Overview

• About the Clean Cities Program
• Current Projects in the Western U.S.
  – ARRA Projects (~$300M)
  – FY09 Projects (~$13.6M)
• Clean Cities Tools and Resources
• Clean Cities Sponsored Research
• National Partner Efforts
Clean Cities’ Mission
To advance the energy, economic, and environmental security of the U.S. by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption in the transportation sector.

- Sponsored by the DOE’s Office of Energy Efficiency and Renewable Energy's Vehicle Technologies program
- Provides a framework for businesses and governments to work together as a coalition to enhance markets
- Coordinate activities, identify mutual interests, develop regional economic opportunities, and improve air quality
Clean Cities Today

- 87 active coalitions in 45 states
- Coalitions serve 78% of the population
- 632,000 AFVs using alternative fuels
- 5,600 AFV stations
- 6,500+ stakeholders
Clean Cities Regional Structure

- **Northwest Region**
  Kay Kelly  
  Kay.Kelly@go.doe.gov  
  (720) 356-1604

- **South Central Region**
  Neil Kirschner  
  Neil.Kirschner@netl.doe.gov  
  (412) 386-5793

- **Western Region**
  Mike Bednarz  
  Michael.Bednarz@netl.doe.gov  
  (412) 386-4862
Petroleum Displacement Methods

- **Replace** petroleum with alternative fuels and low-level blends.

- **Reduce** by promoting energy efficiency in vehicles through advanced technologies and more fuel efficient vehicles.

- **Eliminate** by promoting idle reduction, greater use of mass transit, trip elimination, and other congestion mitigation approaches.
Clean Cities Portfolio of Technologies

Alternative Fuels & Vehicles
- Biodiesel (B100)
- Electricity
- Ethanol (E85)
- Hydrogen
- Natural gas
- Propane

Fuel Blends
- Biodiesel/diesel blends (B2, B5, B20)
- Ethanol/gasoline blends (E10)
- Hydrogen/natural gas blends (HCNG)

Fuel Economy
- Fuel efficiency
- Behavioral changes
- Vehicle maintenance initiatives
- Vehicle miles traveled (VMT)

Hybrids
- Light- and Heavy-duty HEVs
- PHEVs

Idle Reduction
- Heavy-duty trucks
- School buses
- Truck stop electrification
Clean Cities ARRA Projects
More than 2,000 alternative fuel refueling or charging stations will be installed or upgraded. Of these, 1,564 will be electric charging stations.
Clean Cities Recovery Act Projects

Planned New & Existing Refueling Infrastructure by Accessibility

- **New**
  - Private: 405
  - Public: 1463

- **Upgraded**
  - Private: 21
  - Public: 206
Clean Cities Recovery Act Projects
Planned Vehicle Distribution by Fuel/Technology

**MDV/HDV Distribution**
3,634 vehicles

- LPG: 754
- CNG: 1,106
- PHEV: 39
- LNG: 616
- HHV: 55
- HEV: 816

**LDV Distribution**
5,473 vehicles

- LPG: 2,263
- CNG: 1,472
- EV: 271
- HEV: 1,102
- LNG: 365
- HHV: 0

*9,107 total planned vehicle orders*
Sample Project Partners

- **National Fleets**
  - United Parcel Service
  - Sysco
  - Coca Cola
  - Verizon
  - Waste Management
  - Frito Lay
  - Ryder
  - Fed Ex
  - Allied Waste
  - Canteen Vending

- **Other National Companies**
  - Staples
  - ConnocoPhillips
  - Marriott
  - Hilton
  - The Parking Spot

- **Industry Partners**
  - Clean Energy
  - Blossman Gas
  - Clean FUEL USA
  - Gas Technology Institute
  - National Alt Fuels Training Consortium
  - Propane Education & Research Council
  - Daimler Trucks North America
  - Bluebird
  - Freightliner Trucks
  - CALSTART

- **Utilities**
  - Questar Gas
  - Peoples Gas
  - National Grid
  - Citizens Energy
  - DTE Energy
  - Commonwealth Edison
Sample Project Partners (cont)

- **Regional/Local Fleets/Companies**
  - Atlantic City Jitney Association
  - Meijer
  - Rumpke
  - Enviro Express
  - Manhattan Beer Distributors
  - Westchester Ambulette
  - Central Jersey Waste

- **Local Taxi Companies**
  - Red Top Cab (DC)
  - Columbus Green Cabs (OH)
  - Cleveland Yellow Cab (OH)
  - Yellow Cab (Hartford CT)
  - Happy Cab (Omaha NE)

- **Colleges/Universities**
  - University of Missouri KC
  - University of Michigan
  - University of Wisconsin-Madison
  - Washington State University
  - SUNY-Albany
  - James Madison University
  - University of Utah

- **State/Local Governments/Agencies**
  - California Energy Commission
  - Dallas-Ft. Worth Int’l Airport
  - City of Milwaukee
  - Seattle-Tacoma Int’l Airport
  - Indiana DOT
  - Ann Arbor Transportation Authority
  - Wisconsin DOT
  - LA Unified School District
  - Nassau & Suffolk Counties (NY)
  - Hartsfield-Jackson Atlanta Int’l Airport
SCAQMD: UPS Ontario – Las Vegas LNG Corridor Extension Project

**Target:** Complete LNG Fueling Corridor across Southwestern U.S. from Southern California to Utah (700 mile link on the nation’s most heavily traveled goods movement truck routes) through the construction of a publicly accessible LNG fuel station in Las Vegas, Nevada. UPS will also deploy 48 heavy-duty LNG vehicles.

**Budget**
- Total project funding
  - DOE share: $5,591,610
  - Contractor share: $6,268,223

**Partners**
- Project lead: SCAQMD
- Project partners:
  - United Parcel Service,
  - Eastern Sierra Regional Clean Cities Coalition,
  - Southern California Clean Cities Coalition

**Timeline**
- Start: September 2009
- End: December 2013
Existing LNG Station

LNG Station Under Development

LNG Station Needed to Complete the ICTC Corridor

Major Existing LNG Production Plant
SANBAG: Natural Gas Truck Project

**Project Objective:** Purchase more than 200 new OEM natural gas heavy duty trucks, construct two natural gas fueling stations (liquefied, compressed natural gas, or both), upgrade three facilities to accommodate natural gas vehicle maintenance, provide training, administration, technical assistance and provide outreach on project benefits

**Timeline**
- Start: December 23, 2009
- End: December 22, 2013
- Percent complete: 8%

**Budget**
**Total Project Funding**
- DOE: $9,950,708
- CEC: $9,308,000
- Ryder: $20,000,000*

Total = $39,258,708.00

* Under review, being finalized

**Partners**
- Department of Energy
- California Energy Commission
- Ryder Truck Rental, Inc.
- Gladstein, Neandross & Associates (GNA) providing Administration & Technical
- Southern California Association of Governments (SCAG), acting as the Clean Cities’ Coalition
Project Objective: The Port of Los Angeles and Port of Long Beach represent the largest Port complex in the U.S. Heavy-duty diesel trucks serving the Ports are a significant source of air pollution in the region. This grant will help to replace 450 diesel drayage trucks with Natural Gas trucks. The project will reduce consumption of diesel fuel by 5.58 million gallons per year. The project will also result in at least a 25% reduction in greenhouse gas emissions.

Timeline:
- Start: January 2010
- Finish: January 2014
- Anticipated 450 LNG trucks deployed by 6/30/10

Budget:
- Total Project Funding: $33,740,000
  - DOE: $9,408,389
    - $7,967,550 for trucks
    - $500,000 education/outreach
    - $940,839 administrative
  - Cost Share: $24,331,611

Partners:
- Project Lead: South Coast Air Quality Management District
- U.S. DOE
- California Air Resources Board
- Ports of Los Angeles and Long Beach
- U.S. EPA
- SCAG Clean Cities Coalition
Project Objective

- Deploy ~800 propane vehicles
- Install/upgrade 35 propane fueling stations
- Operate concurrent public education and training programs

Budget

- $45,159,853
  - DOE share: $12,633,080
  - Cost share: $32,526,773

Timeline

- Start: February 1, 2010
- End: January 31, 2014
- Less than 50 percent complete

Partners

- School districts
- Cities/counties
- Central Texas Clean Cities
Railroad Commission of Texas

Partners

El Paso area

<table>
<thead>
<tr>
<th>School District</th>
<th>Estimate</th>
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<tbody>
<tr>
<td>El Paso ISD</td>
<td>$762,428</td>
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<tr>
<td>Ysleta ISD</td>
<td>$278,850</td>
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DFW area

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<tr>
<th>School District</th>
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<tbody>
<tr>
<td>Arlington ISD</td>
<td>$508,174</td>
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<tr>
<td>Dallas County Schools</td>
<td>$567,300</td>
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<td>Grapevine-Colleyville ISD</td>
<td>$139,250</td>
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<td>Haltom City</td>
<td>$169,200</td>
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<tr>
<td>Prosper ISD</td>
<td>$232,410</td>
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Houston area

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<th>School District</th>
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<tbody>
<tr>
<td>Alvin ISD</td>
<td>$587,376</td>
</tr>
<tr>
<td>Angleton ISD</td>
<td>$216,094</td>
</tr>
<tr>
<td>Houston Gateway Academy</td>
<td>$101,882</td>
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<tr>
<td>Splendora ISD</td>
<td>$134,514</td>
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San Antonio area

<table>
<thead>
<tr>
<th>School District</th>
<th>Estimate</th>
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<tbody>
<tr>
<td>Marion ISD</td>
<td>$134,514</td>
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<tr>
<td>New Braunfels ISD</td>
<td>$134,514</td>
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<tr>
<td>Northside ISD</td>
<td>$544,706</td>
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<tr>
<td>City of San Antonio</td>
<td>$938,219</td>
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<tr>
<td>Southwest ISD</td>
<td>$97,896</td>
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Rio Grande Valley

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<tr>
<th>School District</th>
<th>Estimate</th>
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<tbody>
<tr>
<td>Rio Honda ISD</td>
<td>$32,632</td>
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<tr>
<td>South Texas ISD</td>
<td>$148,322</td>
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Austin area

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<th>School District</th>
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<tbody>
<tr>
<td>Austin ISD</td>
<td>$236,396</td>
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<tr>
<td>Capital Area Rural Transportation System</td>
<td>$282,890</td>
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<tr>
<td>Eanes ISD</td>
<td>$278,850</td>
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<tr>
<td>Railroad Commission of Texas</td>
<td>$78,596</td>
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<tr>
<td>Texas Adjutant General’s Department</td>
<td>$289,175</td>
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<tr>
<td>Texas Department of Transportation*</td>
<td>$2,884,000</td>
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<tr>
<td>Williamson County</td>
<td>$208,420</td>
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</table>

Other

<table>
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<tr>
<td>Gregory-Portland ISD</td>
<td>$16,316</td>
</tr>
<tr>
<td>City of Levelland</td>
<td>$14,000</td>
</tr>
<tr>
<td>Lumberton ISD</td>
<td>$7,000</td>
</tr>
<tr>
<td>Ramirez Common School District</td>
<td>$16,316</td>
</tr>
<tr>
<td>Orange County</td>
<td>$291,190</td>
</tr>
</tbody>
</table>
Texas State Technical College: Development of National Liquid Propane (Autogas) Refueling Network, Clean School Bus/Vehicle Incentive & Green Jobs Outreach Program

PROJECT OBJECTIVES
• Develop a total of 184 public accessible Autogas refueling stations in the following targeted cities:
  • Atlanta, Chicago, Houston, Denver, Sacramento, Los Angeles, Dallas, Phoenix, Indianapolis, Seattle, Orlando, San Diego, St. Louis, San Antonio, Oklahoma City, Austin and southwest Louisiana
• Purchase 90 LP buses for Los Angeles Unified School District (LAUSD)
• Purchase 23 other LPG Utility Trucks/Shuttles
• Training

BUDGET
- DOE - $12.3M
- Cost Share - $24.5M
- Total - $36.8M

PARTNERS
• CleanFUEL Holdings, Inc.
• Public Solutions Group, Ltd.
• Rush Truck Centers
• 17 Clean Cities Coalitions

TIMELINE
Start Jan 2010
End Dec 2011
5% complete
North Central Texas: Alternative Fuel & Advanced Technology Investment Project

**Project Objective:** Fund 373 Vehicles (CNG, Hybrid and Electric) and 11 Refueling Sites (CNG, Biodiesel, Ethanol and Electric)

**Timeline**
- Start January 29, 2010
- End January 28, 2014
- Project ~15% Complete

**Budget**
- Total Project $39,378,756
- DOE Funds $13,181,171
- Cost Share $23,197,585
- 36% Federal / 64% Match

**Subrecipient Partners**
- Local Governments
- School Districts
- Private Sector Companies
- International Airport
- Non-Profit Organization
# Puget Sound Clean Cities: Petroleum Reduction Project

## Timeline
- **Start date:** Dec 3, 2009
- **End date:** Dec 2, 2011
- **Percent complete:** 10%

## Project Objectives
- 230 vehicles in local gov’t fleets
- 225 vehicles in taxi and shuttle fleets
- 540 GSEs at Sea-Tac Airport
- 4 Refueling Stations (Biogas, Biodiesel, Ethanol)
- ~130 Electric Chargers

## Budget
- **DOE share:** $15 M
- **Recipient share:** $22 M
- **Total Project:** $37 M

## Partners
- **Lead:** Puget Sound Clean Air Agency
- **Partners:** 14 municipalities, 3 universities, 7 private businesses
Project Objective:
- Achieve a significant reduction in petroleum consumption by switching the majority of the trucks used by the largest refuse hauler in the Treasure Valley (Allied Waste) from diesel to CNG
- Create a sustainable market for CNG as a transportation fuel in the Treasure Valley through the development of two public fueling stations (one in Boise and one in Nampa) and promotion of CNG fuel use by additional fleets and individuals

Budget
- Total project funding - $12,358,939
  (DOE - $5,519,862 / Match - $6,839,077)

Partners
- Treasure Valley Clean Cities Coalition
- Allied Waste (largest refuse hauler in the Treasure Valley)

Timeline
- Start date - Jan. 2010
- End date - Jan. 2014
Project Objectives

• Purchase 333 vehicles (CNG, Hybrid and Electric)
• 36 Infrastructure Locations (CNG, E85, Biodiesel and Electric)

Timeline

• Start: Dec 28, 2009
• Finish: Dec 27, 2013
• 2% complete

Budget

• Total project $31,744,788
  ▪ $14,999,905 federal
  ▪ $16,744,883 partner

Partners

American Energy Engineering
City of Kansas City, Missouri
City of Lawrence, Kansas
City of Lee's Summit, Missouri
City of Wichita, Kansas
Happy Cab Company
Kansas City Power & Light
Kansas City, Kansas School District USD500
Lee's Summit School District R-7
Lincoln Airport Authority
Margo Leasing - Wil Fischer
Metropolitan Community College
Metropolitan Utilities District
O’ Daniel Honda
University of Missouri at Kansas City
Zarco 66 Earth Friendly Fuels
Project Objective:
To reduce petroleum use in Utah by increasing the number of CNG, LNG, Hybrid, and biodiesel vehicles on the road and creating an I-15 corridor for alternative fuels

Timeline
Start: January 28, 2010
Finish: January 27, 2017

Budget
• Total project funding
  – DOE share:
    ▪ $14,906,648.00
  – Recipient share:
    ▪ $37,458,715.00

Partners
The state of Utah and numerous universities, private companies, and municipalities are contributing vehicles or stations toward this project.
Anticipated public NGV sites after the grant
Clean Cities FY09 Projects
1. Refueling Infrastructure for Alternative Fuels
   A  Biofuels
   B  Terminal Blending & Gaseous Fuels
2. Incremental Cost of Alternative Fuel Vehicles
3. Education and Outreach Projects

23 Awards
$13.6M
Refueling Infrastructure

- **Kum & Go, L.C.** (partnered with the Iowa Department of Natural Resources, Iowa Corn Growers Association, Iowa Renewable Fuels Association, National Ethanol Vehicle Coalition, and the Iowa Farm Bureau to increase the number of E85 fueling facilities available along interstate highways.) was selected for negotiation of an award of up to $1 million to develop 30 E85 (85% ethanol, 15% gasoline) fueling stations across seven states.

- **The National Biodiesel Foundation** (partnered with Amerigreen, GROWMART, Intercontinental Fuels, LLC, Premium Biodiesel, and VERT Biodiesel) was selected for negotiation of an award of up to $729,761 to install seven biodiesel blending terminals and provide biodiesel to distributors in several regions of the country, including New Jersey, California, Pennsylvania, Illinois, Texas, and Virginia.

- **The City of Dallas** (partnered with Clean Energy) was selected for negotiation of an award of up to $150,000 to expand the city's compressed natural gas (CNG) fueling infrastructure and increase its ability to fuel heavy-duty refuse trucks with CNG.

- **The City of Tulsa** (partnered with the Indian Nations Council of Governments, Oklahoma Department of Central Services, Oklahoma Natural Gas, and Tulsa Gas Technologies) was selected for negotiation of an award of up to $300,000 to expand its use of city-owned CNG vehicles and public knowledge about the benefits of CNG.
• **Utah Clean Cities** (partnered with Questar Gas) was selected for negotiation of an award of up to $150,000 to install four CNG dispensing units.

• **Temecula Valley Unified School District** (partnered with Gas Equipment Systems, Inc., and the Southern California Gas Co.) was selected for negotiation of an award of up to $150,000 to install CNG dispensers to support the district's fleet conversion from diesel to CNG buses.

• **CleanFUEL USA** (partnered with Project partners include ConocoPhillips Oil Co., the Propane Education & Research Council, Atlanta Clean Cities, Chicago Area Clean Cities, Middle Georgia Clean Cities, South Shore Clean Cities, and Denver Metro Clean Cities) was selected for negotiation of an award of up to $600,000 to install a network of five propane stations in selected metropolitan areas.

• **The South Coast Air Quality Management District** was selected for negotiation of an award of up to $150,000 to install a new liquefied natural gas storage tank and dispenser at the Los Angeles/Ontario International Airport.
Alternative Fuel Vehicles

- **Schwan's Home Service, Inc.** (partnered with Bi-Phase Technologies, LLC, and Monroe Truck Equipment) was selected for negotiation of an award of up to $500,000 to purchase 150 medium-duty trucks and convert them to propane to be used at 35 Schwan's facilities in Texas.

- **Clean Energy** was selected for negotiation of an award of up to $500,000 to purchase 71 CNG vehicles that will provide transportation at airports in Atlanta, Austin, Dallas, Houston, San Antonio, Santa Ana, and Los Angeles.

- **South Coast Air Quality Management District** was selected for negotiation of an award of up to $500,000 for an incentive buy-down program for CNG taxicabs and shuttle vans serving the California South Coast Basin.
• The Regents of the University of California and University of California-San Diego (partnered with and the San Diego Clean Cities coalition) were selected for negotiation of an award of up to $500,000 to purchase five electric hybrid CNG microturbine buses to support campus commuters.

• The State of Oklahoma Department of Central Services was selected for negotiation of an award of up to $500,000 to purchase 15 new light-duty CNG vehicles and convert 105 existing light-duty and medium-duty vehicles to CNG.

• The City of San Antonio (partnered with the Alamo Area Clean Cities Coalition, the Texas Transportation Institute, and the Alamo Area Council of Governments) was selected for negotiation of an award of up to $260,000 for the purchase of 65 new light duty propane trucks.
Education and Outreach Projects

• **North Carolina State University** (partnered with Wake Technical Community College) was selected for negotiation of an award of **up to $401,852** to hold 48 workshops **across the country** to raise awareness about alternative fuels and advanced transportation technologies.

• **West Virginia University Research Corp.** (partnered with the National Alternative Fuels Training Consortium) was selected for negotiation of an award of **up to $1.6 million** to develop classroom materials to raise awareness of alternative fuels and advanced vehicle technologies.

• **The Alternative Fuel Trade Alliance** (which includes the Renewable Fuels Association, the National Biodiesel Foundation, the Clean Vehicle Education Foundation, and the Propane Education and Research Council) was selected for negotiation of an award of **up to $1.6 million** to hold more than 45 workshops and at least 64 stakeholder events to increase knowledge about alternative fuels and advanced vehicle technologies.
Clean Cities Tools & Resources
Clean Cities Web Resources

Clean Cities
AFDC
FuelEconomy.gov
Clean Cities Web Site

www.eere.energy.gov/cleancities

- Financial opportunities
- Contact information
  - Coalitions
  - Program staff
- Information resources
  - Newsletters
  - Technology bulletins
  - Technical assistance
Fuel economy information

- Side-by-side comparisons
- Fuel economy ratings
- Carbon footprint
- Average annual fuel cost

www.FuelEconomy.gov
## Fuel Economy Information

### Compare Side-by-Side

<table>
<thead>
<tr>
<th></th>
<th>2009 Hummer H3 4WD</th>
<th>2009 Toyota Prius</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remove</td>
<td>Remove</td>
</tr>
<tr>
<td>New EPA MPG</td>
<td></td>
<td>49.6</td>
</tr>
<tr>
<td>Regular Gasoline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>City</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Hwy</td>
<td>48</td>
<td>46</td>
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<tr>
<td>Hybrid Vehicle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined</td>
<td>14</td>
<td>46</td>
</tr>
</tbody>
</table>

### MPG Estimates from Drivers Like You

User fuel economy estimates are not yet available for this vehicle.

Average based on 11 vehicles.

### Fuel Economics

<table>
<thead>
<tr>
<th></th>
<th>2009 Hummer H3 4WD</th>
<th>2009 Toyota Prius</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost to drive 25 Miles</td>
<td>$4.36</td>
<td>$1.33</td>
</tr>
<tr>
<td>Fuel to Drive 25 Miles</td>
<td>1.79 gal</td>
<td>0.54 gal</td>
</tr>
<tr>
<td>Cost of a Fill-up</td>
<td>$50.51</td>
<td>$26.13</td>
</tr>
<tr>
<td>Miles on a Tank</td>
<td>290 miles</td>
<td>493 miles</td>
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<tr>
<td>Tank Size</td>
<td>23.0 gal</td>
<td>11.9 gal</td>
</tr>
<tr>
<td>Annual Fuel Cost*</td>
<td>$2613</td>
<td>$794</td>
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</table>

Based on 45% highway driving, 55% city driving, 15,000 miles/year and Res.: $2.44 per gallon. Click to use your gas prices and annual miles.

### Energy Impact Score

- Annual Petroleum Consumption (1 barrel = 42 gallons)
  - 24.5 barrels
  - 7.4 barrels

### Annual Tons of CO₂ Emitted

- 13.1
- 4.0

### EPA Air Pollution Score

- Air Pollution Score
  - Best: 7
  - Best: 8
AFDC Web Site – www.afdc.energy.gov

- Alternative fueling station locator
- Incentives and laws
- Clean fleet guide
- Data, analysis, and trends
- Alternative fuel price report
- Technology bulletins & newsletters
- State-specific Web pages
- Vehicles searches
- Cost calculators
- Idle reduction equipment listing and search options
- Searchable document database

…and MORE!
Data stored in the Alternative Fuels and Advanced Vehicles Data Center (AFDC) can provide insight to policymakers, entrepreneurs, fuel users, and other parties interested in reducing petroleum consumption. The National Renewable Energy Laboratory analyzes transportation-related data and identifies trends related to alternative fuels and vehicles. These analyses are posted in the AFDC as technical reports and Excel spreadsheets that can be manipulated by outside users. To provide the most robust collection of information possible, this section also includes links to data analyses from outside the AFDC. These sources are noted in each file.

This page serves as a table of contents for the Data, Analysis, and Trends section. For more information, choose the following links.

- Vehicles
- Fuels
- Infrastructure
- Biomass Resources
- Geographic
- Incentives and Laws
- Clean Cities
- State and Alternative Fuel Provider Fleets
- Federal Fleets
- Data Collection Methodologies

For more information about the data, analysis, and trends presented on these pages, please contact Gayle Johnson at the National Renewable Energy Laboratory.
AFDC Incentives & Laws

Colorado Incentives and Laws
Last Updated July 2006

The Colorado legislature meets annually from early January to early May. During the session, the governor must sign or veto legislation within 10 days of transmission (except Sundays) or it becomes law without signature. Legislation transmitted to the governor within the last 10 days of the session must be acted upon within 30 days after the last day of the session or it becomes law without signature.

Colorado is the home of the Denver Metro (www.lumcolorado.org/CleanCities.htm), Northern Colorado (www.northcolccleancities.com), and Southern Colorado Clean Cities Coalitions. Coordinator contact information is listed in the Points of Contact section.

View All Colorado Summaries

State Incentives
- Biofuels Research Grants
- Alternative Fuel Vehicle (AFV) and Hybrid Electric Vehicle (HEV) Tax Credit
- Alternative Fuel Vehicle (AFV) Rebate
- Alternative Fuel Infrastructure Tax Credit
- High Occupancy Vehicle (HOV) Lane Exemption
- Low Emission Vehicle (LEV) Sales Tax Exemption

State Laws and Regulations
- Clean Energy Development Authority
- Funding for Alternative Fuel Feedstock Production
- Promulgation of Renewable Fuel Storage Tank Regulations
- Alternative Fuel Use and Vehicle Acquisition Requirement
- Alternative Fuel Definition
- Alternative Fuel Vehicle (AFV) Registration
- Alternative Fuel Vehicle (AFV) Weight Limit Exemption
- Alternative Fuels Tax and Vehicle Decal
- Gasoline Gallon Equivalent Definition
- Idle Reduction Requirement - Denver
- Idle Reduction Requirement - Aspen

Utilities/Private Incentives
- Natural Gas Fuel Rate Reduction and Infrastructure Maintenance
- Natural Gas Infrastructure Technical Assistance

Colorado Points of Contact

View All Expired Colorado Laws

Learn about our data collection methodologies.
AFDC Mobile Alternative Fueling Station Locator

Fuel Type
- Biodiesel (B20 and above)

Location
Enter a city, postal code, or address
- 80204

Include private stations
Not all stations are open to the public. Choose this option to also search private fueling stations.

Search

Caution: The AFDC recommends that users verify that stations are open, available to the public, and have the fuel prior to making a trip to that location. Some stations in our database have addresses that could not be located by the Station Locator application. This may result in the station appearing in the center of the zip code area instead of the actual location.

If you're having difficulty, please contact the technical response team at 800-254-6735. They will be able to assist you.
AFDC PREP Tool

Petroleum Reduction Plan
Scenario Name: Test2
Annual Petroleum Reduction Goal: 250,000 GGE

Based on your inputs, this is your petroleum reduction goal and associated plan. You may print the information on this page and use it to help you reach your goal. If you are a registered user, this scenario is saved in the system and you may make changes at a future time.

To alter your plan, return to Step 2.

Alternative Fuels

<table>
<thead>
<tr>
<th>AFV Type</th>
<th>AFV Fuel</th>
<th>Number of AFVs</th>
<th>Average VMT</th>
<th>Fuel Economy (mpg)</th>
<th>Fraction of Fuel Use</th>
<th>GGE Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Pickup/Utility</td>
<td>LPG</td>
<td>50</td>
<td>10000</td>
<td>20</td>
<td>1</td>
<td>25000</td>
</tr>
<tr>
<td>Midsize Car</td>
<td>E85</td>
<td>100</td>
<td>15000</td>
<td>25</td>
<td>1</td>
<td>47400</td>
</tr>
<tr>
<td>HD Truck &gt; 26k lb</td>
<td>CNG</td>
<td>25</td>
<td>15000</td>
<td>5</td>
<td>1</td>
<td>86025</td>
</tr>
<tr>
<td><strong>TOTAL GGE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>158425</strong></td>
</tr>
</tbody>
</table>

Hybrid Electric Vehicles (HEVs)

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Number of Vehicles</th>
<th>Average VMT</th>
<th>Fuel Economy of new HEVs</th>
<th>Fuel Economy of Old Vehicles</th>
<th>GGE Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>75</td>
<td>15000</td>
<td>45</td>
<td>30</td>
<td>12500</td>
</tr>
<tr>
<td><strong>TOTAL GGE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>12500</strong></td>
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</tbody>
</table>

Biodiesel Blends

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>Blend Type</th>
<th>Number of Vehicles</th>
<th>Average VMT</th>
<th>Fraction of Fuel Use</th>
<th>Fuel Economy</th>
<th>GGE Reduced</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD Truck &gt; 26k lb</td>
<td>B50</td>
<td>50</td>
<td>15000</td>
<td>1</td>
<td>5</td>
<td>80777</td>
</tr>
<tr>
<td><strong>TOTAL GGE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>80777</strong></td>
</tr>
</tbody>
</table>
Clean Cities

AFDC TransAtlas

Alternative Fuels & Advanced Vehicles Data Center

Geographic
Implementing advanced vehicles, fuels, and infrastructure must be coordinated geographically, as well as temporally. Maps facilitate this coordination. This page features maps that illustrate the convergence of flexible fuel vehicles (FFVs), Clean Cities coalitions, alternative fueling stations, fuel production facilities, and transportation routes for EBs. Also available are maps highlighting U.S. biomass production and areas of highest potential for hydrogen consumption.

TransAtlas

This interactive map uses a Google Maps interface to display:
- existing and planned alternative fueling stations
- alternative fuel production facilities
- light-duty vehicle density
- roads and political boundaries

Users can customize the map display, print, and query the underlying data.

TransAtlas is part of a suite of geographic analysis tools for renewable energy developed at the National Renewable Energy Laboratory.

The following tables feature PDF and JPG files that can be downloaded and saves, Download Adobe Reader.

### EBs Maps

<table>
<thead>
<tr>
<th>Description</th>
<th>File</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBs FFVs, Clean Cities Coalitions, and EBs Refueling Stations</td>
<td>Downloaded Map</td>
</tr>
<tr>
<td>FFV Registrations by Zip Code</td>
<td>Downloaded Map</td>
</tr>
<tr>
<td>US Federal FFV Fleets and EBs Stations</td>
<td>Downloaded Map</td>
</tr>
<tr>
<td>Minnesota Ethanol Infrastructure and Population</td>
<td>Downloaded Map</td>
</tr>
</tbody>
</table>

### Biomass and Hydrogen Maps

<table>
<thead>
<tr>
<th>Description</th>
<th>File</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomass Resources Available in the United States</td>
<td>Downloaded Map</td>
</tr>
<tr>
<td>Hydrogen Infrastructure Demand Consumer Strategy</td>
<td>Downloaded Map</td>
</tr>
</tbody>
</table>
AFDC Light- and Heavy-Duty Vehicle Search

Hard copy guide will be available soon!
AFDC RSS Feed

RSS Feed
Stay connected with the Alternative Fuels and Advanced Vehicles Data Center (AFDC) and Clean Cities Web sites through RSS (Really Simple Syndication). RSS is a convenient way to automatically track new information posted online.

How do I use RSS?
The first step in using RSS is choosing a feed reader. Also known as news aggregators, these programs are available online and are free to download. A list of free readers is available in Google's News Reader Directory, plus many Web browsers have integrated feed readers.

Once you have a reader in place, subscribe to RSS feeds on your favorite Web sites. Your news reader will then automatically check your RSS feeds for new items. When found, it will list them in an easy-to-scan format. If an item is of interest to you, click on it to read it in full.

How do I subscribe to the AFDC RSS feed?
When your reader is in place, click the orange XML button below to open the AFDC RSS feed. If your news reader is configured to open feeds automatically, news should automatically pop up in the reader. However, if you see code in your browser, copy the AFDC RSS feed URL (http://www.eere.energy.gov/afdc/rss/rss.xml), open your reader, and paste it into the subscription field.

Subscribe to the AFDC RSS feed: 

AFDC RSS Feed

National Fuel Efficiency Policy Aims to Increase Fuel Economy and Reduce GHG
President Obama has set in motion a new policy aimed at increasing fuel economy and reducing greenhouse gas emissions for all new cars and trucks sold in the U.S. The new standards will require an average fuel economy of 35.5 mpg in 2016 and are projected to save 1.8 billion barrels of oil over the life of the program. Read more...

LA Port Launches 2009 Alternative Fuel Truck Incentive Program
The Los Angeles Harbor Commission has approved up to $44.2 million toward the 2009 Clean Truck Incentive Program at the Port of Los Angeles. The incentives are targeted to bring trucks that run on liquefied natural gas, compressed natural gas, or lithium battery electric power into service at the port. Read more...

Clean Cities Publishes Goals, Strategies, and Top Accomplishments
Clean Cities has published a fact sheet outlining its goals, strategies, and top accomplishments. Goals include developing regional fueling infrastructure, partnering with national fleets, and developing interstate alternative fuel corridors. Read more...

Vice President Announces $300 Million for Clean Cities Program
Vice President Joe Biden announced $300 million in funding from the American Recovery and Reinvestment Act for state and local governments, and transit authorities to expand the nation’s fleet of clean, sustainable vehicles and the fueling infrastructure necessary to support them. “For city and state governments across this country, every day is Earth Day thanks to the ambitious commitments they are making to green their vehicles and transit systems. Now it’s time for Washington to help them deliver on those promises,” said Vice President Biden. Read more...
Clean Cities Research
Clean Cities and E15

- EPA is considering a Air Act waiver request from the ethanol industry to allow sales of E15 (15% ethanol; 85% gasoline)
- Clean Cities and other DOE offices are funding E15 testing of fuel dispensing equipment at Underwriters Laboratory
- Testing most common new and used dispensers and hanging hardware (hoses, nozzles, breakaways and swivels)
- Results expected in September
Clean Cities provided funding for testing tank flammability with gasoline, E85 and denatured ethanol (E98).

### Range of Fuel Headspace Vapor Flammability

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Range of Fuel Headspace Vapor Flammability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>-2°F to -13°F</td>
</tr>
<tr>
<td>E85</td>
<td>28°F to -8°F</td>
</tr>
<tr>
<td>Denatured Ethanol (E98)</td>
<td>All normal underground and above ground temperatures to 22°F</td>
</tr>
</tbody>
</table>

- Ethanol (E98) in fuel tanks is flammable over a broad range of common temperatures.
- E85 and Gasoline are flammable when it is colder.
Clean Cities National Partner Efforts
The mission of the National Partner Program will be to develop strategic alliances with national fleets to assist their efforts in reducing petroleum consumption through the deployment of alternative fuel vehicles and advanced vehicle technologies.

Proposed Program Elements:
- Streamline coordination with Clean Cities via one point of entry, but with access to all 90 coalitions
- Access to new and existing Clean Cities tools
- Provide unbiased, accurate technical and market resources
- Individualized fleet assessments
- Networking and peer exchange with other national and local fleets
- Potential for bulk buying or vehicle purchase aggregation
- Partner recognition at the national and local levels

More information is forthcoming (anticipated Fall 2010 launch)
Important Web Sites and Resources

Clean Cities Web site
www.eere.energy.gov/ccities

Alternative Fuels & Advanced Vehicles Data Center Web site
www.eere.energy.gov/afdc

Clean Cities Coordinator Contact Information and Coalition Web sites
http://www.afdc.energy.gov/cleancities/progs/coordinators.php

DOE EERE Information Center & Technical Response Service
Web Site: www.eere.energy.gov/afdc/informationcenter.html
Phone: 1-800-EERE-INF (1-877-337-3463)
Email: technicalresponse@icfi.com
Hours: 9:00 a.m. – 6:00 p.m. EST