



LIQUID PROPANE INJECTION APPLICATIONS

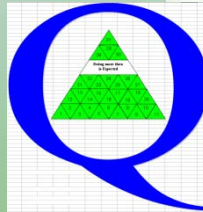
September 30, 2010

Thomas E. Arnold
Product Development & Commercialization
CleanFuel North America, Inc

Liquid Propane Injection Technology Enables

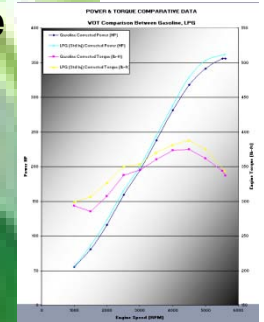
- **Commercial System Expectations**

- Quality Design
- Manufacture & Assembly
- Regulatory Requirements
- Maintenance & Repair



- **Uncompromised Functionality**

- Same Power & Torque
- Same Environmental Vehicle Performance



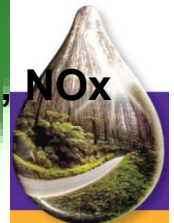
- **Reduced Dependency on Foreign Oil**

- 90% of US supply is domestic
- 55% from natural gas
- 45% from refining crude
- Readily available



- **Environmentally Friendly**

- Reduction in GHG
- Reduction in PM, HC, CO2, NOx



- **Sustainable Propane Transportation Fuel Market Economy**



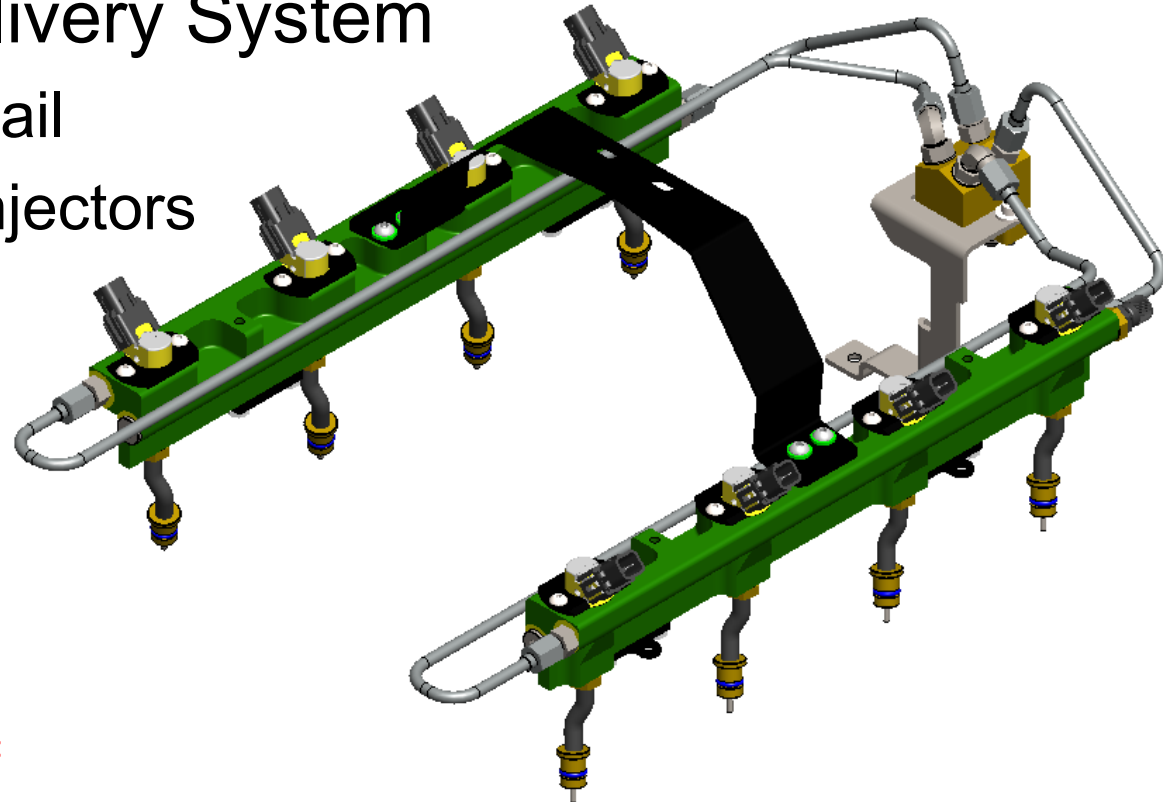
System Description

- Fuel Delivery System
- Fuel Storage System
- Fuel Lines & Fittings

System Description

– Fuel Delivery System

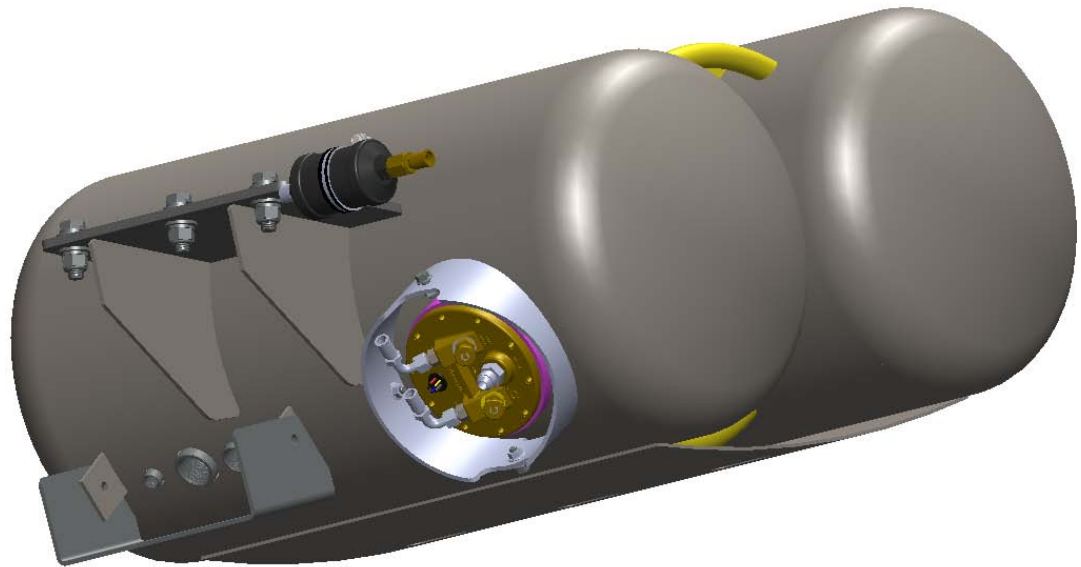
- Fuel Rail
- Fuel Injectors



System Description

– Fuel Storage System

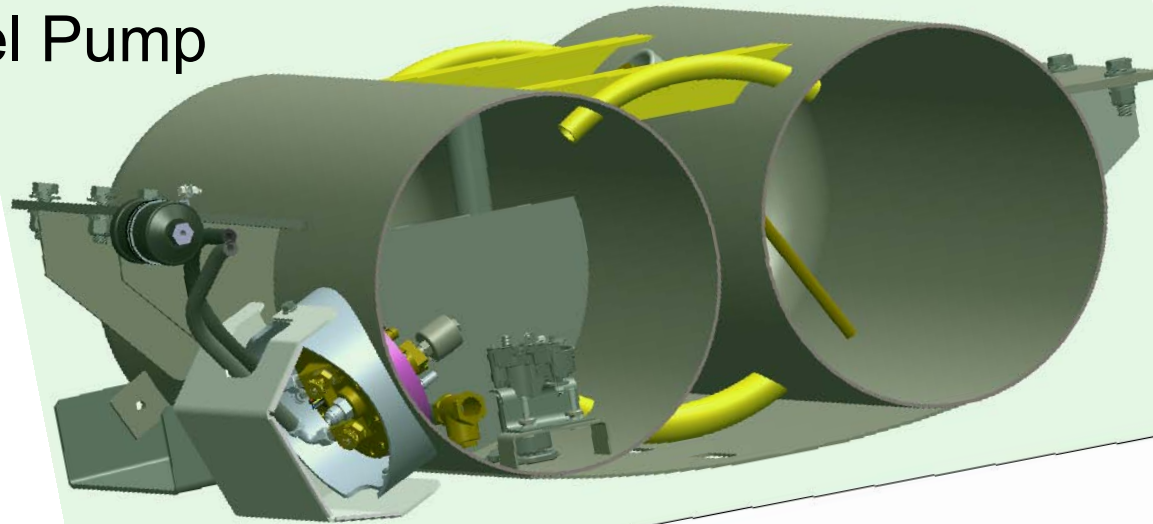
- Tank
- MultiValve



System Description

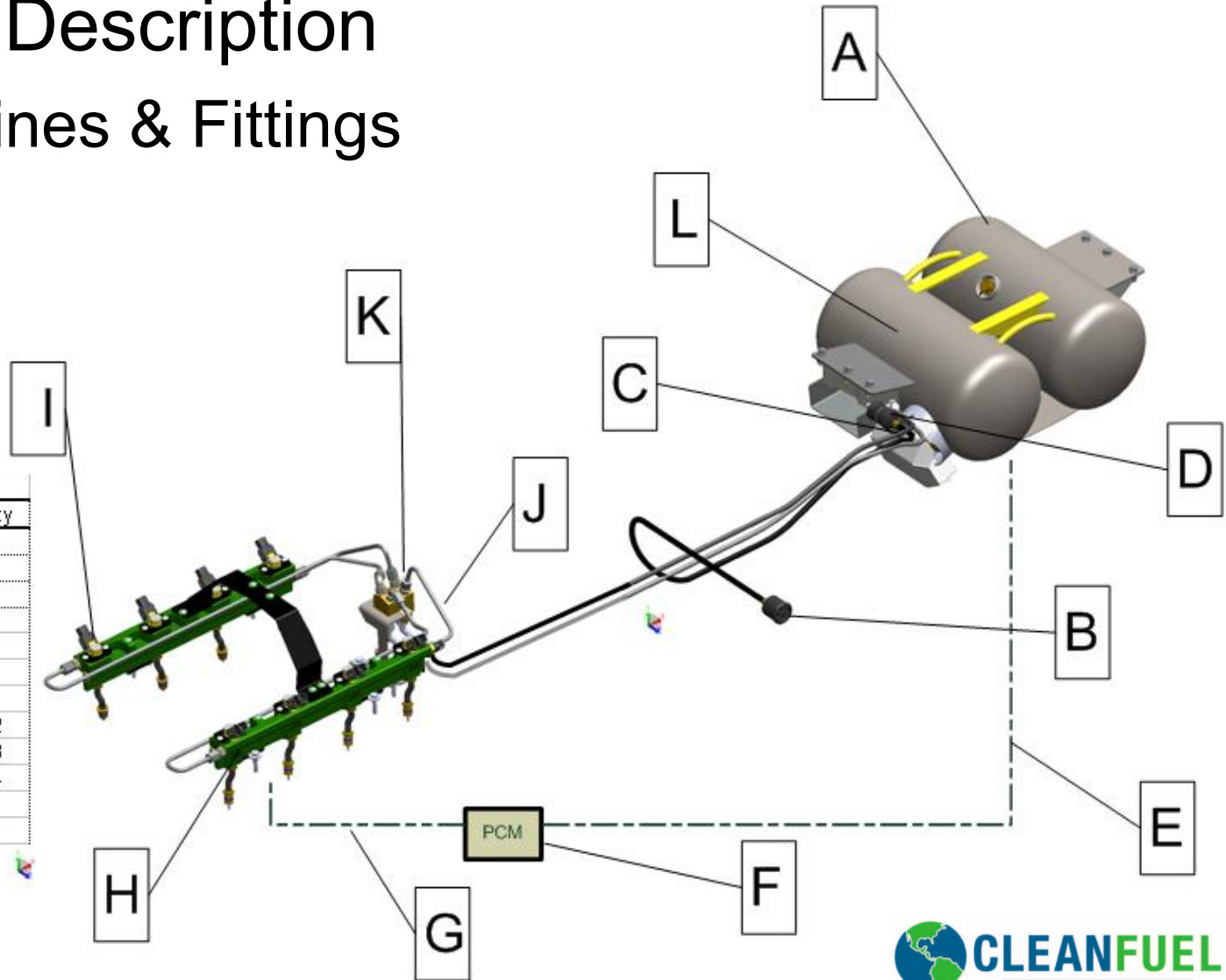
– Fuel Storage System

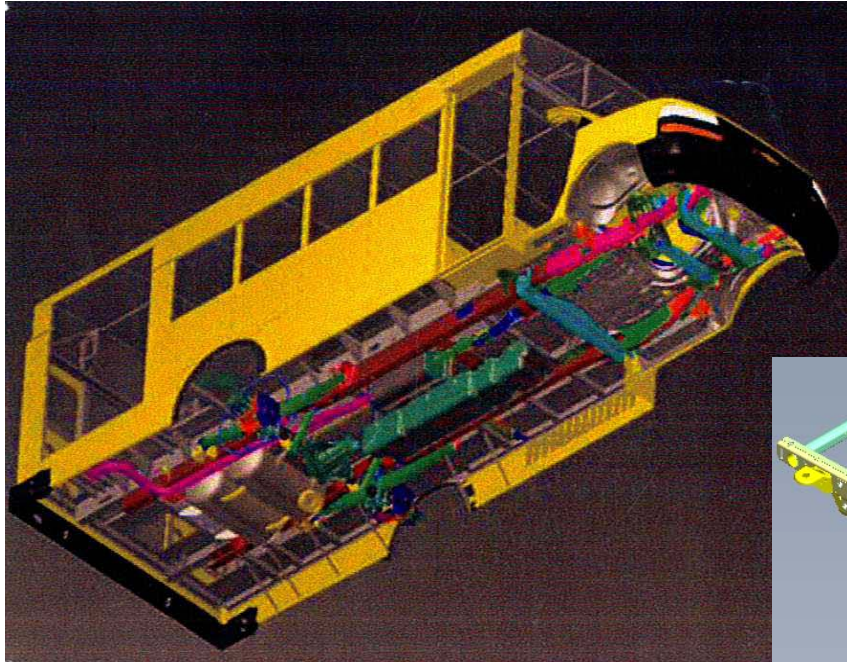
- Baffle
- Fuel Pump



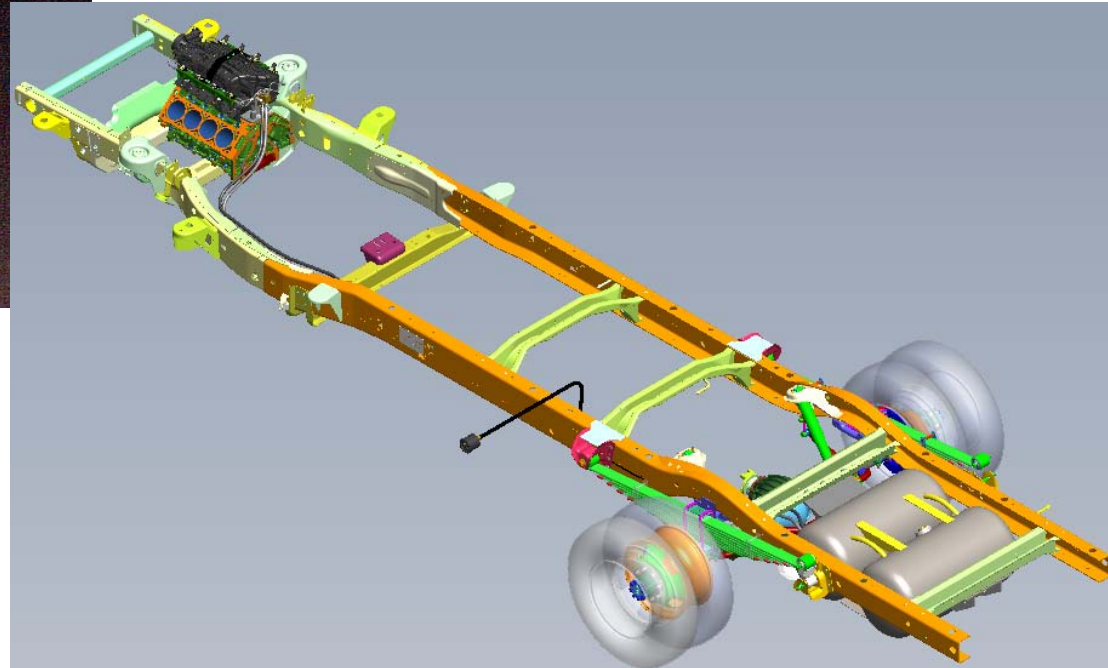
- System Description
 - Fuel Lines & Fittings

Fuel System		
Callout	Description	Qty
A	Fuel Tank Twin 16" x 34"	1
B	Fuel Fill Port and Line	1
C	Multivalve	1
D	Fill Line Fuel Filter	1
E	Fuel Tank Harness	1
F	Powertrain Control Module	1
G	Fuel Injector Harness	1
H	Fuel Rails	2
I	Fuel Injectors	8
J	Fuel Rail Supply/Return Lines	4
K	Fuel Distribution Block	1
L	In Tank Liquid Fuel Pump	1



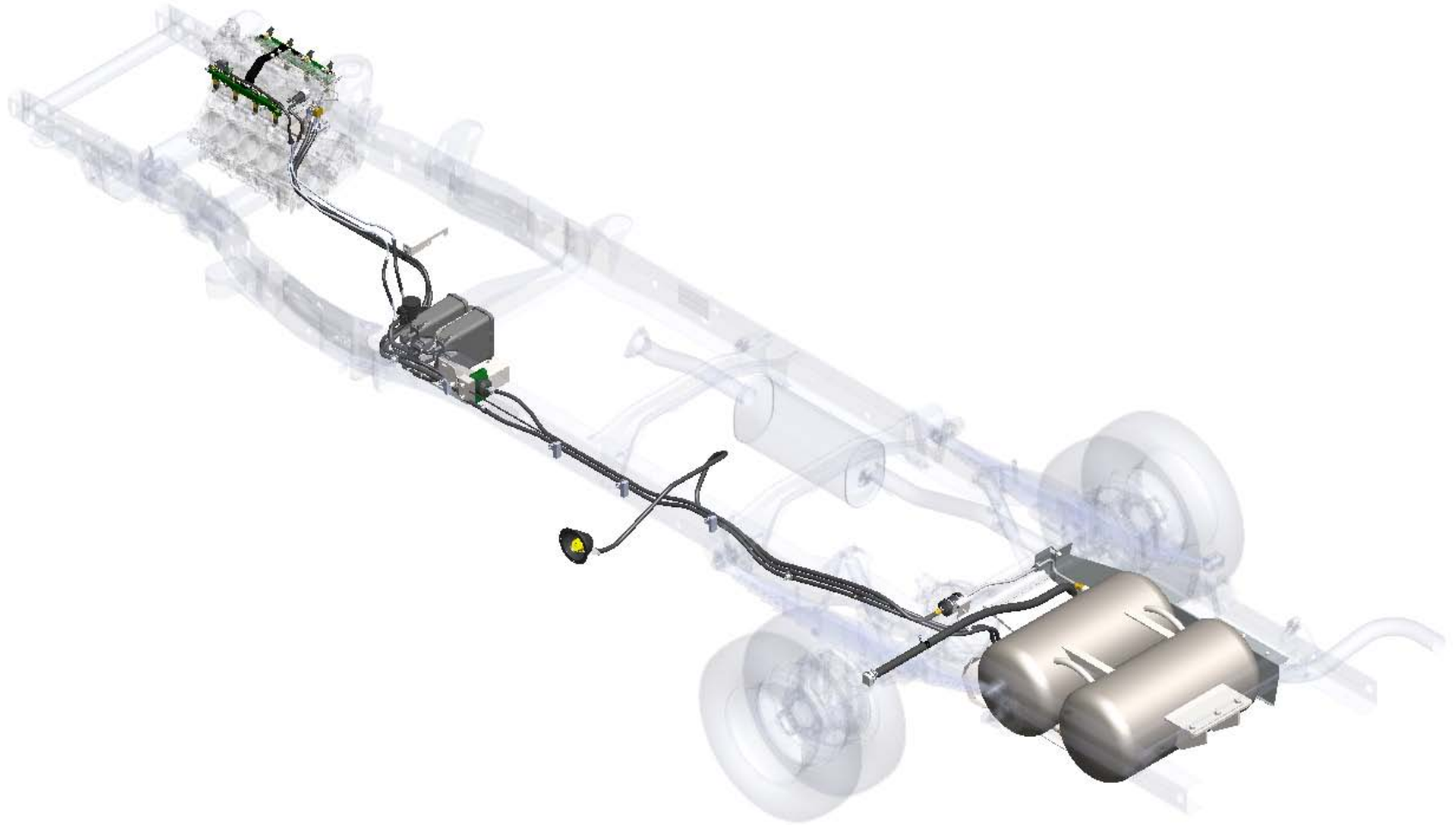


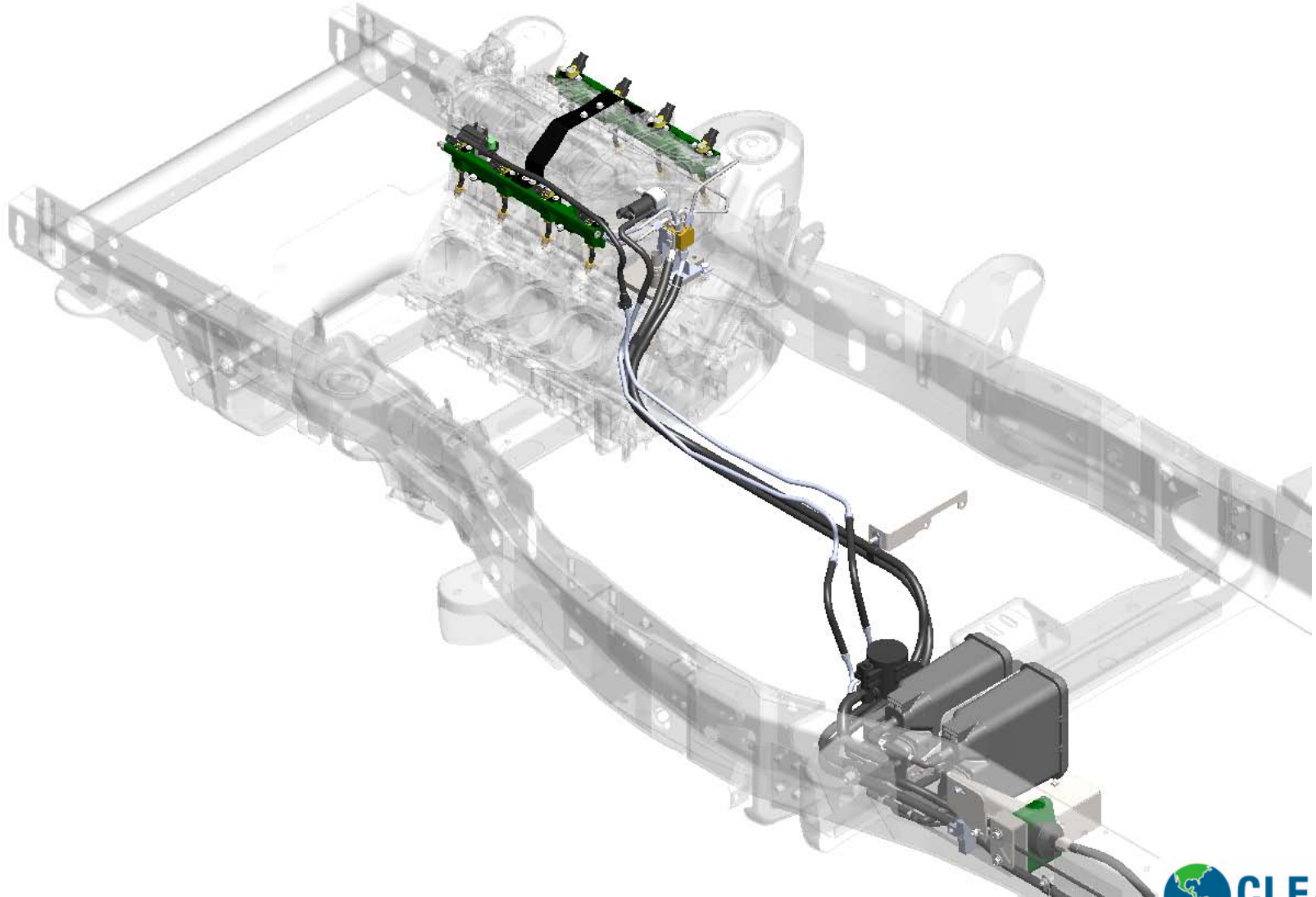
G4500 Series 610 Cut Van

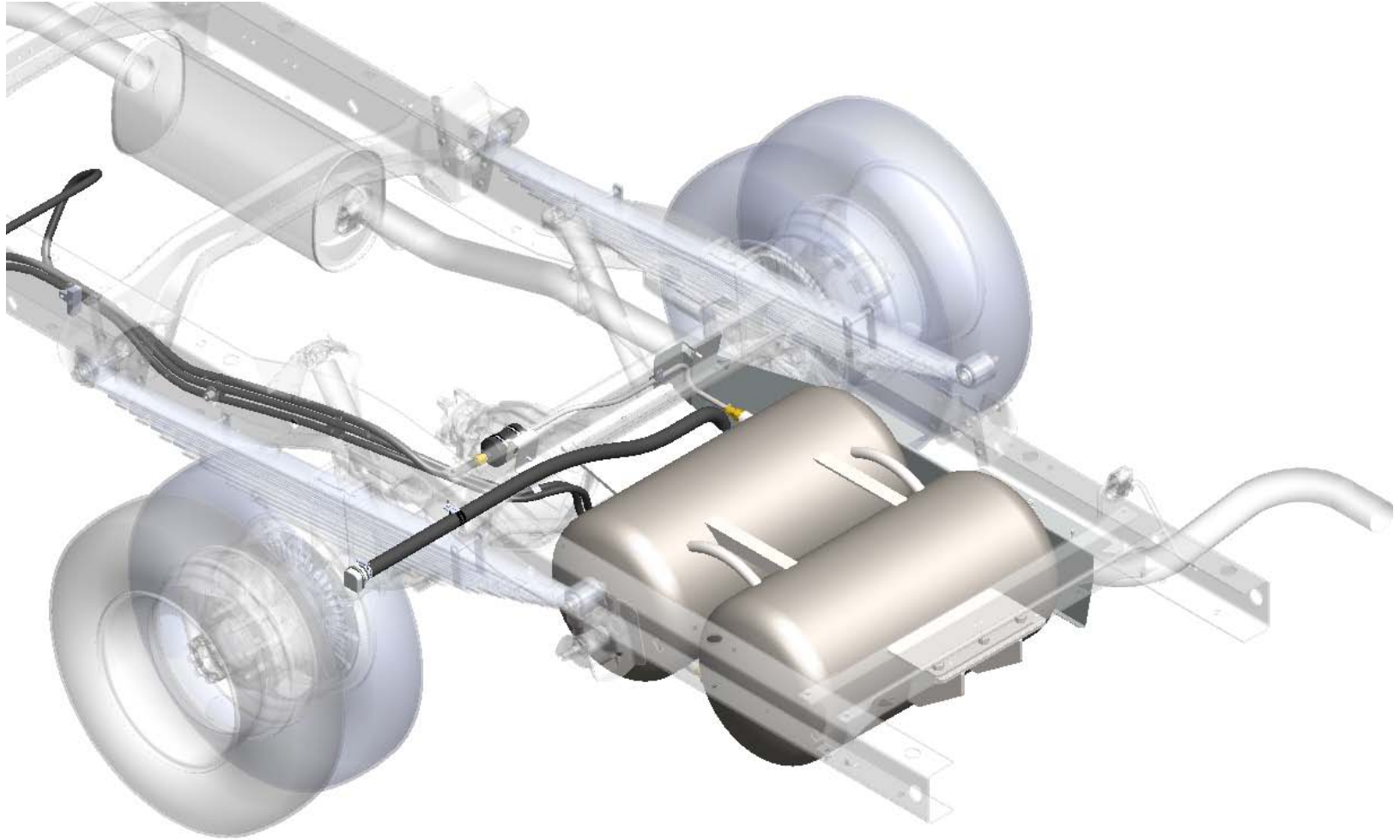


MARKET

- Type A School Bus
- Shuttle Bus
- Utility Van







- Automotive Industry standards and processes ;
 - Engineering & Design
 - Testing
 - Manufacturing
- Testing, Verification & Validation;
 - Engine Tests
 - Component Tests
 - Vehicle Tests



VEHICLE APPLICATION

