



Sustainable

TRANSPORTATION

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

U.S. Department of Transportation's Climate Adaption and Mitigation Workshop

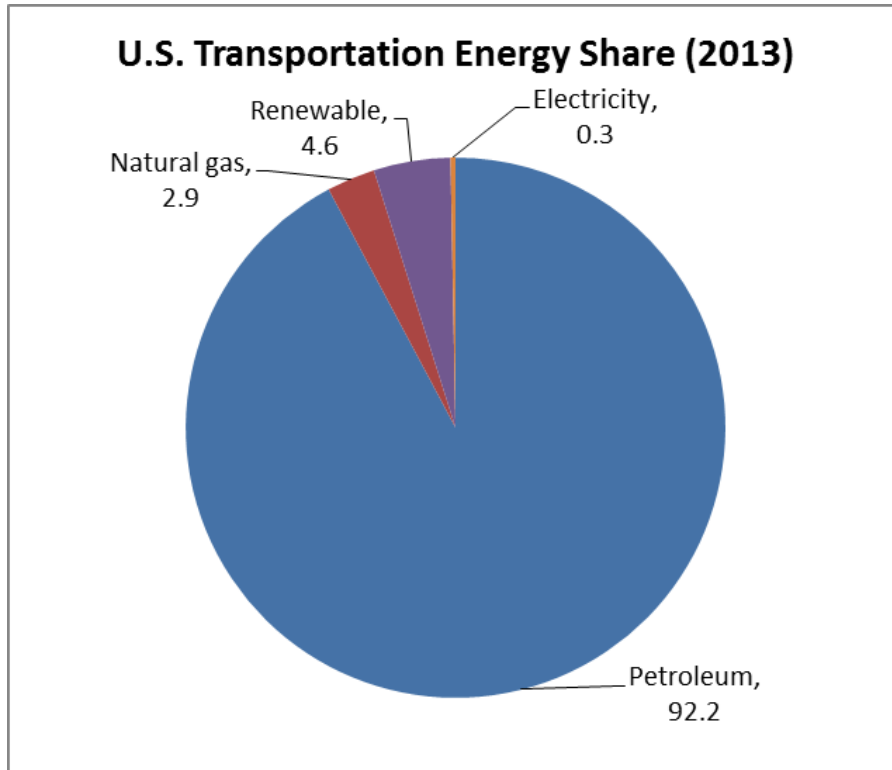
Opportunities in Transportation – Short and Long Term Strategies

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We are Highly Dependent on Oil



Source: Transportation Energy Data Book, ed. 33, Table 2.2,
<http://cta.ornl.gov/data/chapter2.shtml>

- Transportation is responsible for 2/3 of our petroleum usage
- On-road vehicles responsible for ~85% of transportation petroleum usage and 1/3 of GHG emissions
- In 2012 the U.S. economy lost \$116 billion due to dislocation losses, temporary reductions in GDP due to oil price shocks.
- Over the past ten years, U.S. regular conventional retail gasoline prices have fluctuated from below \$1.50 to more than \$4 per gallon.

Historical Gasoline Prices

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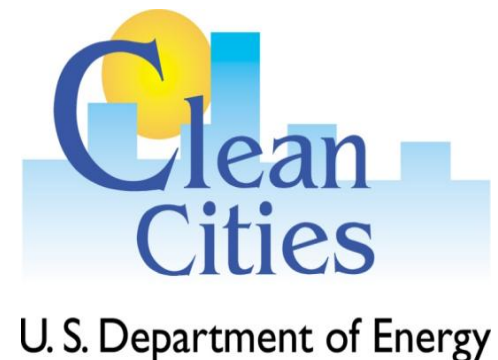
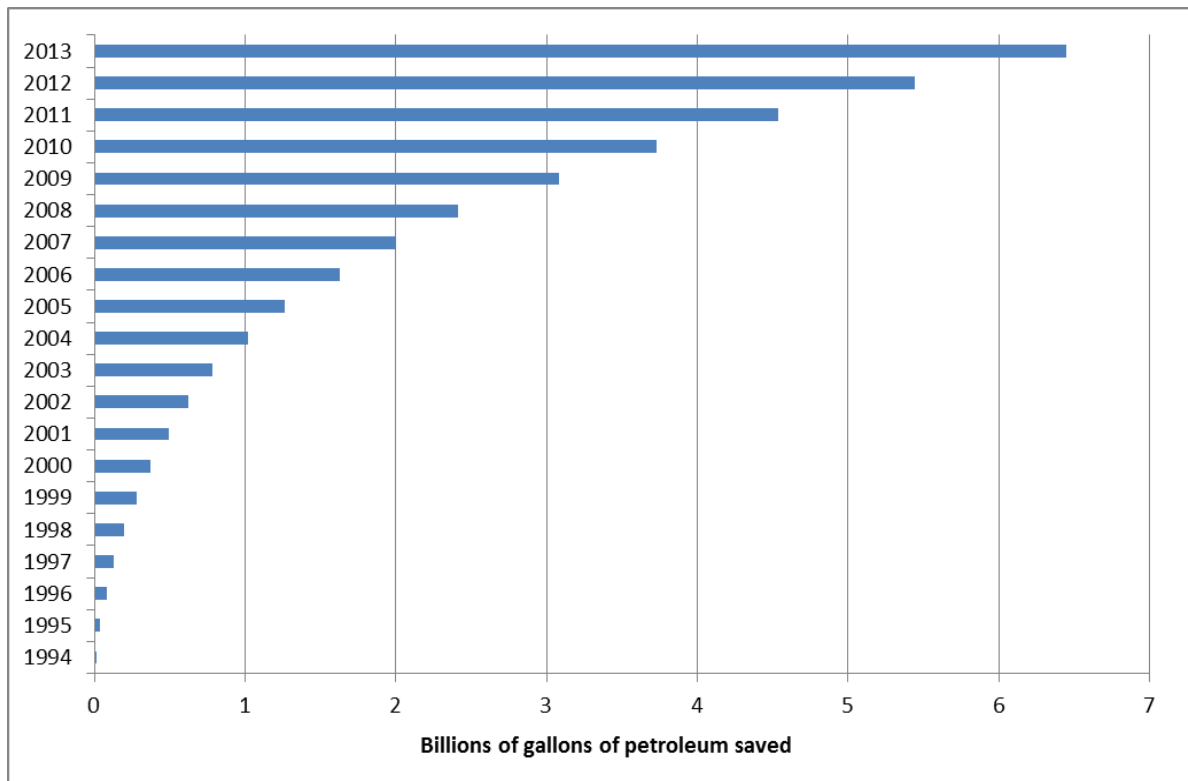


Data from EIA

Alternative Fuel use during Clean Cities 20+ year history

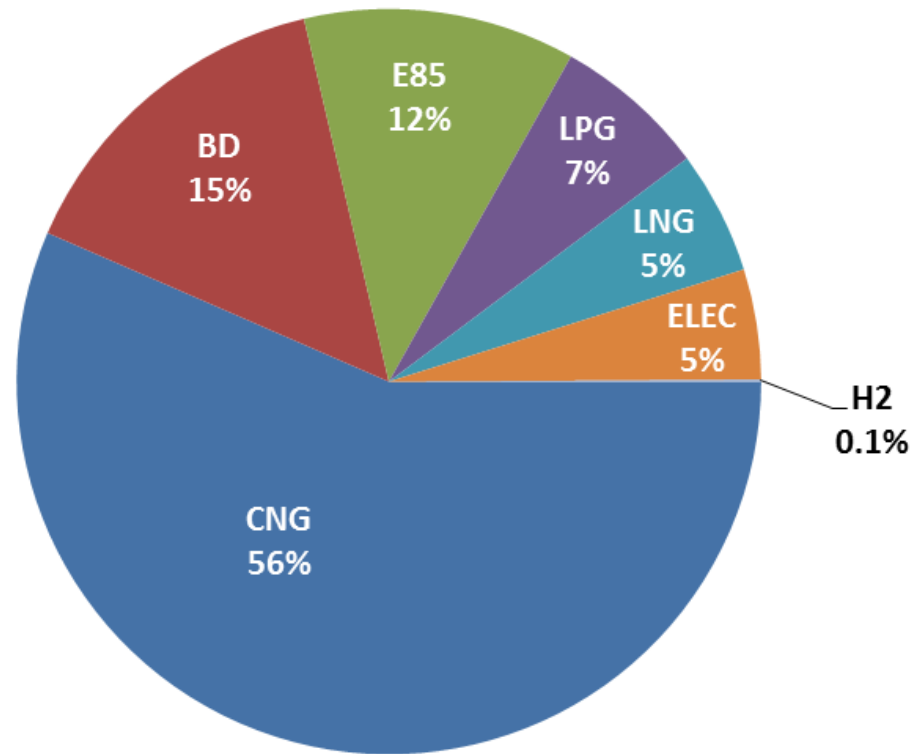
Nearly 6.5 Billion Gallons of Petroleum Reduction since 1993

- Nearly 600,000 AFVs on the road in the US
- Over 14,500 alternative fueling and charging stations
- Long term goal of 2.5B gal/year by 2020



Natural Gas dominates current alt-fuel use

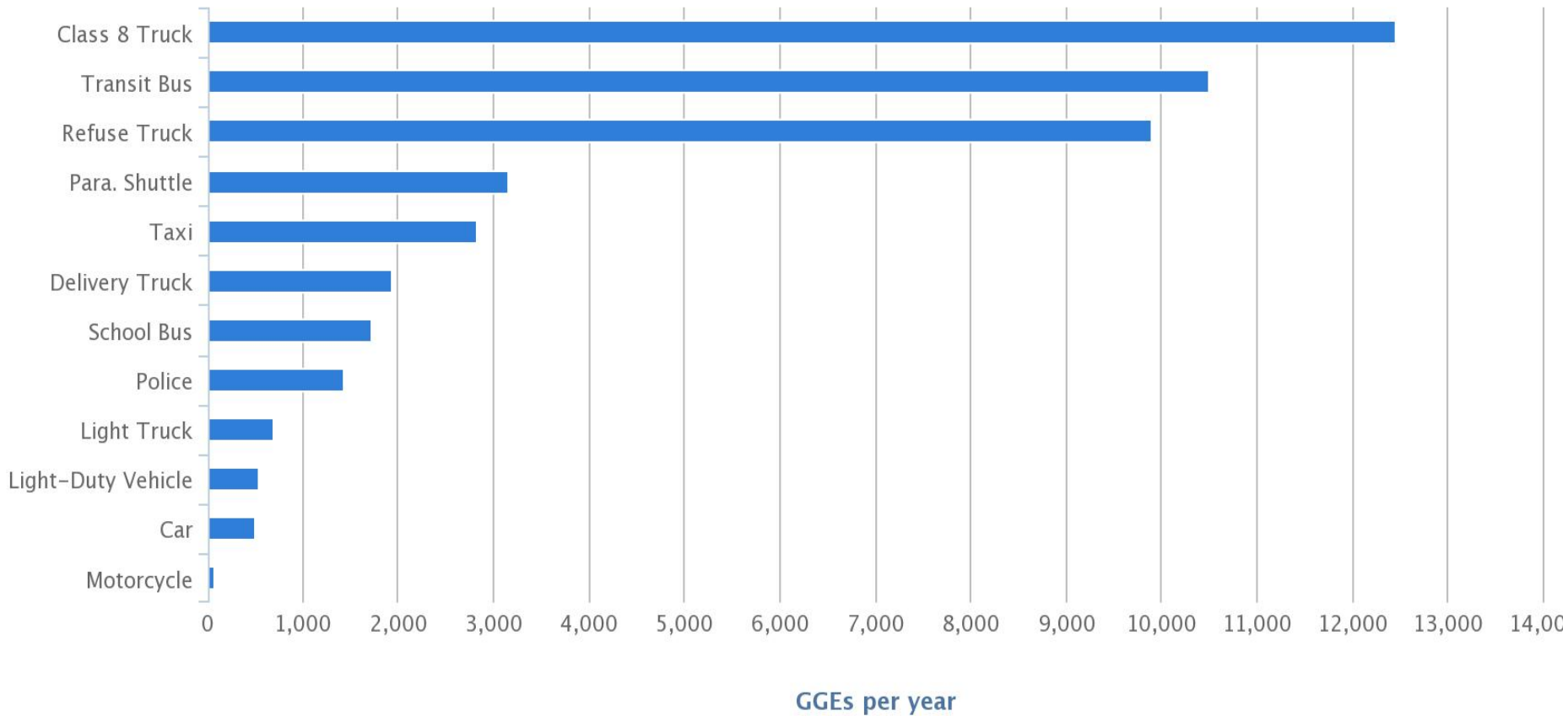
Clean Cities 2013 Petroleum Reduction by AFV Type
(CNG + LNG > 60%)



(based on reported fuel use in Clean Cities territories – for EPACT defined alternative-fuels)

Fuel Consumption and Efficiency

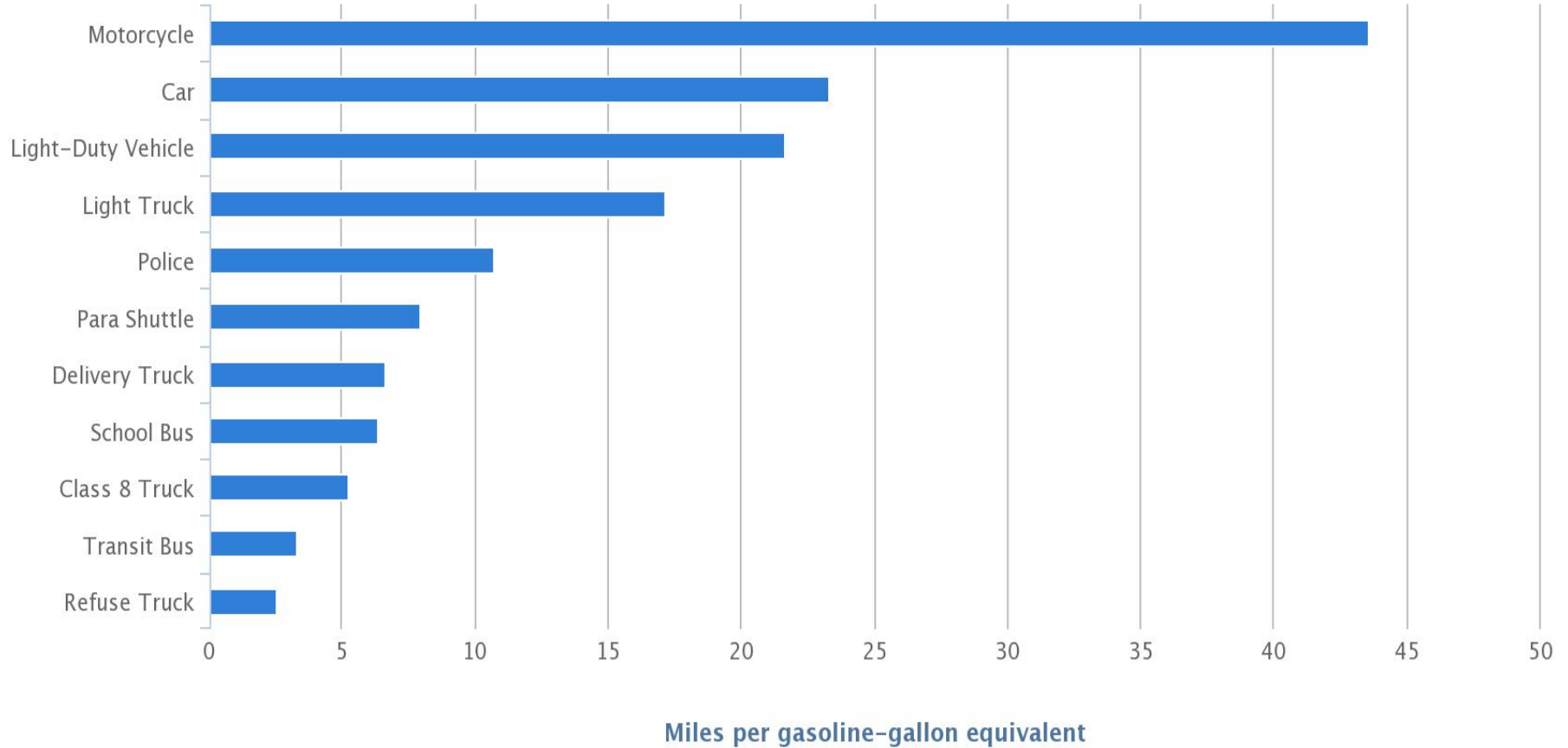
Average Annual Fuel Use of Major Vehicle Categories



Source: Federal Highway Administration Table VM-1 and American Public Transit Association's Public Transportation Fact Book Tables 8, 16, and 21.

Fuel Consumption and Efficiency

Average Fuel Economy of Major Vehicle Categories



Source: Federal Highway Administration Table VM-1 and American Public Transit Association's Public Transportation Fact Book Tables 8, 16, and 21.

US DOE Clean Cities Primary Goal and Results

PRIMARY GOAL:

Mass market adoption of alternative fuel and advanced technology vehicles and smarter driving habits

Reduced Petroleum Use in Transportation

Reduced Greenhouse Gas Emissions

Reduced Dependence on Oil

Improved US Energy, Economic, and Environmental Security

PRIMARY
GOAL
RESULTS

The Clean Cities Model

Leveraging national policies and resources at the local level to facilitate change

Local

Franchise model - coalitions adapt consistent approaches and messages to local market conditions and priorities

National

Conduct mass media and ***online outreach for consumers and fleets***

Provide unbiased tools and experts for ***technical assistance***

Develop ***national partnerships*** with industry and corporate fleets

Provide ***financial assistance*** to incentivize private investment



Local Community Partnerships

Clean Cities Coalitions



Nearly 100 coalitions with thousands of stakeholders

Alternative Fuels Data Center

U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy
EERE Home | Programs & Offices | Consumer Information

Alternative Fuels Data Center

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Fuels & Vehicles


Biodiesel



Electricity


Ethanol


Hydrogen


Natural Gas


Propane


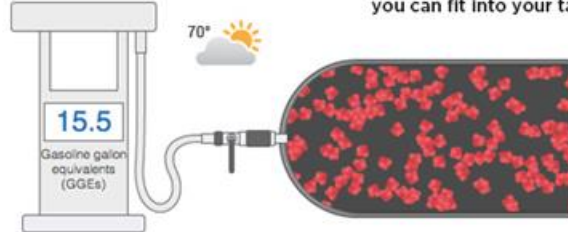


Get Your Fill

Find out how ambient temperatures affect the amount of fuel you can fit into your tank.

15.5

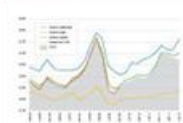
Gasoline gallon equivalents (GGEs)



Maps & Data

- U.S. Alternative Fueling Stations by Fuel Type
- Alternative Fuel Vehicles in Use
- U.S. Hybrid Electric Vehicle Sales by Model

Fuel Prices




Compare alternative fuel prices to gasoline.

Tools

- Laws & Incentives
- Petroleum Reduction Planning Tool
- Vehicle Cost Calculator
- Light-Duty Vehicle Search
- Heavy-Duty Vehicle Search


Station Locator



Find alternative fueling station locations.

Find State Information

GO

Find stations on your iPhone 

Poll

What is the primary reason you use an alternative fuel in your vehicle(s):

afdc.energy.gov

Alternative Fuels Data Center: Tools



Case Studies Search: Find videos and Web stories that document how businesses, fleets, government agencies, and others have successfully deployed alternative fuels and advanced vehicles. Explore case studies at afd.energy.gov/case.



Alternative Fueling Station Locator: Obtain addresses, maps, and driving directions for charging stations and alternative fueling stations; map a driving route with stations identified along the way; determine the total number of stations in a particular state or nationwide.



Light-Duty Vehicle Search: Find and compare light-duty alternative fuel vehicles, electric vehicles, and hybrids.



Heavy-Duty Vehicle Search: Find and compare heavy-duty alternative fuel vehicles, engines, and hybrid propulsion systems.



Incentives and Laws Search: Search our database of state and federal laws and incentives related to alternative fuels and vehicles, air quality, fuel efficiency, and other transportation topics.



Petroleum Reduction Planning Tool: Evaluate options and develop a strategy to reduce conventional fuel use and emissions in fleet and personal vehicles.



Vehicle Cost Calculator: Enter basic information about your driving habits to compare total cost of ownership and emissions for most vehicle models, including those that run on alternative fuels or electricity.



Publications Search: Find publications about alternative fuels and advanced vehicles in this extensive document database. Search for publications at afd.energy.gov/publications.



JOBS Model

Estimate economic impacts of natural gas, hydrogen, or fuel cell infrastructure.

Consumer Information: Video



- > 150 professionally produced segments to date
- Bi-weekly Clean Cities success stories
- Clean Cities YouTube channel – nearly 300 videos



Clean Cities Funding Projects

- **(2009 to present) \$300 M Clean Cities ARRA Awards** - 20 Awards in 36 states (~\$10 - \$15M per award); helped deploy over **1500 AFV stations** and over **8500 AFVs** (*Projects included EVs, CNG, LNG, LPG, H2, E85, and Biodiesel*).
- **(2012) \$11 M Clean Cities Alternative Fuel Implementation Awards** - 20 projects in 30 states + DC (~ \$500k - \$1M per award); to help communities establish action plans, implement sustainable policies, address barriers, and develop incentives (*Projects included EVs, CNG, LNG, LPG, H2, E85, and Biodiesel - did not fund vehicle costs or hardware*).
- **(FY14 FOA) \$4.5M – current funding opportunity for three topic areas**
 - 1: Alternative Fuel Vehicle Demonstration and Enhanced Driver Experience Projects
 - 2: Alternative Fuel Training for First Responders, Public Safety Officials, and Critical Service Providers
 - 3: Incorporating Alternative Fuels into Emergency Response and Preparedness Operations.
- **Notice of Intent - Aggregated Purchasing**

National Clean Fleets Partnership

The 100 largest commercial fleets account for more than 1 million vehicles. Every 2,000 vehicles converted to alternative fuel = 1M gal/year petroleum displacement.



(photo courtesy of White House)

Challenge to top fleets across the country:

- Adopt alternative fuels, advanced vehicles, petroleum reduction plans
- Be pace-setters for others to follow

26 Partners



(logos used with permission of companies represented)

Contact Information & Important Links

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Clean Cities Website: www.cleancities.energy.gov

Clean Cities Coordinators: www.eere.energy.gov/cleancities/progs/coordinators.php

Alternative Fuels & Advanced Vehicles Data Center: www.afdc.energy.gov