaluating ISTEA's success and determining how a reauthorized ISTEA should operate. The agency is expected to submit a proposal to Congress this winter.

"CMAQ has a lot of friends," Savonis said, but that broad constituency of those who utilize the funds is also competing for a larger share of the pie against other transportation needs, such as road maintenance and construction. "Will environmental projects still be able to compete with other projects?" he asked. "Now is the time for your input."





Funding

States Get Funding for AFV Projects

Alternative fuel projects in 12 states and the District of Columbia were given a boost by the U.S. Department of Energy (DOE) this summer. The \$2.15 million distributed through the 1996 State Energy Program grants leveraged \$32 million in cash and in-kind matches, and will support the efforts of 19 Clean Cities coalitions to increase the use of alternative fuels.

Narrowing the grant winners down was difficult; state

application requests totaled \$7.8 million and included many good proposals. "The great number and quality of proposals demonstrates that alternative fuel vehicle (AFV) projects are a top priority for states and that Clean Cities is popular throughout the country," said Marcy Rood, DOE program manager. Programs will include liquefied and compressed natural gas (LNG, CNG), liquefied petroleum gas (LPG), electric, methanol, and ethanol vehicles or infrastructure.

Here are the winners and highlights from their projects:

Delaware—Install a multifuel (CNG/LPG) refueling station at Odessa (between Wilmington and Dover).

Georgia—Complete the plans of a local partnership to create a

convenient, effective, and self-supporting electric vehicle transportation system. DOE funds will pay for Enerpro Chargers and Georgia Power will provide six full-size electric buses.

Illinois—Provide rebates for 50 AFVs for eligible municipalities. The state will provide leverage for public alternative refueling sites.

Kentucky—Convert approximately 50 United Parcel Service 10-ton delivery trucks to dual-fuel CNG, and provide training, promotion, and reporting.

New York—Demonstrate a new, cost-effective approach to vehicle fueling at LaGuardia Airport, and at other cost-share projects within the state, provide fleet operator

How to Buy Time

Washington Gas / PIX 04129



Washington Gas / PIX 04128

Alternative fuel incentives do not always have to be financial. It is often said "you can't buy time," but perhaps someday that could be possible by purchasing an alternative fuel vehicle (AFV).

Virginia was the first state to pass legislation allowing vehicles with a special Clean Fuel Vehicle license plate to use lanes reserved for high occupancy vehicles (HOVs), even if the driver is the only occupant. Arizona passed similar legislation this year (see page 7).

The U.S. Environmental Protection Agency includes HOV restriction exemptions for certified inherently low-emission vehicles in its 1993 final rule for the Clean Fuel Fleet Program. However, Section 1016 of the Intermodal Surface Transportation Efficiency Act (ISTEA), contradicts that language by stating "A state highway department shall establish the occupancy requirements of vehicles

operating in high occupancy vehicle lanes; except that no fewer than two occupants per vehicle may be required."

For more information, contact Bryant Gross at 202-366-9289 or visit the Department of Transportation's Internet site: www.dot.gov/dotinfo/ost/govtaffairs/istea.

If you have ISTEA success stories to share, please send them to:

John Horsley
Deputy Assistant Secretary for Governmental Affairs
U.S. Department of Transportation
400 7th Street, SW, Room 10408
Washington, DC 20590
202-366-4563

technical support and training, and coordinate statewide activities.

Nevada—Construct two public access LNG/CNG refueling stations on the I-15/I-80 Clean Corridor, and convert approximately 43 vehicles to CNG.

Oklahoma—Help the Central Oklahoma Clean Cities Coalition's project to identify new fleet customers, conduct workshops, provide materials, educate the public, support mechanic training programs, and other outreach.

Pennsylvania—Support activities of the Greater Philadelphia Clean Cities Program and the Pittsburgh Region Clean Cities Program, including promotional and educational outreach materials, training workshops, refueling station directories, and fact sheets.

Texas—Develop an alternative fuel implementation plan at the new Austin airport.

Utah—Place 14 AFVs on the road and fund a full-time Salt Lake City Clean Cities program coordinator. A CNG station will also be constructed.

Virginia—Support the Hampton Roads Clean City coalition.

Washington, D.C.—Implement a model regional AFV market development program.

West Virginia—Put 30 new CNG vehicles on the road, provide emissions testing data.



Hot off the Press

Latest Transit Bus Results

The National Renewable Energy Laboratory recently released two new reports on alternative fuel bus projects.

Alternative Fuel Transit Buses: Final Results from the National Renewable Energy Laboratory Vehicle Evaluation Program provides the newest information on the eight transit bus systems around the country that have incorporated a variety of alternative fuel buses into their fleets. Fuels tested include liquefied natural gas, compressed natural gas (CNG), biodiesel, and ethanol. The report provides detailed information on reliability, operating costs, capital costs, and emissions performance.

For a closer look at how one transit agency made the switch,

Did You Know?

At the start of 1996, approximately 4% of the more than 50,000 transit buses in the United States surveyed by the American Public Transit Association ran on an alternative fuel such as ethanol, methanol, natural gas or liquefied petroleum gas. That trend will continue; one out of every five new buses on order runs on an alternative fuel. (Those numbers do not include electric trolley buses.)

check out *Alternative Fuel Transit Buses: The Pierce Transit Success Story*. This case study describes Tacoma, Washington's, success with 10 CNG buses and what the city did to "get it right." The bus report and the study can be found at <http://www.afdc.doe.gov> or obtained by calling our hotline at 800-423-1363.

Ethanol Refueling Handbook

Fuel distributors and retailers interested in selling fuel ethanol may want to get a copy of *Guidebook for Handling, Storage, and*

Dispensing Fuel Ethanol. Subjects covered include fuel specifications, fuel handling, equipment recommendations, safety practices, and testing procedures.

The handbook was prepared by the U.S. Department of Energy's Argonne National Laboratory with assistance and input from the National Corn Growers Association, the Governor's Ethanol Coalition, General Motors Corporation, and Ford Motor Company.

For a copy off the Internet, visit the "What's New" section on the AFDC's home page (or type <http://afdc3.nrel.gov/refuel/reports/fuelrpts.html>).

Heavy-Duty Manufacturers Pick Up the Pace

Today eight manufacturers offer a total of 22 alternative fuel engines for medium- and heavy-duty vehicles. This includes natural gas and propane options, which have significantly reduced emissions compared to their diesel counterparts. Details on these suppliers are included in the *Alternative Fuels Data Center's Heavy-Duty Vehicle and Engine Resource Guide*.

In addition, there are at least 47 medium- and heavy-duty vehicle models, including transit, trolley, school bus and other specialty applications that can run on natural gas, propane, or electricity.

For a copy of these reports, call the National Alternative Fuels Hotline at 1-800-423-1DOE or download it from the AFDC site on the World Wide Web.

Natural Gas Composition and Vehicles

Seasonal and regional changes in natural gas

composition can affect natural gas vehicles, according to researchers at the Institute of Gas Technology (IGT). IGT's new report, *Gas Composition Issues and Implications for Natural Gas Vehicles and Fueling Stations*, will help fleet managers and fuel suppliers educate themselves about these issues and prevent negative impacts.

For a copy, call the National Technical Information Service at 703-487-4650 and request document number PB-195771.



**From
Motor
City**

Chrysler Takes a Year Off

Citing the high cost of natural gas storage tanks and "lackluster market demand," Chrysler Corporation suspended its natural gas vehicle (NGV) production for the 1997 model year.

"At the very low volumes the industry is experiencing, we cannot make a business case for the 1997 model year," said Mike Clement, manager of Chrysler's alternative fuel vehicle sales and marketing division. "We will continue to review the sales potential and explore options to reduce storage tank costs in determining the best time to reenter the market."

But Chrysler isn't totally out of the alternative fuel market this year. As a preview to larger production runs in 1997, Chrysler will sell 20 electric EPIC minivans to the U.S. Department of Defense.

For more information on Chrysler, visit its Internet site at www.chrysler.com or call its fleet operations division at 1-800-255-2616.

Ford Continues AFV Lineup with Reduced Prices

For the first time, alternative fuel vehicles (AFVs) will be offered below or at the cost of the gasoline models. This year fleet managers can save \$345 when they order the flexible-fuel Ford Taurus, available in ethanol or methanol, instead of a gasoline model.

Ford reported it sold about 2,200 natural gas vehicles last year. New incentives for early orders may make those sales figures higher this year. The compressed natural gas (CNG) version of the F-Series Econoline van will cost the same or \$2,935 more than its gasoline counterpart (depending on the number of tanks) if ordered by the end of this year. The CNG F-250 pickup truck is \$1,805 to \$2,900 more than the gasoline truck. The dedicated CNG Crown Victoria's price was also reduced, making it only \$3,255 more than the gasoline version.

More than the price has changed. Unlike last year, the 1997 van and pickups will come with a larger 5.4-liter engine and will be

Did You Know?

While they are not taking orders yet, according to the Arizona Republic, last June one Phoenix Saturn dealer already had requests for General Motors' new EV₁ electric vehicle from 80 serious buyers. For more on the EV₁, visit Saturn's Internet site at:

www.gmev.com/evmainpage.html.

GM has a new hotline for clean fuel vehicles, 800-GM-CFT 4U.

dedicated, not bi-fuel. The bi-fuel CNG Contour, which made its debut late last spring, will return in 1997.

In the past, Ford has relied heavily on using outside converters for its gaseous fuel models through its qualified vehicle modifier (QVM) program. This year only the Contour will be QVM-produced. "We're moving as many products as we can in-house," said Tom Artushin, Ford's specialty vehicle manager.



This 1996 Ford Taurus is a "flexible fuel" vehicle, which can run on either ethanol or standard gasoline.

Warren Gretz, NREL / PIX 02462

There are no immediate plans for repeating the 1996 propane F-Series truck option. It was briefly offered this spring with some success, but dropped when the 4.9-liter engine was phased out. "We're busy launching the new gasoline 5.4-liter," Artushin said. "The alternative fuel vehicles will follow."

For more information, visit Ford's Internet site at www.ford.com (AFVs are found at www.ford.com/corporate-info/environment) or call Ford's hotline, 1-800-ALT-FUEL.

In advance of its 1998 electric pickup truck, Ford has also added an electric vehicle page to its web site: www.ford.com/electric-vehicle.



Clean Cities Update

Clean Cities Takes to the Air

Since 1993, 50 areas have earned Clean Cities designation as part of the U.S. Department of Energy's (DOE) voluntary program to increase the use of alternative fuels. Recognizing the contributions airports can make toward building an alternative fuel infrastructure, DOE recently added a Clean Airports component to the program.

The Clean Airports program will target small airports to serve as home bases for alternative aviation fuel activities. DOE designation will serve as recognition of an airport's commitment to provide the support needed to meet its program goals.

The Texas State Technical College Airport in Waco was the first Clean Airport, and the airport serving the City of Morgantown, West Virginia, became the second designated Clean Airport.

Those designations recognize the work of several pilots and researchers who have demonstrated ethanol's potential to replace leaded av-gas (the fuel for general aviation aircraft) with a high-octane alternative. Since leaded av-gas is more expensive than gasoline, ethanol is already economically competitive.

This summer the Federal Aviation Administration (FAA) granted final certification for a Cessna 152 to run on ethanol. The FAA's approval certifies both the engine and the airframe for ethanol use as long as prescribed modifications are made. Previous flights were with engines only certified for the experimental or show category.

For more information, call Grazia Zanin, director of Baylor University's Renewable Aviation Fuels Development Center, at 817-755-3562, visit the Clean Cities site on the Internet at www.cities.doe.gov, or call 800-423-1DOE.



John Russell (left), Director (retired), U.S. DOE Office of Technology Utilization, and Dr. John Loth, Professor of Aerospace Engineering at West Virginia University (WVU), display the ethanol-fuel aircraft developed and operated by WVU.



From the Capitals

House Natural Gas Vehicle Task Force

A Natural Gas Vehicle (NGV) Task Force formed at the request of Representative Newt Gingrich (R-GA) and headed by Representative Joe Barton (R-TX) has finished holding hearings on NGV purchase barriers and suggestions on how Congress can eliminate them. The eight-member, bipartisan group presented its recommendations this fall in the form of a bill.

Called the Natural Gas Vehicle Incentives Act of 1996, the proposed legislation includes increased funding for natural gas vehicle research and development, and tax incentives for fleets who convert to natural gas, among other things.

House Renewable Energy Caucus

By the August recess, 97 members of Congress signed on

for the House Renewable Energy Caucus that was spearheaded by Representative Dan Schaefer (R-CO) earlier this year.

"We have formed this caucus because of our support for renewable energy technologies which help offset fuel imports, build our domestic economy, create major export opportunities and provide clean, inexhaustible energy for millions of consumers," states the letter that started the whole thing.

The caucus has already sponsored staff briefings and a Renewable Energy Expo that was held on the Hill this spring.

For more information, contact Craig Cox in Representative Schaefer's office at 202-225-7882.

Arizona Governor Signs Alternative Fuel Vehicle Incentive Bill

Beginning April 1, 1997, Arizona residents driving an alternative fuel vehicle (AFV) can use

Did You Know?

According to the U.S. Environmental Protection Agency, there are 176 areas in the nation that do not meet air quality standards for ozone, carbon monoxide, particulate matter, sulfur, lead, or nitrogen oxides. The good news is that since the list was last published in April, three areas were removed from the list: Cleveland-Akron-Lorain, OH (ozone); Greater Connecticut (carbon monoxide); and Youngstown-Warren-Sharon, OH-PA (ozone).

For an updated list, go to www.epa.gov/airs/nonattn.html on the Internet or call the National Alternative Fuels Hotline at 800-423-1363.

lanes reserved for high occupancy vehicles (HOVs) at any time with any number of passengers. The new incentive to purchase an AFV was part of Arizona's House Bill 1002 signed by Governor Fife Symington this summer.

The new law eliminates the state use tax on alternative fuels. Instead, AFV owners will pay \$100-\$400 (depending on vehicle size; hydrogen, electric, and solar vehicles are exempt) to purchase special AFV license plates. The law also allocates at least 31.5% of the state lottery fund to the Arizona Clean Air Fund; some of this money will pay for HOV lane signs indicating that AFVs are allowed. In the future, any maps the state publishes of the Arizona highway system will indicate public alternative fueling facilities.



On the Road

Ethanol Windstars

This year the U.S. Department of Energy, the U.S. Postal Service, and the State of Illinois will demonstrate 15 Ford Wind Star vans equipped with the ethanol Taurus engine. This limited program will help Ford gain experience with the necessary engine recalibrations as well as provide one more opportunity to incorporate ethanol into another fleet application.

Alternative Fuels Get the Gold

Transportation may have been a big problem for organizers of the 1996 Summer Olympic Games in Atlanta, but the alternative fuel vehicles that sup-

ported the effort were part of the solution.

"None of the natural gas transit buses ran out of fuel or were sidelined by fuel-related problems," said Michael Baly, president of the American Gas Association's Clean Air Team. "Our sponsorship proved that improved air quality and outstanding performance can go hand-in-hand." The 77,000 beach volleyball spectators were among the many Olympic guests who were transported to and from their venues aboard the more than 500 natural gas buses brought in from all over the country. Natural gas vehicles also supported the marathon races.

Electric vehicles were another way organizers improved the atmosphere at the Games. In addition to the electric support vehicles, electric trams transported athletes around the sprawling Olympic Village. General Motors' EV1, an electric sports coupe that will be introduced in several California and Arizona markets later this year, led the pack of Olympic marathon runners as the official pace car.

Farewell to DOE Leaders

Those in the Office of Technology Utilization (formerly the Office of Alternative Fuels) say farewell to John Russell, Director, Office of Technology, and Pauline Labrie, Program Manager for Certification of Higher-learning in Alternative Motorfuels Programs (CHAMP), as they retire.

Labrie directed the establishment of the CHAMP program, which helped expand the alternative fuels infrastructure by providing guidelines for certification of programs that train technicians to service alternative fuel vehicles.

Russell has been a leader in the alternative fuels industry since his days with Southwest Research Institute. "It is with the greatest of sadness that we say good-bye to our Director of Technology Utilization, John Russell," said Lee Slezak, Program Manager for the AFDC. "Those of us left at DOE have some pretty big shoes to fill, and I ask everyone in the industry to bear with us as we attempt to carry on the outstanding efforts of Pauline and John."

How to Reach Us

*Have news to share? Comments on the new format?
Need more information?*

Let us know:

AFDC Internet Site: www.afdc.doe.gov

e-mail: hotline@afdc.nrel.gov

Phone: 1-800-423-1DOE

Fax: 703-528-1953

Address: P.O. Box 12316, Arlington, VA 22209

*The AFDC Update is the official publication of the U.S. Department of Energy's (DOE) Alternative Fuels Data Center and is published by the Center for Transportation Technologies and Systems at the National Renewable Energy Laboratory (NREL), 1617 Cole Boulevard, Golden, CO 80401-3393. This newsletter is cooperatively produced by NREL and the Alternative Fuels Hotline, which is operated by Information Resources, Inc., for DOE/NREL.
NREL/SP-425-21529*



ALTERNATIVE FUELS DATA CENTER
P.O. Box 12316 • Arlington, VA 22209

