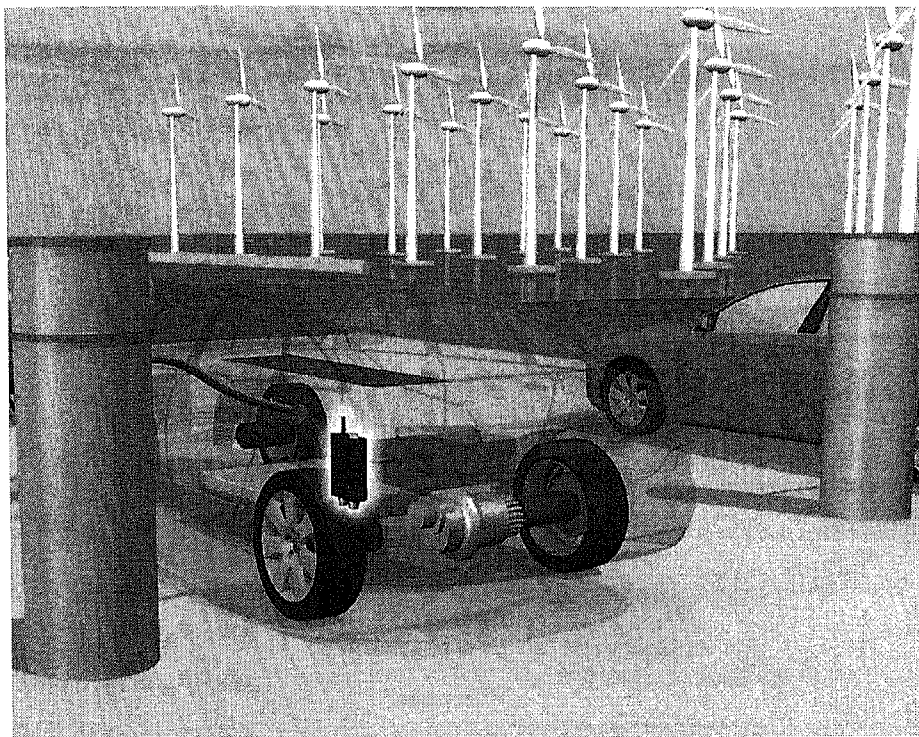


## **3<sup>rd</sup> European Conference**



# **Smart Grids and E-Mobility**

**Munich, Germany**

**October 17<sup>th</sup>/18<sup>th</sup>, 2011**



# Table of Contents

---

	Page
<b>Organisational Guidelines</b>	1
<b>Chairman's Message</b>	3
<b>Programme Outline - Timetable</b>	5
<b>Conference Programme</b>	6
<b>Smart Grids &amp; E-Mobility</b>	
<b>Market and billing models for electric mobility</b>	14
Malte Bolczek, Technische Universität Dortmund, Dortmund, Germany	
<b>Optimal pooling of electric vehicles for ancillary markets under consideration of uncertain parameters</b>	22
Thomas Pollok, RWTH Aachen, Aachen, Germany	
<b>Introducing Human Factors Psychology to Vehicle-to-Grid Technologies</b>	23
Ulf Hahnel, Fraunhofer Institute for Solar Energy Systems ISE Albert-Ludwigs-University Freiburg, Freiburg, Germany	
<b>The role of Smart Sensor Networks for Voltage Monitoring in Smart Grids</b>	31
Petter Støa, SINTEF Energy Research Brunel University, Trondheim, Norway	
<b>Evaluating the impacts of Electric Vehicles and Micro-Generation in Distribution Networks</b>	43
Filipe Soares, INESC Porto, Porto, Portugal	
<b>Mobile Storage and Economics</b>	
<b>Electric Cars as Energy Storages – Case Study from Nordic Country</b>	52
Jukka Lassila, Lappeenranta University of Technology, Lappeenranta, Finland	
<b>Are Battery Electric Vehicles Competitive? - The Development of a Customer Value-based Model</b>	60
Richard Colmorn, Jacobs University Bremen GmbH, Bremen, Germany	
<b>Technical and commercial aspects of battery systems for electric mobility</b>	68
Johannes Jargstorf, Heverlee, Belgium	
<b>Charge application protocol for different bidirectional integration topologies</b>	76
Pascal Benoit, Fraunhofer Institute for Solar Energy Systems, Freiburg, Germany	

---

# Table of Contents

---

## Poster Presentations P1 – P5

<b>The use of Electric Vehicles in Greece: A Case Study</b>	<b>84</b>
Christos Ioakimidis, Deusto Institute of Technology – DeustoTech Energy, Bilbao, Spain	
<b>Fast Charging Station Business analysis</b>	<b>92</b>
Jorge Borges, IST / MIT Portugal noLimits Consulting, Lisbon, Portugal	
<b>Power Distribution Networks: Intelligent Substations (S2G)</b>	<b>100</b>
María Emilia Hervás, Greenpower, Seville, Spain	
<b>Optimal design and energy management of decentralized PV-power supply units with short-term and long-term energy storage path</b>	<b>112</b>
Thilo Bocklisch, TU Chemnitz, Chemnitz, Germany	
<b>Easy Grid Analysis Method for a central observing and controlling system in the low voltage grid for E-Mobility and Renewable Integration</b>	<b>120</b>
Andreas Schuster, Vienna University of Technology, Vienna, Austria	

## Information and Communication Technologies (ICT)

<b>Smart Grids and EU Data Protection Law - What is the legal framework?</b>	<b>130</b>
Jörg Hladjk, Hunton & Williams European Data Protection & Privacy Practice, Brussels, Belgium	
<b>Smart Integration of Electric Vehicles</b>	<b>135</b>
Åstrid Nieße, Group Manager, OFFIS - Institut für Informatik, Oldenburg, Germany	
<b>Smart Standards for Smart Grid Devices</b>	<b>143</b>
Gunnar Kaestle, Institut für Elektrische Energietechnik, TU Clausthal, Clausthal-Zellerfeld, Germany	
<b>Driving Ambition: Bridging the Gap between Electric Vehicles and Smart Metering</b>	<b>151</b>
Aitor Galdos, Landis+Gyr, Zug, Switzerland	
<b>Analysis of an Electric Vehicle Agent Based Management Model</b>	<b>162</b>
Panagiotis Papadopoulos, Cardiff University, Cardiff, UK	

## Poster Presentations P6 – P11

<b>Assessing the potential of electric vehicles and photovoltaics in a smart-grid environment in Brazil</b>	<b>172</b>
Ricardo R��ther, Universidade Federal de Santa Catarina, Florianopolis, Brazil	

---

# Table of Contents

---

<b>Opportunities and challenges with large scale integration of Electric Vehicles and Plug-in-Vehicles in the power system</b>	<b>180</b>
Helge Seljeseth, SINTEF Energy Research, Trondheim, Norway	
<b>Implications of Vehicle-to-Grid Strategies on Lithium-Ion Batteries and Grids</b>	<b>188</b>
Markus Hackmann, P3 automotive GmbH, Stuttgart, Germany	
<b>A methodology for evaluating the hosting capacity margins for PEVs on distribution grids</b>	<b>193</b>
Iva Maria Gianinoni, Ricerca sul Sistema Energetico - RSE S.p.A., Milan, Italy	
<b>Integration of fast EV charging systems into the distribution grid</b>	<b>201</b>
Mikel Zamalloa, ZIV, Zamudio, Spain	
<b>Smart charging systems for intelligent garages</b>	<b>209</b>
Mikel Zamalloa, ZIV, Zamudio, Spain	
<b>Charging &amp; Testing</b>	
<b>The Need for Innovative Functionalities for On-Board Electrical Vehicles Chargers</b>	<b>218</b>
Joao Abel Pecas Lopes, INESC PORTO/FEUP Campus da Feup, Porto, Portugal	
<b>Towards a system for accessing real-time, cross-provider electric mobility charging station information</b>	<b>219</b>
Theo Lutz, Research Institute for Operations Management (FIR) at RWTH Aachen University, Aachen, Germany	
<b>Concept Evaluation of an Inductive Charging System for Electric Vehicles</b>	<b>227</b>
Heike Barth, Fraunhofer-Institut für Windenergie und Energiesystemtechnik (IWES), Kassel, Germany	
<b>System integrated testing of EV batteries</b>	<b>235</b>
Oliver Gehrke, Risø National Laboratory Technical University of Denmark, Roskilde, Denmark	
<b>Poster Presentations P12 – P16</b>	
<b>Requirements analysis for a smart charging infrastructure enabling maximum use of renewable energy</b>	<b>238</b>
Raf Ponnelle, VITO, Mol, Belgium	

---

# Table of Contents

---

<b>The Hybrid Power Supply System for Truong Sa Islands Using Solar And Wind Energy</b>	<b>239</b>
Truong Quang Vinh, Bach Khoa Investment and Development of Solar Energy Corporation, Ho Chi Minh, Vietnam	
<b>Intelligent Local Network Management for the Integration of Distributed Generation and Storage Systems</b>	<b>247</b>
Wolfram Heckmann, Fraunhofer-Institute for Wind Energy and Energy System Technology IWES, Kassel, Germany	
<b>Network of Value Creation Networks for E-Mobility - An Analysis of the Collaborative Competitive Advantage</b>	<b>255</b>
Richard Colmorn, Jacobs University Bremen gGmbH, Bremen, Germany	
<b>Project Netquality</b>	<b>262</b>
Rolf Witzmann, TU München, Institut für Energietechnik, Munich, Germany	
<b>Case Studies &amp; Demonstration Projects</b>	
<b>The Interdependences between Electric Vehicles and Offshore Wind Energy - An Investigation for the North-Western Region of Germany</b>	<b>264</b>
Marius Buchmann, Bremer Energie Institut, Bremen, Germany	
<b>Testing Platform for E-Mobility (TPE)</b>	<b>272</b>
Johannes Prior, Fraunhofer IWES, Kassel, Germany	
<b>Experiences from integrating DG in rural MV networks</b>	<b>280</b>
Maren K. Istad, SINTEF Energy Research, Trondheim, Norway	
<b>MUGIELEC: A comprehensive approach to EV recharge infrastructure</b>	<b>288</b>
Aitor Arzuaga, ZIV, Zamudio, Spain	
<b>Iodel Region Electric Mobility Munich - Drive eCharged</b>	<b>296</b>
Verner vom Eyser, Siemens AG, Corporate Technology, München, Germany	
<b>List of Posters</b>	<b>297</b>
<b>List of Authors</b>	<b>299</b>
<b>List of Participants</b>	<b>303</b>
<b>For your notes</b>	<b>305</b>

---