National Renewable Energy Laboratory
Innovation for Our Energy Future

Petroleum REduction Planning (PREP) Tool

Ted Sears

Propane Engine Fuel Summit
Detroit, Michigan

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NREL/PR-540-44529

PREP Tool – Agenda

- Alternative Fuels and Advanced Vehicles Data Center (AFDC)
- Background on the PREP Tool
- “Unveiling” the PREP Tool
- Holding promise for numerous applications
  - Fleet management and operation
  - Equipment and vehicle supply
  - Fuel marketing or distribution
  - Regulatory program involving:
    - Fleets
    - Fuels
    - Alternative fuel vehicles
- Online demo of PREP Tool

Background: The AFDC

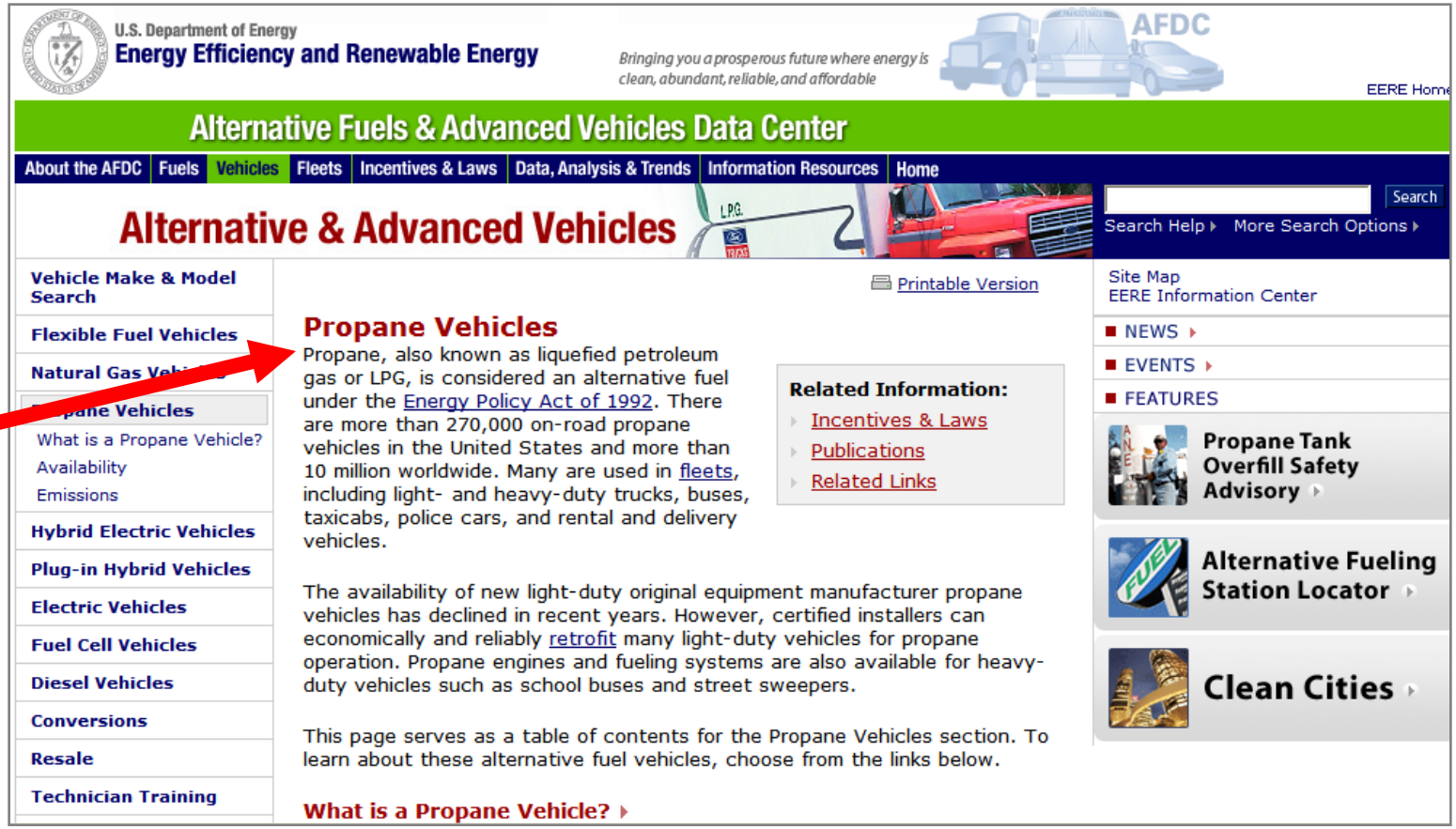
- Comprehensive clearinghouse of data, publications, tools, and information related to advanced transportation technologies
- Hosts more than 3,000 documents and numerous interactive tools
- URL: www.afdc.energy.gov/afdc/
- Provides tools and resources to meet and exceed requirements
  - Types of information available
    - Alternative and Advanced Vehicles Portal
    - Fuel Economy Web site (Fuel Economy Guide)

AFDC Information – Fuels

- Are you looking for general information on alternative and advanced fuels?
  - The AFDC' s Fuels section (www.eere.energy.gov/-afdc/fuels/index.html) features detailed descriptions of all EPAct-approved alternative fuels—including propane, E85, biodiesel, and natural gas—and advanced fuels (e.g., biogas, P-Series, and Fischer-Tropsch diesel).

AFDC Information – Vehicles

- Vehicle Make and Model Search
  - Lists, specs, comparison, cost, and emissions calculator



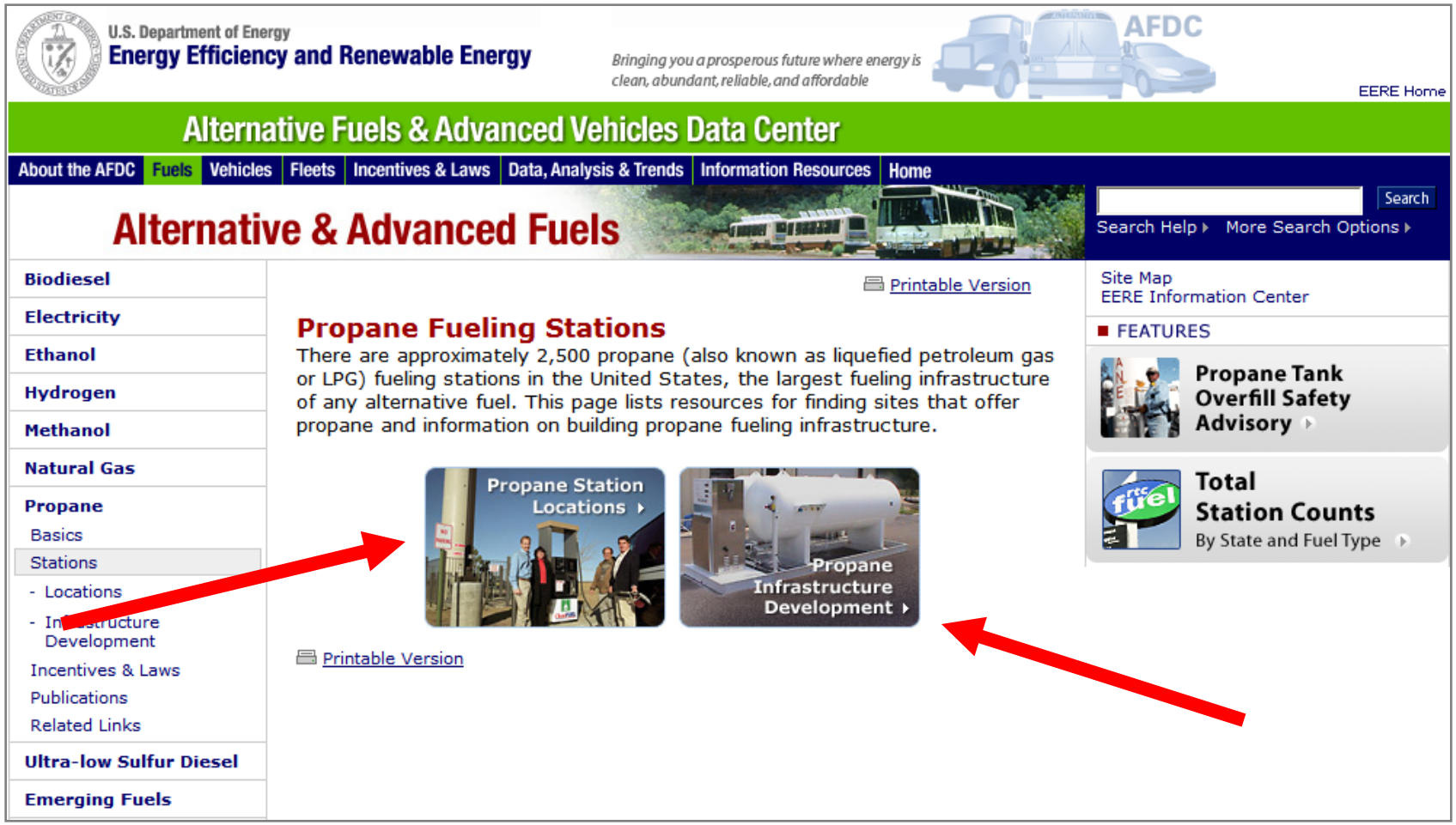
AFDC Information – Emissions

- Vehicle Emissions

AFDC Information – Vehicle Availability

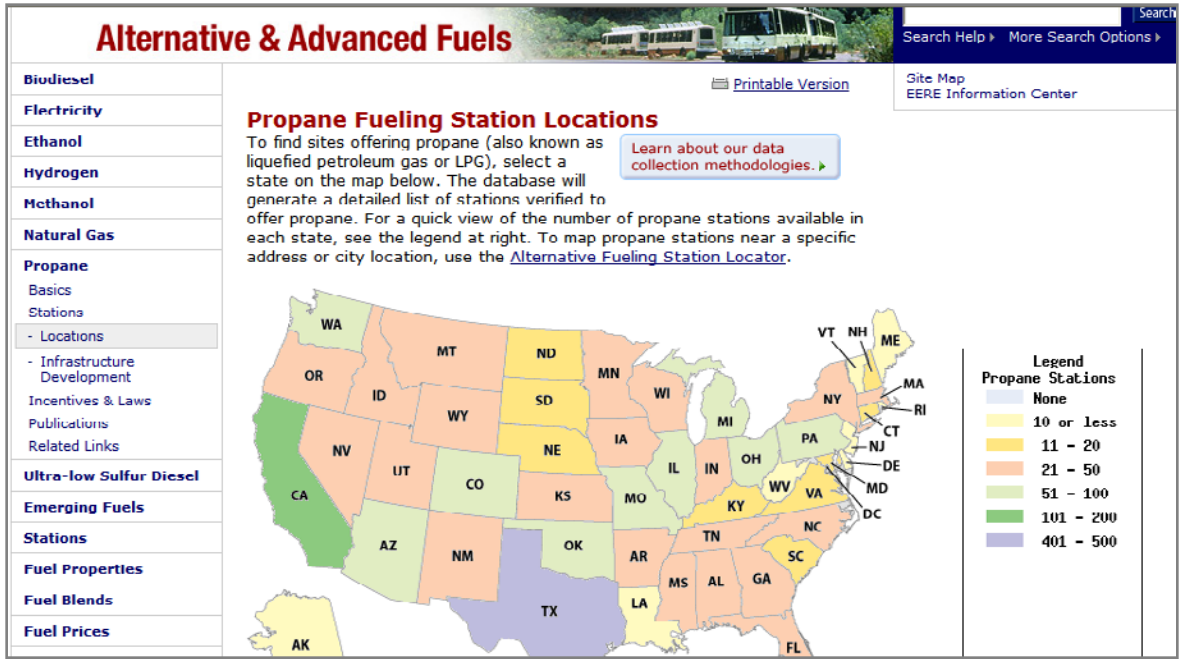
AFDC Information – Fueling Stations

- Fueling Stations
  - Propane station locations and infrastructure development

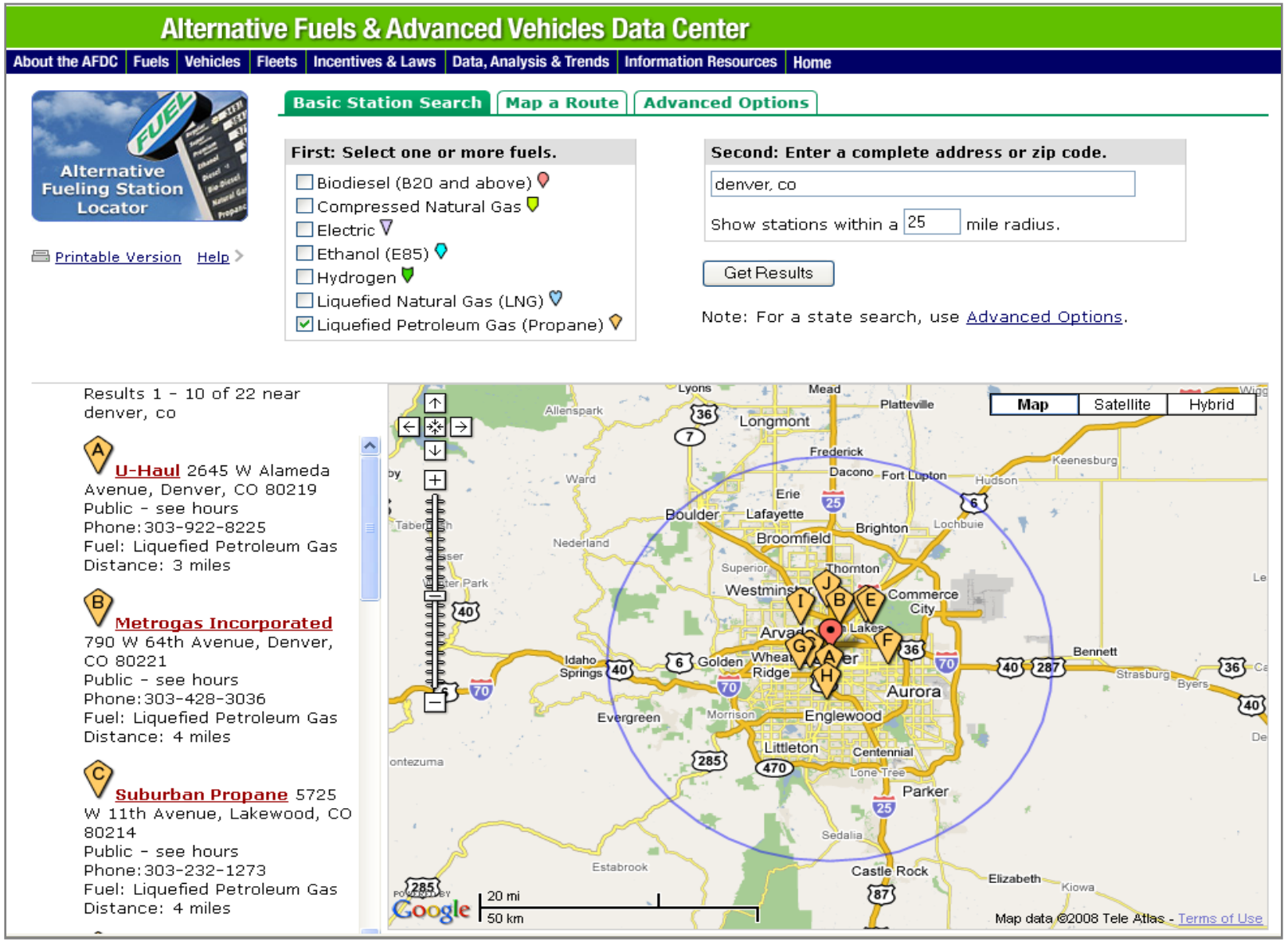


AFDC Information – Fueling Stations

- Do you want to find propane or other alternative fuels in your area?
  - Visit the Alternative Fueling Station Locator (www.eere.energy.gov/afdc/fuels/stations.html), and your vehicles' garaging address. The Station Locator will pull up a list of stations within a chosen radius.
  - State counts, maps, route mapper, locations, and hours

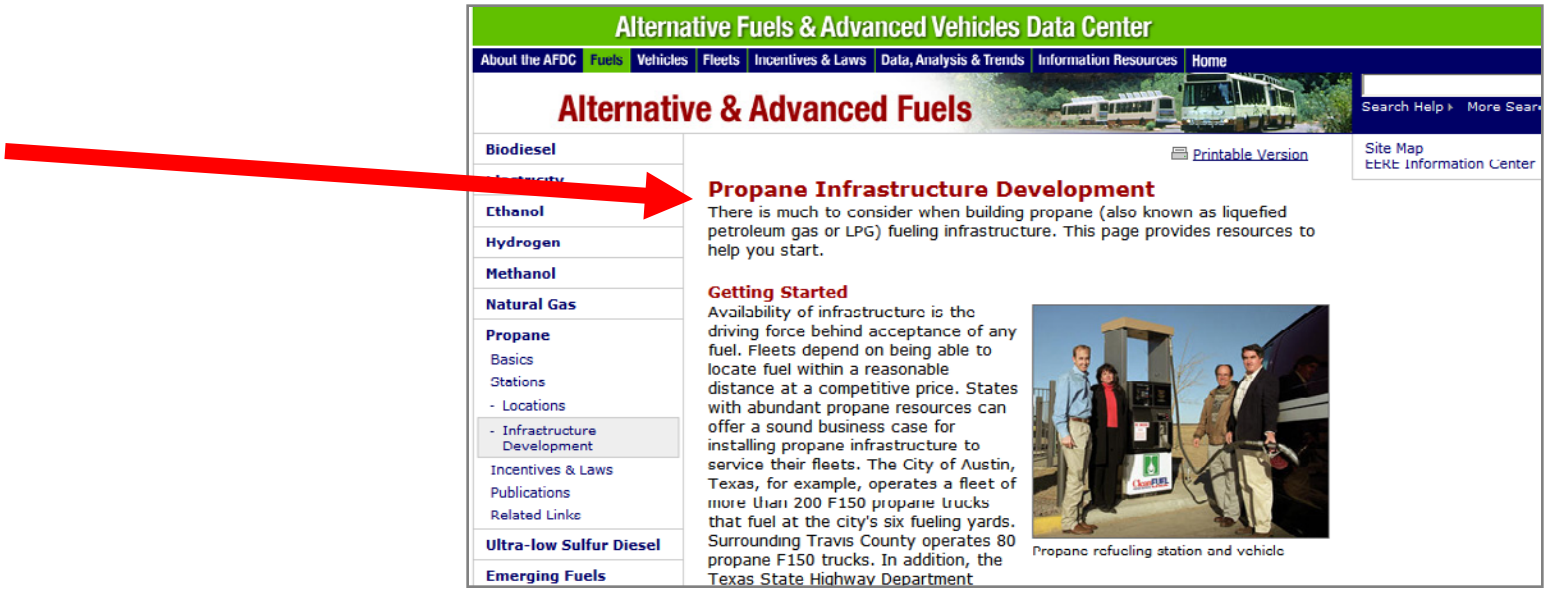


AFDC Information – Stations and Route Mapper



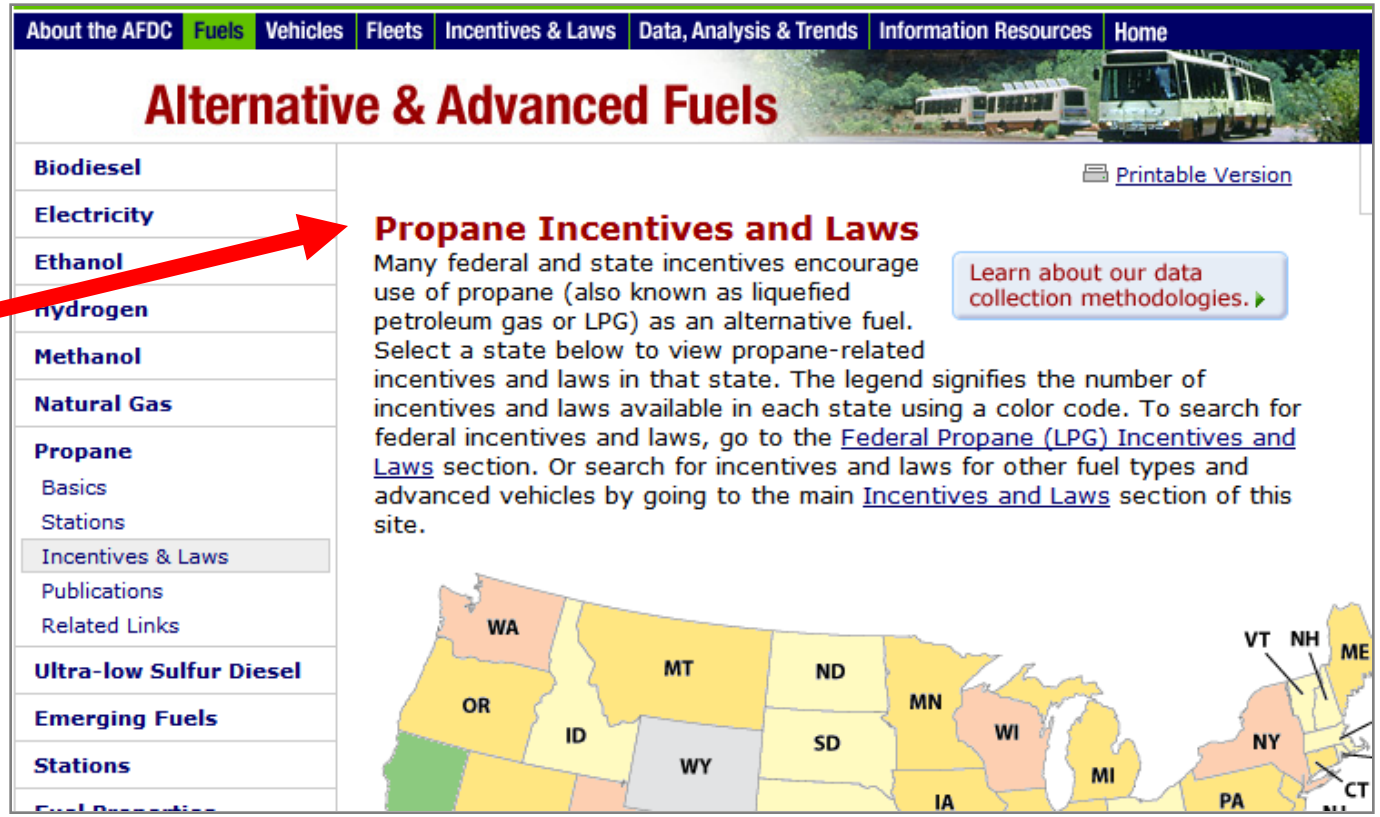
AFDC Information – Station Infrastructure

- Are you thinking about installing onsite alternative refueling infrastructure?
  - Visit the Alternative Fueling Stations section (www.eere.energy.gov/afdc/fuels/stations.html) and scroll to the bottom of the page.
  - There you'll find links to information on infrastructure development, including production, distribution, training, funding, and experiences



AFDC Information – Incentives and Laws

- State and Federal Incentives and Laws
  - Points of contact
  - By state
  - By type
  - By fuel
  - By user



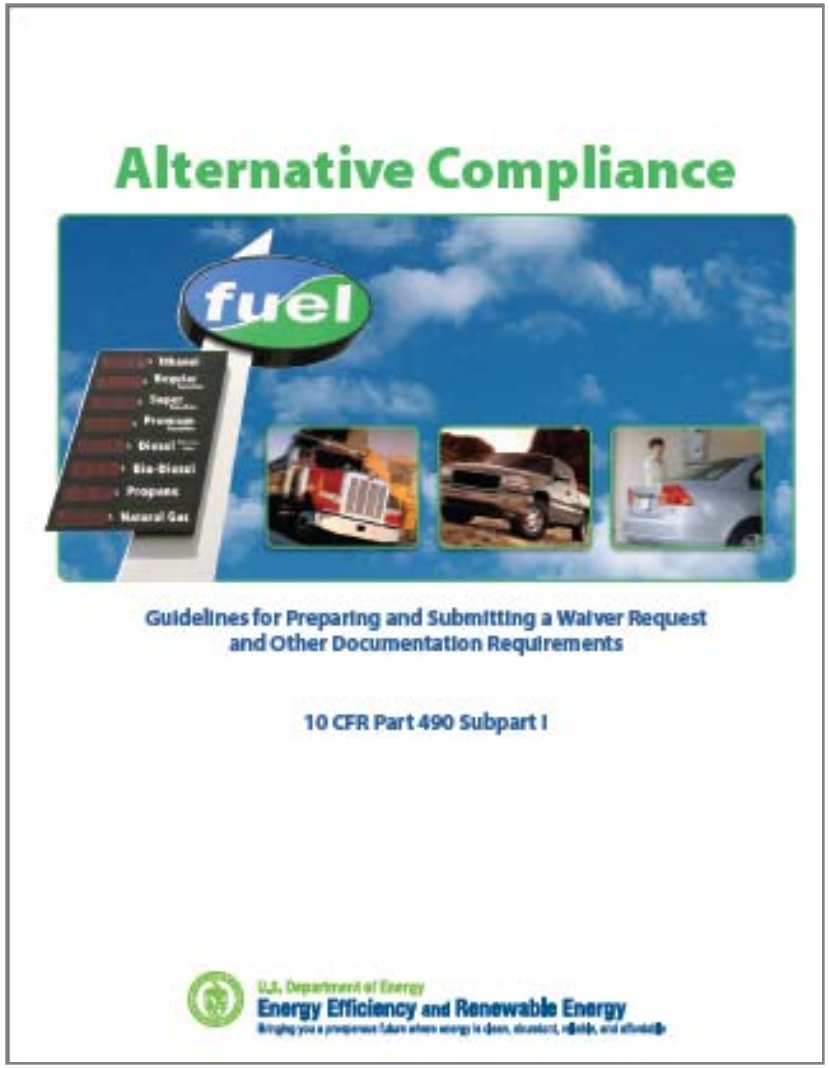
EPAct Vehicle Programs

Energy Policy Act (EPAct) of 1992

- Mandatory Component
  - Implementing federal regulations and executive orders affecting covered federal, state, and alternate fuel provider fleets
  - Generally
    - Vehicle acquisition for state fleets
    - Vehicles acquisition and required alternative fuel use for alternative fuel providers
    - Vehicles acquisition, petroleum reduction, and required alternative fuel use for fed fleets
  - EPAct amendments (EPAct 2005)
    - Allowed for new Alternative Compliance option for state and alternative fuel provider fleets
- Voluntary Component
  - Clean Cities, U.S. Department of Energy (DOE)
    - A voluntary, locally-based government/industry partnership
    - Established in 1993 in response to EPAct 1992
- Viewed as Companion Programs

EPAct 2005 – Alternative Compliance (AC)

- Option for state and alternative fuel provider fleets covered under DOE's Alternative Fuel Transportation Program (10 CFR Pt 490)
- Petroleum reduction in lieu of acquiring AFVs under the Standard Compliance requirements (i.e., vehicle acquisition)
- Covered, interested fleets must file with DOE an Intent to Apply for a Waiver and a Waiver Application

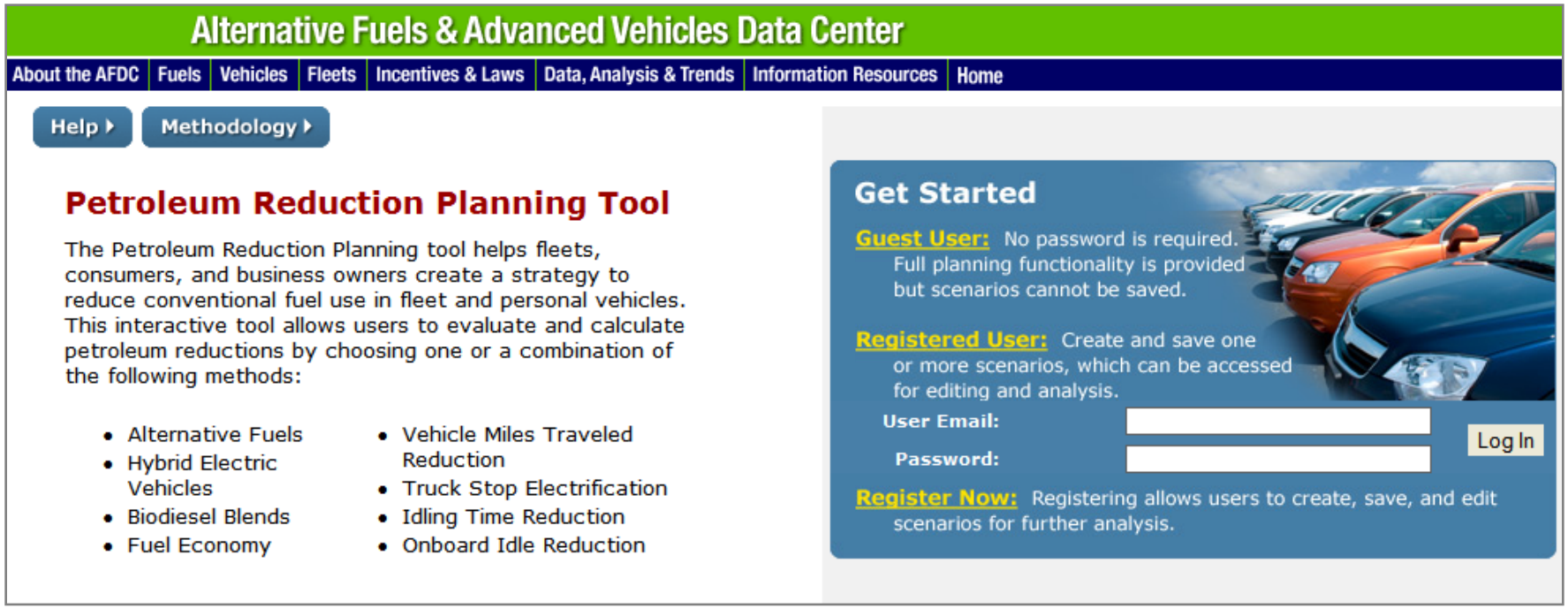


Developing a Petroleum Reduction Plan Under AC

- DOE developed the Alternative Compliance Planning Tool to help fleets calculate their petroleum reduction requirement
- Helps state fleets to design custom strategies to reduce petroleum use
- Tool is currently open only to regulated fleets under AC
- URL: www.eere.energy.gov/vehiclesandfuels/epact/state/acp_tool

Petroleum REduction Planning (PREP) Tool

- Tool originally designed as the Alternative Compliance Planning Tool to help certain state and alternative fuel provider fleets
- PREP Tool helps other fleets and consumers determine petroleum reduction goals and create a plans for meeting them
- URL: www.afdc.energy.gov/afdc/prep/index.php



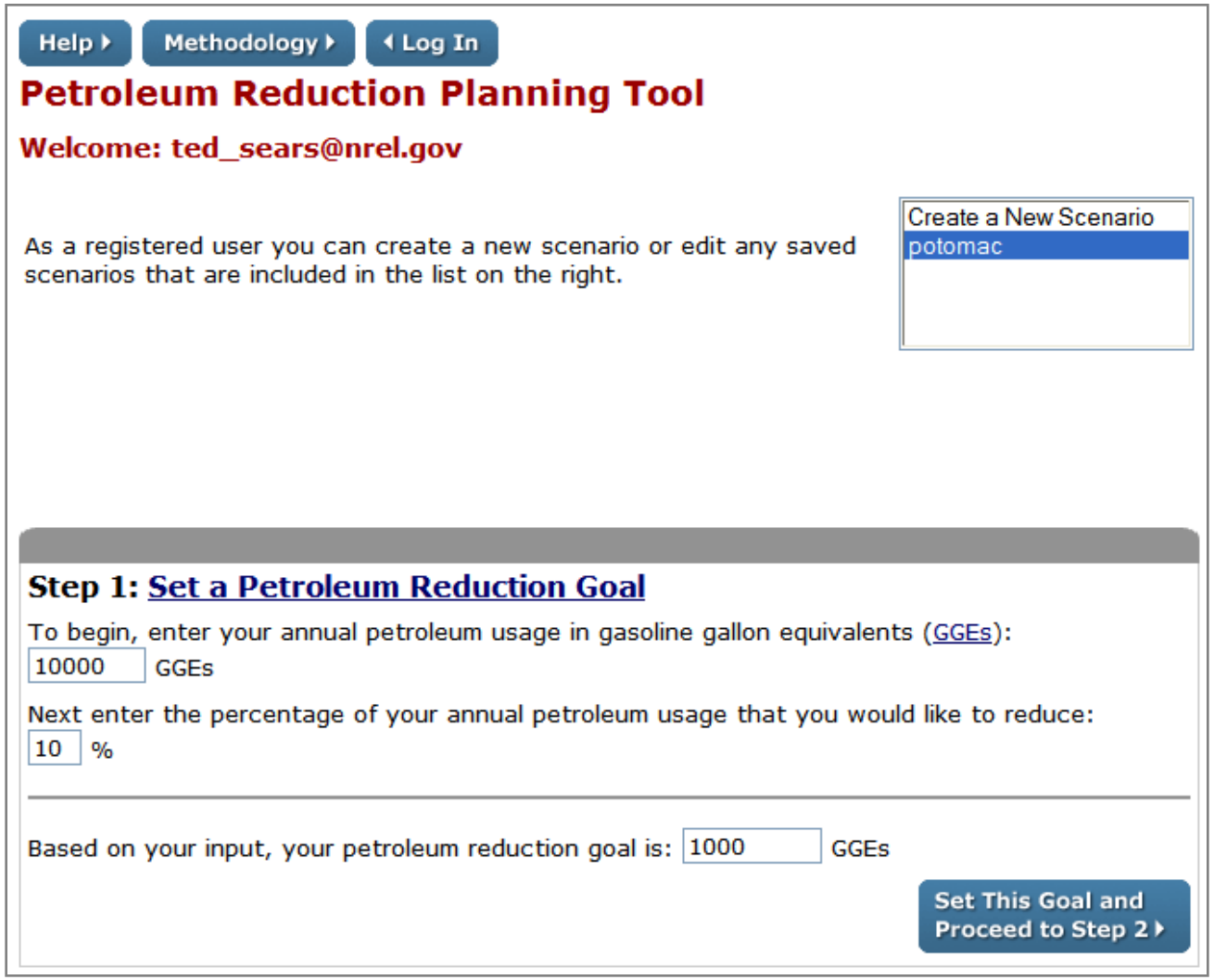
PREP Tool – Function and Utility

- Helps sort strategies for petroleum use reduction
  - Alternative fuels
  - Hybrid electric vehicles
  - Fuel blends
  - Fuel economy
  - Vehicle miles traveled reduction
  - Truck stop electrification
  - Idling time reduction
  - Onboard idle reduction
- Graphical representation of petroleum use reductions and how each technology strategy contributes

PREP Tool – Step 1

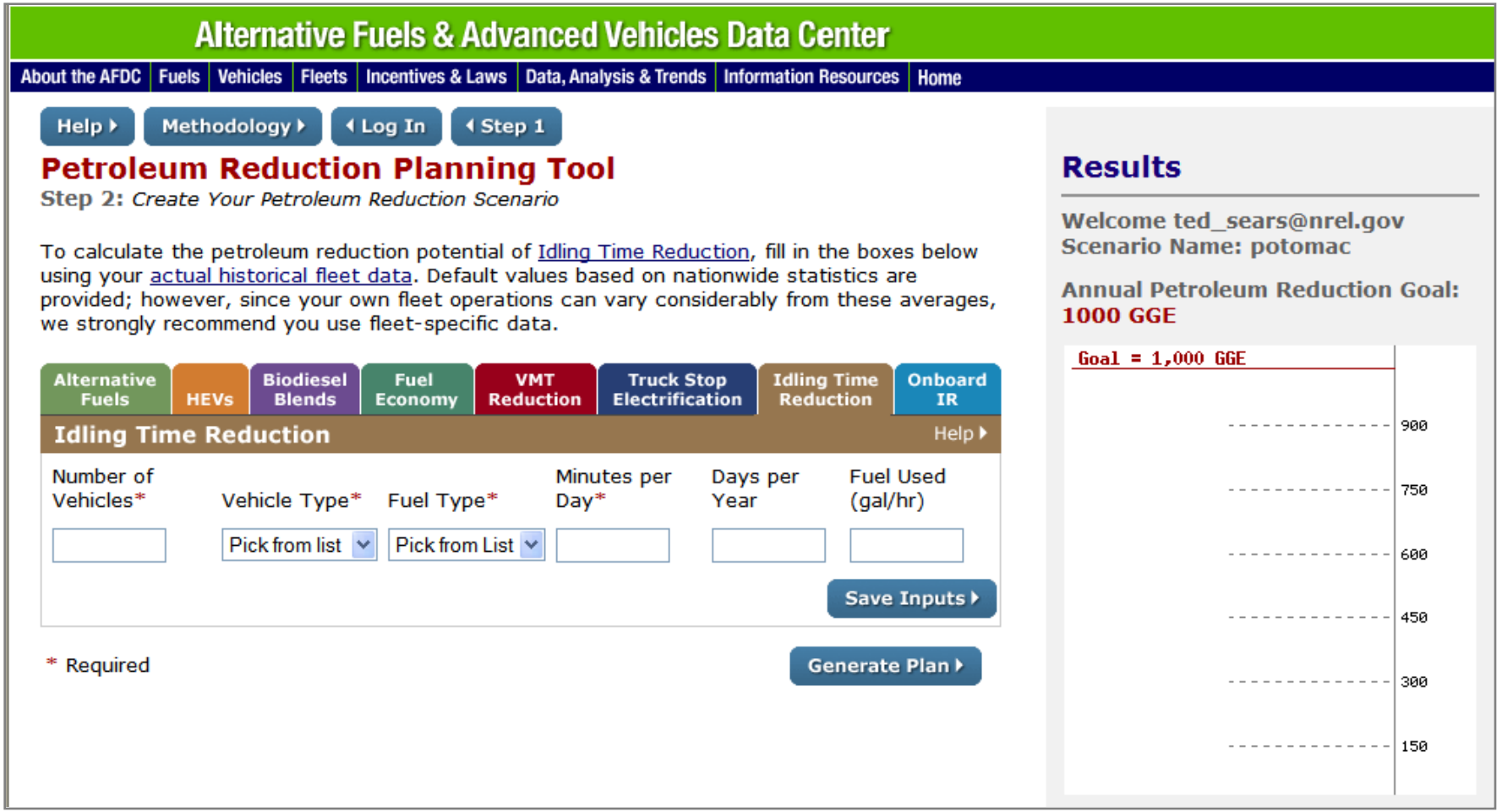
Step 1 – Setting a Petroleum Reduction Goal

- Optional



PREP Tool – Step 2

Step 2 – Selecting Reduction Strategies



PREP Tool – Step 2 Continued

Alternative Fuels & Advanced Vehicles Data Center

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

Help ▸ | Methodology ▸ | ◂ Log In | ◂ Step 1

Petroleum Reduction Planning Tool

Step 2: *Create Your Petroleum Reduction Scenario*

To calculate the petroleum reduction potential of Alternative Fuels, fill in the boxes below using your actual historical fleet data. Default values based on nationwide statistics are provided; however, since your own fleet operations can vary considerably from these averages, we strongly recommend you use fleet-specific data.

Alternative Fuels | HEVs | Biodiesel Blends | Fuel Economy | VMT Reduction | Truck Stop Electrification | Idling Time Reduction | Onboard IR

Alternative Fuels

Help ▸

AFV Type*	AFV Fuel*	Number of AFVs*	Average VMT	Fuel Economy (mpg)	Fraction of Fuel Use*
Pick from list	Pick from list				

Save Inputs ▸

AFV Type*	AFV Fuel*	Number of AFVs*	Average VMT	Fuel Economy (mpg)	Fraction of Fuel Use*
Midsize Car	LPG	15	15000	24.6	1

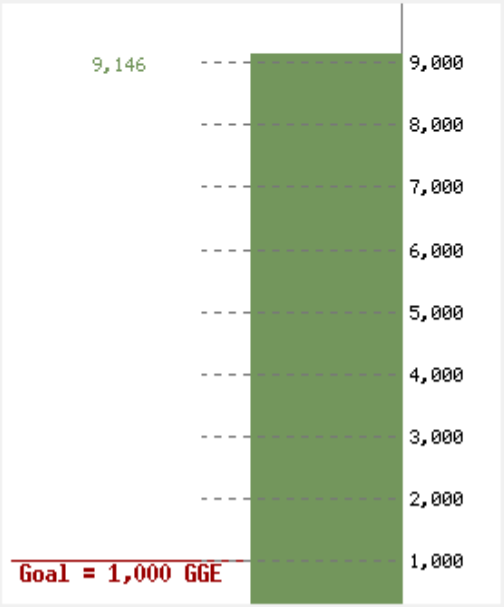
Delete: ☐

GGE Reduced: 9,146

Results

Welcome ted_sears@nrel.gov
Scenario Name: potomac

Annual Petroleum Reduction Goal:
1000 GGE



PREP Tool – Step 2 Continued

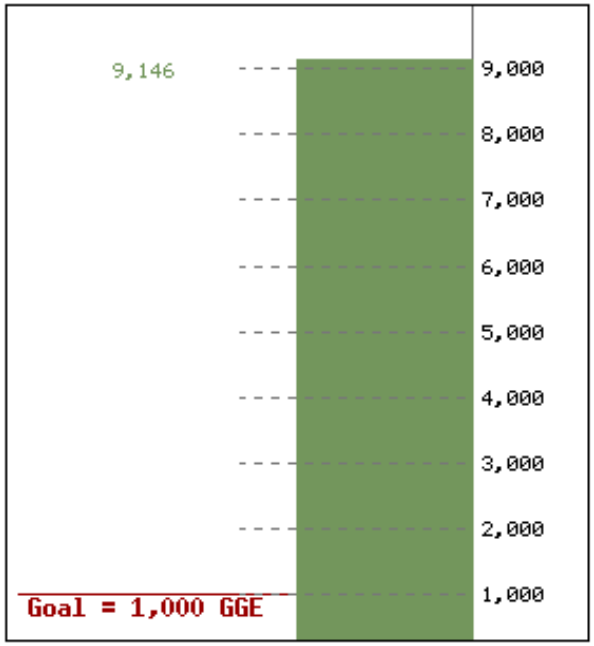
- The Plan

Petroleum Reduction Plan

Scenario Name:potomac
Annual Petroleum Reduction Goal:1000 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

AFV Type	AFV Fuel	Number of AFVs	Average VMT	Fuel Economy (mpg)	Fraction of Fuel Use	GGE Reduced
Midsize Car	LPG	15	15000	24.6	1	9146
					TOTAL GGE	**9146**

Total GGE Reduced: 9,146

Petroleum Marketing

November 12, 2008

ConocoPhillips, CleanFUEL USA Launch Propane Fueling Initiative

ConocoPhillips GEORGETOWN, Texas -- CleanFUELUSA and ConocoPhillips signed a three-year agreement to advance the propane infrastructure for the U.S. transportation fuel industry, which calls for the two companies to provide resources to install and supply propane fuel pumps for commercial fleet fuel users.

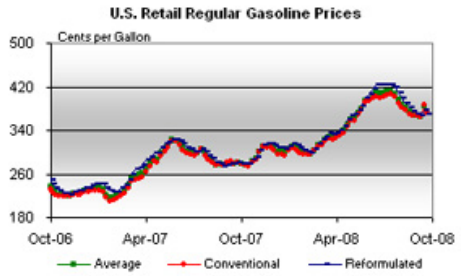
Propane fueling stations will be installed at fleet owner sites and potentially nationwide at select ConocoPhillips' branded stations, including Conoco, Phillips 66 and 76 stations, the companies stated. ConocoPhillips will supply propane to the fueling stations through regional propane marketers.

"CleanFUEL USA is a leader in propane engine technology and the installation of alternative fuel infrastructure," Chris Conway, president Americas supply and trading for ConocoPhillips, said in a statement. "The company's expertise complements ConocoPhillips' strengths in propane supply and relationships with branded fuel marketers to ensure that we meet the market's growing need for propane. Through this collaboration our branded marketers can participate in expanding their fuel offering and providing a solution for this growing customer base."

Propane is an alternative fuel with lower greenhouse gas emissions than gasoline or diesel, according to the companies.

"This agreement with ConocoPhillips is a huge step forward for the U.S. propane engine fuel industry," Curtis Donaldson, CleanFUEl USA's founder and CEO, said in a statement. "With support from an energy company, the industry can start to overcome the infrastructure challenge that has once been a sticking point for fleet managers and automotive OEMs considering propane for its inherent advantages. We look forward to working with ConocoPhillips to expand the distribution of propane, leveraging its established infrastructure footprint."

Petroleum Price Ticker



Source: Energy Information Administration

View this week's report

PREP Tool and AFDC Access

- Future Plans for PREP
  - Greenhouse gas calculator
  - Other emissions of interest
- Important Links
  - PREP Tool
    www.afdc.energy.gov/afdc/prep/index.php
    AFDC
    www.afdc.energy.gov/afdc/fuels/propane.html