

E-Mobility Power System Integration Symposium

07-08 OCT '24

HELSINKI
FINLAND



organized by energynautics



PROGRAM AS OF 6 OCTOBER 2024

Important: This preliminary program is subject to changes. It is strongly recommended to check back regularly.



NATIONAL WORKSHOP PARTNER

FINGRID

WORKSHOP AMBASSADORS



MEDIA PARTNER



ORGANIZER



TIMETABLE 8TH E-MOBILITY POWER SYSTEM INTEGRATION SYMPOSIUM

MONDAY 07 OCTOBER 2024				TUESDAY 08 OCTOBER 2024				
Workshop Day 1				Workshop Day 2				
13:00 – 15:00	AS OF 08:00: REGISTRATION / FOYER			08:30– 09:50	FENNIA II	FENNIA I	BALTICA	
					SESSION 4A: SECTOR COUPLING	SESSION 4B: GRID ASPECTS II	SESSION 4C SMART CHARGING III	
	LUNCH 12:00 – 13:00				COFFEE BREAK (25 MIN)			
	FENNIA II				10:15 – 11:30	FENNIA II	FENNIA I	
	SESSION 1 WELCOME & KEYNOTE SESSION					SESSION 5A: GRID ASPECTS III	SESSION 5B: MOBILITY ASPECTS	
COFFEE BREAK & GROUP PHOTO (30 MIN)				SHORT BREAK 11:30 – 11:45				
15:30 – 16:50	FENNIA II	FENNIA I	NORDIA	11:45 – 12:45	FENNIA II			
	SESSION 2A: RESEARCH PROJECT "UNIT-E ² " – PART 1	SESSION 2B: POWER SYSTEM ASPECTS WITH HIGH SHARES OF EVS	SESSION 2C SMART CHARGING I		SESSION 6: CLOSING SESSION: PANEL DISCUSSION			
COFFEE BREAK (25 MIN)				LUNCH 12:45 – 14:00				
17:15 – 18:55	FENNIA II	FENNIA I	NORDIA	14:00	WIND & SOLAR INTEGRATION WORKSHOP			
	SESSION 3A: RESEARCH PROJECT "UNIT-E ² " – PART 2	SESSION 3B: GRID ASPECTS I	SESSION 3C SMART CHARGING II		– separately bookable –			
19:00	WORKSHOP NETWORKING EVENT / POSTER RECEPTION							
	– Foyer –							

MONDAY, 07 OCTOBER 2024

08:00 Start Registration

All times in the session tables show the on-site time in Helsinki, Finland (Eastern European Summer Time /EEST = UTC+3), the highlighted stripes show the starting times of the respective sessions in additional time zones.

06:00 New York | 07:00 Rio de Janeiro | 12:00 Berlin | 15:30 New Delhi | 17:00 Jakarta | 18:00 Beijing | 19:00 Tokyo | 21:00 Sydney

13:00 – 13:20 WELCOME BY DR. THOMAS ACKERMANN (ENERGYNAUTICS, GERMANY)

13:20 – 15:00 SESSION 1 – KEYNOTE SESSION

06:20 New York | 07:20 Rio de Janeiro | 12:20 Berlin | 15:50 New Delhi | 17:20 Jakarta | 18:20 Beijing | 19:20 Tokyo | 21:20 Sydney

> Session Chair Thomas Ackermann / Eckehard Tröster (Energyautics, Germany)

13:20 – 14:40 Presentations (20 min. each)

- **Status and Outlook on Electrification of Transport and Potential Impacts Towards the Grid**
Mikko Pihlatie (VTT, Finland) (Submission-ID EMOB24-339)
- **Learning From the Norwegian Electric Vehicle Success: An Overview**
Aurora Fosli Flataker (NTNU, Norway) (Submission-ID EMOB24-332)
- **EV Charging in the Nordics**
Jakob Kretzinger (Roland Berger, Sweden) (Submission-ID EMOB24-329)
- **E-Mobility Grid Integration in Germany: Current situation, challenges and opportunities**
Julian Brendel (Reiner Lemoine Institut, Germany) (Submission-ID EMOB24-338)

14:40 – 15:00 Discussions

15:00 – 15:30 COFFEE BREAK | GROUP PHOTO

15:30 – 16:50	SESSION 2A – RESEARCH PROJECT "UNIT-E²" – PART 1
08:30 New York 09:30 Rio de Janeiro 14:30 Berlin 18:00 New Delhi 19:30 Jakarta 20:30 Beijing 21:30 Tokyo 23:30 Sydney	
> Session Chair	Patrick Vollmuth (FfE, Germany)
15:30 – 16:30	Presentations (20 min. each)
<ul style="list-style-type: none"> • Advancing Grid Integration of Electromobility: Insights from the project unIT-e² M. Hinterstocker V. Ziemsky, P. Vollmuth, A. Ostermann, V. Regener, N. Maas, E. Wendlinger, K. Ganz, D. Wohlschlager, J. Zahler, A. Weiß, S. Köppl (FfE, Germany) (Submission-ID EMOB24-017) • unIT-e²: Achieving System Interoperability – A long and rocky road ahead? A. Ostermann, P. Vollmuth (FfE Technical University Munich – TUM, Germany), J. Hawran, L. Gugg (FfE, Germany) (Submission-ID EMOB24-037) • User Perspective on Connected E-Mobility – Insights from the Field Trial of the Research Project "unIT-e²" C. Braun, J. Schumann (University of Passau, Germany) (Submission-ID EMOB24-075) 	
16:30 – 16:50	Discussions

15:30 – 16:50	SESSION 2B – POWER SYSTEM ASPECTS WITH HIGH SHARES OF EVS
08:30 New York 09:30 Rio de Janeiro 14:30 Berlin 18:00 New Delhi 19:30 Jakarta 20:30 Beijing 21:30 Tokyo 23:30 Sydney	
> Session Chair	Julian Brendel (Reiner Lemoine Institut, Germany)
15:30 – 16:30	Presentations (20 min. each)
<ul style="list-style-type: none"> • Unlocking Electric Vehicles' Flexibility for Efficient Load Balancing through Dynamic Tariffs K. Weinand, H. Simon (50 Hertz Transmission GmbH, Germany) (Submission-ID EMOB24-232) • Prototype-based Demonstration for Automated Proofs of Flexibility Provision by Electric Vehicle Pools R. Enzenhoefer (TransnetBW, Germany), J. Griesing (OLI Systems, Germany), M. Hoedl (TransnetBW, Germany), T. Li Zeguangu, T. Brenner (OLI Systems, Germany) (Submission-ID EMOB24-177) • Charging Electric Vehicles from the Perspective of System Operators and Grid Operators, Taking into Account the Grid-Regulating Effect of Legislation Law EnWG §14a J. Eickelmann (PION Technology, Germany), L. Ebbert, B. Engel (TU Braunschweig – elenia, Germany) (Submission-ID EMOB24-222) 	
16:30 – 16:50	Discussions

15:30 – 16:50	SESSION 2C – SMART CHARGING I
08:30 New York 09:30 Rio de Janeiro 14:30 Berlin 18:00 New Delhi 19:30 Jakarta 20:30 Beijing 21:30 Tokyo 23:30 Sydney	
> Session Chair	Jonathon Dyson (Greenview Strategic Consulting, Australia)
15:30 – 16:30	Presentations (20 min. each)
<ul style="list-style-type: none"> • WattRoutes: Smart Planning for Electric HGV Charging Infrastructure L. C. Hunter, J. Scobie, C. McGarry, S. Galloway (University of Strathclyde, United Kingdom) (Submission-ID EMOB24-018) • Interdisciplinary Semantic Integration of Battery Electric Vehicle Charging Infrastructure Data E. S. Arellano Ruiz, C. Hoyer-Klick, F. Miorelli, H. C. Gils, P. Jochem (German Aerospace Center – DLR, Germany) (Submission-ID EMOB24-024) • Smart Electric Vehicle Management vs. Battery Storage for Energy Communities: A Case Study from Denmark F. Pastorelli, T. Unterluggauer, B. J. Höyer, M. M. Wagner, M. Secchi, M. Marinelli (Technical University of Denmark – DTU, Denmark) (Submission-ID EMOB24-278) 	
16:30 – 16:50	Discussions

16:50 – 17:15 COFFEE BREAK

17:15 – 18:40	SESSION 3A – RESEARCH PROJECT "UNIT-E²" – PART 2
10:15 New York 11:15 Rio de Janeiro 16:15 Berlin 19:45 New Delhi 21:15 Jakarta 22:15 Beijing 23:15 Tokyo 01:15 Sydney	
> Session Chair	Michael Hinterstocker (FfE, Germany)
17:15 – 18:15	Presentations (20 min. each)
•	Panacea or Overload? - An Analysis of the Latest Legal Developments in the EU Network Tariff Regulation and its Role in Supporting the Transformation to E-Mobility T. Klarmann (Foundation for Environmental Energy Law, Germany) (Submission-ID EMOB24-057)
•	The Impact of Variable Grid Fee Tariffs on the Electricity Costs of EV Users in Germany K. Ganz, P. Vollmuth (FfE Technical University Munich – TUM, Germany), M. Hinterstocker (FfE, Germany) (Submission-ID EMOB24-084)
•	Optimization Model for Simultaneous Controlled Charging of Electric Vehicles in Distribution Grids in Rural, Suburban and Urban Areas A. J. Hofmann, M. S. Breder, F. Boehnke, C. Weber (University of Duisburg-Essen, Germany) (Submission-ID EMOB24-167)
18:15 – 18:40	Discussions

17:15 – 18:40	SESSION 3B – GRID ASPECTS I
10:15 New York 11:15 Rio de Janeiro 16:15 Berlin 19:45 New Delhi 21:15 Jakarta 22:15 Beijing 23:15 Tokyo 01:15 Sydney	
> Session Chair	Allan Miller (ANSA, New Zealand)
17:15 – 18:15	Presentations (20 min. each)
•	Regenerative Test Bench for the Analysis of High Power Chargers A. Stadler, F. Grumm, L. Baum, J. Tegeler (Helmut Schmidt University/University of the Bundeswehr, Germany), F. Heider, J. Brombach, D. Liebig (Shell Global Solutions, Germany), D. Schulz (Helmut Schmidt University/University of the Bundeswehr, Germany) (Submission-ID EMOB24-265)
•	Machine Learning Based Forecasting of EV Charging Load in a Parking Lot for Optimal Participation in Frequency Services J. M. Mittag, M. Secchi, J. M. Zepter, A. Malkova, M. Marinelli (Technical University of Denmark – DTU, Denmark) (Submission-ID EMOB24-149)
•	Transforming Electric Vehicles into Mobile Power Sources: A Strategy for Grid Resilience P. Huang, A. G. Kidanemariam (Dalarna University, Sweden) (Submission-ID EMOB24-044)
18:15 – 18:40	Discussions

17:15 – 18:40	SESSION 3C – SMART CHARGING II
10:15 New York 11:15 Rio de Janeiro 16:15 Berlin 19:45 New Delhi 21:15 Jakarta 22:15 Beijing 23:15 Tokyo 01:15 Sydney	
> Session Chair	Thorsten Schlößer (Energynautics, Germany)
17:15 – 18:15	Presentations (20 min. each)
•	Charging Strategies for Electric Bus fleets: A Pathway to Grid-Friendly and Cost-Efficient Operation J. Brendel, P. Scheer (Reiner Lemoine Institut, Germany) (Submission-ID EMOB24-115)
•	Site Selection and Layout of Electric Heavy Truck Charging Stations in Chengdu, China Y. Liu, S. Deb (Newcastle University, United Kingdom) (Submission-ID EMOB24-048)
•	Analyzing Phase Imbalance in Smart Charging of Multiple EVs: An Experimental Approach S. Bayram, L. Hunter, M. Senol (University of Strathclyde, United Kingdom), K. Sevdari (Technical University of Denmark – DTU, Denmark) (Submission-ID EMOB24-292)
18:15 – 18:40	Discussions

19:00 – 20:30 NETWORKING EVENT / POSTER RECEPTION FOYER

TUESDAY, 08 OCTOBER 2024

08:30 – 09:50	SESSION 4A – SECTOR COUPLING
01:30 New York 02:30 Rio de Janeiro 07:30 Berlin 11:00 New Delhi 12:30 Jakarta 13:30 Beijing 14:30 Tokyo 16:30 Sydney	
> Session Chair	Sevgi Can Erensoy Mendes (Energynautics, Germany)
08:30 – 9:30	Presentations (20 min. each)
<ul style="list-style-type: none">• SekQuaSens³: Sector Integration Heat, Electricity and Mobility Demand in a District N. Reininghaus, C. Muñoz, P. Klement, M. López Díaz, K. Waiz, E. Turhan, T. Schneider, Y.-P. Flötteröd, S. Ruppe, B. Satola, M. Kroener, M. Vehse, A. Dyck (German Aerospace Center – DLR, Germany) (Submission-ID EMOB24-111)• V2X Use-Case Combinations: A Comprehensive Breakdown P. Stedem, V. Regener (FFE, Germany), F. Kellerer, A. Kroos University of Passau, Germany), T. Haug, L. Wasmeier (FFE, Germany) (Submission-ID EMOB24-099)• Evaluating the Impact of Control Algorithms on Cost Savings of AC Solar Charging: A Simulation-Based Study of Savings in Reference to Bidirectional Charging, Constraints and Options F. F. Sehr, D. Reiners, A. Beblek, V. Grinewitschus (EBZ Business School, Germany) (Submission-ID EMOB24-187)	
9:30 – 09:50	Discussions

08:30 – 09:50	SESSION 4B – GRID ASPECTS II
01:30 New York 02:30 Rio de Janeiro 07:30 Berlin 11:00 New Delhi 12:30 Jakarta 13:30 Beijing 14:30 Tokyo 16:30 Sydney	
> Session Chair	Lewis Hunter (University of Strathclyde, United Kingdom)
08:30 – 9:30	Presentations (20 min. each)
<ul style="list-style-type: none">• Spatio-Temporal Forecasting Model for EV Charging Demands A. Aushev, J. Anttila, M. Pihlatie (VTT Technical Research Centre of Finland, Finland) (Submission-ID EMOB24-122)• Fuzzy Control to Dynamically Alleviate Bottlenecks in Low-Voltage Grids T. Neukamp, I. Jeromin (University of Applied Sciences Darmstadt, Germany) (Submission-ID EMOB24-096)• Low Voltage Network Constraint Risk and Capex from Distributed Energy Resources A. Miller, S. Lemon (ANSA, New Zealand) (Submission-ID EMOB24-277)	
9:30 – 09:50	Discussions

08:30 – 09:50	SESSION 4C – SMART CHARGING III
01:30 New York 02:30 Rio de Janeiro 07:30 Berlin 11:00 New Delhi 12:30 Jakarta 13:30 Beijing 14:30 Tokyo 16:30 Sydney	
> Session Chair	Eckehard Tröster (Energynautics, Germany)
08:30 – 9:30	Presentations (20 min. each)
<ul style="list-style-type: none">• Leveraging EV Deployment with Dynamic Rating and Operational Envelopes D. V Pombo (EPRI Europe, Ireland) (Submission-ID EMOB24-082)• Research on the Demand and Layout of Electric Vehicle Charging Infrastructure - Taking Shenzhen, China as an Example D. He, S. Deb (Newcastle University, United Kingdom) (Submission-ID EMOB24-049)• The Influence of Electricity Storage on the Economic Viability of Truck Charging Infrastructure: An Investigation into the Challenges and Opportunities A. Mertins, J. H. Prause, A. Joost, S. Lahmann (National Centre for Charging Infrastructure – NOW, Germany) (Submission-ID EMOB24-125)	
9:30 – 09:50	Discussions

09:50 – 10:15 COFFEE BREAK

10:15 – 11:30	SESSION 5A – GRID ASPECTS III
03:15 New York 04:15 Rio de Janeiro 09:15 Berlin 12:45 New Delhi 14:15 Jakarta 15:15 Beijing 16:15 Tokyo 18:15 Sydney	
> Session Chair	Nies Reininghaus (German Aerospace Center – DLR, Germany)
10:15 – 11:15	Presentations (20 min. each)
<ul style="list-style-type: none"> • Practical Implementation and Field Test Evaluation of a Decentralized Grid-Friendly Charging Algorithm for Electric Vehicles N. Rhein, D. Masendorf, P. Henzel, S. Hempel, R. Alsayyed, E. Tröster (Energynautics, Germany) (Submission-ID EMOB24-304) • Development of Standard Profiles for Different Charge Point Operator Types to Improve Electric Fleet Land Storage Capacity Estimation. H. Neue (Stromnetz Hamburg, Germany) (Submission-ID EMOB24-323) • Approximation Approach for V2G Capacity Over Project Lifetime A. Rutgers (ChargeSim, Netherlands) (Submission-ID EMOB24-067) 	
11:15 – 11:30	Discussions

10:15 – 11:30	SESSION 5B – MOBILITY ASPECTS
03:15 New York 04:15 Rio de Janeiro 09:15 Berlin 12:45 New Delhi 14:15 Jakarta 15:15 Beijing 16:15 Tokyo 18:15 Sydney	
> Session Chair	Jan-David Schmidt (Energynautics, Germany)
10:15 – 11:15	Presentations (20 min. each)
<ul style="list-style-type: none"> • Assessing Flexibility in Battery Electric Truck Charging Depots Considering Grid Impact S. Decher, H. Schäfers (CC4E Hamburg University of Applied Sciences – HAW Hamburg, Germany) (Submission-ID EMOB24-322) • Optimal Dispatching and Charging Plans in Electrified Bus Networks K. Keshavarzian, A. M. Amani, M. Jalili (RMIT University, Australia) (Submission-ID EMOB24-023) • Understanding the Electric Vehicle Gender Gap Y. Zhang, S. Deb (Newcastle University, United Kingdom) (Submission-ID EMOB24-050) 	
11:15 – 11:30	Discussions

11:30 – 11:45 SHORT BREAK

11:45 – 12:45	SESSION 6 – CLOSING SESSION – PANEL DISCUSSION
05:00 New York 06:00 Rio de Janeiro 11:00 Berlin 14:30 New Delhi 16:00 Jakarta 17:00 Beijing 18:00 Tokyo 20:00 Sydney	
> Session Chair	Thorsten Schlößer (Energynautics, Germany)
11:45 – 12:15	Panel discussion
<p>WILL THE GRID SUPPORT MASS ADOPTION OF DYNAMIC PRICES?</p> <p>Panelists:</p> <ul style="list-style-type: none"> - Lewis Hunter (University of Strathclyde, United Kingdom) - Andrew Rutgers (ChargeSim, Netherlands) - Jens Eickelmann (PION Technology AG, Germany) 	
12:15 – 12:40	Discussions
12:40 – 12:45	Closing Remarks

12:45 – 14:00 LUNCH

POSTER PRESENTATIONS

- **Conventional Cabin Heating in Electric Buses – The Scale of Pollution**
J. Anttila, R. Pettinen, Y. Todorov (VTT Technical Research Centre of Finland, Finland) ([Submission-ID EMOB24-069](#))
- **uniT-e²: The Future of Smart and Bidirectional Charging – Use Case Prospects from the User’s Perspective in Germany**
P. Vollmuth, A. Ostermann (FfE, Germany) ([Submission-ID EMOB24-090](#))
- **Simulative Evaluation of High Temperature Versus Low Temperature Heating Networks to Utilize Waste Heat from Large Fuel Cells for Powering Districts**
N. Gaikwad, N. Reininghaus, C. Muñoz, M. Kröner, B. Satola, M. Vehse, A. Dyck (German Aerospace Center – DLR, Germany) ([Submission-ID EMOB24-109](#))
- **Sensitivity Analysis of the Electrical Power Demand of Heat Pump Systems**
D. Storch (Technical University of Applied Sciences Augsburg, Germany), S. Kunz (SWM Services, Germany), C. Steinhart (SWM Infrastruktur, Germany), S. Greif (SWM, Germany), M. Kreißl, C. Gutzmann (SWM Infrastruktur, Germany), M. Finkel (Technical University of Applied Sciences Augsburg, Germany), R. Witzmann (Technical University of Munich – TUM, Germany) ([Submission-ID EMOB24-118](#))
- **Enhancing Vehicle-to-Grid (V2G) Technologies: Interoperability in Electric Vehicles within the Framework of the Car2Flex Project**
G. Fritscher, K. Bhat, Y. Guo (University of Applied Sciences Technikum Vienna, Austria) ([Submission-ID EMOB24-215](#))
- **Analysis of Electric Vehicle Charging Station Usage and Environmental Sustainability in the UK**
K. Kulkarni, S. Deb, C. Herron (Newcastle University, United Kingdom) ([Submission-ID EMOB24-305](#))