

The IPCC Special Report on Carbon dioxide Capture and Storage

Heleen de Coninck

Technical Support Unit IPCC WG III (Mitigation)

4th Annual Conference on Carbon Sequestration

Alexandria, Virginia, 2 – 5 May, 2005



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



About IPCC

Established by WMO and UNEP 1988:

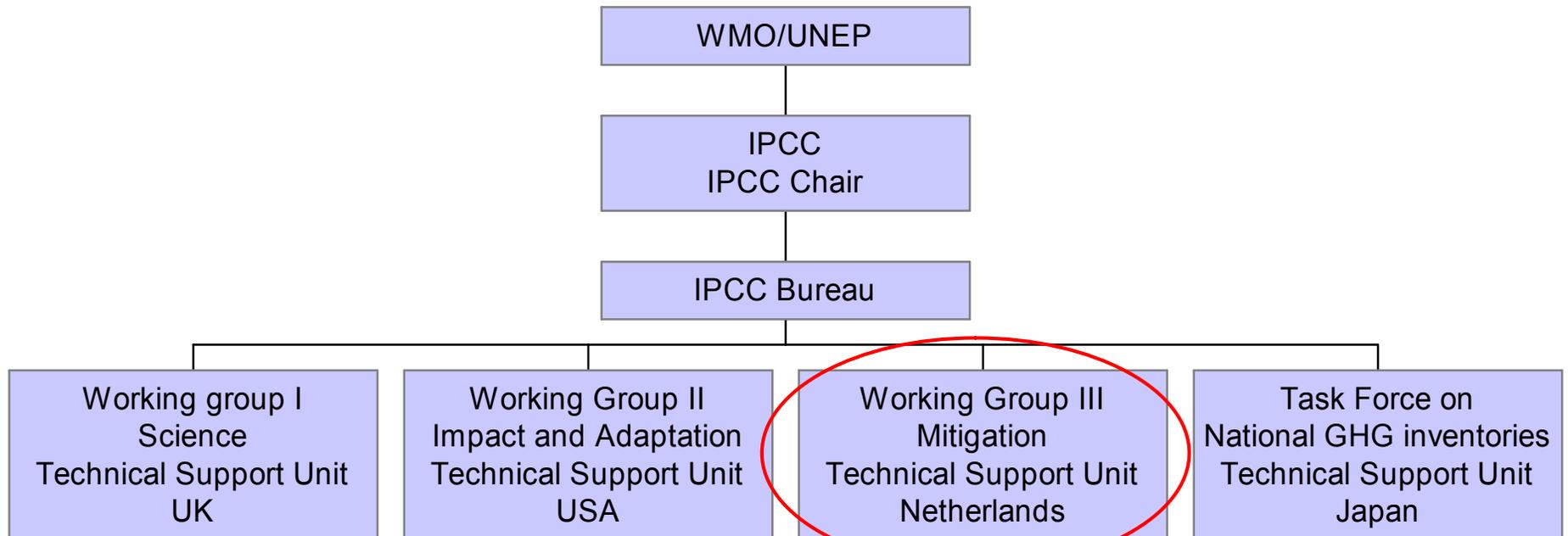
- Assess scientific, technical and socio-economic information on climate change, impacts and options for adaptation and mitigation
- No research, no monitoring, no recommendations; policy relevant but not policy prescriptive
- Publication of reports
- Extensive review processes of its reports
- Support to UNFCCC



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



About IPCC: organisation



Co-ordi
CO₂ capture and storage

Co-chairs WGIII: Ogunlade Davidson (Sierra Leone) & Bert Metz (Netherlands)



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)





INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



IPCC's quality checks

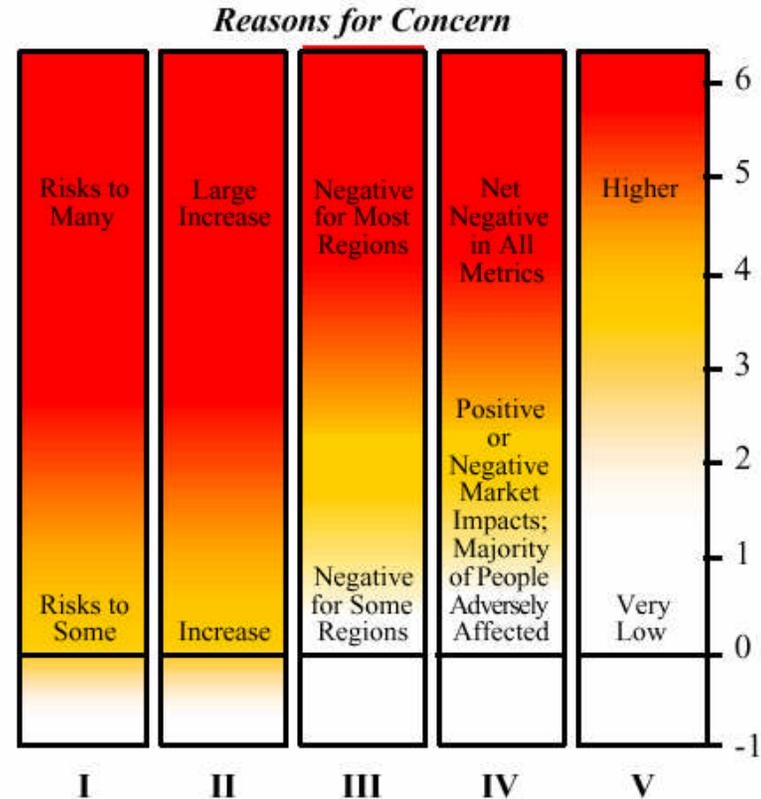
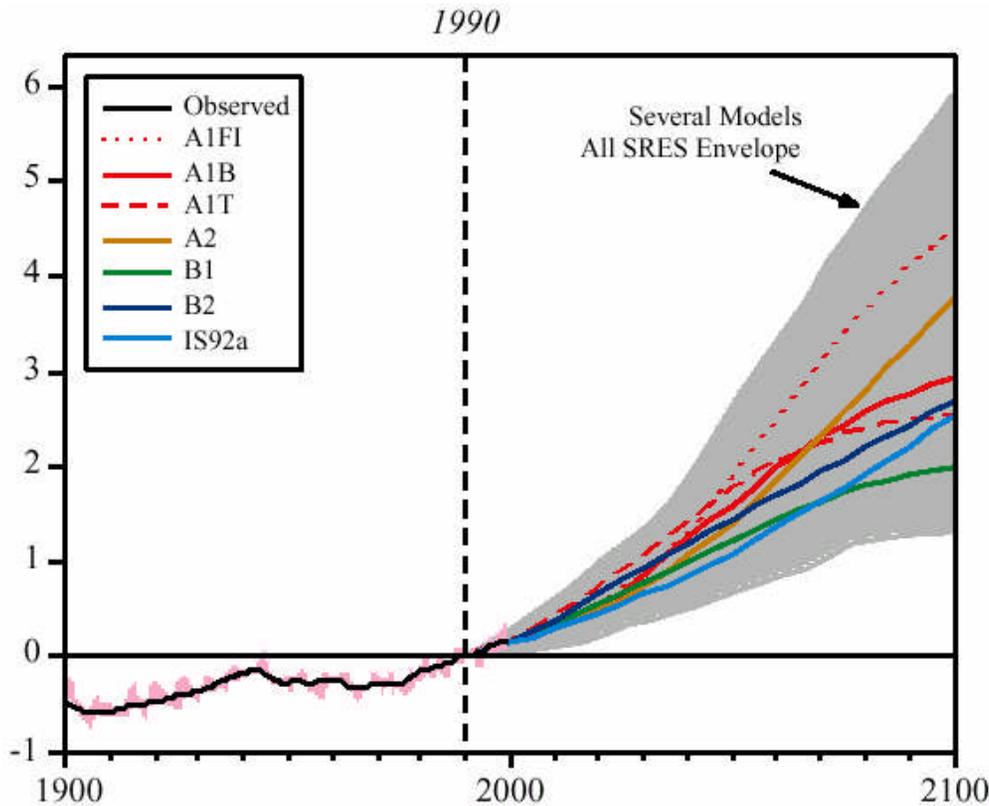
- Peer-reviewed literature only
- Policy relevant, not policy-prescriptive
- Involvement of scientists from all over the world
- Two main review rounds, with hundreds of reviewers
- Comments seriously addressed; process considered by Review Editors
- Governments also reviewers
- Eventual line-by-line approval of the Summary for Policymakers
- Result: an authoritative, balanced document with much impact



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



Products of IPCC



Source: IPCC
TAR, 2001

- I: Unique and threatened systems
- II: Extreme climate events
- III: Distribution
- IV: Aggregate impacts
- V: Large-scale discontinuities

IPCC on capture and storage of CO₂

IPCC Third Assessment Report (2001): a “new mitigation technology”

- “Serious mitigation option”
- Capacity not restraining (~ 5700 GtCO₂)
- Costs are estimated competitive with other mitigation options at ca. 40 – 60 US\$/tCO₂
- Safety and verification noted as problems
- Significant cost reductions for achieving stabilisation scenarios



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



IPCC on capture and storage of CO₂

Workshop in November 2002:

- Relatively small niche market for CCS technologies in the absence of a CO₂ emissions mandate
- CCS technologies' deployment accelerates as carbon permit prices rise
- Ultimate deployment of this class of technologies could be massive, depending on the stabilization scenario assumptions
- More attention needed for barriers and uncertainties



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



The Special Report on Carbon dioxide Capture and Storage (SRCCS)

- Lots of new information available
- CO₂ capture and storage is or will soon be implemented in many countries, e.g. to meet Kyoto obligations
- Request from UNFCCC for a technical overview
- Involvement of 100 authors and 20 Review Editors
- Is supposed to address many of the barriers – and may even arrive at different conclusions as the IPCC Third Assessment Report



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)



Contents of the SRCCS

- Only anthropogenic CO₂, so no terrestrial or biological sequestration
- Starting point: chain approach
- CO₂ source → capture → transport → storage
- Related issues: costs, environmental impacts, safety
- Context: public acceptance, inventories
- Storage types: geological storage, ocean storage, mineral carbonation, industrial use of CO₂

Contents of IPCC SRCSS

1. Introduction
2. Sources of CO₂
3. Capture
4. Transport of CO₂
5. Underground geological storage
6. Ocean storage
7. Mineral carbonation and industrial use
8. Costs and economic potential
9. Inventories and accounting

Contents of the IPCC SRCCS

- How mature is the technology?
- What are the early opportunities?
- What are the storage capacities of the various storage options
- What does it cost?
- How does CCS economically compare to other mitigation options?
- What conclusions do studies on legal issues and public perception allow?
- Within the UNFCCC and the Kyoto Protocol, can CCS methodologically be accommodated?

Timeline of the SRCCS

- Last meeting of the Lead Authors: last week in Oviedo, Spain
- Final Draft ready by **end of June**
- Government review of the SPM: August
- IPCC WGIII Approval Session: **September 22nd – 24th**
- Press message: on **September 26th, 2005**
- **Full report ready: beginning of December (during COP11/MOP1)**

More information?

deconinck@ecm.nl

or contact me during the rest of the conference



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)

