

1st Feb 2011
New Delhi

Diesel

Some Perceptions - Some Realities

SIAM

Society of Indian Automobile Manufacturers

Presentation Outline

- ▶ Diesel : Perception and Reality
- ▶ International Scenario on Diesel
- ▶ Summary and India Opportunity

Perception # 1

**Diesel Vehicles are Large and
Therefore Energy Inefficient**

Reality

- Diesel Vehicles are More Fuel Efficient and Emit Less CO₂ than Petrol Vehicles

Vehicle Model/ Variant	Kerb Weight	Engine cc	Emission	Fuel Type	FE (Kmpl)
Small Sedan Gasoline	1,035	1,197	BSIV	Gasoline	17.9
Small Sedan Diesel	1,105	1,248	BSIV	Diesel	21.7
Entry Level Sedan Gasoline	1,095	1,193	BSIV	Gasoline	15.6
Entry Level Sedan Diesel	1,101	1,396	BSIV	Diesel	23.0
Utility Vehicle Gasoline	1,565	1,998	BSIV	Gasoline	10.4
Utility Vehicle Diesel	1,655	2,494	BSIII	Diesel	13.7
Luxury Vehicle Gasoline	2,195	3,498	BSIV	Gasoline	8.2
Luxury Vehicle Diesel	2,285	2,987	BSIV	Diesel	10.2

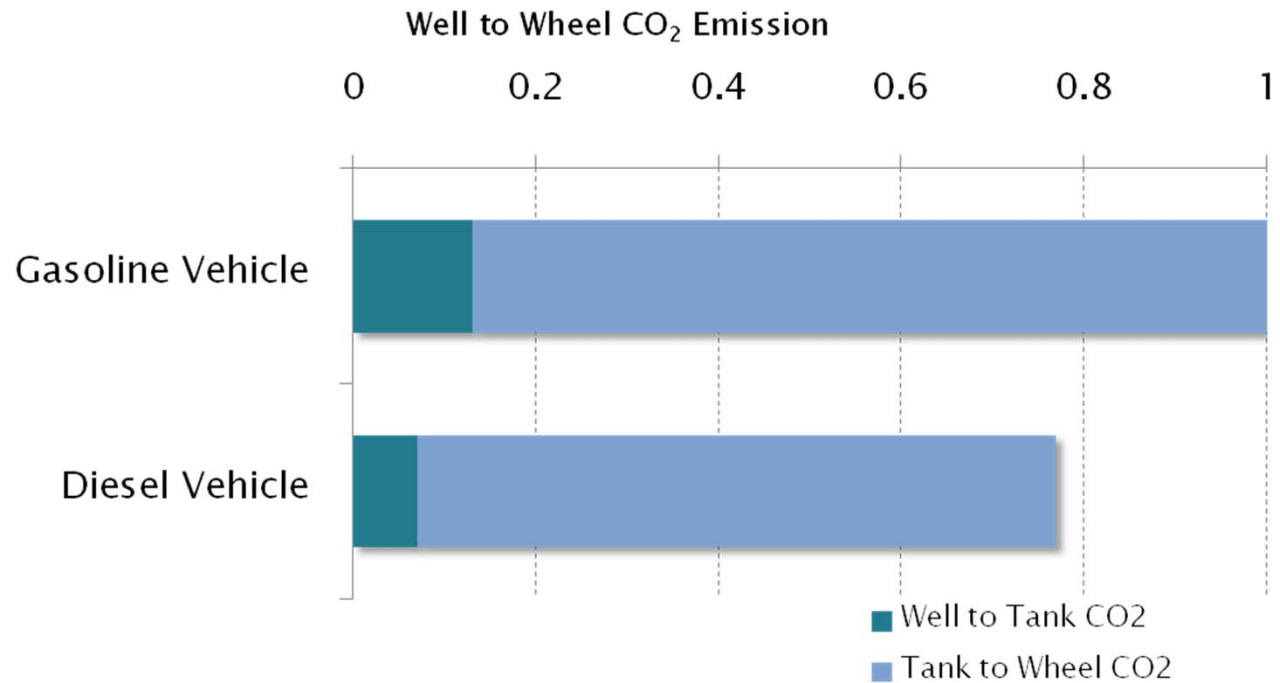
- Like to like Diesel vehicles are about 25% more Fuel Efficient

Perception # 2

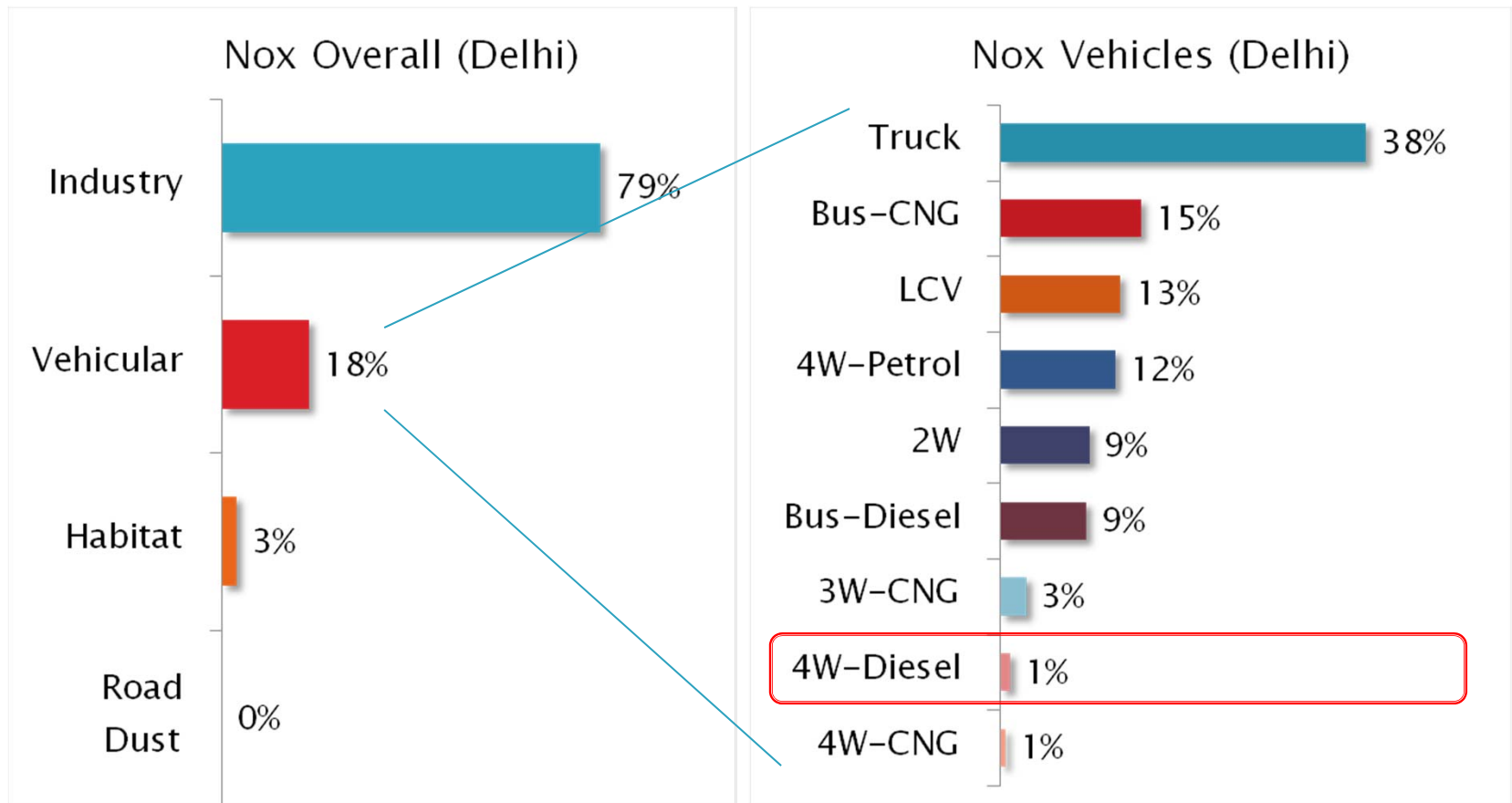
Diesel Vehicles are Polluting

Reality

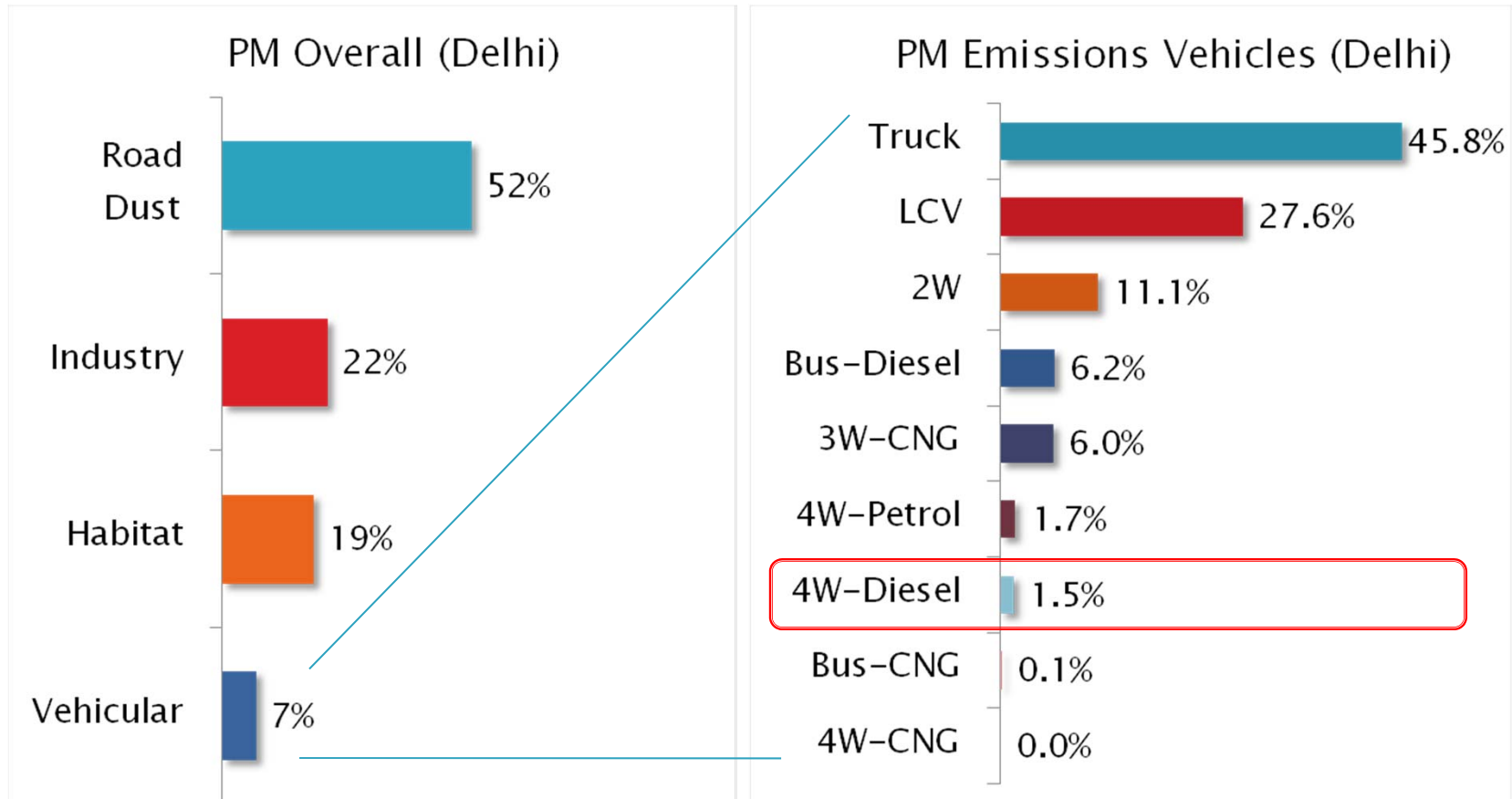
- Diesel is 20% More CO₂ Efficient than Gasoline On a Well to Wheel Basis



Diesel Cars Contribute Just 0.2% to Nox Emissions in Delhi

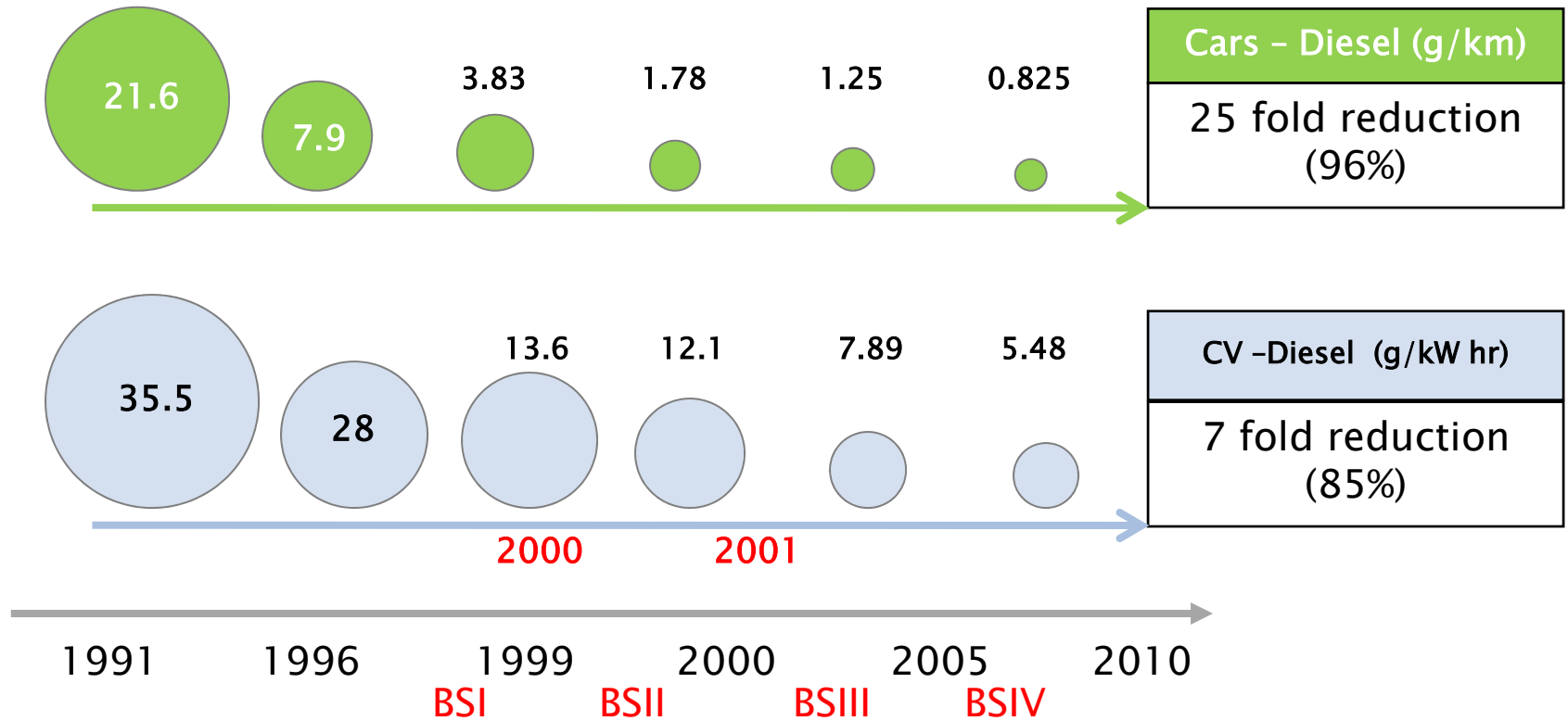


Diesel Cars Contribute Just 0.1% to PM Emissions in Delhi



Emission Improvement from Diesel Vehicles in India

Regulated Pollutants (In total...Co, Nox, PM)

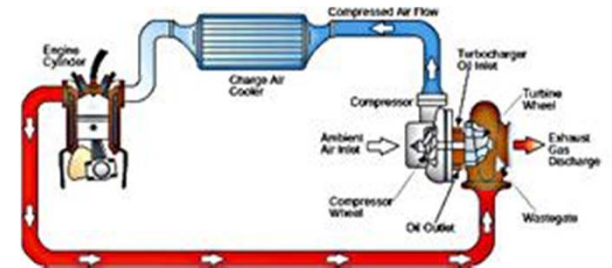


Diesel : Cleaner, Quieter, Fuel Efficient

Engine
Optimisation
and cleaner
fuels



Turbocharger



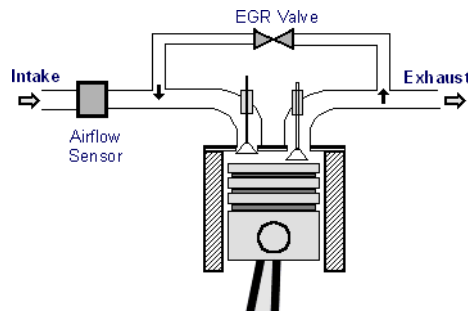
3 way catalytic
converters and
particulate
filters



Common Rail
Injection
System



Urea
Injection



Exhaust Gas
Recirculation



But `50 K to 100 K more expensive than Gasoline

Advantage Diesel

- ▶ Diesel engines have the highest thermo dynamic efficiency
- ▶ Diesel engines use upto 30% less fuel than the equivalent petrol engines
- ▶ The diesel engine is inherently more reliable and requires less maintenance than a comparative petrol engine, therefore less maintenance costs for the owner of the car
- ▶ Diesel engines do not face evaporative emissions problem
- ▶ Diesel engines have improved emission control in cold engine conditions and also in low ambient temperatures
- ▶ Diesel engines have better low end torque and therefore better drivability

Perception # 3

Real Beneficiaries of Reformed Diesel Policy are Car and SUV Owners

Reality

- Road transport uses 64% of Diesel in India
- Private diesel vehicles Use Only 5% of transport diesel

	Distance Covered / yr.	FE (Km.lit)	Diesel Vehicles Sales in F10	Diesel Consumed (liters)	% Consumption
Trucks and Buses	75,000	3.7	531,395	10,771,520,270	92.2%
Cars (Taxi)	75,000	16.0	21,388	100,256,250	0.9%
UV (Taxi)	75,000	13.0	40,455	233,394,231	2.0%
Cars (Private)	15,000	16.0	335,095	314,151,563	2.7%
UV (Private)	15,000	13.0	229,245	264,513,462	2.3%
				11,683,835,775	100.0%

Reality

- Gap Between Petrol and Diesel prices are narrowing

	Petrol	Diesel	Price Differential has reduced
1999	Rs.23.80	Rs.9.94	Petrol 2.4x expensive than diesel
Jan 2011	Rs.58.37	Rs.37.75	Petrol 1.5x expensive than diesel

- Ratio of diesel to petrol consumption has reduced from 6.96 in 1997–98 to 4.61 in 2007–08.
- For a normal Pvt. UV use, the saving due to fuel price will take five yrs for payback of extra cost of vehicle.

Perception # 4

**Diesel Subsidy is Driving
Demand for Diesel Vehicles**

Reality

- Demand for Diesel and Petrol Vehicles have grown at same pace

	2007-08	2008-09	2009-10
Petrol PVs	1,033,740	1,021,834	1,324,966
Diesel PVs	515,677	531,270	626,183
Total PVs	1,549,417	1,553,104	1,951,149
Share of Petrol PVs	67%	66%	68%
Share of Diesel PVs	33%	34%	32%

Perception # 5

Diesel Vehicles are for Rich People

Reality

• 95% Diesel PVs are Under ` 10 lac Range

UVs

Mahindra Bolero
Tata Sumo
Chevrolet Tavera
Force Traveller
Force Trax
Tata Vista
Tata Indigo Manza
Tata Indigo, Indigo CS
Ford Figo
Ford Ikon
Mahindra Logan
Maruti Ritz
Maruti Swift
Skoda Fabia
Volkswagen Polo

4 ~ 6 lac

59%

Toyota Innova
Mahindra Scorpio
Mahindra Xylo
Tata Safari
Fiat Linea
Fiat Punto
Ford Fiesta
Chevrolet Optra
Hyundai i20
Hyundai Verna
Maruti Dzire
Mitsubishi Lancer

6 - 12 lac

38%

Tata Aria
Chevrolet Captiva
Toyota Fortuner
Nissan X-Trail
Hyundai Santa Fe
Mitsubishi Pajero
Ford Endeavour
Mitsubishi Outlander
Fiat 500
Chevrolet Cruz
Hyundai Sonata
Volkswagen Passat
Volkswagen Jetta
Skoda Superb
Skoda Laura

12 - 25 lac

2%

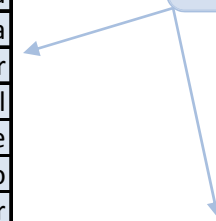
Toyota LC200
Toyota Prado
Mercedes GL-Class
BMX X series
Mitsubishi Monetro
Mercedes C,E,S Class
BMW 3, 5, 7 series
Audi A4, A6

Above 25 lac

1%

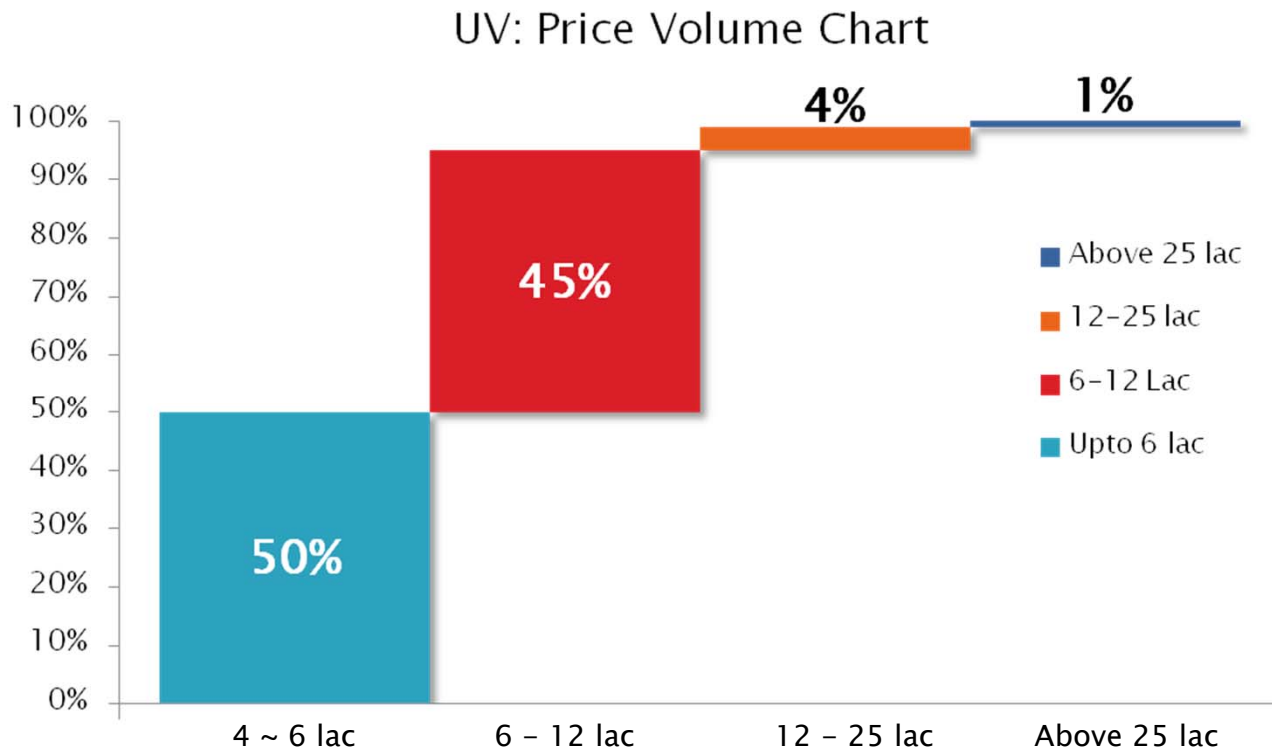
% of total diesel vehicles

17,636 Vehicles
in Apr-Dec 2010



Reality

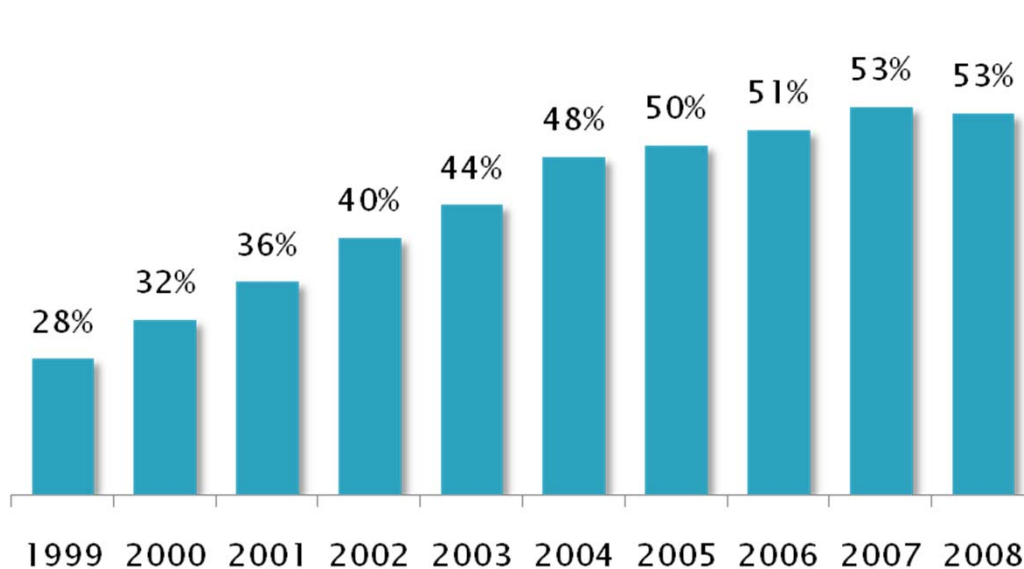
- 95% of UVs Sold are Under ` 10 lac
- 50% of UVs Sold are Under ` 6 lac



International Scenario

Western Europe : Early Diesel Adapters

% Diesel Cars



Country	% Diesel car Sales
Belgium	78.7%
France	77.3%
Norway	72.4%
Spain	69.3%
Italy	50.6%
Germany	44.1%

Source :
http://www1.eere.energy.gov/vehiclesandfuels/facts/2009_fotw575.html

Many Have Lower Taxes on Diesel

Countries	Tax on Petrol	Tax on Diesel
Germany	62%*	56%*
Italy	63%*	56%*
UK	65%*	64%*
Japan	53.8 Yen/ lit	32.1 Yen/ lit
China	1.4 Yuan/ lit	0.8 Yuan/ lit
Korea	529 Won/ lit	375 Won/ lit
India#	13.35 Rs/ lit	3.60 Rs/ lit

* Tax as % of petrol pump price

Basic Excise Duty

In Summary

- ▶ Diesel Technology is more fuel efficient than Gasoline
- ▶ Personal use Diesel vehicles on the Road are not putting an extra strain on the Crude consumption in India
- ▶ The Market today has a good range of affordable diesel vehicles
- ▶ Many developed countries across the world are encouraging Diesel adoption through policies of reduced tax on diesel
- ▶ Diesel is recognised as the most cost effective and practical solution to reduce CO₂ from transport sector
- ▶ If all new vehicles sold are Diesel then:
 - Fuel Saving – 168 million Ltrs p.a.
 - CO₂ Savings– 2.4 million tons p.a.

SIAM Estimates

India Opportunity

- ▶ Reducing Carbon Footprint from Road Transport in India.
- ▶ Encouraging Diesel will support stated policy of reducing the carbon intensity by 20–25% by 2020 by the Government of India
- ▶ Reduce pressure on overall Crude requirement

Thank You



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