universität wien

Fakultät für Physik

Isotopenforschung und Kernphysik

E I N L A D U N G

zum

V E R A - S E M I N A R

von

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On the German “Energiewende” and the major features of its future electricity system

Germany has nearly doubled its electricity supply system because more than 70 GW of wind and photovoltaic (PV) power have been added to the traditional one based on thermal power. The peak demand in Germany is about 83 GW. Under these circumstances the major characteristics of a supply system based heavily on intermittent sources can be identified.
I will address the following topics:
- the mix between wind and PV power, between on- and offshore windpower;
- the power installations needed for a 100% energy supply;
- the level of surplus energy;
- the savings in thermal power;
- the operation conditions for the thermal back-up system;
- the needed storage capacity and its operational form;
- the potential of demand-side-management;
- the effects of an EU-wide grid in smoothing the level of intermittency;
- the overall CO_2-reduction;
- cost issues.

Electricity production by intermittent sources has many negative aspects – overproduction in active periods, the need of large-scale storage, which is technically not solved, or the operation of a back-up system. Such a system has major deficiencies and will need improvement or replacement. Further options have to be developed. This represents a classical case for research and technology because a major motivation for these disciplines throughout the existence of mankind was to liberate human beings from the perils and unpredictabilities of nature.

Donnerstag, 23. April 2015, 16:30 Uhr

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