



# Smart Grids and Mobility

Würzburg, Germany

Tuesday, June 16<sup>th</sup>, 2009

Wednesday, June 17<sup>th</sup>, 2009



## Location:



**Würzburg** – Baroque City with southern flair and also known as the “gateway to the Romantic Road”. Furthermore its “Residenz” is listed in the UNESCO World Heritage. It is the metropolis of sunny Franconia, a landscape whose vineyards flank the river Main and the wines are famous throughout the world.

Würzburg is very well accessed by the train “ICE” and has a direct line from Frankfurt Airport.

## Conference Chairman:



### Prof. Dr. Nikos Hatzigiorgiuri

NTUA National Technical University of Athens, Greece

Professor Nikos Hatzigiorgiuri received the Diploma in Electrical and Mechanical Engineering from NTUA (National Technical University of Athens) and the MSc and PhD degrees from UMIST (University of Manchester Institute of Science and Technology), Manchester, England.

From 1984 he is with the Power Division of the School of Electrical and Computer Engineering of NTUA, where he is full professor, since 1995. He is teaching Power System Analysis (Steady State and Transient Conditions) and Renewable Energy Sources. He is executive Vice-chairman of PPC (Public Power Corporation) and deputy CEO.

## Scientific Committee:

**Dr. Bernhard Michael Buchholz**  
Siemens AG, Erlangen, Germany

**José Corera**  
Iberdrola, Spain

**Christian Dürschner**  
Ing.-Büro Alt. Antriebe & Erneuerbare Energien, Erlangen, Germany

**Prof. Dr. Edmund Handschin**  
University of Dortmund, Germany

**Prof. Dr. Nikos Hatzigiorgiuri**  
NTUA National Technical University of Athens, Greece

**Dr. Frans Nieuwenhout**  
ECN, The Netherlands

**Dr. Aleksandra Sasa Bukvic-Schäfer**  
Institute of Solar Energy Technology (ISET), Kassel, Germany

**Prof. Dr.-Ing. Jürgen Schmid**  
Institute of Solar Energy Technology (ISET), Kassel, Germany

**Philipp Strauss**  
Institute of Solar Energy Technology (ISET), Kassel, Germany

**Dr. Gerald Vones**  
Federal Ministry of Economics and Labour, Vienna, Austria

## Supporting Organisations:



Climate Alliance



SMARTGRIDS  
AUSTRIA

## Focus of the Conference:

- Development of Technologies
- Know-how Transfer
- Identification of R&D Needs
- Exchange of Results and Ideas
- Presentation of Field Experience

## Your Advantage:

- You gain comprehensive information about the **state of technology** as well as latest **results from research and development**.
- The scope of the conference is intended to encourage a hearty **open discussion of problems and future strategies to spread Smart Grids**.
- The speakers are leading scientific and business experts.
- The programme structure and the conference venue best ensure **intensive experience-sharing** between participants and presenters.
- The detailed **proceedings book** with all talks and poster contributions will be handed over at the start of the conference and will serve you well as reference works.

## You will meet:

Regulators, car developers, car manufacturers, utilities, automotive industries, grid operators, engineers and scientists active in the field of renewable energies and storage technologies, electricity power grids, policymakers, consultants, other attendees

The European Target of a 20 % contribution from Renewable Energies by 2020 will have a major impact on its energy structures. Together with increased energy efficiency, integration of very large amounts of renewable energy sources as well as distributed co-generation units, new grid architectures and grid management strategies are required. Besides the integration of conventional loads into grid management strategies, the use of electricity in the transportation sector will offer multiple benefits: compared with conventional motors using liquid fuel, the direct use of electricity could improve energy efficiency up to 400 %! Through the development of plug-in hybrid cars or electric vehicles a big share of this potential could be exploited.

On the other hand, integration of these electric or hybrid vehicles into the electricity grid and its management would offer a new dimension in power-balancing not only by controlled battery charging but also by the possibility of injecting power from the car battery into the grid.

Besides normal grid management, this structure could offer a special benefit for microgrids operating in stand-alone or emergency mode.

We are organizing this conference to raise awareness about the potential of integrating electric and hybrid vehicles into the electricity supply structure concerning grid management strategies as well as gain in energy efficiency.

In this sense, the conference will form the bridge between electric-grid management issues and the introduction of the highly efficient use of renewable energies in mobility.

### **Prof. Dr. Nikos Hatziargyriou**

NTUA National Technical University of Athens, Greece

## Information about OTTI:

OTTI (Ostbayerisches Technologie-Transfer-Institut e.V.) is a non profit organisation founded in 1977. Its aim is the stimulation of the industrial economy and the support of the co-operation between science and industry. OTTI has a 30-person strong team who proffer seminars, specialist forums and conferences. About 5000 specialists and managerial personnel from business, administration and science take part every year.

The ENERGY COLLEGE is the leading European conference organiser of purpose-oriented seminars and conferences in the field of renewable energies. Furthermore, we offer courses in the fields of building, construction and the efficient use of energy. Our conferences with the accompanying specialist exhibitions in Kloster Banz belong to the definitive meetings of the solar energy sector in the German-speaking area.

For more detailed information please visit [www.otti.de](http://www.otti.de)

**Tuesday, June 16<sup>th</sup>, 2009**

**Registration and Checkin starts at 9:00**

**Welcome Coffee**

10.00 **Opening Address**  
Eckardt Günther, OTTI, Regensburg, Germany

### **Aim of the Conference**

Chairman Prof. Dr. Nikos Hatziargyriou, Federal Research NTUA National Technical University of Athens, Greece

## **POLITICAL – ECONOMIC FRAMEWORK**

**Chair: Prof. Dr. Nikos Hatziargyriou, Federal Research NTUA National Technical University of Athens, Greece**

10.20 E-Mobility + E-Energy  
Dr. Andreas Goerdeler, German Federal Ministry of Economics and Technology, Berlin, Germany

10.40 Smart Grids and Smart Customers in Europe  
John Scott, London, KEMA, United Kingdom

11.00 E-Mobility + Energy Efficiency  
Prof. Dr.-Ing. Jürgen Schmid, Institute of Solar Energy Technology (ISET), Kassel, Germany

11.20 Grids for Vehicles  
Thomas Theisen, RWE Energy AG, Dortmund, Germany

11.40 Introduction National Technology Platform Smart Grids Austria  
Andreas Lugmaier, Coordinator NTP Smart Grids Austria, Austria

11.55 Discussion

12.20 **Lunch Break and Visit to the Trade und Poster Exhibition**

## **SMART GRIDS INNOVATIONS IN EUROPE**

**Chair: Prof. Dr. Edmund Handschin, University of Technology Dortmund, Germany**

14.00 From Dispatchability to Stability: Energy Storage in Decentralized Electricity Grids - Functional Requirements and Solutions of selected examples  
Michael Lippert, Saft Batteries, Nürnberg, Germany

14.15 Communication and Control of Electric Vehicles - A Market Overview in the Frame of the Initiative ELAN 2020  
Dr. Christoph Mayer, OFFIS, Oldenburg, Germany

14.30 Using Frequency Dependent Charging of Plug-in Vehicles to Enhance Power Systems Frequency Stability  
Antti Rautiainen, Tampere University of Technology, Finland

14.45 Assessment of Dual Use of Electric Vehicles in the UK Electricity Market  
Bobby Zhong, University of Strathclyde, Glasgow, United Kingdom

15.00 Charging Systems for a Sustainable Integration of Electric

Vehicles  
Johannes Rolink, Technische Universität Dortmund, Germany

- A1 **Poster Presentation**  
A pilot polygeneration microgrid for covering the needs of remote regions in electricity, potable water and fuel  
George Kyriakarakos, Agricultural University of Athens, Greece

15.20 Discussion

15.50 **Coffee Break and Visit to the Poster Exhibition**

## SMART INTEGRATION TECHNOLOGIES

**Chair: Dr. Manuel Sanchez Jiménez, European Commission, Brussels, Belgium**

- 16.30 Indirect control of plug-in hybrid vehicles with variable tariffs  
David Dallinger (ISI), David Nestle (ISET) and Jan Ringelstein (ISET), Fraunhofer Institute for Systems and Innovation Research (ISI) and Institute of Solar Energy Technology (ISET), Germany

- 16.45 Electric Cars – Challenge or Opportunity for the Electricity Distribution Infrastructure?  
Jukka Lassila, Lappeenranta University of Technology, Lappeenranta, Finland

- 17.00 Controlling strategies of PV grid-connected systems with storage capabilities  
Prof. Nicolae Olariu, Universitatea Valahia din Targoviste, Targoviste, Romania

- 17.15 Prof. Electric Vehicles Grid Integration Under the MicroGrid Concept  
Jao Abel Pecos Lopez, INESC PORTO/FEUP, Porto, Portugal

- 17.30 Smart Grids Technologies for Electric Vehicles in Power Systems with 50% Wind Power Penetration: the Danish Case  
Prof. Jacob Østergaard, Technical University of Denmark (DTU), Denmark

17.45 Discussion

18.10 **Poster Presentation**

- B1 Ergon Energy Ubiquitous Telecommunications Network (UbiNet)  
Grahame Foulger, Ergon Energy, Brisbane, Australia

- B2 Autonomous Energy Management for V2G  
Klaus-Wilhelm Köln, UfE Umweltfreundliche Energieanlagen GmbH, Lübeck, Germany

- B3 Demand Side Management in Smart Buildings  
Dr. Panayiotis Romanos, NTUA, Zografou, Greece

- B4 Quantifying Impacts and Benefits of Electric Vehicles Integration on Electricity Grids  
Dr. Filipe Soares, INESC Porto, Porto, Portugal

- B5 Smart Grid Vehicles for Distributed Grid Support  
Gunnar Kaestle, TU Clausthal, Clausthal-Zellerfeld, Germany

- B6 Solar Mobility needs clever pv solutions  
Willi Ernst, CentroSolar Group AG, Paderborn, Germany

- B7 Optimization method for recharging electric vehicles with a photovoltaic production in the workplace  
Yves Marcoux, Centre Scientifique et Technique du Bâtiment, Saint D'Hé, France

18.35 End of the first Conference Day  
**Visit to the Trade and Poster Exhibition**

19.15 Buffet

- 20.30 Networking in the Bürgerspital, Theaterstraße 19, Würzburg, (self payment)

## Wednesday, June 17<sup>th</sup>, 2009

### STORAGES FOR SMART MOBILITY

**Chair: Dr. Frans Nieuwenhout, ECN Energy Research - Centre of the Netherlands, Petten, The Netherlands**

- 9.00 Storage Technologies for Smart Mobility  
Dr. Ludwig Jörisen, ZSW, Ulm, Germany

- 9.20 Modelling the plug-in availability and calculation of energy storage potential of electric and hybrid vehicles  
Niklas Hartmann, Institut für Energiewirtschaft und Rationelle Energieanwendung, Universität Stuttgart, Stuttgart, Germany

- 9.35 Dynamic battery model for vehicle to grid appraisal  
Dr. Piotr Holik University of Strathclyde, Glasgow, United Kingdom

- 9.50 Li-Tec's Li-Ion Batteries for Smart Grids and Mobility  
Tim Schäfer, Li-Tec Battery GmbH & Co. KG, Kamenz, Germany

9.15 Discussion

9.30 **Poster Presentation**

- C1 Assessment and Impact of the Storage Management of Grid Connected Electric Vehicles According to a Business Model Analysis  
Dr. Eduardo Zabala, Labein-Tecnalia, Derio, Spain

- C2 Grid integration issues for EVs / PHEVs: the DERlab approach  
Dr. Elisabeth Lemaire, INES-CEA, Le Bourget du Lac, France

- E1 Proof-of-concept implementation of a software infrastructure for PHEV's in a Smart Grids context  
Henrik Bindner, Wind Energy Division, Riso DTU, Roskilde, Denmark

10.35 **Coffee Break and Visit to the Poster Exhibition**

## PLUG-IN-VEHICLE SYSTEMS

**Chair: Dr. Aleksandra Bukvic-Schäfer, Institut für Solare Energieversorgungs-technik (ISET), Kassel, Germany**

- 11.20 The Electrical Drive in Comparison with other Powertrain Systems  
Prof. Dr. rer. nat Ludwig Brabetz, Universität Kassel, Germany
- 11.40 The ISET Testbed for Plug-In Hybrid Vehicles  
Markus Landau/Thorsten Bülo, Institute of Solar Energy Technology (ISET), Kassel, Germany
- 12.00 THINK  
Dr. Egil Mollestad, Think, Snarøya, Norway
- 12.20 30.000.000 km TWIKE Field Experience  
Martin Moescheid, FINE Mobile GmbH, The TWIKE Manufacturer, Rosenthal, Germany
- 12.40 Discussion
- 13.00 Lunch Break and Visit to the Poster Exhibition

## PILOT- UND DEMONSTRATION PROJECTS

**Chair: José Corera, iberdrola, Spain**

- 14.30 RegModHarz  
Thomas Hunecke, E.ON Avacon AG, Braunschweig, Germany
- 14.50 Ready to race with zero emissions  
DI Dr. Christian Grabner, arsenal research, Department Mobility, Wien
- 15.10 Grid Integration of VW-PlugIn-Hybrids with tariff controlled bidirectional operation within the pilot project of German-BMU-project „fleet test electro mobility“  
Dr.-Ing. Christof Wittwer, Fraunhofer Institute for Systems and Innovation Research (ISI), Freiburg, Germany
- 15:45 Smart Grids implemented on Scottish islands  
Ruth Kemsley, Senergy Econnect, Hexham, United Kingdom
- 16.00 Discussion
- 16.25 **Closing Remarks**  
Perspective and participants  
Feedbacks  
Prof. Dr. Nikos Hatzigrygiou, Federal Research NTUA National Technical University of Athens, Greece
- 16.30 **End of Conference**  
Farewell Coffee

## Organisation Committee:

**Eckardt Günther, Britta Haseneder**

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## Accommodation:

**Please book your accommodation yourself as soon as possible:**  
[www.hrs.de](http://www.hrs.de)

## Conference Venue

**Congress Centrum Würzburg**  
Am Congress Centrum  
97070 Würzburg, Germany  
Phone +49 931 372372  
Fax +49 931 373652  
[tourismus.tagungen@wuerzburg.de](mailto:tourismus.tagungen@wuerzburg.de)

## Conference Fee

**If registered until April 16<sup>th</sup>, 2009**

Per Person: € 580,00  
Member of OTTI: € 510,00

**after April 16<sup>th</sup>, 2009**

Per Person: € 680,00  
Member of OTTI: € 610,00

Reduced fee for presenters: € 310,00

From the third participant on, every other participant of your company profits from our **15% discount** on the conference fee.

Fees cover the admission to all sessions, invitation to all coffee breaks, conference lunch, the dinner and the conference proceedings.

**The Conference Language is English.**

### Photo Credits

Kartenhaus Kollektiv, Regensburg and Congress-Tourismus-Wirtschaft Würzburg

## European Conference Smart Grids and Mobility

June 16<sup>th</sup> – 17<sup>th</sup>, 2009 (SGM 3111)

OTTI e.V.

Headword: Smart Grids and Mobility

Wernerwerkstraße 4  
93049 Regensburg  
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### Registration Conditions

You will receive the relevant papers and confirmation as soon as we have your registration. The fees are exempt from value-added tax (VAT) and are payable in full upon receipt of the invoice. **Payment must be received no later than 14 days before the conference begins (it has to be settled in EURO). All bank charges have to be covered by the transmitter!** OTTI reserves the right to refuse admission if the amount has not arrived, unless said amount is paid by cheque on the day. In case transferring occurs later than 14 days before the conference, please keep a copy of the transfer order ready and show it in the organisation office at the conference. OTTI reserves the right to change the programme at short notice for urgent reasons. There is no charge for cancellations made at least 35 days before the event starts. If the booking is cancelled 34 days before the start of the conference a service charge of € 120,- will be made. It is possible to rebook once without extra charge. All cancellations must be in writing. It is possible to send a substitute delegate at any time without additional cost, but we need a written message about the change before the conference starts. Legal domicile and place of fulfilment is Regensburg.

# European Conference Smart Grids and Mobility

