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Energy Technology Perspectives 2008

Dolf Gielen

Analysis Approach

- Launched June 6th, Tokyo
- Guided by the Committee on Energy Research and Technology
- In close cooperation with the Working Parties and Implementing Agreements
- 10 workshops
- Builds on ETP2006 and WEO2007
- ETP MARKAL model (15-region global model), national models, end-use sector spreadsheet models for G8+5

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Goals

- This is a study about the role of technology
- It includes 17 key technology roadmaps that specify development needs
- It can be a basis for an international technology cooperation framework
- It is *not* meant for country target setting in a post-Kyoto framework
- It is *not* a study about climate policy instruments

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Energy Technology Perspectives Publication 2008

- **How to get there**
  - **Short and medium term technology policy needs**
  - **Special attention for technology roadmaps**
- **Scenario analysis**
  - **Baseline WEO2007 Reference Scenario**
  - **Global stabilization by 2050 (ACT)**
  - **Global 50% reduction by 2050 (BLUE) – *consistent with WEO2007 450 ppm case***
- **Technology chapters:**
  - **Power sector**
  - **End-use sectors**

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ACT Scenarios

- Energy CO_2 emissions back to the 2005 level by 2050
- Revision of ACT as published in ETP2006
  - Options with a cost up to USD 50/t CO_2 – worldwide (*model outcome*)
  - Cost estimate has doubled from ETP2006
- This implies a significantly adjusted energy system

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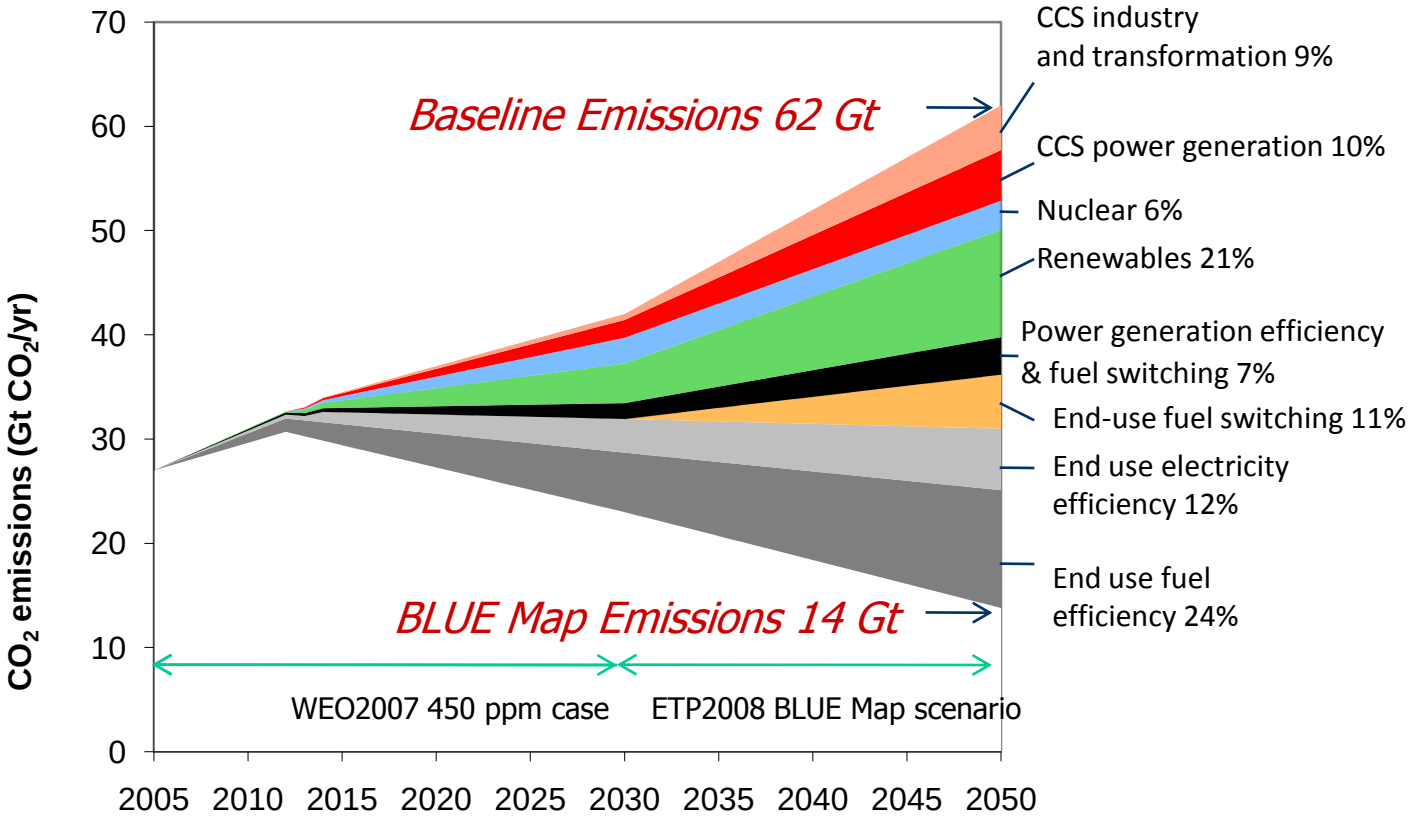
Blue Scenarios

- -50% energy related CO_2 in 2050, compared to 2005
- This could be consistent with 450 ppm (depending on post-2050 emissions trends)
- Options with a cost of up to USD 200/t CO_2 needed (*model outcome*)
  - Significantly higher cost with less optimistic assumptions
- Blue is uncertain, therefore a number of cases needed
- Blue is only possible if the whole world participates fully
- This implies a completely different energy system

Contribution of Technology Wedges



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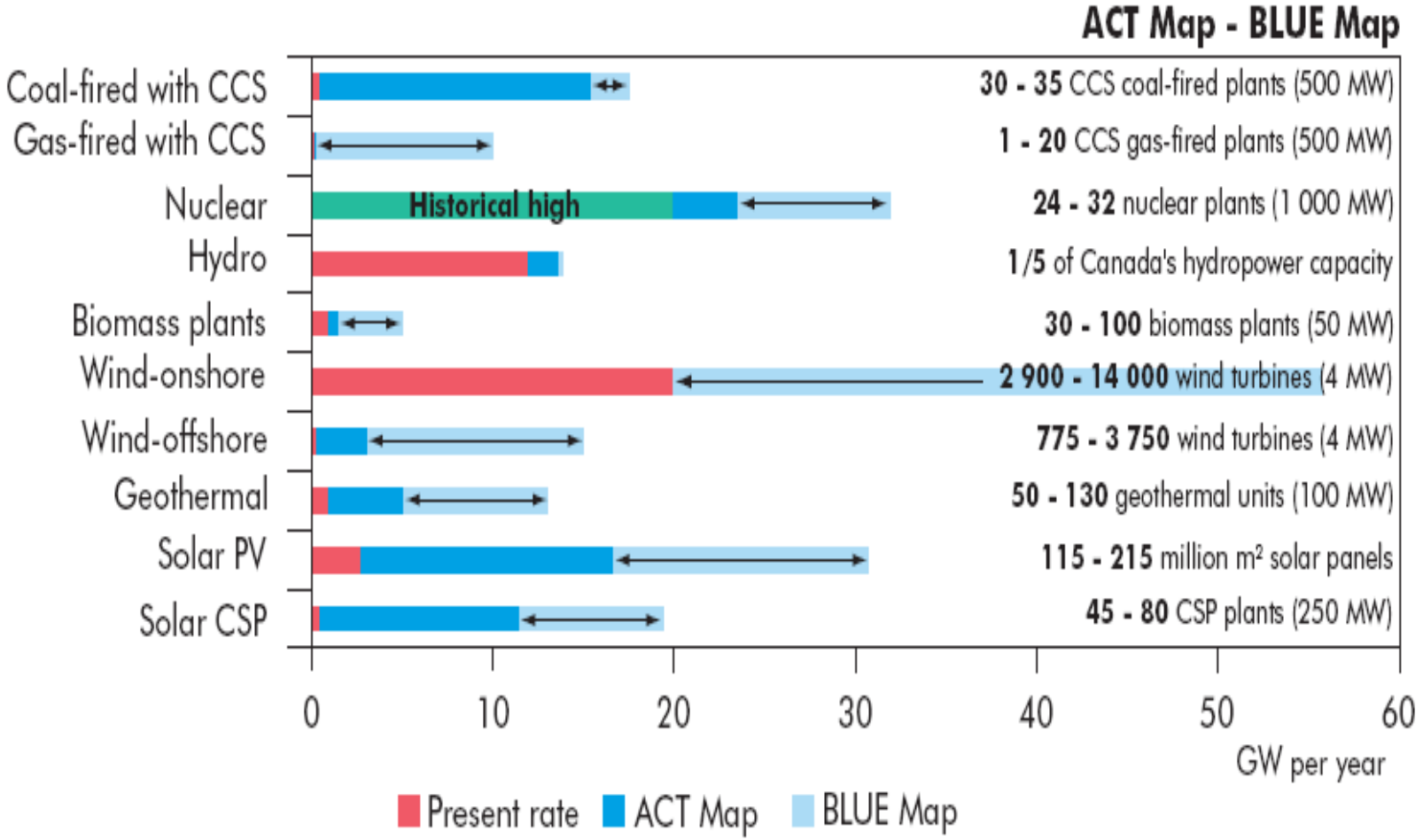
Average Annual Power Generation Capacity Additions, 2010 – 2050 – An Energy Revolution



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Typical Obstacles to New Technology

- Technologies for ACT are available today
  - BLUE requires new technology
- Anything not under development today will not play a significant role by 2030-2040
- Obscure technical issues
  - Developers tend to hide problems
- High cost demonstration projects
- Ramp-up production capacity
- Lack of skilled staff
- No strong champions
- Behavior incumbent players
- Public acceptance of anything new

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Roadmaps concept

- Condense 550 page ETP information into 17 2-pagers
- Elaborate the link between long-terms targets and short & medium term actions/targets
- Broader than traditional roadmaps concept: "anything that progresses necessary technology development"
- Not prescriptive, but indicative and coherent

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Roadmaps

17 technology roadmaps provide 87% of CO_2 savings under the Blue scenario

- Potentials
- Pathways to commercialization
- Technology targets
- How to get there
- Key actions needed
- Key areas for international cooperation

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Next Steps

- Roadmaps need further elaboration
- Waiting on G8 summit response in July
- Getting major emerging economies on board will be essential
- Further collaboration with industry and governments also needed
- A flexible but compelling storyline
- Develop roadmap indicators ?
- Further elaboration in ETP2010 ?

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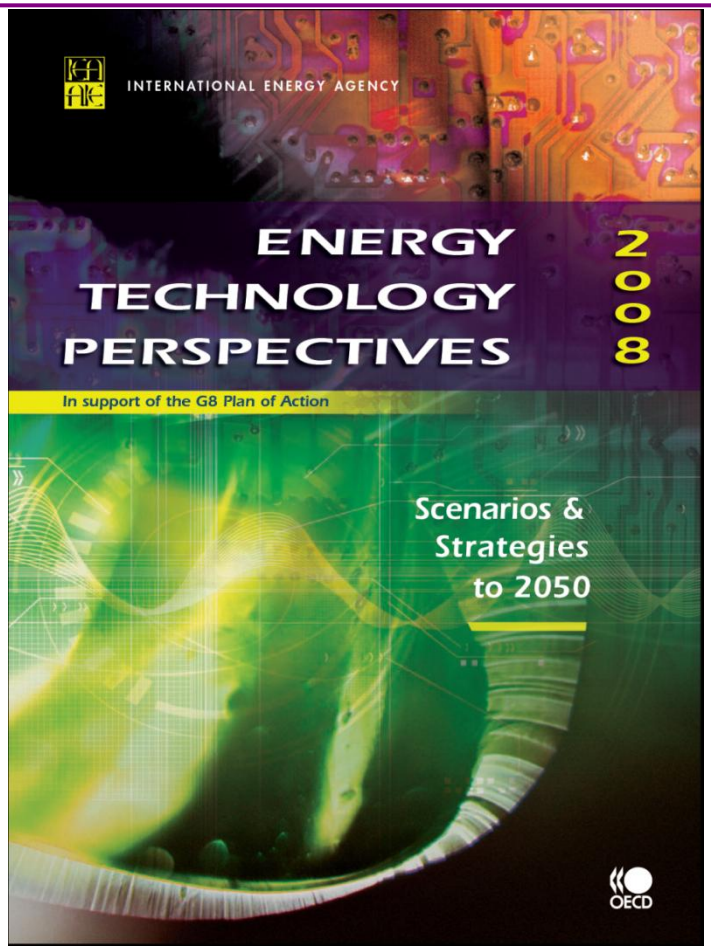
Thank You !



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Launch June 6th

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