Find-a-Car Help

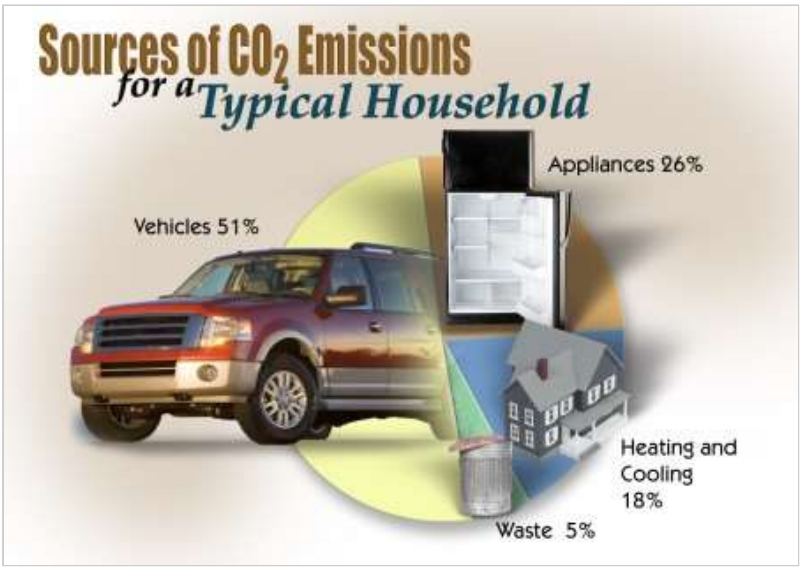
Contents

Miles Per Gallon Equivalent (MPGe)

Miles per gallon equivalent (MPGe) helps you compare the fuel economy of vehicles that use fuels that are not measured in gallons, such as electricity, natural gas, and hydrogen. It represents the number of miles the vehicle can go using a quantity of fuel with the same energy content as a gallon of gasoline.

Greenhouse Gas Emissions

This measure shows a vehicle's impact on climate change in terms of the amount of greenhouse gases, mostly carbon dioxide (CO_2), it emits. Your choice of vehicle has the biggest impact on your overall contribution to climate change.



Graph does not include CO_2 from public transportation and air travel.

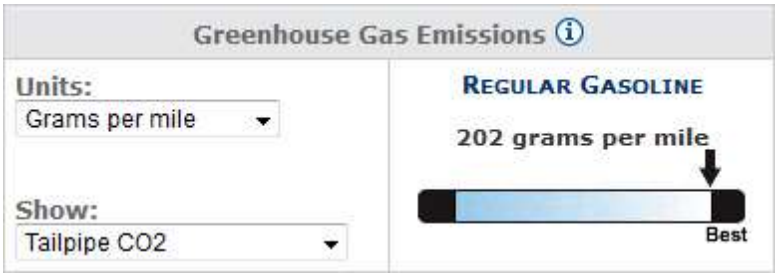
We provide two kinds of greenhouse gas (GHG) emission estimates:

1. Tailpipe-only CO_2 emissions
2. Tailpipe and "upstream" GHG emissions (CO_2 and other GHGs)

If a vehicle can operate on more than one type of fuel, an estimate is provided for each fuel type.

Tailpipe Emissions

These estimates include CO_2 emitted from the vehicle's tailpipe and can be displayed grams per mile, U.S. tons per year, or metric tons per year.

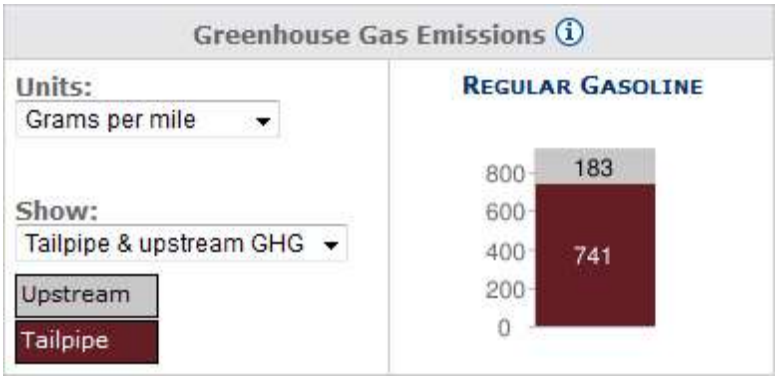


A rating scale is also displayed to show how the vehicle's tailpipe CO_2 emissions compare to those of other vehicles for all model years back to 1984 (GHG rating scale charts by model year).

Note: For model years 2012 and earlier, tailpipe CO_2 is estimated using an EPA emissions factor and does not reflect direct test results.

Tailpipe and Upstream Emissions

These estimates include CO_2, methane, and nitrous oxide emitted from all steps in the use of a fuel, from production and refining to distribution and final use—vehicle manufacture is excluded. Methane and nitrous oxide emissions are converted into a CO_2 equivalent. Tailpipe emissions and upstream emissions—those that occur prior to the fuel being used in the vehicle—are displayed.



Personalize Your Estimate

You can personalize the GHG emission estimates by indicating your annual mileage and the percentage of miles you drive in city vs. highway driving conditions.

Upstream Greenhouse Gas Emissions for E85

Upstream greenhouse gas emissions related to the production of ethanol depend on many variables and uncertainties that are currently being studied. Estimates for flex-fuel vehicles are not provided at this time.

Additional information about the full lifecycle greenhouse gas emissions of ethanol can be found at

- Renewable Fuel Standard: Potential Economic and Environmental Effects of U.S. Biofuel Policy (National Research Council 2011)
- Ethanol: The Complete Energy Lifecycle Picture (DOE 2007)
- Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis (EPA 2010)

EPA Smog Rating & Smartway Certification

EPA Smog Rating

The EPA Smog Rating represents the amount of health-damaging and smog-forming airborne pollutants the vehicle emits. Scoring ranges from 1 (worst) to 10 (best). This rating does not include emissions of greenhouse gases.

The smog rating chart has been recalibrated for model year 2018 to reflect new, more stringent Tier 3 emission standards.

For more detailed information about the smog rating, see EPA's Green Vehicle Guide.

Ratings Vary By State

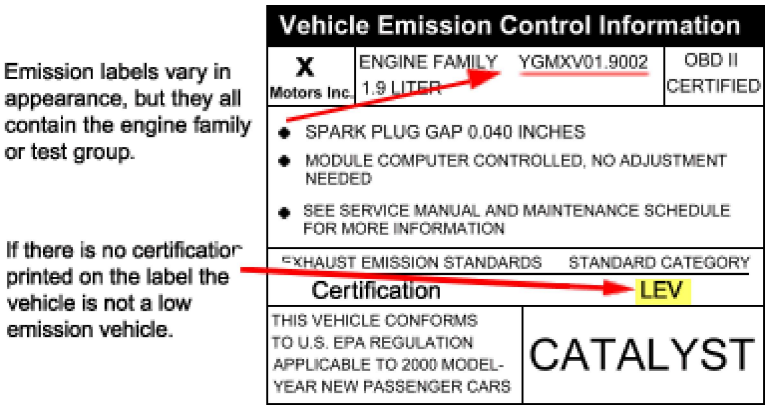
All light-duty cars and trucks must meet either federal (EPA) or California emission requirements. Individual states can choose which standards apply to vehicles sold in that state.

Within both the federal and California systems, automakers may choose from a range of emission standards for each of their vehicles, while maintaining the required fleet average, which is why you see a range of smog ratings.

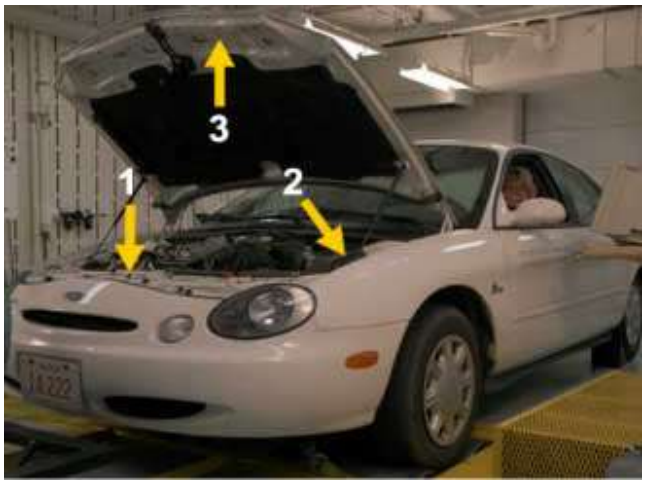
Two vehicles of the same make and model may have different smog ratings. This is generally due to the vehicles being sold in different states (one with federal standards, and another with California standards). Two situations can occur:

1. The vehicles have different emissions configurations. You can distinguish between these vehicles by locating the 12-digit "Engine Family" or "Test Group ID" on the certification label under the hood (see diagram below). You can also find this ID number under vehicle smog ratings posted on fueleconomy.gov.

2. The vehicles have identical Engine Family or Test Group IDs, but the manufacturer has decided to certify the vehicles to different emission standards. Although fueleconomy.gov provides smog ratings by state, the fuel economy labels that are affixed to vehicles on dealership lots will always reflect the federal standard.



The certification label can usually be found in one of several locations under the hood.



SmartWay Certification

Vehicles that receive the SmartWay certification are very good environmental performers relative to other vehicles. They must attain a better-than-average EPA Smog Ratings and Greenhouse Gas Emissions.

The SmartWay Elite certification is reserved for those vehicles that attain the best smog and greenhouse gas emission ratings.

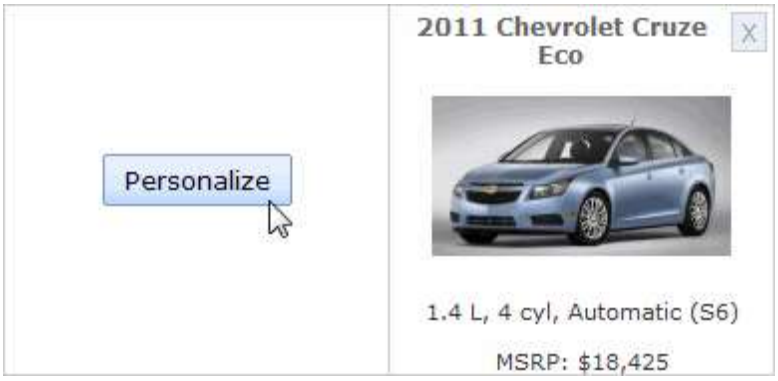
Since the SmartWay certification is based partly on the EPA Smog Rating, you must indicate the state where the vehicle will be purchased to view the SmartWay Certification.

Energy Impact Score

The Energy Impact Score shows the number of barrels of *petroleum* the vehicle will likely consume each year.

Personalizing Estimates

The estimates on this page are based on assumptions about a "typical" driver. Clicking the Personalize button in the upper-left corner of the table allows you to enter information about your annual mileage, the percentage of miles you drive in city vs. highway driving conditions, and your local fuel prices so that we can provide estimates just for you.



EPA Size Class

The size class for cars is based on interior passenger and cargo volumes as described below. The size class for trucks is defined by the gross vehicle weight rating (GVWR), which is the weight of the vehicle and its carrying capacity. Fuel economy regulations do not apply to heavy-duty vehicles, so they are not tested. See Which Vehicles Are Tested for more information on these vehicles.

Vehicle Size Classes Used in the Fuel Economy Guide

CARS		
Class	**Passenger & Cargo Volume (Cu. Ft.)**	
Two-Seaters	Any	
Sedans		
Minicompact	<85	
Subcompact	85 to 99	
Compact	100 to 109	
Midsize	110 to 119	
Large	120 or more	
Station Wagons		
Small	<130	
Midsize	130 to 159	
Large	160 or more	
TRUCKS		
Class	**Gross Vehicle Weight Rating (GVWR)***	
Pickup Trucks	**Through MY 2007**	**As of MY 2008**
Small	<4,500 lbs.	<6,000 lbs.
Standard	4,500 to 8,500 lbs.	6,000 to 8,500 lbs.
Vans	**Through MY 2010**	**As of MY 2011**
Passenger	<8,500 lbs.	<10,000 lbs.
Cargo	<8,500 lbs.	
Minivans	<8,500 lbs.	

SUVs	Through MY 2010	As of MY 2011
	<8,500 lbs.	<10,000 lbs.
Special Purpose Vehicles	**Through MY 2010**	**As of MY 2011**
	<8,500 lbs.	<8,500 lbs. or <10,000 lbs., depending on configuration

MY = model year

*Gross Vehicle Weight Rating (GVWR) is calculated as truck weight plus carrying capacity.

Fuel Economics

Fuel cost estimates assume national average fuel prices and assume you drive 15,000 miles each year, 45% under highway driving conditions (steady speeds with little or no stopping) and 55% in city driving (low speeds with lots of stopping).

You can personalize these values to reflect the price of fuel in your area and your own driving patterns.

Cost to Refuel

Cost to completely refuel the vehicle when the tank (or battery) is 100% empty. Plug-in hybrids have refueling costs for both the fuel tank and the battery.

Distance on a Full Tank/Charge

The distance the vehicle can go from a full tank or full charge (or both, with plug-in hybrids). U.S. or metric units can be displayed depending on the setting in Personalize.

Fuel Capacity

The amount of fuel the vehicle can hold. For a vehicle using gasoline or another liquid fuel, this is the size of the fuel tank in gallons or liters. For electric vehicles, this is the battery capacity in kilowatt-hours. Plug-in hybrids have a capacity for both liquid fuel and electricity.

Engine, Motor, and Transmission Descriptors

Engine and Motor Descriptors

Code	Description
AFM	Active fuel management
CNG	Compressed natural gas
CVH	Compound valve angle hemispherical combustion chamber engine
DI	Direct injection

DOD	Displacement on demand
DSL	Diesel
DVVT	Dual variable valve timing
DOHC	Double overhead camshaft
E85	A Mixture of 85% ethanol and 15% gasoline
eAssist	A mild hybrid technology that helps save fuel
FFS	Feedback fuel system
FFV	Flexible-fuel vehicle. A vehicle that can run on a mixture of two fuel types (e.g., gasoline and ethanol)
GM-BUICK	Engine produced by GM-Buick Motor Division
GM-CHEV	Engine produced by GM-Chevrolet Motor Division
GM-OLDS	Engine produced by GM-Oldsmobile Motor Division
GM-PONT	Engine produced by GM-Pontiac Motor Division
GUZZLER	Vehicle subject to gas guzzler tax due to low fuel economy (tax paid by manufacturer, not buyer)
HEV	Hybrid electric vehicle
HP	Horsepower
I4	In-line 4-cylinder engine
i-ELOOP	Mazda regenerative braking system
LPT	Low-pressure turbo
M-ENG	One of two 5.8L Ford truck engines
Mild hybrid	Mild hybrids use stop-start technologies and a small regenerative braking system that can recover and reuse small amounts of energy lost from braking.
MPFI, MPI	Multipoint fuel injection
NG	Natural gas
NGV	Natural gas vehicle
NO-CAT	No catalytic converter

OHC	Overhead camshaft
OHV	Overhead valves
PHEV	Plug-in hybrid electric vehicle
POLICE	Police vehicle
PFI	Port fuel injection
PR	Premium gasoline required
PZEV	Partial zero-emission vehicle
RNG140/220	Driving range (on a full tank of fuel); example: RNG140/220 = 140 miles on onel fuel and 220 miles on the other
RNG380	Driving range (on a full tank of fuel); example: RNG380 = 380 miles
ROTARY	Rotary engine
S-CHARGE, SC	Supercharger
SIDI	Spark-Ignition Direct-Injection
SMG	Sequential manual gearbox
SOHC	Single overhead camshaft
SPFI	Single-point fuel injection
Stop-start	A fuel-saving technology that stops the engine when the car comes to a stop and automatically restarts it to resume driving
TURBO, TRBO, TC	Turbocharger
ULEV	Ultra-low emission vehicle
VARIABLE	Variable displacement engine
VIS	Variable induction system
VTEC	Variable valve timing and lift electronic control
VCM	Variable cylinder management
VCR	Mechanically variable compression ratio engine

W-END	One of two 5.8L Ford truck engines
ZEV	Zero-emisssion vehicle
16-VALVE	16 valves
305	305 cubic inch displacement engine
307	307 cubic inch displacement engine

Transmission Descriptors

Code	Description
Auto (A*n*), Auto *n*-spd, Automatic *n*-spd, A*n*	Automatic transmission (*n*=number of gears/speeds).
Auto (L*n*), Automatic (L*n*)	Automatic transmission with lock-up (*n*=number of gears/speeds).
Auto (S*n*), Automatic (S*n*), S*n*	Automatic transmission with select shift (*n*=number of gears/speeds). Select shift allows the driver to manually change gears, over-riding the automatic transmission.
AM*n*	Automated manual transmission (*n*=number of gears/speeds)
AM-S*n*	Automated manual transmission with select shift (*n*=number of gears/speeds). Select shift allows the driver to manually change gears, over-riding the transmission.
AV-S*n*	Automatic variable transmission with select shift (*n*=number of gears/speeds). Select shift allows the driver to manually change gears, over-riding the automatic transmission.
CLKUP	Computer-controlled continuously variable lockup
CMODE	Computer-controlled multimode transmission
CVT	Continuously variable transmission
CVT2L	Continuously variable transmission low-range system
DC/FW	Declutching and freewheeling
DCT	Dual clutch transmission
EMS	Engine management system

LONG RATIO	Long ratio gearbox
nLKUP	User-selectable lockup with *n* (2 through 9) lockup ranges
Manual *n*-spd, M*n*	Manual transmission (*n*=number of gears/speeds).
nMODE	Multimode, user-selectable transmission. *n* = number of gear range (2 through 9)
SIL	Shift indicator light on instrument panel
VLKUP	Continuously variable, user-selectable lockup
VMODE	User-selectable continuously variable transmission

Motor and Battery Descriptors

Code	Description
AC	Alternating current
ACIPM	Alternating current induction permanent magnet motor
ACPM	Alternating current permanent magnet motor
DC	Direct current
DCPM	Direct current permanent magnet motor
kW	Kilowatt
kWh, kW-hr	Kilowatt-hour
Li-Ion	Lithium-ion battery
NiMH	Nickel-metal hydride battery
PMSM	Permanent magnet synchronous motor
V	Volt

What's the difference between air pollution and greenhouse gas emissions?

The smog and greenhouse gas ratings measure different types of vehicle emissions. Air pollutants harm human health and/or cause smog. Greenhouse gas emissions (primarily CO_2) contribute to climate change.