



Indian Institute of Management, Ahmedabad

APEIS Training Workshop


25th Nov- 8th Dec, 2004



India Team




Presentation Agenda

- Indian Data
 - Modification of Model
 - Scenarios
 - Results
 - Future Task
- 



Dataset

- I/O Table , U Matrix, V Matrix
 - Commodities: 115
 - Sectors: 35
 - Energy Commodities: 6
 - Energy Sectors: 6
- 



Modification of the Dataset

- Sector definitions
- Commodity definitions
- Creation of Fixed Capital Formation Matrix
- Emission Coefficients





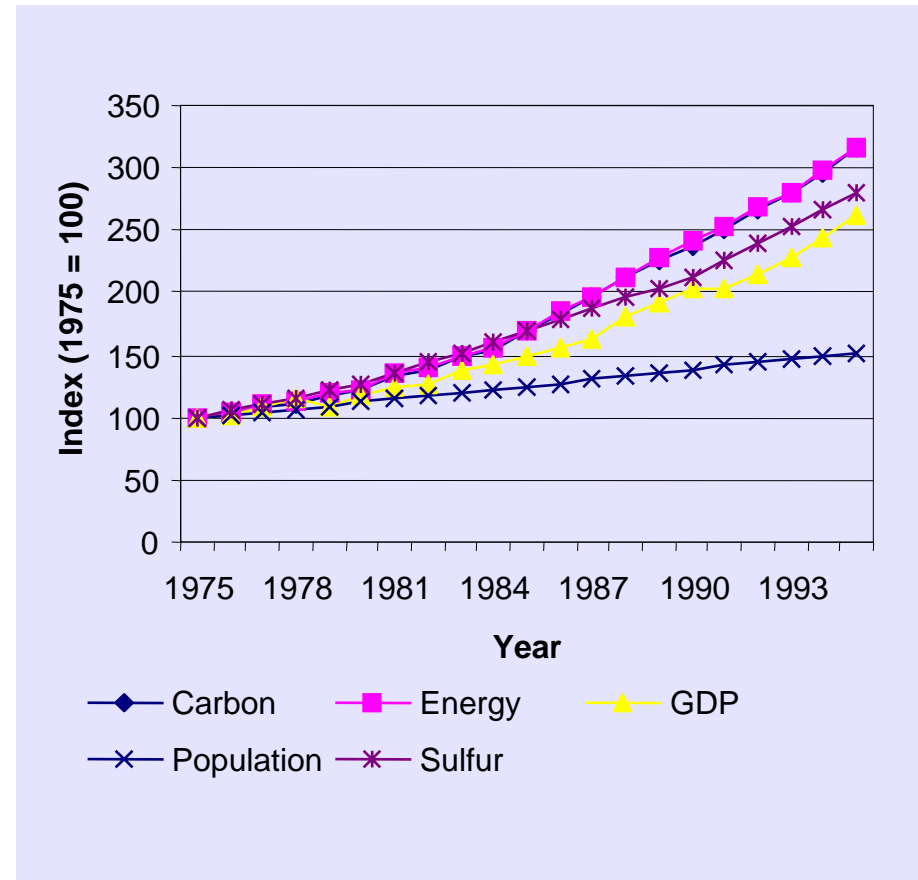
Scenarios

- BAU
- High growth
- Low growth
- Efficiency improvement

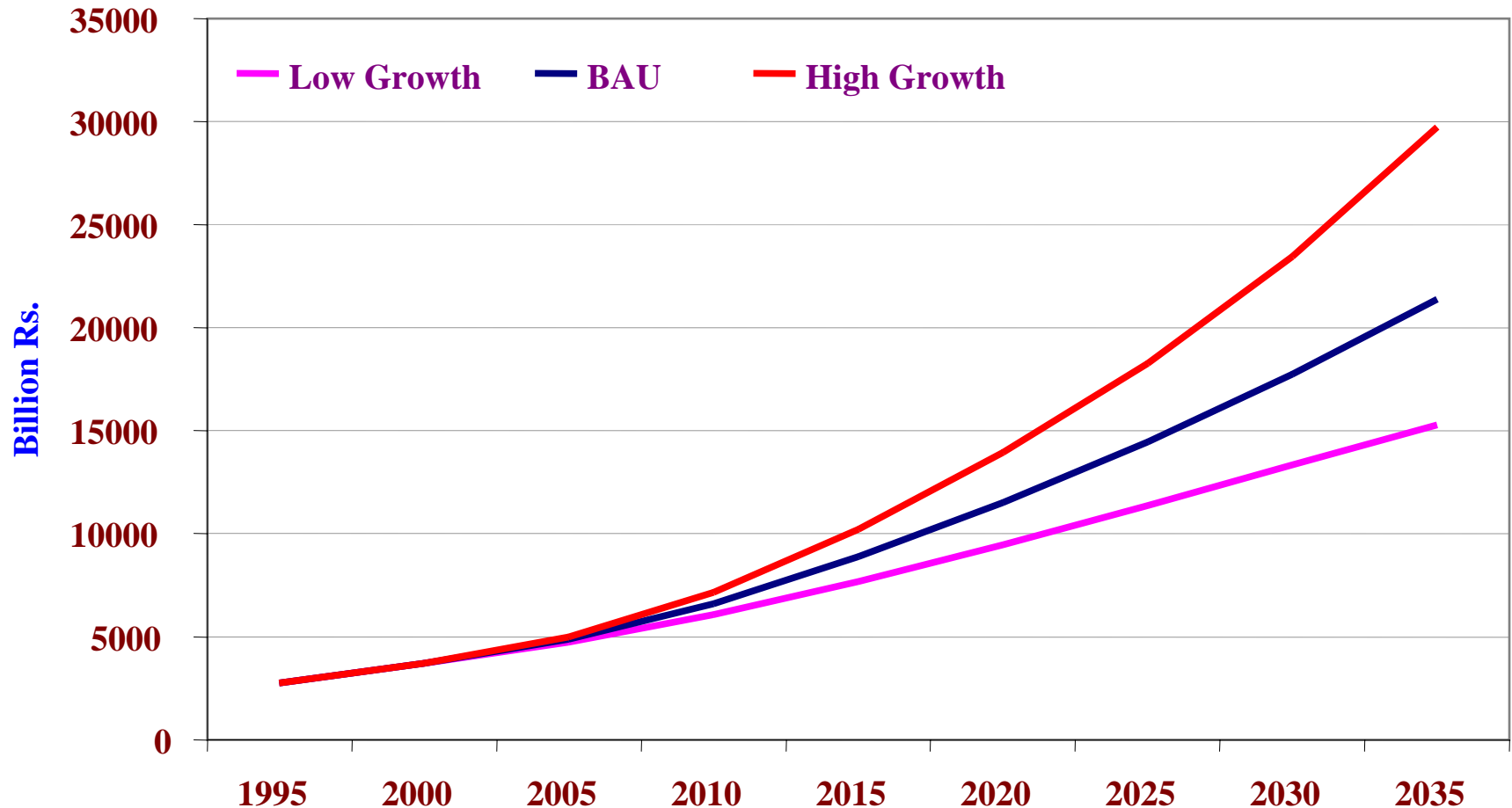


Economy, Energy and Environment

- Energy consumption and emissions have grown faster than GDP
- Strong linkage between energy and carbon emissions
- Synergy between economic, energy and environment policies



GDP Projections (from Bottom Up Analysis)



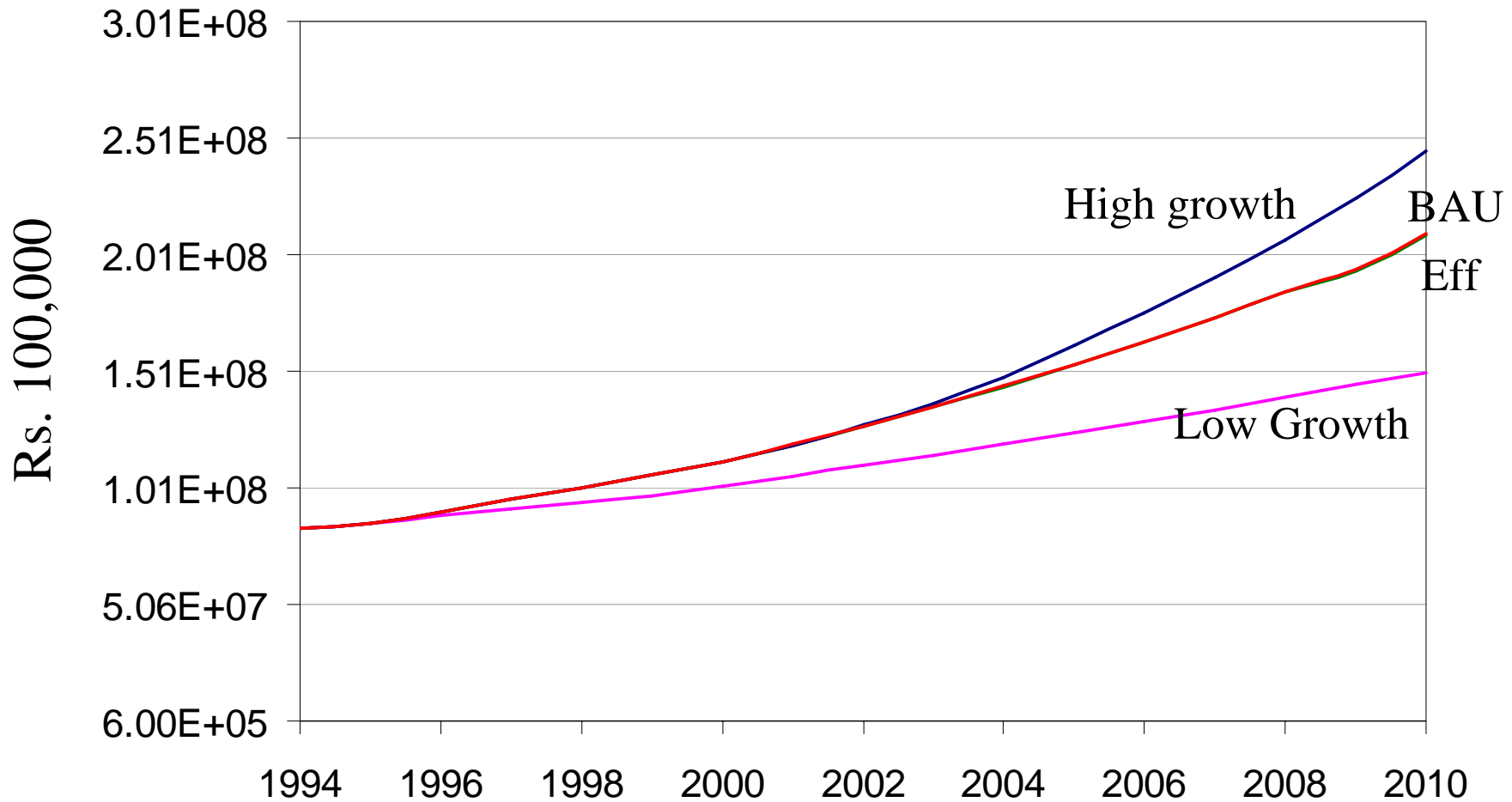


Hypothesis

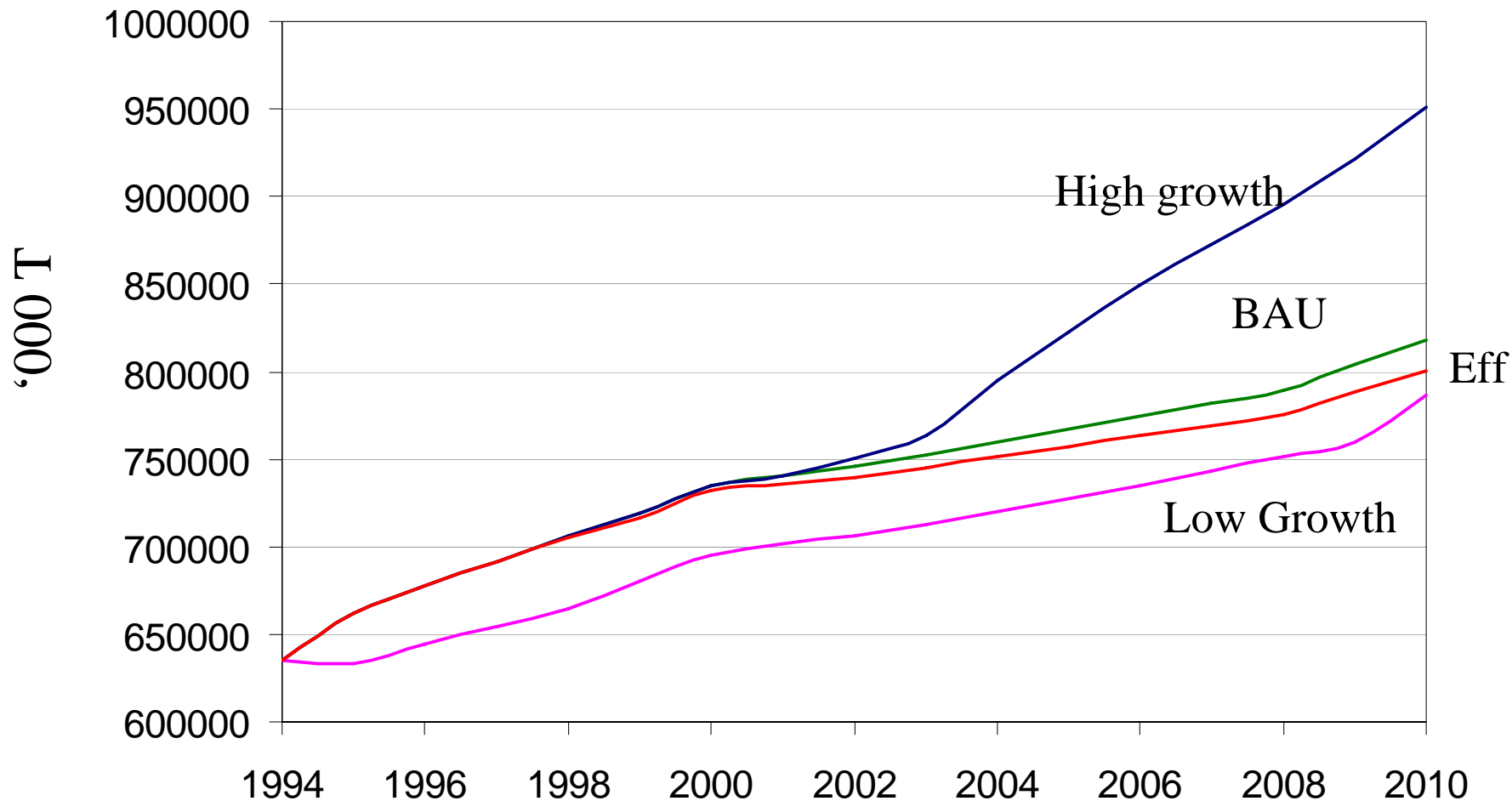
- Higher GDP – Higher emissions
- Lower GDP – Less emissions
- Higher Efficiency – Less Emissions



GDP Projection



Results (CO₂ Emissions)





Policy Options

- Promote Efficient Technologies
- Fuel Switch
- Innovation



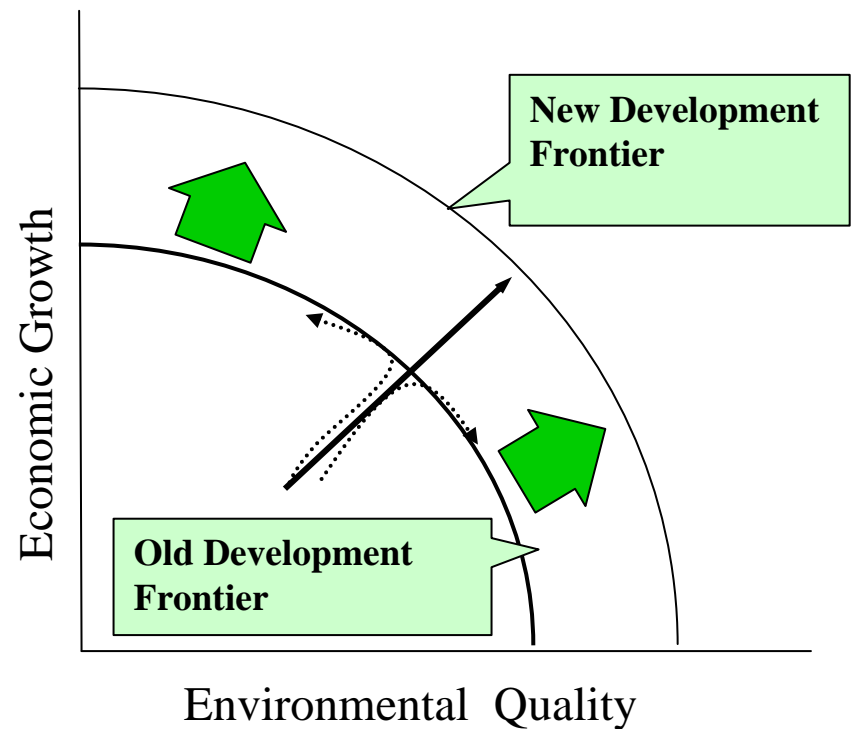
Policies for sustainable development

Existing development path

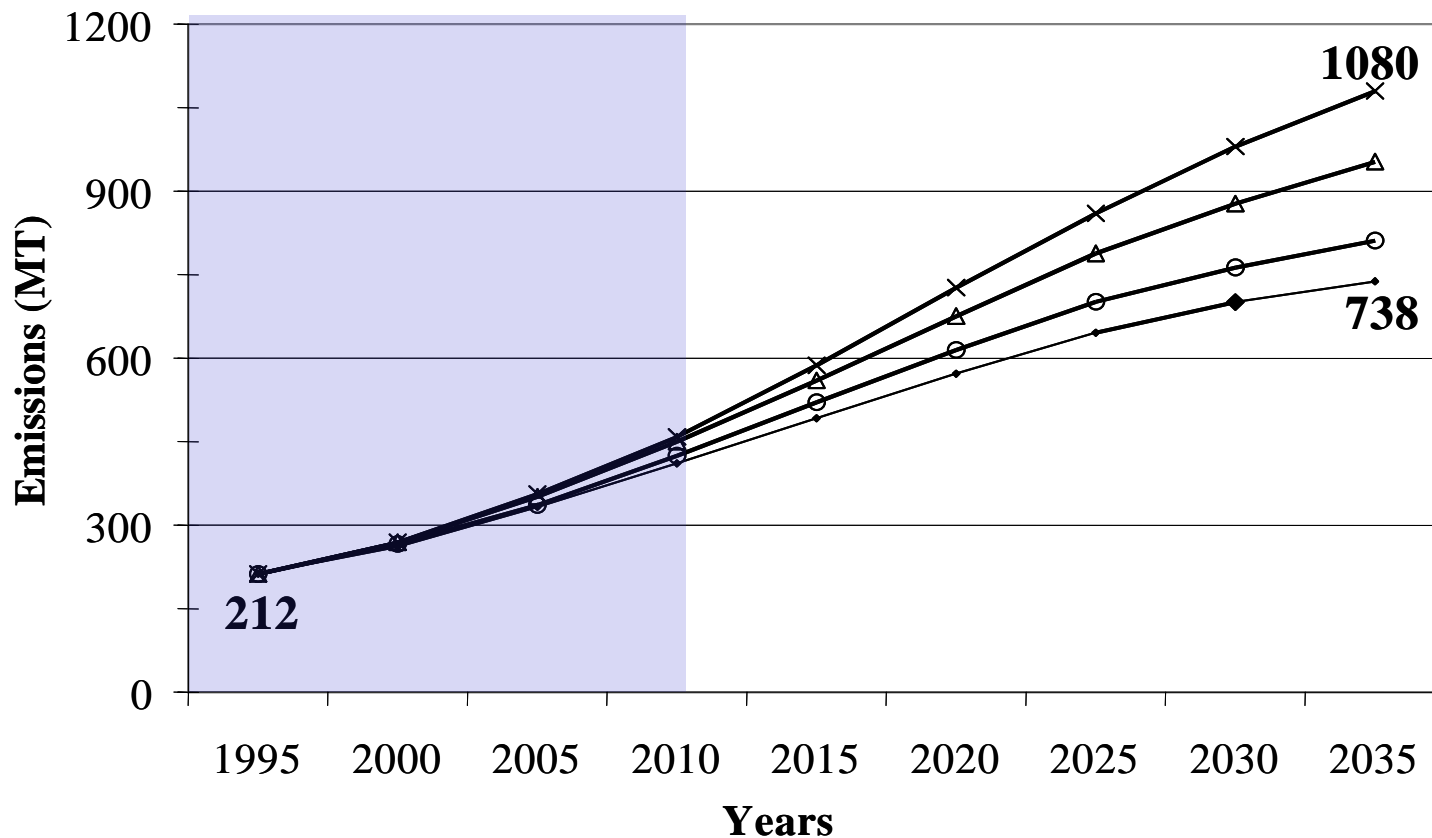
- Creates tradeoffs
- Lock-in of technologies
- Path dependencies

Bifurcate the path

- Development policies with positive environment spillovers
- Technological innovations
- North-South investment and technology flows



Comparison of Results



—○— Reference case

—◇— Autonomous Energy Efficiency Improvements

—△— Technological freeze

—×— structural conversion of economy



Learning's from this workshop

- Understanding
 - the AIM group of models
 - Top down model: CGE
 - Difference between top down and bottom up models





Learning's from this workshop

- CGE
 - Static
 - Dynamic
 - Tax
- Develop base model AIM/CGE for India
- Importance of Strategic Database





Future Tasks

- Preparation of better database (Calibration)
 - Project till 2030
 - Analysis of Scenarios
 - Introduction of Tax
 - Introduction of rural/urban divide
 - Introduction of other gasses
 - Comparison of results with other developing countries
 - Linking AIM/ End-use and AIM/CGE Model
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