Universität Basel

Research Project

Combining Electricity Models (AFEM-MODEL)

Third-party funded project

Project title Combining Electricity Models (AFEM-MODEL)
Principal Investigator(s) Weigt, Hannes ;
Project Members Lemhagen, Sofia ; Savelsberg, Jonas ;
Organisation / Research unit
Departement Wirtschaftswissenschaften / Energieökonomik (Weigt)
Department
Project start 01.11.2014
Probable end 31.10.2018
Status Completed

Addressing the main questions of the joint umbrella project ”Assessing Future Electricity Markets” (AFEM) on how the Swiss and European electricity markets will evolve under current and new market conditions will require a coherent model framework that combines the macro-economic dimension of general market forecasts (i.e. the scenarios of the “Strategie Stromnetze”, generation investments) with short-term operational market models (i.e. dispatch and network models) and finally with the underlying technical characteristics (i.e. detailed AC network modelling and regional evaluations of potentials).

Within the AFEM MODEL project (‘Combining Electricity Models’) such a comprehensive electricity methodology and the underlying model framework will be developed. The framework will cover the most important electricity market segments to allow the analysis of market design, investments, and transmission related aspects. The methodology needs to be able to address the overall market development with particular regard on the role of Switzerland within the European electricity system, the spatial dimension of renewable generation, and the temporal differentiation between long term investment in generation and network and the short term dimension of system stability. It will provide the linkage between the detailed technological perspective of the sub-project AFEM-INFRA and the aggregated market perspective of AFEM- FUTURE. In addition AFEM MODEL will contribute the insights of the detailed bottom-up electricity market-modelling layer to the overall AFEM project.

Due to the hub function of the MODEL project within the AFEM structure a close interaction with the other sub-projects is envisioned. MODEL will be responsible for the development and management of the linkages while the detailed assessments will remain within the other sub-projects, i.e. the technological evaluation in INFRA and the market design and aggregated evaluation in FUTURE. The main objectives of AFEM-MODEL are therefore as follows:

a methodology to link economic and engineering network models

a methodology to match the different spatial and temporal resolutions of top-down/aggregated and bottom-up/detailed electricity market models

those linkages to derive a consistent model framework

numerical results on the short-term market operation

ă

Financed by
Swiss National Science Foundation (SNSF)

Add publication

Add documents

Specify cooperation partners