The Costs of Inaction with Respect to Climate Change

Some comments from the point of view of policymakers

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EU climate policy objective

EU interpretation of Art. 2 – ultimate objective of FCCC:

" (...) REAFFIRMS that, with a view to meeting the ultimate objective of the United Nations Framework Convention on Climate Change ("the Convention") to prevent dangerous anthropogenic interference with the climate system, overall global annual mean surface temperature increase **should not exceed 2ºC above pre-industrial levels in order to limit high risks, including irreversible impacts of climate change**; ..."

EU Environment Council, October 2004

EU climate policy objective (2)

WELCOMES the **Commission's communication** "Winning the battle against global climate change"; NOTES that there is increasing scientific evidence that the **benefits** of limiting overall global annual mean surface temperature increase to 2°C above pre-industrial levels **outweigh** the **costs** of abatement policies

(EU Environment Council March 2005)

The European Council welcomes the **Commission communication** entitled "Winning the battle against global climate change" and calls on the Commission to **continue its cost-benefit analysis** of CO_2 reduction strategies.

(European Council March 2005)

Basis for EU 2ºC target

- 1996: IPCC SAR (1995)
  Also: Safe landing analysis,
  Tolerable Windows Approach (WBGU)
  Risks beyond 2ºC increase substantially
- 2003: IPCC TAR (2001)
  confirms and strengthens SAR results
  New scientific evidence since TAR

➢ EU climate objective not based on cost-benefit analysis, but on determination of physical thresholds/limits

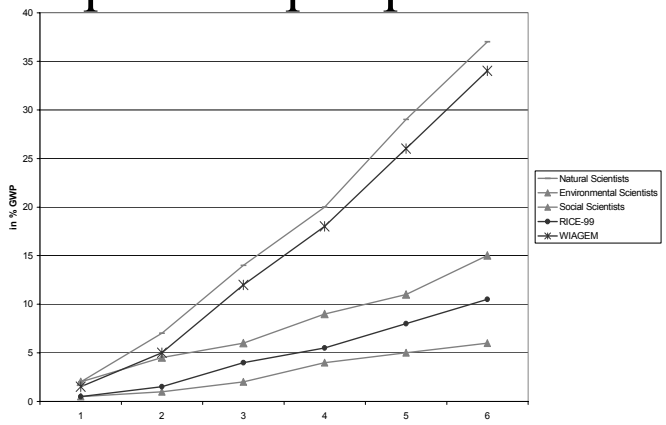
Impacts - thresholds

- 1-2 ºC: Significant global impacts on **ecosystems and water resources** are likely.
- 2-3 ºC: Risks of **net negative impacts on global food production**. **Negative regional impacts** for some regions already below 2-3 ºC
- Above 2 ºC: increase in the risk of a range of severe **large scale events**, such as shutdown of ocean thermohaline circulation.
- Around 2 ºC: Melting of **Greenland Ice sheet** leading to **sea-level rise of several meters** over many centuries

Important Results of OECD Project on Benefits of Climate Change Policies

- Summary estimates of benefits in a single **(monetary) measure** to compare with aggregate costs **may not be adequate on their own**
- Costs of inaction should also be presented as **physical impact estimates**
- Preliminary goal: consistent and comparable **regional information on physical impacts**
- **Second step: monetisation** of regional effects
- **Finally: Attempt of monetised aggregate benefits assessment**

Estimation of Damage Costs: depend on perspective

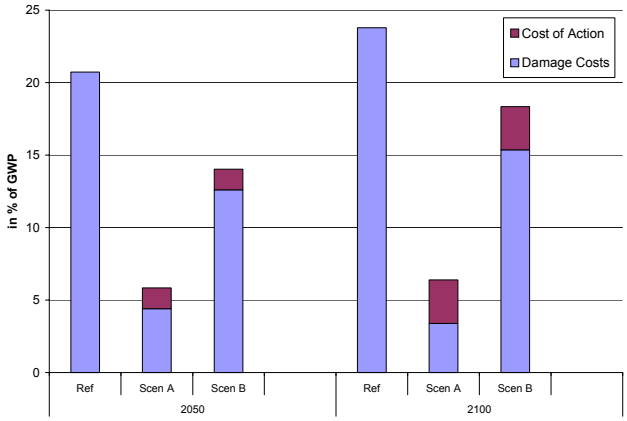


Source: Claudia Kemfert (study for German Environment Ministry) , based on OECD, 2003 ENV/EPOC/GSP.OECD Estimating the Benefits of Climate Change Policy and own model results (WIAGEM)

Damage costs: Examples from Europe

- **Floods summer 2002**: hit Germany, Austria, Czech Republic the hardest. Economic damages amounted to up to 9.2 billion Euros in Germany only (Munich Re)
- **Heat wave summer 2003**: Economic damage estimate at 10 to 17 billion Euros (Munich Re) (mostly due to damages of crop gains, also: disruption in energy supply increase in forest fires, increased diseases)

Example of result of German study: Total costs



Source: Claudia Kemfert (study for German Environment Ministry) (WIAGEM-model)

Cost of Inaction – preliminary conclusions

- Attempts of **monetising aggregate benefits** are useful, if **complemenatry to assessment of physical impacts/other metrics**, and if limitations are recognised appropriately
- Crucial: **Transparency** with regard to assumptions
- Important: Assessment of **costs of delay**
  - Missed opportunities for technology development
  - Higher risk of passing dangerous thresholds
  - Role of inertia (both in climate system as well as in socio-economic system)
- **Uncertainty does not argue for delay**