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The winners of the “E-Energy” competition of the Federal Ministry of Economics and Technology have been announced

Dagmar Wöhrl, Parliamentary State Secretary in the Federal Ministry of Economics and Technology (BMWi), announced at CEBIT 2008 the six winners of the Technology Competition “E-Energy: ICT-based Energy System of the Future”.

At the national IT summit, “E-Energy” was declared a priority beacon project as it is a central part of the German government’s High-Tech Strategy and the “Information Society Germany 2010” programme. As a result of the Technology Competition advertised in April 2007, 28 top-flight project proposals were submitted for the creation of E-Energy model regions. 6 of the proposed research projects were selected by an independent jury for government funding. These projects show in the best way possible how the enormous potential for optimization in information and communication technologies (ICT) can be tapped in order to achieve a higher level of economic viability, security of supply as well as climate and environmental compatibility in power supply. The funding for the winning projects will be provided based on an inter-ministerial partnership with the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). Subject to budgetary provision, the Economics Ministry will provide up to 40 million euro for 4 model regions while the Ministry for the Environment will fund the other two model regions. This way, more model projects can be carried out than originally planned.

“We are still in the initial phase on the road to the Internet of Energy and are facing tremendous challenges”, State Secretary Wöhrl said. Only ICT makes an optimization of technical system and business processes possible right across all stages of the value chain. This change has a deep impact on corporate organization and market relations. We want “E-Energy” to enable us to better reach our energy and climate policy goals. Our intention is to provide a fresh stimulus to the information and energy industry and open up forward-looking sectors of employment and markets.

“E-Energy” builds on the results of the Economics Ministry’s previous study “Potentials of Information and Communication Technologies to Optimise Energy Supply and Consumption”. The study led to the conclusion that the further progress needed to liberalize and decentralize the energy sector will not be successful without comprehensive ICT penetration. It became particularly clear that ICT can significantly improve energy efficiency, the development of renewable energies and CO2 reduction. On the whole, the study identified a major need for action by commerce and government.

The following award-winning projects were selected for E-Energy funding (listed in alphabetical order):

eTelligence - Intelligence for Energy, Markets and Grids, Cuxhaven

The eTelligence project represents a rural model region with a low penetration rate and a high share of renewables which rely on wind energy. It is planned to develop a complex control system to balance the volatility of wind power which intelligently integrates wind energy into grids and markets and ensures a high level of supply security coupled with improved economic viability. The core of eTelligence is a regional electricity website which brings together suppliers, consumers, energy service providers and grid operators. A standardized Plug&Play connection facilitating access for new suppliers and consumers will be the basis for further forward-looking solutions. Online visualization is available to help household customers identify “energy hogs” in their home and adjust their consumption habits. Cuxhaven offers ideal possibilities for eTelligence: several swimming pools, cooling houses, the housing society and operators of wind farms and CHP plants want to become active players in the eTelligence marketplace.

Stakeholders: EWE AG, OFFIS e.V., energy & meteo systems GmbH, BTC AG, Fraunhofer-Verbund Energie, SAP AG

E-DeMa – Development and Demonstration of Decentralized Integrated Energy Systems on the Way Towards the E-Energy Marketplace of the Future; Rhine-Ruhr Region

The model region of the E-DeMa regional network which includes rural and urban areas with two different distribution networks in the Rhine-Ruhr region is characterized by a very heterogeneous penetration rate. This poses technical challenges which are being tackled by creating an intelligent ICT infrastructure. The research project is based on the number of digital electricity meters (“SmartMetering”) currently used to create energy efficiency by networking in private households (new “ICT Gateway”). One objective is to develop an intelligent electricity consumption control system and timely recording and provision of electricity consumption data. Another goal is to optimize the system management of decentralized distribution networks.

Stakeholders: RWE Energy AG, Siemens AG, ef.ruhr GmbH, Miele & Cie. KG, Stadtwerke Krefeld AG, Prosyst Software GmbH

MEREGIO – Gateway to Minimum Emission Regions, Karlsruhe/Stuttgart

The MEREGIO (Minimum Emission Region) research project aims at the use of ICT to minimise carbon emissions and to contribute to climate protection. The centerpiece of this concept is the development of a “Minimum Emission” certification procedure to be applied in the model region of Karlsruhe/Stuttgart. This is intended as a tool to communicate - with a high level of visibility to the outside world - the effectiveness of regional concepts for better energy efficiency and reduction of greenhouse gas emissions. The requirements placed on an efficient energy system are met by integrating on a single platform state-of-the-art online technologies from power generation to consumption. The further development of standards plays a paramount role in this context.

Stakeholders: EnBW Energie Baden-Württemberg AG; ABB AG, IBM Deutschland GmbH, SAP AG, Systemplan GmbH, University of Karlsruhe (TH)

Model City of Mannheim - Model City of Mannheim in the Rhein-Neckar Metropolitan Region, Mannheim

The project “Model City of Mannheim” focusses on an agglomeration area with a high rate of penetration and a high rate of use of renewable and decentralized energy. As part of the “E-Energy” competition, a representative large-scale trial is being carried out testing new methods to improve energy efficiency, grid quality and the integration of renewable and decentralized energy into the municipal distribution network. Its key objective is the development of an overarching approach embracing power, gas and water in order to integrate consumption components via a broadband-powerline infrastructure. Customers are supplied with electric power close to the place and time of its generation. High-loss power transmission and grid energy storage can be avoided. The customer can align his energy demand with the variable price. Real-time information on the customer’s energy consumption is intended to help him contribute actively to higher energy efficiency.

Stakeholders: MVV Energie AG, IBM Deutschland GmbH, Power PLUS Communications AG, Papendorf Software Engineering GmbH, DREWAG - Stadtwerke Dresden GmbH, University of Duisburg-Essen

RegModHarz - Regenerative Model Region of the Harz, Harz District

The objective of the project “Regenerative Model Region of the Harz” is to ensure grid stability inspite of the high volatility of renewable energy. The Harz district, which is characterized by a large number of renewable energy suppliers (wind farm, pumped-storage power plant and photovoltaics plants, biogas plants) is an ideal environment to test the technologies and business models developed under the project. Suppliers, traders, grid operators and customers are provided with an ecologically and economically optimal energy supply up to full supply based on an innovative online network. From a technological perspective, the focus is on the integration of electric vehicles as electrical storage devices which is to be tested.

Stakeholders: RegenerativKraftwerk Harz GmbH & Co KG, E.ON Avacon Netz GmbH, Siemens AG, in.power GmbH, ISET e.V, Vattenfall Europe Transmission GmbH

Smart W@TTS – Increasing the Energy System’s Self-Regulating Capacity Through the “Intelligent Kilowatt Hour” and the Internet of Energy, Aachen

The Smart W@tts model project is based on the network between Trianel and 70 municipal utilities wanting to contribute to an “Internet of Energy” by creating interoperability and standardisation in an ICT-aided energy supply. The project plans to develop modular intelligent electricity meters into a household power station. The aim is for white goods to consume power primarily only at times when it is easily available (e.g. during strong winds or sunshine), without having to compromise convenience and comfort.

In addition, this infrastructure is intended to serve as a basis to provide customers with detailed information and new energy market services, e.g. a new type of online energy advice.

Stakeholders: Trianel European Energy Trading GmbH, Soptim AG, FIR [Research Institute for Rationalisation] at the Aachen Technical University, PSI Büsing & Buchwald GmbH, Bosch Siemens Hausgeräte GmbH, Stadtwerke Aachen AG

See www.bmwi.de and www.e-energie.info for further information.

If you have any questions, please contact Mr. Günter Seher from the Multimedia project provider of the Economics Ministry (guenther.seher@dlr.de).