Climate Scenarios 2050 for the EU and the World

an assumption based scenario machine

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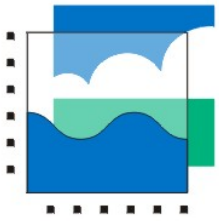

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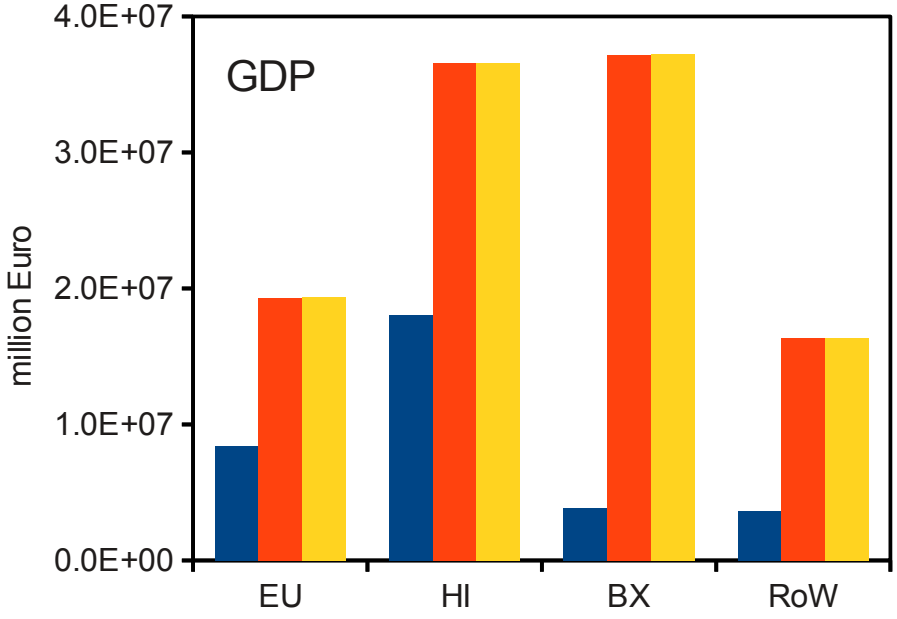
Disclaimer

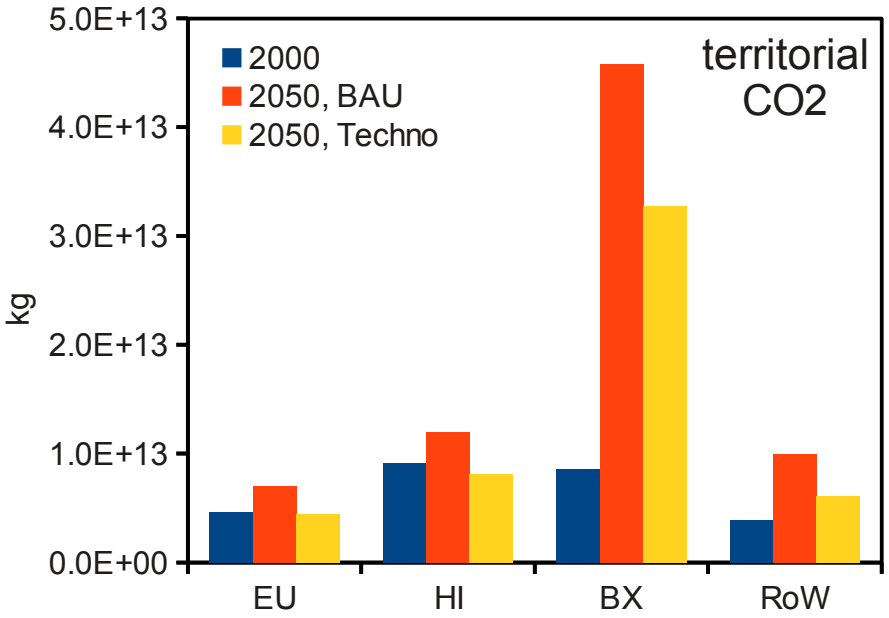
Figures based om preliminary calculations which might substantially change in the final result

Three scenarios and a reference

- Reference 2000
  - data from EXIOBASE supply-use tables
  - 44 countries in 4 regions, trade linked, 129 sectors
- Business-as-usual scenario 2050
  - growth of population, productivity & economies
- Technology scenario 2050
  - emission reducing technologies added, including CCS
- Two degrees scenario 2050
  - in search for further options to reach 80% emission reduction
  - using model as an assumption based scenario machine

Results

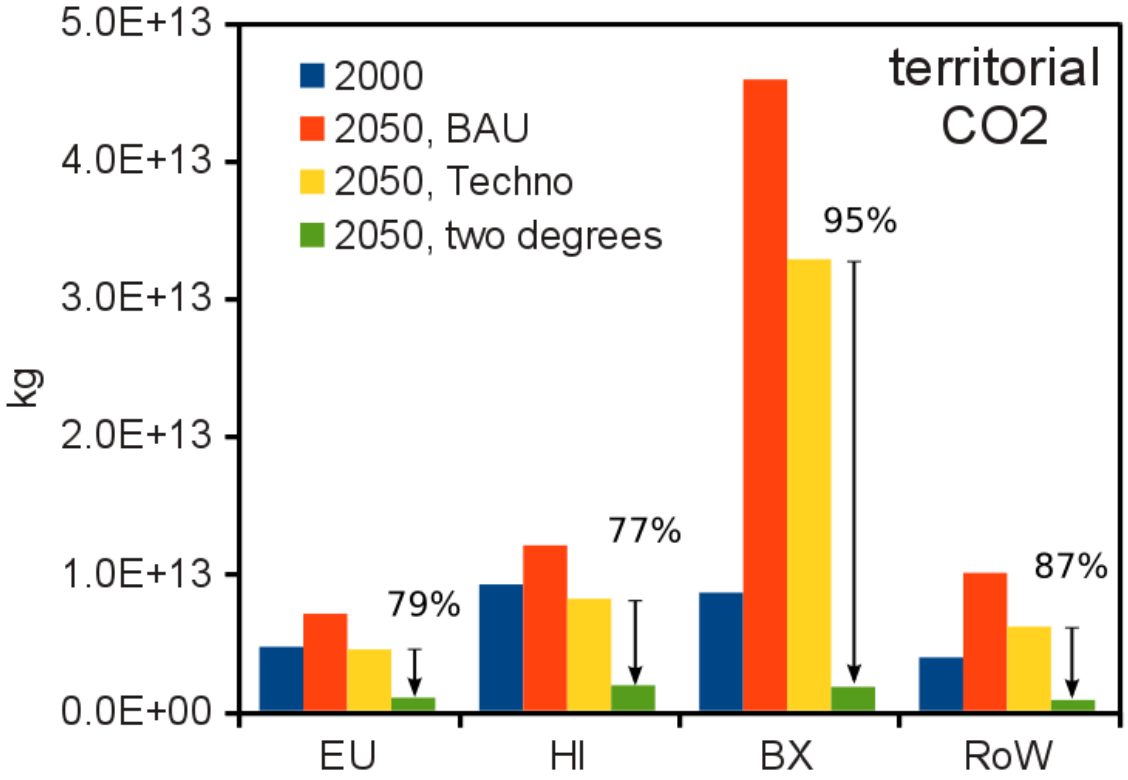




- Techno scenario strong decoupling
- Still CO_2 emission growths by a factor ≈ 2

Towards two degrees scenario

- assume 80% emission reduction compared to 2000 is necessary: EU needs still minus 79%

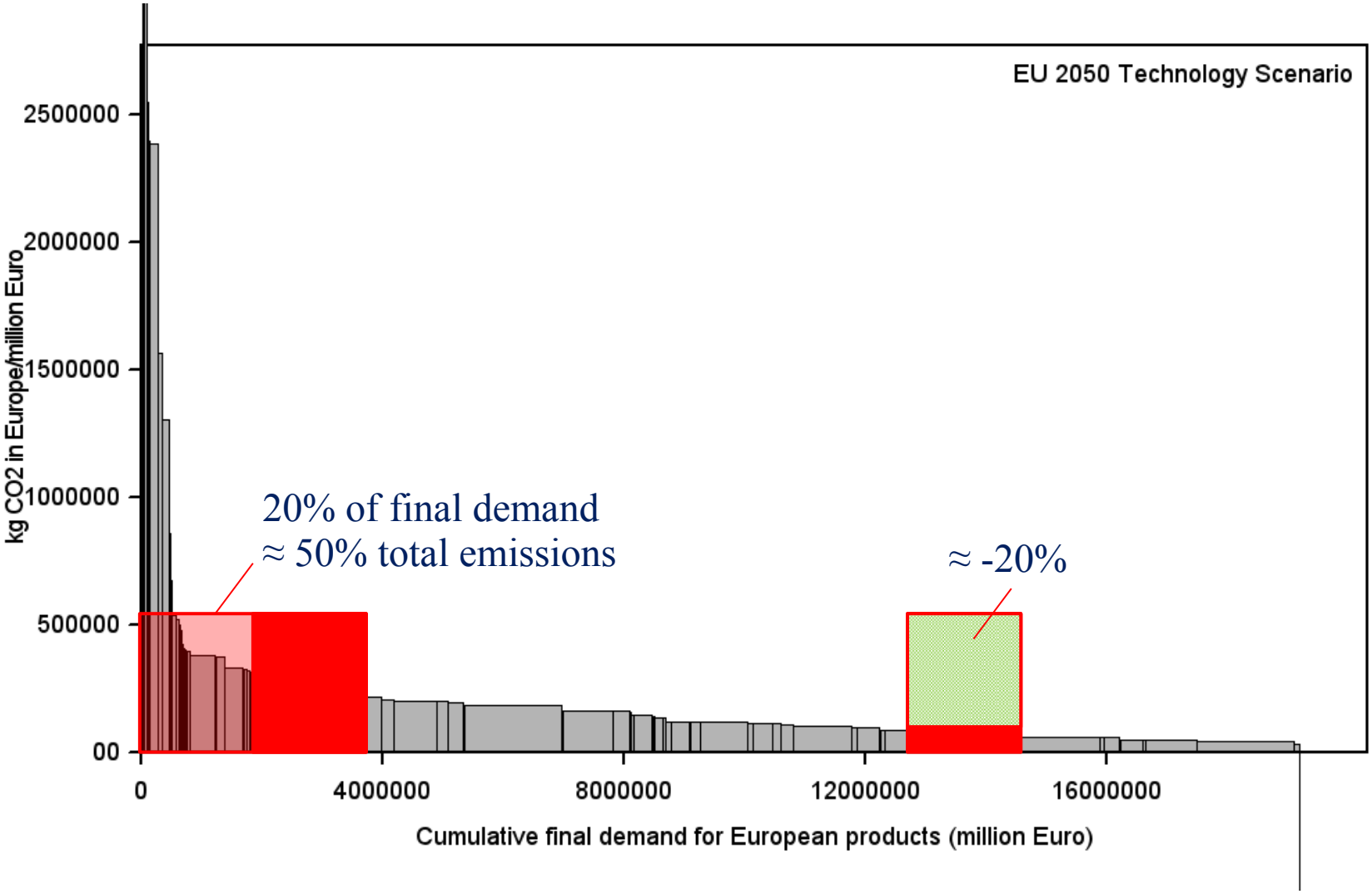


Towards two degrees scenario

Options:

- shift in final demand from high carbon intensive products to low carbon intensive products
- less production & consumption (Tim Jackson, prosperity without growth)
- more CCS (from ≈ 55% to 80%)
- complete shift towards non fossil fuel electricity generation
- techno jumps: probable, feasible and potential

Final demand shift (globally)



Towards two degrees scenario

- Europe alone towards 80% emission reduction?
  - 30% of CO2 emissions to satisfy final demand Europe are generated outside Europe in Techno scenario

Towards two degrees scenario

Options:

- consumption shift ≈ 20 % less
- less growth / consumption ?? %
- 25% more CCS, emissions lower by 15 %
- non fossil fuel electricity generation up, reduction 20 %
- techno jumps: probable, feasible and potential
  - what is still feasible or potential available beyond what is already in the model?

Combined (not additive) only 35% - 40% extra reduction, without techno jumps or reduced economic growth

Suggestions ???