



Long-Term Energy-Economic- Environment Scenarios and Policy Making

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1/14



ECS Research

- “Umbrella”: Global energy-economy-environmental (E3) scenarios and their policy implications
- Technology database CO2DB
- Clean-coal technologies
- Bottom-up multi-gas optimization
- Sustainable-Development scenarios
- Hydrogen

2/14



The CO2DB Database

- Detailed technical, economic and environmental characteristics as well as data on innovation, commercialization and diffusion in some 3000 entries
- Users can add to, select, filter, arrange, and compare CO2DB's data according to any of the technology characteristics included in each database entry
- ECS distributes CO2DB free of charge. In return, for ECS encourages users to share their data.

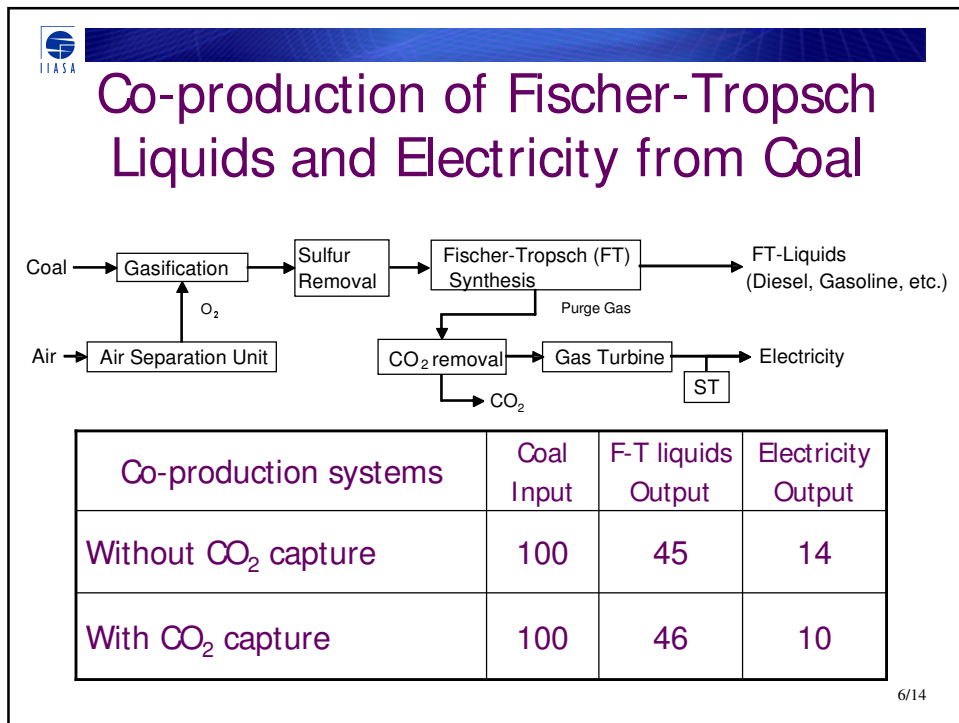
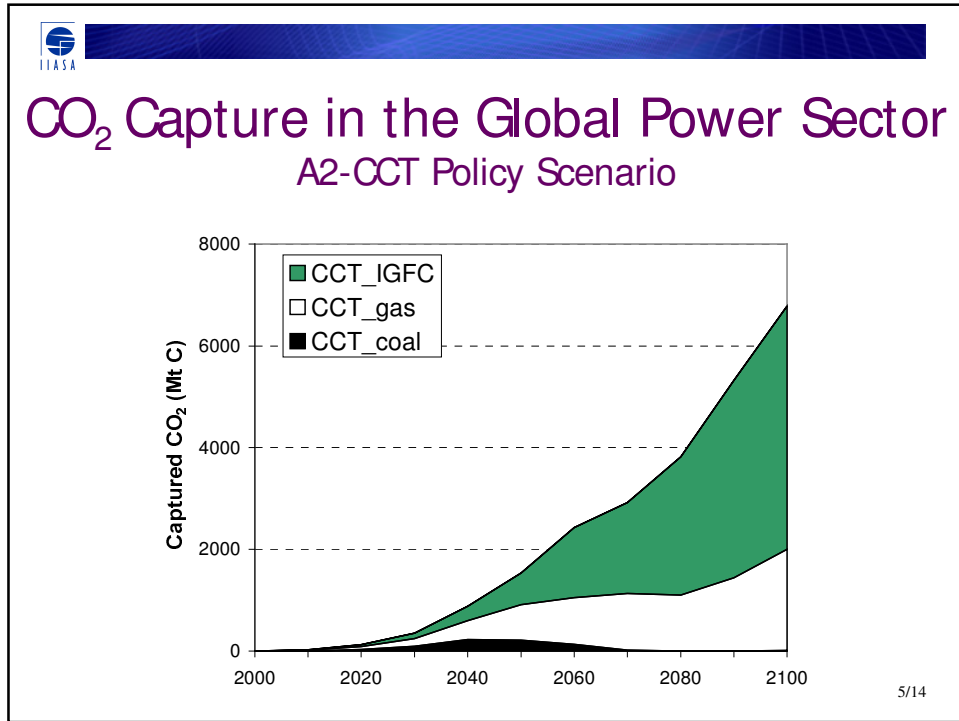
3/14

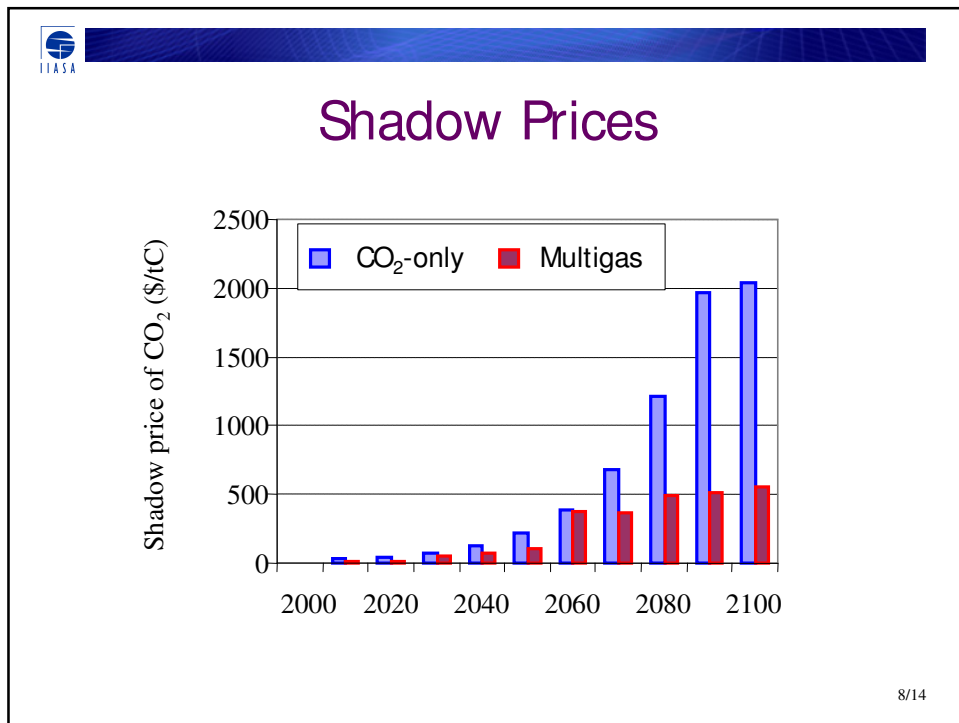
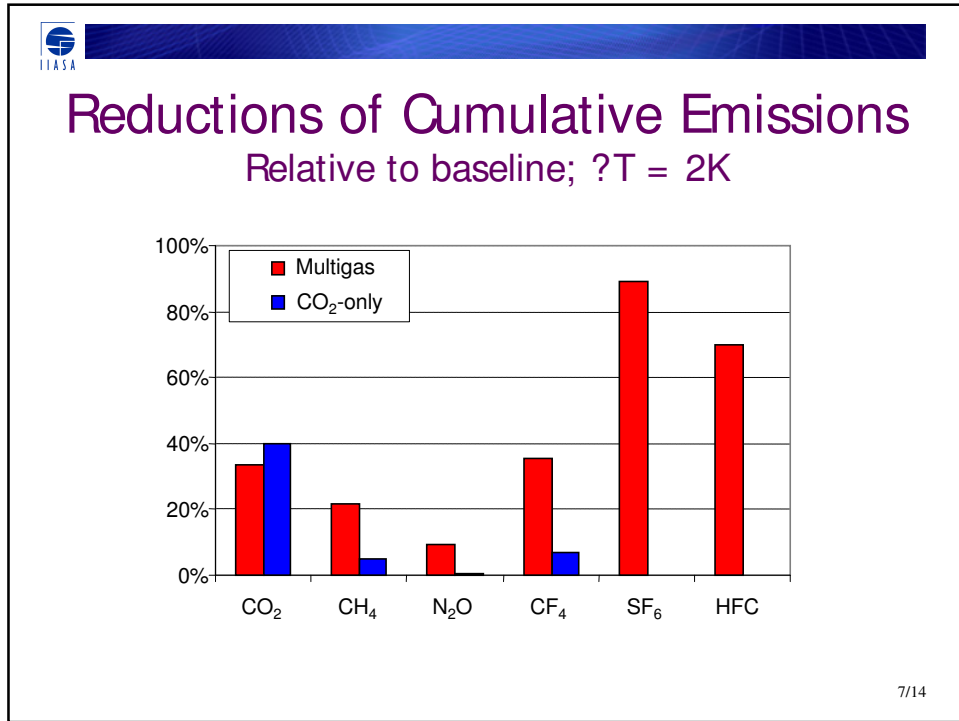


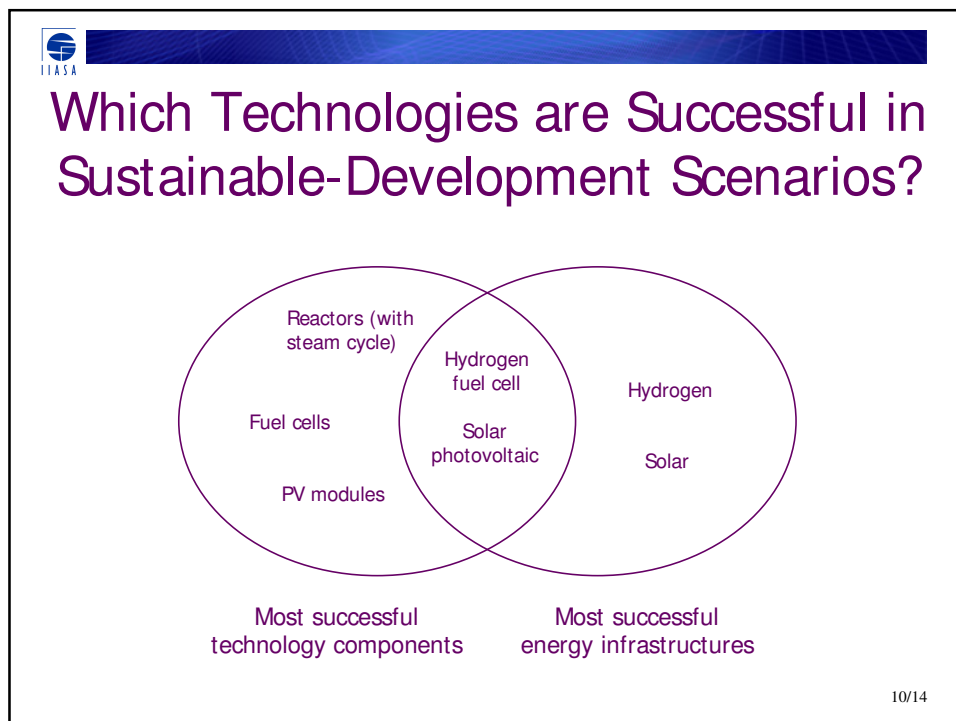
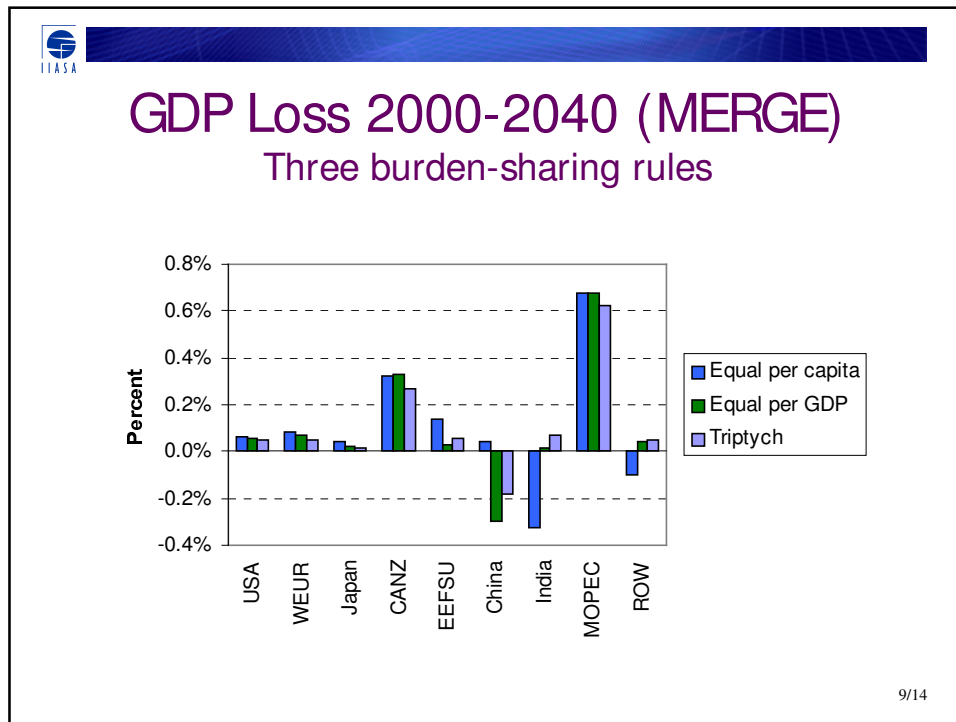
Technology and Climate Change

- Participation in IEA/CERT Book: "Technology Options for Achieving Significant Greenhouse Gas Emissions Reductions from Energy Over the Long-Term"
- ECS contributed a chapter with an examination of robust technologies and energy carriers across a wide range of alternative scenarios

4/14





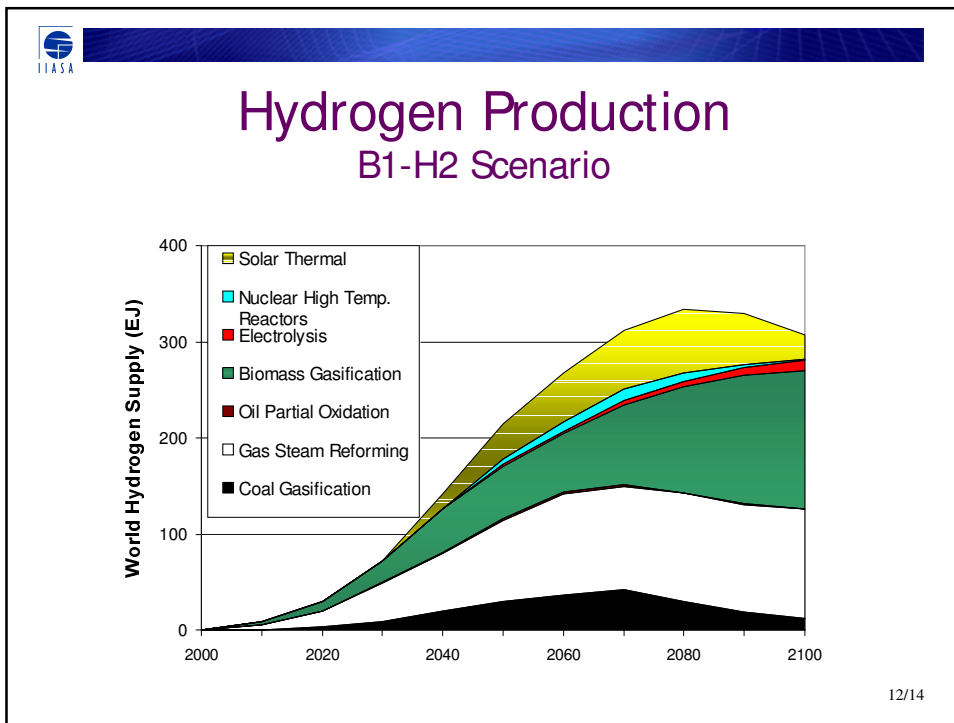


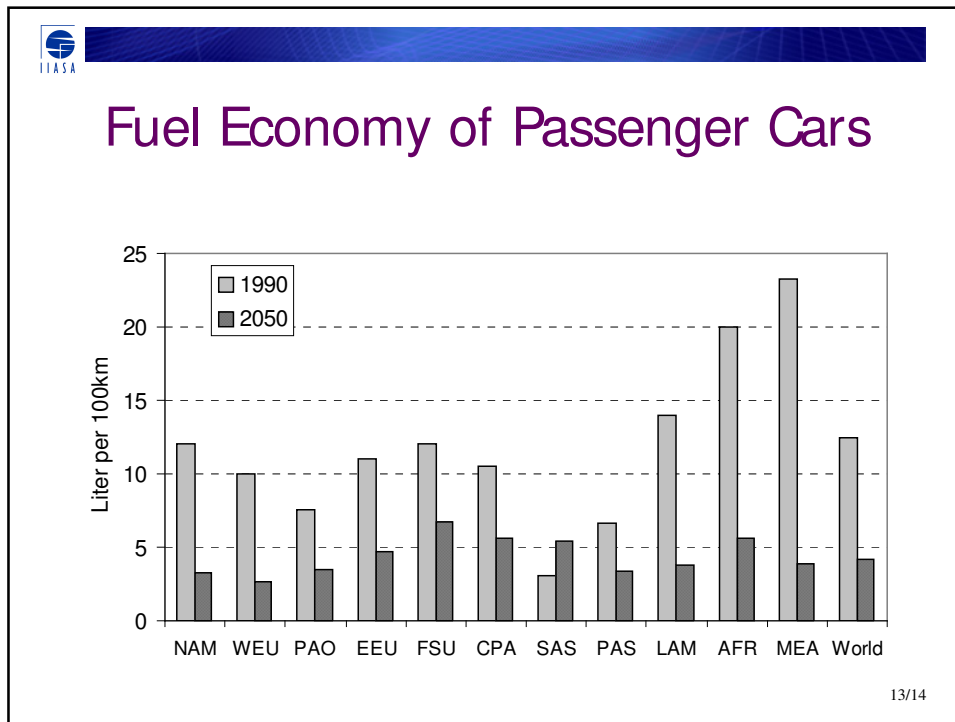
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Policy Implications from SD Scenarios



- Technological progress can make the difference between “not sustainable” and “sustainable”
- Synthetic fuels (generated with renewable energy and suitable for utilization in fuel cells) favor sustainable development
- The most important one is hydrogen

11/14





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- ## Summary
- ECS explores long-term perspectives of the global energy system and related policy issues, generating new methods, tools and insights to support decision-making
 - International and interdisciplinary NGO status allows providing global insights while playing an “honest-broker” role
 - ECS collaborates with different partners and keeps maintaining and extending its network of collaborators
- 14/14



From here: Reserve slides

15/14



Sustainable-Development Scenarios

A Working Definition

- Sustained economic growth
- Declining inter-regional economic inequity
- Non-declining reserves-to-production ratios
- Low environmental stress

Consistent with the “Brundtland Definition” (1987)

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

16/14



Scenario Analysis

- Scenarios are different and self-consistent images of the future
- Scenarios generated by a formal (IIASA's) modeling framework are analyzed
- Which technological trajectories will enable a sustainable-development path?

17/14



IPCC SRES Reference Emission Scenarios

- Four scenario families (A1, A2, B1, B2)
- For each family one narrative (“storyline”)
- 9 IIASA scenarios (out of a total of 40 scenarios from 5 modeling groups)
- Together, the IIASA scenarios cover the full range of GHG and sulfur emissions found in the literature

18/14