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Project website:
www.feem-project.net/planets

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Probabilistic Long-term Assessment of New Energy Technology Scenarios



About

PLANETS is a research project funded by the European Commission under the Seventh Framework Programme. The project is meant to devise robust scenarios for the evolution of low carbon energy technologies in the next 50 years.

» A suite of six energy-economy-climate modelling groups has participated in the project. The portfolio of models spans broad regional coverage, technological detail, and representation of economic interrelations. Using this approach, the models have analysed the implications of climate policies under a wide set of assumptions about national commitments and the use of international carbon offsets.

» This assessment has been expanded to account for uncertainties regarding the future evolution of climate policies and the prospects of key carbon mitigation technologies. This expansion has been implemented by means of stochastic and robust modelling analysis.

» The analysis has been supplemented by dedicated technology assessments that have investigated the sustainability, competitiveness, and technological evolution of a different energy future. Specifically, a technological and economic assessment of key mitigation options, such as Carbon Capture and Storage (CCS) and bio-energy, has been carried out with a focus on Europe.



Main policy insights

The research done during the course of the project has highlighted the following policy recommendations:

- » Interim emission targets matter for the economics of long-term climate stabilisation.
- » While the global costs of climate policy are manageable, they are also very sensitive to the related temperature target and to the speed of action.
- » The design of an effective and engaging climate deal should consider heterogeneities of regional mitigation costs.
- » Moderate restrictions on the use of international carbon trading are likely to induce modest economic penalties on a global scale.
- » The achievement of climate stabilisation targets requires a dynamic portfolio of mitigation options which initially favours technologies that are ready to be integrated within the existing system.
- » Carbon Capture and Storage could be an important mitigation technology in the transition toward a low-carbon economy, but its large scale deployment requires a balanced mixture of policy instruments.

Project outputs

Reports

Eight reports have been prepared summarising the results of the different work-packages. The reports have analysed a wide range of scenarios with alternative prospects for low carbon technologies under different climate policy architectures.

Publications

Several publications have been produced, including: working papers, publications in scientific journals, a policy brief, and a special issue in the peer-reviewed journal 'Environmental Modelling and Assessment'.

E-conferences

Three online polls, involving about 30 external respondents, have provided additional insights on the role of China in global energy and environmental issues, the global role of CCS in climate mitigation, and the prospects of European climate policy.

Dissemination

The research has been disseminated widely through a range of international-focused activities, such as seminars and conferences. Two events have been organised in cooperation with the International Energy Workshop in 2009 and 2010. A final workshop has been hosted by the Bruegel Institute in Brussels.

Website

All project outputs are available at: www.feem-project.net/planets

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