

**DETROIT DIESEL**

**DEMAND PERFORMANCE<sup>SM</sup>**



# Freightliner and Detroit Diesel 2010



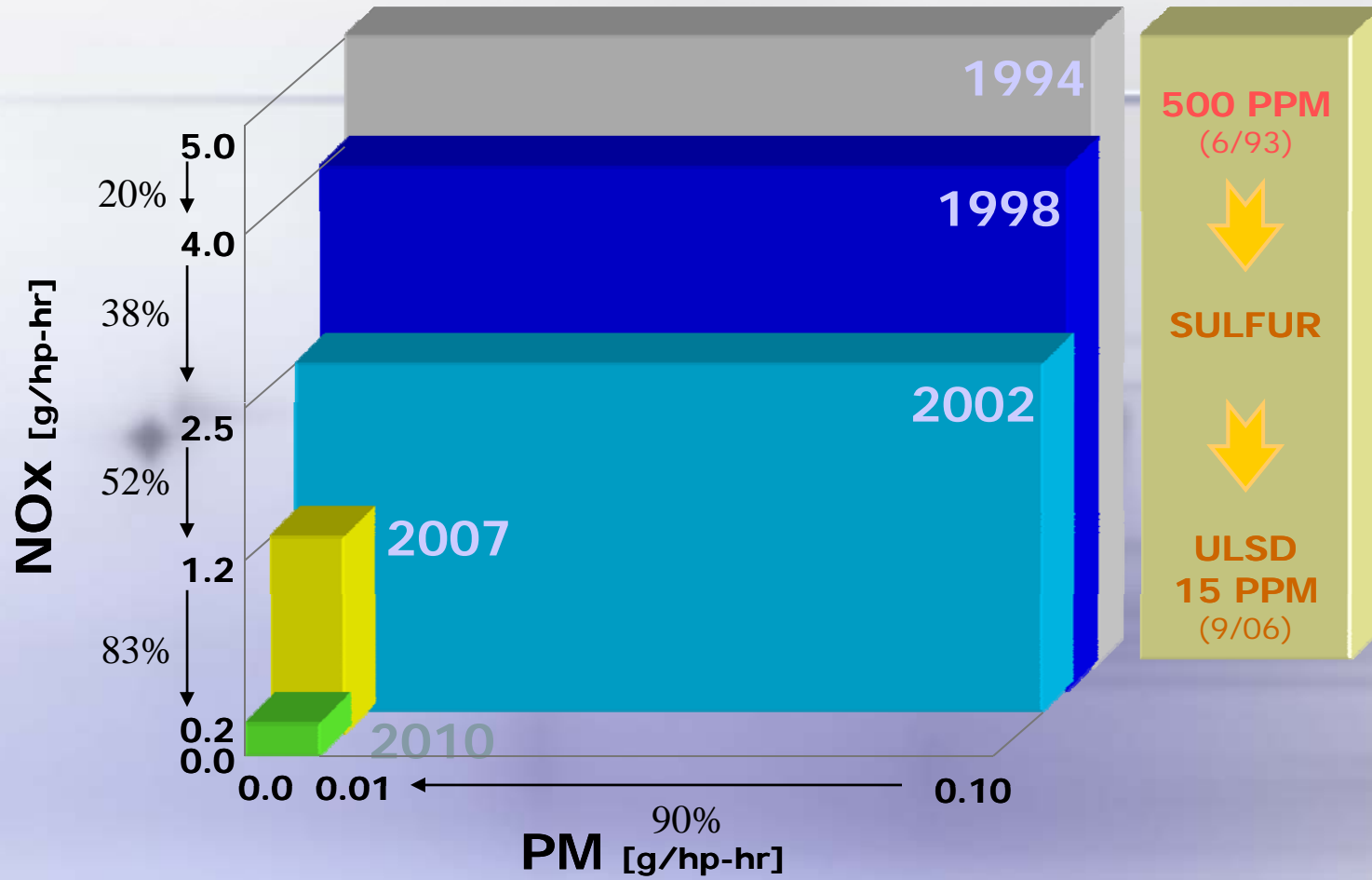
**Valley**  
POWER SYSTEMS, INC.

Suzanne Seivright

Andy Quiniones



# Emission Requirements



**BLUETEC**

**ECONOMY  
SIMPLICITY  
EXPERIENCE  
DEMAND IT ALL**

# SCR “Clean Diesel” Awareness Getting a Boost From Passenger Cars

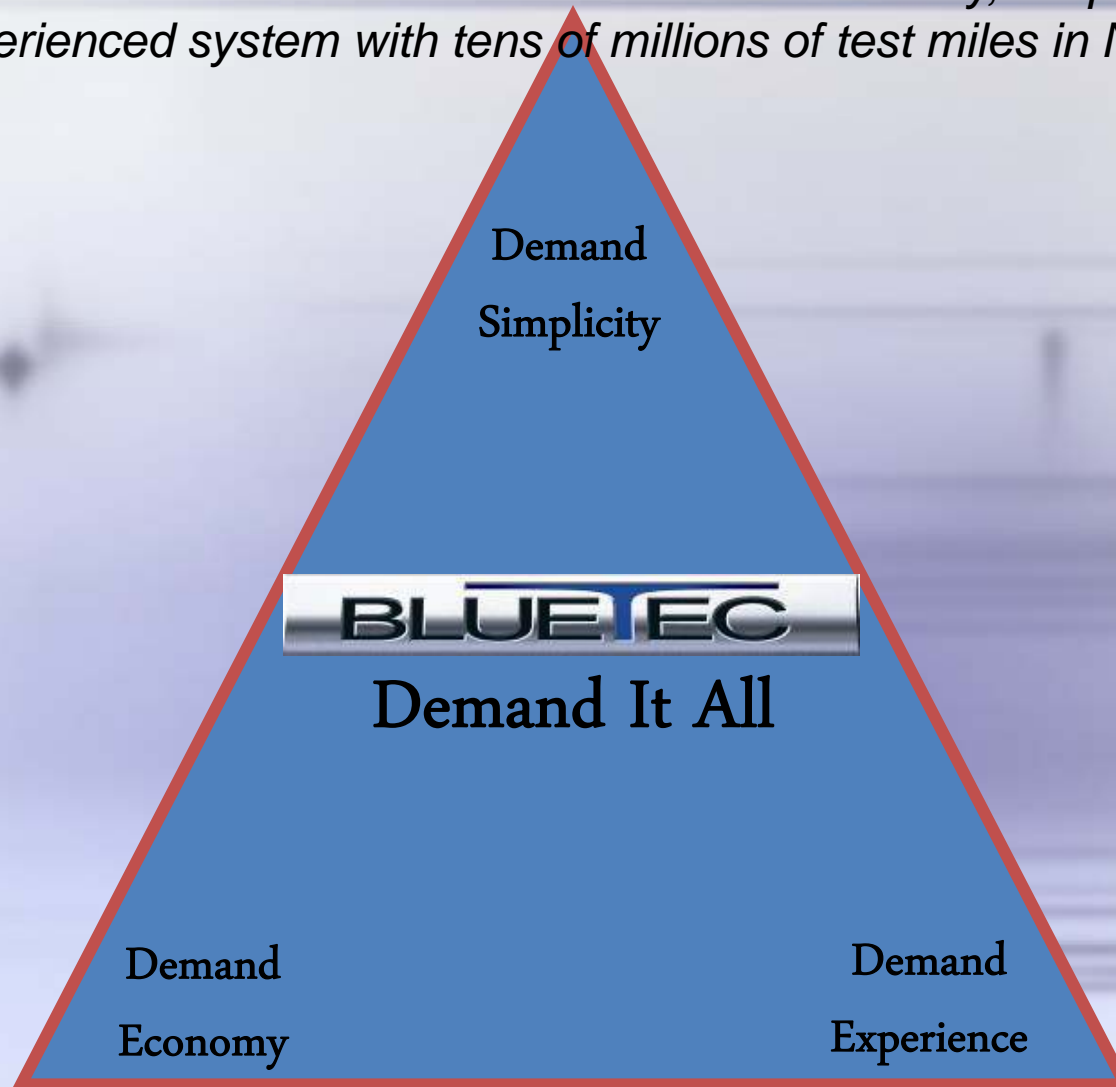


**Mercedes-Benz\***, **BMW\***, **Audi\***, Honda, **Volkswagen\***, **Mini\***, Toyota, **Hyundai\***, **Kia\***, Chevrolet, Ford, **Jeep\***, Dodge All Had Clean Diesels on Display at the 2008 NAIAS

**\* Clean Diesel Using SCR Technology**

# Why BlueTec?

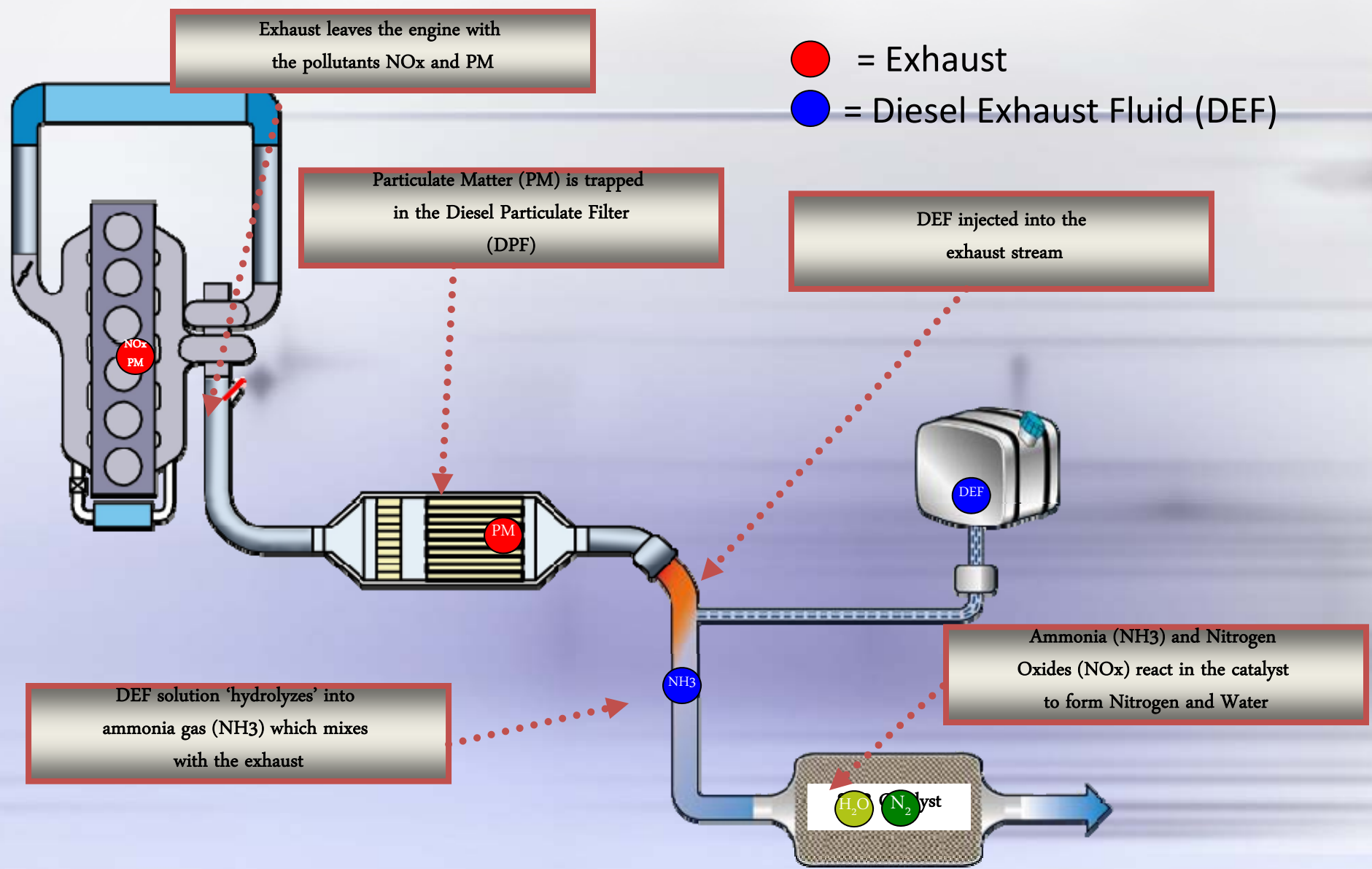
*BlueTec is Detroit Diesel's emissions technology used to meet the EPA10 emissions regulations. BlueTec delivers better fuel economy, simple operations and is an experienced system with tens of millions of test miles in North America.*



# How It Works and New Components

# How BlueTec Works

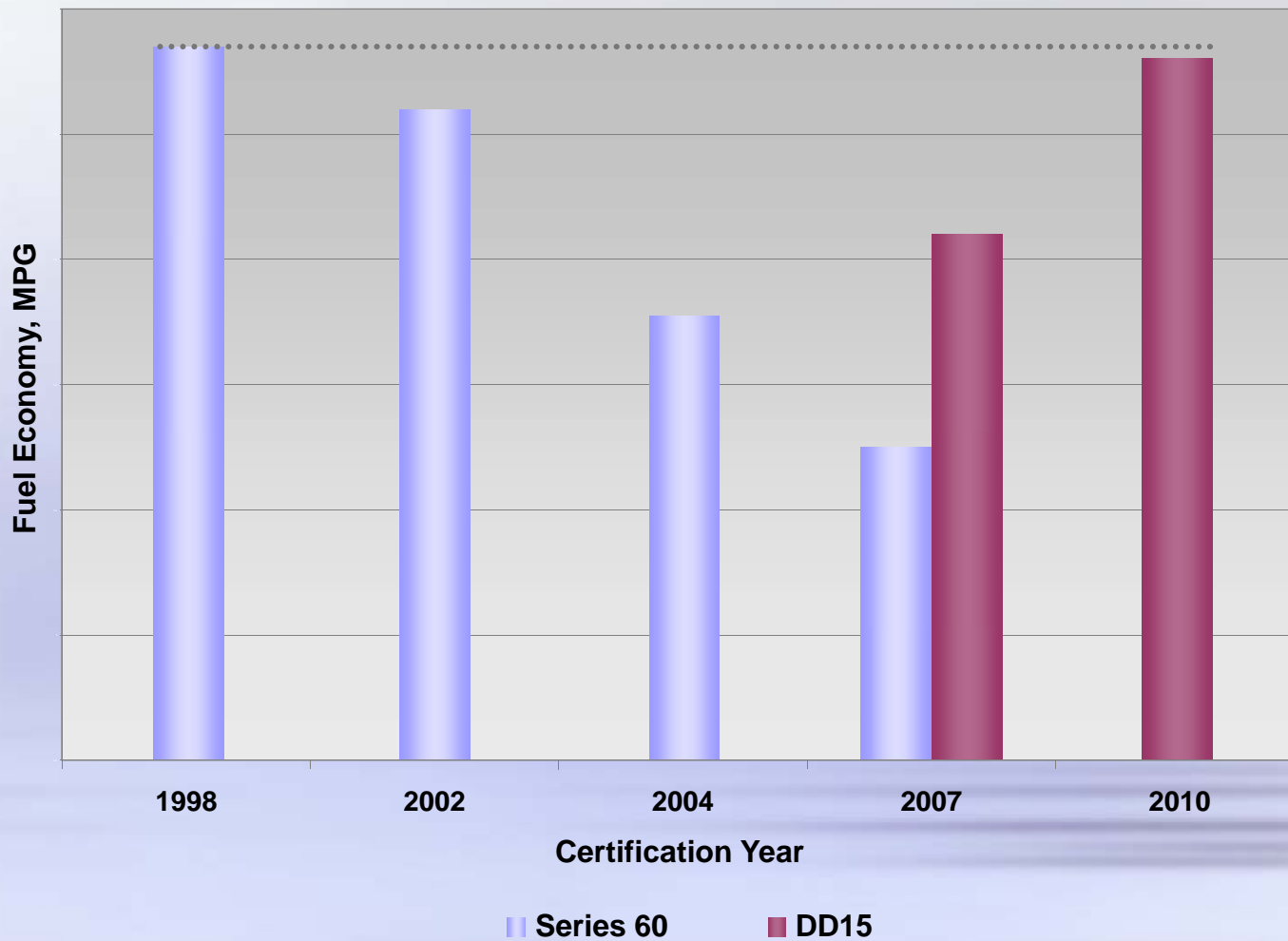
● = Exhaust  
● = Diesel Exhaust Fluid (DEF)



# Demand Economy

# Demand Economy

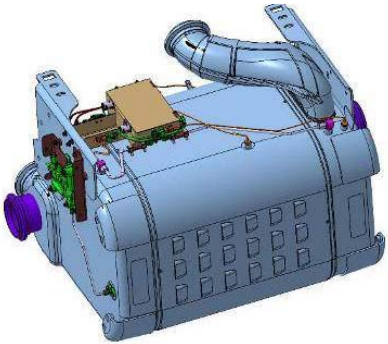
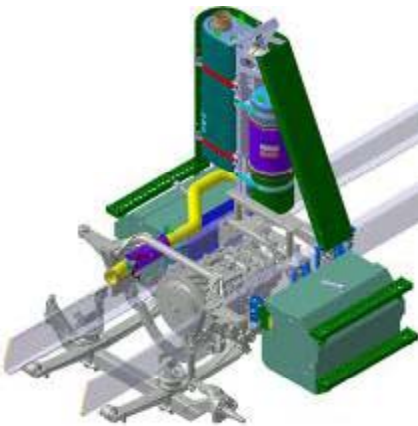
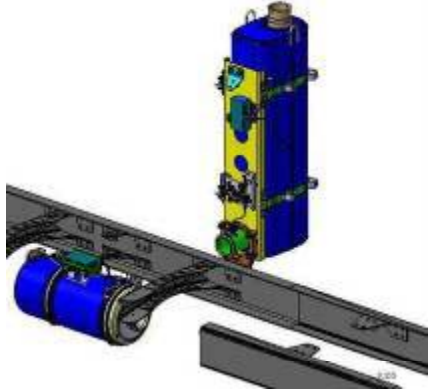
*For the first time Detroit Diesel can meet the emissions regulations in the exhaust stream rather than in cylinder, getting back to pre-EGR fuel economy numbers.*



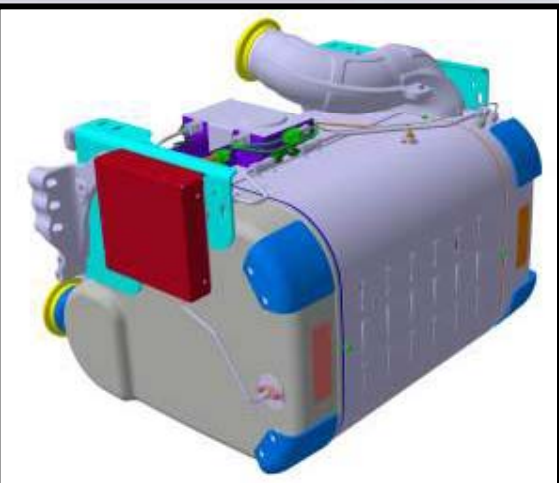
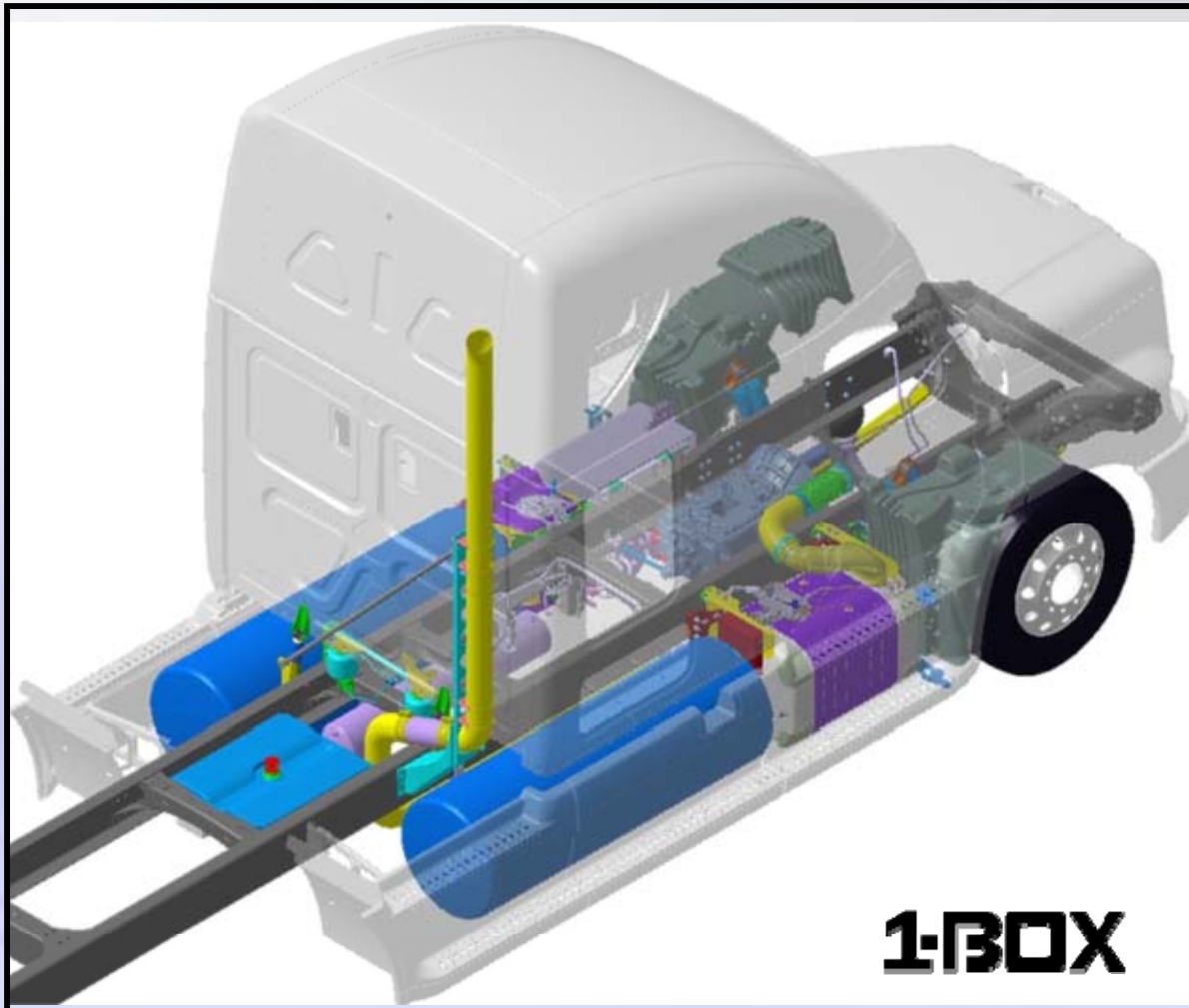
# Demand Simplicity

# Demand Simplicity

*Detroit Diesel offers 3 packaging options to suit your customers' varying needs. Offering more packaging options reduces the impact of adding new hardware for EPA 2010.*

<b>1-BOX</b>	<b>2-Box Vertical</b>	<b>2-Box Vert/Horiz</b>
		

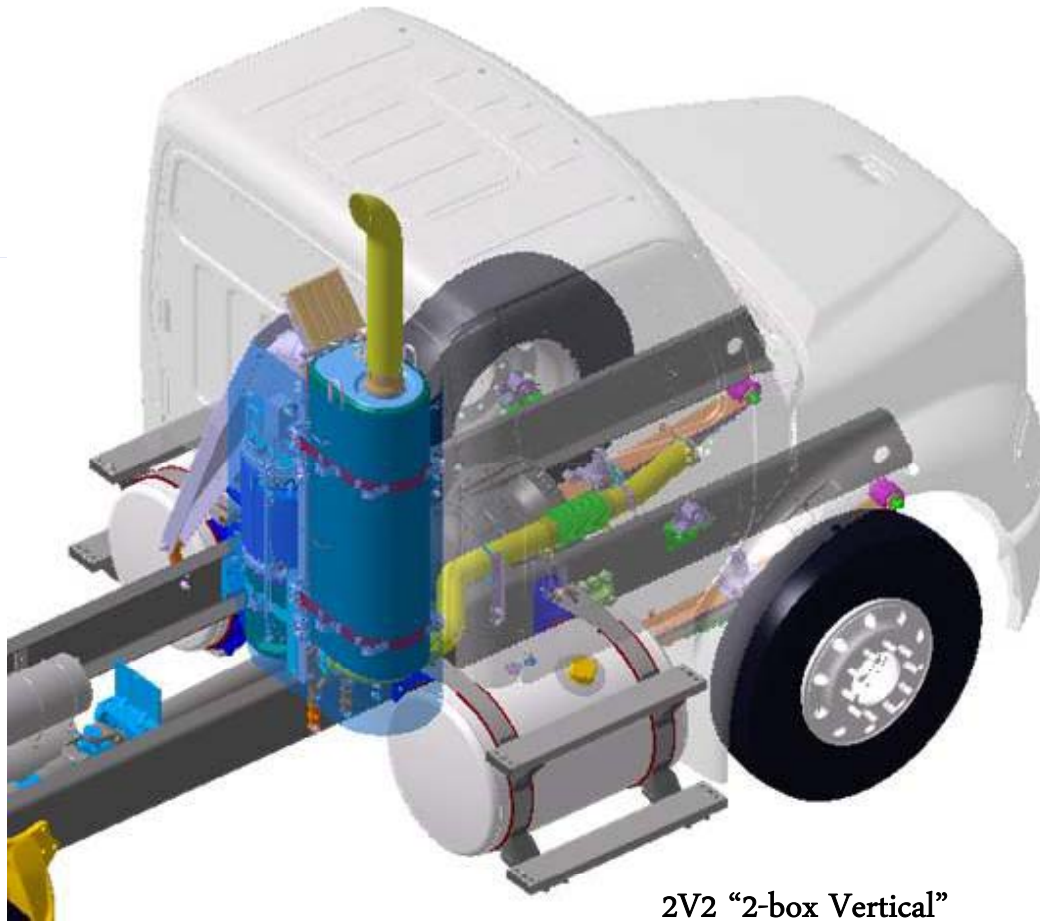
# RH Understep Systems – DD13/15/16



- Compact/integrated design
- Highest fuel efficiency due to low system back pressure
- Clear BOC solution
- Lowest weight HD ATS
- Multiple tailpipe offerings
- Only dual tailpipe option
- Clear RH PTO solution



# Vertical ATS System (2V2) – DD13/DD15



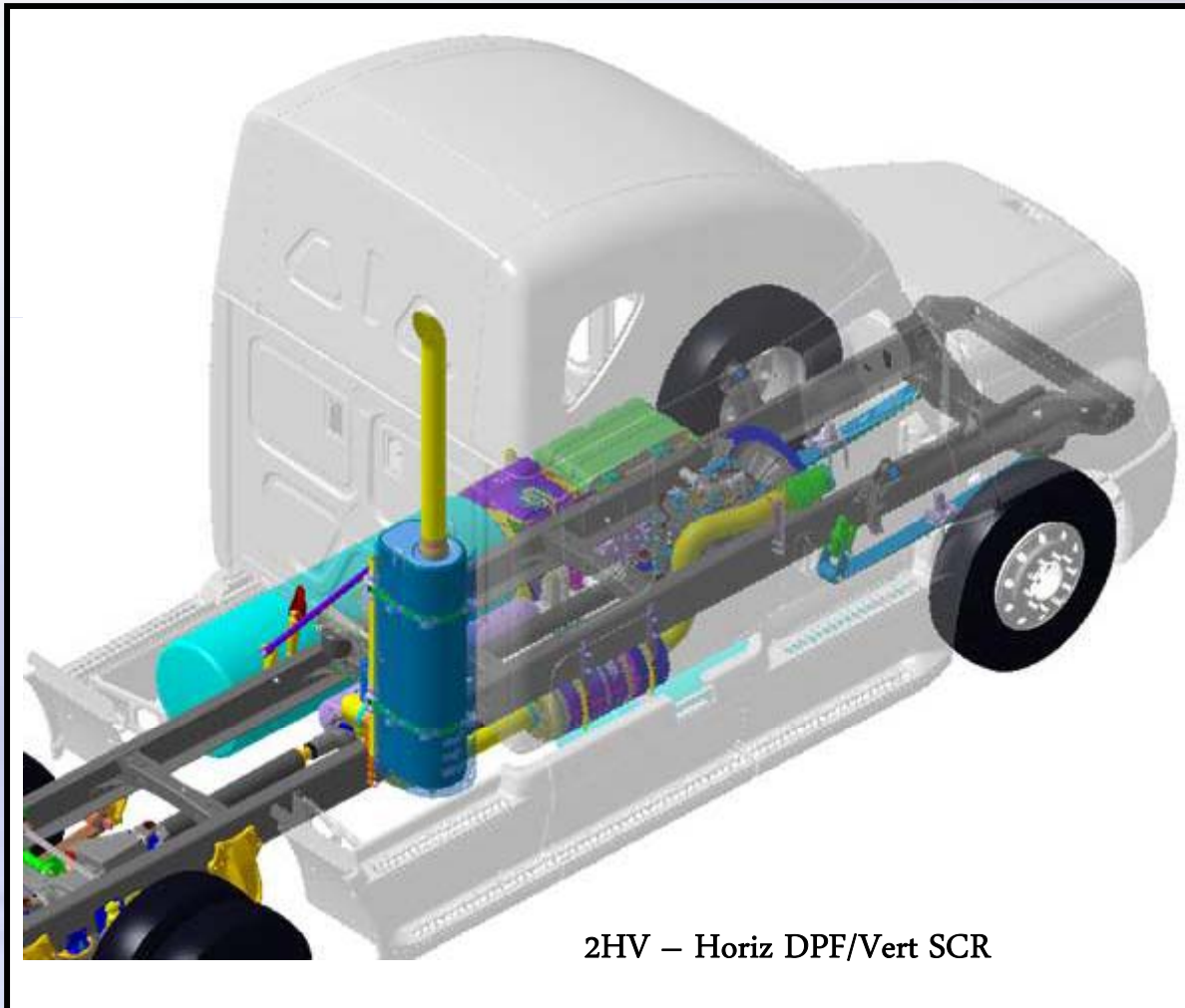
2V2 "2-box Vertical"



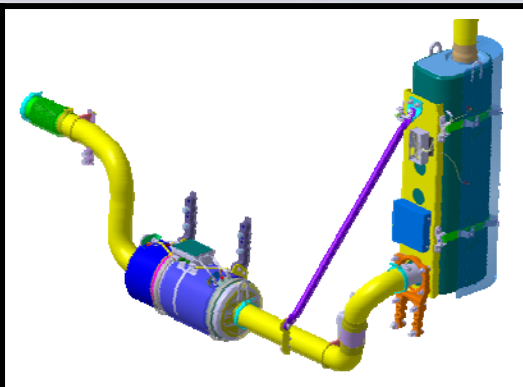
- Clear "below frame" solution
- High fuel capacity
- Clear PTO
- Similar BOC protrusion to EPA '07 vertical DPF
- Available on daycabs
- LH & RH mtg available



# Horizontal/Vertical ATS System (2HV)– DD13/DD15



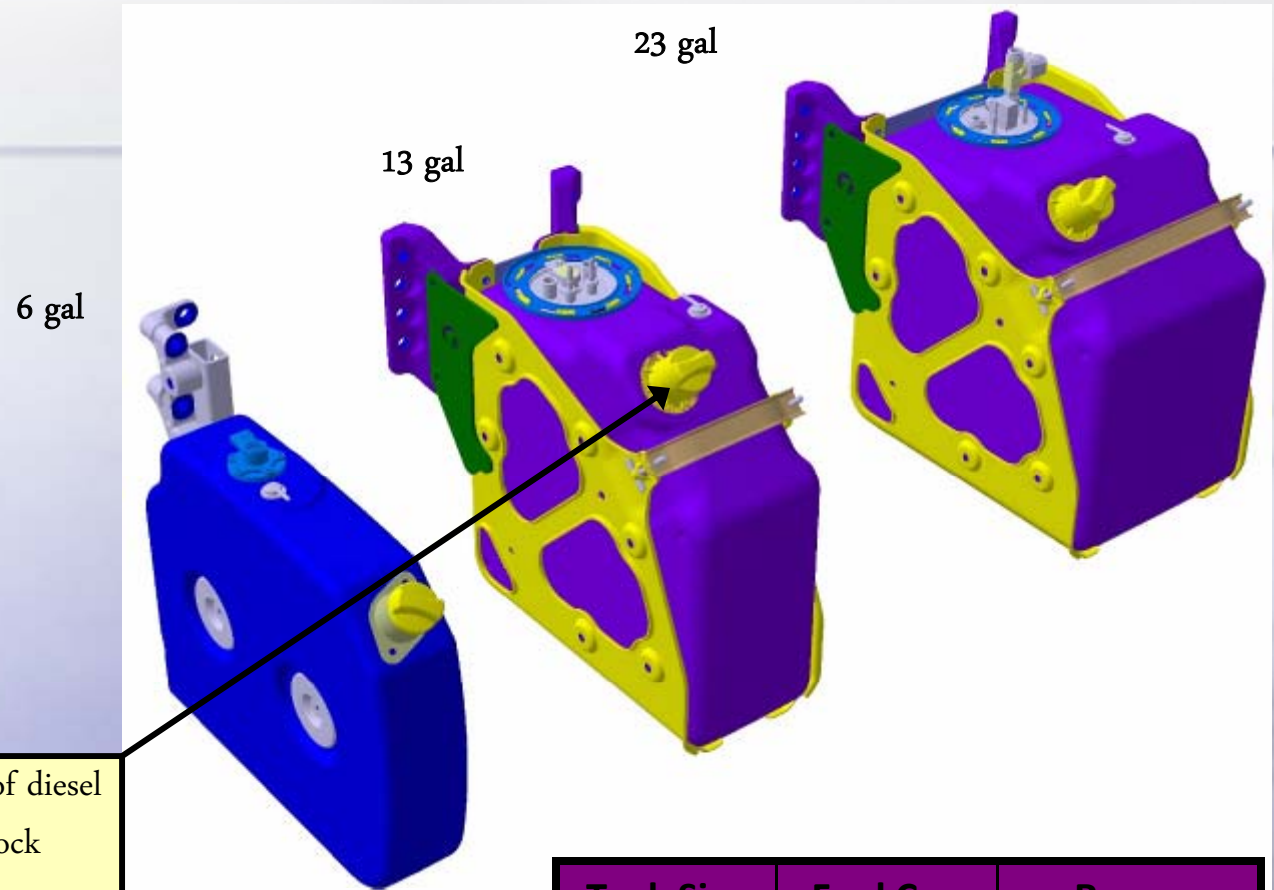
2HV – Horiz DPF/Vert SCR



- High fuel capacity
- Similar BOC protrusion to EPA '07 vertical DPF
- Available on 48"+ sleeper cabs



# DEF Tanks



Fill necks do not allow insertion of diesel nozzle into DEF tank (magnetic lock option being developed)

## Cold Weather Operation:

- Tanks are engine coolant heated
- DEF delivery lines are electrically heated

Tank Size	Fuel Cap	Range (miles)
6 gal	100 gal	1,800
13 gal	200 gal	3,900
23 gal	300+ gal	6,900

# Demand Simplicity

*Keeping your DEF tank full is no big deal. All you have to do is watch your DEF gauge and fill the tank when the gauge gets low. It's that simple.*



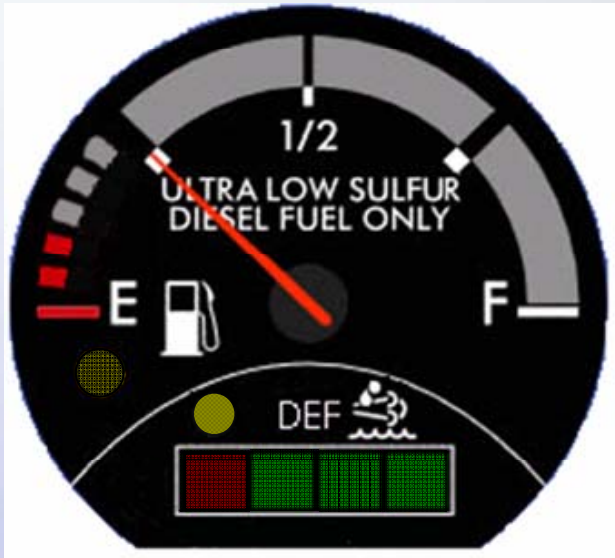
When this gauge is low...



...fill your DEF tank

# 2010 Driver Inducements

*In addition to the BlueTec hardware is a new DEF gauge. Just like filling up their diesel tank, drivers will need to remember to watch their DEF gauge and fill it when needed.*



FULL	DEF Level	Gauge Lamps	DEF Lamp
	75% to 100%	4 green lights	off
	50% to 75%	3 green lights	off
	25% to 50%	2 green lights	off
	10% to 25%	1 green light	off
	5% to 10%	1 yellow light	on solid
	0% to 5%	1 red light flashing	on flashing

**EMPTY**

Check Engine Lamp

- 25% Engine Derate
- 55 MPH Vehicle Speed Limit

Malfunction Indicator Lamp (MIL)



Note: Conditions for 5 MPH speed limit on next page

# Demand Experience

# Demand Experience

- Many of the world's leading engine manufacturing companies use SCR
- BlueTec is already in use all over the world






- Daimler has over 200,000 BlueTec units on the road today
- Detroit Diesel has over 15 MILLION miles and counting of BlueTec validation testing in North America alone



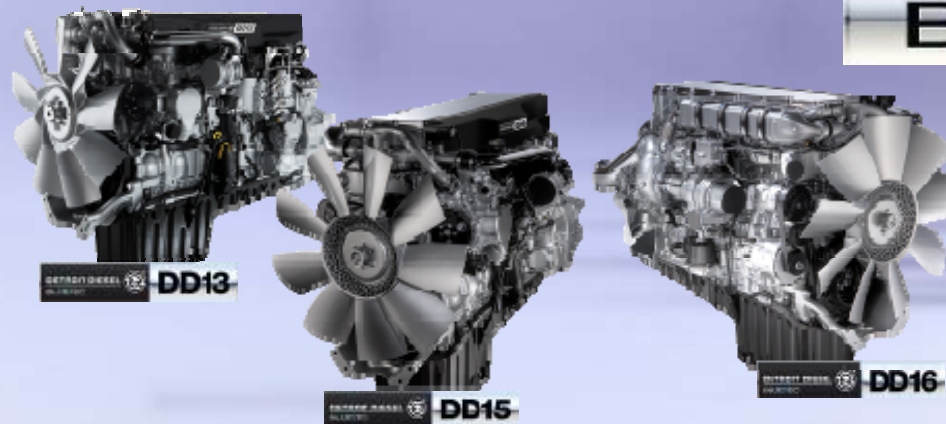
# Advantages Detroit Diesel Engines

# An Engine to Suit Your Needs

The Detroit Diesel engine platform gives customers choice. With horsepower stretching from 350 – 600 and torque from 1250 to 2050 the engine platform is design to cover the varying powertrain needs of customers.

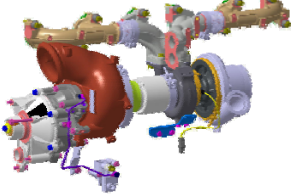

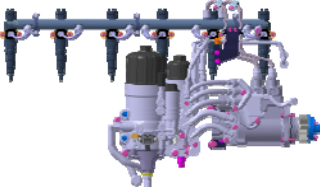
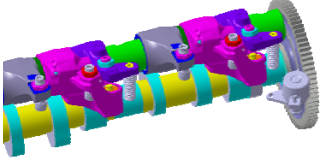

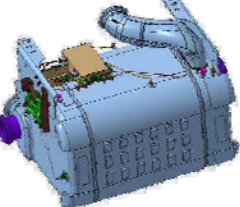
Attribute <sup>(1)</sup>	 DD13	 DD15	 DD16
Target Market	LTL, Reg. Dist., Vocational	Truck Load	Specialized Hauling, O/O, Vocational
Displacement	12.8	14.8	15.6
HP Range	350 – 450	455 – 560	475 – 600
Torque Range	1250 – 1650	1550 – 1850	1750 – 2050

(1) EPA 2010 specification



# Innovation Leader

*Detroit Diesel's new technologies make it the market leader in innovation. Its turbo compounding, Amplified Common Rail Fuel System (ACRS), and integrated Jacobs Brake allows Detroit Diesel engines to create more power without sacrificing fuel economy or driver comfort.*

<p>Turbo Compounding</p>		<p>Turbo compounding adds up to 50 bonus horsepower by converting turbo outlet exhaust gas energy into usable mechanical power.</p>
		<p>The ACRS (Amplified Common Rail Fuel System) gives the DD engine family the ability to optimize the tradeoffs between fuel economy, power, noise and emissions.</p>
<p>Integrated Jacobs Brake</p>		<p>The standard Jacobs Engine Brake gives the customer 3 modes of engine retarding capability (low, medium, high) with minimal noise.</p>
		<p>The BlueTec 1-Box system is the industry's only single packaged DPF/DOC/SCR aftertreatment system. The system provide optimized packaging and improved fuel economy.</p>

# Questions?

Thank you

For your Time!

## TODAY'S BEST PERFORMING ENGINES TOMORROW'S PROVEN 2010 SOLUTION



**BLUETEC**

SCR EMISSIONS TECHNOLOGY

Introducing Detroit Diesel's BlueTec<sup>®</sup> SCR emissions technology. Designed from the ground up to work seamlessly with the DD13<sup>™</sup>, DD15<sup>™</sup> and DD16<sup>™</sup> engines, BlueTec is the most simple and fuel efficient option for 2010 emissions requirements. With 25 million test miles in North America, BlueTec<sup>®</sup> SCR is more than reliable, it's proven. Learn more at [DetroitDiesel.com](http://DetroitDiesel.com).

**DETROIT DIESEL**

DEMAND PERFORMANCE<sup>™</sup>



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