



Table of Contents

Session 1 – Keynote Session

09:00 – 11:00 / 23 October 2017 / Room Alexander 2 / Session chair: T. Ackermann
(Energynautics, Germany)

The Powernetworks and E-Mobility : Risks and Opportunities

Susanne Nies (Entso-E, Belgium)

Transformation of the German Energy and Transport Sector – a National Analysis

K. Goldammer, O. Arnhold, M. Fleck, F. Grüger, B. Schachler (Reiner Lemoine Institute, Berlin, Germany)

E-Mobility and its Future Effect on Demand and Flexibility: Chances and Challenges 2035 from a Transmission System Operator's Perspective

R. Bauer, J. Henkel (50Hertz Transmission, Germany), G. Papaefthymiou, R. Kuwahata (Elia Grid International (egi), Germany)

The Impact of E-Mobility on Distribution Grid Expansion? One Research Question, a Lot of Answers

S. Patzack (FGH Aachen, Germany)

The Role of EV's in Ancillary Services

S. Thies (Tennet, Netherlands)

Session 2A: EVs and Distribution Grids

11:20 – 13:15 / 23 October 2017 / Room Alexander 1 / Session chair: E. Tröster (Energynautics,
Germany)

Determination of the Integration and Influencing Potential of Rapid-Charging Systems for Electric Vehicles in Distribution Grids

M. Kurth, M. Gödde, A.Schnettler (RWTH Aachen University, Germany), A. Probst (Netze BW, Germany), D. Pieper (Netzgesellschaft Düsseldorf, Germany)

Flash Recharging Tram Catenary-Free: Impact Analysis on Italian Distribution Networks

C. Carlini, D. Moneta (RSE, Italy)

Maximizing EV-Integration in LV Grids Using the Universal Smart Energy Framework

E. Coster, H. Fidder, M. Broekmans (Stedin, Netherlands)

Peak Shaving by Means of Buffer Storages in Charging Stations

J. Wussow, B. Engel (TU Braunschweig, Germany)

Impact of Electric Vehicle Charging on Low-Voltage Grids and the Potential of Battery Storage as Temporary Equipment during Grid Reinforcement

L. Held, M. Uhrig, M. R. Suriyah, T. Leibfried (Karlsruhe Institute of Technology, Germany), E. Junge, S. Lossau, M. Konermann (Netze BW, Germany)

Session 2B: International Experience

11:20 – 13:15 / 23 October 2017 / Room Alexander 2 / Session chair: J. C. Smith (UVIG, USA)

Regulatory Issues in the Development of Electro-Mobility Services: Lesson Learned from the Italian Experience

L. Lo Schiavo, D. Bonafede (AEEGSI – National Regulatory Authority for Energy, Italy), S. Celaschi, F. Colzi (RSE, Italy)

Electric Mobility – The Challenges of Regulating the Charging Infrastructure During Early Market Development in Brazil

A. C. Marques de Araujo, R.E. Hardinge-Bailey de Amorim (ANEEL – Brazilian Electricity Regulatory Agency, Brazil)

Effects of Heavy-Duty Vehicle Electrification on Infrastructure: The Case of Switzerland

E. Çabukoglu, G. Georges, L. Küng, K. Boulouchos (ETH Zurich – LAV, Switzerland)

Integration of Multifarious Electric Vehicle Charging Infrastructure Flexibility: Applications in India

G. Ghatikar (India Smart Grid Forum | LeRa, USA), N. Parchure (Ocellion Power Systems, USA), R. K. Pillai (India Smart Grid Forum, India)

The Impact of Electric Vehicles Deployment on Production Cost in a Caribbean Island Country

E. Taibi, C. Fernández (International Renewable Energy Agency – IRENA, Germany)

Electric Vehicle Charge-and-Share: Campus Demonstration on Sustainable Charge, Energy Mobility & Sharing

Y. Ota, T. Nakajima (Tokyo City University, Japan)

Session 3A: EVs and Power System Aspects

14:00 – 16:00 / 23 October 2017 / Room Alexander 1 / Session chair: J. Persson (Vattenfall, Sweden)

Necessary Contribution of Electric Vehicles to Limited Frequency Sensitive Mode: Impact on Frequency Stability in the ENTSO-E Continental Europe Synchronous Area

J. Lehner (TransnetBW, Germany), G. Kerber (LEW Verteilnetz, Germany)

EV Charging Coordination to Secure Power Grid Stability

B. Kirpes, S. Klingert (Universität Mannheim, Germany), M. Eider (Deggendorf Institute of Technology, Germany), R. Basmadjian, H. de Meer (University of Passau, Germany), M. Pérez Ortega (Gfi BeLux, Belgium)

Grid Integration of Electric Vehicle Fleets Using a Traffic Light Concept

M. Vasconcelos, M. Kurth, A. Schnettler (RWTH Aachen University, Germany)

Grid Impact of Electric Vehicles with Secondary Control Reserve Capability

T. Degner, G. Arnold, R. Brandl, J. Dollichon, A. Scheidler (Fraunhofer IWES, Germany)

Leveraging the Benefits of Integrating and Interacting Electric Vehicles and Distributed Energy Resources

M. Paschmann (University of Cologne, Germany)

The Vision of E-Mobility in the Perspective of the Existing Power Infrastructure – Successfully Managing Conflicting Expectations

K. Burges, M. Döring (Ecofys Germany, Germany)

Session 3B: EV Charging Experience

14:00 – 16:00 / 23 October 2017 / Room Alexander 2 / Session chair: M. Perez Ortega
(Gfi Informatique, Belgium)

Modelling the Electrification of Bus Depots using Real Data: Consequences for the Distribution Grid and Operational Requirements

M. Dietmannsberger (Hamburger Hochbahn, Germany), M. Schumann, M. Meyer, D. Schulz (Helmut-Schmidt-University, Germany)

Grid Compatible Flash Charging Technology: TOSA e-bus infrastructure

L. Lonoce, B. Warner (ABB Switzerland, Switzerland), V. Holz (ABB, Germany)

Grid-Integration of High Power Charging Infrastructure

J. Brombach (Innovation for ENERCON, Germany), F. Mayer, C. Strafiel (Wobben Research and Development – WRD, Germany), J. Winkler (ENERCON, Germany), A. Beekmann (Wobben Research and Development – Germany)

Interoperability as the Framework for Smart Successful Smart Charging Services

C. Hahn, P. Gumienny (Hubjet, Germany)

Assist EV Drivers to Act Smarter

C. Kacperski, F. Kutzner (University of Mannheim, Germany)

Assessment of the Marginal Emission Factor Associated with Electric Vehicles Charging

G. Pareschi, G. Georges, K. Boulouchos (ETH Zurich, Switzerland)

Session 4A: Grid Code and Power Quality

16:15 – 17:40 / 23 October 2017 / Room Alexander 1 / Session chair: K. Burges (Ecofys, Germany)

Technical Data Analysis and Power Grid Effects of Fast Charging Processes of Electric Vehicles

G. Göhler, L. Effing (University of Stuttgart, Germany)

Compliance Assessment of Grid Connected EV Charging Stations

J. Langstädtler, J. Döll (FGH, Germany)

Impact of Electric Vehicles on Power Quality in Central Charging Infrastructures

F. Möller, S. Müller, J. Meyer (Technical University Dresden, Germany)

Measurement of Harmonics and Sags in Grid Voltages when Charging Electric Vehicles

J. Persson, J. Wetterström, Y. He (Vattenfall R&D, Sweden)

Session 4B: Modelling

16:15 – 17:40 / 23 October 2017 / Room Alexander 2 / Session chair: N. Martensen (Energynautics, Germany)

Modelling and Simulation of a Public Transport System with Battery-Trolleybuses for an Efficient E-Mobility Integration

D. Baumeister, M. Salih, M. Wazifehdust, P. Steinbusch, M. Zdrallek (University of Wuppertal, Germany), S. Mour, L. Lenuweit, P. Deskovic (SWS Netze Solingen, Germany), H. Ben Zid (Stadtwerke Solingen, Germany)

Development of a Model for Power Grids Based on the Cellular Approach for an Optimum Integration of Electric Charging Infrastructure

J. Vopava, B. Thormann, T. Kienberger (Montanuniversitaet Leoben, Austria)

Forecast Model for Electromobile Loads at Stuttgart Airport and Fair

H. Triebke (Fraunhofer IAO, Germany), E. Siehler (Stuttgart Airport, Germany), E. Staebler (Landesmesse Stuttgart, Germany)

Session 5: Closing Session – Panel Discussions

17:45 – 18:30 / 23 October 2017 / Room Alexander 2 / Session chair: M. van der Meijden (TenneT, Netherlands)

Panelists:

- R. Bauer (50 Hertz Transmission, Germany)
- J. Brombach (ENERCON, Germany)
- K. Burges (Ecofys, Germany)
- J. Persson (Vattenfall R&D, Sweden)
- S. Thies (TenneT, Germany)

The contributions and discussions of this session are not part of the proceedings.

Poster Presentation Papers

NEFUSTA - the Electrical Fueling Station for E-Mobility AND Grid Support

J. van der Burgt (DNV GL, Netherlands)

Modelling Charging of Electric Vehicles Using Mixture of User Behaviours

M. Shepero, J. Munkhammar (Uppsala University, Sweden)

The Improvement of Grid Integration for Electromobility through Innovative Business Models

K. Rambow-Hoeschele (Glasgow Caledonian University, United Kingdom | Aalen University, Germany | Bosch, Germany), I. Walter (Glasgow Caledonian University, United Kingdom | Aalen University, Germany), A. Nagl (Aalen University, Germany), D. Harrison, B. Wood (Glasgow Caledonian University, United Kingdom), K. Bozem (bozem | consulting associates | munich, Germany | Aalen University, Germany), K. Braun, P. Hoch, Peter (Aalen University, Germany)

Demands on the Electrical Grid Due to Electromobility in Hamburg

M. Schumann, M. Meyer, D. Schulz (Helmut Schmidt University, Germany), M. Dietmannsberger (Hamburger Hochbahn, Germany)

Sector Coupling: Optimized Scheduling of Electric Vehicle Charging and Heat Production in Home Energy Systems

M. Zimmerlin, M. Wilferth, T. Leibfried (Karlsruhe Institute of Technology – KIT, Germany)

Analysis of Various Charging Strategies for Electrified Public Bus Transport Utilizing a Lightweight Simulation Model

P. Dicke (Friedrich Alexander University Erlangen-Nürnberg –FAU, Germany), B. Meyer (Fraunhofer UMSICHT, Germany), M. Pruckner (Friedrich Alexander University Erlangen-Nürnberg –FAU, Germany)

HIL Test of Power System Frequency Control by Electric Vehicles

H. Toda, Y. Ota, T. Nakajima (Tokyo City University, Japan), K.-i. Kawabe (Tokyo Institute of Technology, Japan), A. Yokoyama (University of Tokyo, Japan)

Exploring Electric Vehicle Participation in the Icelandic Balancing Market as Virtual Power Plant

F. Steingrube (Reykjavik University, Iceland), S. Perkin (Landsnet, Iceland), E. Lazarczyk, H. Stefánsson (Reykjavik University, Iceland)

Workshop Participants

Participants per country & list of participants