

# **Breakout Group on Good Practice in Setting National Baselines**

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Climate Change Expert Group Global Forum

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# About TERI



Creating Innovative Solutions  
for a Sustainable Future

- TERI's Vision
  - **To work towards global sustainable development, creating innovative solutions for a better tomorrow**
- HQ at New Delhi; regional centers in Bangalore, Goa, Mumbai, Guwahati; field stations at Gual Pahari and Mukteshwar
- Overseas offices in US, UK, Netherlands, Japan, Malaysia, Gulf, and Africa
- Over 900 professionals working in the areas of earth science and climate change, water resources policy and management, sustainable habitat, energy environment technology, industrial energy efficiency, regulatory studies and governance, resources and global security, environmental and industrial biotechnology, social transformation, technology transfer, and sustainable development outreach

# TERI's MARKAL Applications



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- Asia Least cost Greenhouse Gas Abatement Strategy: India Country Report (1998)
- National Energy Map of India: Technology Vision 2030 (2006)
- Mitigation Options for India -The role of the International Community (2008)
- Energy-Economic-Environment Modelling to support climate change assessment and policy-making in India (2009)
- India's Energy Security: new opportunities for a sustainable future (2009)
- National and International Policy Responses to the Carbon Budget Approach: An Indian Perspective(2010)
- TERI is now also assisting other countries
  - **Malaysia in setting up National level MARKAL models to examine BAU and alternative scenarios**



# What can the model address?



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- **Can explore responses to different technological futures, emission limitations & policy scenarios → useful in examining “what if” scenarios to guide policy and technological decision making**
- **Implication on final energy use and related CO<sub>2</sub> emissions due to changed demands & higher uptake of efficient technologies can be examined**

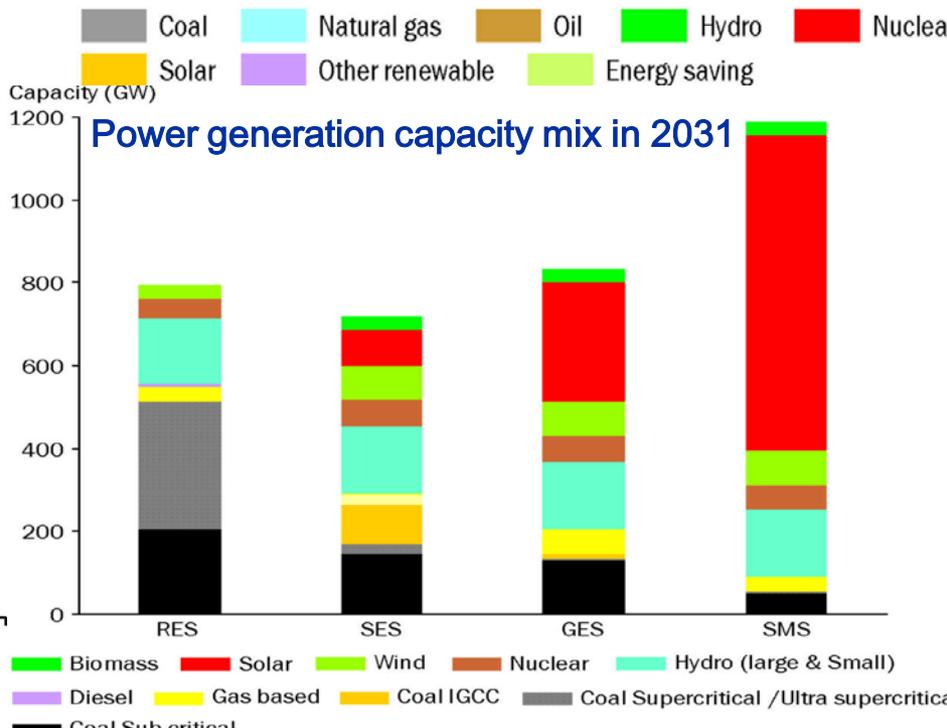
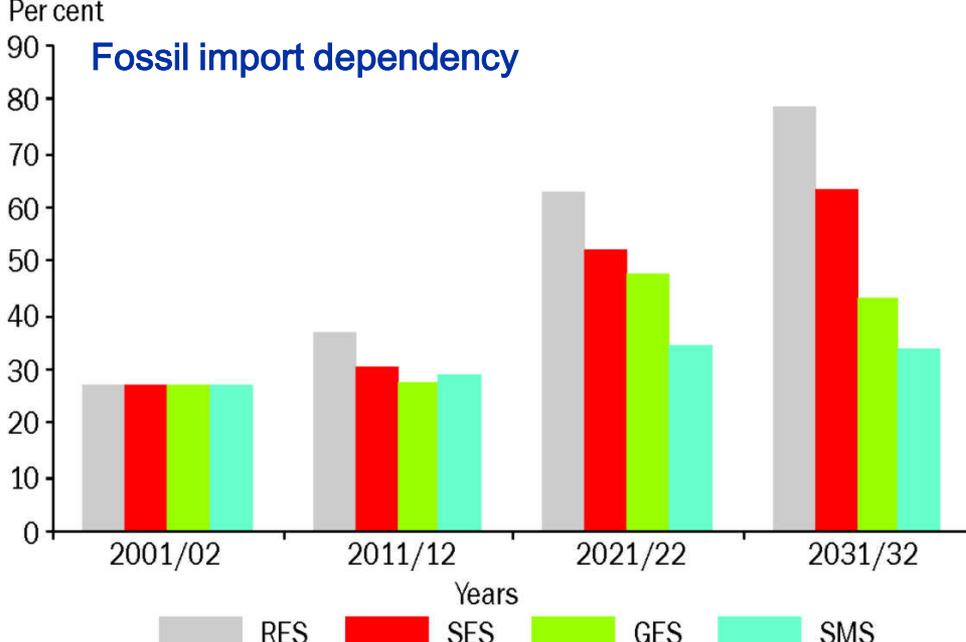
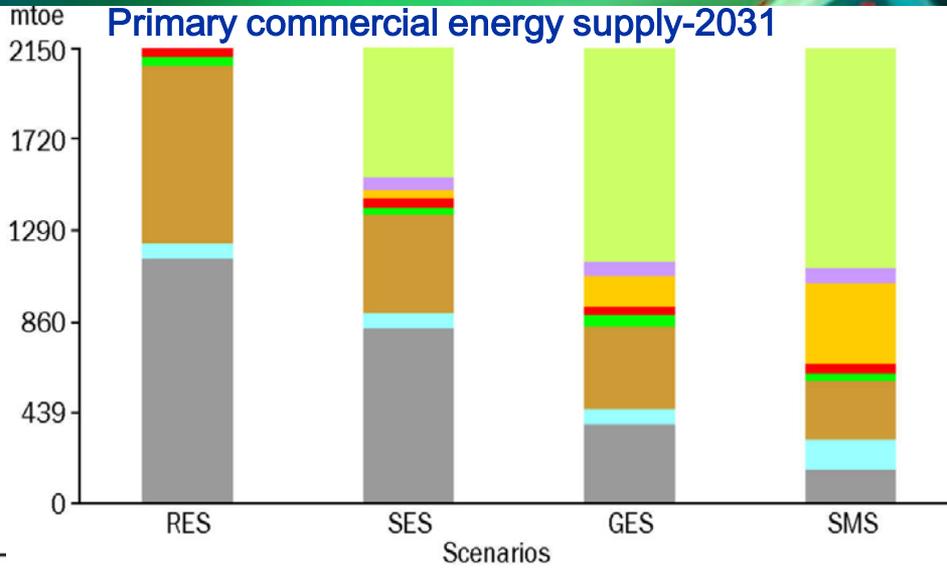
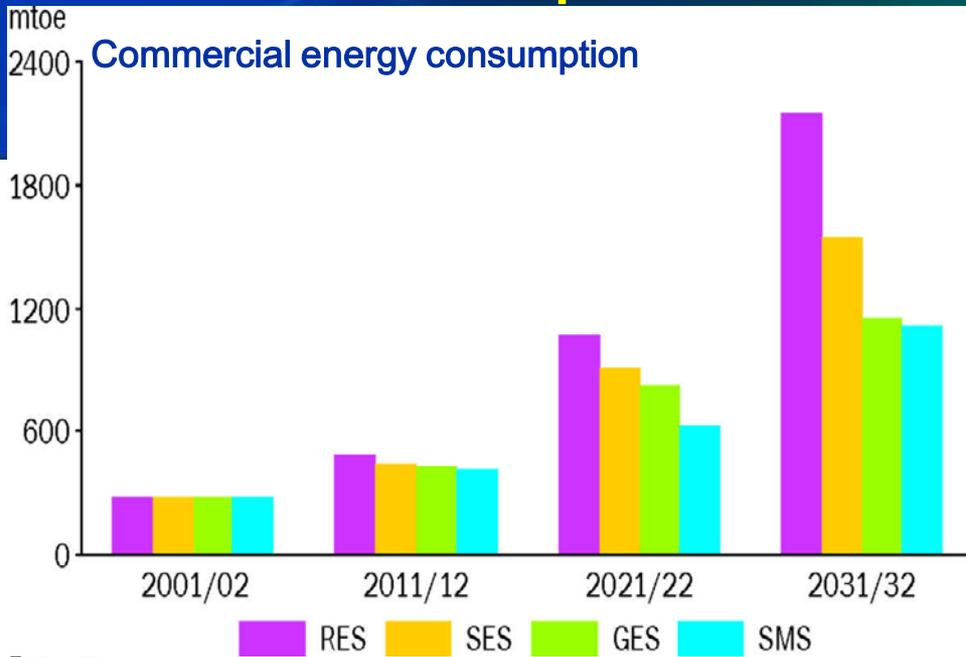
# Scenario Analysis



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Scenario names	Storyline
Reference Energy Scenario (RES)	Life continues pretty much as we know it with autonomous efficiency improvements taking place where feasible and increase in use of renewable energy carrying on at the same pace; and defined policy priorities being implemented with no real sense of urgency.
Sustainable Energy Scenario (SES)	A determined effort is provided here for efficiency improvements both on the supply and demand sides; an accelerated push for renewable energy, nuclear and new technologies such as CTL (Coal to liquids) and GTL (Gas to liquids). Energy Security concerns are paramount in this scenario.
Global Equity Scenario (GES)	This scenario honours the Prime Minister of India's commitment that India's per capita carbon emissions would never exceed those of the developed world and it is optimistically assumed here that the developed world would be able to bring down its emissions to a level of 2 tonnes/capita.
Stringent Mitigation Scenario (SMS)	This scenario considers that India sets aside its legitimate arguments on "common but differentiated responsibilities" and equitable per capita rights, and takes on even more stringent emission reduction targets (reaching 1.24 tonnes/capita in 2031 towards influencing global response to the challenge of climate change.

# So What Shape Can The Future Take?



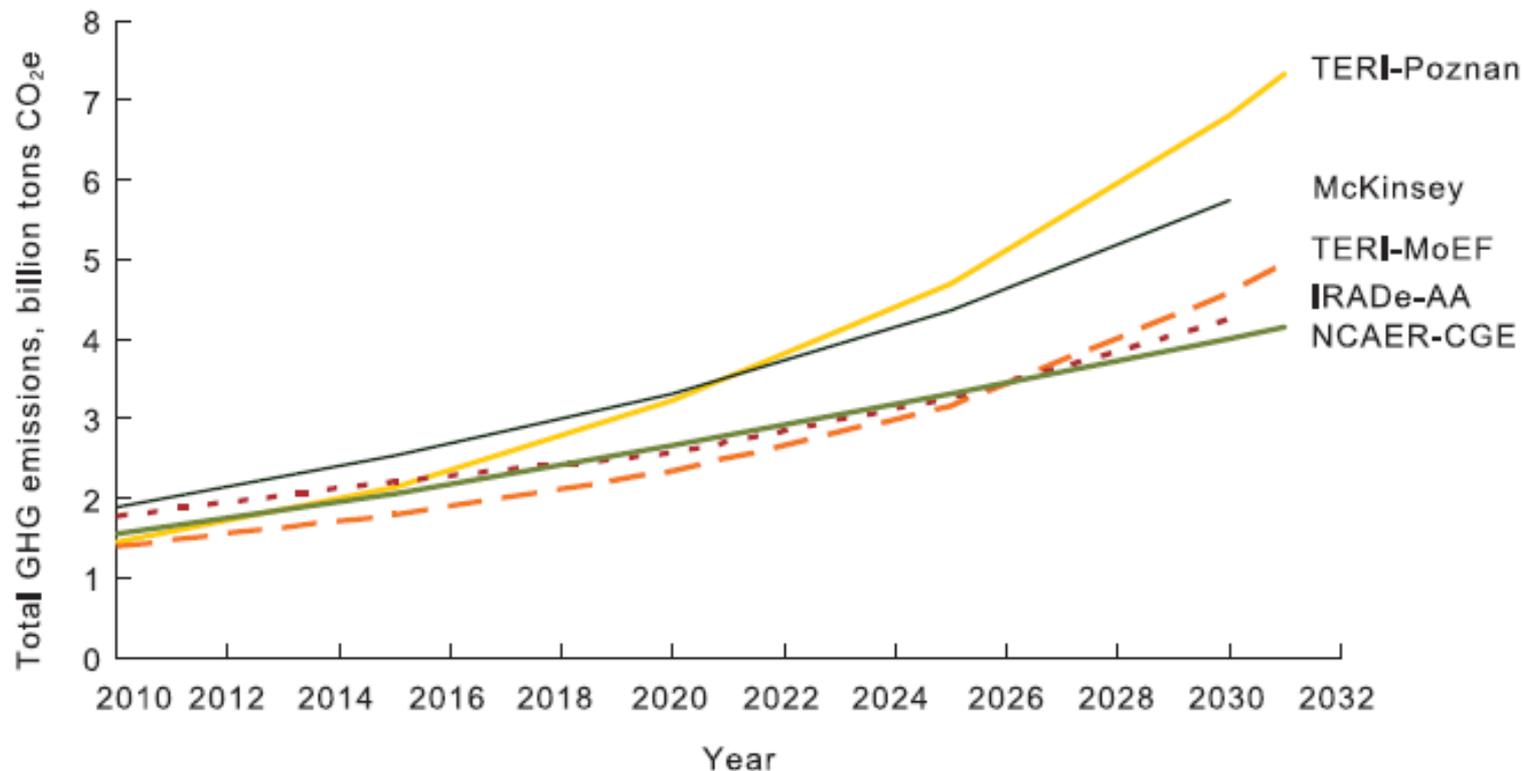
# Emissions Projections for India from 5 Studies in Illustrative Scenarios



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## Total GHG emissions

GHG emissions projections for India from 5 studies in Illustrative Scenarios (2010-2031)





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# Thank You

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