

INDIAN TWO WHEELERS

Presentation

By

M.N.MURALIKRISHNA
Technical Adviser
TVS MOTOR COMPANY
INDIA

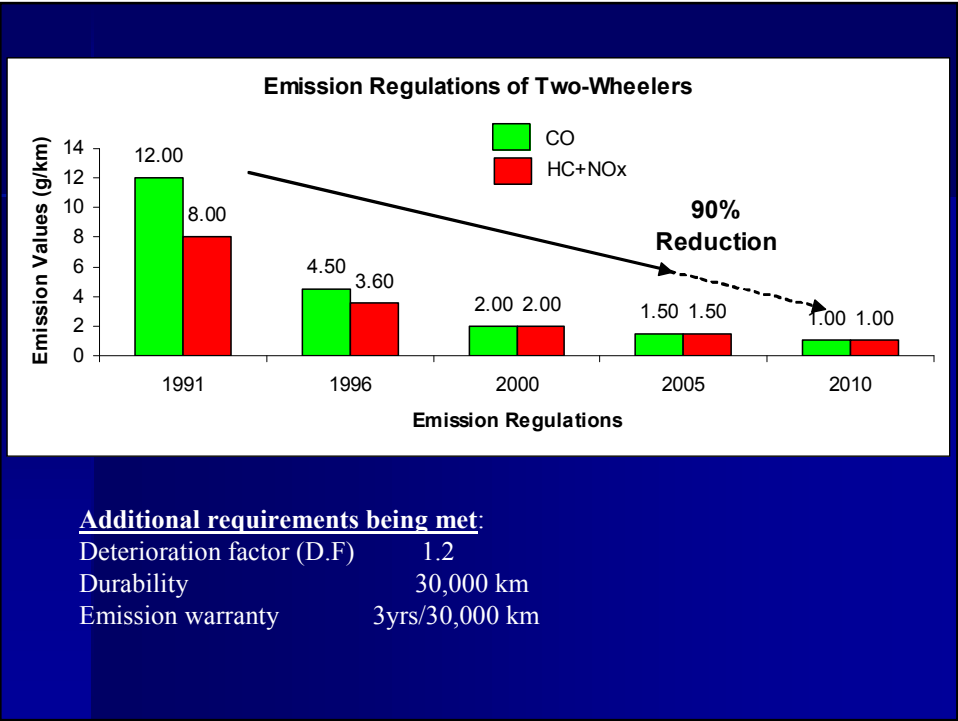
PCRA International seminar
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INDIAN TWO WHEELERS

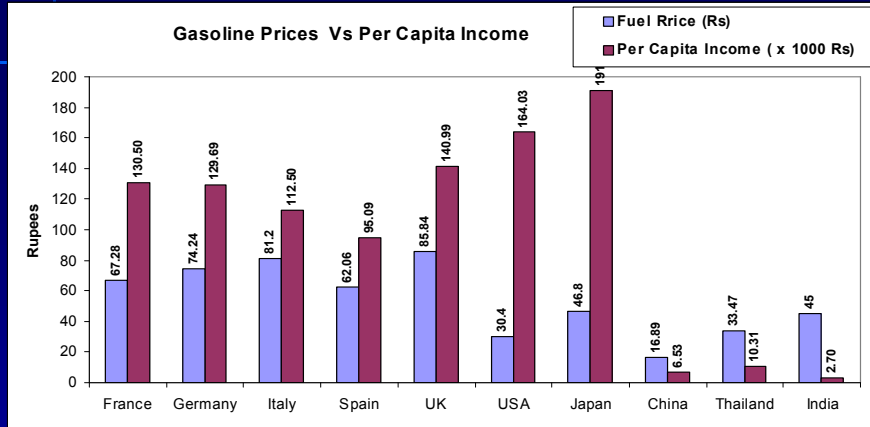
- India 2nd largest producer of two wheelers globally
- World's largest motorcycle manufacturer is in India
- Meeting very stringent emission regulations
- Provides convenient and affordable personal transport
- Usage pattern mostly utility- for families, office goers, small traders, farmers etc
- Fills-in the void created by lack of efficient public transport system in the country



- ## Fuel economy
- Indian two wheelers are the most fuel efficient, globally
 - Incorporate most updated technologies for meeting high levels of fuel economy and also stringent emission regulation
 - Not because of any regulation
 - Dictated by customer's preference for high fuel economy (high fuel costs in India)

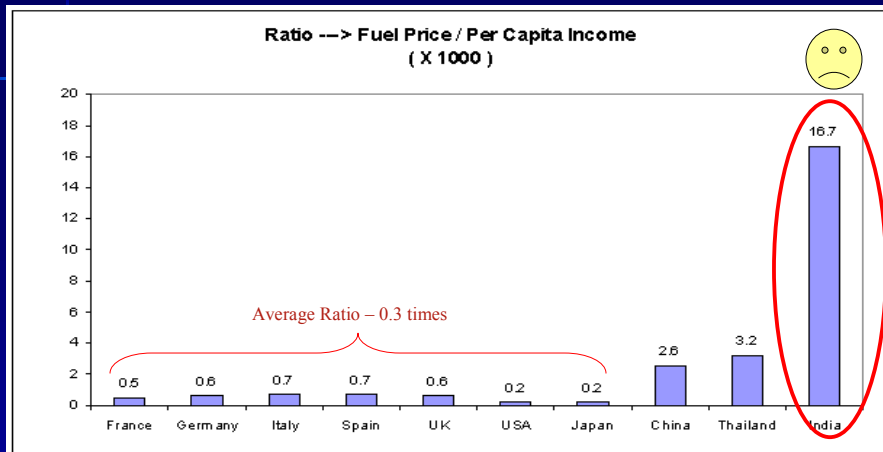
Gasoline prices & per capita incomes

International Scenario - Comparative Figures: (Price in local currency converted to Rs)



SOURCE : Fuel Price - Internal HHML Data
Per capita Income - World Bank Data for the Year 2005

FUEL PRICE / CAPITA INCOME (POCKET PINCHING)



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

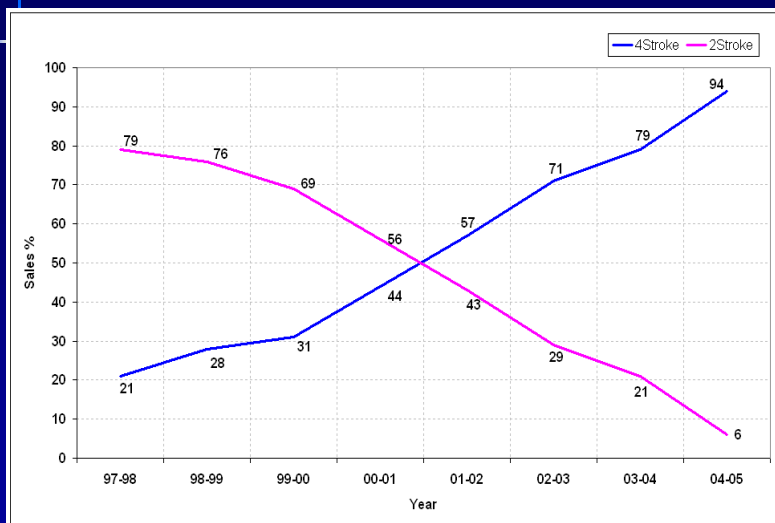
SOURCE : Fuel Price - Internal HHML Data
Per capita Income - World Bank Data for the Year 2005

Important technologies currently on Indian two wheelers

- Major shift to Four stroke engines incorporating improved combustion and lean-burn technologies
- Secondary air injection system
- Digital electronic ignition with multiple curves
- Carburettors incorporating precision controlled fuel delivery
- Sophisticated multiple catalytic convertor arrangements
- Electronic Fuel injectionetc

Progression of shift to four stroke engines

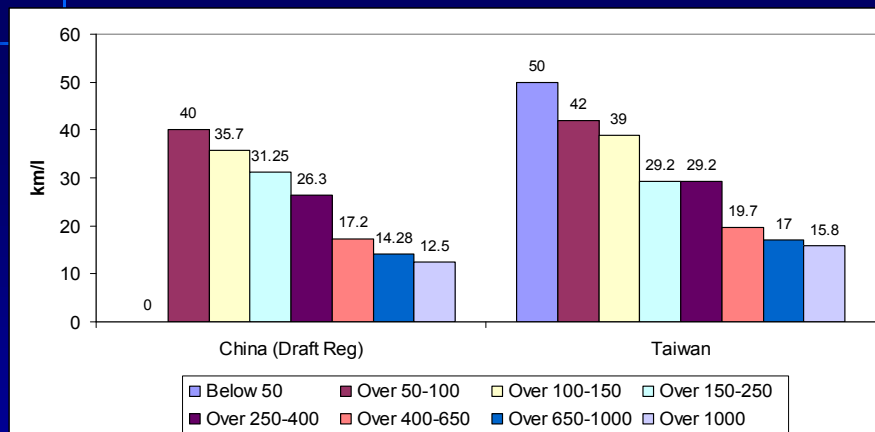
4 Stroke Vs 2 Stroke



Status of regulation on Fuel economy – two wheelers globally

EU	None
USA	None
Japan	None
Indonesia	None
Malaysia	None
Philippines	None
Thailand	None
China	Draft notification
Taiwan	Yes

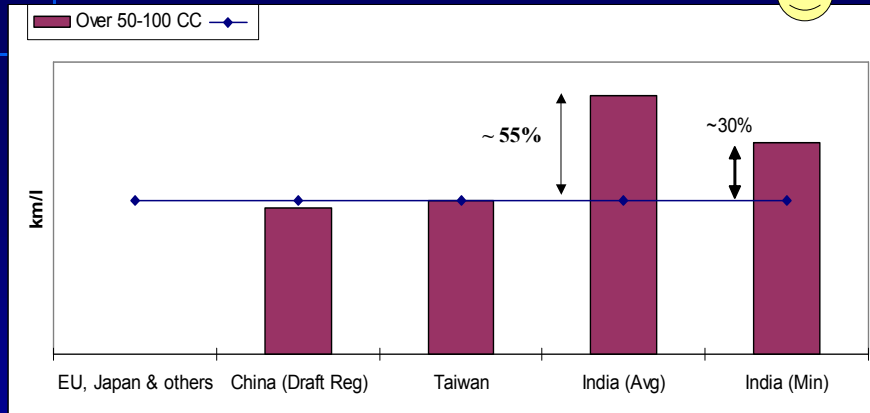
Fuel Economy Standard China (draft) & Taiwan



SOURCE : China & Taiwan Regulations from FAMI

Comparative fuel economy – India vs Others

International Scenario (2W's):

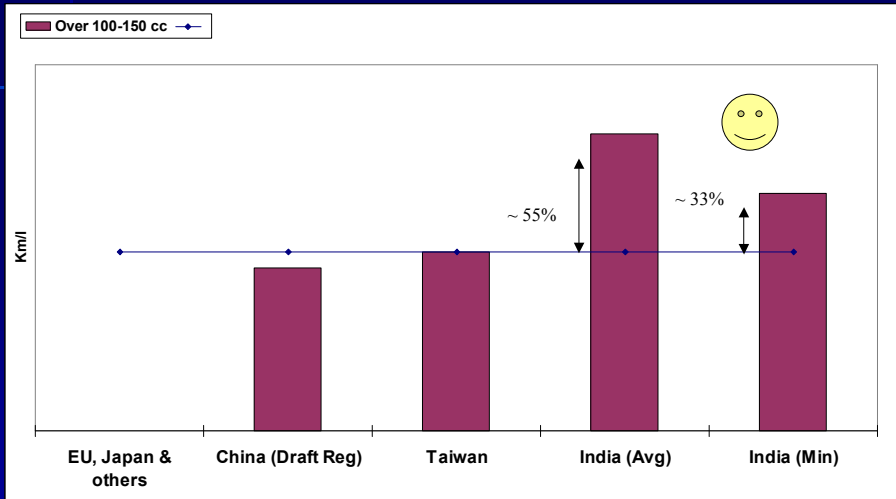


- Different countries follow different driving cycles , reflecting the actual driving pattern for that particular country
- Even in present scenario , the fuel efficiency levels as obtained on Indian vehicles are significantly higher than that in other countries

SOURCE : IDC Data (n=42)from SIAM / ARAI, China & Taiwan Regulations from FAMI

Comparative fuel economy – India vs Others

International Scenario (2W's):

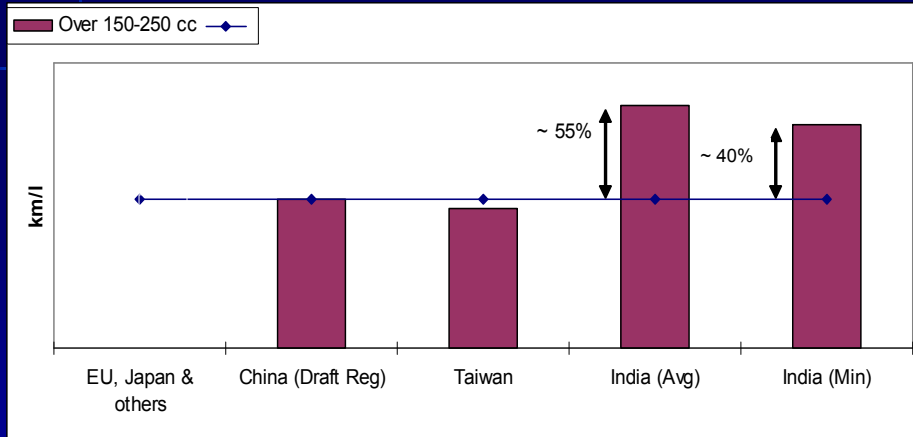


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Comparative fuel economy – India vs Others

International Scenario (2W's):



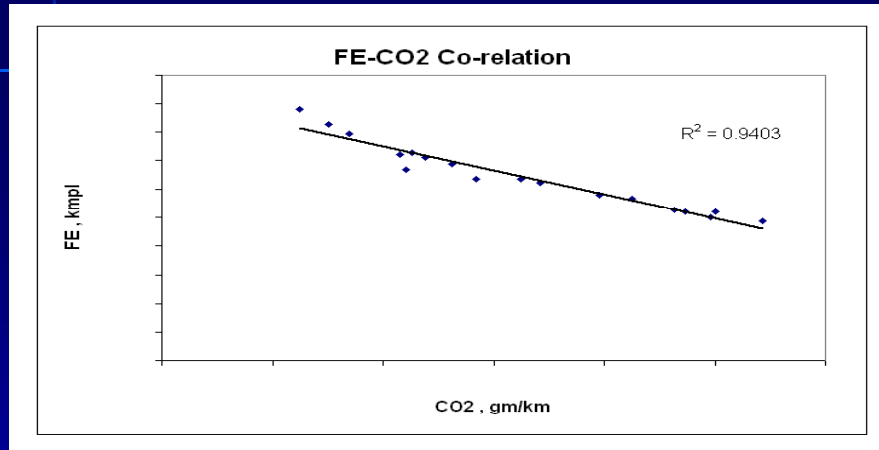
- Across all classes of vehicles , Indian FE values are much superior to FE values as regulated in other countries

SOURCE : IDC Data (n=42) from SIAM / ARAI, China & Taiwan Regulations from FAMI

Fuel economy standard

- Fuel Economy value in Taiwan is calculated based on 60% simulated test cycle + 40% constant speed test values
- Such simulated test values never tallies with values recorded by customers under different operating conditions
- Poor traffic management , indifferent road conditions, driver behaviour, etc greatly contribute to high variability in fuel consumption under actual user condition on road
- We understand that countries where FE standards are enforced - do face lot of customer complaints and grievances, leading to legal hassles

FE / CO2 Co-relation (2 W's)



Note : FE and CO2 have good and credible correlation .

Fuel economy and CO2 emissions

- Fuel economy and CO2 emissions have good and positive correlation
- In line with this - globally most fuel efficient Indian two wheelers emit lowest CO2 emissions also, comparatively
- From Global warming perspective CO2 emission abatement is our challenge
- Industry prefers voluntary declaration ,and control CO2 emissions from their vehicles

Summarizing

- India's per capita income ranks amongst the bottom rung in the world
- Fuel price / Per capita income ratio is approx 3000% higher than the rest of the world
- Indian vehicles globally are highly fuel efficient and emit lowest CO2 emissions comparatively
- Market forces and customer preferences enforce self regulation on industry to achieve high fuel economy, thereby lower CO2
- Hence, Industry opines that there is no need for introducing specific regulation concerning FE for two wheelers.

THANK YOU