EUROPEAN GRID SERVICE MARKETS

symposium 2019
Lucerne Switzerland
3 - 4 July

Supported by Swiss State Secretariat and Horizon 2020 FCH JU

GRID FLEXIBILITY & BUSINESS

Sessions

VPP panel
Business potential & technology challenges (joint with PACE FCH JU project)

Flexible units
Developments in grid service markets I + II

Grid services operation
International collaboration

Poster session (covering all GSM session topics)

Networking
Grid apéro, GSM network dinner, Dinner on the Lake

Among others

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The electricity market is changing, opening opportunities for MORE FLEXIBILITY in generation, storage and consumption. New technologies and services such as Power to X, Batteries, Demand Side Response (DSR), Load Management, Water Electrolysers, Fuel Cells, Virtual Power Plants, Control Reserves, Direct Marketing and others compete or complement each other in terms of technical capabilities and economic performance to meet the needs of future distribution and transmission grids and to launch and optimize GRID SERVICES.

The 3rd Grid-Service-Market symposium (GSM) aims

to outline general and country specific market conditions and solutions for grid services. In addition, it reports on experiences and success stories, which support a rating of the performance and potential of new sustainable technologies.

The 3rd GSM symposium addresses
grid and technology experts, scouts and managers from the electricity industry, administration bodies and researchers interested in the commercial aspects of grid services and new technologies.

The international audience
will exchange on market logic, regulations and harmonization activities, future trends, operations, technology capabilities, and long term business plans and other business related aspects of European grid service markets.


The international advisory board

consist of:
Davor Bošnjak, HEP, Croatia
Bruno Cova, CESI S.p.a., Italy
Prof. K. Andreas Friedrich, DLR, Germany
Prof. Nikos Hatzigiroyi, NTUA, Greece
Prof. Christoph Imboden, HSLU, Switzerland
Thomas Kudela, Ørsted A/S, Denmark
Prof. Carlo Alberto Nucci, Uni Bologna, Italy
Dr. Bastian Schwark, Swissgrid AG, Switzerland
Andreas Svendstrup-Bjerre, Vestas Wind Systems A/S, Denmark
Sebastian Ziegler, 50 Hertz, Germany

Symposium Chair
Prof. Christoph Imboden is professor for product innovation at the Lucerne University of Applied Sciences HSLU and Head of Research at the Institute for Innovation and Technology Management. He is engaged in several research projects focusing on power economy. He studied electrical engineering at the ETH Zurich, received his doctorate in 1995 and an executive MBA at the University of Zurich in 2006. He looks back to more than twenty years of industrial experience in different application areas of the energy, communication and information technologies.

SYMPOSIUM

Events

3 July
morning
Possibility to - join the EFCF opening & overview sessions (to be booked separately), - visit EFCF exhibition & poster hall, to have business & project meetings (get support)
from 11:30
GSM registration, welcome coffee
12:45 - 18:00
Official opening & overview session with VPP-panel, keynotes, oral & poster sessions
19:30
GSM networking dinner with folklore and culture

4 July
from 8:30
GSM registration, welcome coffee
08:50 - 16:15
Keynotes, oral & poster sessions, summary & symposium outlook, possibility to join EFCF sessions;
19:20 - 23.30
Dinner on the Lake: Unique networking pleasure boat tour with music in dreamlike scenery

Venue
The GSM Symposium is held at the Uni Lucerne (UniLU) and Culture & Convention Centre Lucerne (KKL) on the picturesque waterfront of the lake Lucerne in the middle of Switzerland. The venue is easy to reach by car, plane & train, because it is closed to car parks & railway station, within a short distance from charming hotels & the historical town centre.

Fees

• Students, trainees & unemployed persons etc. with valid identification 500 CHF incl. 7.7% VAT where applicable
• Regular 900 CHF incl. 7.7% VAT where applicable
• Late charge for registrations On-Site 100 CHF incl. 7.7% VAT where applicable

One Swiss Franc (CHF) is valued at about: 0.88 EURO, 1.03 US Dollar, 87 YEN, 6.87 CNY (Nov 2018).

The fees include access to: Complete GSM symposium (sessions/posters/networking); EFCF 2019 exhibition & poster hall; 4 July 2019 EFCF sessions (keynotes, oral, poster); Conference proceedings, conference bag, business lunch, refreshments and the GSM networking dinner on Wednesday 3 July; Post symposium access to all allowed presentations, impressions and available proceedings published with ISBN on GMSlibrary and with DOI on Lucerne Open Repository (HSLU-LORY).

Optional: EFCF 2019 opening & overview sessions on We 3 July (on request), “Dinner on the Lake” on Th 4 July (EFCF supported tickets: 120 CHF pp).

Contacts
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Organisers:
European Fuel Cell Forum - www.EFCF.com; Power Economy, Innovation & Tech. Mgt, UAS HSLU - www.HSLU.ch; Lucerne, Switzerland
**3rd GSM Symposium 2019**

**Grid Service Market - Grid Flexibility & Business**

Chaired by: Prof. Christoph Imboden HSLU, Lucerne/Switzerland

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**Session program**

**Wednesday, 3 July**

*11:30 On-site GSM registration*

*12:45 G01 OPENING AND WELCOME*

- Welcome by the organizers: Michael Spring, Oliver Bucheli
- Welcome by the symposium chair: Christoph Imboden

*13:00 G02 VPP-PANEL: BUSINESS-POTENTIAL & TECHNOLOGY-CHALLENGES* (joint with PACE project)

- Session-chair: Andreas Svendsstrup-Bjerré
  - Ameland: Frontrunner in the Energy Transition e.g. VPP Project with 45 Fuel Cells as part of an island wide Smart Grid, large H2 project
  - Jacob Dijkstra
  - Municipality of Ameland, The Netherlands
  - EnergieKoplopers (Energy Frontrunners): Lessons learned from a flexibility market for households with fuel cells
  - Stefan Neelen
  - Qontor B.V. Energy Consulting (Alianz NV), AB Duven, The Netherlands
  - NOVICE - Development and Demonstration of an Innovative Business Model for Energy Service Companies
  - Stephan Marty
  - KWI Power Ltd London, UK
  - Demand side management and virtual power plants or Experience with virtual power plant operations in Switzerland and Germany
  - Aby Chacko
  - Tiko, Switzerland
  - Assessing the impact of virtual qualified units on the Italian ancillary services market
  - Marco Stabile
  - CESI S.p.A., Italy
  - VPP Panel Discussion: Business-Potentials & Technology-Challenges
  - Speakers & Audience
  - Moderator: Andreas Svendsstrup-Bjerré
  - Vestas Wind Systems A/S, Virtual Power Plant Architect, Denmark

*15:20 Coffee break & exhibition & poster visit*

*15:50 G03 FLEXIBLE UNITS - DEVELOPMENTS IN GRID SERVICE MARKETS I*

- Session-chair: Andreas Friedrich
  - Modelling and optimization of a flexible PEMFC power plant for grid balancing purposes
  - Elena Crespi (1), Giulio Guardalini (1), Jord Coolegem (2), Mariana M. Betancourt (3), Sönke Gößling (4), Peter Beckhaus (4), Stefano Campanari (1)
  - Politecnico di Milano, Italy, (2) Nedstack Fuel Cell Technology B.V., The Netherlands, (3) Abengo Innovation, Spain, (4) ZBT GmbH, Germany
  - Using electric water heaters to provide multiple energy services
  - Hammin Cai, Shi You
  - Technical University of Denmark, Denmark
  - Integrating decentralized renewable assets with a network of smart home storage devices
  - Matthias Ditlhey
  - sonnen, Germany
  - Keynote: Energy system decarbonisation: Informing reform of energy market and regulatory framework
  - Goran Siribac
  - Imperial College London, UK
  - Summary of the day, Details of the evening program
  - Christoph Imboden
  - Lucerne Uni of Applied Sciences & Arts, Switzerland

*18:00 End of sessions*

*19:30 GSM Network Dinner* (included, guest tickets for 120.- CHF pP available)

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**Thursday, 4 July**

*08:30 On-site GSM registration*

*08:50 G04 DEVELOPMENTS IN GRID SERVICE MARKETS II*

- Session-chair: Thomas Kudela
  - Local market opportunities, experiences with and perspectives from the ENERA project
  - Philippe Vassiliopoulos
  - EPEX SPOT, France
  - Impact of balancing and day-ahead market sequences on bidding behavior of market participants
  - Ksenia Poplavskaya (1,2), Fabian Ocker (3), Kari-Marin Ehrhart (4)
  - (1) Austrian Institute of Technology, Austria, (2) Delft University of Technology, Netherlands, (4) Karlsruhe Institute of Technology, Germany
  - Architectures for Optimized Interactions between TSOs and DSOs: Experiences and learnings from SmartNet
  - Ivana Kockur (1), Gianluigi Migliavacca (2), Andrea Monch (3), Silvia Dario (3)
  - (1) University of Strathclyde, UK, (2) RSE SpA, Italy, (3) SINTEF Energy Research, Norway
  - Grid services as byproducts of a water electrolyzer
  - Valenart Klamenz, Tanaka Mandy Mihalvanka, Christoph Imboden
  - Lucerne University, Switzerland
  - NODES – a new market design to trade decentralized flexibility
  - Benedikt Deuchert
  - NODES AS, Norway

*10:30 Coffee break & exhibition & poster visit*

*11:00 G05 FLEXIBLE UNITS & GRID SERVICES OPERATION*

- Session-chair: Nikos Hatzargyriou
  - Five actions to improve your short term forecasting of electricity demand and RES production
  - Johan Nihägen, Alexander Nordling
  - Vitec Energy AB, Sweden
  - Qualifying Tests of Electrolysers for Grid Services System Behaviour and Scalability
  - Regina Reisner (1), Shi You (2), Cyril Bourasseau (3), Pablo March (3), Gilles Lavalle (3), Daniel A. Greenhalgh (5), Laura Abadia (6), Christoph Imboden (7), Marcus Bornstein (8) et al.
  - (1) DLR, Germany, (2) DTU, Denmark, (3) CEA, France, (4) HJT, Switzerland, (5) ITM Power, UK, (6) Foundation for the Development of New Hydrogen Technologies in Aragon, Spain, (7) HSLU, Switzerland, (8) NEL HYDROGEN AS, Norway
  - Overlook the Copernicus CSS-SIS-ENERGY service with a focus on seasonal forecast and additional climate indicators
  - Raphaël Legrand
  - Météo France, France
  - Dependence of operational processes in a power system on weather conditions
  - Davor Bosniak
  - HEP, Croatia

*12:40 Lunch break*
The European Fuel Cell Forum is an international reference conference with exhibition & tutorials in the emerging field of “Fuel Cells, Electrolysers & H2 Processing”. It takes place since 1994 - 23rd times - always at the beginning of July in Lucerne/Switzerland.

**Figures Participants:**
- GSM/VPP panel this year between 50-80 expected;
- EFCF usually between 350-550;
- EFCF Tutorial participants: - FCH Fuel Cells, Electrolysers & Hydrogen (kick-start) 20;
- EIS Electrochem. Impedance Spectroscopy (advanced) 25

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