

Action plan and challenges for future climate research in Norway

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Director CICERO

A newly appointed committee will elaborate an action/strategic plan for Norwegian climate research

- **Members of the committee: Pål Prestrud (Chairman), Helge Drange (UiB), Harald Dovland (MD), Eli Arnstad (ENOVA), Torstein Bye (SSB), Tora Skodvin (UiO), Inger Marie Malvik (OG21 and Statoil)**
- **First meeting October 11, 2005. Final report delivered before summer 2006.**
- **Secretariate: The Norwegian Research Council**

Mandate and background

- **The research council was given the task by the Ministry of Environment in their annual assignment letter for 2005.**
- **Ensure greater strategic entirety/totality in climate research.**
- **Systematic analysis of research challenges and development of a national research plan which will ensure that all relevant actors as well as "owners of the problem" are stimulated to participate.**
- **The society's needs must be clarified in a way that all actors can identify themselves with the plan and have an ownership to the problems and actions.**
- **The ministry will be active in helping the dialogue with other ministries and sectors**

Interpretation of the mandate

- **This will not be a detailed research plan. The committee does not have the competence, expertise or sufficient time in order to "dive" all the way down to the research front in all the involved disciplines.**
- **The committee must keep a broad overview and deal with the broad lines in climate research.**
- **The plan should be a strategic basis and tool for leadership in climate research. MD wants to be clearer on strategic leadership**
- **More active and broad involvement from other ministries and sectors will be an important element of the plan**

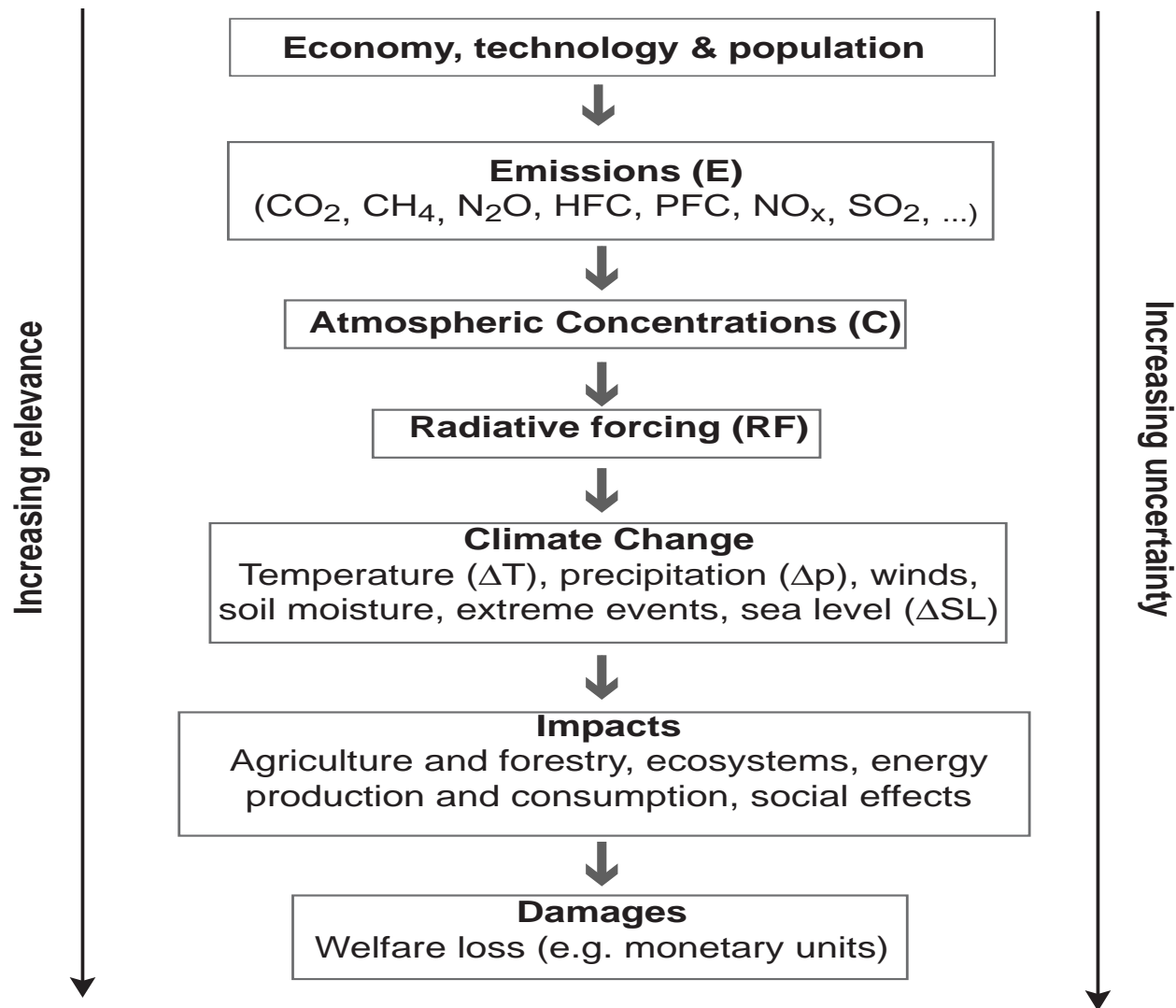
How we will work

- **All relevant research disciplines in technology, natural sciences and social sciences are included.**
- **Dialogue with stakeholders: Reference groups consisting of representatives from all relevant ministries, from relevant research disciplines, and the industry will be appointed.**
- **Demand analysis**
- **Mapping of ongoing research activities**
- **Analysis: Are the demands/needs covered? Any gaps in knowledge? Any needs for strengthening specific fields? Any needs for reorganisations?**

Some preliminary thoughts on challenges for future Norwegian climate research

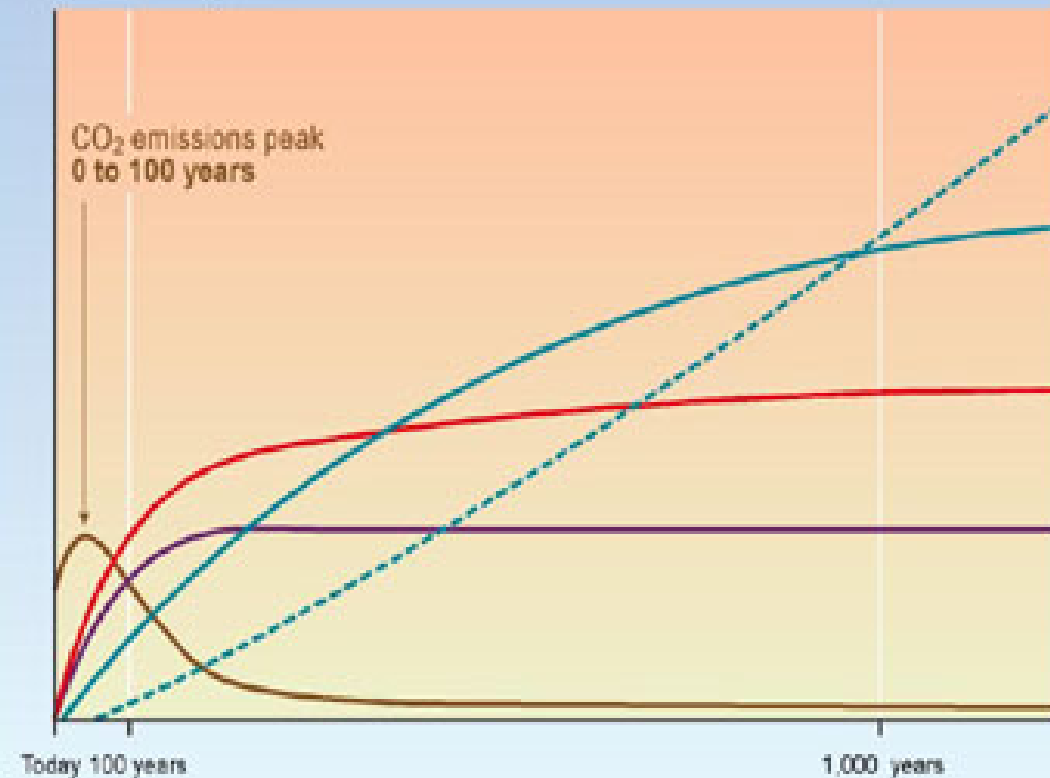
- **What is needed in order to trigger the necessary political action and which actions/measures are the most cost-effective and politically feasible?**
- **Degree of scientific certainty about current and future climate change and its impact on the society**
- **Climate system in Norwegian research: Atmosphere, ocean, polar and regional modelling**

How to develop climate scenarios



CO₂ concentration, temperature, and sea level continue to rise long after emissions are reduced

Magnitude of response



Time taken to reach equilibrium

Sea-level rise due to ice melting:
several millennia

Sea-level rise due to thermal expansion:
centuries to millennia

Temperature stabilization:
a few centuries

CO₂ stabilization:
100 to 300 years

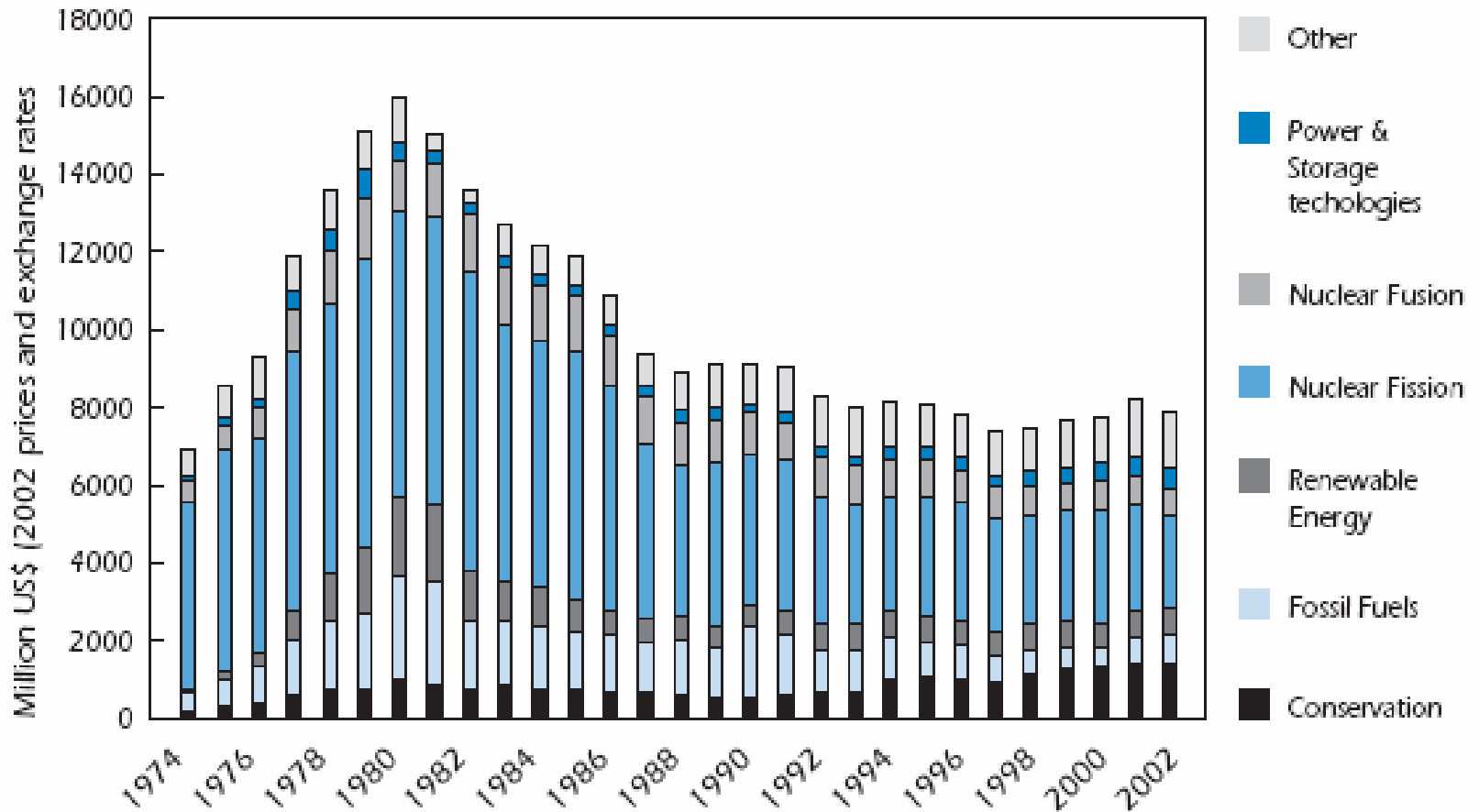
CO₂ emissions

SYR - FIGURE 5-2

Actions and measures

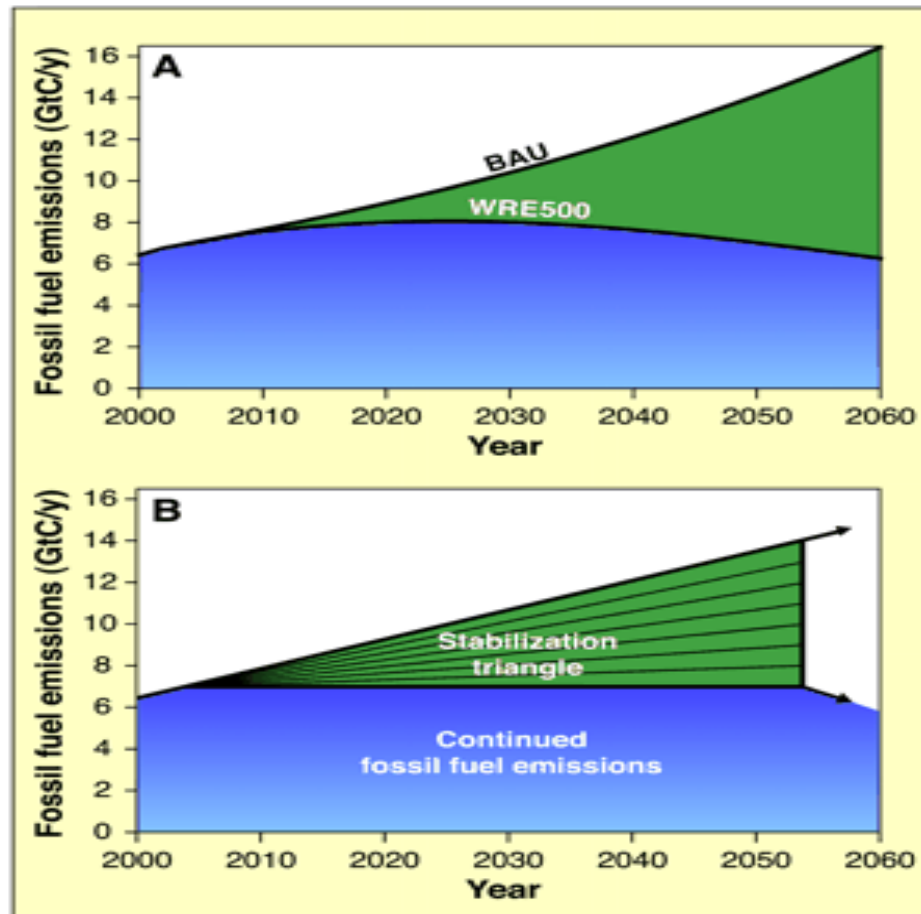
- **In a global context: "Let the thousand flowers bloom"**
- **Nationally: How can we meet our international commitments and in which field can we contribute most significant in the global struggle to mitigate climate change?**
- **CCS, new renewable energy, energy efficiency.**
- **Which actions are necessary in order to stimulate energy technology development and to take existing energy technology into use?**
- **Political feasibility both in a national and international context. How do we change our attitudes and minds?**

IEA Government RD&D Budgets on energy technology



Source: IEA, Gielen, Dolf & Podkanski 2004

Stabilization Wedges: Solving the Climate Problem for the Next 50 Years with Current Technologies. Pacala and Socolow (2004). *Science* 305:968.



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