



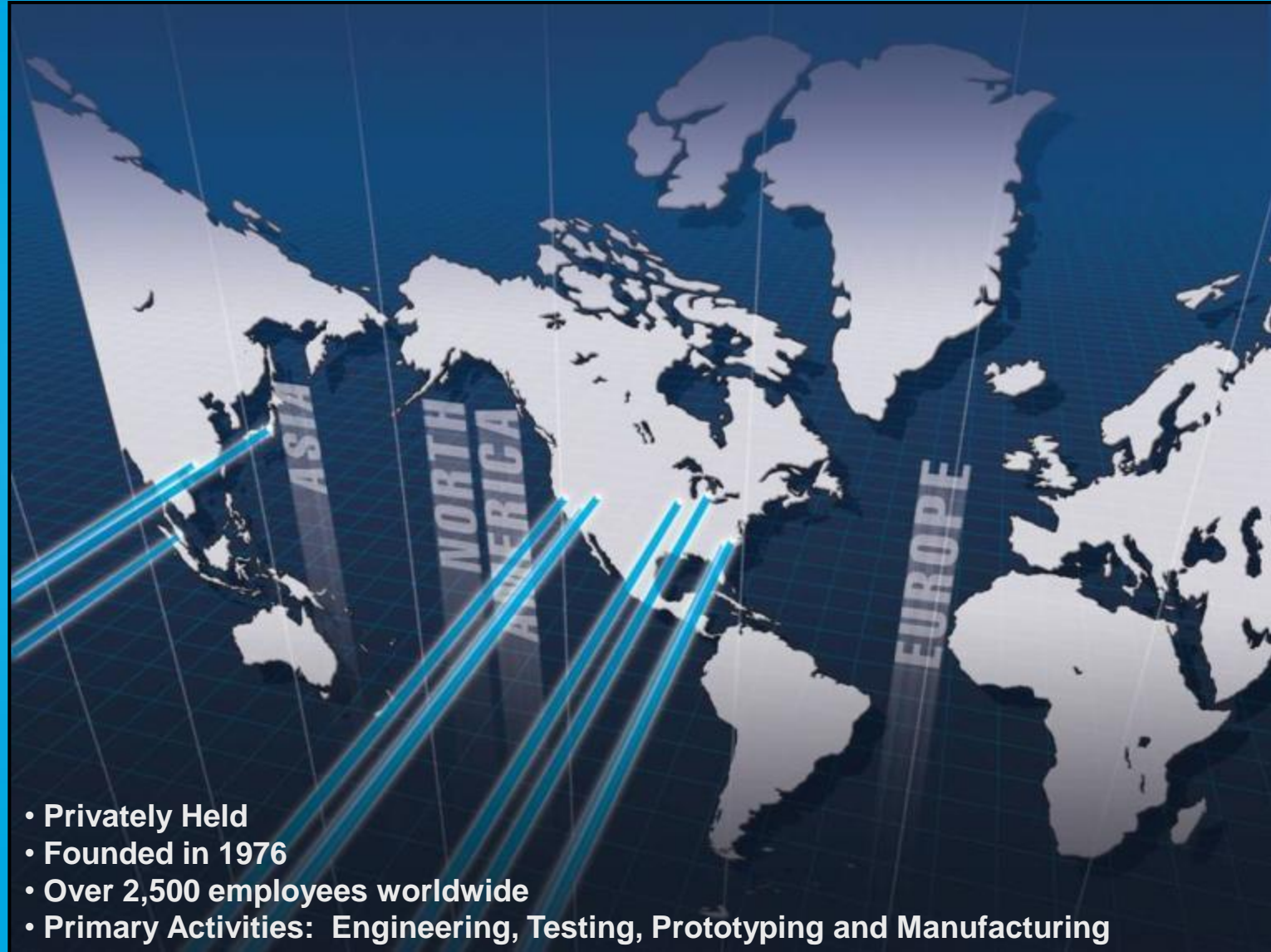
PRODUCT INTRODUCTION & OVERVIEW



February 2011

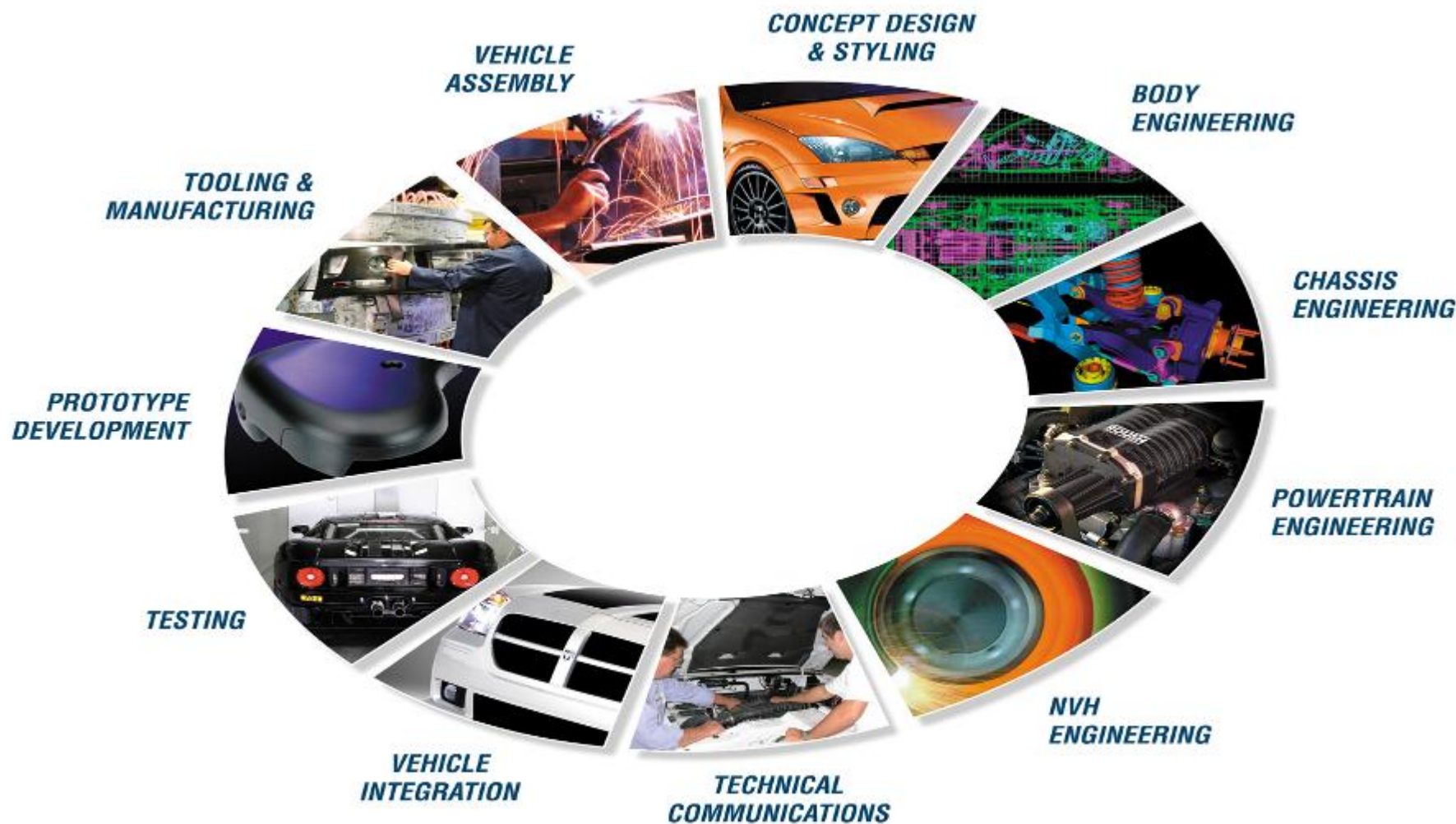
- Corporate Overview
- What Is Propane Autogas?
- Fleet Research
- Current & Future Product
- System Overview & Performance
- Return on Investment Analysis
- The ROUSH CleanTech Difference
- Customer Case Studies
- Q & A

Corporate Overview



- Privately Held
- Founded in 1976
- Over 2,500 employees worldwide
- Primary Activities: Engineering, Testing, Prototyping and Manufacturing

Corporate Overview



Corporate Wheel of Capability

Corporate Overview

Core		Capabilities						
Engineering	Concept and Design Electrical Engineering Body Engineering Chassis Engineering Powertrain	Automotive	Performance Products	Military	Entertainment	Life Sciences	Alternative Fuels/Energy	Consumer Products
Engineering	NVH Engineering Systems Integration Program Management Tech Doc							
Prototyping	Machining Fabrication Assembly Modeling SLA/SLS Composites							
Testing	Dyno Testing Emissions Sound/Vibration Brakes Electronics ORVT							
Production	Injection/Blow Tools Molding Painting Assembly Machining Fabrication							
Sales and Marketing	Direct Indirect							

Market Strategy

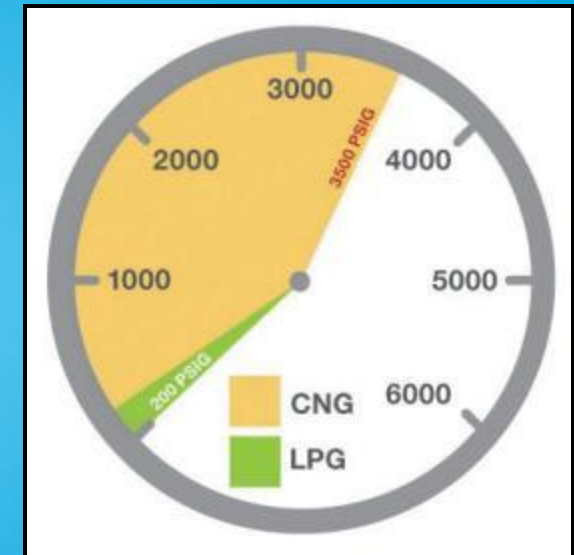


WHAT IS PROPANE AUTOGAS?

**Clean. Domestic. Abundant.
Safe.**

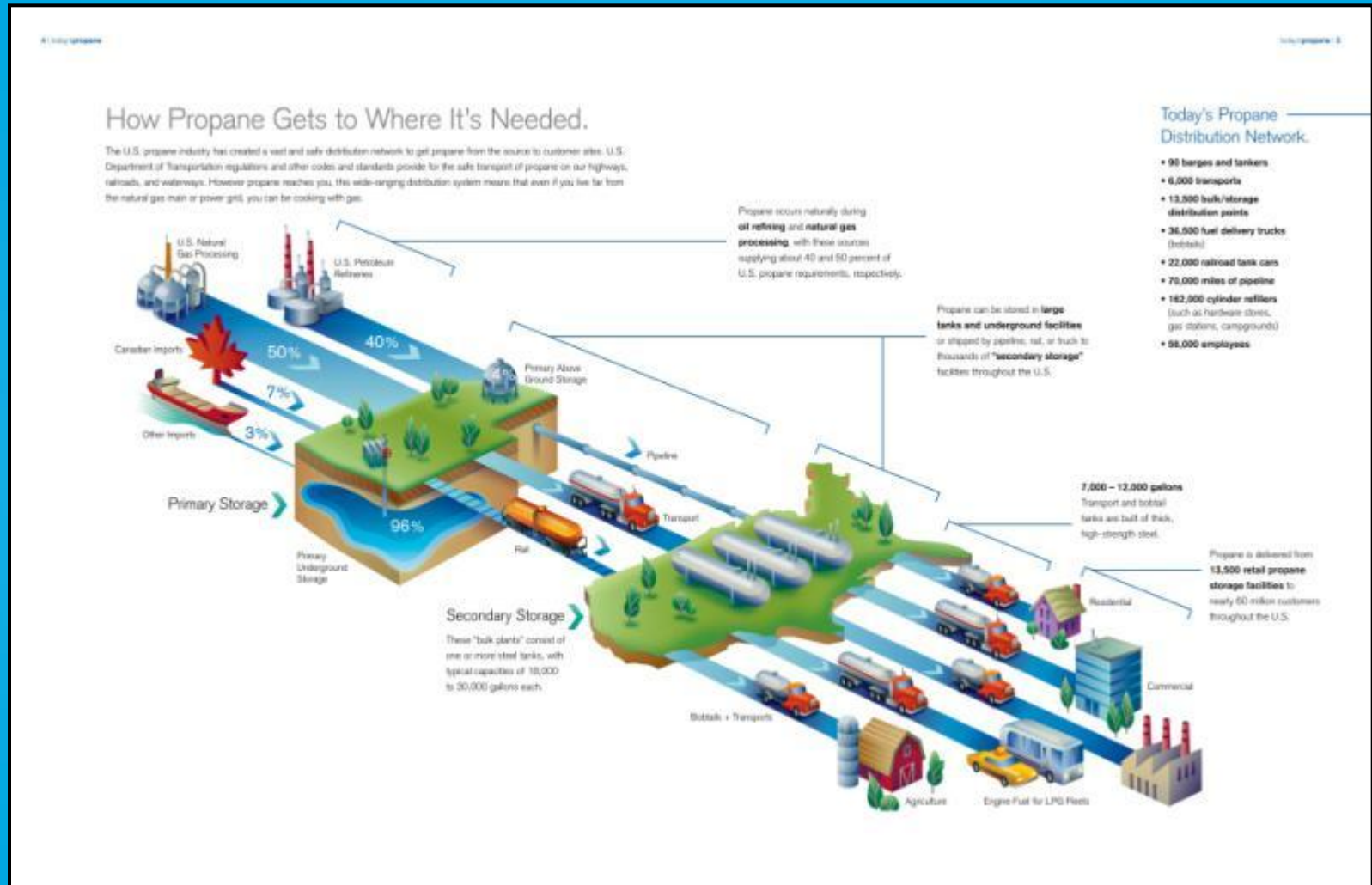
What Is Propane Autogas?

- **Clean**
 - 24% reduction in Greenhouse Gas (GHG) emissions
 - 20% reduction in Nitrogen Oxide (NOx) emissions
 - 60% reduction in Carbon Monoxide (CO) emissions
- **Domestic**
 - 90% of propane used in U.S. comes from U.S.
 - 7% of propane used in U.S. comes from Canada
- **Abundant**
 - Most refueling infrastructure of any alternative fuel
 - Major natural gas shale found in northeast U.S.
 - Powers over 15 million vehicles worldwide
- **Safe**
 - Low pressure (~ 200 psig)
 - Narrow flammability range
 - Fuel tanks are 20x's more puncture resistant than gasoline



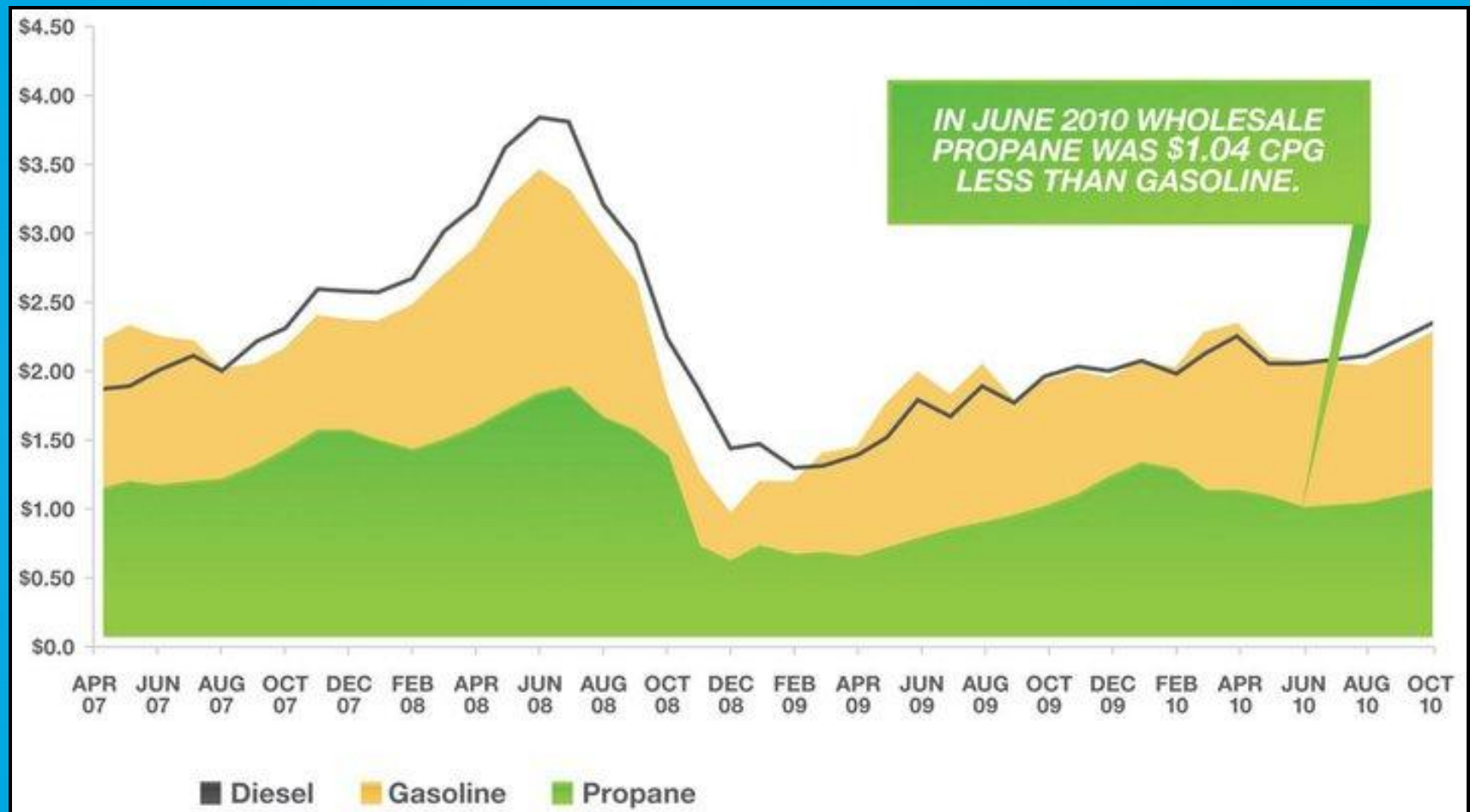
Propane Autogas and CNG
Tank Pressure Comparison

What Is Propane Autogas?



The Propane Supply Chain

What Is Propane Autogas?



The Price of Diesel, Gasoline, and Propane Autogas

What Is Propane Autogas?

On-Site Refueling:



Ford Michigan Assembly Plant (MI)



Positive Connections (MN)



Shell (AZ)



Portland Schools(OR)



ROUSH CleanTech (MI)



Prosper Schools (TX)



FLEET RESEARCH:

**What Do Fleet Managers Want In
An
Alternative Fuel Vehicle Solution?**

- **Reduced Operating Costs**
 - Propane autogas costs ~ 40% less than gasoline
 - Significant tax credits available
- **Reliability**
 - Five years in development
 - Significant engineering & testing
- **Performance**
 - Horsepower, torque, towing capacity unchanged



2012 Ford F-550

- **Warranty & Serviceability**
 - 3 year / 36,000 mile warranty
 - Ford alt. fuel prep package
 - Uses standard Ford diagnostic equipment
- **Positive Environmental Impact**
 - 24% reduction in Greenhouse Gas (GHG) emissions
 - 20% reduction in Nitrogen Oxide (NOx) emissions
 - 60% reduction in Carbon Monoxide (CO) emissions
 - EPA and CARB certification



Ford Diagnostic Equipment

Fleet Research

- Fuel Availability
 - Over 3,000 public fueling stations
 - Infrastructure available for little- to no-cost



Skid-Mounted Refueling Station

- Operating Range
 - Under-body tanks: 250 – 300 miles
 - In-bed Tanks: 450 – 500 miles
 - Factory fuel gauges work with system



ROUSH CleanTech E-450 Under-Body Tank



PRODUCT OVERVIEW:

**Pickups | Vans & Wagons | Cutaway
Vans**

Product Overview - Pickups



Ford F-150

Model Years:	2007.5 – 2008
Engine Size:	5.4L V8 (3V)
Applications:	All bed lengths All axle configurations
Tank Sizes:	In-Bed – 46 gallons Under-Bed – 20 gallons
Order Availability:	Conversion Kits
Certification:	EPA CARB



Product Overview - Pickups



Ford F-250 / F-350

Model Years:	2009 – 2010
Engine Size:	5.4L V8 (3V)
Applications:	All bed lengths All cab except chassis cab All axle configurations
Tank Sizes:	In-Bed – 55 gallons Under-Bed – 23 gallons
Order Availability:	Conversion Kits
Certification:	EPA CARB



Product Overview – Vans & Wagons



Ford E-150 / E-250 / E-350

Model Years:	2009 – 2011
Engine Size:	5.4L V8 (2V)
Applications:	All cargo configurations All passenger configurations Single rear wheel cutaway
Tank Sizes:	Under-Floor – 25 gallons
Order Availability:	Ford Ship Through Conversion Kits
Certification:	EPA CARB (pending)



Product Overview – Vans & Wagons



Ford E-350 DRW Cutaway

Model Years:	2010 – 2011*
Engine Size:	5.4L V8 (2V)
Applications:	Dual rear wheel cutaway 5-speed auto transmission
Tank Sizes:	Under-Floor – 41 gallons
Order Availability:	Ford Ship Through Conversion Kits
Timing:	Late Q1, 2010



* = 2007 – 2008 Retrofit also available

Product Overview – Vans & Wagons



Ford E-450 DRW Cutaway

Model Years:	2009 – 2011
Engine Size:	5.4L V8 (2V)
Applications:	Dual rear wheel cutaway 5-speed auto transmission
Tank Sizes:	Under-Floor – 41 gallons
Order Availability:	Ford Ship Through Conversion Kits
Timing:	Available Now



Product Overview - Future

- Ford F-450 / F-550
6.8L V10 (3V)
- Ford F-250 / F-350
6.2L V8 (3V)
- Ford F-650
6.8L V10 (3V)
- Ford F-59 / F-53 Strip Chassis
6.8L V10 (3V)
- Ford Transit Connect
TBD Powertrain
- Ford F-150
TBD Powertrain



Ford F-450 / F-550



Ford F-59 / F-53



Ford Transit Connect



SYSTEM OVERVIEW & PERFORMANCE:

**The Zero Compromise Alternative Fuel
Solution**

System Overview

- Fuel Rail Assembly
 - Fuel Rails
 - Fuel Injectors
 - Injection Press. / Temp. Sensor
- Fuel Line Assembly
 - Fuel Lines
 - Flow Control Solenoid
- Fuel Tank Assembly
 - Fuel Tank
 - Fuel Pump
 - Fuel Level Sensor



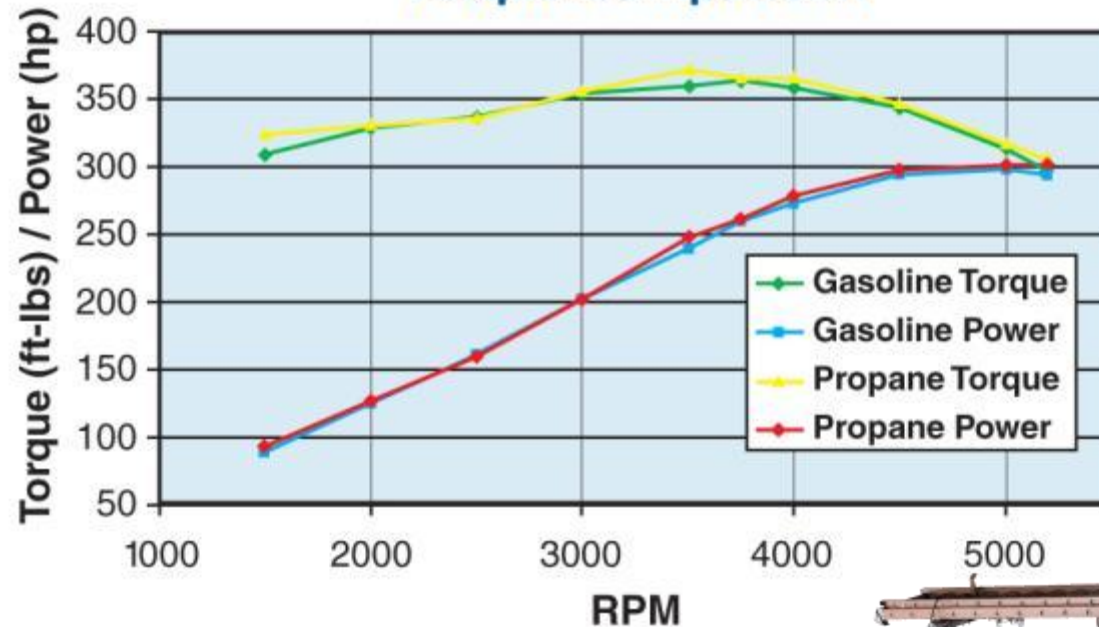
2011 Ford E-450 DRW Cutaway Fuel System

- Powertrain Control System
 - PCM Calibration
 - Wiring Harness

Performance

2011 Ford E-250 w/ 5.4L V8 Engine

Gasoline/Propane Power and Torque Comparison





RETURN ON INVESTMENT:

**A Positive Return, Even Without
Government Incentives**

Savings Calculator

2011 Ford E-250 Pass. Van

Capital Costs

Base Ford Vehicle Purchase Price

\$ 28,400.00

\$ 28,400.00

ROUSH Propane System Conversion Price

\$ 10,900.00

[Federal Alternative Motor Vehicle Tax Credit \(propane only\)](#)

Total Capital Savings or Investment to Convert:

\$28,400.00

\$39,300.00

\$ (10,900.00)

Operating Costs (fuel)

Total Vehicle Life (miles)

200,000

200,000

Average Miles per Gallon*

13.0

11.6

Gallons of Fuel Used Over Life of Vehicle

15,385

17,286

Fuel Price (per gallon)**

\$ 3.15

\$ 2.15

+ Federal excise tax credit / gallon (propane only)

\$ -

\$ (0.50)

+ Adjusted Fuel Price (per gallon)

\$ 3.15

\$ 1.65

Total Fuel Savings or Cost Over Life of Vehicle:

\$ 48,461.54

\$ 28,522.04

\$ 19,939.50

Operating Costs (misc.)

Maintenance Rate per mile (tune-ups, oil, engine life, etc.)***

\$ 0.030

\$ 0.015

Maintenance Costs

\$ 6,000.00

\$ 3,000.00

Fuel Loss from Pilferage & Theft (\$100 per year)

\$500.00

\$0.00

Total Misc. Savings or Costs Over Life of Vehicle:

\$6,500.00

\$3,000.00

\$ 3,500.00



Gross Vehicle Lifetime Savings or Loss:

\$23,439.50

Net Vehicle Lifetime Savings or Loss:

\$12,539.50

Savings Calculator



2011 Ford E-450 Cutaway

Capital Costs

Base Ford Vehicle Purchase Price	\$ 30,175.00	\$ 30,175.00	
ROUSH Propane System Conversion Price		\$ 13,900.00	
Federal Alternative Motor Vehicle Tax Credit (propane only)			
Total Capital Savings or Investment to Convert:	\$30,175.00	\$44,075.00	\$ (13,900.00)

Operating Costs (fuel)

Total Vehicle Life (miles)	200,000	200,000	
Average Miles per Gallon*	9.0	8.0	
Gallons of Fuel Used Over Life of Vehicle	22,222	24,969	
Fuel Price (per gallon)**	\$ 3.15	\$ 2.15	
+ Federal excise tax credit / gallon (propane only)	\$ -	\$ (0.50)	
+ Adjusted Fuel Price (per gallon)	\$ 3.15	\$ 1.65	
Total Fuel Savings or Cost Over Life of Vehicle:	\$ 70,000.00	\$ 41,198.50	\$ 28,801.50

Operating Costs (misc.)

Maintenance Rate per mile (tune-ups, oil, engine life, etc.)***	\$ 0.030	\$ 0.015	
Maintenance Costs	\$ 6,000.00	\$ 3,000.00	
Fuel Loss from Pilferage & Theft (\$100 per year)	\$500.00	\$0.00	
Total Misc. Savings or Costs Over Life of Vehicle:	\$6,500.00	\$3,000.00	\$ 3,500.00

Gross Vehicle Lifetime Savings or Loss: **\$32,301.50**

Net Vehicle Lifetime Savings or Loss: **\$18,401.50**

Emissions Calculator

2011 Ford E-450 Cutaway

Emissions Reductions	Gasoline	Propane	Difference (Gasoline - Propane)
Total Vehicle Life (miles)	200,000	200,000	
Average Miles per Gallon	9.0	8.0	
Gallons of Fuel Used Over Life of Vehicle	22,222	24,969	(2,747)
Carbon Mass per Gallon Fuel (lb / gal.)	5.10	3.47	
Mass of CO2 per Gallon Fuel (lb / gal.)	18.70	12.72	
Total Lbs of CO2 Produced During Vehicle Life:	415,458	317,558	97,900

Fewer Lbs of CO2 Produced Using Propane Autogas:

97,900

Assumptions:

Fuel Properties Used

	Gasoline	Propane
	C8H18	C3H8
Fuel Density (lb / gal)	6.07	4.23
Energy Density (BTU / gal)	114,100	84,300
Main Constituents (% by weight)	84C 16H	82C 18H



- **Alternative Fuel Excise Tax Credit**

\$.50 / gallon

- Must be liable for reporting and paying the federal excise tax on the sale or use of the fuel in a motor vehicle
- Tax exempt entities such as state and local governments that dispense qualified fuel from an on-site fueling station for use in vehicles qualify for the incentive
- The incentive must first be taken as a credit against the entity's alternative fuel tax liability; any excess over this fuel tax liability may be claimed as a direct payment from the IRS.

- **Alternative Fuel Infrastructure Tax Credit**

30% of cost, up to \$30,000

- Fueling station owners who install qualified equipment at multiple sites are allowed to use the credit towards each location.
- Unused credits that qualify as general business tax credits, as defined by the Internal Revenue Service (IRS), may be carried backward one year and carried forward 20 years.

Source: <http://www.afdc.energy.gov/afdc/laws/laws/US/tech/3254>

State Incentives



Alt Fuels & Advanced Vehicles Data Center

A website maintained by the U.S. Department of Energy that lists incentives for propane autogas and other alternative fuels state-by-state.

http://www.afdc.energy.gov/afdc/fuels/propane_laws.html

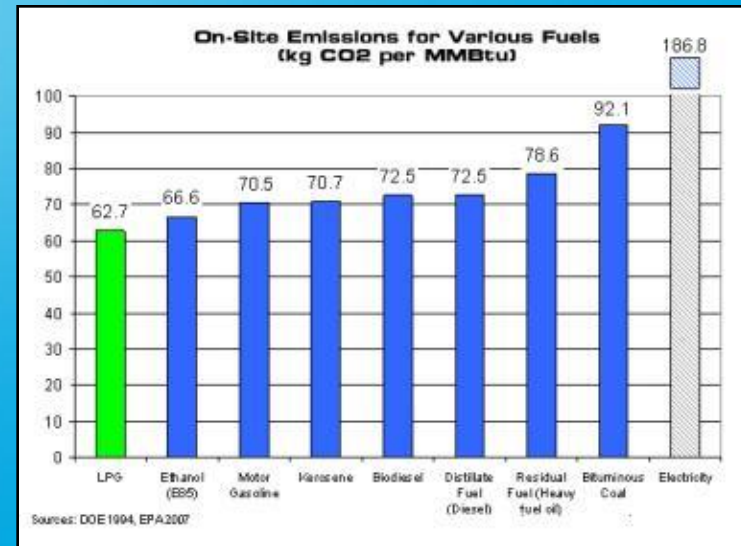


THE ROUSH CLEANTECH DIFFERENCE:

Why Propane Autogas?

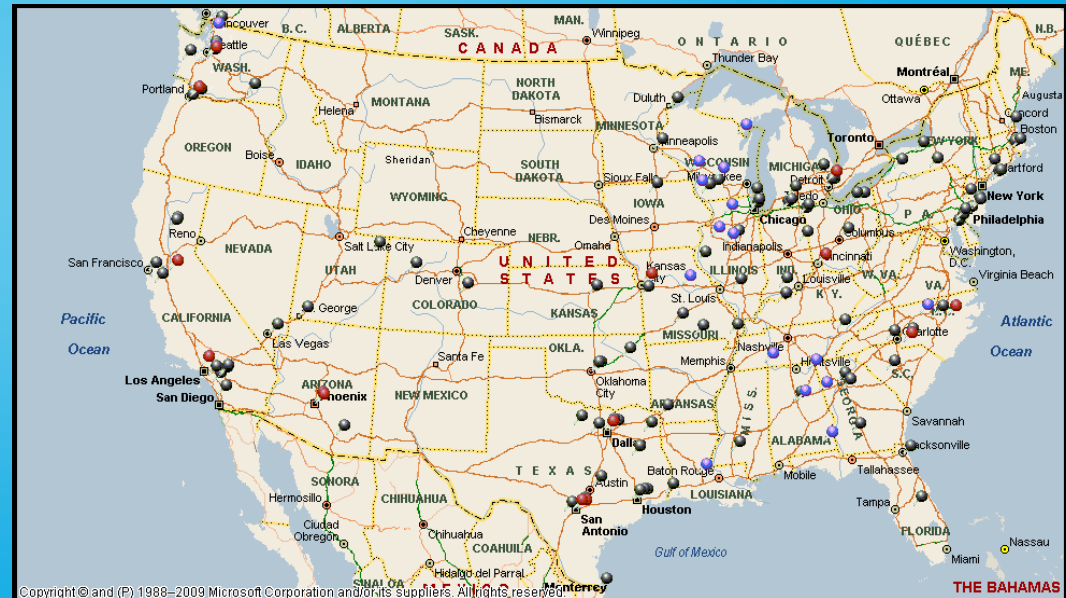
The ROUSH CleanTech Difference

- Over 35 Years of Engineering Experience
 - CNG
 - Electric / Electric Hybrid
 - Hydrogen
- Rigorous Customer Research and Development
- Seamless Customer Experience
 - Serviceability
 - Warranty coverage
- Clean & Green
 - Lower emissions
 - Lower operating costs
 - Proven technology



Field Service Network

- National Footprint to Support Customers
- Training Program Includes
 - System overview
 - Service diagnostics
 - Repair procedures
 - Warranty claim process
 - Service manual review
 - Contact information
- Web-Based Training
 - Available Q2 2011



Black = Sales/Service Centers, Red = Trained, Blue = Training Scheduled

Demonstration Vehicles



ROUSH CleanTech Demo Units

- Located around the U.S.
- Vehicles available:
 - E-series Cargo Vans
 - E-series Passenger Vans
 - E-series Cutaway Vans
 - F-series Pickup Trucks
- Contact us for details



Case Study – Wright & Filippis



Industry: Home Medical Equipment

Location: Rochester Hills, MI

Vehicles: 2011 Ford E-350 Cargo Vans
2011 Ford E-450 Cutaway Van

By The Numbers:

- **48,000** fewer gallons of gasoline / year
- **931,200** fewer lbs of CO₂ / year
- **\$36,000** reduction in fuel costs / year



“Propane autogas is sustainable technology that works. I would encourage any owner that operates a fleet to take a look at the propane autogas solutions that are out there today. I think they will find that this is a very cost-effective solution available that makes sense for their fleets as well.”

- **Tom Hopkins**, Distribution & Fleet Manager

Case Study – King County, WA



Industry: Government

Location: Seattle, WA

Vehicles: 2010 Ford F-250 Pickup Trucks
2010 Ford F-350 Pickup Truck
2010 Ford E-250 Cargo Van



By The Numbers:

- **11,200** fewer gallons of gasoline year
- **77,280** fewer lbs of CO₂ / year
- **\$15,338** reduction in fuel costs / year

“For the driver, it’s pretty much seamless other than you fill up at a propane tank instead of a gas dispenser. Range is approximately the same and fuel economy is approximately the same. A big advantage is that with the federal rebate being offered on propane autogas fuel, the cost of fuel is currently considerably less than the price of gasoline. So right now that’s a big advantage.”

- **Robert Toppen**, Equipment Supervisor



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