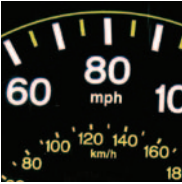


Clean Cities 2010 Vehicle Buyer's Guide






Natural Gas
Propane
Hybrid Electric
Ethanol
Biodiesel



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-  Natural Gas
-  Propane
-  Hybrid Electric
-  Ethanol
-  Biodiesel

2010

Clean Cities

Vehicle Buyer's Guide

Reducing the petroleum used in light-duty vehicles has become easier with the increase in hybrid electric vehicles, flexible fuel vehicles, and compressed natural gas- and propane-powered vehicles. By selecting the vehicle and fuel that fit your needs, your location, and your driving range, you can help the United States achieve energy independence while you improve your own bottom line.

Introduction



Those who depend on foreign oil for transportation fuel have seen prices rollercoaster between \$5/gallon and \$1.75/gallon and back up again. The economic impact of our dependence on foreign oil could not be clearer. To get off the rollercoaster, smart consumers are looking at the expanding availability of advanced, efficient vehicles, including hybrids and all-electrics as well as cleaner domestic fuels such as propane, natural gas, ethanol, and biodiesel.

Alternative fuels and advanced vehicles including flexible fuel vehicles (FFVs), hybrids, electric vehicles, and others that can run on natural gas or propane, are available today. You can choose a vehicle that sips rather than guzzles gas or one that uses a cleaner, domestically produced fuel without sacrificing performance.

The year 2009 presented great changes for U.S. automakers. Difficult economic times forced original equipment manufacturers (OEMs) to make strategic choices about models, dealerships, and operating performance. While some OEMs cut back on certain models, others pushed ahead toward a future that would feature highway-capable electric vehicles, plug-in hybrid electric vehicles, and more propane and natural gas vehicles.

This Vehicle Buyer's Guide features the 2010 lineup of available light-duty vehicles, features, costs, and information resources. Use this guide to learn about getting off the rollercoaster and into an alternative fuel or advanced technology vehicle.

How to Use This Guide

The 2010 Buyer's Guide includes vehicle-specific information on fuel economy, emissions, vehicle specifications, estimated cost, and warranty. This booklet helps you compare similar alternative fuel vehicles to make an informed buying decision.

Fuel Economy

The 2010 Buyer's Guide includes the U.S. Environmental Protection Agency's (EPA) city and highway fuel economy numbers. The city fuel economy tests simulate urban driving, in which a vehicle is started in the morning after being parked all night and driven in stop-and-go traffic. EPA's highway fuel economy tests simulate a mixture of rural and interstate highway driving in a warmed-up vehicle in free-flowing traffic. Federal law requires manufacturers of light-duty vehicles sold in the U.S. to inform customers about these EPA ratings.

Emissions

The Air Pollution Score represents the amount of health-damaging, smog-forming pollutants emitted by a vehicle. The star system at the right represents the EPA's Air Pollution Score, which ranges from 5 stars for vehicles with zero emissions to 1 star for vehicles with the highest emissions. A 3-star rating is the average rating for 2010 cars.

Zero emissions	★★★★★
Low emissions	★★★★
Average emissions	★★★
High emissions	★★
Highest emissions	★

California Emission Standards, set by the California Air Resources Board (CARB), are similar to but more stringent than federal standards. In addition, individual states are permitted to adopt the CARB standards. For the 2010 model year, the following states have adopted the CARB standards: Arizona, Connecticut, Maine, Massachusetts, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, and the District of Columbia. Florida, Pennsylvania, and Washington have adopted all but the zero-emission vehicle sales requirement. States that border those states may also sell CARB-certified vehicles. Most manufacturers choose to design a single vehicle type that complies with both CARB and federal emission standards, making the vehicles available nationwide. However, in some cases, manufacturers will design and certify a vehicle type for sale only in "CARB states."

Carbon Footprint Score

The Carbon Footprint Score measures greenhouse gas (GHG) emissions (primarily CO₂) that impact climate change. GHG emissions are rated by the EPA and range from 10 (lowest emissions) to 1 (highest emissions). Estimates are for the full fuel cycle and exclude all vehicle manufacture emissions.

10 = Lowest
GHG emissions
1 = Highest
GHG emissions
N/A = Not Available

Engine Size, Price, and Warranty

In most cases, information on engine size and manufacturer's suggested retail price (MSRP) is provided by the vehicle manufacturer, the Kelly Blue Book, and the EPA Web site at www.fueleconomy.gov. The MSRP does not include shipping or freight charges.

Compressed Natural Gas



Natural gas vehicles save money and emit less pollution.

Compressed natural gas (CNG) vehicles use the same natural gas used for cooking or heating. Domestic natural gas supplies are plentiful and some locations are even developing renewable sources known as renewable natural gas.

Consumers are interested in CNG vehicles because CNG is often less expensive than gasoline, and CNG vehicles emit fewer health-threatening air pollutants.

Choose a factory-built vehicle or convert a gasoline vehicle.

New car buyers can choose the 2010 CNG Honda Civic GX for \$5,000 to \$7,000 more than the standard Civic. A federal tax credit of \$4,000 and fuel cost savings allow most motorists to recoup the extra cost within two to five years. State incentives may also exist in your state. Check with your tax advisor to determine tax credit eligibility.

Several new or used vehicles can be converted from gasoline to CNG operation for a typical cost of \$8,000 to \$12,000. Vehicles converted to run on CNG exclusively are considered “dedicated” and are also eligible for a federal tax credit. Conversions are regulated by the EPA and must be certified based on vehicle make, model, and model year.

Fuel availability may be the deciding factor.

Matching your vehicle choice with a readily available fuel is a smart move. If you are considering the purchase of a dedicated CNG vehicle or converting a conventional vehicle to run on CNG, check the online Alternative Fueling Station Locator at www.afdc.energy.gov/stations or www.afdc.energy.gov/stations/m on your mobile device.

Civic CNG Honda

- ▶ 4-cyl, CNG, 1.8L engine
- ▶ \$25,340 MSRP
- ▶ 24 mpg city, 36 mpg highway
- ▶ Carbon footprint (CNG): Not available
- ▶ Air Pollution Score: ★★★★★

Propane

Propane vehicles save money.

Propane is a readily available, clean-burning fuel that has been used in the transportation sector for over 80 years. It is the most widely used motor fuel worldwide and powers roughly 159,000 vehicles in the United States. Besides being clean burning, propane is nontoxic and does not contaminate soil or the atmosphere. Propane-powered vehicles offer lower operating costs and reduced emissions compared with gasoline. The price of propane for motor vehicles is typically two-thirds that of gasoline and is available through a number of fueling stations across the United States. The Alternative Fueling Station Locator, online at www.afdc.energy.gov/stations, can identify fueling locations in your area.



3500 Savana GMC
3500 Express Chevrolet

- ▶ V8, LPI, 6.0L engine
- ▶ Carbon footprint: Not available
- ▶ Air Pollution Score: Not available

Propane vehicles are available through conversion.

Dedicated liquid propane injection (LPI) fuel systems are available for light- and medium-duty Ford and GMC trucks and vans including the following models:

- Ford 2010 F-250 & F-350 (5.4L V8 engine)
- Ford 2010 E-150, E-250, & E-350 (5.4L V8 engine)
- GMC/Chevrolet 2010 3500 Savana/Express (6.0L engine)
- GMC/Chevrolet 2010 2500/3500 HD Sierra/Silverado (6.0L engine)

These propane vehicles can be ordered through Ford or GM dealerships with the propane system factory installed. The conversion has no effect on the horsepower, torque, towing capacity, or factory warranty. A federal tax credit may reduce the differential cost substantially for propane-powered vehicles. Check with your tax advisor for specific information about tax credits. Learn more about conversions on page 27 or online at www.afdc.energy.gov/afdc/vehicles/conversions.html.



F-250 Roush Industries Ford

- ▶ V8, LPI, 5.4L engine
- ▶ \$35,300 MSRP
- ▶ Carbon footprint: Not available
- ▶ Air Pollution Score: Not available

Savana; General Motors
F-150 Pickup; Roush Industries

Hybrid Electric



Hybrids boost fuel efficiency and fuel economy.

Today's hybrid electric vehicles (HEVs) are powered by an internal combustion engine (ICE) combined with a battery-powered electric motor. HEVs run on regular gasoline and don't need to be plugged in to recharge the battery. Because HEVs travel at least some distance on battery power, they require fewer fill-ups and are more economical to run, some getting between 40 and 50 miles per gallon. They also emit fewer tailpipe pollutants and fewer greenhouse gases because of their electric powertrains and efficient ICEs.

Hybrids can have a parallel design, a series design, or a combination of both:

- In a parallel design, the energy conversion unit and electric propulsion system are connected directly to the vehicle's wheels. The primary engine is used for highway driving; the electric motor provides added power during hill climbs, acceleration, and other periods of high demand.
- In a series design, the primary engine is connected to a generator that produces electricity. The electricity charges the batteries, which drive an electric motor that powers the wheels.

HEVs can also be built to use the series configuration at low speeds and the parallel configuration for highway driving and acceleration.

At low demand, such as at slow speeds, the motor drives the vehicle using battery power. The internal combustion engine engages when needed to drive the wheels or recharge the battery. At full acceleration, the battery adds power. The engine automatically shuts off when the vehicle comes to a stop and restarts when the accelerator is pressed, preventing wasteful idling.

Manufacturers, including Toyota, Honda, Nissan, Ford, Mazda, Mercury, BMW, Lexus, Cadillac, Chevrolet, and GMC, are offering a variety of HEVs in 2010 ranging from small compacts to sport utility vehicles and pickups.

Insight Honda

- ▶ 4-cyl, Hybrid, 1.3L engine
- ▶ NiMH battery
- ▶ \$19,800 MSRP
- ▶ 40 mpg city, 43 mpg highway
- ▶ Carbon footprint (gasoline): 10
- ▶ Air Pollution Score: ★★ ★★ ★

Prius Toyota

- ▶ 4-cyl, Hybrid, 1.8L engine
- ▶ NiMH battery
- ▶ \$21,000 MSRP
- ▶ 51 mpg city, 48 mpg highway
- ▶ Carbon Footprint (gasoline) = 10
- ▶ Air Pollution Score: ★★★★★



Fusion Hybrid Ford

- ▶ 4-cyl, Hybrid, 2.5L engine
- ▶ NiMH battery
- ▶ \$27,625 MSRP
- ▶ 41 mpg city, 36 mpg highway
- ▶ Carbon Footprint (gasoline) = 10
- ▶ Air Pollution Score: ★★★★★



BMW X6 Active Hybrid BMW

- ▶ V8, Hybrid, 4.4L engine
- ▶ NiMH battery
- ▶ \$88,900 MSRP
- ▶ 17 mpg city, 19 mpg highway
- ▶ Carbon Footprint (gasoline) = N/A
- ▶ Air Pollution Score: ★★★★★



Civic Hybrid Honda

- ▶ 4-cyl, Hybrid, 1.3L engine
- ▶ NiMH battery
- ▶ \$23,800 MSRP
- ▶ 40 mpg city, 45 mpg highway
- ▶ Carbon Footprint (gasoline) = 10
- ▶ Air Pollution Score: ★★★★★



Prius, BMW X6 and Civic; conceptcarz.com
Fusion; Wieck Media Services

Malibu LS Hybrid Chevrolet

- ▶ 4-cyl, Hybrid, 2.4L engine
- ▶ NiMH battery
- ▶ \$25,925 MSRP
- ▶ 26 mpg city, 34 mpg highway
- ▶ Carbon Footprint (gasoline) = 8
- ▶ Air Pollution Score: ★★ ★



Milan FWD Hybrid Mercury

- ▶ 4-cyl, Hybrid, 2.5L engine
- ▶ NiMH battery
- ▶ \$31,235 MSRP
- ▶ 41 mpg city, 36 mpg highway
- ▶ Carbon Footprint (gasoline) = 10
- ▶ Air Pollution Score: ★★ ★ ★



Altima Hybrid Nissan

- ▶ 4-cyl, Hybrid, 2.5L engine
- ▶ NiMH battery
- ▶ \$26,780 MSRP
- ▶ 35 mpg city, 33 mpg highway
- ▶ Carbon Footprint (gasoline) = 9
- ▶ Air Pollution Score: ★★ ★ ★ ★

Available in CARB states only



RX 450h AWD Lexus

- ▶ 6-cyl, Hybrid, 3.5L engine
- ▶ NiMH battery
- ▶ \$42,110 MSRP
- ▶ 32 mpg city, 28 mpg highway
- ▶ Carbon Footprint (gasoline) = 8
- ▶ Air Pollution Score: ★★ ★ ★



Malibu and Milan; Wieck Media Services
Altima; NetCarShow.com
RX 450h; conceptcarz.com

Camry Hybrid Toyota

- ▶ 4-cyl, Hybrid, 2.4L engine
- ▶ NiMH battery
- ▶ \$26,150 MSRP
- ▶ 33 mpg city, 34 mpg highway
- ▶ Carbon Footprint (gasoline) = 9
- ▶ Air Pollution Score: ★★★★★



S400 Hybrid Mercedes Benz

- ▶ 6-cyl, Hybrid, 3.5L engine
- ▶ Lithium-ion battery
- ▶ \$87,950 MSRP
- ▶ 19 mpg city, 26 mpg highway
- ▶ Carbon Footprint (gasoline) = 5
- ▶ Air Pollution Score: ★★★★★



HS 250h Lexus

- ▶ 4-cyl, Hybrid, 2.4L engine
- ▶ NiMH battery
- ▶ \$34,200 MSRP
- ▶ 35 mpg city, 34 mpg highway
- ▶ Carbon Footprint (gasoline) = 9
- ▶ Air Pollution Score: ★★★★★



Escape Hybrid 2WD Ford

- ▶ 4-cyl, Hybrid, 2.5L engine
- ▶ NiMH battery
- ▶ \$31,500 MSRP
- ▶ 34 mpg city, 31 mpg highway
- ▶ Carbon Footprint (gasoline) = 9
- ▶ Air Pollution Score: ★★★★★

Also available in 4WD



Camry and HS; conceptcarz.com
S400; NetCarShow.com
Escape; Wieck Media Services

Escalade Hybrid 2WD Cadillac

- ▶ V8, Hybrid, 6.0L engine
- ▶ NiMH battery
- ▶ \$73,425 MSRP
- ▶ 21 mpg city, 22 mpg highway
- ▶ Carbon Footprint (gasoline) = 6
- ▶ Air Pollution Score: ★★ ★

Also available in 4WD



Tribute Touring Hybrid Mazda

- ▶ 4-cyl, Hybrid, 2.5L engine
- ▶ NiMH battery
- ▶ \$29,175 MSRP
- ▶ 34 mpg city, 31 mpg highway
- ▶ Carbon Footprint (gasoline) = 9
- ▶ Air Pollution Score: ★★ ★★ ★

Also available in 4WD



Highlander Hybrid 4WD Toyota

- ▶ V6, Hybrid, 3.3L engine
- ▶ NiMH battery
- ▶ \$34,700 MSRP
- ▶ 27 mpg city, 25 mpg highway
- ▶ Carbon Footprint (gasoline) = 7
- ▶ Air Pollution Score: ★★ ★★ ★★

Also available in 4WD



Tahoe Hybrid 2WD Chevrolet Yukon 1500 Hybrid 2WD GMC

- ▶ V8, Hybrid, 6.0L engine
- ▶ NiMH battery
- ▶ \$50,720 MSRP
- ▶ 21 mpg city, 22 mpg highway
- ▶ Carbon Footprint (gasoline) = 6
- ▶ Air Pollution Score: ★★ ★★

Also available in 4WD



Escalade and Tahoe; Wieck Media Services
Tribute and Highlander; conceptcarz.com

Mariner Hybrid 2WD Mercury

- ▶ 4-cyl, Hybrid, 2.5L engine
- ▶ NiMH battery
- ▶ \$30,030 MSRP
- ▶ 34 mpg city, 31 mpg highway
- ▶ Carbon Footprint (gasoline) = 9
- ▶ Air Pollution Score: ★★★★★

Also available in 4WD



Silverado 1500 Crew Cab Hybrid 2WD Chevrolet

- ▶ V8, Hybrid, 6.0L engine
- ▶ NiMH battery
- ▶ \$38,340 MSRP
- ▶ 21 mpg city, 22 mpg highway
- ▶ Carbon Footprint (gasoline) = 6
- ▶ Air Pollution Score: ★★★

Also available in 4WD



Ethanol



Flexible fuel vehicles can operate on regular gas or E85 ethanol.

Flexible fuel vehicles (FFVs) let motorists choose to run their vehicle on gasoline, E85, or any combination of both. Although today's flexible fuel vehicles get 20 percent to 25 percent less fuel economy when running on E85, the price of E85 is typically 10 percent to 30 percent less than gasoline, offsetting the loss in fuel economy. Fuel economy also varies by model and driving conditions. FFVs are distinguished by logos on the back of the vehicle, and they often have a yellow fuel cap. Your vehicle owner's manual will also explain your fuel options.

E85 is a renewable fuel choice.

E85 is a mix of 85 percent ethanol and 15 percent gasoline and is produced from starchy feedstocks. Today, most ethanol in the United States is made from corn, but in the near future, ethanol may be made from other renewable resources, including perennial grasses, crop residues, straw, and fast-growing trees. Ethanol from these materials and corn combined may eventually replace up to 40 percent of the gasoline we currently use.

E85 is widely available.

The number of E85 fueling stations is increasing and will exceed 2,000 by 2010. To locate an E85 station near you, visit the Alternative Fueling Station Locator at www.afdc.energy.gov/stations or on your mobile device at www.afdc.energy.gov/stations/m.

Fusion SEL AWD Ford

- ▶ V6, FFV, 3.0L engine
- ▶ \$27,790 MSRP
- ▶ 13 mpg city, 18 mpg highway (E85)
- ▶ 18 mpg city, 25 mpg highway (gasoline)
- ▶ Carbon footprint: E85 = 6; gasoline = 7
- ▶ Air Pollution Score: ★★ ★

Impala Chevrolet

- ▶ V6, FFV, 3.5L engine
- ▶ \$23,890 MSRP
- ▶ 14 mpg city, 22 mpg highway (E85)
- ▶ 18 mpg city, 29 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 7; gasoline = 6
- ▶ Air Pollution Score: ★★★★★



Crown Victoria Ford (fleet only)

- ▶ V8, FFV, 4.6L engine
- ▶ \$24,620 MSRP
- ▶ 12 mpg city, 17 mpg highway (E85)
- ▶ 16 mpg city, 24 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 5; gasoline = 4
- ▶ Air Pollution Score: ★★★★★



Avenger SXT 2WD Dodge

- ▶ V6, FFV, 2.7L engine
- ▶ \$20,230 MSRP
- ▶ 14 mpg city, 20 mpg highway (E85)
- ▶ 19 mpg city, 27 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 6; gasoline = 6
- ▶ Air Pollution Score: ★★



C300 Sport Mercedes Benz

C300 4Matic FFV Mercedes Benz

- ▶ 6 cyl, FFV, 3.0L engine
- ▶ \$33,600 MSRP
- ▶ 13 mpg city, 19 mpg highway (E85)
- ▶ 18 mpg city, 26 mpg highway (premium)
- ▶ Carbon Footprint: E85 = 5; gasoline = 5
- ▶ Air Pollution Score: ★★★★★



Impala and Crown Victoria; Wieck Media Services
Avenger; conceptcarz.com
C300; Mercedes Benz USA

Malibu Chevrolet

- ▶ 4-cyl, FFV, 2.4L engine, Automatic
- ▶ \$21,825 MSRP
- ▶ 16 mpg city, 23 mpg highway (E85)
- ▶ 22 mpg city, 30 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 7; gasoline = 7
- ▶ Air Pollution Score: ★★★★★



Milan FWD Mercury

- ▶ V6, FFV, 3.0L engine
- ▶ \$21,535 MSRP
- ▶ 13 mpg city, 20 mpg highway (E85)
- ▶ 19 mpg city, 27 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 5; gasoline = 5
- ▶ Air Pollution Score: ★★★★★



Sebring Chrysler

- ▶ 6-cyl, FFV, 2.7L engine
- ▶ \$20,120 MSRP
- ▶ 14 city mpg, 20 mpg highway (E85)
- ▶ 19 mpg city, 27 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 6; gasoline = 6
- ▶ Air Pollution Score: ★★



Town Car Lincoln

- ▶ V8, FFV, 4.6L engine
- ▶ \$46,525 MSRP
- ▶ 12 city mpg, 17 mpg highway (E85)
- ▶ 16 mpg city, 24 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 5; gasoline = 4
- ▶ Air Pollution Score: ★★★★★



Malibu and Milan; Wieck Media Services
Sebring; conceptcarz.com
Town Car; Ford Motor Company

Lucerne Buick

- ▶ V6, FFV, 3.9L engine
- ▶ \$29,230 MSRP
- ▶ 13 mpg city, 20 mpg highway (E85)
- ▶ 17 mpg city, 26 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 5; gasoline = 5
- ▶ Air Pollution Score: ★★★★★



HHR 2WD Manual Chevrolet

- ▶ 4-cyl, FFV, 2.2L engine
- ▶ \$18,720 MSRP
- ▶ 16 mpg city, 23 mpg highway (E85)
- ▶ 22 mpg city, 32 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 7; gasoline = 7
- ▶ Air Pollution Score: ★★★★★



Grand Marquis FFV Mercury

- ▶ V8, FFV, 4.6L engine
- ▶ \$29,410 MSRP
- ▶ 12 mpg city, 17 mpg highway (E85)
- ▶ 16 mpg city, 24 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 5; gasoline = 4
- ▶ Air Pollution Score: ★★★★★



Expedition 2WD Ford

- ▶ V8, FFV, 5.4L engine
- ▶ \$35,085 MSRP
- ▶ 9 mpg city, 13 mpg highway (E85)
- ▶ 13 mpg city, 19 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 2; gasoline = 2
- ▶ Air Pollution Score: ★★★★★

Also available in 4WD



Lucerne, HHR and Expedition; Wieck Media Services
Grand Marquis; Ford Motor Company

Escape FFV 2WD Ford

- ▶ V6, FFV, 3.0L engine
- ▶ \$20,550 MSRP
- ▶ 14 mpg city, 19 mpg highway (E85)
- ▶ 19 mpg city, 25 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 6; gasoline = 5
- ▶ Air Pollution Score: ★★★★★

Also available in 4WD



Mariner 2WD FFV Mercury

- ▶ V6, FFV, 3.0L engine
- ▶ \$23,070 MSRP
- ▶ 14 mpg city, 19 mpg highway (E85)
- ▶ 19 mpg city, 25 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 6; gasoline = 5
- ▶ Air Pollution Score: ★★★★★

Also available in 4WD



Avalanche 1500 2WD Chevrolet

- ▶ V8, FFV, 5.3L engine
- ▶ \$35,725 MSRP
- ▶ 11 mpg city, 16 mpg highway (E85)
- ▶ 15 mpg city, 21 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 4; gasoline = 3
- ▶ Air Pollution Score: ★★

Also available in 4WD



Tahoe 1500 2WD Chevrolet

Yukon 1500 2WD GMC

- ▶ V8, FFV, 5.3L engine
- ▶ \$37,280 MSRP
- ▶ 11 mpg city, 16 mpg highway (E85)
- ▶ 15 mpg city, 21 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 4; gasoline = 3
- ▶ Air Pollution Score: ★★

Also available in 4WD



Escape; Ford Motor Company
Mariner, Avalanche and Yukon; Wieck Media Services

Escalade 2WD Cadillac

- ▶ V8, FFV, 6.2L engine
- ▶ \$62,495 MSRP
- ▶ 10 mpg city, 16 mpg highway (E85)
- ▶ 14 mpg city, 20 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 3; gasoline = 3
- ▶ Air Pollution Score: ★★ ★

Also available in 4WD



Tribute FWD Mazda

- ▶ V6, FFV, 3.0L engine
- ▶ \$20,090 MSRP
- ▶ 14 mpg city, 19 mpg highway (E85)
- ▶ 19 mpg city, 25 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 6; gasoline = 5
- ▶ Air Pollution Score: ★★ ★★ ★

Also available in 4WD



Navigator 2WD Lincoln

- ▶ V8, FFV, 5.4L engine
- ▶ \$54,400 MSRP
- ▶ 9 mpg city, 13 mpg highway (E85)
- ▶ 14 mpg city, 20 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 2; gasoline = 3
- ▶ Air Pollution Score: ★★ ★★

Also available in 4WD



Armada 4WD Nissan

- ▶ V8, FFV, 5.6L engine
- ▶ \$37,210 MSRP
- ▶ 9 mpg city, 13 mpg highway (E85)
- ▶ 12 mpg city, 18 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 2; gasoline = 1
- ▶ Air Pollution Score: ★★ ★★

Also available in 2WD



Escalade and Navigator; Wieck Media Services
Tribute and Armada; conceptcarz.com

Sequoia 4WD FFV Toyota

- ▶ V8, FFV, 5.7L engine
- ▶ \$38,530 MSRP
- ▶ 9 mpg city, 12 mpg highway (E85)
- ▶ 13 mpg city, 18 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 1; gasoline = 1
- ▶ Air Pollution Score: ★★ ★

Only available in 4WD



Suburban C1500 2WD Chevrolet
Yukon C1500 2WD GMC

- ▶ V8, FFV, 5.3L engine
- ▶ \$40,635 MSRP
- ▶ 11 mpg city, 16 mpg highway (E85)
- ▶ 15 mpg city, 21 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 4; gasoline = 3
- ▶ Air Pollution Score: ★★ ★

Also available in 4WD



Silverado C15 2WD Chevrolet
Sierra C15 2WD GMC

- ▶ V8, FFV, 5.3L engine
- ▶ \$20,850 MSRP
- ▶ 11 mpg city, 16 mpg highway (E85)
- ▶ 15 mpg city, 21 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 4; gasoline = 3
- ▶ Air Pollution Score: ★★ ★

Also available in 4WD



Dakota 2WD Pickup Dodge

- ▶ V8, FFV, 4.7L engine
- ▶ \$23,495 MSRP
- ▶ 9 mpg city, 13 mpg highway (E85)
- ▶ 14 mpg city, 19 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 1; gasoline = 2
- ▶ Air Pollution Score: ★★ ★

Also available in 4WD



Sequoia and Silverado; conceptcarz.com
Suburban; Wieck Media Services
Dakota; Chrysler Group

Tundra 4WD FFV Toyota

- ▶ V8, FFV, 5.7L engine
- ▶ \$23,155 MSRP
- ▶ 10 mpg city, 13 mpg highway (E85)
- ▶ 13 mpg city, 17 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 2; gasoline = 2
- ▶ Air Pollution Score: ★★ ★

Only available in 4WD



F-150 2WD Ford

- ▶ V8, FFV, 5.4L engine
- ▶ \$21,380 MSRP
- ▶ 10 mpg city, 14 mpg highway (E85)
- ▶ 14 mpg city, 20 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 4; gasoline = 3
- ▶ Air Pollution Score: ★★ ★

Also available in 4WD



Titan XE Crew Cab Nissan

- ▶ V8, FFV, 5.6L engine
- ▶ \$28,870 MSRP
- ▶ 9 mpg city, 13 mpg highway (E85)
- ▶ 13 mpg city, 18 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 2; gasoline = 2
- ▶ Air Pollution Score: ★★ ★

Also available in 4WD



RAM 1500 4WD Pickup Dodge

- ▶ V8, FFV, 4.7L engine
- ▶ \$20,610 MSRP
- ▶ 9 mpg city, 12 mpg highway (E85)
- ▶ 13 mpg city, 18 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 1; gasoline = 2
- ▶ Air Pollution Score: ★★ ★

Also available in 2WD



Tundra; conceptcarz.com
F-150 and RAM; Wieck Media Services
Titan; Nissan North America

Grand Caravan FWD Dodge
Town & Country FWD Chrysler

- ▶ V6, FFV, 3.3L engine
- ▶ \$21,800 MSRP
- ▶ 12 mpg city, 17 mpg highway (E85)
- ▶ 17 mpg city, 24 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 4; gasoline = 4
- ▶ Air Pollution Score: ★★ ★



Express G1500 Cargo Van 2WD Chevrolet
Savana 1500 Passenger Van 2WD GMC

- ▶ V8, FFV, 5.3L engine
- ▶ \$24,655 MSRP
- ▶ 10 mpg city, 13 mpg highway (E85)
- ▶ 13 mpg city, 18 mpg highway (gasoline)
- ▶ Carbon Footprint: E85 = 2; gasoline = 1
- ▶ Air Pollution Score: ★★ ★



Biodiesel



Biodiesel is a clean, renewable fuel.

Biodiesel is a renewable fuel produced from a wide range of vegetable oils and animal fats. B100 is pure biodiesel, but consumers typically buy biodiesel blends ranging from B5 (5% biodiesel, 95% petroleum diesel) to

B20 (20% biodiesel, 80% petroleum diesel). In 2008, the American Society for Testing Materials published the D7467-08 standard for biodiesel blends ranging from B6 to B20. B20 has been shown to perform well in vehicles that use diesel—even in cold weather and in older engines.

Biodiesel fueling locations are available online at www.afdc.energy.gov/stations or on your mobile device at www.afdc.energy.gov/stations/m.

Biodiesel is different from plain vegetable oil.

Biodiesel is made by refining any fat or vegetable oil (such as soybean oil) using a catalyst to react the oil with an alcohol to remove glycerin. Pure biodiesel (B100) must be produced to strict specifications (ASTM D6751) to ensure proper performance. Unprocessed vegetable oil has different chemical properties than biodiesel, and engine manufacturers do not recommend its use in diesel engines.

Biodiesel is good for your vehicle and the environment.

Biodiesel performs much like petroleum diesel in most engines. It reduces engine wear and cleans out deposits to help engines run more efficiently. It also significantly curbs most tail-pipe emissions and reduces greenhouse gases. With more than 5 million diesel cars, pickups, and SUVs on U.S. roads today, the petroleum reduction potential of biodiesel holds great promise for U.S. energy security.

RAM 2500/3500 4WD Dodge

- ▶ I-6, 6.7L Turbo Diesel
- ▶ \$47,425 MSRP
- ▶ Carbon footprint: Not available
- ▶ Air Pollution Score: Not available

What's Next for Alternative Fuel Vehicles?



Nissan LEAF

The development of advanced technology vehicles has accelerated since 2005. Vehicles that were only talked about as concept vehicles are now being rolled out for testing. There are still concerns among OEMs about the cost of groundbreaking technologies such as lithium-ion batteries and hydrogen fuel cells and about how willing American consumers are to use gaseous fuel or plug-ins for electric vehicles.

Plug-in hybrid electric vehicles provide the best of both worlds.

Plug-in hybrid electric vehicles combine fuel-saving battery operation with gasoline fuel range. Plug-in recharging extends the electric power range available today in hybrid electrics—promising potentially large fuel and cost savings and emissions reductions.

Operating on a combination of electric power and liquid fuel (gasoline, diesel, or ethanol), plug-in hybrid electric vehicles (PHEVs) are a follow-on to available hybrid electrics such as the Toyota Prius and the Ford Escape Hybrid. Several manufacturers including Toyota, Ford, Chinese automaker BYD Auto, Volkswagen, and California startups Fisker Automotive and Aptera Motors, have announced their intention to introduce production PHEV automobiles for model year 2011.



Wieck Media Services

Leaf; Nissan

All-electric cars pick up speed.

The first commercially available highway speed all-electric car was the Tesla Roadster, a custom two-seater sports car that appeared in 2008. Next year Nissan is expected to roll out the LEAF and General

Motors is expected to introduce the Chevrolet Volt Extended Range Electric Vehicle—zero-emission, all-electric vehicles that can travel at highway speeds.



The Chevy Volt uses electricity to move the wheels at all times and speeds. For trips up to 40 miles, the Volt is powered by only electricity stored in a 16-kWh, lithium-ion battery. When the battery's energy is depleted, a gasoline-powered engine generator provides electricity to power the Volt's electric drive unit while simultaneously sustaining the charge on the battery. This operation mode extends the Volt's range for several hundred additional miles, until the vehicle's battery can be plugged in and recharged.

Fuel cell cars burn clean.

The interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency, which can be two to three times more efficient than gasoline vehicles. Honda's Clarity FCX and the Chevrolet Equinox Fuel Cell vehicle have been driven by consumers under real-world driving conditions to gather data about this promising technology.

The Chevy Equinox runs on electricity created by an on-board fuel cell stack. The only emissions are wisps of water vapor. The Equinox carries 4.2 kilograms of compressed hydrogen on board, enough for about 168 miles, and has EPA ratings of 38 city and 46 highway. Regenerative braking, which sends energy created in braking back to the vehicle battery, extends the driving range. A five-to-seven minute refill available at hydrogen stations in New York, Washington, D.C., and Southern California is all that's required to get the Equinox back on the highway.



General Motors Equinox

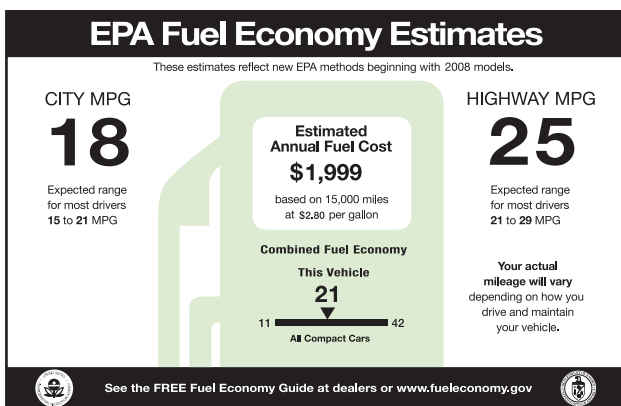
EPA Fuel Economy Estimates

The fuel economy estimates made by the U.S. Environmental Protection Agency (EPA) are determined by laboratory test procedures prescribed by EPA regulations. In 2008, the EPA revised these standards for new vehicles sold after 2007. Test procedures are performed by auto manufacturers, and EPA audits the results at its own test laboratory to ensure manufacturers' accuracy. The vehicles are driven by professional drivers in controlled laboratory conditions using standardized test methods that ensure the fuel economy of all vehicles can be compared.

These methods are used to determine the city and highway estimates posted on the Green Vehicle Guide (www.epa.gov/greenvehicles) and on the window stickers of all new cars and light trucks. The methods were designed to provide consumers with better fuel economy estimates based on realistic driving conditions, such as cold temperatures, higher speeds, and use of air conditioning.

Even with the improved test methods for measuring fuel economy, no test can simulate all the possible conditions that affect fuel economy, such as climate, driver behavior, road condition, and vehicle care habits. Your actual mileage will vary from the estimates. For 2010, the EPA created "Your MPG" to help you calculate and track your fuel economy to compare with EPA test ratings. You can register online to share your mpg data with other users at <https://www.fueleconomy.gov/mpg/MPG.do>. If you register, you can save your mpg information to view, edit, or update later.

Federal fuel economy requirements currently apply to only light-duty vehicles and light-duty trucks weighing under 8,500 pounds (gross vehicle weight rating), which excludes some pickups, vans, and SUVs. Beginning with 2011 models, fuel economy estimates will be required for vehicles known as "Medium-Duty Passenger Vehicles," which are SUVs and vans rated at 10,000 pounds (gross vehicle weight rating).



Environmental Protection Agency

Vehicle Conversions

What is an alternative fuel vehicle conversion?

A converted vehicle is one that was originally designed to operate on gasoline or diesel but has a modified fueling system to run on an alternative fuel. Compressed natural gas (CNG) and liquefied petroleum gas (propane) are the most common alternative fuel vehicle conversions.

The Environmental Protection Agency (EPA) requires manufacturers to certify all conversion systems by obtaining a Certificate of Conformity. EPA issues Certificates of Conformity that cover a “test group”—a specific vehicle or engine model modified to operate on an alternative fuel. Data for a test group retrofitted with a conversion company’s alternative fuel system must be submitted to EPA for certification. Once the Certificate of Conformity is issued, vehicles in the test group may be converted by that company to use that alternative fuel system.

The converter must ensure the vehicle meets the same exhaust and emissions standards that the original equipment manufacturer vehicle was required to meet. The certification process involves emissions testing of a converted vehicle prior to issuing the certificate, and certification applies only to the certified vehicles, not the conversion system itself. More conversion information is available at www.afdc.energy.gov/afdc/vehicles/conversions.html.



Dept of Energy/PIX 16748

Convert to propane.

Gasoline engines may be converted to operate solely on propane (referred to as a dedicated conversion) or equipped to switch between propane and gasoline (known as a bifuel conversion). Information about current propane conversion options is available from the Propane Education & Research Council (PERC) at www.propanecouncil.org.

Convert to natural gas.

Vehicles converted to run on natural gas must follow the same procedure described above. NGV America publishes a list of Available Natural Gas Vehicles and Engines online at: www.ngvc.org/pdfs/marketplace/MP.Analyses.NGVs-a.pdf. This document lists light-, medium-, and heavy-duty natural gas vehicles and engines available directly from large original equipment manufacturers (OEMs) or qualified system retrofitters. The document also provides manufacturer and retrofitter contact information.

Convert to E85.

Converting a conventional gasoline vehicle to run on E85 is allowed when, like natural gas and propane systems, the conversion system has been certified by the EPA. Converted vehicles must meet existing EPA emissions standards set for OEM vehicles of the same model year, and all vehicle components and materials—whether supplied by original equipment manufacturers or the conversion companies—must be compatible with E85 throughout the life of the vehicle. Using noncertified conversion systems of any kind may lead to tampering charges under the Clean Air Act and may affect vehicle warranties.



Fuel Conservation

Adopt good driving habits.

Jack-rabbit starts, hard braking, high-speed driving, and excessive idling all waste fuel. By accelerating gradually, easing into traffic, and trimming five miles per hour from your speed, you can save fuel. Calculate your miles per gallon based on your current driving habits and then make some changes. Reduce your highway driving speed to 60 mph, accelerate gradually from stops, and avoid hard braking. Reduce idling as much as possible. When you anticipate waiting for more than a minute, turn off your engine if it's safe to do so. Compare your mileage after one tank, and you will see that more moderate driving habits can pay real dividends.



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Use fuel saving techniques with your vehicle.

Around town, turn your air conditioner off and roll down the windows. At speeds of 40 mph or more, roll up your windows and turn on the air conditioner to reduce drag.

Use four-wheel drive only when necessary. Engaging all four wheels makes the engine work harder and increases crankcase losses.

Inflate your tires to the recommended pressure. Remind yourself to check tire pressure at least once per month.

For more tips and information about fuel conservation, visit www.fueleconomy.gov/feg/driveHabits.shtml.



Dean Armstrong, NREL/PIX 16794



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