

DIESEL EXHAUST FLUID SUPPLY: CURRENT STATE



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Objectives & Methodology

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Objectives:

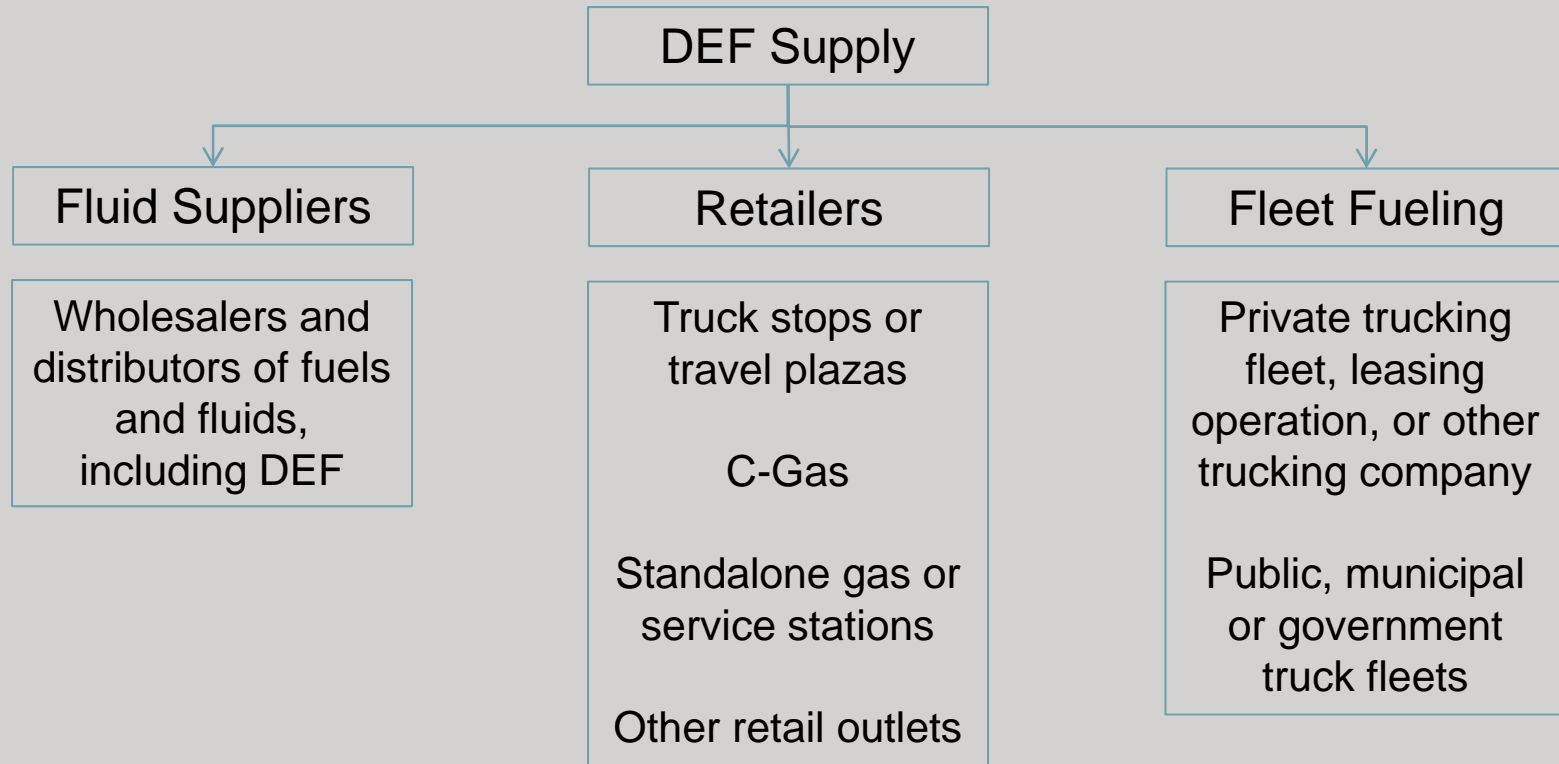
- Determine the current state of the Diesel Exhaust Fluid (DEF) supply chain, focusing on:
 - % of companies that are currently selling or dispensing DEF
 - Types of packaging being used
 - Typical wholesale and retail prices

Methodology:

- Online survey developed and analyzed by Quixote Group
- Fielded to Opis' email database during the week of September 13, 2010
- 293 total responses were collected

Target Audiences

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Goal: Create a benchmark for DEF usage and pricing

Context

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- Recessionary environment plus 2009 end-of-year pre-buy have resulted in slow start to U.S. sales of 2010 Class 8 trucks
- Class 8 truck sales in the first 7 months of 2010 = 58,846 units, well below the record level of 162,545 set in 2006:
 - 71% of January – July sales (41,780 units) represent SCR OEMs

Who is selling or supplying DEF?

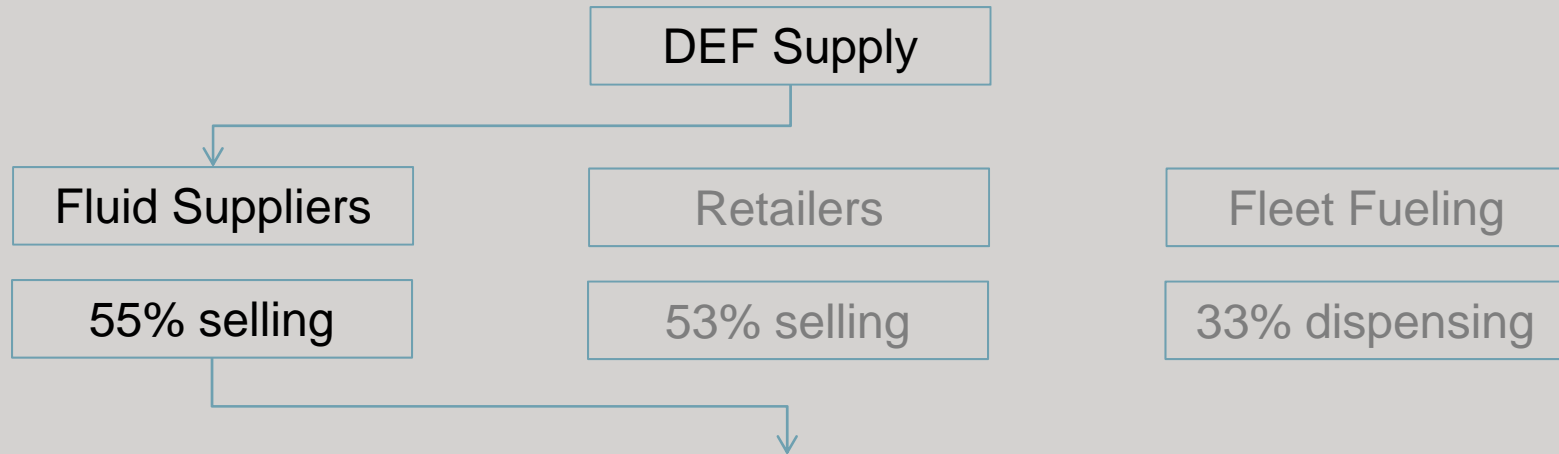
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- 45% of all companies responding (regardless of role in the supply chain) reported that they are currently selling or dispensing Diesel Exhaust Fluid
- DEF formats studied:
 - 1 and 2.5 gallon jugs
 - Drums – 55 gallons
 - Totes or IBCs – 275 or 330 gallons
 - Mini-bulk dispensers – 800 or more gallons

Fuel and Fluid Suppliers

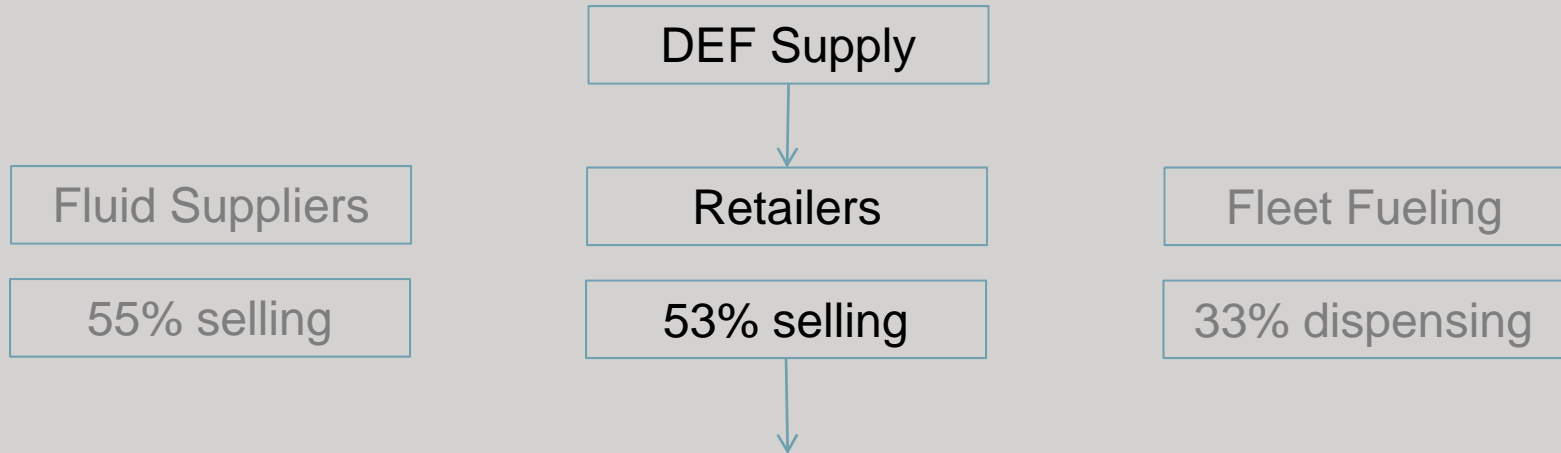
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- Type of packaging:
 - 100% selling jugs – average wholesale price of \$4.65/gallon
 - 94% selling drums – average wholesale price of \$3.74/gallon
 - 81% selling totes or IBCs – average wholesale price of \$3.36/gallon
 - 26% selling mini-bulk dispensers – average wholesale price of \$2.24/gallon
- Average monthly DEF volume (all package types) = 1,760 gallons

Retailers

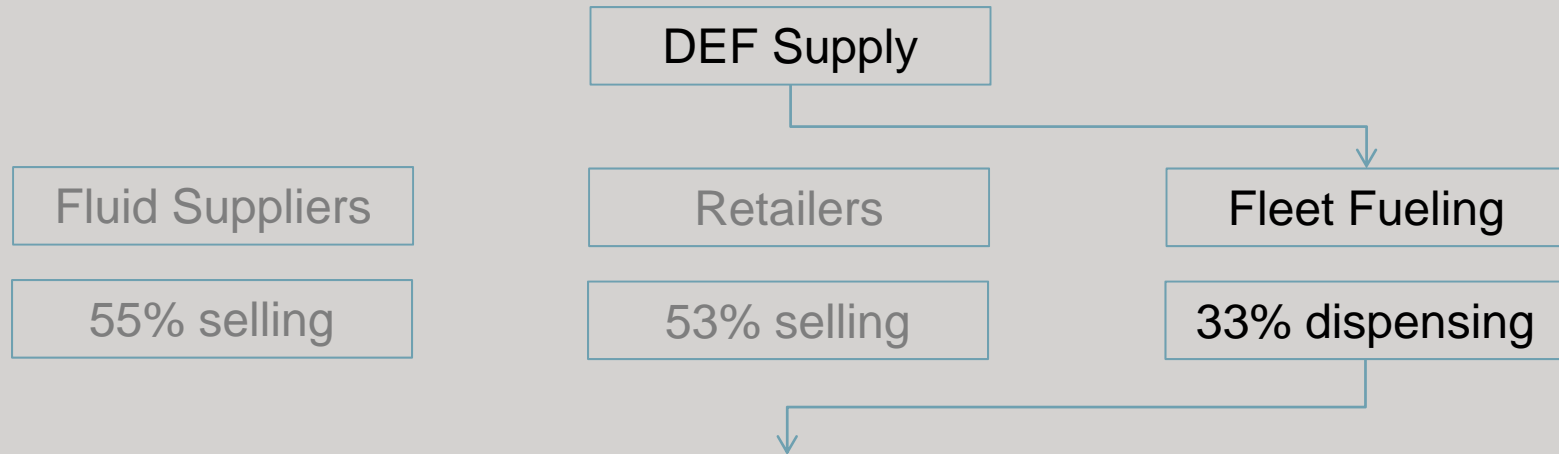
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- Of those selling DEF:
 - 22% have on-island or bulk dispensers (which are available at 5% of their stores) – average retail price \$3.05/gallon
 - 100% carry jugs (available at 90% of their stores) – average retail price of \$13.78 per 2.5 gallon jug, or \$5.51/gallon
- Average inventory of jugs per store carrying = 26

Fleet Fueling Locations

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- Availability by fleet size:
 - 65% of fleets dispensing DEF have fleets of 150 or more trucks
 - 61% of fleets NOT dispensing DEF have fleets of less than 150 trucks
- Purchasing jugs (33%), drums (42%), totes/IBCs (49%) and mini-bulk (12%)
 - Average price paid = \$2.81/gallon
- Approximate monthly volume purchased per truck fleet = 412 gallons
 - Equivalent to 123,600 truck miles/month

Economic Analysis: Data Sources

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- Goal – Determine the overall incremental costs or savings provided by SCR-equipped trucks based on current pricing for Diesel Exhaust Fluid
- Data sources for the analysis are as follows:

ITEM	DATA	SOURCE
MPG (pre-2010)	6.0	U.S. Department of Energy
Annual miles/truck	107,000	OOIDA – Owner-Operators Independent Drivers Profile 2008
Average price/gallon (diesel)	\$2.96	U.S. Department of Energy
MPG – SCR trucks	6.3	5% fuel efficiency gain cited by various SCR OEMs
DEF consumption (MPG)	300	Cummins Filtration – Diesel Exhaust Fluid Q&A

Economic Analysis

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	PRE 2010	SCR TRUCK: DEF FILLING METHOD		
	No DEF needed	2.5 gal. jug	On-island pump	Fleet Fueling
MPG	6.0			
Annual miles/truck	107,000			
Diesel gallons/truck/year	17,833.3			
Average price/gallon	\$2.96			
Total diesel expense/truck	\$52,786			
DEF gallons/truck/year	NA			
Average price/gallon	NA			
Total DEF expense/truck	NA			
Total: Diesel + DEF	\$52,786			
Savings per truck/year	-			

Economic Analysis

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	PRE 2010	SCR TRUCK: DEF FILLING METHOD		
	No DEF needed	2.5 gal. jug	On-island pump	Fleet Fueling
MPG	6.0	6.3	6.3	6.3
Annual miles/truck	107,000	107,000	107,000	107,000
Diesel gallons/truck/year	17,833.3	16,984.1	16,984.1	16,984.1
Average price/gallon	\$2.96	\$2.96	\$2.96	\$2.96
Total diesel expense/truck	\$52,786	\$50,273	\$50,273	\$50,273
DEF gallons/truck/year	NA			
Average price/gallon	NA			
Total DEF expense/truck	NA			
Total: Diesel + DEF	\$52,786			
Savings per truck/year	-			

Economic Analysis

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	PRE 2010	SCR TRUCK: DEF FILLING METHOD		
	No DEF needed	2.5 gal. jug	On-island pump	Fleet Fueling
MPG	6.0	6.3	6.3	6.3
Annual miles/truck	107,000	107,000	107,000	107,000
Diesel gallons/truck/year	17,833.3	16,984.1	16,984.1	16,984.1
Average price/gallon	\$2.96	\$2.96	\$2.96	\$2.96
Total diesel expense/truck	\$52,786	\$50,273	\$50,273	\$50,273
DEF gallons/truck/year	NA	356.7	356.7	356.7
Average price/gallon	NA	\$5.51	\$3.05	\$2.81
Total DEF expense/truck	NA	\$1,965	\$1,088	\$1,002
Total: Diesel + DEF	\$52,786	\$52,238	\$51,361	\$51,275
Savings per truck/year	-	(\$548)	(\$1,425)	(\$1,511)

Questions?



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