Climate Recon 2050:
Dialogues on Pathways and Policy

Czech Republic
Michal Danhelka, Ministry of Environment

CZ 2050 Carbon Calculator

- based on the UK 2050 Pathways Calculator – substantial assistance from UK experts + sharing of experience
- excel spreadsheet and web-tool available at: http://co2.enviros.cz
- project financed by the Ministry of Environment, contract awarded to Enviros Ltd. (long term collaborator on PAMs and projections)
- very small project team and quite limited validation of model assumptions by stakeholders

Further Development

- so far one update from energy balance 2014 to energy balance 2016
- ongoing work on improvement of the transport module, intended also as a tool for calculating carbon footprint
- ongoing R&D project under the Technology Agency of the Czech Republic
  - main goal is to validate assumptions and enhance trajectories for the non-ETS sectors, starting with transport
- the core projects team remains the same (Enviros Ltd.)
- more time for proper validation – sectoral working groups envisaged, including ministries, sectoral experts and other stakeholders

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How is the 2050 Calculator used?

- calculator intended to inform the policy debate on energy, climate and low carbon development
- web-tool also available to general public
- selected scenarios used for long term low emission strategy of the Czech Republic = Climate Protection Policy adopted in 2017: 80% reduction target for 2050

Example Scenarios

- 8 scenarios used for the Climate Protection Policy
- the „Current Policies Scenario“ (extrapolation of State Energy Policy scenario to 2050) achieves only 53% GHG reduction
- only 3 scenarios reach the 2050 target:
    - Only the scenario with CCS provides some margin with 84% reduction by 2050
    - The other 2 scenarios are based on significant energy efficiency improvements by 2050 (thermal losses in households are reduced by 50%, energy efficiency of industry is increasing by 3% each year, 30% reduction in services consumption) + full electrification of personal transport and railways
    - Energy mix almost fully decarbonized: one scenario based more on nuclear electricity, the other more on domestic RES (including geothermal) and some import of bioenergy
- These scenarios are not intended as a blueprint for future development, but to illustrate the challenges of necessary transformation

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Other 2050 Modelling Tools and Approaches

- Charles University Environment Centre: TIMES-CZ – The Integrated MARKAL-EFOM System adapted and calibrated for the region of Czech Republic, used for modelling impacts of environmental regulation
- EGU Brno
  - prepares the outlook and analysis of potential development of balance between electricity and gas supply and demand in CZ using own modelling tools
  - modelling impacts and costs and of the 2050 target with the support of Ministry of Environment
  - focus on the necessary transformation of the energy system + calculation of externalities (Charles University Environment Centre)

General comments

- currently very limited pool of modelling experts in the country
- limited in-house capacity and expertise in the public sector
- mostly project based financing, without long-term perspective
- cooperation of ministries is improving, however involvement of Ministries of Transport and Agriculture is essential