

**Guide to
Available Natural Gas Vehicles and Engines**
a listing of
Light-, Medium- and Heavy-Duty Vehicles and/or Engines
available directly from
Original Equipment Manufacturers (OEM)
or via **Qualified System Retrofitters Using EPA-/CARB-Certified Systems**
from **Small Volume OEMs (SVM)**

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How to Use This Guide

On the following pages, NGVAmerica has assembled information about vehicles and/or engines that have been certified by the US Environmental Protection Agency (EPA) and/or California Air Resources Board (CARB) to operate on natural gas, either as (1) dedicated vehicles - *spark-ignited engine operates on natural gas only*, (2) bi-fuel vehicles - *spark-ignited engine operates on either compressed natural gas (CNG) or gasoline, but not both at same time*, or (3) dual-fuel vehicles - *compression-cycle engine operates primarily on natural gas but uses diesel as ignition "pilot".**

Generally, CARB has more stringent emissions and on-board diagnostics (OBD) compliance requirements than EPA. Other differences between the two sets of standards is that EPA classifies vehicles under 8500 pounds GVW as light duty and those over as heavy-duty while CARB's light duty classification goes up to 10,000 pounds. While most states require certification to EPA standards, a growing number of states are opting to adopt CARB standards for new registered vehicles.

This Guide's list of light -duty vehicles includes those manufactured at the factory by traditional Original Equipment Manufacturers (OEMs) such as American Honda as well as those retrofit with EPA- or CARB-certified engine systems after leaving the factory using systems made by Small Volume Original Equipment Manufacturers (SVMs). Furthermore, SVM engine retrofit systems may be installed before placing the vehicle into active service or afterward. System installations are usually handled by the SVMs themselves or their qualified system retrofitters. Note that, unlike the unregulated "conversion kits" that were available from dozens of manufacturers in the late-1970s through the mid-1990s, all gaseous fuel engine systems on the market today are engineered and tested to comply with the same tough CARB and/or EPA emissions performance requirements as the large automobile manufacturers.

Also note that EPA and CARB certifications of light-duty vehicle retrofit systems are for specific model years and installation time-periods. Current 2008/2009 model (MY) listings are listed on the first chart. The second chart lists certifications held in previous years. Those interested in converting an existing vehicle should check with the SVMs about whether these prior year certifications have been "carried forward" (renewed). Most have not been carried forward more than a year from the original model year in which they were issued.

The Guide's list of medium- and heavy-duty engines is sorted by engine size (defined by displacement) and - for the Otto-cycle (gasoline) based engines - the vehicle chassis to which those engine retrofit systems apply (per EPA and CARB rules concerning modifications to gasoline-based engines). For the diesel-based engine platforms, we have attempted to list the OEM or Distributor OEM (DOEM) relationships to which they apply but readers are advised that these engines are also permitted to be field-retrofit by engine-system integrators to additional platforms. Contact the engine manufacturer to get a full listing of available applications.

*When new engines are EPA- or CARB-certified to run on hydrogen (H₂) or hydrogen-CNG blends (generically referred to as "HCNG"), these engines will be added to the listing. As of this revision of the guide (5-10-08), H₂ and HCNG engines were being tested/monitored in various field RD&D trials but none had yet been certified for general commercial sale.

This Guide is a work product of NGVAmerica and not an official government document - any omissions or errors are inadvertent. If notified of errors or omissions, NGVAmerica will do its best to verify certifications and correct this listing as quickly as possible.

Medium- and Heavy-Duty Engines

BAF Technologie: See Light-Duty Vehicle charts for additional listings by BAF Technologies

5.4 L V-8 (spark-ignited) Dedicated CNG. Based on Ford Triton gasoline engine. CARB/EPA certified application: retrofits of MY07/08/09 E350 passenger and cargo vans (9600GVW); MY08/09 F150, F250 and F350 (up to 11,000# GVWR)

6.8L V-10 (spark-ignited) Dedicated CNG. Based on Ford gasoline engine. CARB/EPA certified application: retrofits of MY06/07/08/09 E450 series cutaway vans (for shuttles, box trucks, etc)

Baytech Corporal See Light-Duty Vehicle charts for additional listings by Baytech Corporation

6.0L HD (spark-ignited) Dedicated CNG and Bi-Fuel. Based on GM Vortec 6000 V-8 gasoline engine. CARB/EPA certified application: retrofits of MY06/07/09 Sierra/Silverado 2500HD/3500 pick-up and Utility Cab+Chassis models, W3500/4500, Isuzu NPR/NPR HD, GM cutaway (over 14,000#), Workhorse W42 chassis. (Contact Baytech regarding availability of systems for MYs prior to 2006)

8.1L V-8 (spark-ignited) Dedicated CNG and Bi-fuel. Based on GM 8.1L gasoline engine. CARB/EPA certified applications: retrofits of MY06/07/08/09 C4500/5500/6500/7500/8500 (Topkick), Workhorse W62 chassis. (Contact Baytech regarding availability of systems for MYs prior to 2006)

FuelTek Conversion Corp.

5.4 L V-8 (spark-ignited) **See Light-Duty Vehicle charts for additional listings by FuelTek Conversion Corp.**
Bi-Fuel CNG. Based on Ford Triton gasoline engine. EPA certified application: retrofits of MY 08 F250 and F350 (up to 13,000# GVWR)

Cummins Westport Inc

5.9L B Gas F (spark-ignited) Based on Cummins ISB diesel platform; 195-230 HP; medium-duty applications such as shuttles, buses, delivery trucks, walk-in vans, yard spotters, and street sweepers. Ex: Freightliner Custom Chassis (FCC) MT45/MT55 walk-in van chassis; FCC MB55 shuttle bus chassis (upfit by multiple vendors); Tymco, Elgin, Allianz-Johnston and Schwarze sweepers (various models)

8.9L ISL G (spark-ignited) Based on Cummins ISL diesel platform; 2010-compliant (.2 NOx and .01PM); HP ratings of 250, 260, 280, 300, 320; replaced CWI's C Gas Plus and L Gas Plus engine lines across all vehicle types in June 2007. Available in: Refuse trucks (Peterbilt LCF 320, Crane-Carrier LET, Autocar Xpedito and ALF Condor); school buses (Thomas Saf-T-Liner HDX, Blue Bird All American RE); Sterling "L" series trucks; several sweeper models.

Emission Solutions Inc

7.6L NG Phc (spark-ignited) CARB-certified at .8NOx; Based on International/Navistar DT466 diesel platform, remanufactured to natural gas operational specifications; 265 HP; DT466 engine replacement in existing/new International school bus, medium-, medium-heavy-duty and heavy-duty work truck applications. 2010-compliant version due out 2Q 2008. Also certifying 9.0L 300+HP 530/570 models in 2nd/3rd Q 2008

Westport Innovations

15L ISX-G (compression ignited) Based on Cummins ISX diesel platform; CARB/EPA-certified, available in 400 + 450Hp configurations for HD work truck and line-haul applications (including OEM install by Kenworth); HPDI fuel system runs on natural gas with diesel as pilot fuel

Spark-Ignited Natural Gas (SING) Light-Duty Vehicles Up to 10,000# (MY 2008/09)

Engine	Make	Model	Baytech Corporation			BAF Technologies			IMPCO Technologies			Fuel Tek Conversion Corp		
			Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	B-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	B-Fuel/ Dedicated	EPA/ CARB	Model Year(s)
American Honda Motor Company (OEM)														
1.8L	Honda	Civic GX (dedicated CNG)												
General Motors														
6.0L V8	Chevy	Express Passenger/Cargo Van G1500	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	Chevy	Express Passenger/Cargo Van G1500	Dedicated	CARB	2009									
6.0L V8	Chevy	Express Passenger/Cargo Van G2500	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	Chevy	Express Passenger/Cargo Van G2500	Dedicated	CARB	2009									
6.0L V8	Chevy	Express Passenger/Cargo Van G3500	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	Chevy	Express Passenger/Cargo Van G3500	Dedicated	CARB	2009									
6.0L V8	Chevy	Silverado C1500HD	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	Chevy	Silverado C1500HD	Dedicated	CARB	2009									
6.0L V8	Chevy	Silverado C/K2500 HD 2WD/4WD	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	Chevy	Silverado C/K2500 HD 2WD/4WD	Dedicated	CARB	2009									
6.0L V8	Chevy	Silverado C/K3500 2WD/4WD	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	Chevy	Silverado C/K3500 2WD/4WD	Dedicated	CARB	2009									
6.0L V8	GMC	Cutaway G3500	Bi+Ded	EPA/CARB	2009									
6.0L V8	GMC	Savana Passenger/Cargo Van G1500	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	GMC	Savana Passenger/Cargo Van G1500	Dedicated	CARB	2009									
6.0L V8	GMC	Savana passenger/Cargo Van G2500	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	GMC	Savana passenger/Cargo Van G2500	Dedicated	CARB	2009									
6.0L V8	GMC	Savana Passenger/Cargo Van G3500	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	GMC	Savana Passenger/Cargo Van G3500	Dedicated	CARB	2009									
6.0L V8	GMC	Sierra C1500HD	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	GMC	Sierra C1500HD	Dedicated	CARB	2009									
6.0L V8	GMC	Sierra C/K2500 HD 2WD/4WD	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	GMC	Sierra C/K2500 HD 2WD/4WD	Dedicated	CARB	2009									
6.0L V8	GMC	Sierra C/K3500 2WD/4WD	Bi+Ded	EPA	2009				Bi-Fuel	EPA	2007/08			
6.0L V8	GMC	Sierra C/K3500 2WD/4WD	Dedicated	CARB	2009									
Ford Motor Company														
4.6L V8	Ford	Crown Victoria				Dedicated	EPA/CARB	2008						
4.6L V8	Mercury	Grand Marquis				Dedicated	EPA/CARB	2008						
4.6L V8	Lincoln	Town Car				Dedicated	EPA/CARB	2008						
5.4L V8	Ford	F 150 pick-up + cab-chassis				Dedicated	EPA/CARB	2008						
5.4L V8	Ford	F 250/350 pick-up + cab-chassis				Dedicated	EPA/CARB	2008				Bi-Fuel	EPA	2008
5.4L V8	Ford	E-350 Cutaway Cab and Chassis				Dedicated	EPA/CARB	2008						
5.4L V8	Ford	E-350 Passenger/Cargo Van				Dedicated	EPA/CARB	2008						
6.8L V10	Ford	E-450 Cutaway Cab and Chassis				Dedicated	EPA/CARB	2008						

Spark-Ignited Natural Gas (SING) Engine Retrofit Systems For Light-Duty Vehicles (Pre-MY 2008)

Engine	Make	Model	Baytech Corporation			BAF Technologies			ECO Fuel			Campbell Parnell Tech.		
			Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)
General Motors														
3.1L V6	Buick	Century							Bi-Fuel	EPA	2003			
3.1L V6	Chevy	Malibu							Bi-Fuel	EPA	2003			
3.1L V6	Pontiac	Grand Prix							Bi-Fuel	EPA	2003			
3.4L V6	Chevy	Impala							Bi-Fuel	EPA	2003			
3.4L V6	Chevy	Monte Carlo							Bi-Fuel	EPA	2003			
3.4L V6	Olds	Alero							Bi-Fuel	EPA	2003			
3.4L V6	Pontiac	Grand Am							Bi-Fuel	EPA	2003			
3.4L V6	Pontiac	Grand Prix							Bi-Fuel	EPA	2003			
3.5L	Chv/GMC	Colorado/Canyon 2WD/4WD							Dedicated	EPA	2006			
3.5L	Hummer	H3 AWD							Dedicated	EPA	2006			
3.8L V8	Buick	LeSabre							Bi-Fuel	EPA	2003			
3.8L V8	Buick	Park Avenue							Bi-Fuel	EPA	2003			
3.8L V8	Buick	Regal							Bi-Fuel	EPA	2003			
3.8L V8	Chevy	Impala							Bi-Fuel	EPA	2003			
3.8L V8	Chevy	Monte Carlo							Bi-Fuel	EPA	2003			
3.8L V8	Pontiac	Grand Am							Bi-Fuel	EPA	2003			
3.8L V8	Pontiac	Grand Prix							Bi-Fuel	EPA	2003			
4.3L V6	Chevy	Astro Minivan	Bi+Ded	EPA/CARB	2000-03									
4.3L V6	Chevy	Astro Minivan	Dedicated	EPA/CARB	2004-05									
4.3L V6	Chevy	Blazer 2WD/4WD	Bi+Ded	EPA/CARB	2000-03									
4.3L V6	Chevy	Blazer 2WD/4WD	Dedicated	EPA/CARB	2004-05									
4.3L V6	Chevy	Express Cargo Van G1500/2500	Bi+Ded	EPA/CARB	2000-05									
4.3L V6	Chevy	Express Pass. Van G1500/2500	Bi+Ded	EPA/CARB	2000-05									
4.3L V6	Chevy	S-10 2WD/4WD	Bi+Ded	EPA/CARB	2000-03									
4.3L V6	Chevy	Silverado C/K1500 2WD/4WD	Bi+Ded	EPA/CARB	2000-05									
4.3L V6	Chevy	Sonoma 2WD/4WD	Bi+Ded	EPA/CARB	2000-03									
4.3L V6	GMC	Jimmy 2WD/4WD	Bi+Ded	EPA/CARB	2000-03									
4.3L V6	GMC	Jimmy 2WD/4WD	Dedicated	EPA/CARB	2004-05									
4.3L V6	GMC	Safari Minivan	Bi+Ded	EPA/CARB	2000-03									
4.3L V6	GMC	Safari Minivan	Dedicated	EPA/CARB	2004-05									
4.3L V6	GMC	Savana Cargo Van G1500/2500	Bi+Ded	EPA/CARB	2000-05									
4.3L V6	GMC	Savana Pass. Van G1500/2500	Bi+Ded	EPA/CARB	2000-05									
4.3L V6	GMC	Sierra C/K1500 2WD/4WD	Bi+Ded	EPA/CARB	2000-05									
4.3L V6	Workhorse	P Chassis	Bi+Ded	EPA/CARB	2000-03									
4.8L V8	Chevy	Express Pass/Cargo G1500/2500/3500							Dedicated	EPA	2006			
4.8L V8	Chevy	Silverado C/K1500 2WD/4WD							Bi-Fuel	EPA	2005			
4.8L V8	Chevy	Silverado C/K1500 2WD/4WD							Dedicated	EPA	2006			
4.8L V8	Chevy	Tahoe C/K 1500 2WD/4WD							Dedicated	EPA	2006			
4.8L V8	GMC	Savana Pass/Cargo G1500/2500/3500							Dedicated	EPA	2006			
4.8L V8	GMC	Sierra C/K1500 2WD/4WD							Bi-Fuel	EPA	2005			
4.8L V8	GMC	Sierra C/K1500 2WD/4WD							Dedicated	EPA	2006			
4.8L V8	GMC	Yukon C/K 1500 2WD/4WD							Dedicated	EPA	2006			

Spark-Ignited Natural Gas (SING) Engine Retrofit Systems For Light-Duty Vehicles (Pre-MY 2008)

Engine	Make	Model	Baytech Corporation			BAF Technologies			ECO Fuel			Campbell Parnell Tech.		
			Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)	Bi-Fuel/ Dedicated	EPA/ CARB	Model Year(s)
General Motors (6.0L systems continued)														
6.0L V8	Chevy	Tahoe	Dedicated	EPA/CARB	2004-06									
6.0L V8	GMC	Cutaway G3500	Bi+Ded	EPA/CARB	2004-07									
6.0L V8	GMC	Savana Cargo Van G1500	Bi+Ded	EPA/CARB	2004-07				Dedicated	EPA	2006			
6.0L V8	GMC	Savana Cargo Van G2500	Bi+Ded	EPA/CARB	2004-07				Dedicated	EPA	2006			
6.0L V8	GMC	Savana Cargo Van G3500	Bi+Ded	EPA/CARB	2004-07				Dedicated	EPA	2006			
6.0L V8	GMC	Savana Passenger Van G1500	Bi+Ded	EPA/CARB	2004-07				Dedicated	EPA	2006			
6.0L V8	GMC	Savana Passenger Van G2500	Bi+Ded	EPA/CARB	2004-07				Dedicated	EPA	2006			
6.0L V8	GMC	Savana Passenger Van G3500	Bi+Ded	EPA/CARB	2004-07				Dedicated	EPA	2006			
6.0L V8	GMC	Sierra C1500HD	Dedicated	EPA/CARB	2004-07									
6.0L V8	GMC	Sierra C/K2500 HD 2WD/4WD	Bi+Ded	EPA/CARB	2004-07									
6.0L V8	GMC	Sierra C/K3500 2WD/4WD	Bi+Ded	EPA/CARB	2004-07									
6.0L V8	GMC	Utility C/K2500 HD 2WD	Bi+Ded	EPA/CARB	2004-07									
6.0L V8	GMC	Utility C/K3500 2WD	Bi+Ded	EPA/CARB	2004-07									
6.0L V8	GMC	W3500/W4500 COE Chassis	Bi+Ded	EPA/CARB	2004-07									
6.0L V8	GMC	Yukon / Yukon XL	Dedicated	EPA/CARB	2004-06									
6.0L V8	GMC	Yukon XL C/K2500 2WD/4WD	Bi+Ded	EPA/CARB	2004-06									
6.0L V8	Isuzu	NPR/NPR HD COE Chassis	Bi+Ded	EPA/CARB	2004-07									
6.0L V8	Workhorse	W42 Walk-in van chassis	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	Chevy	Silverado C2500 2WD	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	Chevy	Silverado C2500 HD 2WD	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Cab and Chassis G3500	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Cutaway C4500	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Cutaway C5500	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Sierra C2500 2WD	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Sierra C2500 HD 2WD	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Topkick/Kodiak C4500	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Topkick/Kodiak C5500	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Topkick/Kodiak C6500	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Topkick/Kodiak C7500	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	GMC	Topkick/Kodiak C8500	Bi+Ded	EPA/CARB	2004-07									
8.1L V8	Workhorse	W62 Walk-in van chassis	Bi+Ded	EPA/CARB	2004-07									
Ford Motor Company														
3.0L V6	Ford	Taurus Sedan/Wagon							Bi-Fuel	EPA	2004-05			
3.0L V6	Mercury	Sable Sedan/Wagon							Bi-Fuel	EPA	2004-05			
4.6L V8	Ford	Crown Victoria				Dedicated	EPA/CARB	2003, 06-07	Bi+Ded	EPA	2003-04			
4.6L V8	Mercury	Grand Marquis				Dedicated	EPA/CARB	2003, 06-07	Bi+Ded	EPA	2003-04			
4.6L V8	Lincoln	Town Car				Dedicated	EPA/CARB	2003, 06-07	Bi+Ded	EPA	2003-04			
5.4L V8	Ford	E-350 Cutaway Cab and Chassis										Bi-Fuel	EPA	2005
5.4L V8	Ford	E-350 Econoline 2WD										Bi-Fuel	EPA	2005
6.8L V10	Ford	E-450 Cutaway Cab and Chassis				Dedicated	EPA/CARB	2002-07						

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