



Planning for Sustainable Transport

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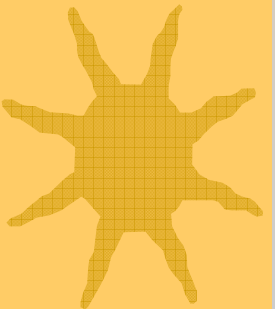
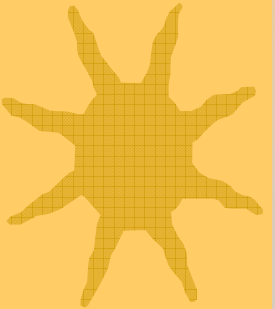
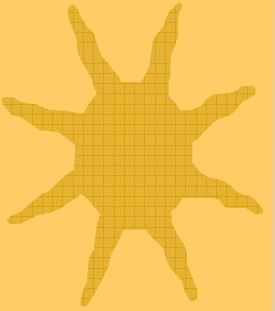
Distinguished Fellow, TERI

Climate 2050 Conference, Montreal, 24-26 October 2007



What is Urban Planning?

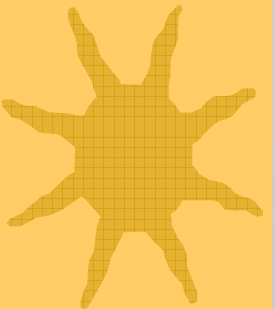
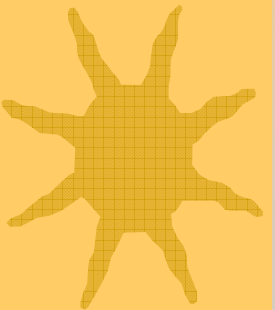
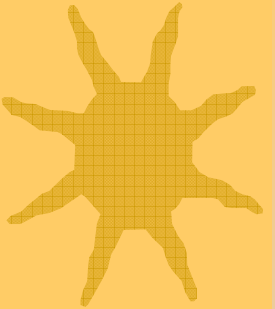
- ★ Urban planning should aim to create environments where many generations can live as happily as possible
- ★ It should be a dynamic process which not only accommodates the current needs but also guides future growth on a sustainable basis





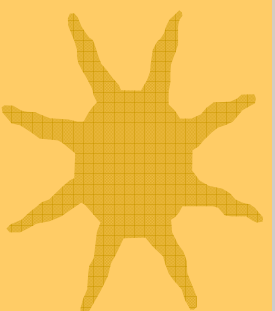
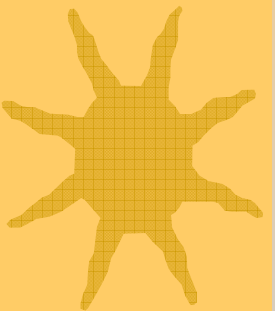
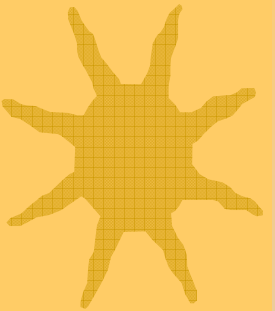
Urban Planning and Transport

- ★ Urban planning and transport influence each other
- ★ Urban planning can either
 - help to build high-density cities with a large transit share and reduce travel demand or facilitate urban sprawls with a growing travel demand
 - address the mobility needs of people or cater to the mobility of vehicles
- ★ Transport infrastructure can in turn guide the overall direction of future urban development, influence its pattern and intensity, minimize environmental impact and encourage economic growth.





The Indian Scenario

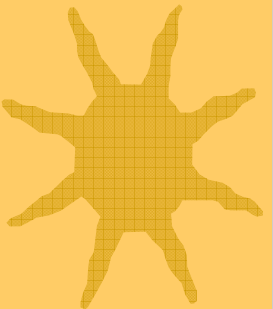
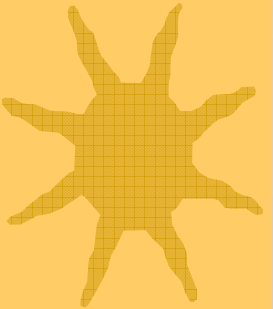
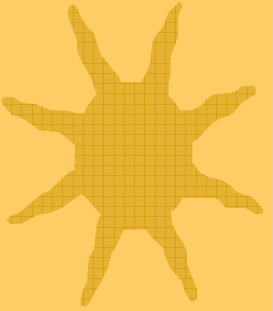


- ★ 28% of the total population in urban India; projected to grow to 33% percent by 2025 and over 50% by 2050.
- ★ 5161 cities; 35 of them are million plus. 60-70 million plus cities by 2025 .
- ★ Most million plus cities are urban sprawls with increasing travel demand and growing reliance on personal vehicles



Poor Planning Has Led To

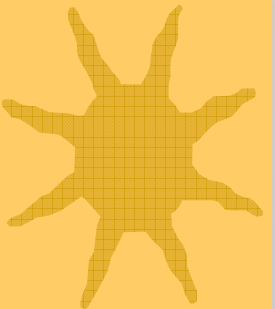
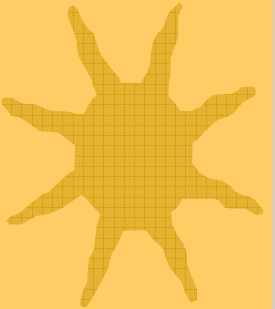
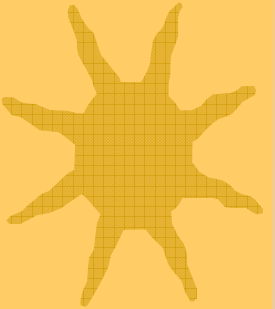
- ★ Increase in number of trips and trip lengths
- ★ Diminishing share of public transportation and growth of personal vehicles
- ★ Investments largely on road space for vehicles and not on pedestrian pathways, NMT
- ★ Inequitable allocation of road space and inadequate accessibility for the poor





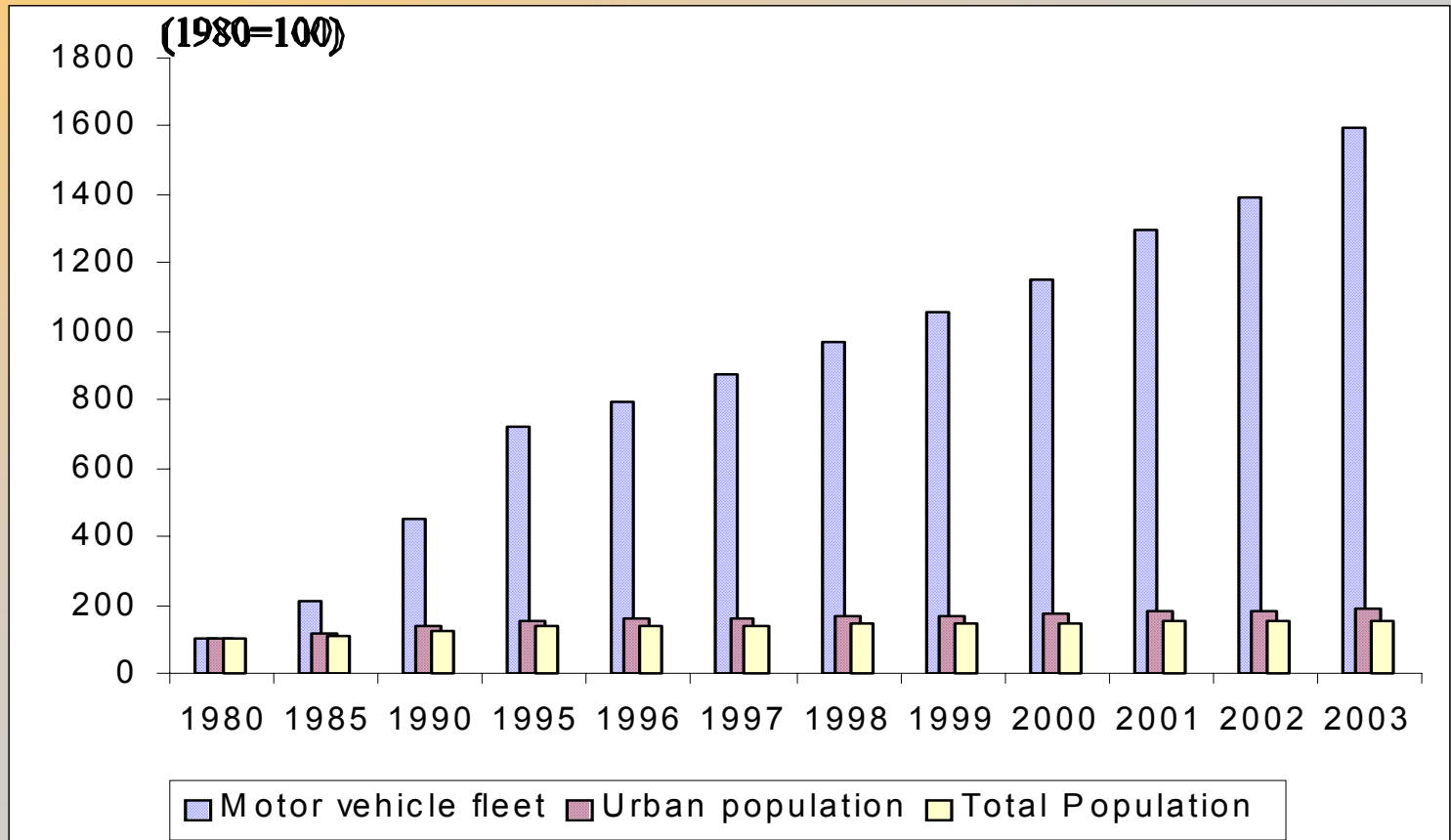
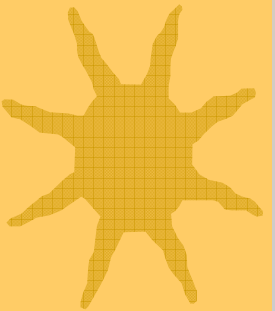
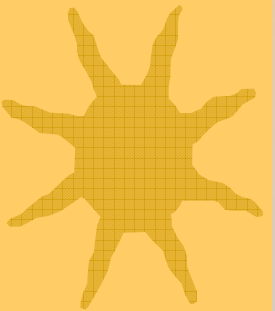
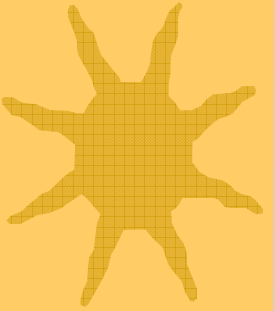
Poor Planning Has Led To

- ★ Growing dependence on fossil fuels and increase in emissions
- ★ Increase in traffic related morbidity and mortality
- ★ Urban congestion, wastage of fuel & loss of productivity ; no demand management
- ★ No Urban Transport Policy in the states
- ★ Diffused institutional arrangements and responsibilities
 - Fragmented among and within central, state and local authorities





Growth of Population, Urban Population and Motorization



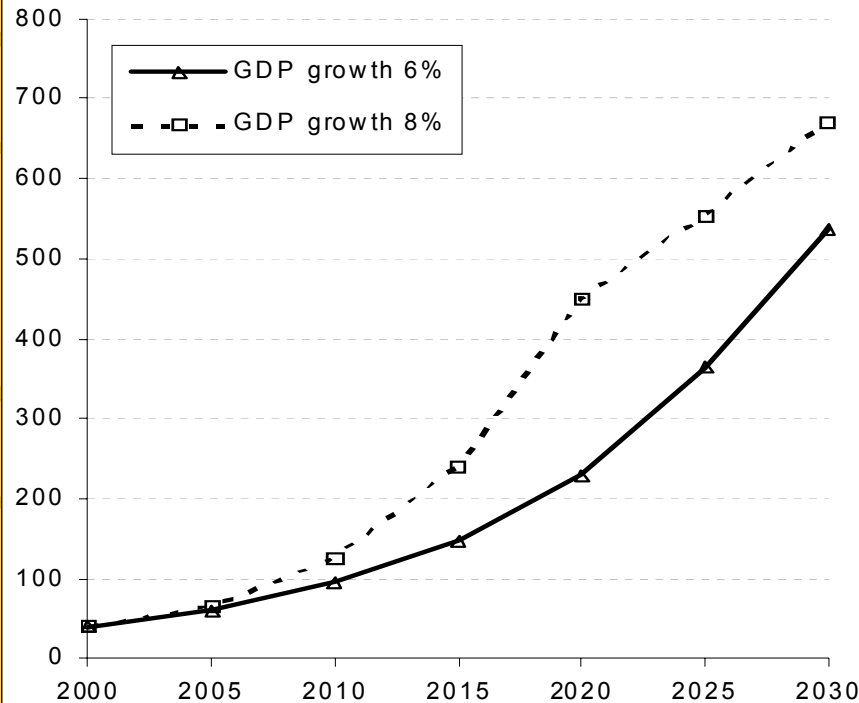
Source: TERI 2006-Paper for ADB



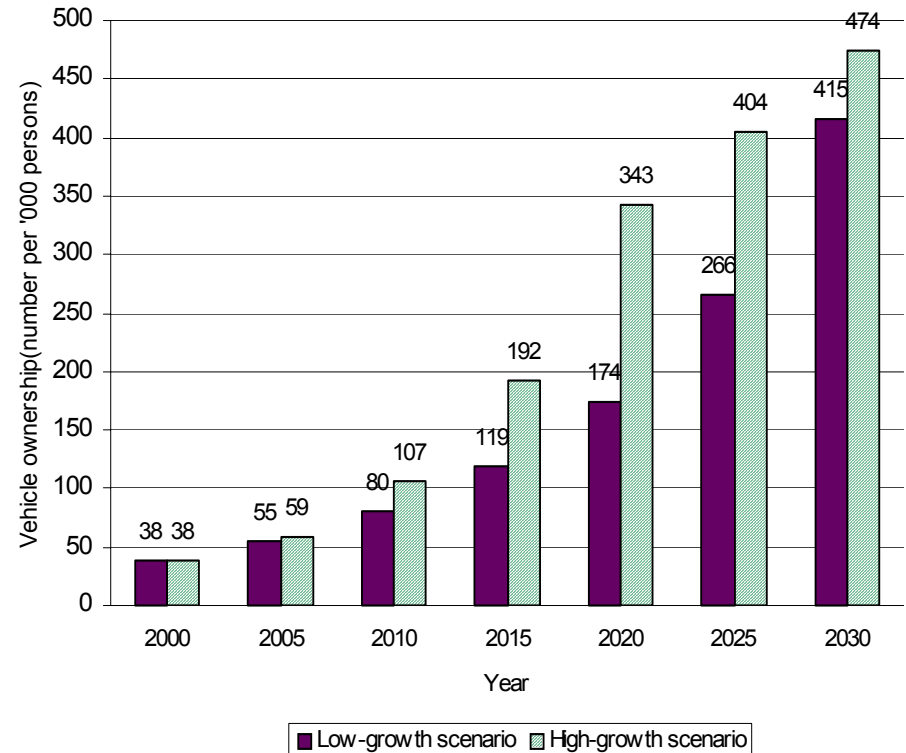
Growth in GDP and Vehicles

Total number of on road vehicles

million

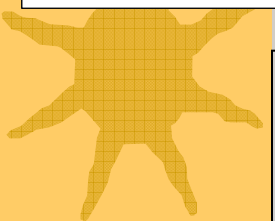


Vehicle Ownership and GDP Growth - Different Scenarios



From 60 million vehicles in 2000

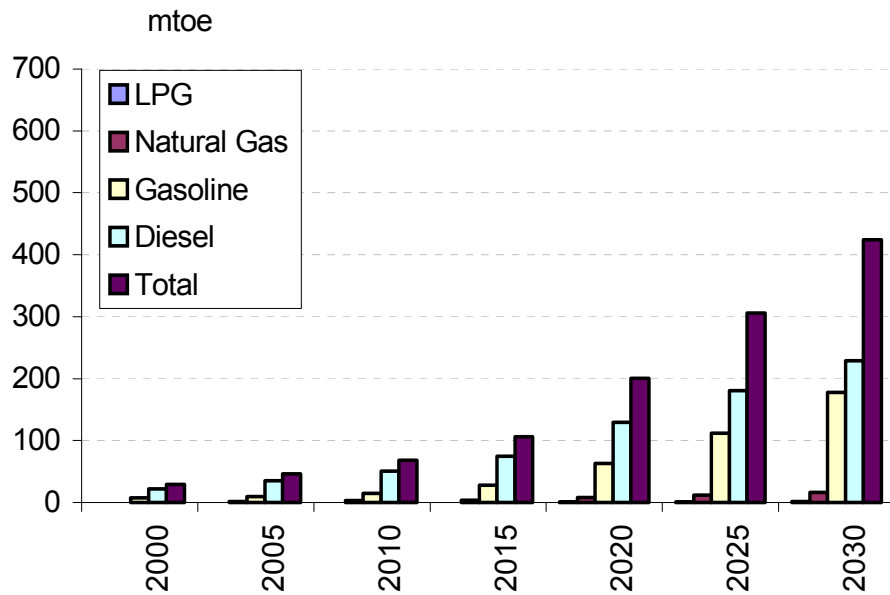
- **537 million in 2030 (6% annual growth)**
- **671 million in 2030 (8% annual growth)**



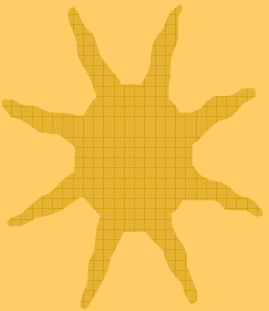
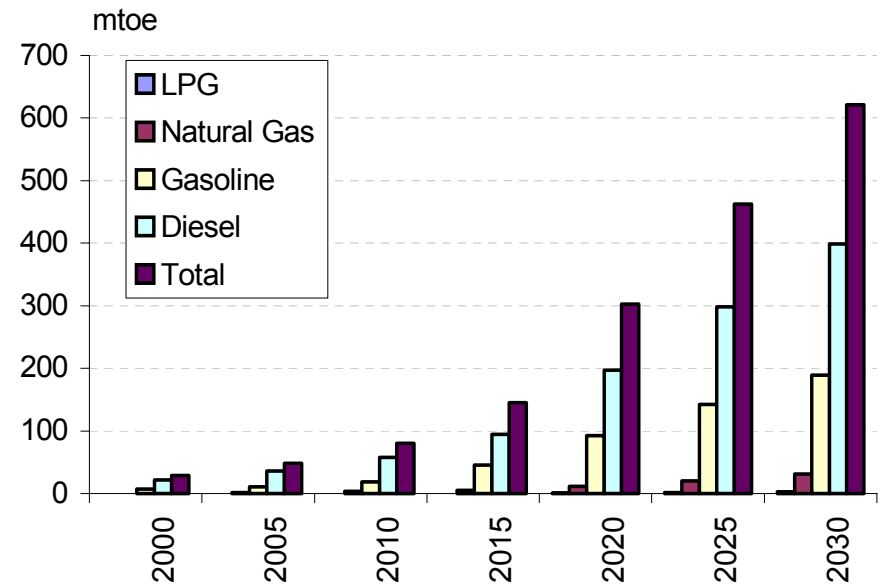


Rise in Auto Fuel Demand

6% GDP growth



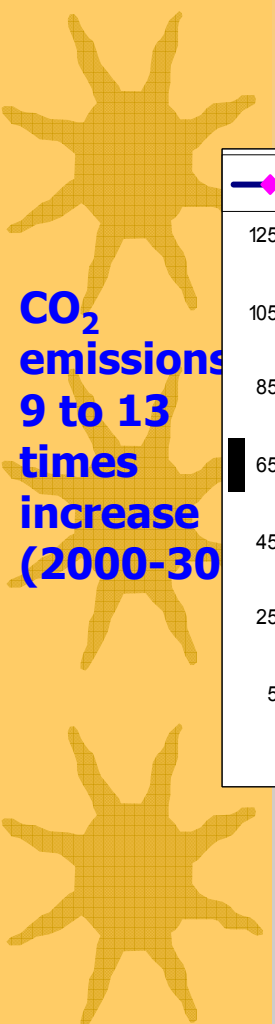
8% GDP growth



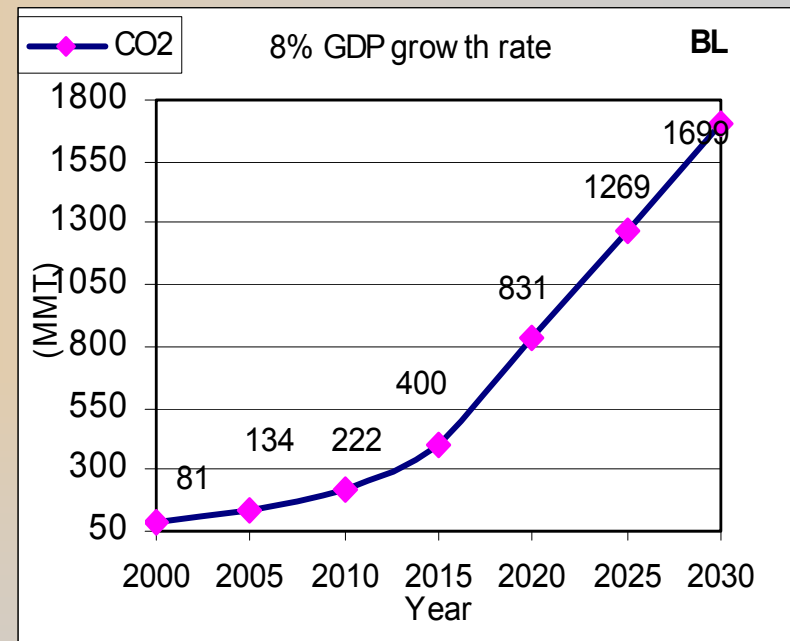
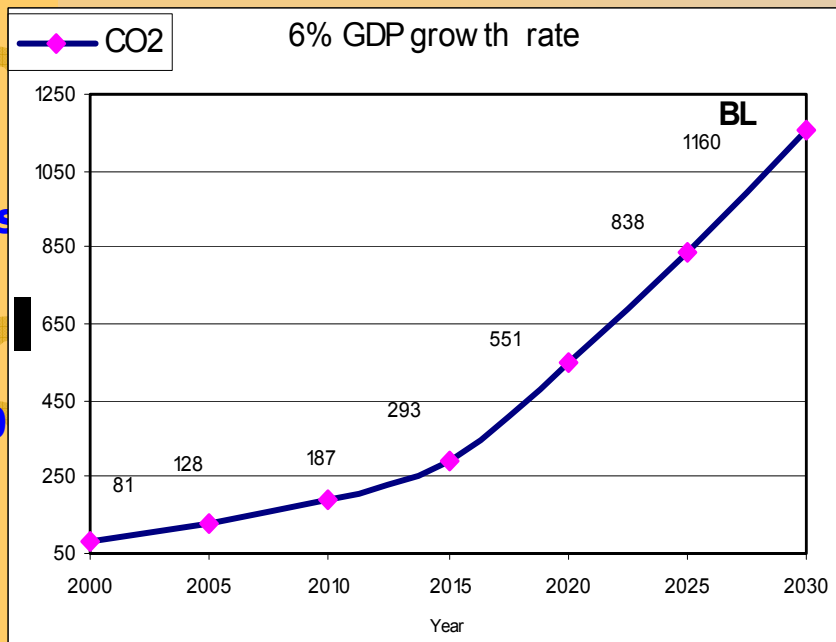
Source: TERI 2006-Paper for ADB



Growth in CO₂ Emissions



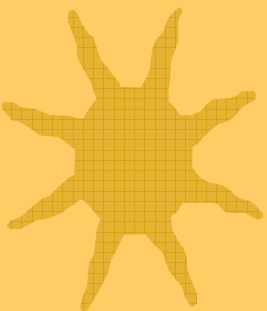
CO₂ emissions 9 to 13 times increase (2000-30)



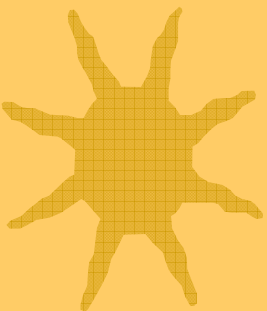
Source: TERI 2006



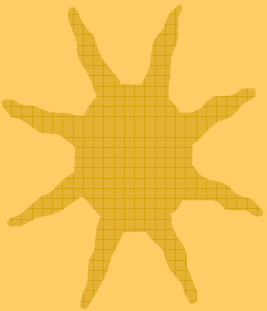
Implications for Energy Security and Climate Change



★ Share of transport in petroleum consumption to increase from 36% in 2001 to 64% in 2030



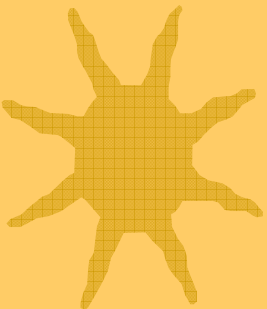
★ Oil import dependency to increase from 76% of 141mt to 93% of 731mt by 2031.



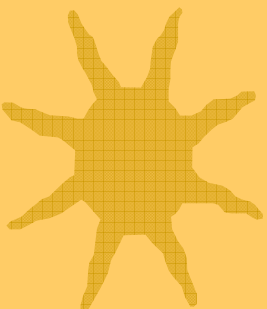
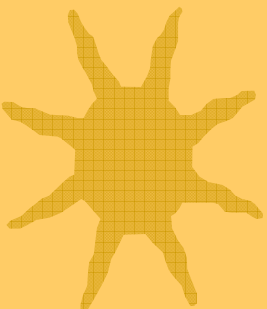
★ Limited fuel switching options for transport sector
– Adverse implications for energy security and GHG emissions



Prioritization of Mitigation Measures

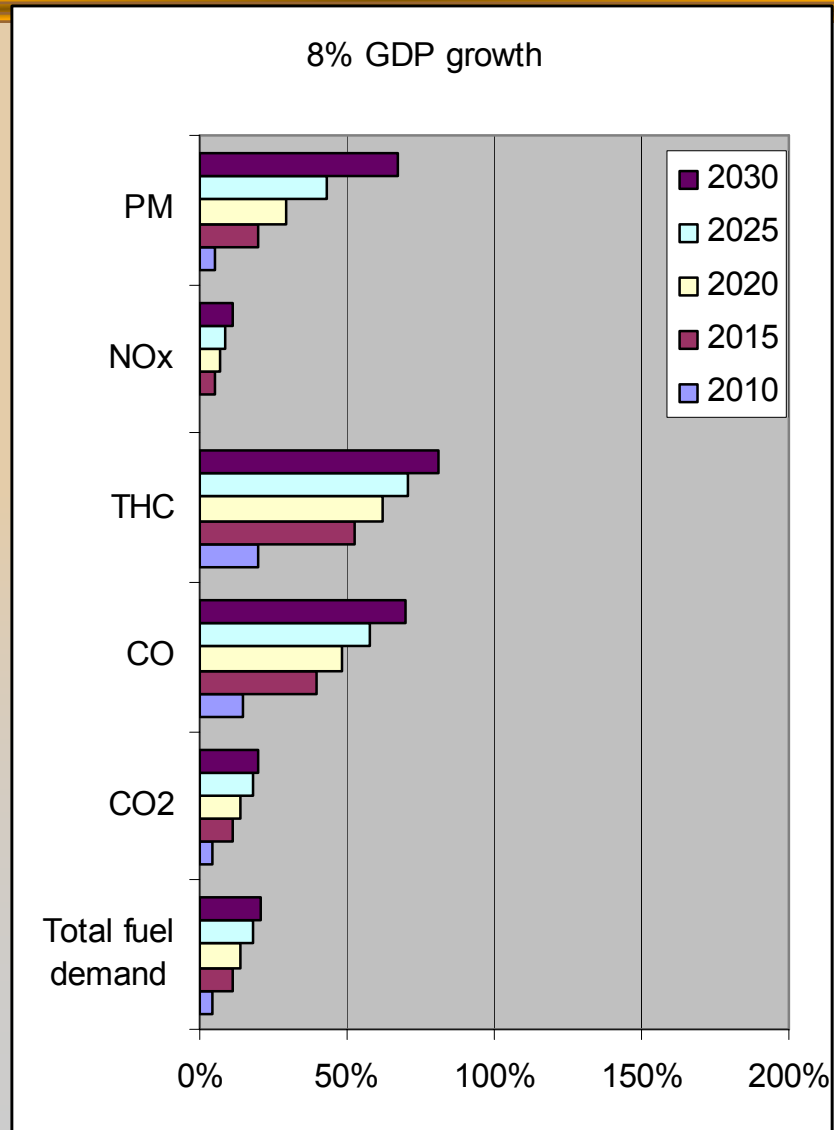
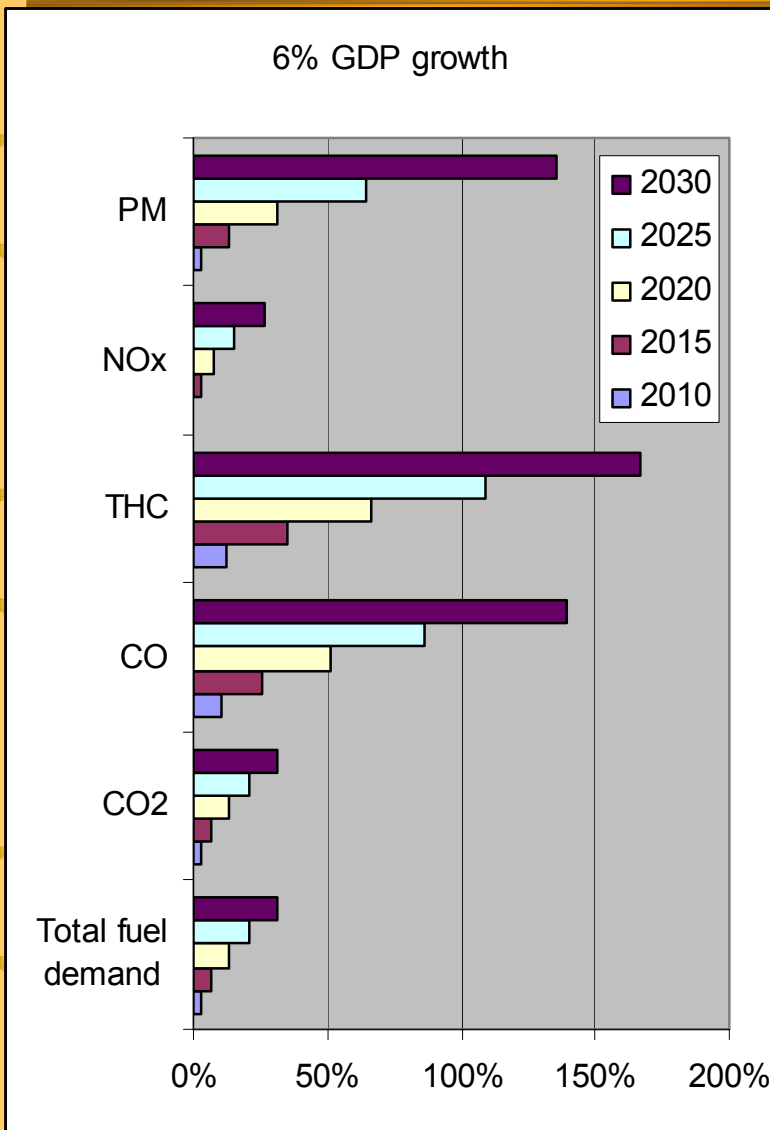


- ★ Multiple mitigation options in the transport sector, but their effect may be counteracted by growth. Mitigation options are faced with many barriers, such as consumer preferences and lack of policy frameworks-(IPCC Fourth Assessment Report)
- ★ Lifestyle changes call for social engineering and will take time
- ★ Increased penetration of public transport through Bus Rapid Transport System seems the most time and cost effective option –within reach of public policy





Impact of Increasing Bus Share on Energy Savings and Emissions





National Urban Transport Policy

To ensure accessible, affordable and acceptable transport through:

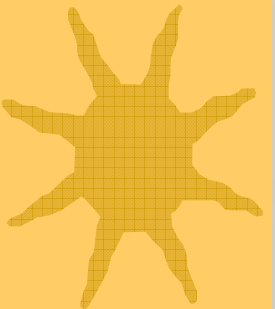
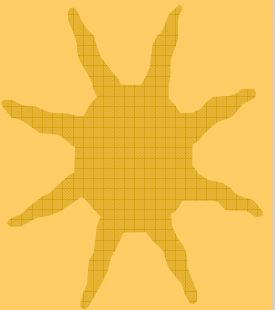
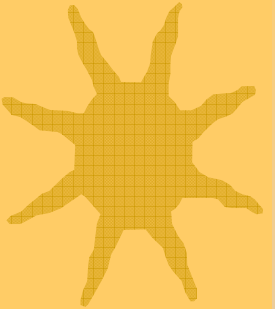
- ★ Integrated land use and transport planning
- ★ Investing in transport systems that encourage greater use of public transport and NMT ; Mass Rapid Transport in large cities
- ★ Reducing pollution levels
- ★ Efficient traffic management

Govt. of India to finance investments in urban transport infrastructure



The JNNURM

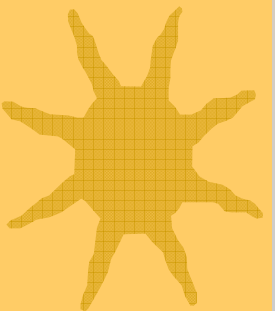
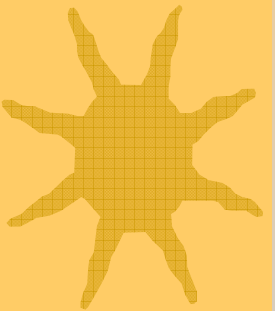
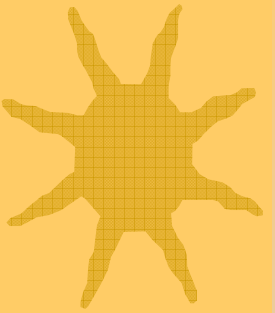
- ★ An initial outlay of Rs.500 Bn (approx.\$12.5Bn.)
- ★ To be implemented in 63 Indian cities
- ★ Public transport an integral element
- ★ Central funding for projects as part of a comprehensive mobility plan





Challenges for City Governments

- ★ Plan for sustainable cities ; integrate land use and transport
- ★ Formulate a transport policy and a comprehensive mobility plan that address the mobility needs of all and sustainability concerns in transport
- ★ Invest in public transport and facilities for NMT
- ★ Manage traffic efficiently and reduce urban congestion, pollution and accidents
- ★ Involve citizens in making their cities and transport systems sustainable





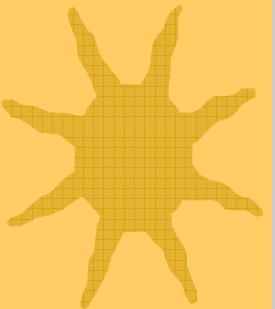
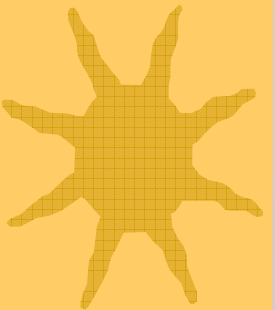
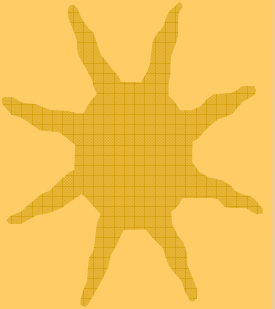
Challenges for National Governments

- ★ Establish an appropriate legal and institutional framework to enable sustainable urbanization
- ★ Empower local governments both functionally and financially
- ★ Build capacity in local governments to plan for sustainable urbanization and transport
- ★ Provide financial support for building sustainable cities and transportation networks
- ★ Enable and facilitate public-private partnerships



Challenges for the Global Community

- ★ Provide technical and financial assistance to support sustainable urbanization
- ★ Fund projects that address local needs and do not impose solutions or technologies
- ★ Share technologies that improve fuel efficiency and reduce CO2 emissions at affordable costs
- ★ Give carbon credit to initiatives in the transport sector to reduce CO2 emissions





Thank You

Climate 2050 Conference, Montreal, 24-26 October 2007