

2015 ALTERNATIVE FUEL BUYERS GUIDE



COMPRESSED
NATURAL GAS



PROPANE
AUTOGAS



BIODIESEL



ETHANOL



HYBRID



PLUG-IN HYBRID



ALL-ELECTRIC



Go Further

WHY **ALTERNATIVE FUEL** IS IMPORTANT TO YOU AND FORD.

Reduced carbon footprint.

For many businesses, operating a fleet is the single largest contributor to their carbon footprint.

When a business decides to reduce its carbon output, the fleet managers need to know how to identify which alternative fuel will make the biggest difference.

Reduced dependence on foreign oil.

Most of the world's oil reserves are concentrated in the Middle East. Since most alternative fuels are available in the U.S. from U.S. sources, switching to alternative fuels can limit how much money is transferred offshore to support our domestic energy demands.

Cost of ownership.

All fleet managers should consider the combination of acquisition costs, fuel prices and residual values to determine the total cost of ownership of the vehicles in their fleet. Although acquisition costs for alternative fuel vehicles may be higher, these costs are often offset by the lower costs of the alternative fuels. In addition, the lower volatility of alternative fuel prices reduces risk of future price shocks.

Blueprint for sustainability.

"From exciting wireless communications projects to our efforts to strengthen our financial position and reduce our environmental impact, Ford is deeply committed to sustainability. New technologies and a more open, collaborative approach are helping us achieve breakthroughs we could only dream of, and we are eager to go further. It is an exciting time for us as we continue on our journey to build great products, a strong business and a better world."

- William Clay Ford Jr.

Excerpted from <http://corporate.ford.com/microsites/sustainability/report-2012-13/review-letter-ford>

Ford Offers Customers A Complete Selection Of Alternative Fuel Commercial Vehicles



	Transit Connect Van/Wagon	Transit Van/Wagon	Transit Cutaway/Chassis Cab	E-350/450 Cutaway Chassis	E-350/450 Stripped Chassis	F-150 Pickup	F-250/350/450 Super Duty® Pickup	F-350/450/550 Super Duty Chassis Cab	F-650/F-750 Medium Duty Chassis Cab**	F59 Commercial/F53 RV Stripped Chassis
Fuel Type										
Ethanol (E85)		Ethanol (E85)	Ethanol (E85)	Ethanol (E85)	Ethanol (E85)	Ethanol (E85)	Ethanol (E85)	Ethanol (E85)		
Biodiesel (B20)		Biodiesel (B20)	Biodiesel (B20)				Biodiesel (B20)	Biodiesel (B20)	Biodiesel (B20)	
CNG/Propane	CNG/Propane	CNG/Propane	CNG/Propane	CNG/Propane	CNG/Propane		CNG/Propane	CNG/Propane	CNG/Propane	CNG/Propane
Hybrid									Plug-In Hybrid (Diesel only)	
GVWR (lbs.)	4,780 - 5,280	8,550 - 10,360	9,000 - 10,360	10,050 - 14,500	11,500 - 14,500	6,010 - 7,850	9,900 - 14,000	9,800 - 19,500	Gas: 22,000 - 33,000 Diesel: 20,500 - 37,000	16,000 - 22,000 (F59) 16,000 - 26,000 (F53)
GCWR (lbs.)	5,820 - 6,320	10,600 - 13,500	10,600 - 13,500	13,000 - 22,000	13,000 - 22,000	9,500 - 17,100	19,000 - 40,400	19,000 - 35,000	37,000 - 50,000	23,000 - 26,000 (F59)
Payload (lbs.)	1,110 - 1,620	2,610 - 4,560	4,200 - 5,790	5,090 - 9,040	6,927 - 9,747	1,580 - 3,300	2,100 - 7,050	2,517 - 12,660	TBD	10,048 - 15,600 (F59)
Engine	2.5L*	3.7L Ti-VCT FFV*	3.7L Ti-VCT FFV*	5.4L V8 FFV*	5.4L V8 FFV*	3.5L Ti-VCT V6 FFV 2.7L V6 EcoBoost® 3.5L V6 Eco Boost 5.0L V8 FFV	6.2L V8 FFV*	6.2L V8 FFV* 6.8L V10*	6.8L V10*	6.8L V10*
	1.6L EcoBoost®	3.5L EcoBoost 3.2L I-5 Power Stroke Diesel	3.2L I-5 Power Stroke Diesel	6.8L V10*	6.8L V10*		6.7L Power Stroke® V8 Diesel	6.7L Power Stroke V8 Diesel	6.7L Power Stroke V8 Diesel	
Transmission	6-Speed SelectShift® Automatic with Overdrive	6-Speed SelectShift Automatic with Overdrive	6-Speed SelectShift Automatic with Overdrive	TorqShift® 5-Speed Automatic with Overdrive	TorqShift 5-Speed Automatic with Overdrive	6-Speed SelectShift® Automatic with Overdrive	TorqShift® Heavy Duty 6-Speed SelectShift Automatic with Overdrive	TorqShift Heavy Duty 6-Speed SelectShift Automatic with Overdrive TorqShift 5-Speed SelectShift Automatic with Overdrive (6.8L)	TorqShift Heavy Duty 6-Speed Automatic with Overdrive	TorqShift 5-Speed Automatic with Overdrive

2 * Available with CNG/Propane Gaseous Engine Prep Package.

** 2016 model shown. Available Summer 2015.

Ford Provides **COMPLETE CUSTOMER SUPPORT.**



Go Further

Nationwide Dealer Network

Ford has a nationwide network of over 3,200 dealers that provide sales, finance and service support. Ford is a well established leader in commercial sales and has a long history of providing vehicles that are Built Ford Tough.



Specialized Commercial Vehicle Dealers

Ford Business Preferred Network (BPN) dealers understand the needs of business owners. A BPN dealer knows that vehicles used in everyday operations are critical tools for financial success and your ability to provide for customers. Similarly, Ford makes sure BPN dealers have the tools they need to get the job done for businesses, from Commercial Truck Tools to Quality Fleet Care.



FORD CREDIT

Ford Credit Commercial Lending Services

Ford Credit Commercial Lending Services help meet the unique demands of your business. Our finance products can be tailored to respond to fleet needs such as alternative fuel upfits, high mileage leases, or flexible payment plans. We also offer Commercial Lines of Credit to help obtain vehicles quickly and easily.



Gaseous Engine Prep Package

CNG and Propane Autogas (LPG) are increasingly popular choices for cutting fuel costs and greenhouse gas emissions. Ford offers Gaseous Engine Prep packages across our entire commercial vehicle line-up. These packages include hardened valves and valve seats and other components to withstand the higher operating temperatures and lower lubricity of gaseous fuels.



Detailed Engineering Requirements

The Qualified Vehicle Modifier (QVM) Program is intended to help modifiers achieve greater levels of customer satisfaction and product acceptance through the manufacture of high quality vehicles. This program assures vehicle modifiers have the capability and processes in place to maintain the integrity of the Ford systems while meeting Federal and Ford Motor Company required standards.



Established Truck Equipment Upfitters

To get the equipment your business needs to get work done in an efficient, cost effective manner, Ford has established Pool Accounts. These equipment specialists assist Ford dealers to ensure you have the right truck for the right job every time.



Warranty-Parts-Service

Ford dealers are equipped to provide any necessary service repairs. They stock Ford Authorized parts, and service technicians are factory trained. Ford service departments are backed by computerized diagnostic equipment and have access to national hotline support.



Roadside Assistance 24 Hours-Seven Days

Ford provides roadside assistance 24 hours a day, seven days a week on all Ford commercial vehicles. By dialing 1-800-241-3673, Ford commercial alternative fuel vehicle customers also have access to: flat tire change, locksmith service (if locked out), and towing.

Ford Is **EASY TO WORK WITH.**



Simplified Ordering To Delivery

From dealer order through customer delivery

- 1 Dealer and customer determine appropriate vehicle based on application, payload and range
- 2 Dealer places vehicle order, and vehicle is delivered to QVM
- 3 QVM installs alternative fuel components and system
- 4 Vehicle is delivered to dealer and dealer delivers vehicle to customer

The commercial truck market is comprised of many unique vocations and vehicle requirements. One size does not fit all. That's why Ford is collaborating with reliable and qualified modifiers to deliver completed alternative fuel vehicles. Most Ford commercial vehicles can be ordered with a CNG/Propane Gaseous Engine Prep Package.

Although vehicles with Gaseous Prep Engines can be driven as delivered on gasoline, most vehicles are transported to Qualified Vehicle Modifiers (QVM) that install the CNG/Propane tanks and hardware.

Ford has released QVM Guidelines and Ford engineers work with QVMs to help ensure consistent, reliable performance and customer service.

Ford maintains the Engine and Powertrain Limited Warranty (5 years or 60,000 miles*) and the QVM is responsible for the system component warranty.

Given the number of unique applications, this strategy provides the greatest flexibility to commercial customers from many vocations.

Warranty And Service **SUPPORT.**



Our dealers service what they sell. Similar to other commercial vehicles (ambulances, motorhomes, utility trucks, etc), Ford maintains the warranty on the base vehicle and any modifications are warranted by the QVM. For gaseous fuel modifications, Ford stands behind the engine warranty (as described in the 5 year/ 60,000 mile Powertrain Limited Warranty*) when the modifications comply with QVM Bulletin Q-185.

The QVMs provide service training programs for dealership technicians. This training ensures the dealership can accurately diagnose and safely repair modified vehicles. The QVMs also provide Technical Hotlines to assist in diagnosing component or drivability issues.

Engine calibration and emission certification and compliance are part of the QVM supplied modifications to the vehicle. The Powertrain Control Module (PCM) is reflashed with the certified calibration by the QVM when the fuel system is modified. In the event service is needed on the PCM, the QVM will work with the dealer to provide a new or replacement calibration.

Contact information is provided at the time of delivery and can be found in the QVM's *Supplemental Owner's Guide*.

* See dealer for details

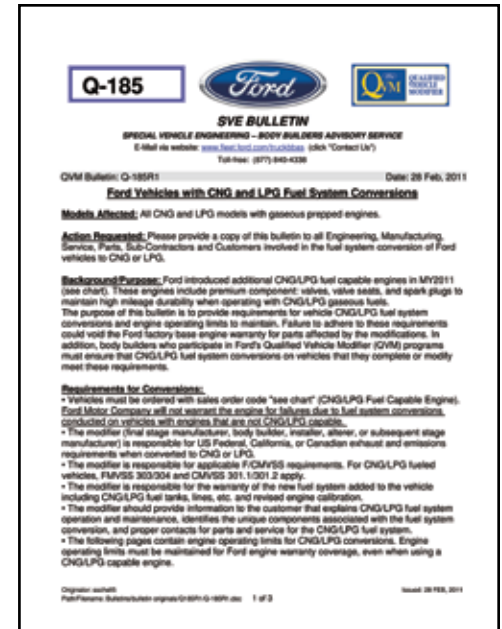
Ford Engineering **SUPPORT.**

Gaseous Fuel Qualified Vehicle Modifiers (QVM)

Ford has established a rigorous qualification program for alternative fuel vehicle modifiers. These guidelines are intended to provide guidance, modification recommendations and engine operating specifications required to ensure customer satisfaction and reliability in line with Ford Motor Company standards.

Onsite assessments at each QVM location assure conformance to a high standard of manufacturing, assembly, workmanship and customer service.

Modifiers that have demonstrated compliance to the Ford QVM guidelines and validation of the Q-185 engine operating parameters are listed on page 7.



Engine dynamometer and calibration tests.

Bulletin For Gaseous Fuel Modification

Ford has released a Qualified Vehicle Modifier (QVM) Bulletin Q-185 that provides guidance on modifying Ford Gaseous Prep Engines. The bulletin is updated as required and contains the following information:

- Proper engine order codes required for CNG/Propane conversion
- Calibration requirements to maintain factory limited warranty on the base engine
- Modifier responsibilities for required government emission and safety (FMVSS) certification
- Modifier responsibilities for warranty of the new or modified fuel system components
- Modifier required information for the customer to explain CNG/Propane fuel system operation and maintenance, identify unique components associated with the CNG/Propane conversion, and provide contacts for parts and service of the CNG/Propane fuel system

QVM Bulletin #Q-185 can be found on Ford's Fleet website: www.fleet.ford.com/truckbbas, refer to Bulletins Tab.

Broad Portfolio Of Gaseous Fuel **SOLUTIONS.**

Gaseous Fuel Qualified Vehicle Modifiers (QVMs)

Ford recognizes six Gaseous Fuel QVMs. These companies develop and provide the engine calibration systems, dynamometer testing and Ford Engineering compliance required for vehicle operation on gaseous fuels. The QVM ensures the gaseous fuel capable vehicle is delivered to your dealership ready to operate.

Gaseous Fuel Qualified Vehicle Modifier Contact Information

COMPANY	WEBSITE
Altech-Eco	altecheco.com/pages/CNG_Conversions.htm
IMPCO®	impcoautomotive.com
Landi Renzo®	landiusa.com
ROUSH® CleanTech	ROUSHcleantech.com
Venchurs	venchurscng.com
Westport	wingpowersystem.com

Gaseous Fuel Qualified Vehicle Modifier Chart

Model	Engine	CNG		PROPANE	
		Dedicated	Bi-Fuel	Dedicated	Bi-Fuel
Transit Connect	2.5L	A**, V**	A, V, W	—	—
Transit	3.7L	A**, V**, W*	A, V	—	—
E-350–450 Cutaway/CC	6.8L	I*, L*, W*	—	R*	—
F-Super Duty F-250–350	6.2L	A*, I*, V*, W*	A, I, L, V, W	R*	I
F-450–550	6.8L	I*, L*, W*	L	R*	—
F-650–750	6.8L	I*, L*, W*	—	R*	—
F53, F59 Stripped Chassis	6.8L	L*, W*	—	R*	—

* CARB Certified

** Only available in warm weather states. See Altech-Eco or Venchurs website for details.

A = Altech-Eco, I = IMPCO, L = Landi Renzo, R = ROUSH CleanTech, V = Venchurs, W = Westport

Networking For Your Benefit

Providing the right truck with the right fuel that will get the job done requires coordination of experts who understand your needs. If additional modifications are required beyond the fuel system, Ford's six QVMs identify gaseous system installers that can complete the fuel system installation along with whatever upfits are required to meet the specific challenges your business faces every day. This installer network follows QVM processes and ensures that the fuel system is compatible with whatever upfits you require such as stake beds, dumps or shuttle bus bodies for safe and integrated installation. These installers are located throughout the country to address customer needs from coast to coast.

CNG INFRASTRUCTURE.



Commercial

Companies and fleet owners want an efficient, reliable and cost effective system that enables them to refuel their vehicles without spending a fortune: Cubogas Pocket is one solution. This plug & fill station comes with one 50HP skid mounted compressor, air cooler, 47 GGE on board storage, control panel and integrated double dispenser, all in one small unit easy to install and relocate. The Pocket can be used for both fast and slow fill applications: light-duty vehicles can be filled up in less than 8 minutes or slow-filled overnight. Equipped with temperature compensation system and a lubrication free compressor to avoid oil contamination, it refuels vehicles efficiently and safely. The Pocket's capacity can be increased with the installation of additional external storage. For more information visit www.cubogas.com

Public

The growth of public CNG refueling stations goes hand in hand with the increasing number of CNG vehicles available on the market. Federal and State incentives for the opening of alternative fuel stations and the attractive price difference between gasoline and natural gas provide a business case. Independence from oil and fewer emissions complete the equation.

Home

BRC FuelMaker offers a complete line of 240-volt home and vehicle refueling appliances (HRA-VRA), the only CSA certified natural gas compressors for individuals and small fleets. Fast and easy to install, they generally do not require any special permit or authorization. Home refueling has never been so easy: contact your local BRC FuelMaker dealer and ask him to install Phill[®] to refuel your car inside your garage or outside your house. Plug your vehicle in, push the start button and the compressor starts to refuel automatically. Phill[®] comes with an internal gas sensor, gas filter and dryer to ensure safe refueling in every condition. You can also install multiple units to refuel 2+ vehicles at the same time.

For more information visit www.brcfuelmaker.com

Resources

Current refueling stations can be found at one of the following internet sites:

www.drivealternatives.com

Online database of CNG/ Propane and Ethanol (E85) refueling stations.

www.cleanenergyfuels.com

One of the leading providers of natural gas fuel in North America.

www.cngnow.com

Provides a "locator" for CNG refueling stations, as well as a great source for CNG information.

Smart Phone Apps*: Dozens of smart phone applications can locate CNG/Propane/E85/B20/Electric refueling stations.

** Message and Data Rates may apply*

Ford CNG Vehicle **TESTIMONIAL 1.**

Atmos Energy

Atmos Energy is one of the country's largest natural-gas-only distributors, serving approximately 3 million customers in more than 1,400 communities. Headquartered in Dallas, Texas, the nation's leading natural gas producing state, Atmos Energy decided to make the switch to a compressed natural gas (CNG)-powered fleet.

Atmos Energy began transitioning part of their fleet this year with the purchase of 50 Ford F-150's that were converted by Venchurs Vehicle Systems. With 2014 being the first year that Ford would offer a CNG-prepped engine for the F-150, Atmos Energy was one of the first customers to receive a factory converted half-ton vehicle.

"Because distributing natural gas is what we do, it only made sense for us to begin transitioning our fleet to the fuel that we sell," said Richard Squires, Fleet Sourcing Analyst at Atmos Energy. "We knew the economics made sense, but we were also able to reduce our emissions and support our employees and the communities we serve that benefit from the natural gas industry."

"Our drivers have been using the Venchurs Vehicle Systems' Ford F-150's since March and were impressed with how seamless the transition was from gasoline to CNG," said Jesse Oquendo, Operations Supervisor at Atmos Energy. "They are proud to be driving vehicles fueled by clean-burning natural gas, and to be supporting American jobs while they do it."

In addition to the CNG conversion on Atmos Energy's F-150's, Venchurs Vehicle Systems also installed the other equipment needed to complete the vehicles. This included tool boxes, graphics, warning lights and back-up sensors.

"The fact that Venchurs could install all of the equipment we needed on these trucks in addition to converting them to CNG made the ordering process easier, reduced our logistics costs, and it also reduced our order-to-delivery time," said Squires. "I had a chance to visit the Venchurs facility in Adrian, MI where they complete all of their upfits, and was impressed with their 40-year history and well-defined processes."

"Atmos Energy is one of our most valued customers and we are proud to see the Venchurs badges on



the back of their trucks," said Jeff Wyatt, President of Venchurs Vehicle Systems. "We take pride in our quality, service, and delivery, and know that Atmos Energy's decision to purchase our CNG conversions was a true testament to the service we provide."

Ford CNG Vehicle **TESTIMONIAL 2.**

New York State Office of Parks, Recreation, and Historic Preservation

The NYS Office of Parks, Recreation, and Historic Preservation (NYS Parks) is the agency that manages over 214 publicly accessible Parks and Historic Sites throughout New York. For over fifteen years, NYS Parks has had a “Green Parks” policy of implementing alternative fuels for use in transportation, knowing that displacing petroleum is good for the environment, good for the public, and good for the bottom line. One of the most visible parks within the system is Niagara Falls State Park. For over a decade, the trolleys moving guests throughout the park have been running on natural gas, a much cleaner fuel than diesel or gasoline. This year, NYS Parks decided to upgrade the trolley fleet, and have recently added eight new dedicated natural gas powered vehicles. These trolleys, based on the Ford F59 chassis and powered by the natural gas compatible 6.8 liter V10, utilize a dedicated natural gas operating system developed by Landi Renzo USA, a Ford QVM (Qualified Vehicle Modifier). The systems were installed by Clean Vehicle Solutions, of West Nyack, NY; an authorized installation partner of Landi Renzo USA.

Michael Wise, Director of Energy and Equipment Management for NYS Parks has long been a believer in the benefits of alternative fuels. The NYS Parks Program has included electric, propane, natural gas, biodiesel, and even hydrogen powered vehicles for parks support and events. NYS Parks works closely with the US DOE’s Clean Cities program throughout NYS and has been nationally recognized for hosting multiple green events across New York State. All NYS Parks and Historic Sites use alternative fueled vehicles whenever possible.

Landi Renzo USA supplies natural gas operating systems for a variety of Ford engine platforms, and is proud to be part of this project for NYS Parks and Clean Vehicle Solutions, a NYS based natural gas installation center. Integrating these vehicles into the NYS Parks fleet and utilizing domestic natural gas will lower both emissions and operating costs while maintaining critical services. According to Michael Wise, Director of Energy and Equipment Management, the addition of these vehicles will eliminate over 300 tons of emissions, and save over \$150,000 in operating costs over the life of the vehicles.



The added benefit to drivers, passengers, and visitors to the park is the quieter operation of the natural gas engine, and it is an important part in the overall New York State Green Parks Initiative.

Contacts:

Barry Carr, Director of Business Development, Landi Renzo USA; www.landiusa.com; bcarr@landiusa.com

Michael Wise, Director, Energy & Equipment Management; NYS Office of Parks, Recreation, and Historic Preservation; www.parks.ny.gov

Gary Trombino, VP of Sales; Clean Vehicle Solutions; www.cleanvehiclesolutions.com

Ford CNG Vehicle **TESTIMONIAL 3.**

USD, Inc.

Exceeding Expectations: Westport's CNG-Powered Ford Transit Connect

When USD, Inc. made the move away from independent contract drivers and brought its delivery fleet in-house over a year ago, the company's management team decided to incorporate as many alternative fuel vehicles as possible going forward. In 2013 alone, the company added 20 Westport WiNG™ Power System Ford Transit Connects operating on dedicated compressed natural gas (CNG) to its fleet.



USD is the leading distributor of original equipment automotive parts in the southwest United States for Ford, General Motors and Chrysler. Operating for 42 years, with corporate headquarters in Phoenix, Arizona, USD also has facilities in New Mexico, Texas and Colorado.

“As our business continues to grow, it is increasingly important for us to look for ways to improve efficiencies to serve our customers while at the same time reduce our environmental impact in the communities where we operate,” said Eric Bromenshenkel, president and CEO, USD Inc. “Not only has adding CNG vehicles helped us save about 30 per cent in fuel costs, we’re using a cleaner domestic fuel.”

USD has a fleet of 30 vehicles used for parts delivery with each vehicle driven approximately 250 miles making four to five runs per day. In an effort to promote driver retention with the company and to encourage drivers to maintain their vehicles, USD has

developed a unique compensation program. After four years with the company, when their assigned vehicle reaches the end of its useful life for everyday company use, drivers will have their vehicle signed over to them as a length of service award.

Looking ahead, the company plans to expand its fleet in 2015 with the addition of either more CNG powered Transit Connects or Ford pickup trucks, making their fleet almost entirely CNG capable.



“The quality and performance of our Westport CNG Ford Transit Connects has exceeded our expectations,” Eric said. “The vehicles perform like Ford original equipment manufacturer Transit Connects with the added benefits of fuel cost savings, less routine engine maintenance requirements and environmental protection through the production of lower emissions on the road.”

“Our drivers have really enjoyed their experience driving CNG vehicles and we’re glad we took a chance on the alternative fuel program. CNG vehicles are gaining momentum and with fueling infrastructure on the rise, the industry will only further advance.”

Propane Autogas (LPG) INFRASTRUCTURE.

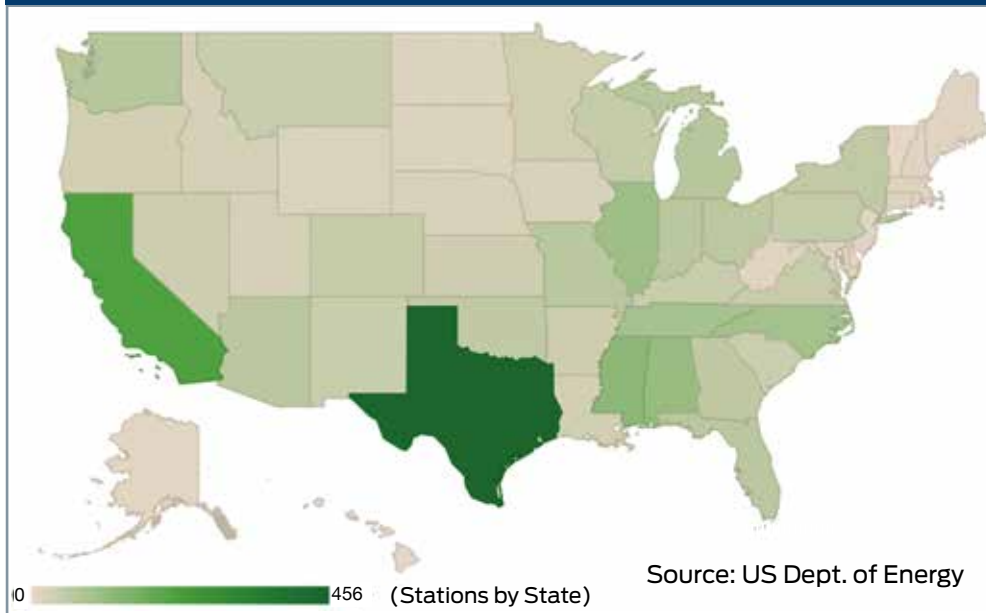


Already the third most widely used engine fuel behind gasoline and diesel, propane autogas has a national infrastructure in place. Thousands of refueling stations, up to 56,000 miles of pipeline, an established distribution process, and more than 6,000 retail propane dealer locations make propane readily available throughout the U.S., with fueling stations in every state with more opening all the time.

In addition to the thousands of propane autogas fueling stations found throughout the U.S., installation of on-site dispensing is easy and convenient for fleets across the country. Propane autogas provides an affordable infrastructure for on-site refueling compared with conventional and alternative fuels. There are two options for propane autogas refueling — skid-mount and permanent stations. With skid mount, above ground refueling stations typically come pre-assembled and are easy and inexpensive to have installed. Permanent stations feature underground propane storage tanks. Both have dispensers for ease of use similar to conventional refueling.

There are many different federal and state tax incentives for installing new propane fueling structures and fueling with propane. For a list of propane companies that will install a skid-mount or permanent station, refer to the ROUSH® CleanTech website below.

Propane Autogas (LPG) Infrastructure Number of Propane Autogas (LPG) stations by State



Resources

www.afdc.energy.gov/afdc/locator/stations

With more than 2,500 fueling stations across the United States, propane is easily accessible. To find a location, visit the Department of Energy website.

www.propane.com/on-road-fleets/

The Propane Education & Research Council (PERC) promotes the safe, efficient use of propane as a preferred energy resource through research and development, training and safety programs.

www.roushcleantech.com/content/propane

Provides a “locator” for propane refueling stations, as well as a great source of propane information.

Smart Phone Apps*: Dozens of smart phone applications can locate CNG/Propane/E85/B20/Electric refueling stations.

* Message and Data Rates may apply

Ford Propane Vehicle **TESTIMONIAL.**

Alpha Baking Company, Inc.

A decade ago, Alpha Baking Company Inc., a national bakery products manufacturer and distributor located in Chicago, began testing alternative fuels to power its fleet of delivery trucks.

To find the ideal fuel for their needs, the company established criteria through which they evaluated multiple alternative fuel sources: a reliable fuel supply, be backed by maintenance support, and maintain the original equipment manufacturer (OEM) warranty. The company tested many transportation fuels, including hydrogen injection, biodiesels, waste vegetable oil and propane autogas vapor injection.

Delivering on its Goals

Alpha Baking selected the Ford E-450 from ROUSH CleanTech and introduced 22 propane autogas trucks into its fleet.

Emissions-Reducing Benefits

The fleet of propane autogas trucks will save the company about 2.3 million pounds of carbon dioxide emissions over the truck's 250,000-mile lifetime.

Alpha Baking wrapped the vehicles to display the benefits of the fuel technology being employed. The easy-to-spot trucks are emblazoned with words emphasizing their fuel choice, such as “non-toxic,” “lower carbon emissions,” “progressive,” and “100 percent propane powered.”

“People have actually stopped our drivers and inquired about the propane autogas trucks: telling us how nice they look, asking about the performance and how much fuel they save,” said Bob McGuire, Alpha Baking’s vice president and director of logistics.

Refueling Infrastructure

The company opted for a private fueling station for driver convenience, fuel control and reduced labor costs. At its truck depot, Alpha Baking installed two above-ground 1,000-gallon propane tanks to refuel the trucks. In its continued efforts to be good corporate citizens, the company will consider opening the station in the future to government municipalities.

Real Cost-Savings

On the question of savings, McGuire notes that Alpha Baking is pleased with the initial operating performance and cost. At an average price for propane in the region of \$2.04 per gallon, gasoline \$3.60 and diesel fuel at \$4.00, the company reported a lower fuel cost during the first five months of operation.



McGuire believes there is a payback employing a propane autogas fleet.

Yet, return on investment is not the push behind this alternative fuel initiative. For this company, McGuire says, “We’re doing this because it’s the right thing to do.”



Ford provides **ELECTRIFICATION CHOICES.**



Ford's electrification strategy involves three types of electrified vehicles – hybrid, plug-in hybrid and all-electric – to provide customers with fuel economy options and help reduce CO₂ emissions.

Among the highlights:

Focus Electric with an EPA-estimated MPGe rating of 110 city/99 highway/105 combined*.

Fusion Hybrid Powered by a state-of-the-art, lithium-ion battery, the traction motor can allow Fusion Hybrid to operate in electric mode at speeds of up to 85 mph, with an EPA-estimated MPG rating of 44 city/41 highway/42 combined**.

Fusion Energi plug-in hybrid has an EPA-estimated MPGe rating of 95 city/81 highway/88 combined* with an EPA-estimated range of up to 550 miles†.

C-MAX Hybrid offers an available class-exclusive, foot-activated, hands-free liftgate feature and has an EPA-estimated MPG rating of 42 city/37 highway/40 combined**.

C-MAX Energi has an EPA-estimated MPGe rating of 95 city/81 highway/88 combined*.

Focus Electric

Mechanical: 107-kW electric motor/23-kWh liquid-cooled lithium-ion battery

Horsepower/Torque Equivalent:

143 hp /184 lb.-ft.

Miles Per Gallon Equivalent (MPGe): EPA-estimated rating of 110 city/99 highway/105 combined*

EPA-estimated Range: 76 miles††

Top Speed: 84 mph

Charge Time: 3.6 hrs. (240 v); approximately 20 hours (120 v)

Fusion Energi

Engine: 2.0L Atkinson cycle I-4 Hybrid Engine

Horsepower/Torque:

Gas: 141 hp/129 lb.-ft.

Electric: 118 hp /88kW; Total combined power (sustain): 188 hp
Mile Per Gallon Equivalent (MPGe): EPA-estimated rating of 95 city/81 highway/88 combined*

EPA-estimated Range: 550 miles†

All-Electric Range: 19 miles†

85 mph in electric mode

Charge Time: 2.5 hrs. (240 v); 7 hours (120 v)

C-MAX Energi

Engine: 2.0L Atkinson cycle I-4 Hybrid Engine

Horsepower/Torque:

Gas: 141 hp/129 lb.-ft.

Electric: 118 hp /88kW; Total combined power (sustain): 188 hp
Mile Per Gallon Equivalent (MPGe): EPA-estimated rating of 95 city/81 highway/88 combined*

EPA-estimated Range: 550 miles†

All-Electric Range: 19 miles†

85 mph in electric mode

Charge Time: 2.5 hrs. (240 v); 7 hours (120 v)



F-750 Plug-In Hybrid***

Engine:

- 6.7L Power Stroke®
- Remy HVH 250 Electric Drive Motor; 80 hp/59.2 kW
- Plug-in Hybrid with lithium-ion 28.4 kWh batteries

Transmission:

- 6-Speed SelectShift® Automatic with Overdrive

Upfit Weight:

- 1,800 lbs.

Estimated Range:

- 300 miles with 50-gallon fuel tank

*** Modification by Odyne

Fusion Hybrid

Engine: 2.0L Atkinson cycle I-4 Hybrid Engine

Horsepower/Torque:

Gas: 141 hp/129 lb.-ft.

Electric: 118 hp /88kW @ 6,000 rpm; Total combined net horsepower (sustain): 188 hp

Miles Per Gallon

EPA-estimated rating of 44 city/41 highway /42 combined**

EPA-estimated Range:

567 miles¹, 13.5 gallon tank.

Battery Peak Power: 35 kW

C-MAX Hybrid

Engine: 2.0L Atkinson cycle I-4 Hybrid Engine

Horsepower/Torque:

Gas: 141 hp/129 lb.-ft.

Electric: 118 hp /88kW @ 6,000 rpm; Total combined net horsepower (sustain): 188 hp

Miles Per Gallon

EPA-estimated rating of 42 city/37 highway /40 combined**

EPA-estimated Range:

540 miles², 13.5 gallon tank.

Battery Peak Power: 35 kW

* Actual mileage will vary. MPGe is the EPA equivalent measure of gasoline fuel efficiency mode operation.

** Actual mileage will vary.

† EPA-estimated 40city/36hwy/38combined MPG; 14-gallon tank, 19 miles electric. Range calculation based on fuel economy.gov. Actual mileage will vary.

†† Actual mileage will vary with conditions such as external conditions elements, driving behaviors, vehicle maintenance and lithium-ion battery age.

1 EPA-estimated 44city/41hwy/42combined MPG; 13.5 gallon tank. Range calculation based on fuel economy.gov. Actual mileage will vary.

2 EPA-estimated 42city/37hwy/40combined MPG; 13.5 gallon tank. Range calculation based on fuel economy.gov. Actual mileage will vary.

MyFord[®] Mobile Communicates with Ford Plug-in Hybrid and All-Electric Vehicles

MyFord Mobile is a smartphone app and website that enhances the electric vehicle experience. The app helps find current and projected battery state of charge information including estimated range and the amount of charge time necessary for additional EV only range. MyFord Mobile is able to optimize use of electricity from the grid with a value charging feature (dependent on local utility participation) and get up-to-date charge station information from PlugShare.

MyFord Mobile allows remote access of the car from nearly anywhere, anytime.



MyFord Mobile uses an onboard wireless module integrated into the Focus Electric allowing the car to communicate with the Ford cloud-computing service through familiar cellular technology.

Owners can use a smartphone app or website to communicate with the Ford cloud-based secure server, helping to ensure up-to-the-minute access to vehicle information and a full suite of remote-controlled functionality.

Charging Station Locators



Overview

MyFord Mobile displays information for over 10,000 public charge stations helping EV customers plan their daily trips and maximize their EV miles driven with confidence. With charge station information powered by PlugShare, MyFord Mobile will deliver up-to-date information on charge station locations with the ability to map destinations and send charge station location information to their vehicle navigation system, if equipped.*

Features

- Find charge station locations while trip planning
- View other information including number of Level 1 or Level 2 chargers
- Send charging station locations to your vehicle with Send to SYNC[®] service, if equipped
- Includes stations across U.S. and Canada

* MyFord Mobile subscription complimentary for five years from the vehicle sale date as recorded by the dealer. Subscriptions fees apply after five years. MyFord Mobile requires a compatible 2G independent cellular network. Evolving technology and cellular networks may affect future availability and functionality. Text and data rates apply to usage.

Electric Vehicle **INFRASTRUCTURE.**



Charging Stations

Commercial

A number of companies offer commercial electric vehicle (EV) charging infrastructure. These commercial grade Level 2 (240V) systems can recharge vehicles significantly faster than using an ordinary 110V outlet. They can fully charge a Focus Electric in less than four hours and the C-MAX Energi or Fusion Energi in less than three hours. Pictured is the GE WattStation™.

Plug your vehicle in and the charge port will illuminate to indicate the state of charge. The charging station will also show a charging icon to signal that the vehicle is in the process of charging. When charging is complete, users simply stow the cord, keeping it organized for the next user. GE WattStations are available in pedestal or wall mount configurations. Wall mount units can either be hard wired for permanent installations or plugged-in to an existing 240V outlet for simple removal of the unit. As an added benefit, it is possible to network stations to allow users to know if a vehicle is charging or how long it may have charged. This information can be used to determine EV miles driven as well as fuel and CO₂ saved.



Public

For fleet drivers to charge their all-electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs) in public, charging stations are being deployed with consideration for daily commutes and typical driving habits.

Public charging stations make EVs and PHEVs more convenient to charge. Although the majority of EV and PHEV drivers will charge at home, public charging stations can increase the useful range of EVs and reduce the amount of gasoline consumed by PHEVs.

Generally public charging stations use Level 2 (240V) service and are usually located where vehicle owners are highly concentrated, such as shopping centers, city parking lots and garages, airports, hotels, government offices, and other businesses.

Source: www.afdc.energy.gov/fuels/electricity_charging_public.html



Home

A 240-volt charging station is available for purchase with or without installation services from AeroVironment™. If you decide to have the unit installed, an AeroVironment affiliated electrician will perform an electrical audit and then install the 240-volt charging station. The electrician can handle everything including securing the required permits. In many cases, installation could be

performed in less than one day. If you like, you could have a preferred electrician install the AeroVironment charging station. It is branded by Ford Motor Company, and can be hardwired or plugged into a 240-volt outlet for non-permanent installation, easy removal or replacement. For more information, please call 1-888-219-6747. or visit evsolutions.com/ford

Ford Plug-In Hybrid Vehicle **TESTIMONIAL.**

PECO

DUECO inc. is delivering 22 F-750 chassis cabs outfitted as Terex® T55 bucket trucks to PECO, an electric and natural gas utility based in Philadelphia. The 22 bucket trucks feature an Odyne plug-in hybrid system.

Power System

The Odyne hybrid power system features proprietary and patented hybrid technology combining reliable electric power conversion, power control and energy storage technology. The Odyne plug-in hybrid drive system reduces fleet operating and maintenance costs, and depending on duty cycle, enables large trucks to obtain fuel economy improvements of up to 50 percent compared to traditional diesel or gasoline engines. Odyne continues to develop plug-in hybrid systems on medium- or heavy-duty trucks to offer greater fuel efficiency both while driving and at the work site.

Advanced Grid Capabilities

The 22 trucks are part of a 300 vehicle, \$45.4 million U.S. Department of Energy (DOE), Electric Power Research Institute (EPRI) and South Coast Air Quality Management District of California (SCAQMD) award. The trucks feature advanced grid capabilities to charge the hybrid batteries at the most opportune time, reducing charging costs and excess demand on the utility grid.

“We are proud to be the first utility in the United States to deploy this type of vehicle through the combined Department of Energy and Electric Power Research Institute initiative,” said PECO President and CEO, Craig Adams. “In addition to our core mission of providing safe and reliable service to our customers, PECO shares a strong commitment to protecting and preserving the environment, and operating a sustainable fleet is a key component of our efforts.”

About DUECO, Inc.

DUECO is a women-owned business and the largest independent provider of Terex bucket trucks, digger derricks, and cranes for the utility market in the nation. DUECO services customers 24/7 in 17 states. To learn more, visit dueco.com or call 800-558-4004.

About PECO

PECO is an electric and natural gas utility subsidiary of Exelon Corporation. PECO serves 1.6 million



electric and more than 500,000 natural gas customers in southeastern Pennsylvania. For more information visit PECO.com, and connect with the company on Facebook and Twitter.

About Odyne Systems, LLC

Odyne is a leader in hybrid drive systems for medium and heavy-duty vehicles. Odyne’s advanced plug-in hybrid technology enables trucks over 14,000 pounds to have substantially lower fuel consumption, lower emissions, improved performance, quieter job site operation and reduced operating and maintenance costs. For further information, visit Odyne at www.odyne.com and follow us on Twitter @Odyne.

About SCAQMD

SCAQMD is the air pollution control agency for Orange County and major portions of the Los Angeles, San Bernardino and Riverside counties.

Cost Of OWNERSHIP.



The primary goal of most fleet managers is to achieve and maintain the lowest Total Cost of Ownership (TCO) for their fleet.

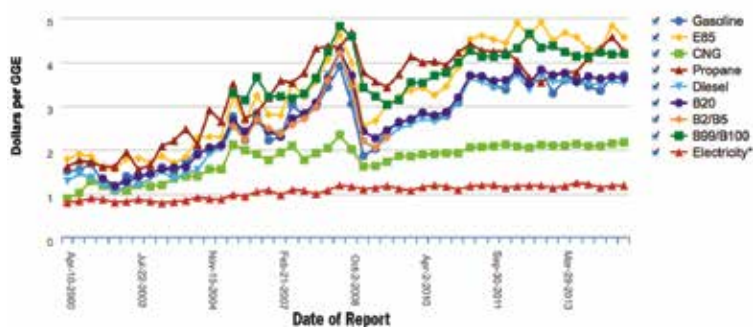
TCO calculations should include the acquisition cost of the vehicle, duty cycle, mileage traveled, fuel (or fuels) used, associated infrastructure, maintenance costs and the residual value of the vehicle, along with any other ancillary costs.

The calculations shown below address only the cost components of selecting an alternative fuel compared to gasoline assuming all other aspects are equal. Fuel prices for this brochure were extracted from www.afdc.energy.gov/fuels/prices.html.

Average Retail Fuel Price July 1, 2014

Fuel	Price
Biodiesel (B20)	\$3.98/gallon
Biodiesel (B99-B100)	\$4.24/gallon
Electricity	\$0.12/kWh
Ethanol (E85)	\$3.23/gallon
Natural Gas (CNG)	\$2.17/GGE
Propane	\$3.07/gallon
Gasoline	\$3.70/gallon
Diesel	\$3.91/gallon

Average Retail Fuel Prices in the U.S.



Electricity costs are adjusted to account for electric motor efficiency. It takes 9.9 kWh for an electric motor to achieve 1 GGE in an internal combustion engine (33.7 kWh/3.4 efficiency).

As the chart indicates, fuel prices ranged from \$2.17-\$4.24 in July 2014, but that is only half the story. The graph shows the prices of each fuel ranged from \$1.19 to \$4.56 per gasoline gallon equivalent (GGE), a relative measure that captures the energy density for each fuel. When viewed this way, ethanol and some higher blends of biodiesel become significantly more expensive.

For a detailed analysis, Ford recommends that you work with a Commercial Account Manager at one of our Business Preferred Network Dealers to address your specific needs.

Calculating the fuel cost payback for any alternative fuel is straightforward:

- A: Identify the base price of the vehicle you need assuming a gasoline engine
- B: Identify the price increase needed to equip for alternative fuel over the base vehicle:
 - Flex Fuel (E85) is generally available at little or no upcharge
 - Diesel can range from \$4,000 and up
 - CNG/Propane Autogas conversions can range from \$6,000 and up
- C: Identify the price of gasoline
- D: Identify the price of your alternative fuel per GGE
- E: Determine the estimated MPG based on your duty cycle (towing, hauling, etc.)
- F: Determine the number of miles traveled per year

Then perform the following calculations:

- 1: $(F/E) * (C-D) =$ your expected annual fuel savings over using gasoline
- 2: Divide your upfit cost for alternative fuel (B) by your annual fuel savings to determine the time period needed to payback the upfit
- 3: If the payback period is a shorter time than you plan on owning your vehicle, then you are on your way to achieving lower costs, reduced emissions and reduced dependence on foreign oil all at the same time.

Example: An F-Super Duty customer driving 20,000 miles per year at 12 MPG. To consider a CNG conversion at \$7,500 with gasoline priced at \$3.70/gallon and CNG at \$2.17/GGE, the calculation is:

$(20,000/12) * (\$3.70 - \$2.17) = \$2,550$ savings per year.
 $\$7,500 / \$2,550 = 2.94$ years to payback the upfit cost.

Many alternative fuels have additional incentives available from states and the federal government. These incentives can significantly reduce the payback period.

Some general rules of thumb:

- The higher the annual miles driven, the more likely that alternative fuels will make economic sense.
- The lower the fuel efficiency (mpg), the more likely that alternative fuels will make economic sense.
- The more the price gap widens between an alternative fuel and gasoline, the shorter the payback period.

Alternative Fuel INCENTIVES.

Commercial Upfit Incentives

The *Commercial Connection* program was created to help businesses upfit their commercial vehicles by providing incentives and special offers. As part of this program, Ford offers incentives for alternative fuel modifications such as CNG or Propane. These incentives are in addition to any national retail incentives⁽¹⁾ and are dependent on the vehicle



model series. All alternative fuel modifications must be completed by a gaseous fuel QVM (see page 7).

Model	Transit Connect	Transit	E-Series Cutaway/Chassis Cab	F-250-450 Super Duty Pickup	F-350-F-550 Super Duty Chassis Cab	F-650/F-750
Incentive ⁽²⁾	\$350	\$1,000	\$1,200	\$500	\$750	\$1,500

- 1 Take new retail delivery from dealer stock. Restrictions apply. See dealer for qualifications and complete details. Offer correct at time of printing. Program rules subject to change.
- 2 Upfit minimum may be required dependent on vehicle. Not available on factory-installed options. Units receiving any form of CPA (56A), GPC, Long-Term Rental (56K) or other concessions are ineligible. Take new vehicle delivery from dealer stock by 7/31/15. Restrictions apply. See your dealer for qualifications, complete details and possible program extension. Offer correct at time of printing. Program rules subject to change. Claimed incentives cannot exceed actual price of upfit.

It is important for customers to consult with their Ford BPN Dealer to obtain the most current incentive details. Go to fordtoughtruck.com for more details.

Government Incentives

The Federal Government offers varied incentives to encourage the adoption of alternative fuels, such as a \$7,500 tax credit for the Focus Electric and a \$4,007 tax credit for the Fusion Energi and C-MAX Energi. Many state governments also offer interesting incentives for alternative fuel vehicles. The U.S. Department of Energy has established a website that allows you to search its database of federal and state laws and incentive programs related to alternative fuel vehicles.

Some examples of state incentives (check afdc.energy.gov/laws/ for details and redirection to state specific websites):

State	Amount	How
Florida	50% of upfit Cost	Grant
Georgia	up to \$20K/vehicle	Tax credit
Louisiana	50% of upfit Cost	Tax credit
Pennsylvania	50% of upfit Cost	Grant



www.afdc.energy.gov/laws/

U.S. Department of Energy allows you to search its database of federal and state laws and incentive programs related to alternative fuel vehicles.

www.fueleconomy.gov

Information about federal and state tax incentives for purchasing alternative fuel vehicles.

Alternative Fuel **FINANCING.**



FORD CREDIT
Commercial Lending Services

Ford Credit Commercial Lending Services

Help meet the demands of your business that require specialized knowledge and a unique customer focus. Ford Credit commercial finance and lease products are tailored to respond to your needs.

Commercial Retail Financing - options that can be tailored to meet your business needs. We help you choose options that make the most sense for your business.

Commercial Red Carpet Lease (RCL) - is a closed end lease available for non-upfit vehicles with no residual risk – an ideal option for predictable use vehicles. At lease end, when you complete your lease as agreed, simply bring the vehicle to your dealer. You are only responsible for excess mileage, and wear and use charges.

Commercial Lease - is a customizable, open-end lease program that allows flexibility to set the residual based on your business needs. This program can be tailored a number of ways.

Commercial Line of Credit (CLOC)¹ - available with Commercial Retail, Commercial RCL, and Commercial Lease, with credit approval for up to 12 months. Get the vehicles your business needs quickly, easily, and with less hassle.

Commercial Service Plus (CSP) - is a comprehensive fleet management program that assists with all aspects of vehicle ownership, including service, maintenance, administration, management and expertise, to help reduce vehicle downtime. CSP is available with Commercial Retail and Commercial Lease transactions. Contact your dealer, or visit fordcsp.com for more information.

Commercial GAP Coverage - provides protection when a financed vehicle is stolen or declared a total loss and the insurance settlement does not satisfy the outstanding balance on the vehicle.

State & Local Government

Municipal Financing - is a lending program that helps state, local, and municipal governments make the most of their operating budgets by providing flexibility, affordability and convenience when acquiring vehicles for essential services.

Body Manufacturers and Upfitters

Chassis Financing - provides inventory financing for qualified body companies for the purchase of truck, van chassis, and limousine cars and trucks that will be converted or upfit with a specialty body.

Find more information at <http://credit.ford.com/comlend>

Ford Credit Alternative Fuel Financing Options

	CNG Vehicles	LPG Vehicles	BEV	PHEV	HEV
Commercial Retail Financing -flexible financing to meet your business needs.	■	■	■	■	■
Commercial Red Carpet Lease (RCL) Financing - For predictable usage vehicles, choose this closed-end lease with no residual risk. When you complete your lease as agreed, simply bring the vehicle to your Ford dealer.	Not Eligible	Not Eligible	■	■	■*
Commercial Lease (TRAC) Financing - a customizable lease plan that can be tailored to meet your business needs.	■	■	■	■	■
Municipal Financing - Ford Credit's Municipal Lease/Purchase finance program can help you make the most of your operating budget by providing flexibility, affordability, and convenience.	■	■	■	■	■
Chassis Financing - Short term inventory financing	■	■	■	■	■

¹ - Note: subject to initial approval, ongoing eligibility, and periodic reviews. Not all customers will qualify. See your dealer for qualification details.

* - Excludes F-750 Hybrid

BPN - Business Preferred Network.



The Right Place To Find The Right Commercial Vehicle

Dedicated service, customer commitment and advanced commercial vehicle expertise come standard with every Ford BPN Dealer.

Find a highly qualified BPN dealer near you, with the online BPN Dealer Directory at www.bpndealerdirectory.com

New Service Part Warranty

A warranty with no commercial restrictions.

When you count on a BPN Dealer, you can expect dedicated commercial vehicle expertise. And now Ford Genuine and Motorcraft® parts offer a new Service Part Warranty of 2 years/unlimited mileage and no commercial restrictions. Labor included.*

Business Preferred Network

Advanced commercial vehicle expertise, in stock.

When you work with a BPN dealer, you're getting advanced commercial vehicle expertise. Ford BPN Dealers offer a variety of hard-working Ford vehicles (in-stock), with dedicated service, outstanding customer commitment and custom financing. Bottom line? BPN dealers help your business run smoothly—today and down the road.

Alternative Fuels

Help improve your sustainability with the right truck and the right fuel.

Specialized Training

Certified in commercial vehicle service, and more.

BPN dealers' sales, finance, service and parts personnel are trained and certified to understand the unique requirements of commercial customers, the complexity of vehicle applications and your lease and finance options.

They are held to very high standards and monitored monthly, to provide you with the dealership experience you deserve.

Choosing The Right Vehicle

Finding the vehicle that meets your needs, exactly.

The Ford BPN Dealer experience guides you in buying the right vehicle to fit your needs. Personnel are trained and certified in commercial trucks and their applications. They also use a proprietary diagnostic software, Commercial Truck Tools (CTT), to recommend the most appropriate vehicle specifications for your business, based on your unique requirements (payload, cargo space, upfit needs, etc.).

Commercial Lending

Finance Programs designed with your business in mind.

Ford Credit Commercial Lending provides finance and lease programs designed with your business in mind—including a wide range of finance and leasing solutions and unique fleet vehicle finance options, customized for your business and vehicle use. Ford Credit financing is available through your Ford BPN Dealer.

Consolidated Billing

Convenient Billing Options, just for commercial customers.

Set up a convenient, single monthly payment billing option on Ford parts and services through Quality Fleet Care (QFC). Consolidated billing is available for commercial customers with Ford and non-Ford vehicles.

QFC consolidated billing is available through any Ford Dealer.

Extended Service Plans

Minimize a variety of unexpected repair costs.

Ford Extended Service Plans (ESP) take the risk out of commercial vehicle ownership by minimizing a variety of unexpected repair costs, from the engine to the electrical systems.

* Labor may have a limit. See your seller for a copy of the limited warranty. Motorcraft® is a registered trademark of Ford Motor Company. See your dealer for a copy of the limited warranty.

Popular **ALTERNATIVE FUEL** Sources.



Flexible-Fuel Vehicles (FFV) are designed to operate the internal combustion engine for a range of gasoline and ethanol blends. FFVs are capable of burning any blend ranging from 100% gasoline (E0) up to 85% ethanol/15% gasoline (E85). Fuel injection and spark timing are automatically adjusted according to the specific blend detected by electronic sensors. E85 is the most common Flex Fuel and many Ford engines are equipped to handle this fuel type.

Advantage – Ethanol/E85 is clean-burning and substantially reduces CO and CO₂ emissions. Compared to gasoline, E85 has a higher octane rating, provides the same or more horsepower and burns cooler. Corn and other cellulosic plant sources are readily available.

Consideration – E85 produces less energy by volume than gasoline. One gallon of gasoline is the equivalent of 1.56 gallons of E85 used to travel the same distance. Due to the increased volume required and the fact that ethanol is corrosive, fuel system components must be upgraded.

Biodiesel refers to a vegetable oil-based or animal fat-based diesel fuel. Blends of Biodiesel and conventional petrodiesel fuels are products most commonly distributed for use in the retail diesel fuel marketplace. A system known as the “B” factor is used to state the amount of Biodiesel in any fuel mix:

- 100% Biodiesel is referred to as B100, while
- 20% Biodiesel is labeled B20
- 5% Biodiesel is labeled B5
- 2% Biodiesel is labeled B2



All Ford diesels are capable of running on any blend of biodiesel up to and including B20.

Advantage – Biodiesel (B20) burns cleaner than petrodiesel, with reduced emissions.

Consideration – Biodiesel (B20) may be more expensive than petrodiesel and in low temperatures may require a special additive or fuel tank heater to flow properly.



Compressed Natural Gas (CNG) is a fossil fuel substitute for gasoline or diesel. CNG is domestically sourced and reduces our dependence on foreign oil. Landfills and biologic waste also provide CNG through digesters and emission recapture turning waste into fuel. It is stored and distributed in hard containers at a pressure of 2,900–3,600 psi. It is safer than other fuels in the event of a spill (natural gas is lighter than air, and disperses quickly when released). CNG is made by compressing natural gas which is mainly composed of methane.

Advantage – CNG is an extremely clean burning fuel and significantly reduces CO, CO₂ and NO_x compared to its gasoline counterpart. CNG is typically less expensive than gasoline and the fuel price is also less volatile. CNG has an octane rating of 130 and has the potential to optimize the engine’s thermodynamic efficiency by utilizing a higher compression ratio.

Consideration – CNG has slightly less energy than gasoline per unit volume. CNG at 3,600 PSI occupies about 3.5 times the volume as gasoline does for the equivalent amount of energy and therefore requires a larger fuel tank to maintain the same range. Refueling time and infrastructure are also considerations.



Propane Autogas also known as Liquefied

Petroleum Gas - LPG is a mixture of hydrocarbon gases, most commonly propane and butane. A powerful odorant, ethyl mercaptan, is added so that leaks can be detected easily.

As opposed to relying on foreign oil sources, approximately 90% of the United States propane supply is produced domestically. 70% of the remaining supply is imported from Canada and Mexico.

Propane is non-toxic and cannot get into the water table if there is a leak in the storage container. From an economic perspective, propane is an

effective alternative to conventional transportation fuels when capital cost (vehicle and infrastructure), operation and maintenance are all taken into consideration.

Advantage – Power, acceleration, payload and cruise speed are unchanged compared to an equivalent vehicle fueled by gasoline. Propane has a high octane rating of 104, in-between Compressed Natural Gas (CNG) at 130 and unleaded gasoline at 87.

Consideration – Propane Autogas has fewer BTU's than gasoline, which may result in an mpg loss compared to gasoline.

Hybrids & Plug-In Hybrids are vehicles that utilize both an internal combustion engine AND electric motors to propel the vehicle.

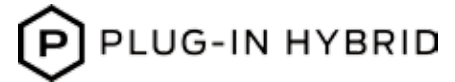
Hybrids (HEVs) are powered in part by gasoline and part by a battery-driven electric motor. They seamlessly switch between the gasoline engine, electric motor or a combination of both to offer efficiency and performance. The battery pack is automatically recharged by the gasoline engine and through regenerative braking. Hybrids do not plug in.

Plug-In Hybrids (PHEVs) are progressive hybrids that expand capability by providing the option of plugging in or not. To enhance the hybrid experience and maximize the battery capability, drivers can choose to plug into a standard 120V or available 240V outlet. By fully charging before driving, you may achieve greater fuel savings and minimize your carbon footprint. Ford PHEVs feature an electric vehicle (EV) mode button which allows the driver to choose electric-only mode (EV Now), saving plug-in power for

later use (EV Later), or driving in normal hybrid operation (Auto EV). PHEVs offer the best of both worlds, driving like an EV for short trips or like a hybrid for longer trips.

Advantage – Hybrids may reduce fuel consumption especially if the duty cycle of the vehicle involves urban driving with lots of stop and go. By substituting grid energy for gasoline, PHEVs can offer an additional potential improvement in fuel savings and emissions.

Consideration – The vehicle essentially has two powertrains. Combining powertrains increases vehicle weight, reduces payload and towing capability.



Battery Electric Vehicles (BEVs) are powered completely by a rechargeable battery so you never need a drop of gasoline or an oil change. Key features are the electric motor, charge port and lithium-ion battery pack. BEVs provide a CO₂-free driving experience. Drivers plug the vehicle in to fully charge the battery pack. While driving, regenerative braking also aids in charging the battery.

Advantage – Vehicles that run solely on electric power require no warm-up, run almost silently and have excellent performance. Electric vehicles can be recharged at night when generating plants are under utilized. Electric vehicles produce zero tailpipe emissions.

Consideration – Pure electric vehicles have limited range. For example, the Focus Electric has an EPA-estimated range of 76 gas free miles on each charge (actual mileage will vary)*. Charge time is also important to assess. Depending on voltage, charging overnight may be needed to fully recharge a depleted battery.

** Actual range varies with conditions (e.g., external elements, driving behaviors, vehicle maintenance, and lithium-ion battery age).*



There Is More To **SUSTAINABILITY** Than Alternative Fuel Use.



2015 Ford F-150

The all-new, aluminum alloy 2015 Ford F-150 pickup continues to make headlines for groundbreaking achievements in technology. With this bold new design, Ford has placed a huge bet on the future of the pickup business - which is vital not only to the Company and its dealers, but also to the truck-using public which has made Ford F-series the pickup of choice for over 37 years.

“Between 2000 and 2012, Ford pared down water usage in everything from its cooling towers to parts washing to paint operations. The result? A 62 percent reduction in total global water consumption and a savings of 10.6 billion gallons of water.”

- Ford Motor Company: Sustainability Blues

Sustainability Means Doing More Good

This is great news for Ford dealers and customers, of course; but the story doesn't stop there. This **commitment by Ford to reverse a long-term weight-gain is symbolic of a much larger strategy** that Ford is following: Corporate Sustainability. And we're not simply talking of maintaining a healthy balance sheet - Sustainability is about engaging with the overall environment such that the making, using, and disposing of each individual vehicle ultimately results in minimal environmental impact. In short, **Sustainability ensures the Earth can support long-term usage of the vehicles we all have come to depend upon.** But even more important, Ford is focusing on sustaining strategies that result in positive trade-offs. In other words, finding **solutions that are not only good for the environment, but also better for the intended usage** compared to the less-environmentally friendly alternative.

Why Sustainability Is Important

Why is Sustainability important? In two short words: resource management. Just as every organization has a finite amount of resources, the Earth itself has a finite amount of resources. And while the Earth is greatly endowed with vast resources, these are not inexhaustible - whereas demand for these resources continues to rise with both population increases and improvements to the economies of developing nations. There are very legitimate concerns over greenhouse gas (GHG) emissions and related climate changes that cannot be ignored. It is simply very wise for all of us.



Commercial Vehicle Sales & Marketing
North American Fleet, Lease and Remarketing Operations
Ford Motor Company



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