

# Legal, Policy and Institutional Framework for Emission Reduction

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## Transport and the Environment

- Transport Infrastructure impacts on the natural environment and the ecological balance of the area.
- Vehicular emissions - the largest source of pollutants amongst all end-use sectors (WB,2006)
- Air pollution has major health impacts on the poor (World Bank 2006).
- Mortality from air pollution in urban areas estimated at more than 50,000 deaths per year in developing countries (World Bank 2002).

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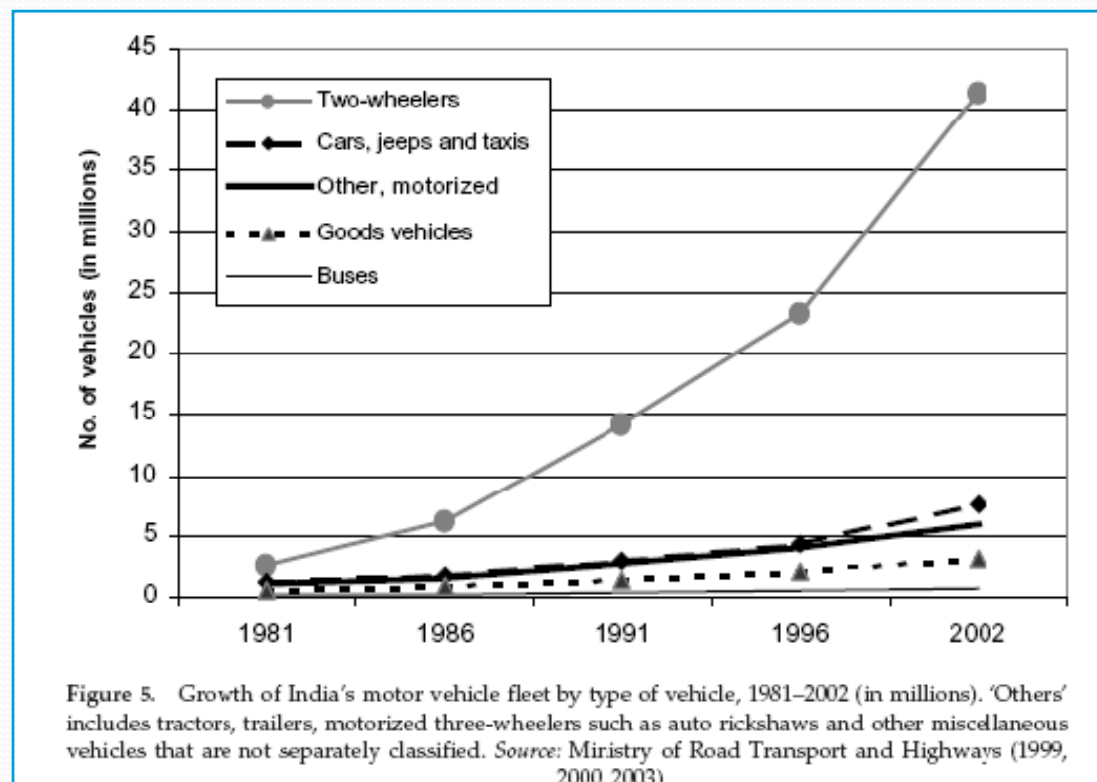
## Transport and Climate Change

- Transport - second largest consumer of energy; a share of 26% of world energy use in 2004
- Energy consumption to grow fastest ( 2% p.a.) amongst all end-use sectors in the next 25 years
- Emerging Asian countries led by China and India to account for 45% of the total world oil use increase through 2025
- CO<sub>2</sub> emissions from on-road transport in China and India to increase by 3.4 times and 5.8 times, respectively, over a thirty-year period (2005-2035)

Source: IPCC, ADB, IEA

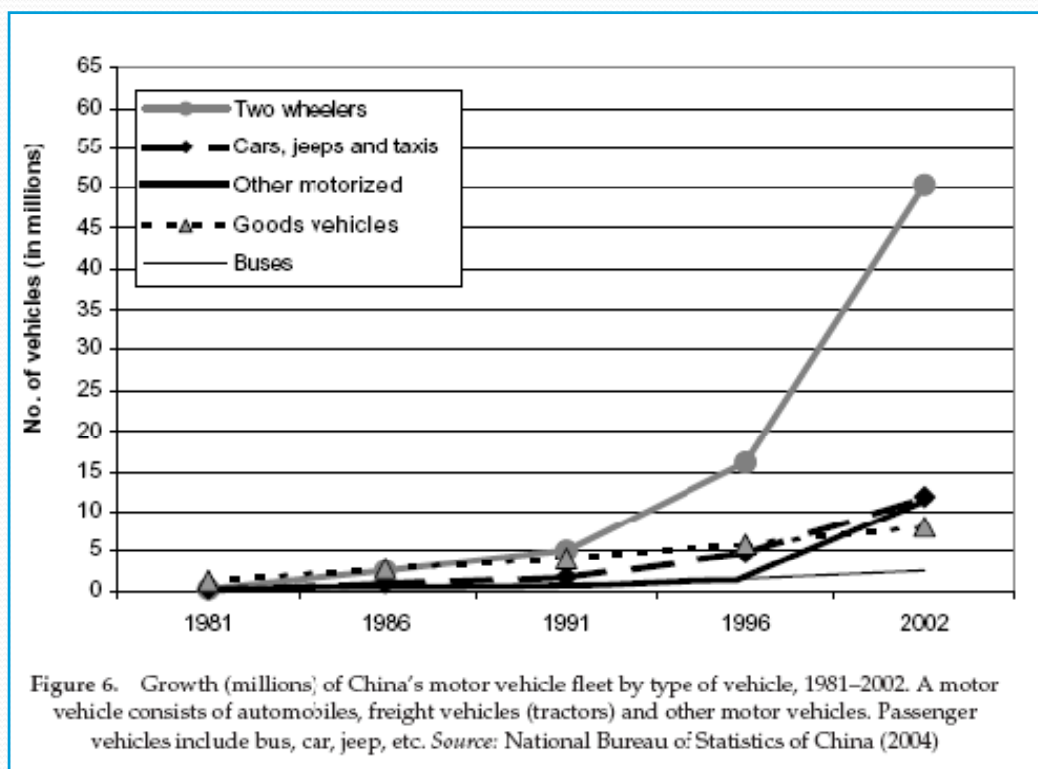
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## Growth of India's Motor Vehicles Fleet



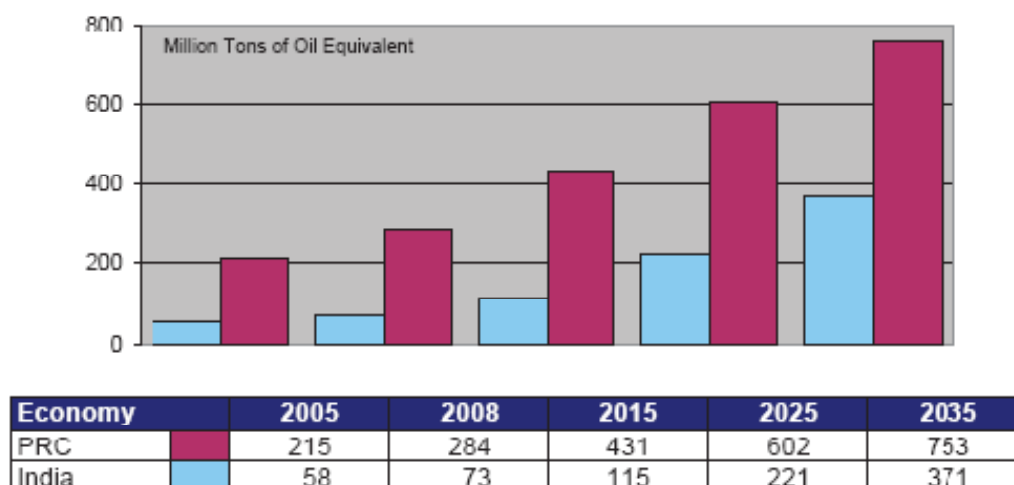
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# Growth of China's Motor Vehicles Fleet



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# Total On-Road Vehicle Fuel Consumption

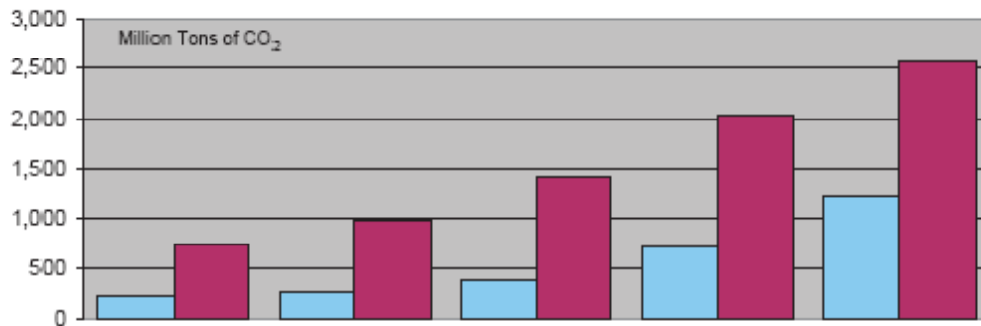


Mtoe = million tons of oil equivalent; PRC = People's Republic of China.

Total On Road Vehicle Fuel Consumption (mtoe) India & China  
(Source: ADB 2006)

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## Total CO2 Emissions from On- Road Vehicles



Economy	2005	2008	2015	2025	2035
PRC	752	967	1,429	2,039	2,557
India	208	256	391	721	1,212

CO<sub>2</sub> = carbon dioxide; PRC = People's Republic of China.

Source: Author, utilizing Fulton and Eads. 2004.

### Total CO2 (well to exhaust) emissions from on – road vehicles (India and China)

Source: ADB 2006

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## Measures to Reduce Emissions of Criteria Pollutants

- Set Baseline - Apportion sources
- Set emission standards for new and in-use vehicles
- Monitor emissions, identify hot spots and highly polluting vehicles
- Manage demand
- Establish computerised Inspection and Certification centers
- Improve vehicle technology and fuel quality
- Set targets for progressive reduction

**Difficult for vehicle importing countries**

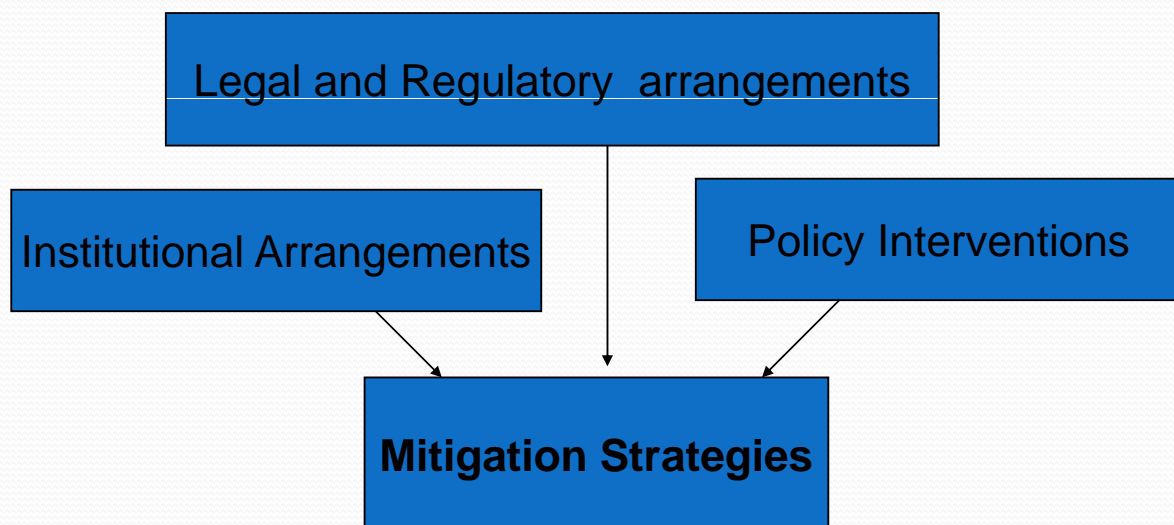
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## Climate change-mitigation measures

- Integrate land use and transport planning, employ virtual mobility alternatives using (ICT), and better traffic management using (ITS)
- Effect inter-modal shifts to less energy intensive modes
- Improve vehicle and fuel technologies, set fuel economy standards and improve the performance of in-use vehicles.
- Introduce clean technologies and alternative fuels

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## Need for appropriate legal, policy and institutional framework



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## Legal and Regulatory Framework

- Powers to set emission, fuel quality and fuel economy standards
- Laws to enforce inspection and maintenance
- Laws to manage transport demand
- Empower and equip local governments to make transport sustainable
- Streamline procedures for private sector participation

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## Need for Appropriate Policies

- Each mitigation measure calls for appropriate policies
- Policies need to transcend sectoral and jurisdictional boundaries
- Need for integration between sectors and tiers of government

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## Policies at Different Tiers of Government

- Laws and policies fall in different domains  
- national governments , provincial governments in federal structures and city governments
- Policies must be consistent and integrated
- Encourage cities to develop Comprehensive Mobility Plans

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## Policy Interventions

- Integrate land use with transport planning and encourage high density cities.
- Promote inter modal shift to energy efficient modes.
- Discourage use of personal vehicles
- Encourage NMT
- Promote clean fuel and automobile technologies

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## Fiscal policies

- Remove distortions- eg. License fees, dual pricing
- Provide incentives to facilitate mitigation
- Use fiscal instruments to manage demand
- Incentivise private investments in public transport
- Provide incentives for clean fuels and technologies
- Integrate benefits from GHG reductions in private investments

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## Budgetary Policies

- Provide adequate funding for public transport and NMT
- Invest in energy efficient modes of transport
- Invest in clean fuels

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## Institutional Framework

- Fragmented responsibility
- Lack of coordination
- Lack of capacity
- Inadequate intermodal integration



## Institutional Framework

- Provide for an integrated authority
- Bring all transport systems under one authority
- Provide for effective coordination between transport and other relevant ministries

## Build Capacity

- Involve civil society and promote awareness among all stake holders
- Identify capacity gaps
- Formulate and implement policies and programmes for capacity building at all levels

gTKP,CAI-Asia etc. can help

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## International Cooperation

- Assist in evolving appropriate policies
- Share experience
- Build Capacity
- Transfer technologies at affordable prices
- Fund projects that are appropriate to country situations
- Look at innovative financing arrangements

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**Thank You**