

# *Current & Future IPCC Assessment of Emissions Scenarios*

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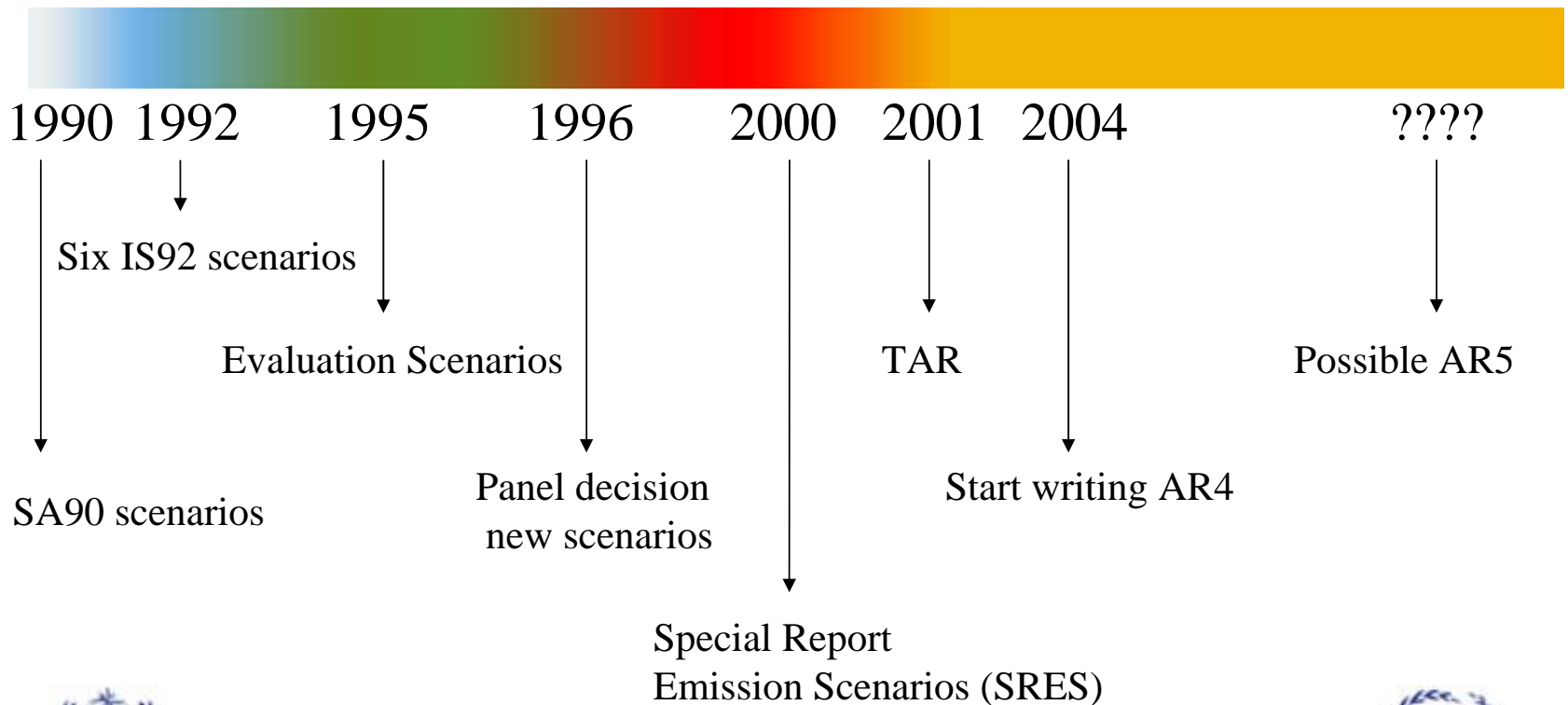
U.S. Climate Change Science Program Workshop  
Session 2: Evaluating Assessments  
Washington, DC. 14 Nov 2005



# Outline

- Past IPCC efforts on scenarios
- Current Fourth Assessment Reports
- Recent consideration by IPCC on New Scenarios and possible directions
- *Scenario*: “representation of key features of human and/or environmental systems in order to represent the evolution of the system under alternative assumptions, such as population, economic growth, technological change and environmental sensitivity.” *IPCC TAR, Chap 2*.

# Previous developed and used scenarios by IPCC



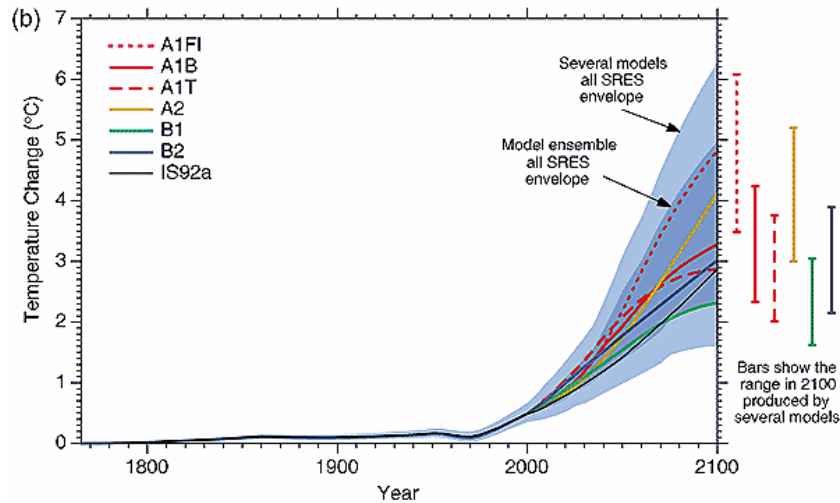
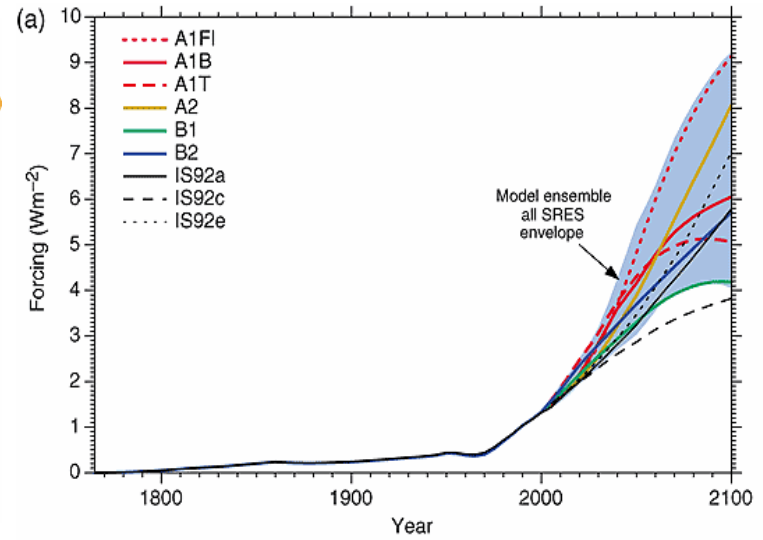
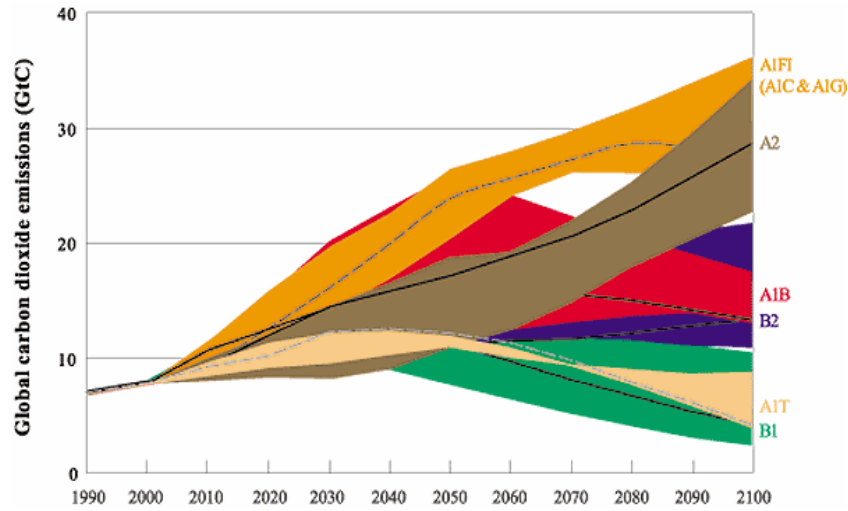
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INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

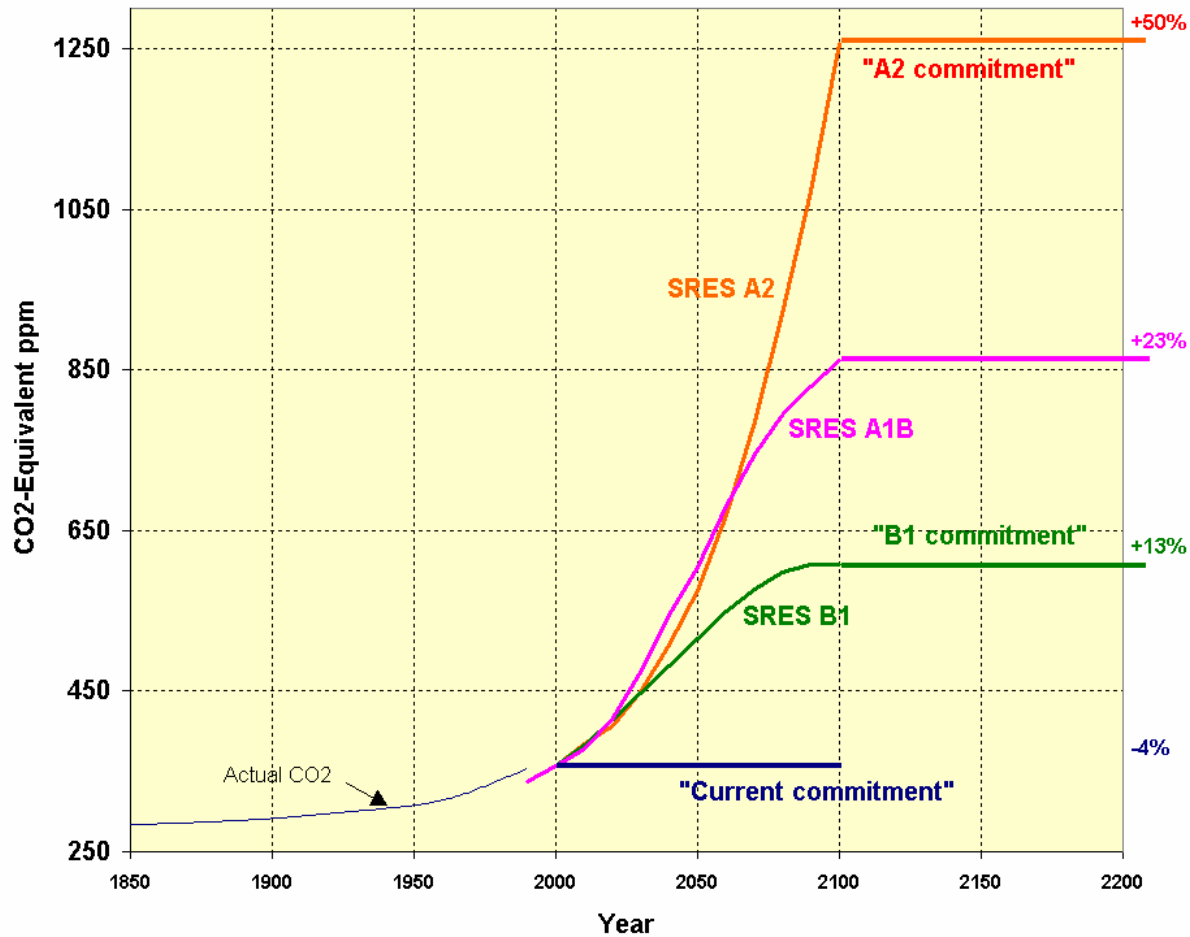


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# Scenario Causal Chain

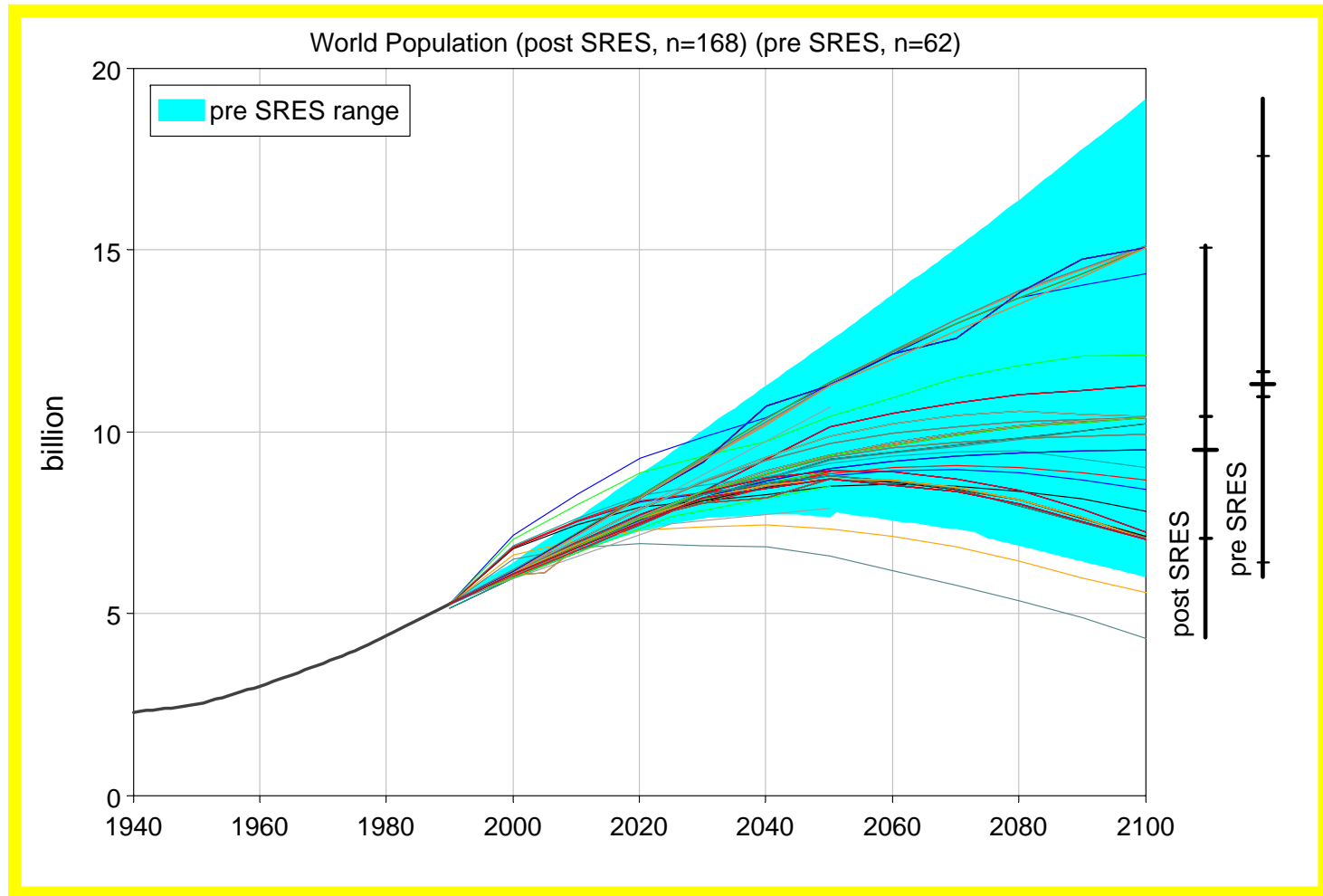


# AR4 Physics Tests – CO<sub>2</sub> Equivalents

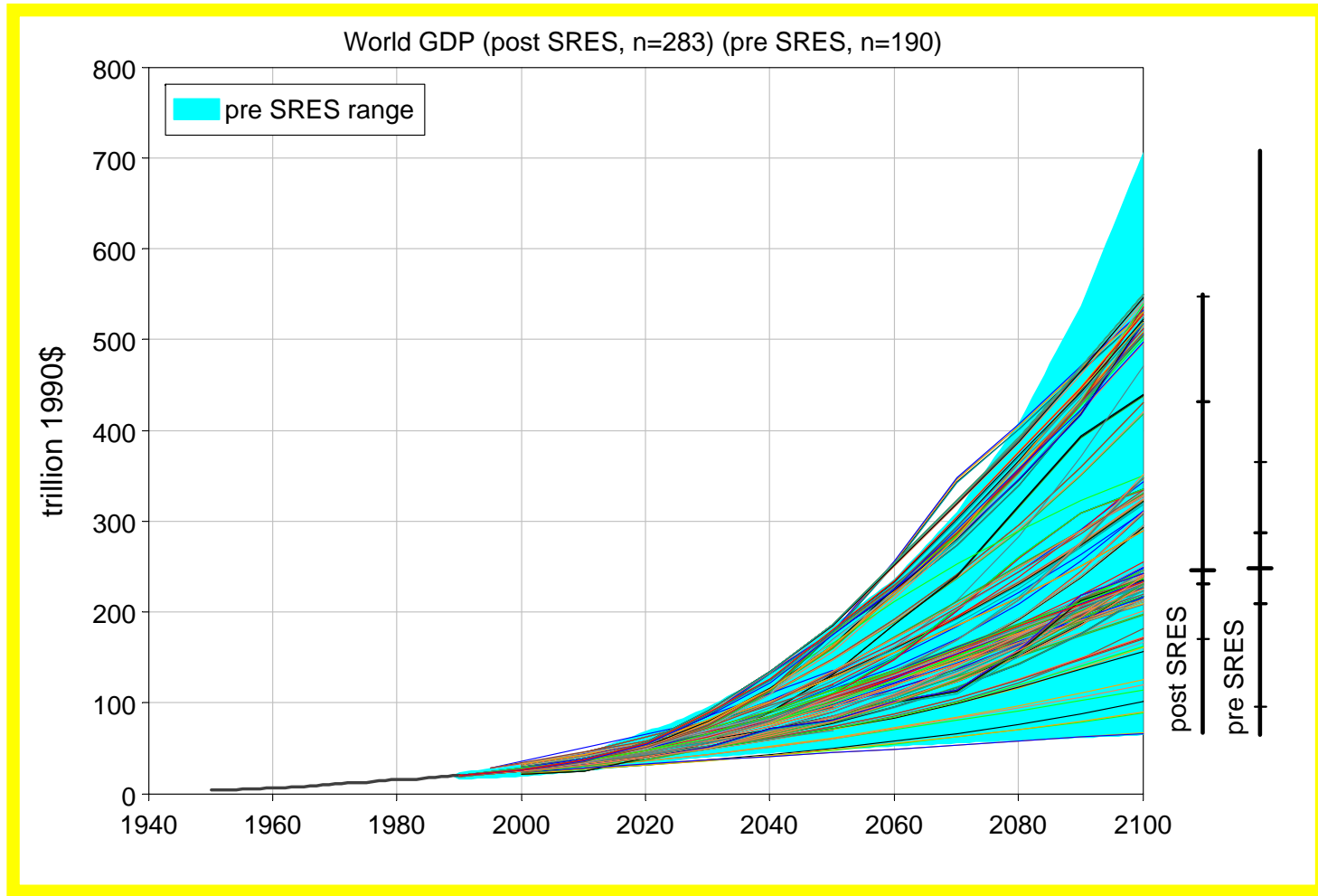


The relative effect of radiative forcing due to non-CO<sub>2</sub> GHGs and aerosols varies with scenario.

# Global Population Projections Range Across Emissions Scenarios

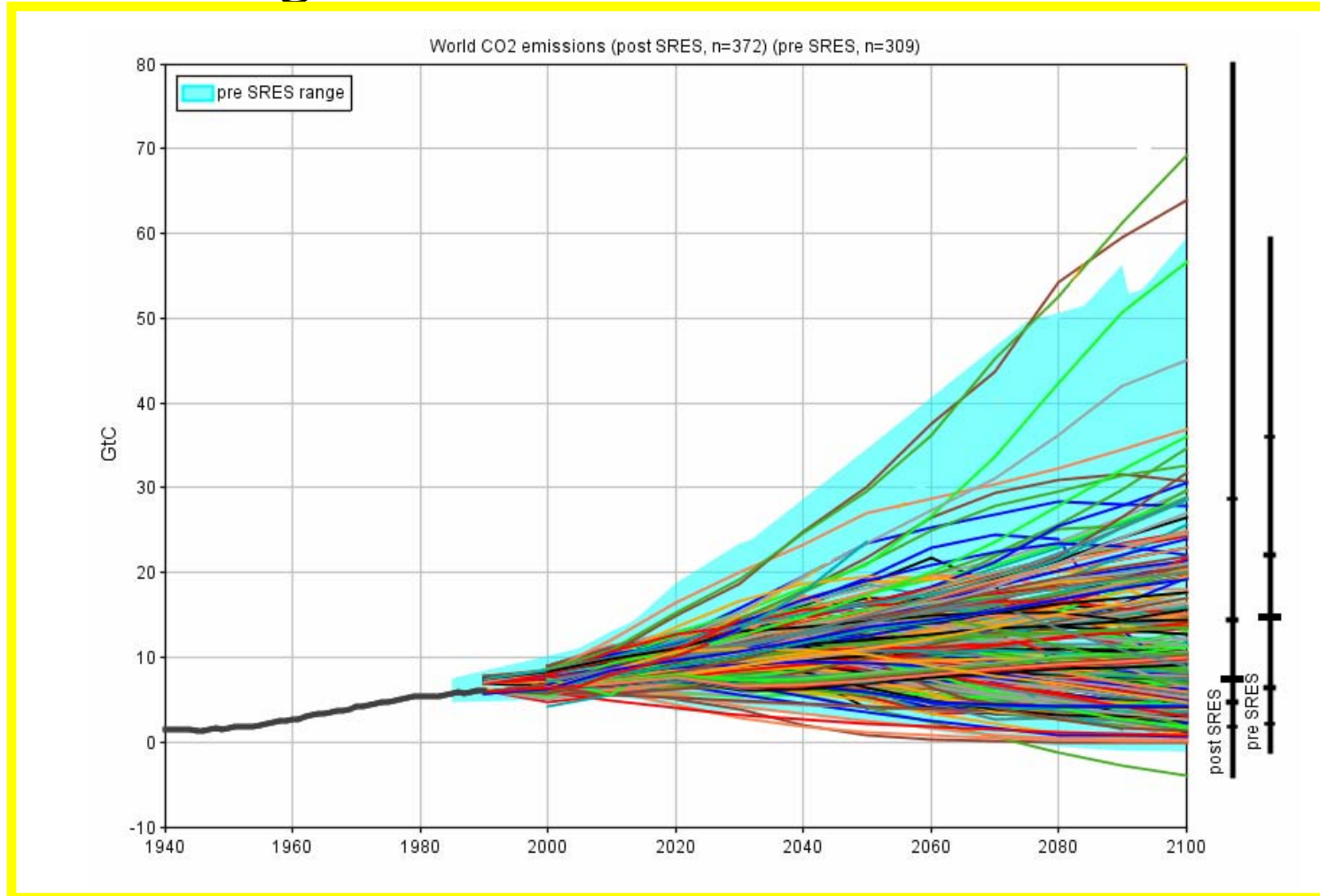


# Gross World Product Range Across Emissions Scenarios



# Carbon Emissions

## Range Across Emissions Scenarios



Source: Scenarios Database, NIES



# Expert Workshop on New Emission scenarios Laxenburg June 2005

- Evaluate the future user needs and requirements of the various user communities and to assess to what extent current and past IPCC scenarios have fulfilled those needs.
- Identify what kind of scenarios could meet these user requirements (in light of the state of the art of scenario development and quantitative modeling of scenarios).
- Propose and evaluate options for the role of the IPCC in the development of new scenarios that would become available for research and assessment for the AR5.



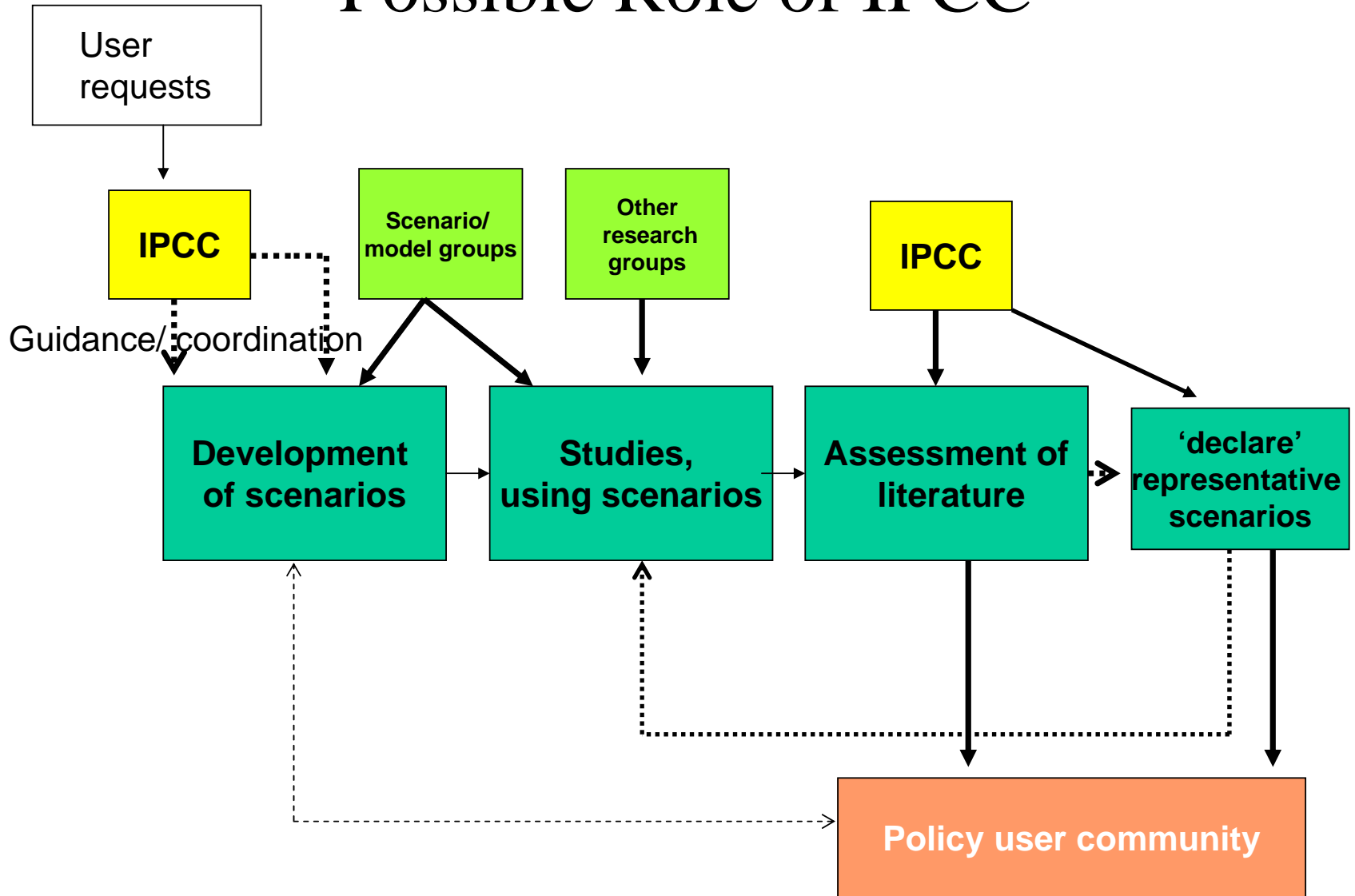
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# Possible Role of IPCC



Source: Laxenburg Workshop Report

# Decision at IPCC-24

- There is a need for new emissions scenarios, to be produced by the scientific community, with facilitation or coordination by the IPCC, to be available before a possible AR5.
- A Task Group be set up for the purpose of further defining:
  - IPCC facilitation or coordination with the scientific community for development of scenarios.
  - Deliverables of the emission scenarios development process, drawing on the user needs and scenario characteristics as outlined in the Laxenburg Workshop
  - Process and timeline that should be followed for the development and use of the new emission scenarios.
  - Organizational arrangements and a timetable for IPCC's own activities.
  - To consider the possibility of encouraging, but not itself facilitating, a wider family of non-climate scenarios within which emissions scenarios might sit.
- The Task Group will organize an Experts Meeting March 20-22 and then formulate a plan of work and present this to IPCC-25 for decision-making



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



## U.S Government View:

*Organize a process with the scientific community for developing new scenarios (driven by the modelers)*

- International modeling community is now much larger and is attracting specialists from diverse fields
  - ENSEMBLES (Europe)
  - Project and the Innovation Modeling Comparison Project (Europe)
  - Asian-Pacific Integrated Modeling consortia (NIES-Japan)
  - Energy Modeling Forum (International)
  - U.S. Climate Change Science Program
- Future assessment activities should engage the best people that the field has to offer as authors and reviewers of the state of the science.

## U.S Government View (cont.):

- Follow the experience of AR4 where Lead Authors are now assessing the available literature published after SRES.
- IPCC should not try to push the field in any pre-determined direction.
- Beyond assessment, IPCC could support the modeling community's effort to develop new scenarios:
  - Organize a Workshop or Meeting to (a) solicit input from various groups on their needs and useful approaches for scenario development; or (b) help foster communication between and coordination across user and developer groups
  - Provide straightforward, non-prescriptive guidance and formats for researchers to facilitate reporting of results and key assumptions to aid future assessments