

NGV America

The Westport GX for 2010

Jonathan Burke

August 12, 2010



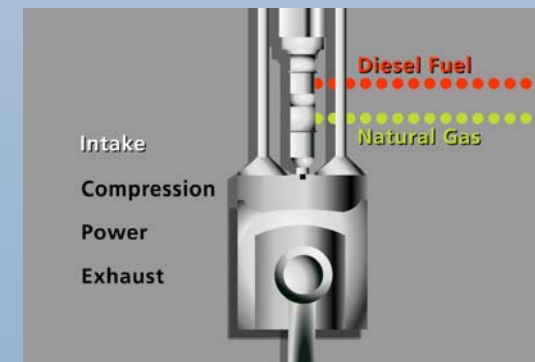
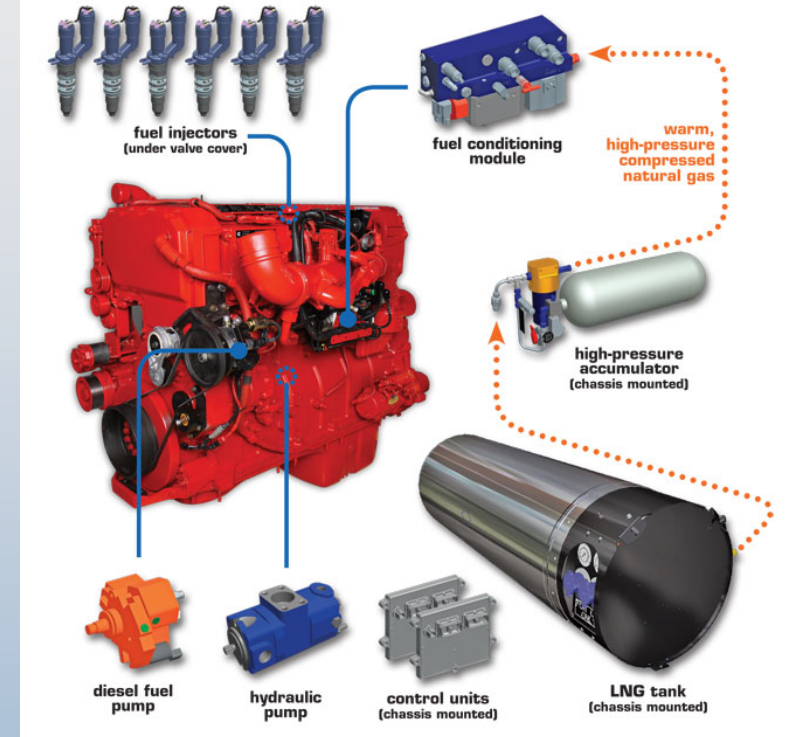
Westport GX Technology

High Pressure Direct Injection (HPDI)

- Compression ignition – no spark plug
- Natural gas injected at high pressure at end of compression stroke
- Low diesel usage under all conditions – high diesel substitution
- Diesel Engine Performance remains
 - Same high power and torque
 - Same or higher efficiency

The Westport GX

- Liquefied Natural Gas (LNG) fuelled heavy-duty engine
- Cummins ISX base engine platform
- Compression ignition – no spark plug
- Direct injection high pressure natural gas
- High diesel substitution
- Diesel Engine Performance remains:
 - Same high power and torque
 - Same or higher efficiency
- EPA/CARB 2010 certified



GX 2010 Product

- Major NG fuel system components unchanged from EPA 07 product
- Using common after-treatment technology
 - Selective Catalytic Reduction (SCR)
 - Diesel Particulate Filter (DPF)
- The addition of SCR provides
 - Fuel economy gains ~5% vs. 2009 (EPA 07) product
- Westport WTW GHGe advantage maintained in 2010 – 20-25% reduction (dependent on duty cycle, fuel source)

Engine Model	Horsepower (hp)	Peak Torque (lb-ft)
475	475	1,750 @ 1,200 RPM
450	450	1,650 @ 1,200 RPM
400	400	1,450 @ 1,200 RPM

2010 Engineering Truck

(in operation since September 2009)



120 gal LNG
Tank

Diesel Exhaust Fluid
Tank (urea solution)

DPF/SCR (under step on
this configuration)

- 3 additional field trial trucks in operation in southern California

LNG Truck Availability

- Available in either Kenworth or Peterbilt chassis
- Supported through KW/PB dealer network
- Service and support call center located in Long Beach, CA



Applicable Vocations

- With ratings of 1450 to 1750ft-lbs, 400 to 475hp, most HD applications are suited to Westport GX LNG System
- Customized chassis integration to suit:



Roll Off Trucks	✓
Heavy Haul	✓
Refuse Transfer	✓
Water Trucks	✓
Flat Bed Haul	✓
Dump Truck	✓
Freight Haul	✓
Derrick Rigs	✓
Bulk Haul	✓

Proven Operations (USA, Canada, Australia)



Westport™ HD

CUSTOMERS TALK ABOUT THE WESTPORT GX HEAVY-DUTY LNG ENGINE

L 007
TTSI
THE PORTS TRUCKING SYSTEMS INC. (DOT 1048451)

Vic on why he chose Westport HD LNG trucks

"In 2007 the Ports were mulling around a Clean Air Action program. We pretty much determined that the future was going to really dictate a major movement to alternative fuels. The only thing being developed in the market place at the time that was truly alternative and would get the job done was LNG."

"With this particular engine we'll be able to go a million miles"

LNG SPELLS PROGRESS FOR TTSI

Warranty - 2010

- Base warranty matches Cummins Diesel ISX15 warranty:
 - 2 years/250K miles on all components including LNG pump and injectors
- Extended coverage for all major components available for up to 5 years/500K miles

Incremental Maintenance & Costs

- Maintenance required to maintain warranty coverage
- Full maintenance schedule available on Service website
- Incremental PM cost ~\$0.005 - \$0.007 per mile above diesel
- Oil Change interval extensions possible

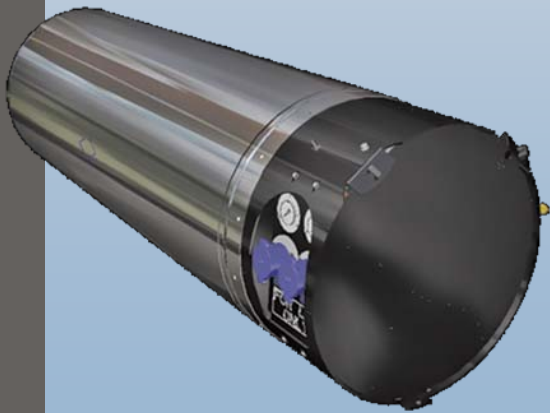
Every 4 Months	Every 12 Months, 1000 hours 30,000 miles	Every 4000 hours 125,000 miles
<ul style="list-style-type: none">• Conduct Gas Detection system function test	<ul style="list-style-type: none">• Conduct detailed gas leak check• Conduct detailed diesel leak check• Replace primary (low pressure) diesel filter• Inspect HP gas accumulator• Conduct LNG Tank Visual Inspection• Drain vent stack filter, if so equipped	<ul style="list-style-type: none">• Inspect all fluid hoses for leaks and deterioration• Replace high pressure natural gas filter• Replace high pressure (secondary) diesel filter• Replace diesel pump drive belt• Replace Dosing pump filter• Replace vent stack filter

GX Value Proposition for Customers

- Westport GX Value Proposition:
 - **Energy security** – domestic natural gas
 - **Emissions** – ~25% WTW GHGe reduction; meet or beat EPA/CARB 2010 emissions (no credits)
 - **Economics** – Lifecycle operating cost superiority over diesel
 - **Performance** – same horsepower/torque/fuel economy as base diesel



LNG Safety



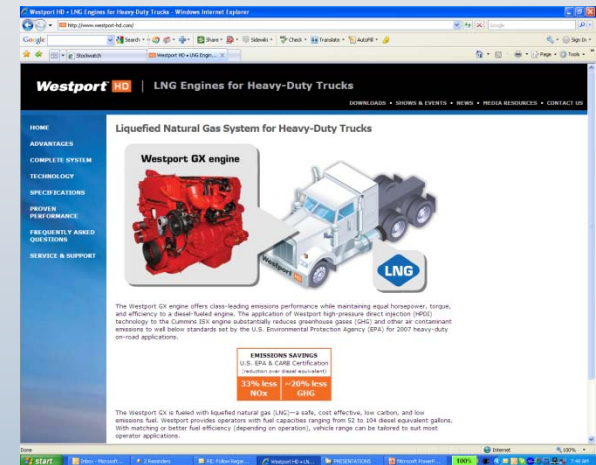
For More Information

- Jonathan Burke, VP GX Market Development (Vancouver, Canada)
 - Tel: 604-718-2016 or 604-831-3334
 - jburke@westport.com
- Kelly Mills, Territory Manager, USA (Long Beach, CA)
 - Tel: 323-434-1700
 - kmills@westport.com
- John Reece, District Sales Manager Southwest US (Long Beach, CA)
 - Tel: 562-852-4730
 - jreece@westport.com
- Stephen Ptucha, Technical Marketing Manager (Vancouver, Canada)
 - Tel: 604-718-2024
 - sptucha@westport.com
- Konrad Komuniecki, Customer Care Manager (Vancouver, Canada)
 - Tel: 604-718-6459
 - kkomuniecki@westport.com

<http://www.westport-hd.com/>

Toll Free: 1-888-978-4734

www.westport-hd.com



service.westport.com

