

**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)**

Read page 2 "How to Use This Guide" before proceeding further

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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's certification procedure imposes more testing and documentation requirements for both new-vehicle and aftermarket engine-retrofit ("conversion") systems than EPA, although both CARB and EPA have similar emissions and on-board diagnostics (OBD) compliance requirements. 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 only EPA certification of new vehicles and aftermarket retrofit systems, a growing number of states are opting to adopt CARB standards for sale and/or registration of new vehicles. Check with your state officials to determine whether CARB standards for aftermarket retrofit systems have been adopted in your state; otherwise EPA standards apply.

This Guide's list of light -duty vehicles includes those manufactured at the factory by traditional Original Equipment Manufacturers (OEMs) such as American Honda, and 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. Only ACTIVE CERTIFICATIONS are listed on the chart starting on page 3. **Some SVMs also hold certifications from previous years but these may not have been "carried forward" as required by EPA if the installation time period for the model year for which the cert was issued has now passed. Those interested in converting an existing vehicle should check with the SVMs about whether these prior year certifications have been renewed. Most have not been carried forward more than a year or two 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 (see date above), 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.

Engine/Vehicle Certifications (Vehicles over 14,000# GVWR)

BAF Technologies

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

6.8L V-10 (spark-ignited)	Dedicated CNG retrofit of Ford gasoline engine with active CARB/EPA certifications for: MY'08, 09, '10 E450 cutaway chassis (e.g., for shuttles, box trucks)
	(See also - chart of vehicles up to 14,000# for more BAF Technologies retrofit system certifications)

Baytech Corporation

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

6.0L HD (spark-ignited)	Dedicated and Bi-Fuel CNG CARB/EPA MY '09 Chevrolet W4500 "cab-over" truck chassis; Isuzu NPR HD "cab-over" truck chassis; Workhorse MY'09 W42 walk-in van chassis (over 14,000#); Dedicated CNG (CARB/EPA) and Bi-Fuel CNG (EPA) MY '10 Chevrolet W4500 "cab-over" truck chassis; Isuzu NPR HD "cab-over" truck chassis; Workhorse MY'10 W42 walk-in van chassis (over 14,000#)
	Dedicated CNG retrofit of GM gasoline engine with CARB/EPA certifications covering : MY '09 and '10 G4500 cutaway (e.g., shuttles,box trucks);
	(See also - chart of vehicles up to 14,000# for more Baytech Corporation retrofit system certifications for 6.0L GM engine)
8.1L (spark-ignited)	Dedicated CNG and Bi-Fuel (CARB/EPA) retrofit certifications covering MY '08, '09 C4500/5500 cutaway chassis; C4500/5500/6500/7500/8500 Topkick/Kodiak conventional truck chassis; Workhorse W62 walk-in van chassis. Dedicated CNG (CARB/EPA) and Bi-Fuel (EPA) MY'10 C4500/5500 cutaway chassis; C4500/5500/6500/7500/8500 Topkick/Kodiak conventional truck chassis; Workhorse W62 walk-in van chassis. GM discontinued sales/manufacturing of this engine in 2009, although as-yet-unsold and/or low-mileage models may still be retrofitted until December 31 2010. Contact SVM regarding availability for larger orders after this date.

Cummins Westport Inc

8.9L ISL G (spark-ignited)	Dedicated natural gas engine based on Cummins ISL diesel platform; 2010-compliant (.2 NOx and .01PM): HP ratings of 250, 260, 280, 300, 320; 660-1000 ft lbs torque. Available in: LCF refuse trucks by Peterbilt, Crane-Carrier, Autocar, International-Condor and Mack; Type D/4 school buses by Thomas Built (Saf-T-Liner HDX) and Blue Bird (All American RE); transit buses by New Flyer, NABI, Orion and Foton; work trucks by Freightliner (M2 tractors and M2 112 straight trucks), Kenworth (T440, T8SH), Peterbilt (365, 384); port "yard hostlers" by Capacity. Generally, CWI does not repower existing diesel vehicles, and instead, sells thru bus and truck OEMs and their dealers. There are exceptions to this general rule including some transit applications - contact your regional Cummins distributor or your CWI regional sales manager for more information.
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Doosan Infracore America

11L GK12 Spark-ignited	Dedicated natural gas engine manufactured by Doosan rated at 290 HP/905 ft-lb torque; 2010 compliant using SCR with DPF. Currently available as repower option for transit, refuse and other HD applications
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Emission Solutions Inc

7.6L NG Phoenix (spark ignited)	Dedicated natural gas engine based on International-Navistar DT466 (#308 12-valve) diesel platform, remanufactured to natural gas operational specifications; EPA-/CARB-certified 2010-compliant at .2NOx and .01PM; 260 HP, 730 ft-lb torque; Engine/fuel system change-out for existing 1994-2003 diesel International DT466-equipped school buses, medium-/medium-heavy-duty and heavy-duty cutaway shuttles and work trucks. Also EPA-/CARB-certified 2010-compliant for repower of International-Navistar MaxxForce DT (#316, #326 24-valve) version of same engine with 300Hp and 860 ft.-lb torque.
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Westport Innovations

15L GX (compression ignited)	Based on Cummins ISX diesel platform, this dual-fuel High Pressure Direct Injection (HPDI) system engine runs primarily on natural gas (90-99%) with diesel pilot fuel (1-10%); CARB/EPA-certified, available up to 475Hp configuration for HD work truck and line-haul applications (including OEM availability from Kenworth - Model T800; and Peterbilt - Models);
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Spark-Ignited Natural Gas (SING) Vehicles Up to 14,000#

(Active Certifications Only - Contact SVM for Availabilities of Systems and Minimum Purchase Requirements for Previous Models Years)
 (Engine/vehicle listings below refer to EPA and/or CARB certificate holders; some companies listed below may also install other SVM's systems)

Original Equipment Manufacturer (OEM) Vehicles **(FACTORY-BUILT: NOT A CONVERSION - NO CONVERSIONS AVAILABLE)**

Engine	Make		Model	EPA/ CARB	Model Year(s)
Honda 1.8L	Honda	Dedicated	Civic GX	E/C	97-10

Small Volume OEM (SVM) Vehicles **(CONVERSIONS VIA SVMs AND/OR THEIR QUALIFIED SYSTEM RETROFITTERS)**

Engine	Make	Dedicated	Model	Baytech Corp.		BAF Tech.		FuelTek Corp.		IMPCO Tech.		Natural Drive		Altech-Eco		TBA		TBA		TBA	
				EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)
GM3.5L	Chevy	Bi-Fuel	Impala							E	08/09										
GM3.5L	Chevy	Dedicated	Impala									E	08/09								
GM3.9L	Chevy	Bi-Fuel	Impala									E	08/09								
GM3.9L	Chevy	Dedicated	Impala																		
GM4.8L	Chevy	Bi-Fuel	Express pasenger/Cargo Van G1500																		
GM4.8L	Chevy	Bi-Fuel	Express Passenger/Cargo Van G2500/3500	E	09																
GM4.8L	Chevy	Dedicated	Express Passenger/Cargo Van G2500/3500	E/C	09/10								E	09							
GM4.8L	Chevy	Dedicated	Silverado C/K1500 2WD/4WD pick-up										E	08							
GM4.8L	Chevy	Dedicated	Tahoe C1500 2WD										E	08							
GM4.8L	GMC	Bi-Fuel	Savana Passenger/Cargo Van G1500																		
GM4.8L	GMC	Bi-Fuel	Savana passenger/Cargo Van G2500/3500	E	09																
GM4.8L	GMC	Dedicated	Savana passenger/Cargo Van G2500/3500	E/C	09/10								E	09							
GM4.8L	GMC	Dedicated	Sierra C/K 1500 2WD/4WD										E	08							
GM4.8L	GMC	Dedicated	Yukon C1500 2WD										E	08							
GM5.3L	Chevy	Bi-Fuel	Silverado C/K1500 2WD/4WD pick-up									E	09								
GM5.3L	Chevy	Dedicated	Silverado C/K1500 2WD/4WD pick-up											E	08						
GM5.3L	Chevy	Bi-Fuel	Tahoe C/K1500 2WD/4WD									E	09								
GM5.3L	Chevy	Dedicated	Tahoe C/K1500 2WD/4WD											E	08						
GM5.3L	Chevy	Bi-Fuel	Avalanche C/K1500 2WD/4WD									E	09								
GM5.3L	Chevy	Dedicated	Avalanche C/K1500 2WD/4WD											E	08						
GM5.3L	Chevy	Bi-Fuel	Suburban C/K1500 2WD/4WD									E	09								
GM5.3L	Chevy	Dedicated	Suburban C/K1500 2WD/4WD											E	08						

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Spark-Ignited Natural Gas (SING) Vehicles Up to 14,000#

(Active Certifications Only - Contact SVM for Availabilities of Systems and Minimum Purchase Requirements for Previous Models Years)

(Engine/vehicle listings below refer to EPA and/or CARB certificate holders; some companies listed below may also install other SVM's systems)

Small Volume OEM (SVM) Vehicles (continued) (CONVERSIONS VIA SVMs AND/OR THEIR QUALIFIED SYSTEM RETROFITTERS)

Engine	Make		Model	Baytech Corp.		BAF Tech.		FuelTek Corp.		IMPCO Tech.		Natural Drive		Altech-Eco		TBA		TBA		TBA		
				EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB
GM5.3L	Chevy	Dedicated	Colorado 2WD/4WD									E	08									
GM5.3L	Chevy	Dedicated	Colorado Crew Cab 2WD/4WD									E	08									
GM5.3L	Chevy	Dedicated	Express Passenger/Cargo Van G1500									E	08									
GM5.3L	GMC	Bi-Fuel	Sierra C/K 1500 2WD/4WD							E	09											
GM5.3L	GMC	Dedicated	Sierra C/K 1500 2WD/4WD									E	08									
GM5.3L	GMC	Bi-Fuel	Yukon C/K1500 2WD/4WD							E	09											
GM5.3L	GMC	Dedicated	Yukon C/K1500 2WD/4WD									E	08									
GM5.3L	GMC	Bi-Fuel	Yukon XL C/K1500 2WD/4WD							E	09											
GM5.3L	GMC	Dedicated	Yukon XL C/K1500 2WD/4WD									E	08									
GM5.3L	GMC	Dedicated	Canyon 2WD/4WD									E	08									
GM5.3L	GMC	Dedicated	Canyon Crew Cab 2WD/4WD									E	08									
GM5.3L	GMC	Bi-Fuel	Savanna Passenger/Cargo Van G1500							E	10											
GM5.3L	GMC	Dedicated	Savanna Passenger/Cargo Van G1500									E	08									
GM5.3L	Hummer	Dedicated	H3 4WD									E	08									
GM6.0L	Chevy	Bi-Fuel	Express Passenger/Cargo Van G1500							E	08/09											
GM6.0L	Chevy	Bi-Fuel	Express Passenger/Cargo Van G2500	E	09					E	08/09											
GM6.0L	Chevy	Dedicated	Express Passenger/Cargo Van G2500	E/C	09/10							E	09									
GM6.0L	Chevy	Bi-Fuel	Express Passenger/Cargo Van G3500	E	09					E	08/09											
GM6.0L	Chevy	Dedicated	Express Passenger/Cargo Van G3500	E/C	09/10							E	09									
GM6.0L	Chevy	Bi-Fuel	Express Cutaway G3500	E	09/10																	
GM6.0L	Chevy	Dedicated	Express Cutaway G3500	E/C	09/10																	
GM6.0L	Chevy	Bi-Fuel	Express Cutaway G4500 (14,200# GVWR)	E/C (09)	09/10																	
GM6.0L	Chevy	Dedicated	Express Cutaway G4500 (14,200# GVWR)	E/C	09/10																	
GM6.0L	Chevy	Bi-Fuel	Silverado C/K1500 2WD/4WD pick-up							E	08/09											
GM6.0L	Chevy	Bi-Fuel	Silverado C/K2500 2WD/4WD pick-up	E	09/10					E	08/09											
GM6.0L	Chevy	Dedicated	Silverado C/K2500 2WD/4WD pick-up	E/C	09/10							E	09/10									
GM6.0L	Chevy	Bi-Fuel	Silverado C/K3500 2WD/4WD pick-up	E	09/10					E	08/09											
GM6.0L	Chevy	Dedicated	Silverado C/K3500 2WD/4WD pick-up	E/C	09/10							E	09/10									
GM6.0L	Chevy	Bi-Fuel	Silverado C/K2500 HD 2WD/4WD cab-chassis	E	09/10					E	08/09											
GM6.0L	Chevy	Dedicated	Silverado C/K2500 HD 2WD/4WD cab-chassis	E/C	09/10							E	09/10									
GM6.0L	Chevy	Bi-Fuel	Silverado C/K3500 HD 2WD/4WD cab-chassis	E	09/10					E	08/09											
GM6.0L	Chevy	Dedicated	Silverado C/K3500 HD 2WD/4WD cab-chassis	E/C	09/10							E	09/10									
GM6.0L	Chevy	Bi-Fuel	W3500 cab-over truck chassis	E	09/10																	
GM6.0L	Chevy	Dedicated	W3500 cab-over truck chassis	E/C	09/10																	

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Spark-Ignited Natural Gas (SING) Vehicles Up to 14,000#

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(Engine/vehicle listings below refer to EPA and/or CARB certificate holders; some companies listed below may also install other SVM's systems)

Small Volume OEM (SVM) Vehicles (continued) **(CONVERSIONS VIA SVMs AND/OR THEIR QUALIFIED SYSTEM RETROFITTERS)**

Engine	Make		Model	Baytech Corp.		BAF Tech.		FuelTek Corp.		IMPCO Tech.		Natural Drive		Altech-Eco		TBA		TBA		TBA	
				EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)	EPA/ CARB	Model Year(s)
GM6.0L	GMC	Bi-Fuel	Savana Passenger/Cargo Van G1500							E	08/09										
GM6.0L	GMC	Bi-Fuel	Savana passenger/Cargo Van G2500	E	09					E	08/09										
GM6.0L	GMC	Dedicated	Savana passenger/Cargo Van G2500	E/C	09/10							E	09								
GM6.0L	GMC	Bi-Fuel	Savana Passenger/Cargo Van G3500	E	09					E	08/09										
GM6.0L	GMC	Dedicated	Savana Passenger/Cargo Van G3500	E/C	09/10							E	09								
GM6.0L	GMC	Bi-Fuel	Savana Cutaway G3500	E	09/10																
GM6.0L	GMC	Dedicated	Savana Cutaway G3500	E/C	09/10																
GM6.0L	GMC	Bi-Fuel	Savana Cutaway G4500 (14,200# GVWR)	E/C (09)	09/10																
GM6.0L	GMC	Dedicated	Savana Cutaway G4500 (14,200# GVWR)	E/C	09/10																
GM6.0L	GMC	Bi-Fuel	Sierra C1500HD							E	08/09										
GM6.0L	GMC	Bi-Fuel	Sierra C/K2500 2WD/4WD pick-up	E	09/10					E	08/09										
GM6.0L	GMC	Dedicated	Sierra C/K2500 2WD/4WD pick-up	E/C	09/10							E	09/10								
GM6.0L	GMC	Bi-Fuel	Sierra C/K3500 2WD/4WD pick-up	E	09/10					E	08/09										
GM6.0L	GMC	Dedicated	Sierra C/K3500 2WD/4WD pick-up	E/C	09/10							E	09/10								
GM6.0L	GMC	Bi-Fuel	Sierra C/K2500HD 2WD/4WD cab-chassis	E	09/10					E	08/09										
GM6.0L	GMC	Dedicated	Sierra C/K2500HD 2WD/4WD cab-chassis	E/C	09/10							E	09/10								
GM6.0L	GMC	Bi-Fuel	Sierra C/K3500HD 2WD/4WD cab-chassis	E	09/10					E	08/09										
GM6.0L	GMC	Dedicated	Sierra C/K3500HD 2WD/4WD cab-chassis	E/C	09/10							E	09/10								
GM6.0L	GMC	Bi-Fuel	W3500 cab-over truck chassis	E	09/10																
GM6.0L	GMC	Dedicated	W3500 cab-over truck chassis	E/C	09/10																
GM6.0L	Isuzu	Bi-Fuel	NPR cab-over truck chassis (up to 14,000#)	E	09/10																
GM6.0L	Isuzu	Dedicated	NPR cab-over truck chassis (up to 14,000#)	E/C	09/10																
GM6.0L	Workhorse	Bi-Fuel	W42 walk-in/step-van truck (up to 14,000#)	E	09/10																
GM6.0L	Workhorse	Dedicated	W42 walk-in/step-van truck (up to 14,000#)	E/C	09/10																
Ford2.0L	Ford	Bi-Fuel	Focus											E	08/09/10						
Ford2.0L	Ford	Dedicated	Focus											E	08/09/10						
Ford2.0L	Ford	Bi-Fuel	Transit Connect											E	10						
Ford2.0L	Ford	Dedicated	Transit Connect											E	10						
Ford2.3L	Ford	Bi-Fuel	Fusion											E	09						
Ford2.3L	Ford	Dedicated	Fusion											E	09						
Ford2.3L	Mercury	Bi-Fuel	Milan											E	09						
Ford2.3L	Mercury	Dedicated	Milan											E	09						

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Contacts

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Baytech Corporation	PO Box 1148, Los Altos, CA 94022	Richard Turner	650-949-1976	sales@baytechcorp.com
Cummins Westport Inc.	1750 West 75th Ave., #101, Vancouver, BC V6P 6G2	Jeff Campbell	604-718-8100	jcampbell@cumminswestport.com
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FuelTek Conversion Corp	5660 E. 58th Avenue, Unit B, Commerce City, CO 80022	Holly Biggers	720-941-2791	answers@fueltek.biz
IMPCO Technologies	3030 South Susan Street, Santa Ana, CA 92704	Jim Sherouse	714-656-1325	autoinquiries@impcotechnologies.com
NaturalDrive	3134 West Lewis - Suite 44, Phoenix, AZ 85009	John Mitton	801-768-2986	john@naturaldrive.com
Westport Innovations	1750 West 75th Ave., #101, Vancouver, BC V6P 6G2	Jonathan Burke	604-718-8100	jburke@westport.com

SEE ALSO http://www.ngvamerica.org/pdfs/FAQs_Converting_to_NGVs.pdf for more information

PLEASE, DO NOT CONTACT HONDA FOR CONVERSION SYSTEMS - THEY OFFER AN OEM VEHICLE ONLY

PLEASE, DO NOT CONTACT NGVAMERICA TO ASK WHY A RETROFIT SYSTEM IS NOT AVAILABLE FOR YOUR MAKE/MODEL YEAR (WE DO NOT CONTROL/INFLUENCE OEM's/SVM's R&D AND EPA/CARB CERTIFICATION DECISIONS)

PLEASE, DO NOT CALL/E-MAIL NGVAMERICA QUESTIONING EPA/CARB CERTIFICATION REQUIREMENTS AND COSTS. WE DO NOT REPRESENT EPA NOR CARB. WE INFORM PROSPECTIVE PURCHASERS OF THE APPLICABLE LAWS AND REQUIREMENTS

For more information, please contact:

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