

“Towards a Global Approach to Automotive Fuel Economy”

15th & 16th May 2008, Paris

Indian Vehicle Manufacturer's Perspective

P K Banerjee

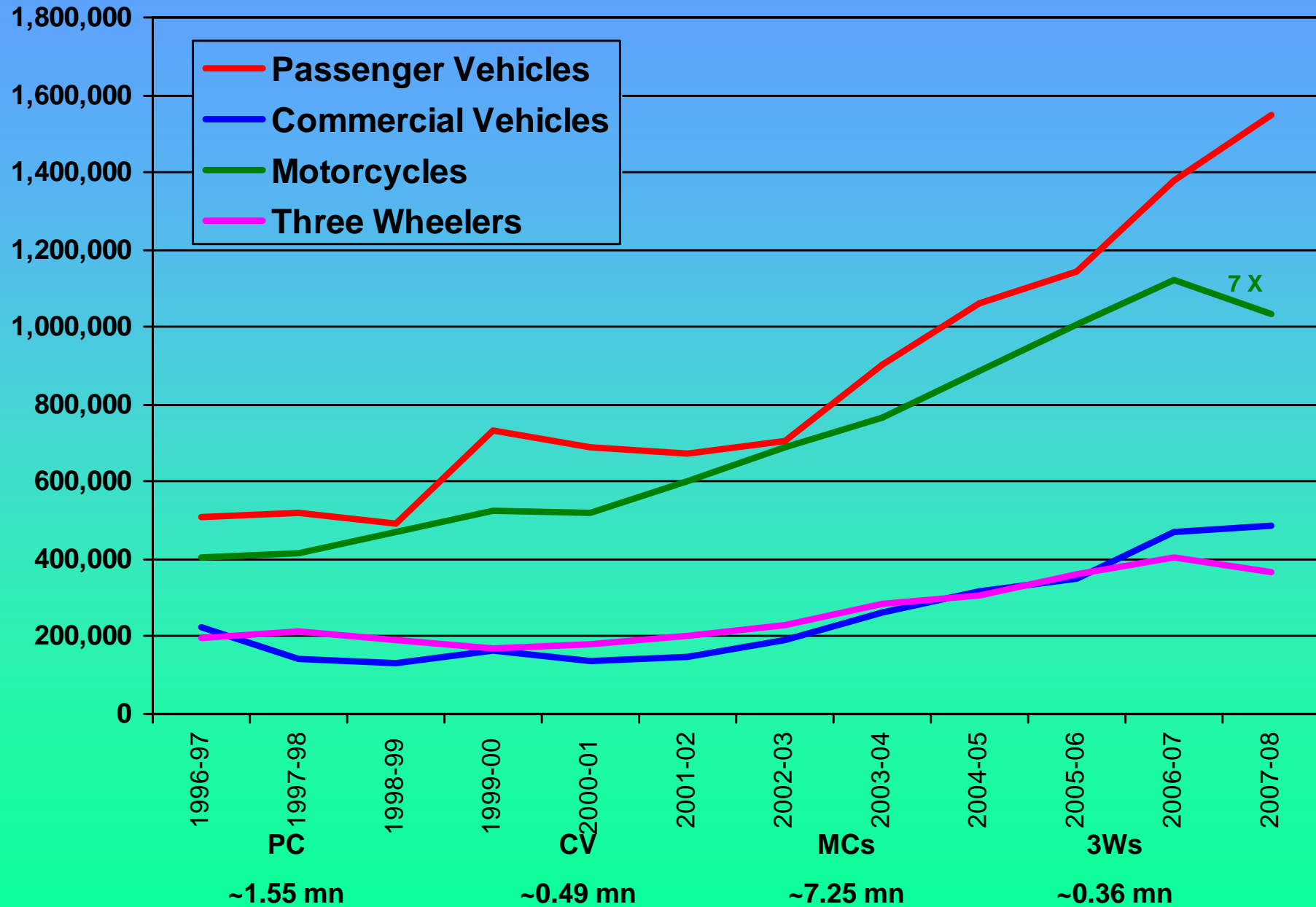
Assistant General Manager, Tata Motors

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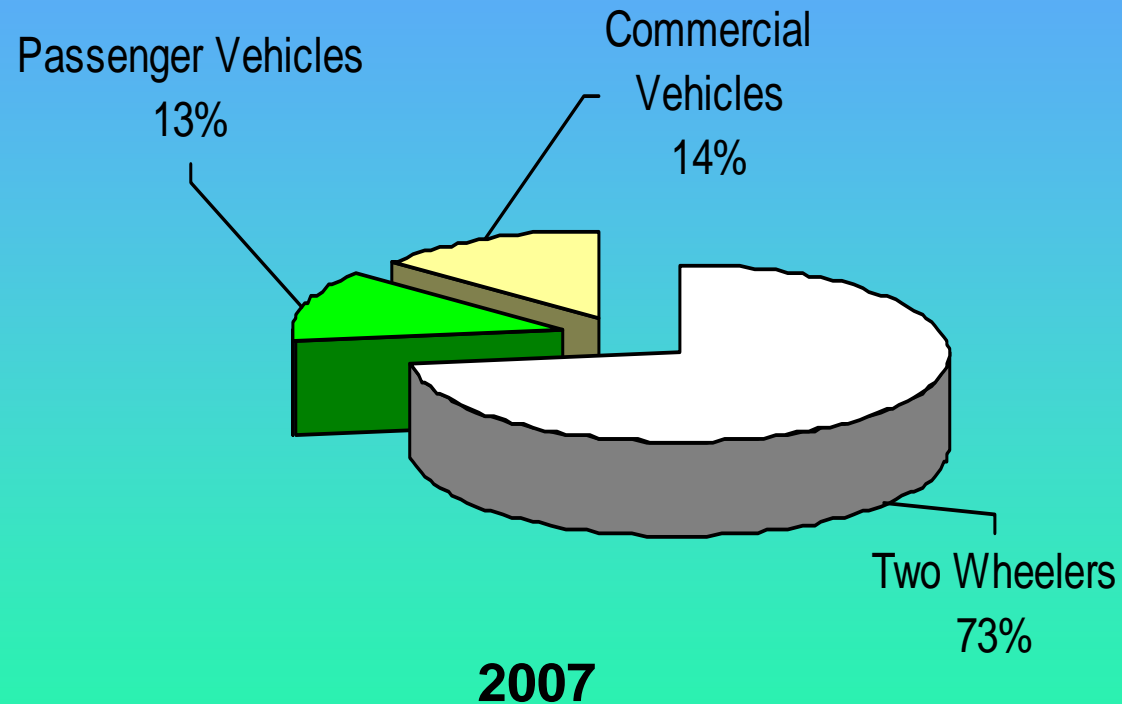
Atanu Ganguli

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Vehicle Sales Pattern



Indian Vehicle Parc



Total Registered Vehicles ~ 98 Mn

Key Drivers

- Growth of Economy – GDP
- Availability and cost of finance
- Low Level of penetration of vehicles
- Choice of vehicles at competitive prices
- Development of Infrastructure
- Increased need for mobility
 - Vehicles seen as a means to promote
 - Entrepreneurship
 - Employment
 - Efficiency
 - Economic growth

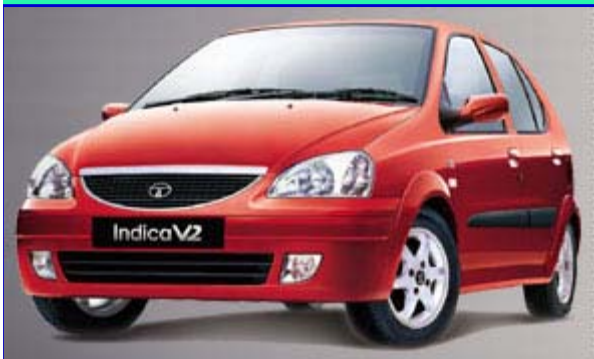


Low Vehicle Production

In '000

	Cars			Commercial Vehicles		
	2001	2006	CAGR %	2001	2006	CAGR %
US	4,879.12	4,366.22	-2.2	6,545.57	6,897.77	1.1
Europe	17,423.25	18,073.78	0.7	2,678.09	3,225.12	3.8
Germany	5,301.19	5,398.51	0.4	390.49	421.11	1.5
Japan	8,117.56	9,756.51	3.7	1,659.63	1,727.72	0.8
South Korea	2,471.44	3,489.14	7.1	474.88	350.97	-5.9
China	703.52	5,233.13		1,630.92	1,955.56	
India	548.41	1,473.00		160.05	546.81	

Source: OICA



World Trend - Motorcycle Production

	2001	2006	CAGR %
China	11,912,719	20,544,842	11.5
India	4,323,644	8,384,707	14.2
Indonesia	1,645,133	4,458,886	22.1
Taiwan	994,794	1,412,953	7.3

Source: Honda Motorcycle Facts & Figures



Low Passenger Vehicles Penetration

City	Cars / 1000 people
Germany	550
France	495
Malaysia	253
South Korea	219
Mexico	135
Brazil	96
Thailand	51
Indonesia	16
Philippines	9
India	7
China	6

Source MoSRTM 2004, Census & Analysis

Low Two Wheelers Penetration

Countries	2W / 1000 people
Thailand	286
Malaysia	258
Italy	166
Spain	90
Indonesia	90
Switzerland	77
Germany	69
China	59
India	43
US	18

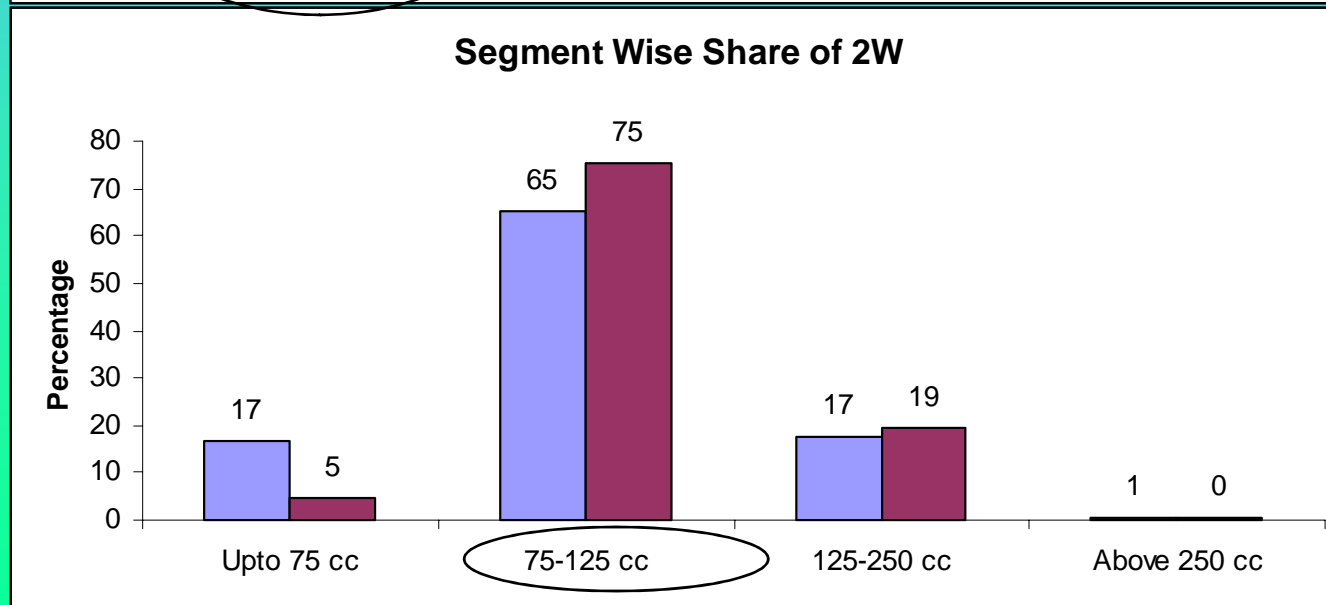
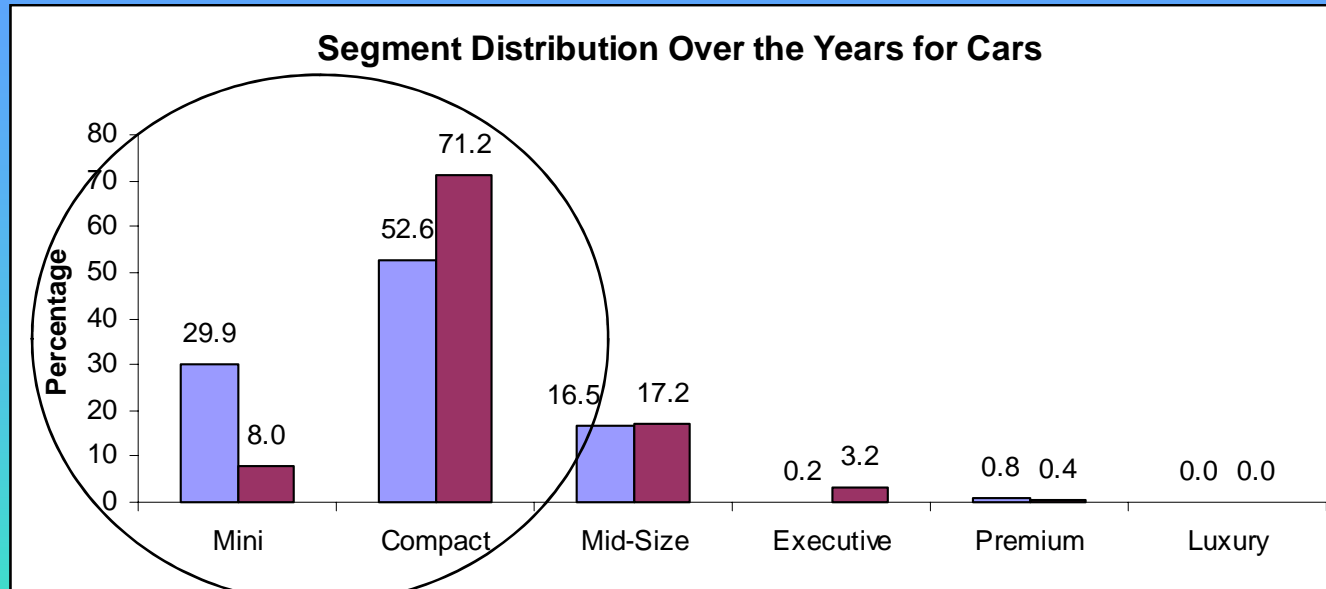
Source: JAMA & SIAM

Source MoSRTTH 2004, Census & Analysis

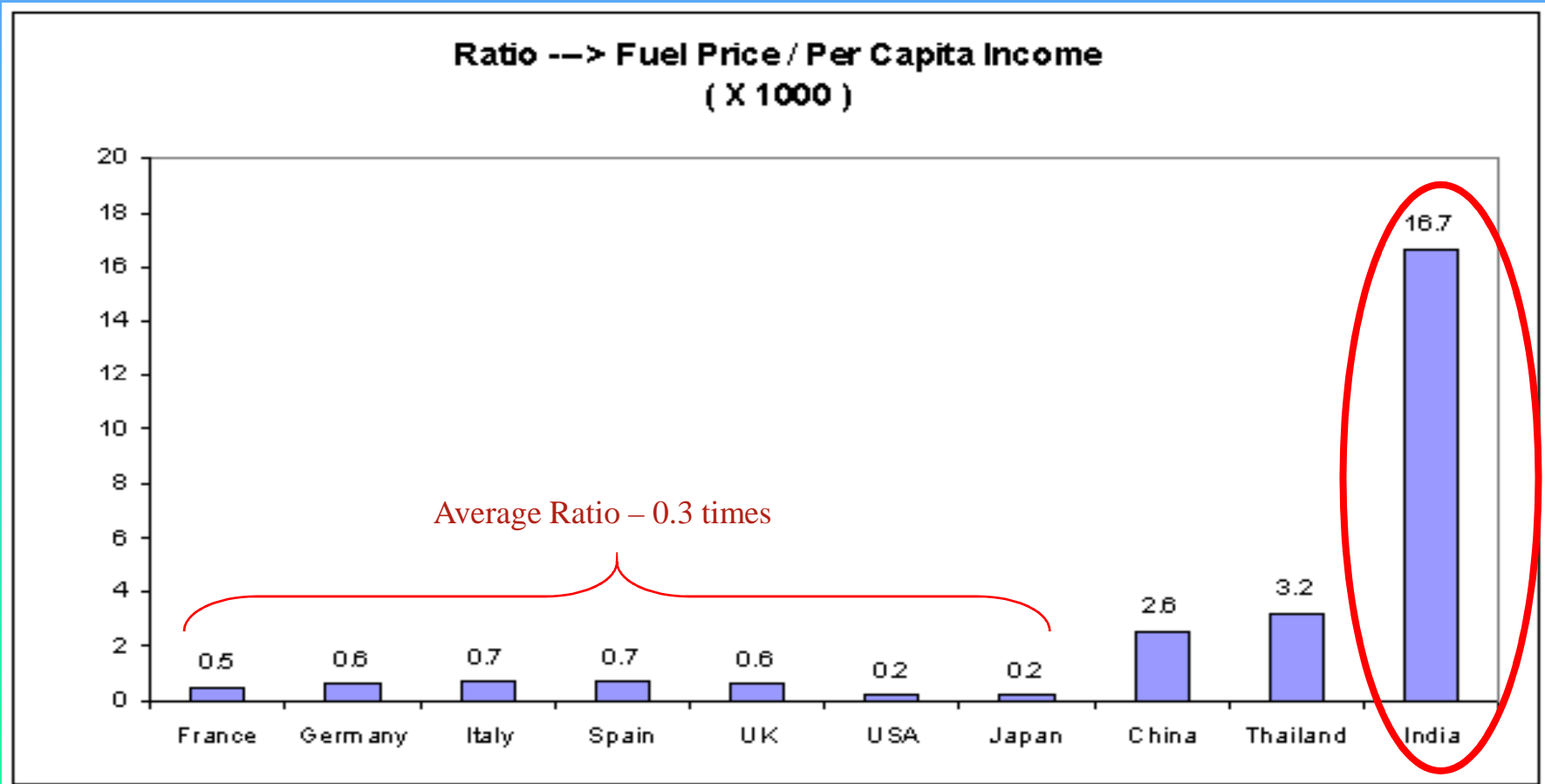
Cars & Two-Wheelers

Segment wise production

2001-02 & 2006-07



Fuel Price / Capita Income

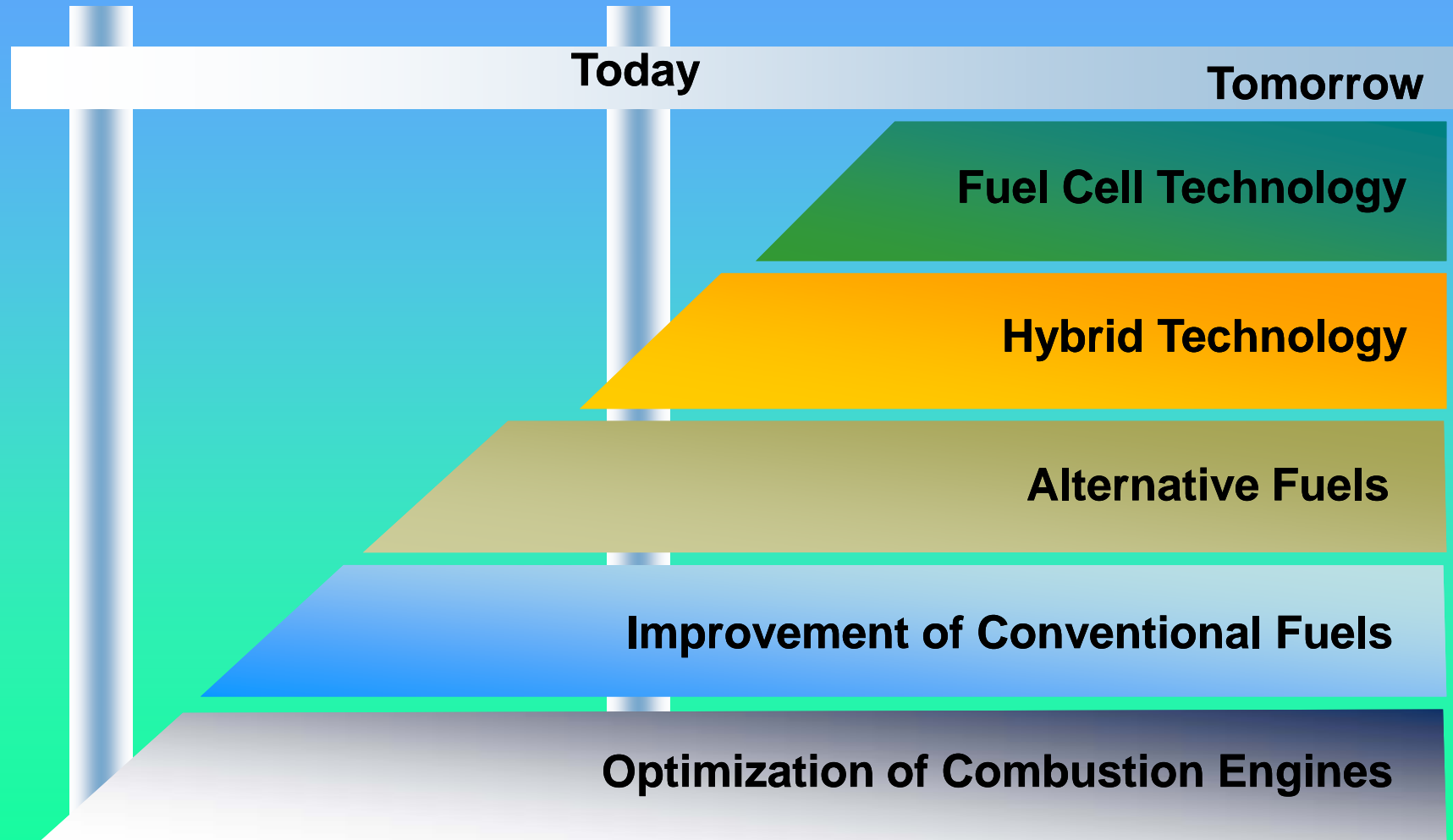


- In India Fuel price as a Pocket Pinching factor is highest.
- Hence , it is already a strong competitive development parameter

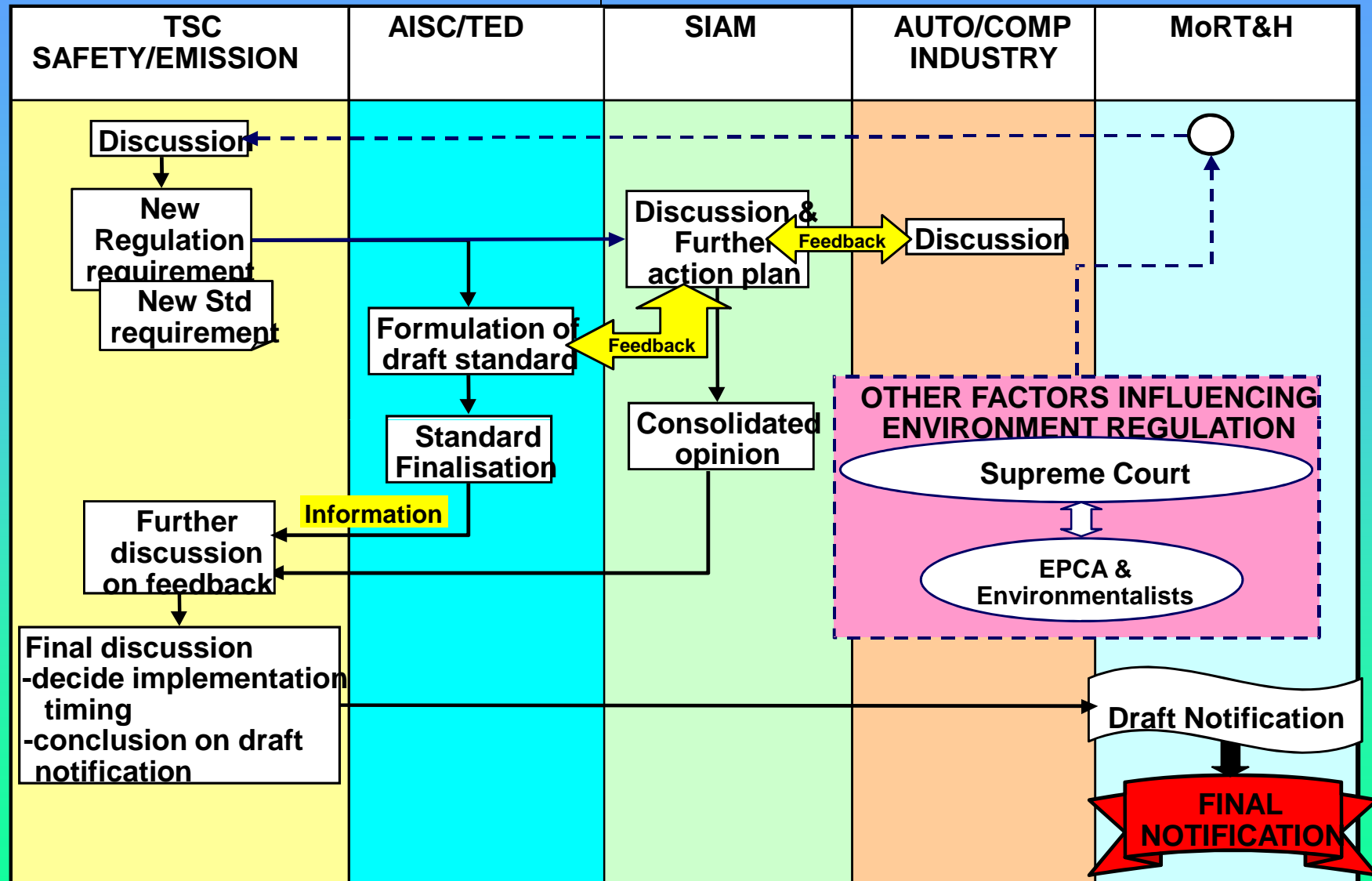
SOURCE : Fuel Price - Internal SIAM Data

Per capita Income - World Bank Data for the Year 2005

Technology Development



Regulation Making Process



Automotive Mission Plan 2006-2016

Vision

“To emerge as the destination of choice in the world for the design and manufacture of automobiles and automotive components. The output of India’s automotive sector will be USD 145 billion, contributing to more than 10% of India’s Gross Domestic Product and providing employment to 25 million persons additionally by 2016”.

Development of Regulations for CO₂ Emissions in India

CO₂ Contribution from Transport Sector

S. No	Country / Region	CO ₂ (Mt)			Contribution of Transport (%)
		Total	Power Generation	Transport	
1	World	26,079	10,587	5,112	19.60
2	USA	5,769	2,403	1,759	30.49
3	Japan	1,211	454	252	20.81
4	OECD Europe	4,078	1,409	976	23.93
5	India	1,103	629	98	8.88

Source: World Energy Outlook for the year 2004
International Energy Agency

Total Contribution from Transport in India in Overall CO₂
Emissions Worldwide - **0.37%**

CO₂ estimation from different sectors being done for National
Communication to UNFCCC by Ministry of Environment and
Forests, Government of India

Regulations for CO₂ Emissions

- Energy security and Global Warming are the two main reasons.
- In India, Emission Regulations are becoming tighter and so will the Safety Regulations in near future. **This will have impact on the CO₂ emissions of the vehicles.**
- Suitable learning needs to be drawn from regulations adopted in Europe, USA, China and Japan.

Characteristics of Indian Vehicles

- Per capita consumption of energy is also very low in automobile segment.
- Fuel efficiency has been one of the predominant criteria for deciding purchase of a vehicle in India
- Indian vehicles generally have good fuel efficiency

Factors that Impact Fuel Consumption

- Safety Regulations
 - New Safety regulations increases weight of vehicle
- Roads : Condition
 - Frequent braking while driving due to badly maintained road
 - Increase rolling resistance
- Inspection & Maintenance programme
 - Regular maintenance of vehicles on road
- Driving Habit
 - Significant saving could be observed
- Fuel Adulteration & Pricing
 - Vehicle performance deteriorates
- Emission Standards
 - Future Trade offs

Fuel Efficiency –Basic Philosophy

- Look at current performance level of vehicles
- Need a long Term well defined plan
- Defining
 - Standard Test Criteria
 - Classifications
 - Method of compliance
 - Reporting procedure

Conclusion

- SIAM members are committed to support Government of India's initiative to develop Fuel Efficiency / CO₂ regulations
- Study all International FE & FC Programmes
- Need to finalise a long term holistic plan in line with overall policy of the Country

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