Climate Scenarios 2050
for the EU and the World
an assumption based scenario machine

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Disclaimer

Figures based on 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 $\approx 2$
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 \( \approx 55\% \) to 80\%)
- complete shift towards non fossil fuel electricity generation
- techno jumps: probable, feasible and potential
Final demand shift (globally)

20% of final demand ≈ 50% total emissions

≈ -20%
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 ???