

Vehicle Technologies Program Merit Review

May 12, 2011

Margo Melendez, NREL
David Greene, ORNL

Project # TI-003-Melendez

Clean Cities Tools and Resources

FuelEconomy.gov

AFDC and Clean Cities Websites

Overview

Relevance

Milestones

Approach and Impacts

Accomplishments

Future Activities

Summary

Timeline

- AFDC and FuelEconomy.gov have been supporting Clean Cities stakeholders and the public since 1991 and 1999 respectively

Barriers

- Resources to address implementation challenges for consumers and fleets
- Lack of understandable, unbiased information to facilitate decision making

Funding

- AFDC and Clean Cities \$1.9M annually
- Fueleconomy.gov \$3.0M annually

Partners

- NREL/ORNL
- ANL/NETL
- EPA
- Clean Cities coordinators
- Industry stakeholders/trade groups
- Maryland Public Television, PBS

www.afdc.energy.gov

www.fueleconomy.gov

www.cleancities.energy.gov

Make an impact on petroleum use

Provide credible information

Provide tools that are understandable and relevant

Meet DOE's statutory requirements to provide information to the public

Use as a launching point for broader deployment activities

fueleconomy.gov

- New look and functionality
- Personal MPG estimates

cleancities.energy.gov

- Redesign for impact
- Prioritize user needs

afdc.energy.gov

- Widgets
- Expand data sharing
- EV “clearinghouse”

Approach



Relevant, latest technology, government websites

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

www.fueleconomy.gov

the official U.S. government source for fuel economy information

Find a Car ▾ Tips ▾ Save Money ▾ Benefits ▾ Your MPG ▾ Hybrids & Electrics ▾ Diesels ▾ Alternative Fuels ▾ Extreme MPG ▾ More... ▾

Find and Compare Cars

Gas mileage (MPG), fuel cost, greenhouse gas emissions, energy impact score, air pollution ratings, and safety information for new and used cars and trucks

Compare Side-by-Side
Power Search

Hybrid Vehicles & Electric Vehicles

- New and Upcoming Hybrids
- Plug-in Hybrids
- Electric Vehicles

Diesel Vehicles and Fuels

Alternative Fuel Vehicles

Extreme MPG

Your MPG Will Still Vary

MotorWeek Videos

Mobile Web Sites

Fuel Economy Guide

U.S. ENVIRONMENTAL PROTECTION AGENCY

Mobile | Español | Site Map | Links | FAQ | Videos | Contacts

Alternative Fuels & Advanced Vehicles Data Center

About the AFDC | Fuels | Vehicles | Fleets | Incentives & Laws | Data, Analysis & Trends | Information Resources

Alternative Fuels and Advanced Vehicles Data Center (AFDC, formerly known as the Alternative Fuels Data Center) provides a wide range of information and resources to enable use of alternative fuels (as defined by the Energy Policy Act of 1992), in addition to other vehicle reduction options such as advanced

Alternative Fuel Portals

- Biodiesel
- Electricity
- Ethanol
- Hydrogen
- Natural Gas
- Propane

More Fuels Information

Site Map
EERE Information Center

NEWS

Automotive Fleet Magazine
Includes Clean Cities Now In Its Green Fleet Supplement
December 09, 2010

More News

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Subscribe to EERE News Updates

Fleet Management Institute
BO
2011 - 04/12/2011

More Events

RES

Plug-in Ready?
Read case studies featuring metro areas preparing for electric vehicles.

Financial Opportunities

Clean Cities 2009 Petroleum Reduction Projects

TransAtlas
Explore alternative fuel and vehicle data

Clean Cities

U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

Clean Cities

About the Program | Coalitions | Coordinator Toolkit | Financial Opportunities | Information Resources

In the \$4 Gas Cars.com America work - Honda miles - Disclaimer

Fueleconomy.gov

U.S. Department of Energy

Clean Cities strives to advance the nation's economic, environmental, and energy security by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption. Clean Cities has a network of nearly 100 volunteer coalitions, which develop partnerships in the public and private sectors to promote alternative and renewable fuels, fuel economy measures, idle reduction technologies, and new technologies as they emerge.

Clean Cities is part of the Office of Energy Efficiency and Renewable Energy's [Vehicle Technologies](#) Program.

Select Coalition-Related Information

- Starting Coalitions
- Coalition Locations
- Program Contacts
- Coordinator Contacts

Petroleum Reduction Tools & Information

Alternative Fuels and Advanced Vehicles Data Center: This Web site educates consumers and fleets on alternative fuels and advanced vehicles.

Fueleconomy.gov: This Web site compares gas mileage, emissions, air pollution ratings, and safety data for new and used vehicles.

Clean Cities Now
This biannual newsletter addresses industry news, coalition successes, and program information.

Coordinator Toolkit
This sub-site helps coordinators develop strong coalitions, promote partnerships, and facilitate activities.

What is Clean Cities? Fact Sheet (PDF 2 MB)
Download Adobe Reader

NEWS

DOE Finalizes \$50 Million Loan for CNG-Powered Vehicles
March 16, 2011

More News

Subscribe to RSS News Feed

Subscribe to EERE News Updates

EVENTS

NAFA Fleet Management Institute and Expo
April 9-12, 2011

More Events

FEATURES

National Parks Initiative
Learn how Clean Cities partners with the National Park Service.

Clean Cities MotorWeek Videos

Clean Cities 2009 Petroleum Reduction Projects

Visits - FY2010

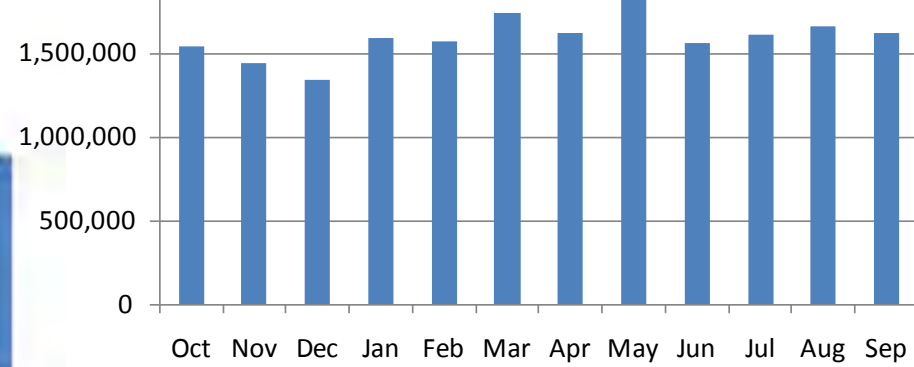
www.afdc.energy.gov



19M total visits to FuelEconomy.gov in FY2010

Visits - FY2010

www.fueleconomy.gov



80K total visits to Clean Cities in FY2010

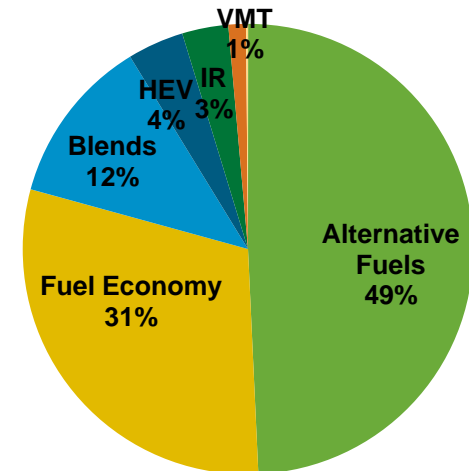
Visits - FY2010

www.cleancities.energy.gov

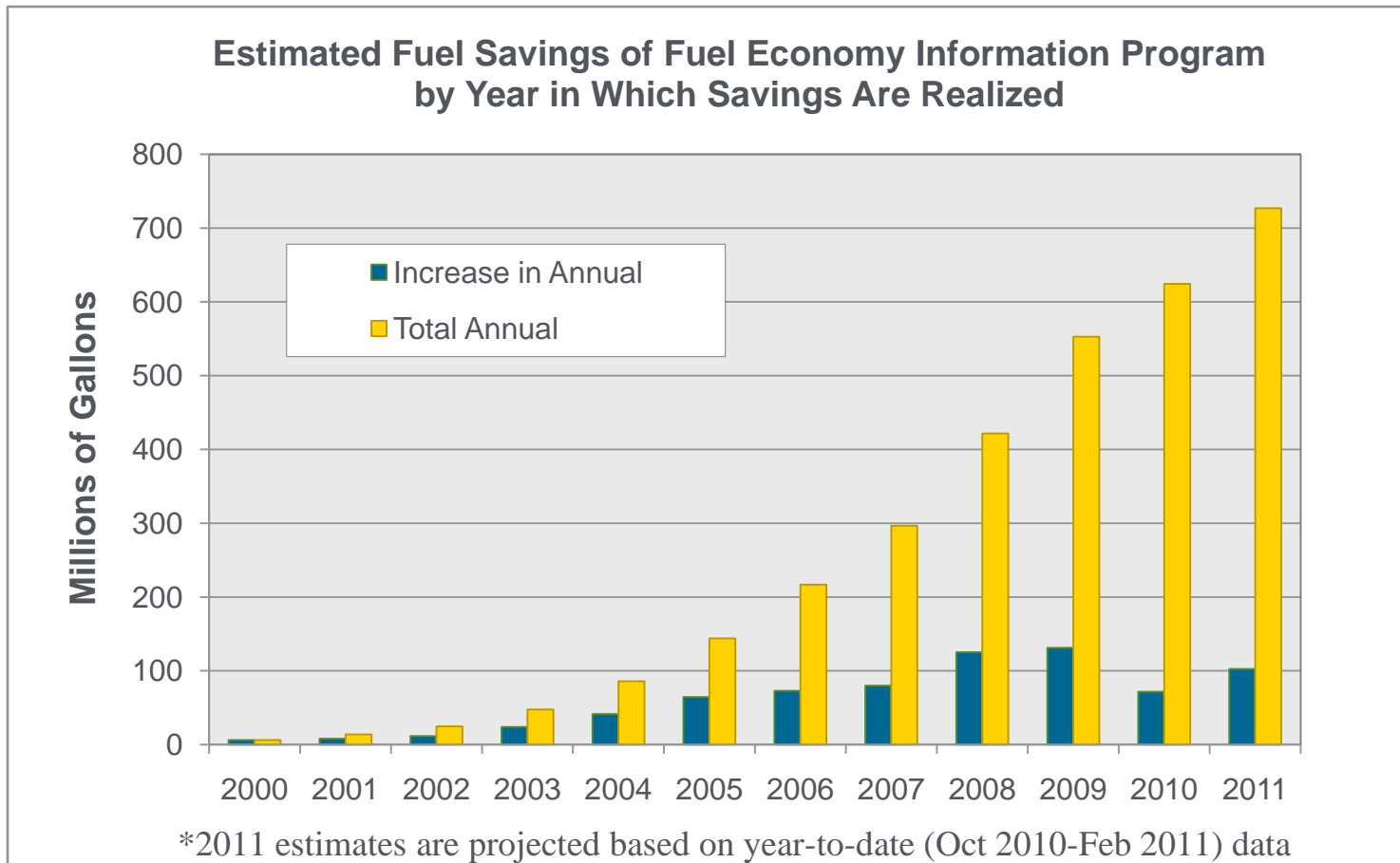


CC Petroleum Displacement

446M GGE in 2009



Estimated fuel savings of more than 700 million gallons of petroleum in 2011 attributed to FuelEconomy.gov



Accomplishments: Automotive Technical Support

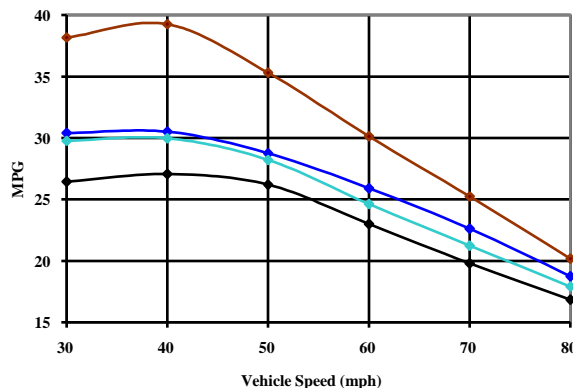
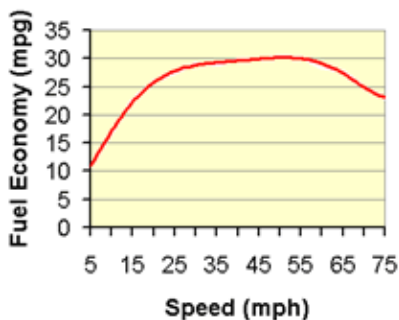
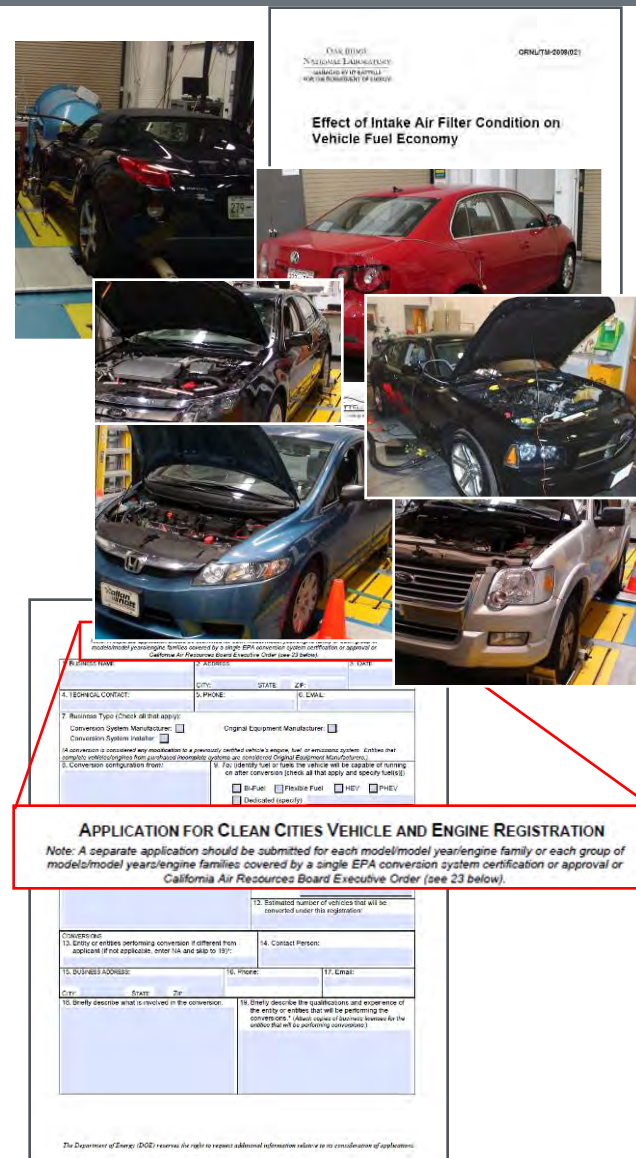


Update Driver Tips

- Established panel of auto experts to provide peer review and guidance
- Conducted clogged air filter experiment in 2009 – corrected out-of-date advice from early 1970s for gasoline vehicles
 - Follow-on test of gasoline vehicle with turbocharged, direct-injected engine and two diesel vehicles (2010)
 - Results and report in 2011
- Speed and fuel economy
 - Combination of data mining, experiments, and modeling under way. Will update ~15-year-old data to inform consumers about effects of speed on fuel economy
- Developing driver tips for new technology vehicles (EV, HEV, and PHEV)

Clean Cities Vehicle and Engine Registration

- Developing application form, panel, and process to register alternative fuel conversions (EV, PHEV, FFV, CNG, etc.)

APPLICATION FOR CLEAN CITIES VEHICLE AND ENGINE REGISTRATION

Note: A separate application should be submitted for each model/model year/engine family or each group of models/model years/engine families covered by a single EPA conversion system certification or approval or California Air Resources Board Executive Order (see 23 below).

13. Describe the qualifications and experience of the entity or entities that will be performing the conversions. (Attach resumes if available, resumes for the entities that will be performing conversions)

14. Contact Person:

15. Business Address: City: State: Zip:

16. Phone: 17. Email:

The Department of Energy (DOE) reserves the right to request additional submission information in its consideration of applications.

Accomplishments: FE Sticker tool



Used car fuel economy sticker tool helps buyers find efficient vehicles

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy | U.S. ENVIRONMENTAL PROTECTION AGENCY

www.fueleconomy.gov
the official U.S. government source for fuel economy information

Mobile | Español | Site Map | Links | FAQ | Videos | Contacts

Find a Car | Tips | Save Money | Benefits | Your MPG | Hybrids & Electrics | Diesels | Alternative Fuels | Extreme MPG | More...

Create a Used Car Fuel Economy Sticker

Selling your Car?
Our new tool can help you create a fuel economy window sticker for your vehicle!

Step 1. Select your vehicle. | **Step 2. Create your window sticker.**

2010 | Acura | MDX 4WD | Auto (S6), 6 cyl, 3.7 L

2010 Acura MDX 4WD
3.7 L, 6 cyl, Automatic (S6)

MPG 18
COMBINED

16 CITY | **21** HWY

www.fueleconomy.gov

Make My Sticker

Questions and Answers

- ▶ How much does fuel economy decline with the age of the car?
- ▶ Why are the fuel economy estimates different than those on my original EPA window sticker?
- ▶ What is a QR code?
- ▶ Do I need special software on my phone to read the QR code?

[Download EPA's MPS Ratings](#) | [Find and Compare Cars](#) | [USA.gov](#) | [Info for Auto Dealers](#) | [Privacy/Security](#) | [Feedback](#)



Accomplishments: Usability Updates



- Based upon usability sessions
 - ✓ L&I, Cost Calc, PREP
- Testers represented tool users and novices
- Redesigned L&I featured on CNN, GM
- Identified and defined key audiences



Jack • Industry Partner



"We need to green up our products."
"Show me emerging markets, so I know where to invest."
"How does the policy impact my bottom line?"
"Let's cut to the chase, shall we?"

- 44-year-old with MBA
- Lives in the suburbs, works in the city
- Works as an analyst, oversees several staff, summarizes data and writes reports for product manager
- Loves golf, his dogs, and the Detroit Red Wings

Experience on AFDC and Clean Cities Sites

- Comes to the site for a few pieces he knows well
- Is more familiar with the Energy Information Administration site
- Isn't well acquainted with AFDC and Clean Cities tools and content
- Recognizes that Clean Cities work contributes to growing his industry

Tech Savvy

- Expanding his knowledge of technology
- Familiar with models of smartphones

Emotions

- Excited: Emerging markets hold promise
- Impatient: Needs tools that are quick and easy

Values

- Reliability: Company image is important
- Accessibility: Wants to be able to use data to support conclusions
- Transparency: Wants to know our conclusions, but only if substantiated by data
- Economy: Values the payback period
- Freedom: Dislikes regulation

Social/Cultural

- Performs demos at trade-shows
- Gives presentations for sourcing data, and he thinks we give good, reliable number

Pressured: Has to demonstrate results

- Skeptical: Needs to know where the data is from

Learn about our data collection methodologies. >

...s and Laws >

...d laws sorted by [technology/fuel](#), [incentive](#), [regulation](#), or [...](#)

...tion summaries related to alternative fuels and advanced

...d Laws >

...and laws from local governments.

...e to add an incentive to the database, e-mail the [Technical](#)

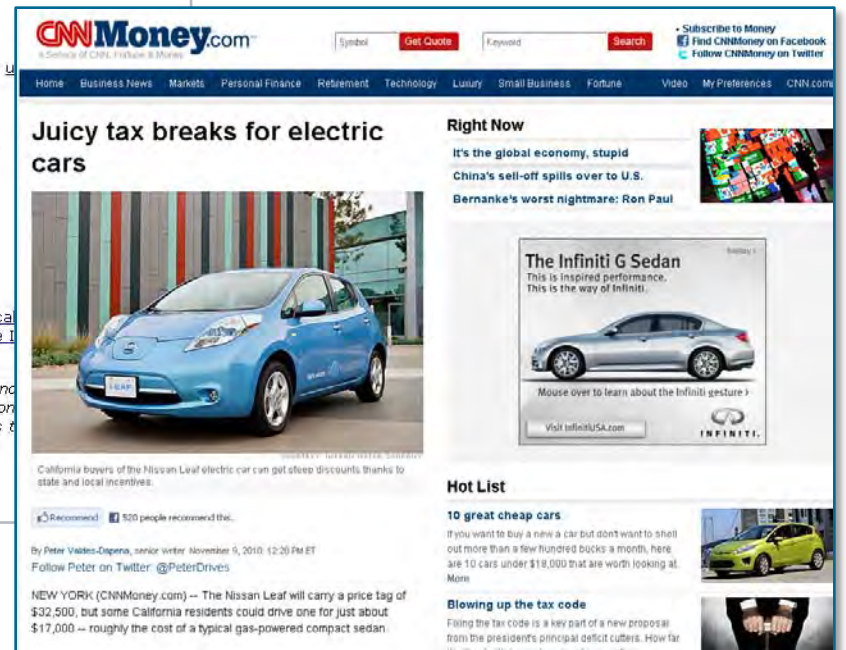
...related to renewable energy, go to the [Database of State I](#)

...ese pages provides an overview of incentives and laws and

...ation when making vehicle purchase decisions, tax decisions

...to the federal and state contacts included in these pages to

...f applicable and consult your tax advisor.





U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Alternative Fuels & Advanced Vehicles Data

About the AFDC | Fuels | Vehicles | Fleets | Incentives & Laws | Data, Analysis & Trends | Inform

Information Resources

- Publications
- Videos
- Tools
- State Information
- Spanish Resources
- Data Downloads**
- Related Links
- Glossary
- Codes & Standards

Data Downloads

To download data related to alternative fuels and vehicles, follow the steps below.

Step 1. Choose data to download
Choose the dataset and file format you want to download.

Dataset:

File Format:

Step 2. Share your information
Provide the following contact and use information to help us understand how you use the data.

First Name * Last

E-mail Address *

How will you use the data? (optional)

* Required

I have downloaded this data

- Fueling stations database, others planned
- 922 users downloaded the station data 2,471 times since 9/2011
- Data used for developing tools, markets, curricula, point of interest (POI) for GPS devices, analyses and fleet optimization
- Builds relationships, especially with new media targets

Example users: Nissan, Chrysler, AT&T, Honda, EPRI, Best Buy, Toyota, Hertz, Hyundai, DuPont, ORNL, PNL, USDA, GSA, Air Force, DOT, EPA, IRS, Navy, USC, Berkley, Cornell, University of Texas, University of Illinois, Dartmouth, University of Colorado, RFA, BP, Honeywell

Accomplishments: EV Updates



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Alternative Fuels & Advanced Vehicles Data Center

About the AFDC | **Fuels** | Vehicles | Fleets | Incentives & Laws | Data, Analysis & Trends | Information Resources | Home

Basic Station Search | Map a Route | Stations by State

First: Select one or more fuels.

- Biodiesel (B20 and above)
- Compressed Natural Gas (CNG)
- Electric
- Ethanol (E85)
- Hydrogen
- Liquefied Natural Gas (LNG)
- Liquefied Petroleum Gas (Propane)

Second: Enter a complete address or zip code.

Show stations within a mile radius.

Show station type:

- Level 1
- Level 2
- DC Fast
- Legacy

Get Results

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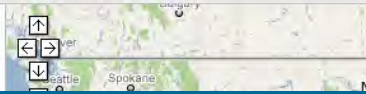
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Alternative & Advanced Vehicles

Printable Version | Site Map | EERE Information Center

Additional Alternative Fueling Station Resources
Total Station Counts by Fuel & State
U.S. Overview Maps
Add/Del




- Light-Duty Vehicle
- Conversions
- Resale
- Technician Training

Availability of Hybrid, Plug-in Hybrid, and All-Electric Vehicles

A number of light-duty and heavy-duty hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), and all-electric vehicles (EVs) are available from a variety of automakers or are in development as described below.

Hybrid Electric Vehicles




Search for light-duty HEVs.

Search for heavy-duty HEVs:

- CNG
- Diesel
- Fuel cell
- Gasoline
- Hybrid propulsion

Plug-in Hybrid Electric Vehicles




Search for light-duty PHEVs.

Learn about [light-duty PHEVs in development](#) from Plug In America.

Learn about [medium- and heavy-duty PHEV conversions](#).

All-Electric Vehicles



Search for light-duty EVs.

Search for heavy-duty EVs.

Search for low-speed NEVs.

Learn about [light-duty EVs in development](#) from Plug In America.

- GeoEVSE initiative launched
- New EV Cost Calculator
- EV links, content updated
- Updated EVSE in station locator
- EV Case Studies

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Alternative & Advanced Vehicles

Light-Duty Vehicle Search
Heavy-Duty Vehicle Search
Cost Calculator
Flexible Fuel Vehicles
Natural Gas Vehicles
Propane Vehicles
Hybrid, Plug-in Hybrid, & All-Electric Vehicles
Basics
Benefits
Availability
Emissions
Charging
Batteries
Maintenance & Safety
Deployment
- Projects
- Case Studies
Research & Development
Related Links
Fuel Cell Vehicles
Diesel Vehicles
Conversions
Resale
Technician Training
Idle Reduction
Fuel Economy
Emissions

Plug-in Hybrid and All-Electric Vehicle Deployment Case Studies

Preparing for widespread adoption of electric vehicles, cities and other local lead process to install home-based electric vehicle supply equipment (EVSE) for plug (PHEVs) and all-electric vehicles (EVs). Some U.S. cities are cutting the time ne charging stations down to one or two days. The following case studies focus on doing to trim the EVSE permitting and installation process.

Oregon ▶ Oregon's statewide process speeds simple EVSE installations by enabling licensed electricians to buy permitting "labels" online and inspecting only one out of ten EVSE installations.

Raleigh ▶ With one-hour inspections, Raleigh's EVSE project cut two days.

Los Angeles ▶ Los Angeles issues automatic online for simple EVSE and guarantees in within 24 hours of installation.

Houston ▶

Printable Version

Case Studies: OREGON | RALEIGH | **LOS ANGELES** | HOUSTON

Los Angeles' Plug-in Vehicle Activities and Processes

Los Angeles, California, is once again helping lead the nation's deployment of plug-in vehicles and electric vehicle supply equipment (EVSE) infrastructure.

Los Angeles' Plug-in Vehicle Evolution

In 1990, California passed the nation's first Zero Emission Vehicle (ZEV) mandate, putting it at the forefront of that decade's deployment of plug-in vehicles, such as the General Motors EV-1, Toyota RAV4-EV, and Honda EV-Plus. Although many vehicles from this generation were discontinued in the early 2000s, California's vision helped set the stage for today's plug-in vehicle rollouts.

As California's largest city, Los Angeles was a leader in deploying the previous generation of plug-in vehicles and is committed to leading the next generation as well. Los Angeles is a huge vehicle market: home to 4 million people, with one of the nation's highest per-capita car-ownership rates. A municipal utility, the Los Angeles Department of Water and Power (LADWP), serves the city's electric needs, and permitting in the utility's service area is done entirely by the city's Department of Building and Safety—both of these factors facilitate plug-in vehicle and EVSE deployment.

LADWP is leading Los Angeles' plug-in vehicle efforts. As part of its

Los Angeles' EVSE Installing and Permitting Process

- ▶ Step 1: Identify
- ▶ Step 2: Assess
- ▶ Step 3: Permit

Getting a Permit

For standard installations, the EVSE customer's electrician applies for a permit online via the Los Angeles Department of Building and Safety's ePermitting system. Approval is automatic. The fee is \$75. All installations have specific requirements.

- First-of-it's-kind collection
- Highlights early leaders in home-charging implementation

Get E-mail Updates | E-mail Me When This Page Is Updated | Contact



Mobile Apps > Alternative Fuel Locator



Alternative Fuel Locator

Department of Energy - Clean Cities

Mobile Web

www.afdc.energy.gov

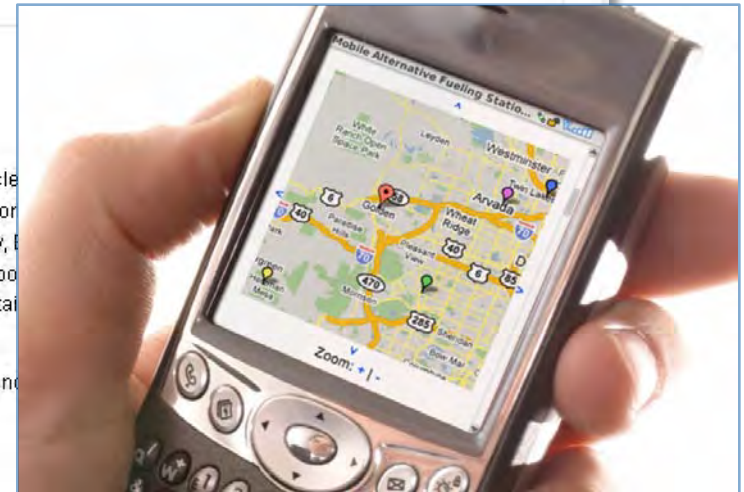
<http://www.afdc.energy.gov/stations/m>

Find it. Fuel it. Go.

Find fueling stations for your alternative fuel vehicle with the Alternative Fueling Station Locator. The locator works for drivers to find the five closest biodiesel, electricity, and natural gas fueling sites. It uses familiar, easy-to-navigate Google Maps information and business hours, and provide detailed information.

Tags: cars, energy, environment, fuel, mobile-friendly

Mobile station locator and fueleconomy.gov featured on USA.gov app store



Accomplishments: Video Success Stories



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Information Resources

Los Angeles Tennessee

CNG: 29.7%
E85: 15%
E85: 82%

Plans for Handling, Storing, and Dispensing E85

Search
Search Help | More Search Options >

Printable Version | SHARE | Site Map | EERE Information Center

Videos

Watch and download videos about alternative fuels and advanced technology vehicles. View [more videos](#) at [FuelEconomy.gov](#).



00:00 CC

Category Search
All Subjects Go

Knoxville Utilities Board
01/22/2011 - Find out how the Knoxville Utilities Board is displacing more than 46,000 gallons of petroleum a year.

Austin, Texas
01/15/2011 - Learn how Austin, Texas, is planning to build a carbon-neutral city fleet by 2020.

Great Smoky Mountains National Park
12/25/2010 - Discover how Great Smoky Mountains National Park uses hybrid and alt fuel vehicles.

City of Sevierville,

ct, contact [East Tennessee Clean](#)

QuickTime (MOV 12 MB)

MotorWeek Provided by Maryland Public Television
Television's Original Automotive Magazine

- Searchable by region or technology
- Format similar to other video websites
- Showcases Clean Cities accomplishments
- Used by coordinators and stakeholders for multiple purposes

Accomplishments: Coordinator Bios



Rick Wallace

Columbia-Willamette Clean Cities



Rick Wallace is a Senior Manager of Energy in the Energy Department. He is an expert on alternative fuel and vehicle technologies in the transportation sector. Rick is the coordinator of the Columbia Willamette Clean Cities coalition. He is focused on the use of domestically produced biofuels to improve energy efficiency. Rick has accumulated extensive experience in developing, marketing and implementing renewable fuel programs. He has worked 14 years in the energy sector.

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Lisa Thurstin

Twin Cities Clean Cities



Lisa Thurstin has been the coordinator of the Twin Cities Clean Cities coalition since 2006. She is also the manager of Clean Fuel and Vehicle Technologies for the American Lung Association in Minnesota (ALAMN). For nine years, her duties have included management of ALAMN's biofuels activities through the Clean Air Choice consumer education program. Her responsibilities include coordinating events, designing educational and marketing campaigns, and assisting with program development.

In addition, she has worked throughout the state of Illinois, Indiana, and Wisconsin.

Lisa Thurstin
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lthurstin@tcclean.org

Chelsea Jenkins

Virginia Clean Cities



Chelsea Jenkins is the executive director of Virginia Clean Cities, which supports alternative fuel and vehicle deployment activities throughout the commonwealth of Virginia.

Prior to becoming the coordinator of Virginia Clean Cities in 2005, Jenkins helped establish Valley AIRNow, the air quality outreach program for Winchester and Frederick counties. Before a biodiesel project in Malta started her career in alternative fuels, she worked in several nondestructive evaluation laboratories, including NASA's Langley Research Center, where she used thermography to explore the environmental impacts of carbon monoxide presence in the atmosphere, compared the thermal signatures of a diesel engine to methanol fuel cells, and examined the Space Shuttle Columbia's wing leading edge for defects.

Jenkins is a graduate of James Madison University's Integrated Science and Technology Program with a concentration in energy, environment, and transportation.

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- Bios added to coordinator contacts page
- Highlight areas of expertise
- Facilitate partnerships

- Improved consumer information on EVs and PHEVs
 - Our consumer-friendly PHEV calculator will help car buyers understand the costs of driving a plug-in hybrid
- Personalized MPG estimates
- Market research/usability testing of FuelEconomy.gov
- Development of mobile app to allow input of user MPG data
- Redesigned Clean Cities website to launch this summer– AFDC to follow
- Widgets and apps
- National Clean Fleets Partners pages and CRM

- The AFDC, FuelEconomy.gov, and Clean Cities websites are widely used, recognized, and respected as sources of advanced vehicle expertise and information
- Projects are targeted to respond to the public, industry, and stakeholder needs
- Partnerships with key organizations ensure accurate and quality information
- Program is making tangible contributions today

www.afdc.energy.gov

www.fueleconomy.gov

www.cleancities.energy.gov