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Reducing Federal Petroleum Use: Mandates and Strategies

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FEMP FOCUS

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Reducing Federal Petroleum Use: Mandates and Strategies

Federal fleets are subject to several statutory requirements, Executive Orders, and other policies whose requirements address petroleum reduction. Some of these requirements and the degree to which Federal agencies have been successful with these requirements are described below.

- **Energy Policy Act of 1992.** Under the Energy Policy Act (EPAct) of 1992, 75 percent of light-duty vehicles acquired by Federal agencies in large cities must be alternative fuel vehicles (AFVs). The overall intent of EPAct 1992 was to reduce the nation's dependence on foreign petroleum, and it was hoped that a large number of AFVs would generate a market for alternative fuels. Federal agencies as a whole over the past several years have been very successful in meeting the 75 percent requirement. Results for 2007* indicate that Federal fleets acquired about 17,500 light duty vehicles that were "covered" under EPAct 1992, meaning that 75 percent (or about 13,150) of those acquisitions had to be AFVs. Agencies also acquired many AFVs not covered under EPAct due to geographical and/or fleet size exemptions, since agencies do earn AFV acquisition credits for any newly acquired AFV no matter where it is located. As such, Federal fleets acquired more than 26,000 total AFVs, and earned almost 3,800 additional credits for biodiesel use. (Using biodiesel in sufficient quantities earns credits equivalent to an AFV acquisition.)
- **Energy Policy Act of 2005.** EPAct 2005 requires Federal fleet AFVs to use alternative fuel unless the Department of Energy (DOE) approves waiver requests. Waivers are granted due to alternative fuel unavailability or unreasonable expense. There are about 122,000 AFVs in the combined Federal fleet, and in FY 2009 slightly more than half of those AFVs received waivers exempting them from the requirement to use alternative fuel, primarily because the fleets do not have access to the fuel. While this waiver approval number is relatively high, it is about 7,000 less than the number of approved waivers for FY 2008. The number of waivers is anticipated to drop further as alternative fuel becomes more readily available.
- **Executive Order 13423.** Executive Order (E.O.) 13423 requires Federal agencies to decrease their fleets' petroleum consumption by two percent annually and increase non-petroleum fuel consumption by 10 percent annually through 2015. Federal fleets as a whole exceeded the 10 percent alternative fuel use requirement for 2007, and were very close to meeting the two percent annual petroleum reduction requirement for 2007.
- **Scorecards.** The Office of Management and Budget (OMB) annually issues "Transportation Scorecards" for Federal agencies that, among other things, assess agencies' success in reducing the number of annual waiver requests described above. Transportation Scorecards assess Federal agency compliance with statutory requirements and Executive Orders and Federal agency actions taken to reduce petroleum consumption. Individual agency scorecard results vary, as some

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IN THIS ISSUE, You Will Find. . .

* *Data from 2008 was not finalized at the time of publication.*

U.S. Department of Energy
Energy Efficiency and Renewable Energy
Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

Secretary of Energy
Steven Chu

FEMP Program Manager
Richard G. Kidd, IV

Cover Magnifying Glass Photo:

United States Postal Service vehicle advertising its use of E85 fuel at the Winter Carnival Parade in Saint Paul, Minnesota.

Photographer: Michael Hicks

FEMP

Leading by example, saving energy and taxpayer dollars in federal facilities

A Message from FEMP's Program Manager

Dear Colleagues,

For those I have not had the pleasure of meeting over the past months, I am pleased to introduce myself as FEMP's "new" Program Manager. I'm very excited to be here and look forward to working with you.

I came to the Department of Energy in July 2008 from the U.S. Department of State with experience working in more than 70 countries through a number of public and international organizations.

After working with the United Nations on a variety of assignments both abroad and at home, I was recruited by the Department of State's Bureau of Political Military Affairs to apply my experience to work in Afghanistan and other post-conflict areas. While working inside the refugee camps, I realized the vital importance of scarce natural resources including energy, and became interested in working directly in the energy efficiency arena.

We are now seeing a great surge of national interest in improving energy and environmental management. With the current requirements of Executive Order 13423 and the Energy Independence and Security Act of 2007, agencies must make major investments in energy efficiency and renewable energy projects. Based on the increasing interest in energy, FEMP is looking forward to expanding mandates, rules, and resources, making this a very exciting time for Federal energy management.

FEMP is gearing up for this shifting landscape and the increasing Federal workload. We are now in the midst of renewing FEMP's focus on its agency customer's plans, projects, processes, and needs. Please look for more information on FEMP's new customer service plan in the next issue of *FEMP Focus*.

I am proud of the great progress FEMP and agencies have already made and I look forward to a strong collaborative relationship with Federal government leaders and champions, as well as our private sector partners and associations, to help us all meet the escalating challenges we face as a nation. I welcome your comments and suggestions as FEMP continues to work toward improving its processes and support to ensure customer success. Together we will demonstrate that the Federal government is serious about improving our nation's energy security and environmental footprint.

As part of our effort, this special issue of *FEMP Focus* highlights Federal Fleet Management, and includes strategies to meet goals and mandates for Federal fleets, some examples of recent agency initiatives, and award-winning Federal programs. FEMP also brought together a host of valuable resources, tools, publications, and contacts as a center pull-out section.

Please enjoy this issue of *FEMP Focus*!

Richard Kidd
FEMP Program Manager

STRATEGIES FOR MEETING FEDERAL FLEET MANDATES INTELLIGENTLY
(continued from cover)

agencies are more successful than others in meeting petroleum reduction requirements.

- **Energy Indepence and Security Act of 2007.** Section 142 of the Energy Independence and Security Act of 2007 (EISA) contains language that is similar to E.O. 13423. DOE is currently conducting a rulemaking on Section 142 of EISA, with the intent of issuing guidance and clarifying any possible interpretation questions. Agencies cannot acquire light duty motor vehicles that are not low greenhouse gas emitting vehicles under Section 141 of EISA. The Environmental Protection Agency (EPA) has the lead on determining of what qualifies as a low greenhouse gas emitting vehicle, and is in the process of proposing definitions of low greenhouse gas (GHG) emitting vehicles. EPA obtains vehicle GHG emissions data from their vehicle certification and fuel economy labeling programs. These programs require vehicle manufacturers to test their vehicles and report emission data results to EPA. Section 141 of EISA requires EPA to annually issue guidance that identifies low GHG emitting vehicles.
- **National Defense Authorization Act of 2008.** The National Defense Authorization Act of 2008 (NDAA 2008) defines several new types of vehicles as qualifying AFVs for Federal fleets, including hybrid electric vehicles (HEVs).

Federal fleet managers are faced with several unique challenges as they attempt to meet the requirements described above. In 2007, Federal fleets earned more than twice the required number of EPAct 1992 AFV acquisition credits. Exceeding this requirement by such a large margin is outpacing the development of necessary infrastructure. More than half of Federal AFVs were waived from using alternative fuel due to lack of infrastructure.

Federal agencies will find it more and more challenging to decrease petroleum consumption by two percent and increase alternative fuel use by 10 percent annually. Some of the best opportunities for efficiencies have already been exploited, and Federal agency "mission growth" continues to increase demands on Federal fleets.

How can Federal fleets best meet these challenges? The answer entails developing an overall AFV acquisition and alternative fuel use strategy that is both cost-effective and efficient, and includes the following steps.

1. Acquire the right number and type of AFVs in the correct location

Changing the mindset from "acquire as many AFVs as possible" to "acquire AFVs intelligently and then use alternative fuel in those AFVs" will allow agencies to be more efficient in meeting Federal alternative fuel use and petroleum reduction mandates.

Exceeding the 75 percent acquisition goal by placing AFVs where alternative fuel is not available does not necessarily reduce petroleum consumption, and may even make it more difficult to reduce agencies' petroleum use if the AFV uses petroleum and gets fewer miles per gallon than the non-AFV equivalent. A"straight line" approach to the acquisition mandates, requiring each of an agency's subfleets to acquire exactly 75 percent AFVs and to decrease petroleum consumption by two percent, also is not always the most efficient.

Acquisition of AFVs should be part of an integrated plan for petroleum reduction that takes advantage of available alternative fuel infrastructure, and uses other types of vehicles where alternative fuel infrastructure is not available. In geographical areas where there is alternative fuel available, AFVs should be acquired, and fleet managers should ensure alternative fuel is used in those AFVs to the greatest extent practicable. In fact, if a subfleet has access to alternative fuel, an agency might consider composing the entire fleet of AFVs.

While it may be tempting to acquire HEVs, in general an AFV using alternative fuel reduces petroleum consumption significantly more than a HEV using gasoline. In geographical areas where alternative fuel is not available, consider downsizing fleets, acquiring vehicles with higher fuel economy, and/or acquiring HEVs.

The General Services Administration (GSA) offers more than 70 different AFV/HEV vehicle options for leasing to Federal agencies in 2009, including 28 different E85-fueled pickup trucks. Incremental costs for these pickups trucks range from zero to more than $4,800 per pickup truck, and fuel economy varies by 10 percent in many cases. Prior to making leasing decisions, an agency should evaluate whether it truly requires a four-wheel drive extended cab pickup that gets 10 percent less fuel economy compared to other flex-fuel pickups,

Other options include acquiring medium-duty and heavy-duty AFVs (which earn multiple EPAct acquisition credits), and acquiring neighborhood electric vehicles (NEVs), which are well-suited for a campus-like environment. Consider acquiring compressed natural gas (CNG)-fueled buses or using B20 in agency buses as well.

Using biodiesel in diesel vehicles is another important option for fleets that have limited access to alternative fuels for light-duty vehicles. Under the Energy Conservation Reauthorization Act of 1998 (ECRA 1998), 2,250 gallons of B20 (a mixture of 20 percent biodiesel and 80 percent diesel fuel) earns Federal agencies one AFV acquisition credit, and is often very cost effective. Agencies can use B20 to meet up to half of their AFV acquisition requirements. Significant

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Air Force Energy Strategy Commits to Procuring Low-speed Vehicles

The U.S. Air Force (USAF) is committed to reducing petroleum consumption and championing more sustainable military operations that meet Federal policy while meeting all mission requirements. Executive Order 13423 and the Energy Independence and Security Act (EISA) require each agency to reduce annual petroleum consumption by 2 percent compared to a 2005 baseline. In an effort to meet these legislative mandates, the USAF is in the process of implementing a comprehensive Infrastructure Energy Strategic Plan that integrates technology and efficiencies with culture change. The strategy is based on four pillars: 1) Improve current infrastructure; 2) Improve future infrastructure; 3) Expand renewables; and 4) Manage costs. Each pillar of the strategy is broken down into specific actionable and measurable goals. This article will focus on the first pillar of the USAF strategy.

The first pillar of the USAF strategy incorporates the following two goals designed to maximize the use of high efficiency low-speed vehicles (LSVs) in the light duty non-tactical vehicle fleet. Worked in unison, these goals will allow the USAF to incorporate LSVs in the military culture today and position the USAF to maximize the use of LSVs tomorrow.

1. *Convert 30 percent of the light-duty vehicle fleet authorizations to low-speed vehicles by 2012.*
2. *Catalog LSVs available on the market for replacing vehicle above the light-duty category of 8,500 lbs and over. Consider viability of LSVs in 5 passenger pickup truck, telephone maintenance utility trucks, and multi-stop maintenance vans.*

LSVs are alternative means of transportation that drastically reduce the amount of petroleum used by a conventional vehicle fleet. They are suitable to be used on roads with speed limits of less than 35 mph; this makes them an excellent application for on-base use. The LSVs are prohibited for use on federal highways and therefore are not recommended for use off-base.

LSVs come in a range of multi-passenger vehicles, light duty pick-ups, and special application vehicles (such as a trash hauler). With an optimized portfolio of LSVs and conventional vehicles, an installation can reduce petroleum consumption without any negative effects on mission requirements. Along with reducing the petroleum consumption of the installation, LSVs also may have a significant reduction on the carbon footprint and overall fuel costs. A neighborhood electric vehicle, for example, is estimated to operate at a cost of $0.02 per mile compared to $0.20 per mile for a conventional vehicle.

The reduction of petroleum achieved by increasing the number of LSVs is substantial and depends on the type of LSV used. A gas driven LSV pick-up truck, for example, can have a fuel economy as high as 37 miles per gallon (mpg) compared to an estimated 20 mpg for a conventional pick-up truck. In the case of a neighborhood electric vehicle, the petroleum consumption is effectively reduced to 0.

The USAF is already well under way in meeting, and potentially exceeding, the goal to convert 30 percent (or roughly 4,600 units) of their light duty fleet to LSVs by 2012. The USAF amended Air Force Instruction 23-302 to include specific guidance so that base personnel can identify conventional vehicle authorizations that can be converted to LSVs. Additionally, the USAF is performing comprehensive vehicle validation assessments at various bases to optimize the vehicle requirements. To date, the USAF has fielded 240 LSVs, procured 1,100 in FY 2008, and is programmed to procure 882 in FY 2009. This leaves a shortfall of roughly 2,000 units to be acquired by 2012. There is a strong possibility the USAF will not only meet, but exceed its goal of 30 percent by 2012.

As part of its effort to identify and adopt new LSVs into the USAF vehicle fleet, the USAF recently completed an assessment of plug-in electric pick-up trucks. The assessment was designed to determine, through potential user evaluation, if the truck offers sufficient advantages to warrant USAF adoption. The vehicle was compared to the performance that would be expected from a conventional pick-up truck. The vehicles were utilized and evaluated for various work, delivery, and administrative duties where ¼ and ½ ton standard and crew cab pick-up trucks are currently being used. Pros of using the vehicle included the following:

- Excellent for tasks that require short, moderately light load hauling,
- Serve well as personnel taxi vehicles and enable access to tight, closed-in areas,
- Batteries prove to hold their charge for an adequate time before needing to be recharged

Some cons included:

- Not multi-passenger pick ups,
- Limited off-road use,
- Does not accommodate heavy loads,
- Not suitable for 24-hr continual use due to battery recharging

Overall, the study determined that the plug-in electric pick-up trucks are suitable for USAF use. The study estimated monthly fuel savings of about $356 if the standard trucks are replaced with LSVs (based on 88 gallons per month at $4.05/gallon for gas trucks), for total savings of more than $4,200 annually. Additionally, USAF estimated savings of at least $50 for scheduled maintenance per LSV during the six month test period.

For more information, please contact Mr. Nicholas Rotteveel, HQ USAF/A4LE, at 703-695-8540 or Nicholas.Rotteveel.ctr@pentagon.af.mil

U.S. Postal Service Champions Cutting-edge Modes of Transportation

Throughout our nation's history, the United States Postal Service (USPS) has championed every new mode of transportation in its ongoing effort to provide prompt, reliable, and universal mail delivery. From horse-drawn wagons and stage coaches to trains, automobiles and planes, the Postal Service has always been on the cutting edge of transportation.

With the largest civilian delivery fleet in the world—more than 220,000 vehicles traveling more than 1.2 billion miles a year—USPS is attentive to the environmental impact it has on the nation's communities. That is why the Postal Service has more than 42,000 alternative fuel-capable vehicles in its fleet. Of those, 36,000 are ethanol-capable vehicles, and in its ongoing efforts to reduce its use of petroleum-based fuel, USPS increased its use of E85 (fuel with 85 percent ethanol and 15 percent gasoline) more than 40 percent between 2006 and 2007.

Also essential is managing the volume of fuel and associated costs to move 212 billion pieces of mail every year, especially since the Postal Service delivers to approximately 2 million new locations annually. In 2008, USPS spent more than $2 billion on fuel, including jet fuel and heating oil for postal facilities.

USPS is working to make better decisions through vehicle research and development. Because several alternative vehicle fuels and technologies are either currently or close to being available, there is uncertainty in the marketplace regarding which options will prove to be widely accepted. This uncertainty complicates Postal Service decisions concerning vehicle purchases and fleet replacement.

To reduce this uncertainty and the risk associated with investing in new technology, USPS has developed a vehicle R&D strategy. This strategy calls for testing fuels and technologies in operational conditions to determine their overall viability and value to postal operations, including fuel and maintenance costs and environmental impact.

T-3 Three-wheel Electric Vehicle

The Postal Service's Vehicle Engineering department is currently testing and monitoring the performance of a variety of fuel alternatives, including:

Electric Vehicles — The first electric vehicle joined the USPS fleet in 1899, after winning out over a horse and buggy. Currently, 30 electric step vans are in New York and T-3 three-wheel electric vehicles are being tested in Florida, California and Arizona. The T-3s have a range of 40 miles, a maximum speed of 12 miles per hour, and a load capacity of 450 pounds. Best of all, they cost less than one cent a mile to operate.

Biodiesel — The Postal Service uses biodiesel fuel in heavy-duty vehicles at selected sites.

Compressed Natural Gas — USPS converted more than 4,300 of its gasoline-powered delivery vehicles into compressed natural gas bi-fuel vehicles, although it is only using natural gas in 200 vehicles nationally, due to infrastructure limitations.

Propane — 35 delivery vehicles have been converted to run on propane.

Hybrid Electric — USPS is currently conducting tests on medium duty hybrid electric step vans from Eaton Corporation and Azure Dynamics. There are 10 Hybrid-Electric Ford Escape vehicles already in the fleet.

USPS Hybrid Electric Vehicle

Fuel Cell — Fuel-cell technology promises the benefits of no greenhouse gasses, no air pollutants, greater energy efficiency, and reduced reliance on foreign oil. By serving as a test bed for this technology, the Postal Service is working to advance the use of fuel-cell vehicles. An example is the existing fourth generation hydrogen fuel cell Chevrolet Equinox partnership with General Motors, with funding support from the U.S. Department of Energy. A hydrogen fuel cell Equinox has been delivering mail at the Irvine, California, Post Office since July

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Southwest Region Fleet Transportation Wins Closing the Circle Award for Deploying Alternative Fuel Vehicles

In June 2008, the Office of the Federal Environmental Executive presented their annual Closing the Circle Awards, which recognize outstanding achievements of Federal employees and their facilities resulting in significant contributions to promoting environmental stewardship. The "Alternative Fuel and Fuel Conservation in Transportation" category recognized FY 2007 programs, practices, and procedures implemented in a Federal fleet that resulted in significant alternative fuel use and fuel conservation measures in transportation. The U.S. Marine Corps Southwest Region Fleet Transportation (SWRFT) was one of two winners in this category.

The SWRFT is a regional organization comprised of Garrison Mobile Equipment fleets located at seven Marine Corps Installations in California. These installations include Marine Corps Base Camp Pendleton; Marine Corps Recruit Depot San Diego; Marine Corps Air Station Miramar; Marine Corps Air Station, Camp Pendleton; Marine Corps Air Ground Combat Center, Twentynine Palms; Marine Corps Logistics Base, Barstow; and Mountain Warfare Training Center, Bridgeport. The Fleet Managers from these locations comprise a team that has proven its dedication to the reduction of oil-based fuel usage.

In order to meet the goals of Executive Order 13423 and the Energy Policy Act of 1992, the SWRFT Team members identify and employ advanced technology and products along with alternative fueled vehicles in the seven installations. The Team demonstrated success in the use of alternative fuel and fuel conservation, reducing the Nation's dependence on petroleum as well as reducing output of hazardous pollution and greenhouse gases.

In terms of alternative fuel vehicles (AFVs), the Team employs 542 Compressed Natural Gas vehicles, 293 electric vehicles, 21 gasoline/electric hybrids, and 367 flex fuel ethanol (E85) vehicles. Altogether, this totals more than 1,200 AFVs that significantly reduce nitrous oxide, carbon monoxide, and methane pollution, as well as reduce petroleum usage.

Along with its impressive fleet of AFVs, the Fleet Transportation Team uses other techniques and products to reduce pollution and increase vehicle fuel efficiency. Biodiesel fuel (B20) is required of all diesel fuel equipment. The SWRFT Team has thus reduced petroleum diesel consumption by 20 percent in its 817 diesel engine vehicles. The installation vehicles consume 1.3 million gallons of biodiesel each year.

To further conserve fuel and collect information about engine performance, speed, and location of the vehicles, the Team uses an onboard wireless location and performance monitoring device. The information is later analyzed to ensure that the vehicle is consuming fuel as efficiently and as cleanly as possible and to identify improperly performing engines requiring maintenance. These devices also allow managers to reduce the number of unnecessary trips and improve route planning, as well as reduce the amount of air pollution caused by burning excessive fossil fuels. The Team recorded a 27 percent reduction in excessive speed reports after the installation of the GPS devices, indicating just one of the successes of these devices.

Another electronic device, a cabin video/audio monitoring device, also was installed on the fleet's windshields. This device monitors the area ahead of the vehicle and the vehicle cabin area, and records a 30-second event when it receives a force that exceeds a specified level. These events are later downloaded to a central location for review. These monitoring devices improve operator driving habits and reduce aggressive driving behavior, improving fuel efficiency and reducing premature tire wear. The Team has seen a 33 percent reduction in captured events.

Knowing that good tire maintenance programs help to both extend tire life and improve fuel efficiency, the Team installed tire pressure monitoring devices on the medium and heavy duty fleet vehicles. These monitors provide an easy method for vehicle operators to maintain proper tire air pressure, improving fuel efficiency and reducing tire wear. Tires that are properly maintained during their life with little wear or damage to the core are retreaded, greatly reducing the waste tire volume.

The SWRFT Team is currently looking to hydrogen fuel cell technology for the next generation of fleet vehicles. Marine Corps Base Camp Pendleton will open a hydrogen fuel station that also supports the State of California's desire to create a hydrogen highway along Interstate 5. This facility will fuel prototype fuel cell and hydrogen internal combustion engine vehicles that the Base recently began testing and utilizing in daily fleet operations. The hydrogen station has the potential to fuel both government and civilian hydrogen fuel cell vehicles in the near future.

For more information, please contact Gary Funk of USMC Camp Pendleton at gary.funk@usmc.mil or 760-725-4579.

FEMP's Transportation Program Provides Guidance to Federal Fleet Managers

The Federal Energy Management Program's (FEMP) Transportation group provides guidance on and assistance for the efficient use of the federal government's vehicles. The federal vehicle fleet consists of 650,000 vehicles, approximately 20 percent of which are alternative fuel vehicles (AFVs). FEMP aims to reduce the federal government's petroleum consumption through increased AFV use and to lead the country in renewable energy and oil consumption use.

FEMP encourages and facilitates Federal agencies' use of AFVs and alternate fuels through INTERFUELS, a monthly working group of agency fleet managers, and other interagency and industry collaborations such as the Industry Day highlighted on page 10. FEMP also co-sponsors FAST, the Federal Automotive Statistical Tool, with GSA. FAST is a Web-based tracking tool that allows agencies to input fleet data for many data collection requirements.

To help agency fleet managers meet their fleet requirements, FEMP's Transportation group works with agencies in the areas of:

- Communications
- Technical assistance
- Reporting
- Guidance documents

For more information on federal fleet requirements and FEMP's services, please visit the FEMP Web site at www.femp.energy.gov/about/fleet_requirements.html, or contact Brad Gustafson at brad.gustafson@ee.doe.gov or 202-586-5865.

STRATEGIES FOR MEETING FEDERAL FLEET MANDATES INTELLIGENTLY
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B20 use should be part of any agency's AFV acquisition plan, assuming an agency has a large inventory of diesel vehicles.

2. Develop alternative fuel infrastructure.

Developing alternative fuel infrastructure helps Federal agencies meet petroleum reduction and alternative fuel use mandates, reduces the number of waiver requests for AFVs not having access to alternative fuel, sets a leadership example for the public, and helps meet the intent of EPAct 1992. Federal agencies may be able to fund several infrastructure projects with dollars normally used to acquire AFVs above the 75 percent acquisition requirement. Additionally, public refueling stations are often willing to install E85 pumps at no cost in areas with high concentrations of Federal vehicles.

In June of 2008, the Department of Energy (DOE) hosted an Alternative Fuel Industry Forum where alternative fuel providers met with Federal fleet representatives (see article on page 10). One outcome of this conference was a publicly accessible list of Federal fleet E85-fueled AFVs that did not have access to E85 (please visit www.afdc.energy.gov/afdc/data/fleets.html). Using location data from this list, alternative fuel providers are considering alternative fuel installation projects in dozens of geographical areas nationwide. Agencies can also refer private partners to this list, or use it to coordinate infrastructure planning with other agencies.

3. Update agency-specific policies and procedures.

A major challenge for Federal fleets is ensuring alternative fuel is used in AFVs when the fuel is available. There has been some success using a key card system that allows E85-fueled vehicles to only refuel with E85 when refueling on site at an agency. Agencies must develop and encourage policies that ensure AFVs use alternative fuel to the greatest extent possible. Agencies may consider fleet site visits or internal audits.

DOE sites, for example, are in the process of developing executable petroleum reduction plans. DOE representatives well-versed in petroleum reduction strategies intend to visit several of these sites, working in conjunction with local fleet managers to develop petroleum reduction strategies that have site fleet manager and site senior transportation official buy-in. Preliminary indications are that there are large petroleum reduction potentials at DOE sites, if sites were to implement some of the strategies discussed above.

For more information, please contact Dr. Michael Helwig, National Renewable Energy Laboratory, at Michael_Helwig@NREL.gov or 303-275-4426.

Use the Alternative Fuels and Advanced Vehicles Data Center (AFDC) station locator to find alternative fueling stations and work with Clean Cities coordinators to develop infrastructure where needed. Visit http://www.afdc.energy.gov/afdc/fuels/stations_locator.html.

Use the petroleum reduction planning tool to evaluate and calculate petroleum reductions in fleet vehicles. Visit https://www.afdc.energy.gov/afdc/prep/index.php.

FEDERAL FLEET RESOURCES

Federal Leadership by Example

FEMP's Transportation Group provides guidance and assistance for the efficient use of the Federal Government's vehicles; aims to reduce the Federal Government's petroleum consumption through increased AFV use; and leads by example in the use of renewable fuels.

Internet Resources

FEMP's Federal Fleet Resources and Services

www.eere.energy.gov/femp/about/fleet_requirements.html

FEMP provides many helpful resources on federal fleet policy and compliance available to managers and other personnel.

Technical Information: Information and points of contact from our knowledgeable staff, ready to answer your questions.

Guidance Documents: To support your transportation management needs.

Data Collection and Annual Reports: DOE and GSA provide the Federal Automotive Statistical Tool (FAST), a Web-based tracking system. FEMP compiles data from FAST to report status and progress in Annual Reports. https://fastweb.inel.gov

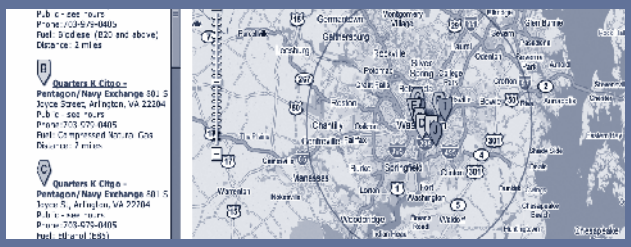
Case Studies: To highlight best practices and provide an in-depth look at specific technologies and strategies.

Information and Links: Internet links to other Federal and private sites with related resources.

Education: FEMP provides outreach through INTERFUEL, Industry Day, and Interagency Task Force meetings.

Legislative Analysis: FEMP interprets and helps implement existing legislation while also evaluating proposed and enacted Federal fleet mandates.

Locators, Calculators & Interactive Tools



Alternative Fueling Station Locator

The Station Locator displays public and private fueling stations, which have been independently verified by the Alternative Fuels and Advanced Vehicles Data Center. This tool searches the fueling station database and maps stations that sell a variety of non-petroleum fuels.

www.afdc.energy.gov/afdc/fuels/stations_locator.html

Plan your route to take advantage of any and all alternative fueling stations along the way:

www.afdc.energy.gov/afdc/stations/find_route.php

Petroleum Reduction Planning Tool

This interactive tool helps fleets, consumers, and business owners create a strategy to reduce conventional fuel use in fleet and personal vehicles. Users can evaluate and calculate petroleum reductions achieved from various combinations of petroleum reduction methods.

www.afdc.energy.gov/afdc/prep/index.php

Guidance and Compliance

Federal agencies must comply with the Federal Fleet requirements of:

* **Energy Independence and Security Act of 2007**
* **Executive Order 13423, January 2007**
* **Energy Policy Act 2005**
* **Energy Conservation Reauthorization Act**
* **Energy Policy Act of 1992**

The following Government Web sites provide a wide range of information and resources to reduce petroleum use.

GSA offers a wide range of services for fleet managers including vehicle purchasing and full service fleet leasing. The GSA website contains information on alternative fuel vehicles, safe driving practices, vehicle rates, and fleet services cards. In addition, through GSA Fleet Drive Thru, customers are able to obtain information on their leased vehicles such as: current inventory, fuel use, FAST data, and crash data. For more information from GSA on AFVs and other fleet issues please see http://www.gsa.gov/afv

Clean Cities has a network of approximately 90 volunteer coalitions, which develop public/private partnerships to promote alternative fuels and advanced vehicles, fuel blends, fuel economy, hybrid vehicles, and idle reduction. Fleet managers can use this network to learn about opportunities for developing alternative fuel infrastructure in coalition areas. http://www.eere.energy.gov/cleancities/

Selecting and Buying a Vehicle

Buy GSA Vehicles:
http://www.gsa.gov/automotive

Lease GSA Vehicles:
http://www.gsa.gov/vehicleleasing

EPA Green Vehicle Guide:
Find a vehicle's greenhouse gas score
http://www.epa.gov/greenvehicles/Index.do

FuelEconomy.gov:
This site helps fulfill DOE and EPA responsibilities under the Energy Policy Act (EPAct) of 1992 to provide accurate MPG information to consumers.
http://www.fueleconomy.gov/

Planning Your Route and Filling Up

Find alternative fueling stations:
www.afdc.energy.gov/afdc/fuels/stations_locator.html

Plan your route:
http://www.afdc.energy.gov/afdc/stations/find_route.php

Compare prices at the pump: http://www.e85prices.com and http://www.altfuelprices.com/

Develop E85 Infrastructure:
Information for fleet managers or fueling station owners interested in installing E85 infrastructure.
http://www.afdc.energy.gov/afdc/ethanol/station_infrastructure.html

http://www.eere.energy.gov/femp/about/fleet_requirements.html

Publications, Training, and Outreach

Fact Sheets

EPAct and E.O. 13423: *How Do Federal Fleets Comply?* (PDF 237 KB)
http://www.eere.energy.gov/femp/pdfs/43500.pdf

EPAct and Clean Cities: *What Is the Connection?* (PDF 476 KB)
http://www.eere.energy.gov/vehiclesandfuels/epact/pdfs/epact_clean_cities_connection.pdf

History of Actions and Mandates Relative to Federal Fleets, Alternative Fuel Vehicles, and Alternative Fuel Use (PDF 147 KB)
http://www.eere.energy.gov/femp/pdfs/fs_federal_fleets.pdf

Guidebook for Handling, Storing, and Dispensing E85 (PDF 5.4 MB)
http://www.e85fuel.com/pdf/e85_technical_booklet.pdf

Newsletters

Alternative Fuel Price Report
A quarterly newsletter designed to keep you up-to-date on the regional average price of alternative fuels in the United States in relation to gasoline and diesel prices.
http://www.afdc.energy.gov/afdc/price_report.html

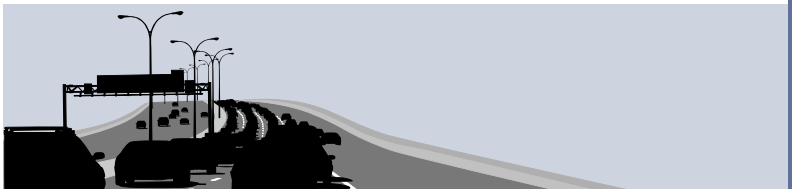
Clean Cities Now
The official quarterly publication of Clean Cities, an initiative of the U.S. Department of Energy's Vehicle Technologies Program.
http://www.afdc.energy.gov/cleancities/ccn/

Ethanol Report
Published bi-weekly by the Renewable Fuels Association to keep subscribers appraised of the most topical issues concerning the ethanol industry.
http://www.ethanolrfa.org/media/newsletter/

E85 FYI
Produced by the National Ethanol Vehicle Coalition.
http://www.e85fuel.com/whatsnew/newsreleases.php

Wheels & Wings Newsletter
Wheels & Wings is a quarterly newsletter from GSA that addresses issues concerning motor vehicle and aircraft management policies.
http://www.gsa.gov/wheelsandwings

Energy Savers Blog
A blog provided by the DOE's EERE Program discussing some of the latest issues regarding transportation and energy:
http://eere.typepad.com/energysavers/vehicles/



Meetings and Conferences

FedFleet 2009
Annual national meeting of federal vehicle and aviation fleet managers.
July 28 - 30, 2009, Chicago, Illinois
http://www.fedfleet.org/

GovEnergy
Annual energy training workshops and exposition for Federal Agencies.
August 9 - 12, 2009, Rhode Island
http://www.govenergy.com/

National Biodiesel Conference and Expo
February 1-4, 2009, San Francisco, California
A conference and exposition for biodiesel marketers, feedstock growers, fuel distributors, government leaders and biodiesel users.
www.biodieselconference.org/2009/default.asp

National Ethanol Conference
February 23-25, 2009, San Antonio, Texas
A conference with opportunities for industry interaction, networking and education on marketing and policy issues impacting the U.S. ethanol industry.
http://www.nationalethanolconference.com/

Clean Heavy Duty Vehicle Conference & Expo
March 16-18, 2009, Long Beach, California
A national conference on the latest technologies and fuels for heavy duty vehicles and buses.
http://www.chdv.org/

Alternative Fuels & Vehicles National Conference and Expo
April 19-22, 2009, Lake Buena Vista, Florida
Organized by the Alternative Fuel Vehicel Institute.
http://www.afv2009.com

NAFA 200 Institute 7 Expo
April 25-28, 2009, New Orleans, Louisiana
Fleet management resources, products, training and education.
http://www.nafaiande.org/

FEMP Holds Alternative Fuels Industry Forum

To comply with Federal mandates, Federal fleets must reduce energy and petroleum consumption and increase the use of alternative fuels. The Federal Energy Management Program (FEMP) is here to help agencies in these efforts. To better help agencies expedite compliance, last June FEMP held a one-day meeting in Washington, D.C., *Fueling Federal Fleets: An Alternative Fuel Industry Forum*. The meeting featured presentations from government agencies on current issues related to the use of alternative fuels and the challenges facing the Federal fleets in reaching goals required by legislation and Executive Orders. The Forum was attended by nearly 100 individuals including agency fleet managers and decision-makers, private sector representatives from fuel suppliers, alternative fuel infrastructure developers, and industry organization representatives.

The primary goal of the Forum sought to facilitate discussion between public and private-sector participants, identify barriers to increased alternative fuels use in Federal fleets, and find possible solutions to those barriers. FEMP also hoped to learn from the private sector the best approaches and business models to meet Federal fleet alternative fuel infrastructure needs.

In presentations to the full group, Federal agency representatives outlined Federal mandates requiring government agencies to increase their use of alternative fuels in Federal fleets and described the resulting challenges and opportunities affecting the private sector (the cover article of this issue of *FEMP Focus* lists and summarizes these mandates). Two breakout sessions were devoted to E85 flexible fuel vehicles and to biodiesel, compressed natural gas, and liquefied propane gas. Participants discussed barriers to adopting alternative fuels in government fleets and opportunities for the private sector to assist in overcoming them. Discussion topics included contracting issues, the need for fuel standards, and the need for information from and about Federal agencies and their fleets, especially related to fuel volume requirements and contracting processes. Participants compiled lists of concerns, challenges, and recommendations to help FEMP develop action plans for alternative fuel use in the government sector.

Some key recommendations from Forum include:

- The Federal government should develop a working standard (including contracting models) to specify how alternative fuels are to be supplied to government agency fleets.
- Government agencies should share specific information with the private sector about alternative fuel vehicle (AFV) fleets and expectations related to alternative fuel infrastructure funding.
- Clean City coordinators should be involved in efforts to locate sites for alternative fuel stations so that a demand threshold for the fuel can be met or exceeded by involving federal, state, and local government fleets and the public AFVs.
- Alternative fuel suppliers should inform government agencies about their capabilities to supply fuels and build infrastructure.
- Additional meetings should be scheduled in various regions of the country with emphases on specific regions and/or metropolitan areas, as a part of related large upcoming conferences, and as Web casts and/or teleconferences to expand participation.

In response to this meeting, and to address recommendation number two above, DOE released the locations of Federal fleet AFVs currently waived from using alternative fuel. This data allows alternative fuel providers to identify locations with high numbers of vehicles that could use their alternative fuel station. As a result of releasing this data, DOE expects 30 alternative fuel stations to begin development by the end of 2008. The location information is posted on the Alternative Fuels and Advanced Data Center Website at http://www.afdc.energy.gov/afdc/data/fleets.html.

For the complete meeting summary report, which includes Power Point presentations and highlights, detailed summaries of the breakout sessions, next steps for government agencies and industry, and lists of attendees and agency contacts, please visit http://www.sentech.org/FEMP/FEMP_Conference_6.12.08.html.

For information on the next Alternative Fuel Industry Forum, which is expected to be scheduled in the early part of 2009, please contact Brad Gustafson of FEMP at brad.gustafson@ee.doe.gov or 202-586-5865.

Oak Ridge National Laboratory Wins Closing the Circle Award for its Green Transportation Initiative

Oak Ridge National Laboratory (ORNL) in Oak Ridge, Tennessee is the Department of Energy's (DOE) largest science and energy laboratory, employing about 4,200 people. Through its Green Transportation Initiative, ORNL significantly increased the use of alternative fuel, reduced reliance on petroleum, and provided personnel with safer, more cost-effective transportation options—winning the laboratory a 2008 Closing the Circle Award in the Alternative Fuel and Fuel Conservation in Transportation category.

During the past several years, ORNL effectively "greened" its campus transportation by: (1) designing the campus to encourage walking and biking by personnel, (2) integrating fuel efficiency features into roadway design, (3) encouraging shared transportation, (4) expanding the fleet of flex fuel vehicles, and (5) implementing the use of biodiesel in fleet vehicles

Together, these efforts have yielded impressive results. "Since 2000 ORNL has tripled its usage of alternative fuels and reduced by 23 percent its consumption of gasoline and diesel fuel made from petroleum," said Jon Forstrom, director of ORNL's Logistical Services Division.

To minimize the use of petroleum-based government vehicles, ORNL updated the campus with numerous outdoor walkways that ensure pedestrian and bicycle friendliness. Off campus, a pedestrian and bicycle lane was added to the main access route to the laboratory. ORNL also provides more than 100 bicycles for its employees, as well as several electric low-speed vehicles.

In addition, ORNL eliminated a major traffic light at the main entrance to the laboratory. The light was replaced with a roundabout, which reduces petroleum consumption caused by idling automobiles waiting for the traffic light to change.

To decrease unnecessary fuel utilization by both ORNL and its employees, ORNL created both on- and off-campus options for shared transportation. On site, ORNL uses a campus taxi service that is promoted throughout the lab and has its own internal homepage. Off campus, a lab-sponsored carpool program is in place to encourage personnel to share rides when commuting to work. This program, which currently has about 130 active participants, uses an interactive internal carpool Web site that includes information about carpool benefits, etiquette, announcements, and a database to facilitate carpool partner searches. Additionally, ORNL promotes hybrid vehicle ownership through awareness campaigns and articles highlighting personnel who own hybrids.

ORNL began purchasing flex fuel alternative fuel vehicles (AFVs) in 1999 to study their performance and to reduce the Laboratory's dependence on foreign oil and its emissions of climate-altering carbon dioxide. Now, more than 200 AFVs make up almost 46 percent of ORNL's total fleet.

ORNL currently owns 150 flex fuel vehicles. Use of the lab's on-site 8,000 gallon E85 tank continues to increase, nearly reaching the 30,000 gallons-used mark in FY 2007.

ORNL also began using biodiesel (B20) in 67 diesel vehicles and numerous pieces of equipment on campus in 2007. Only the emergency generators are not fueled with biodiesel. The lab has a 6,000 gallon biodiesel fuel tank on site, and used 15,600 gallons of the fuel in its fleet in FY 2007. Like E85, this fuel reduces hazardous tailpipe emissions and reduces dependency on petroleum-based fuels.

For more information, please contact Susan R.C. Michaud at michaudsr@ornl.gov or 865-576-1562.

2008 Federal Awards Recognize Outstanding Efforts in Fleet and Mobility Energy Management

FEMP Federal Energy and Water Management Awards

This year the Federal Energy Management Program (FEMP) added a new award category to their annual Federal Energy and Water Management Awards criteria to recognize exemplary Federal efforts to implement sustainable practices for vehicle fleet management, in line with the goals of Executive Order 13423 and the Energy Independence and Security Act of 2007 (EISA). At the October 2008 ceremony, Fleet Vehicle Management awards went to the Department of Energy's Princeton University Plasma Physics Laboratory (PPPL) and Bruce Chesson of the National Aeronautics and Space Administration's Kennedy Space Center for increased use of alternative fuels that led to reductions in petroleum fuel consumption in fiscal year (FY) 2007.

The DEPARTMENT OF ENERGY'S PRINCETON UNIVERSITY PLASMA PHYSICS LABORATORY (PPPL) first began using B20 biodiesel as an alternative fuel in FY 2007 for new utility vehicles and existing diesel-powered fleet vehicles. The organization used B20 fuel for the first time ever in a new utility vehicle—the John Deere Gator—a groundbreaking effort. PPPL also reinstituted the use of natural gas powered vehicles. These efforts, along with managing vehicle use, allowed PPPL to reduce petroleum fuel from more than 7,200 gallons in the FY 2005 base year to just over 4,600 gallons in FY 2007. This reduction of 36 percent is nearly double EISA's 2015 goal of 20 percent. The use of B20 also resulted in a reduced carbon footprint of more than 2,400 pounds of carbon dioxide.

PPPL used B20 biodiesel in the "Bio-Gator" vehicle for the first time.

At the NATIONAL AERONAUTICS AND SPACE ADMINISTRATION'S JOHN F. KENNEDY SPACE CENTER (KSC), Bruce Chesson greatly increased the use of alternative fuels, reduced petroleum usage, and increased public awareness of alternative fuels. Mr. Chesson was instrumental in acquiring alternative-fueled vehicles for KSC in FY 2007, as well as procuring a contract to provide two Ethanol (E85) service stations. Due to his efforts, KSC increased its E85 volume from 144 gallons to an average of 15,000 gallons per month. Use of E85-flex fuel vehicles, B20 biodiesel and compressed natural gas vehicles reduced KSC's petroleum fuel consumption in FY 2007 by more than 104,300 gallons from the FY 2005 base year.

To read about the accomplishments of all FEMP's 2008 energy award winners, www.femp.energy.gov/services/awards.html. The 2009 Awards Criteria and Guidelines will be posted by February 2009, with nominations due in May 2009. *Please contact Amanda Sahl, FEMP, at amanda.sahl@ee.doe.gov or 202-586-1662.*

Secretary of the Navy Energy and Water Management Awards

The Department of the Navy also held their Secretary of the Navy (SECNAV) Energy and Water Management Awards Ceremony at the Navy Memorial in October 2008. Six installations and ships were overall SECNAV winners, with 59 additional winners at the Platinum, Blue, and Gold level. Overall winners in the ship category included the USS BONHOMME RICHARD (LHD 6) in the large ship category and the USS NITZE (DDG 94) in the small ship category.

USS BONHOMME RICHARD (LHD 6) saved more than 37,400 barrels of fuel in FY 2007 compared to the LHD 1 class average fuel usage. The $3.6 million in fuel savings is attributed to a strong command commitment to energy conservation and senior leadership participation in NAVSEA's energy conservation seminars and workshops. For example, the commanding officer and executive officer conducted weekly tours through all engineering spaces onboard, assessing methods to improve energy usage. The presence of senior leadership on the deck plates motivated junior personnel to participate in energy awareness and aggressive fuel management practices.

USS NITZE (DDG 94) saved more than 20,500 barrels of fuel in FY 2007 compared to the DDG 51 class average fuel usage—a savings of nearly $2 million. A strong commitment from senior leadership was also a key to their success, demonstrated by extensive all hands attendance at energy conservation training classes and strict adherence to implementing energy efficiency checklists. While underway, NITZE operates in Fuel Efficient Pitch Mode, and consistently exhibits 10 percent fuel savings on average. NITZE routinely monitors equipment to ensure that redundant ship's systems are left off until they are needed.

For more information on the SECNAV Awards, please contact Bob Racicot of the Navy at robert.racicot@navy.mil or 202-685-9259.

New Department of Energy Campaign Encourages Consumers to "Stay Warm, Save Money"

Winter is here, and the Department of Energy (DOE) has launched a new Web site and educational outreach campaign to help consumers be more energy efficient and save on their energy costs. The "Stay Warm, Save Money" campaign provides simple, cost-effective, energy-saving solutions for home consumers and small businesses.

The campaign Web site at www.energysavers.gov offers no-cost and low-cost energy-savings tips, financial assistance links, long-term energy saving solutions, and a blog covering energy-saving topics. Visitors to the site can also download an energy saving checklist and other materials to help them save money on energy costs while staying warm this winter.

The campaign is currently focusing on energy-saving tips for the winter months, including the Top 10 Tips to Cut Winter Energy Costs (below). The Web site will be expanded later in the year to include tips for the summer. The site also features DOE's work to develop cleaner, more affordable, diverse, reliable and sustainable energy sources that support the President's goal to slow the growth of U.S. greenhouse gas emissions by 2025 while meeting increasing energy demands.

For more information and campaign resources, please visit the campaign Web site at www.energysavers.gov.

Top 10 Tips to Cut Winter Energy Costs

1. Maintain air filters and HVAC equipment

Well-maintained equipment runs more efficiently, so change your air filter monthly or as needed and tune up your HVAC equipment yearly.

2. Set your thermostat as low as is comfortable

Roll temperatures back by 10 to 15°F before bed and before leaving for work.

3. Reduce air leaks (can save up to 10% on energy bills)

Seal doors and windows with weather stripping or caulk. Tape clear plastic film to the inside of window frames to further reduce leaks, and consider installing insulated curtains or blinds.

4. Take advantage of the sun's heat and light

Keep your south-facing windows clean. Open curtains on south-facing windows during the day and close all curtains at night.

5. Add insulation to your attic

With the right safety practices, this can be a do-it-yourself project.

6. Turn down the temperature on water heaters and provide good insulation

Most water heaters are set to 140°F, but at 115 to 120°F you'll still have plenty of hot water. Insulate hot water pipes and, if your water heater is over 7 years old, consider a "wrap" to insulate the tank. Also consider heat traps on water heater tanks, timers that use off-peak power for electric water heaters, hot water recirculation loops, and drain-water heat recovery systems.

7. Fireplace efficiency

Plug and seal the chimney flue of fireplaces that are never used. When using fireplaces, keep the damper closed unless a fire is going and make sure the damper is as snug as possible. Caulk around the fireplace hearth. Consider installing tempered glass doors and a heat-exchanger system to blow warm air back into the room. When a fire is lit, open dampers or open nearest window about an inch, close doors leading into the room, and lower your thermostat to between 50° and 55°F.

8. Wood and pellet burning heaters

Clean the flue vent regularly and the inside of the appliance periodically with a wire brush.

9. Unplug electronics and appliances when not in use

Use multiple-outlet strips so you can turn everything off with one flip of a switch.

10. Replace incandescent bulbs with compact fluorescent bulbs (CFLs)

Lighting makes up about 10 percent of home energy costs, and CFLs can save up to 75 percent of that energy. They also last longer, saving money on replacements.


FEDFLEET
2009
Winds of CHANGE
The 9th National Motor Vehicle and Aviation Workshops and Exposition
The Federal Fleet Policy Council, GSA's Office of Governmentwide Policy, the Interagency Committee for Aviation Policy, and GSA Fleet are proud to host FedFleet 2009, the 9th National Motor Vehicle and Aviation Workshops and Exposition. This prestigious conference will be held July 28 – 30 at the Sheraton Hotel & Towers and the Navy Pier located in Chicago, Illinois.
FedFleet 2009 will include the GSA Automotive Federal Vehicle Standards breakout sessions and vendor presentations. The agenda includes extensive Aviation Workshop sessions and an all-day Basic Fleet Management class. This comprehensive collection of fleet management, automotive procurement and aircraft related educational sessions truly makes FedFleet 2009 a one-stop experience for Fleet and Aviation Management professionals.
We are confident that you'll find FedFleet 2009 a quality event and an excellent value for the nominal training and travel dollars involved.
Save the date and visit us online at www.fedfleet.org
JULY 28-30, 2009
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For any questions or information contact us at 1-800-315-4333 or help@fedfleet.org

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U.S. POSTAL SERVICE CHAMPIONS CUTTING-EDGE MODES OF TRANSPORTATION
(continued from page 5)

2008 and another Equinox will be deployed in Washington, DC in November 2008.

The objective of this testing is to understand how new technologies perform in postal operations and to be able to make informed, reliable decisions regarding fleet replacement and new vehicle technologies. This will ensure that USPS is in the best possible position to make decisions that have a long-lasting impact on operations and the employees responsible for driving and maintaining these vehicles.

For more information, please contact David West at david.e.west@usps.gov or 202-268-6871.

USPS Equinox Fuel Cell Vehicle

U.S. Department of Energy
Energy Efficiency and Renewable Energy

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