

Press release

European collaboration to prepare European electricity networks for influx of electric vehicles

Arnhem, the Netherlands / Freiburg, Germany / Aalborg, Denmark, 18 January 2013 – A European consortium, consisting of [DNV KEMA](#), [Fraunhofer ISE](#), [EMD International](#), [RAH](#) and [RFVV](#), has begun an EU funded project to develop modeling and simulation tools for optimally integrating electrical vehicles (EVs) into electricity networks. The project, *Novel E-Mobility Grid Model (NEMO)*, plays a key role in the further development of electric mobility in Europe and will be an important element in the further development of smart grids.

The number of electric vehicles (EVs) in Europe is rapidly rising, but there is serious concern over the existing electricity infrastructure's capacity to accommodate the associated dramatic growth in electricity demand. As charging spots and stations connect to the existing grid, the NEMO project has been set-up to support European grid operators and service providers in assessing the impact of EVs on the power grid, and to evaluate possible solutions such as grid extension or load management.

NEMO has been commissioned by the European Union's ERA-NET Plus initiative, *Electromobility+*, which aims to create a sustainable framework for electromobility in Europe.

Integrating complementary simulation tools into a single framework

The consortium will develop a NEMO simulation and optimization tool suite based on the existing complementary simulation tools PLATOS, SimTOOL and energyPRO, which were each developed by the respective NEMO core partners DNV KEMA, Fraunhofer ISE and EMD.

The simulation tools combine to address both market-oriented and technical problems that may result from the predicted influx of EVs on the electricity grid, such as identifying grid constraints in the network or determining the optimal use of available electricity generators. "Our three tools will be further extended and integrated into one single tool suite to assess the impact of a large volume of EVs on both the electricity network and energy markets in its entirety. The combined project team will be able to offer cooperative services that none of the partners could offer individually", explains Dr Martijn Huibers, NEMO project coordinator at DNV KEMA.

The project team aims to enable the exchange of simulation data between the models of each tool. In order to achieve this, the NEMO tool suite will have to be designed specifically for interoperability in order to facilitate data exchange, and advanced versions of each of the partners' existing tools will need to be developed to fit within this framework. In the development of this tool set, the NEMO consortium will work closely with stakeholders to ensure the suite addresses key market needs.

Use case demonstration of the tool suite's applicability

The interoperable simulation models within the NEMO framework will be applied and validated by three representative case studies in order to assess the key issues of integrating EVs into electricity networks.

The first use case will demonstrate the use of NEMO tools for power grid planning in terms of matching distributed generation (DG) and charging of EVs. This involves the assessment of energy flows and capacity utilization of all grid components, for various combinations of load generation in certain grid segments.



The second use case will concentrate on applying the NEMO tool suite to fast charging scenarios and a number of adequate technical solutions. To select the grid infrastructure optimally according to technical and economic criteria will be a main focus of the investigation.

Finally, investigations will focus on the development of approaches to help power grid operators solve problems linked to ‘abnormal’ charging situations. For example, dealing with peak demand at events where a large number of might recharge their EVs simultaneously.

More information about the NEMO project, its simulation tools and the showcases are available at the project website <http://www.nemo-project.eu>.

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This is a joint press release by DNV, Fraunhofer ISE, EMD International, RAH and RFVV.

About DNV KEMA Energy & Sustainability

DNV KEMA Energy & Sustainability, with more than 2,300 experts in over 30 countries around the world, is committed to driving the global transition toward a safe, reliable, efficient, and clean energy future. With a heritage of nearly 150 years, we specialize in providing world-class, innovative solutions in the fields of business & technical consultancy, testing, inspections & certification, risk management, and verification. As an objective and impartial knowledge-based company, we advise and support organizations along the energy value chain: producers, suppliers & end-users of energy, equipment manufacturers, as well as government bodies, corporations and non-governmental organizations. DNV KEMA Energy & Sustainability is part of DNV, a global provider of services for managing risk with more than 10,000 employees in over 100 countries. For more information on DNV KEMA Energy & Sustainability, visit www.dnvkema.com.

About Fraunhofer ISE

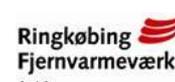
The Fraunhofer Institute for Solar Energy Systems ISE conducts research on the technology needed to supply energy efficiently and on an environmentally sound basis in industrialised, threshold and developing countries. To this purpose, the Institute develops systems, components, materials and processes in the areas of the thermal use of solar energy, solar building, solar cells, electrical power supplies, chemical energy conversion, energy storage and the rational use of energy. The Institute's work ranges from fundamental scientific research relating to solar energy applications, through the development of production technology and prototypes, to the construction of demonstration systems. The Institute plans, advises and provides know-how and technical facilities as services. For more information on Fraunhofer ISE, visit www.ise.fraunhofer.de/en.

About EMD International

EMD has over 20 years of experience within software development, preparation of detailed feasibility analyses, study appraisals and second opinion analyses for many different types of distributed energy projects. It is in a position to give an unbiased appraisal of the viability of cogeneration, RES and other energy projects at a particular site. For more information on EMD International A/S, visit www.emd.dk.

About RAH

Ringkøbing Amts Højspændingsforsyning a.m.b.a (RAH) delivers electricity to large parts of private households, institutions and companies in Jutland with approximately 35,000 customers. The supply area covers an area of 1,450 km². The distribution of electricity to customers and shareholders is the core competence of RAH with a focus on proximity, quality, security of supply and price. For more information on RAH, visit www.rah.dk.



About RFVV

Ringkøbing Fjernvarme (RFVV) is a district heating company owned by the 4,100 heat consumers. The CHP capacity at RFVV is a 6.2 MW gas turbine and a 8.87 MW gas engine. It has installed a 12 MW electrical boiler and a 15,000 m² solar collector. The thermal stores of RFVV could allow the flexible operation which is needed for integrating EVs and wind energy plants into the electricity network. In this context, the two thermal stores at the Rindum plant are 3,000 m³ and 2,500 m³ while the thermal store at the solar heat plant is 1,500 m³. RFVV sells electricity in the spot market and participates in two of the balancing markets, the regulating power market (tertiary control) and the primary reserve market, with both the CHP-units and the electrical boiler. For more information on RFVV, visit www.rfv.dk.

+++Information for editors, not for publication+++

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