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THE GERMAN RESEARCH NETWORK ON ENERGY SYSTEM ANALYSIS

In 2015 the German Ministry of Economic Affairs and Energy (BMWi) introduced seven research networks for energy research. One of them is the “Research Network for Energy System Analysis”.

Aim of this research platform is to strengthen networking between scientists and to increase the transparency and comparability of modelling tools. The research network serves as an open forum for (interdisciplinary) exchange on different questions of energy system analysis, forecasting, simulation and medium/long term energy scenarios. The members cover a wide range of academic institutions, universities, research centers and institutions as well as companies and other organizations. The research network is organized in **five working groups**.

In 2017 the working groups contributed to the 7th Renewable Energies Act of Germany. In addition, a joint three year “model comparison experiment” is planned to start in 2019 including 38 models and 6 focus subjects.

The German Research Network for Energy System Analysis will develop future research topics, new methods and standards. **Aiming to improve the interaction within the research community, we seek to establish a stronger link between the national network(s) and the European network for energy system modelling**.

Data and databases

The working group Data is focusing on the data needs for energy system modelling. Energy systems’ modelling needs many different types of data and it is the goal of the group to develop open standards for data exchange and data sharing and publishing. The idea is to develop a data infrastructure which can be shared by energy systems modellers.

Actors‘ structures and behaviour

Against the background of increasing complexity and dynamics of energy systems, the integration of actors’ structures and behaviors gain in importance.

An important topic is to take account of the heterogeneity of actors with regard to factors, which influence their investment decisions and user behaviour. These factors have to be examined empirically and have to be reflected in the energy system analysis.

Methodology and Reduction of complexity

In recent years energy system models tend to become more and more complex to be able to answer todays and future research questions.

The working group “methods and reduction of complexity” provides a platform for the development and discussion of new methods for energy models. The group currently addresses topics such as reduction of model complexity, parallel computing and big data.

Model coupling and energy systems

A variety of different models are used to generate energy and climate change mitigation scenarios. The working group model coupling and energy systems deals with the coupling of these models.

The spectrum of models ranges from techno-economic models to macro-economic models. The focus here is on different system levels (national, sectoral etc.) In addition, further topic are the spatial and temporal resolution of energy system models as well as uncertainties.

Comparability and Transparency

The working group Transparency started by raising awareness of what transparency in research means and what belongs to it. With foci on subjects like explaining the role of licensing, looking at differences between transparency and quality as well as having all works in mind like data, software, texts and pictures.

Now one of the main tasks is to show ways how this can actually be implemented in research institutions and to point out or even develop tools that are needed to become more transparent.

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