Pressinformation

BINE Informationsdienst

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Modelling renewable electricity supplies

Study compares economic and technical options

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The German federal government wants at least 80 per cent of the electricity production to be generated by renewables by 2050. Scientists at the Öko-Institut are therefore investigating how the growing proportion of renewable energies can be optimally integrated into the energy system using storage systems combined with grid and load management. The newly published BINE-Projektinfo brochure entitled "Modelling power supply for 2050" (02/2016) presents possible basic structures for generating and distributing electricity for the years 2020, 2030 and 2050.

In order to balance out the volatile supply of renewable energy, the consumption also needs to be flexibly organised in both temporal and spatial terms. Thermal power plants, storage systems and smart load management provide corresponding possibilities in this regard. Experts from the Öko-Institut have investigated which options are already available and where there is still need for development.

For this purpose they have developed an electricity market model that incorporates both technical and economic factors. This makes it possible, for example, to depict various energy sources in the future system. Using the model, the experts can estimate the economic feasibility of individual variants. Heat storage systems for CHP plants make economic sense, for example, since low specific investments are needed. Load management for industry, commerce, retail and services provide further possibilities.

The scientists produced generation and consumption scenarios for the years 2020, 2030 and 2050. Among other things, the study showed that the variable electricity generation costs will fall in 2020 through the use of load management, heat and pumped storage systems.

The BINE Projektinfo brochure, which can be obtained free of charge from the BINE Information Service at FIZ Karlsruhe, is available online

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at www.bine.info or by calling +49 (0)228 92379-0. The brochure cover and an additional image can also be downloaded from the press section in this web portal.

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