

Setting Up Fuel Efficiency Norms for India- An Overview

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Fuel Efficiency Seminar – Chennai /M&M Property

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Need and Importance

- Curb Global Warming (By Reducing Vehicular CO2 Emissions)
- Energy Conservation and Security
- Ambient Quality Management and Continuous Improvement
- Reduced Vehicular Emissions (Cleaner Vehicles)
- Customer Satisfaction & Value creation (Lower Fuel Consumption)
- Less dependency on Crude Imports.
- Integrated Approach Strategy (Collaboration with all agencies)

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EU Scenario

- EU Directive : Average Passenger Car CO₂ Emissions to be 120 g/km by 2012 and further reduction beyond 2015
- Currently 19 % of EU CO₂ Emissions are from PC and LCV. 60 % of petroleum resource is used EU road transport.
- Manufacturers able to meet now between 160 to 140 g/km CO₂ average emissions.
- 1/3 rd of EU PC are meeting limit 120 g/km (Mainly Small PC with advanced engine and vehicle technologies)
- CO₂ Reduction is offset by 15 g/km due stricter safety norms (Weight Increase for Crash).
- Customers preference is more towards medium and large cars for luxury and safety- Greater impact on fleet CO₂ fleet average.
- Aging fleet produces 2-3 times more CO₂ than new registration vehicles – Integrated Approach strategy is not in place fully

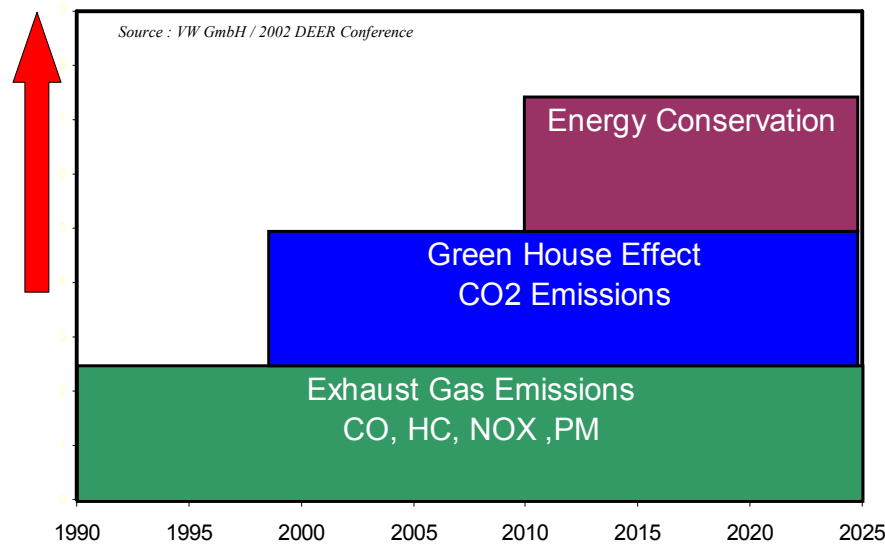
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Environmental Driving Forces for Vehicle Development

Importance

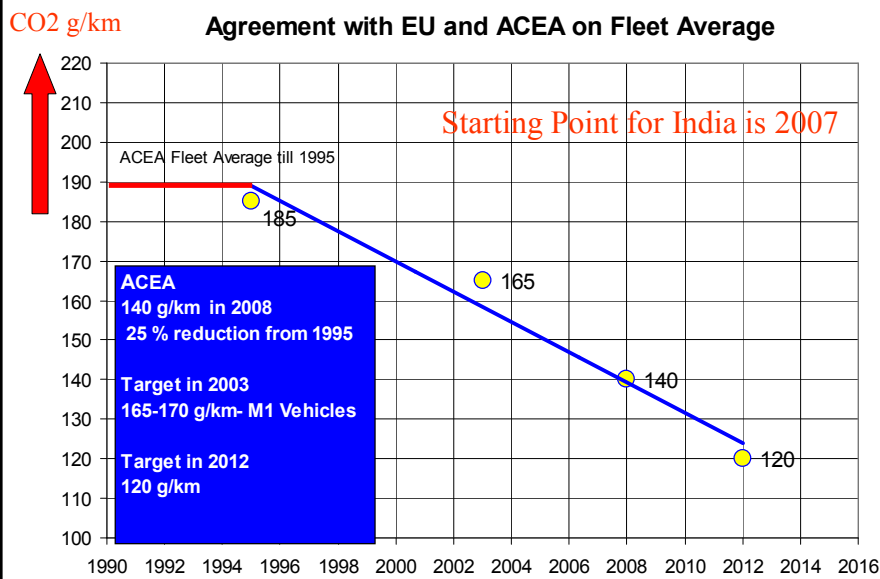
EUROPEAN STATUS



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CO2 Reduction in Europe



EU Scenario – The Way Forward

- Workout Structured Lead Time – Short and Long term Approach.
- Short Term : 7 to 8 Years with Improvement in current Technologies.
- Long Term : 10 to 15 years by use of Hybrids, EV, biofuels & Fuel Cells
- Proposal of Carbon Credits (CARS) and Tax Benefits/Penalties
- Amendments in Driving Cycle for RWUP & Test Procedures
- Advertising and Labelling for Consumer awareness and demand.
- Retiring benefits/Incentives for aging vehicles .
- Complimentary measures : Better Road and Traffic management, Educating ECO Driving habits
- Promote use of alternative fuels CNG and LPG

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Indian Scenario

- Indian Auto Industry Size is 73 % -2Ws, 14 % -PCs and 13 % -CVs.- (% Share is different than European Market)
- % Share of CO2 emissions from Automotive vehicles is not fully established- Inadequate Ambient Air Quality Studies
- Follows EU Emission Norms with much reduced lead time than Europe. Euro I & II in 2000, Euro III in 2005 and Euro IV by 2010.- Lesser lead time for adapting & Implementing cutting edge technologies.
- In use vehicles average life is 15 years + making higher impact on CO2 in atmosphere.
- I/M Programs and Infrastructure/Traffic Management is not effective to curb CO2 Emissions

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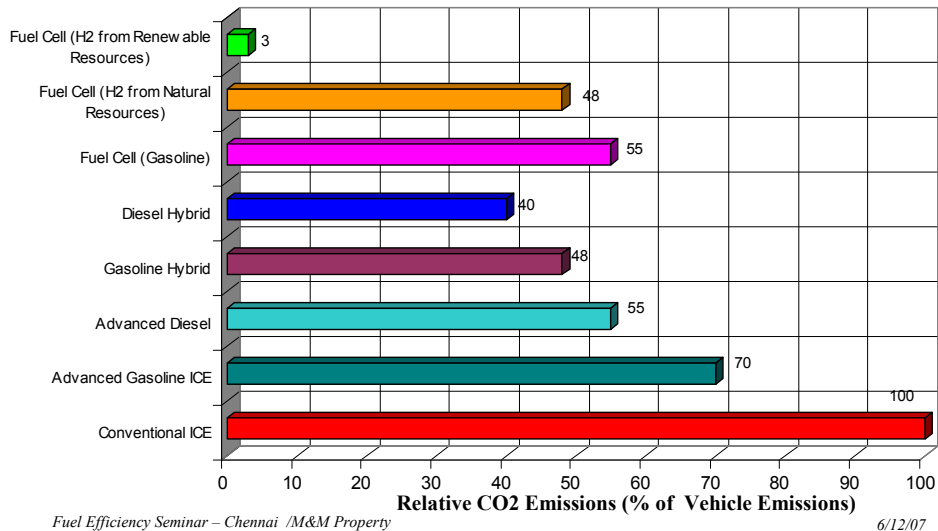
Indian Scenario

- Fuel Adulteration and No Harmonized Fuel Specifications across country wide. (Durability of After treatment devices – DPF and SCR for BS-IV and Beyond).
- Fiscal Incentives policies is much needed due to highly Cost Sensitive market.
- Need to evolve standards for LPG, NG, biofuels, Hybrids and Fuel Cells
- In spite of above uncertainties, Indian Automotive Industry is fully committed for Voluntary declaration of CO2 emissions.
- CO2 Standards proposed are based on the Type and Ref Mass class of each vehicle category as a starting point
- Align with EU norms in phased manner addressing the above complex issues taking cue from EU experiences

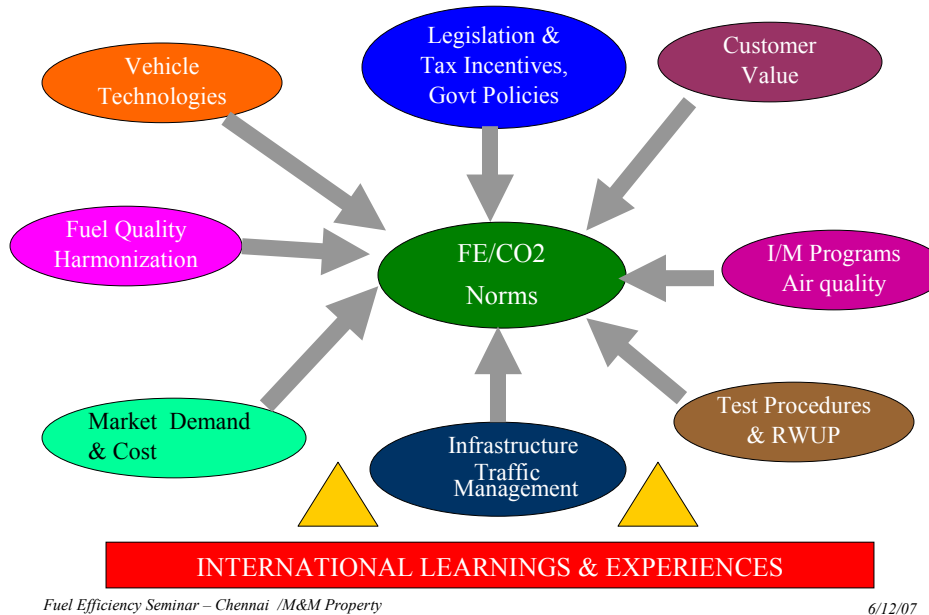
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Technology Options to meet CO2 Norms

WELL TO WHEEL CARBON EMISSIONS



Indian Fuel Efficiency/CO2 Norms Drivers



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Thank You

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