

PRESSEMITTEILUNG

The Europäische Akademie's Spring Conference on renewable energy sources: Supply security and compliance with long-term CO₂ reduction targets?

Bad Neuenahr-Ahrweiler, 31 March 2010. – The proportion of renewables in our energy supply is steadily growing, due in part to fixed feed-in tariffs meant to promote climate protection. These tariffs are aimed at reaching political targets regarding the proportion of renewables in the overall energy supply. For technical reasons, power inputs and outputs must be balanced at all times, in order to avoid network failures and ensure the required quality standard of the generated electricity. Since the amount of fed-in electricity of most currently viable technologies depends upon wind speeds or solar radiation in a given location at a given time, the use of renewables comes with a certain number of imponderables which need to be discussed and clarified.

Therefore, the Europäische Akademie held its Spring Conference on the topic of “Secure electricity supply and renewable energies. Supply security with meeting long-term targets for CO₂-emission reduction?” at the Bonn Wissenschaftszentrum (Science Centre) from 24–26 March 2010. The conference was opened with a public evening lecture by Professor Dr. Kornelis Blok (Utrecht University) on the status quo of scientific and political discussions regarding scenarios of the future and climate protection targets and the claimed contributions of the global supply of energy.

During the first main section of the conference, Dr.-Ing. Joachim Nitsch (German Aerospace Centre DLR, Stuttgart) presented, amongst others, the German Federal Environment Ministry's “reference scenarios”. They demonstrate how Germany could reach its targets by 2050 with an extensive use of renewables. The scenarios make evident how those goals can be reached based on set presuppositions, e.g. for technology development. Adj. Professor Dr. Dietmar Lindenberger (University of Cologne) presented the results of grid studies by the German Energy Agency (dena). He discussed ways of integrating wind power stations into the German electricity supply by the year 2015 or respectively 2020/2025 and emphasised the necessity of a European perspective for the efficient expansion of the use of renewable energies.

The conference also focused on the technical means of balancing out electricity in- and output by enhancing electrical grids and introducing electricity storages. First, Professor Dr.-Ing. Christian Rehtanz (Technical University of Dortmund) presented the challenges and opportunities of integrating renewables into electrical power supply grids: Grid bottlenecks and the current lack of flexibility within

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power distribution networks could be solved, for instance, by means of co-ordinated load-flow regulations, DC transmission lines and end customer participation. Furthermore, Professor Dr. Dirk Uwe Sauer (RWTH Aachen University) presented an overview of the options and fields of application for storing electrical energy, and developed a technology scenario using primarily hydrogen and pumped storages for creating a balance over a span of several days; for shorter time periods, systems such as batteries of electric vehicles, thermal storage systems and Smart Grid Management may be conceivable. The section was concluded by Professor Dr. Dr.-Ing. Hans Müller-Steinhagen (German Aerospace Centre DLR, Stuttgart/University of Stuttgart) who explained the Desertec concept, an industry initiative for secure and environmentally-friendly power supply and its integration into a power union of EU and Mediterranean countries (MENA). To ensure a consistent power feed, solar thermal power plants, for instance, are combined with efficient heat storages and DC transmission lines.

The third section of the conference looked into the legal and economic framework conditions for integrating renewable energies. Professor Dr. Thomas Ziesemer (University of Maastricht) first discussed the economic framework conditions of market economies and proposed to fundamentally rework them. Professor Dr. Jens-Peter Schneider (University of Osnabrück) dealt with current legal regulations and options for setting the course for sustainable energy systems against the backdrop of current German and European legal frameworks, e.g. the responsibility question for the construction of storage facilities and conflicts of use regarding storage media such as gas caverns. Industry representatives (EWE, citiworks, E.ON, RWE) concluded this section with comments on the subject. They discussed approaches to the integration of renewable energies and raised unresolved questions.

It became evident that, although concepts and technologies for integrating renewable energies do exist, they require further expansion and development. Due to the long-term nature of the development and implementation of individual technical measures along with the possibly necessary structural adaptations of markets and the regulation of electrical power grids, supporting concepts and measures for such an integration must be developed further and implemented along with the promotion of power generation from renewable energy sources.

- All contributions are available from the Europäische Akademie website: www.ea-aw.de/en

- *Speakers:* Professor Dr. Kornelis Blok (Utrecht University); Andreas Brabeck (RWE AG, Essen); Vera Brenzel (E.ON, Düsseldorf); Jörg-Werner Haug (citiworks AG, Munich); Dr. Wolfram Krause (EWE AG, Oldenburg); Priv.-Doz. Dr. rer. pol. Dietmar Lindenberger (University of Cologne); Professor Dr. Dr.-Ing. Hans Müller-Steinhagen (German Aerospace Centre, Stuttgart/University of Stuttgart); Dr.-Ing. Joachim Nitsch (German Aerospace Centre, Stuttgart); Professor Dr.-Ing. Christian Rehtanz (Technical University of Dortmund); Professor Dr. rer. nat. Dirk Uwe Sauer (RWTH Aachen University); Professor Dr. jur. Jens-Peter Schneider (University of Osnabrück); Professor Dr. rer. pol. Thomas Ziesemer (University of Maastricht)

- *Scientific Co-ordination:* Dr.-Ing. Bert Droste-Franke (Europäische Akademie GmbH)

The Europäische Akademie zur Erforschung von Folgen wissenschaftlich-technischer Entwicklungen Bad Neuenahr-Ahrweiler gGmbH was founded in 1996 by the Bundesland Rhineland-Palatinate (Land Rheinland-Pfalz) and the German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt e.V. – DLR). Director of the academy and manager of the company is Professor Dr. phil. Dr. phil.h.c. Carl Friedrich Gethmann, who is a full professor of applied philosophy at the Universität Duisburg-Essen. The Europäische Akademie deals with the scientific study of the consequences of scientific and technological advances for individuals and society, as well as for the natural environment. The main focus is on the examination of foreseeable mid and long-term processes that are especially influenced by the natural and engineering sciences and the medical disciplines. As an independent scientific institution, the Europäische Akademie pursues a dialogue with the world of politics and society at large. Further information: www.ea-aw.de/en.