



# ***Competitiveness and the EU's 2°C target: Implications of recent scientific findings***

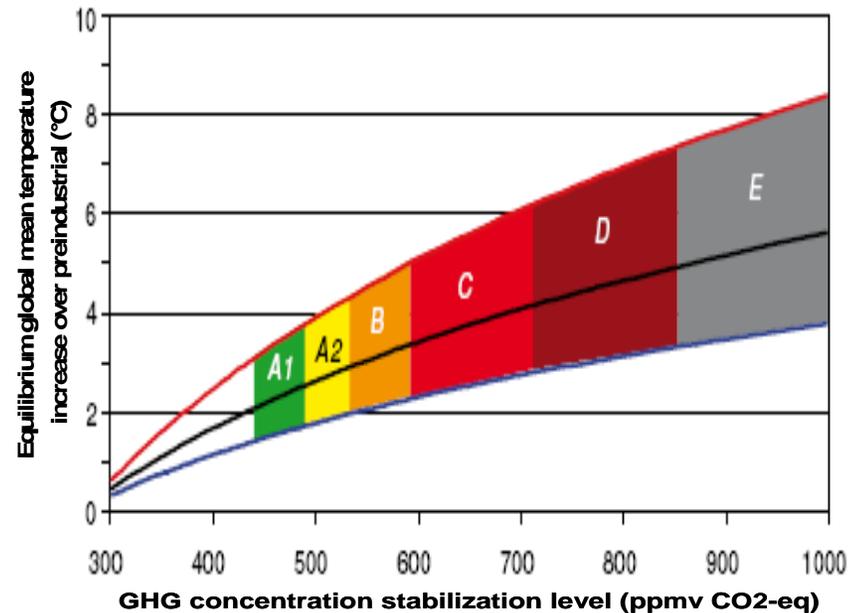
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# The key question: can “dangerous anthropogenic climate change” be avoided?

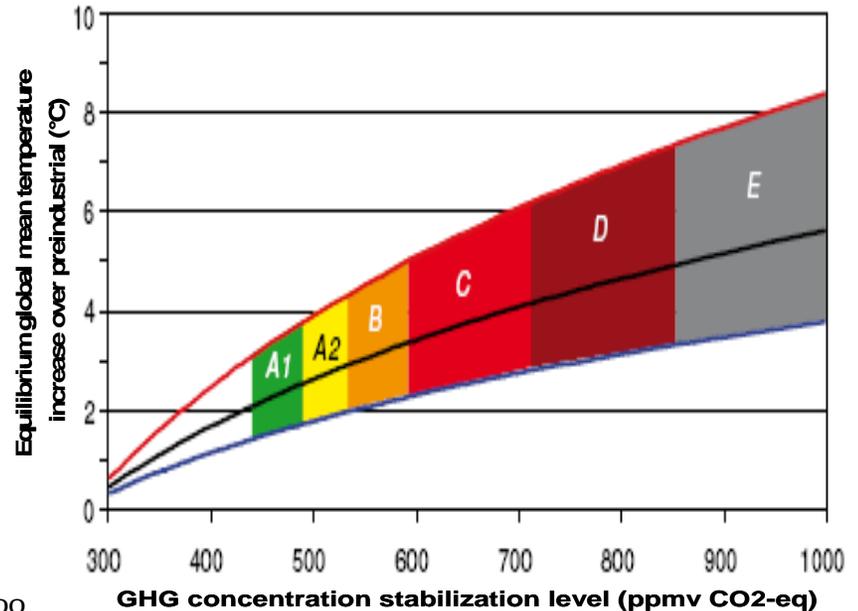
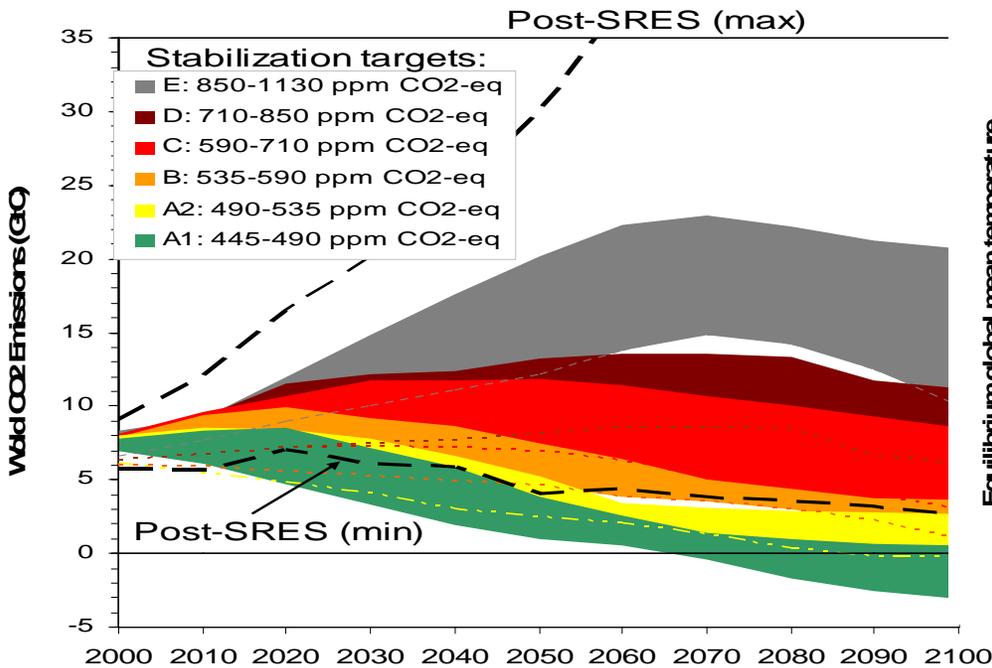
**EU interpretation:**  
global mean  
temperature increase  
at less than 2°C  
above pre-industrial  
level



# The lower the stabilisation level, the earlier global emissions have to go down

Range comes from different models

Range comes from alternative estimates of climate sensitivity



Multigas and CO<sub>2</sub>-only studies combined

Note lack of studies below 450ppmv-CO<sub>2</sub>-eq

# Implications for avoiding dangerous climate change

- To have a good probability of achieving  $<2^{\circ}\text{C}$  rise
  - $\text{CO}_2$ -eq concentrations have to be  $<450\text{ppm CO}_2$  eq (c/f c430 now)
  - global GHG emissions have to fall by  $>70\%$  below baseline by 2050
  - technologies have to be developed to capture  $\text{CO}_2$
- Global warming is a stock problem and industrialized countries are responsible for most of current stocks
  - hence reduction in OECD of c90% below BAU/1990 by 2050
- Risks are asymmetric
  - so precaution suggests a zero carbon economy as soon as possible (without excessive costs)
- Eventually all countries & sectors have to decarbonize
  - not “How much?” but “When?” for each business and government

# AR4: The literature on competitiveness and carbon leakage

- Both price and non-price competitiveness can be significant,
  - literature more developed for price competitiveness (esp. using CGE models)
- Important to allow for exchange rate offsetting for EU competitiveness
- Barriers to re-location of firms
  - information (local markets, laws, business), labour skills
- Energy costs are usually a small component of overall costs; emissions changes even lower
- Overall conclusion: sectoral competitiveness effects are likely to be insignificant, if policies are well designed, encourage new products and processes, allow time for adjustment and cover many countries

# EU unilateral action (accelerated decarbonisation) and competitiveness

EU Action: ETS + ecotax reform, incl. ITC incentives

- Traditional economics
  - Assumption of “zero-sum” game (+full employment, no ITC)
  - All competitiveness effects come through prices (CGE modelling)
  - EU action leads to carbon leakage & loss of price competitiveness, offset by euro depreciation
- “New” economics
  - Economies grow faster if more R&D and technological change
  - Competitiveness comes from price and quality
  - Price is a minor factor for niche capital goods
  - Carbon leakage can be negative (e.g. EU exports of wind turbines)
- Conclusions
  - CGE modelling misleading and results erratic and unconvincing
  - Net competitiveness effects are complex and depend e.g. on ETS exemptions and use of auction revenues