

E-Mobility Power System Integration Symposium

07-08 OCT '24

HELSINKI
FINLAND



organized by energynautics



PROGRAM AS OF 25 JULY 2024

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



WORKSHOP AMBASSADORS



Renewables
Grid Initiative



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 09:00: REGISTRATION / FOYER			08:30– 10:00	FENNIA II	FENNIA I	NORDIA
					SESSION 4A: SECTOR COUPLING	SESSION 4B: GRID ASPECTS - II	SESSION 4C SMART CHARGING - III
	LUNCH 12:00 – 13:00			COFFEE BREAK (20 MIN)			
	FENNIA II			10:20 – 11:55	FENNIA II	FENNIA I	NORDIA
	SESSION 1 WELCOME & KEYNOTE SESSION				SESSION 5A: MOBILITY ASPECTS	SESSION 5B: GRID ASPECTS III	SESSION 5C TITLE TBA
COFFEE BREAK & GROUP PHOTO (30 MIN)				SHORT BREAK 11:55 – 12:00			
15:30 – 17:00	FENNIA II	FENNIA I	NORDIA	12:00 – 13:00	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 5: CLOSING SESSION: PANEL DISCUSSION		
COFFEE BREAK (15 MIN)				LUNCH 13:00 – 14:00			
17:15 – 18:50	FENNIA II	FENNIA I	NORDIA	14:00	WIND & SOLAR INTEGRATION WORKSHOP – separately bookable –		
	SESSION 3A: RESEARCH PROJECT "UNIT-E ² " – PART 2	SESSION 3B: GRID ASPECTS - I	SESSION 3C SMART CHARGING - II				
19:00	WORKSHOP NETWORKING EVENT / POSTER RECEPTION – Foyer –						

MONDAY, 07 OCTOBER 2024

09:00 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

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 (Energynautics, Germany)

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

- **Fingrid**
NN (Fingrid, Finland)
- **Title 2**
NN (Affiliation, Country)
- **Title 3**
NN (Affiliation, Country)
- **Title 4**
NN (Affiliation, Country)

14:40 – 15:00 Discussions

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

15:30 – 17:00 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 TBA

15:30 – 16:30 Presentations (20 min. each)

- **Advancing Grid Integration of Electromobility: Insights from the project unIT-e²**
M. Hinterstocker (FfE GmbH, Germany) (Submission-ID EMOB24-017)
- **unIT-e²: Achieving System Interoperability – A long and rocky road ahead?**
A. Ostermann, P. Vollmuth (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 – 17:00 Discussions

15:30 – 17:00		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		TBA
15:30 – 16:42	Presentations (18 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, M. Hoedl (TransnetBW, Germany), T. Brenner, J. Griesing, L. Zeguang (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 AG, Germany), B. Engel (TU Braunschweig, Germany) (Submission-ID EMOB24-222) • Machine Learning Based Forecasting of EV Charging Load in a Parking Lot for Optimal Participation in Frequency Service Markets J. Mittag, M. Secchi, A. Malkova, J. M. Zepter, M. Marinelli (Technical University of Denmark – DTU, Denmark) (Submission-ID EMOB24-149) 	
16:42 – 17:00	Discussions	

15:30 – 17:00		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		TBA
15:30 – 16:42	Presentations (18 min. each)	
	<ul style="list-style-type: none"> • Leveraging EV Deployment with Collocated Generation, Dynamic Rating, and Operational Envelopes D. V Pombo (EPRI Europe, Ireland) (Submission-ID EMOB24-082) • Global User Experience Related to Electric Vehicle Charging S. Deb (Newcastle University, United Kingdom) (Submission-ID EMOB24-007) • WattRoutes: Smart Planning for Electric HGV Charging Infrastructure in Scotland L. Hunter, S. Galloway (University of Strathclyde, United Kingdom) (Submission-ID EMOB24-018) • 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) 	
16:42 – 17:00	Discussions	

17:00 – 17:15 COFFEE BREAK

17:15 – 18:45 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 TBA

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 (Stiftung Umweltenergierecht, 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, Germany | TUM, Germany) (Submission-ID EMOB24-084)
- **Optimization Model for Simultaneous Controlled Charging of Electric Vehicles in a Distribution Grid Considering Characteristics of Typical Rural, Suburban or Urban Grids and Limited Power Transmission**
A. Hofmann, M. S. Breder, F. Boehnke, C. Weber (University of Duisburg-Essen, Germany) (Submission-ID EMOB24-167)

18:15 – 18:45 Discussions

17:15 – 18:50 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 TBA

17:15 – 18:30 Presentations (18 min. each)

- **Connection Requirements for Electric Vehicle Charging - A Review of Rules**
N. Martensen, T. Schlößer, D. Masendorf (Energynautics, Germany) (Submission-ID EMOB24-296)
- **Scalable Bidirectional Smart Charging SGAM Architecture: Use Case Analysis for a Viable Business to Integrate Electric Vehicles as Distributed Energy Resources Based on IEC Standards**
F. Maldonato (TU Berlin, Germany), D. Vereno, S. Eschlberger, C. Neureiter (Fachhochschule Salzburg, Austria), D. Göhlich (TU Berlin, Germany) (Submission-ID EMOB24-291)
- **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)
- **Transforming Electric Vehicles into Mobile Power Sources: A Strategy for Grid Resilience**
P. Huang, A. Kidanemariam (Dalarna University, Sweden) (Submission-ID EMOB24-044)

18:30 – 18:50 Discussions

17:15 – 18:50 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 TBA

17:15 – 18:30 Presentations (18 min. each)

- **Optimizing EV Charging Station Allocation Under Grid Connection Uncertainties: A Stochastic Programming Approach**
G. Li (Technical University of Munich – TUM, Germany), D. Husarek, D. Tomaselli (Siemens AG, Germany), M. Ulbrich (Technical University of Munich – TUM, Germany) (Submission-ID EMOB24-051)
- **Site Selection and Layout of Electric Heavy Truck Charging and Swapping Stations in Chengdu, China**
Y. Liu, S. Deb (Newcastle University, United Kingdom) (Submission-ID EMOB24-048)
- **Enhancing Operational Resilience of EV Charging Stations: A System Dynamics Approach to Analyzing Power Outage Interdependencies**
M. Abdelfattah, T. Hartmann (Technische Universität Berlin, Germany) (Submission-ID EMOB24-174)
- **Receding Horizon Energy Management Control for EV Charging Station with Hybrid Renewable Power Plant**
A. Malkova, J. M. Zepter, M. Marinelli (Technical University of Denmark – DTU, Denmark) (Submission-ID EMOB24-0179)

18:30 – 18:50 Discussions

19:00 NETWORKING EVENT / POSTER RECEPTION

FOYER

TUESDAY, 08 OCTOBER 2024

08:30 – 10:00	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	TBA
08:30 – 9:45	Presentations (18 min. each)
<ul style="list-style-type: none">• Update on the Project SekQuaSens³: Sektorcoupling Heat, Electricity and Mobility Demand in a District N. Reininghaus, P. Klement, M. Lopez Diaz, K. Waiz, E. Turhan, T. Schneider, M. Bergfeld, Y.-P. Flötteröd, S. Ruppe, 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 (Forschungsstelle für Energiewirtschaft e. V. (FfE), Germany) (Submission-ID EMOB24-099)• Impact of Solar Charging Profit for Electric Vehicles: A Simulation based Study of AC/DC Charging Technologies, Local and Cloud-Based Home Energy Management Systems, their Advantages and Limitations F. F. Sehr, D. Reiners, A. Beblek, V. Grinewitschus (EBZ Business School, Germany) (Submission-ID EMOB24-187)• A new energy community in Copenhagen: A Comparative Study of V2B Technology, Stationary Batteries, and Smart Charging Systems. M. Mørkeberg Wagner, B. Jacobi Höyer, M. Marinelli, T. Unterluggauer, F. Pastorelli (Technical University of Denmark – DTU, Denmark) (Submission-ID EMOB24-278)	
9:45 – 10:00	Discussions

08:30 – 10:00	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	TBA
08:30 – 9:45	Presentations (18 min. each)
<ul style="list-style-type: none">• Spatio-Temporal Forecasting Model for EV Charging Demands to Enhance Transport Electrification 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)• Congestion Pricing Can Effectively Substitute Fuel Tax in a World of Electric Mobility T. N. Nguyen, F. Müsgens (BTU Cottbus-Senftenberg, Germany) (Submission-ID EMOB24-209)	
9:45 – 10:00	Discussions

08:30 – 10:00	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 TBA	
08:30 – 9:45	Presentations (18 min. each)
<ul style="list-style-type: none"> • Charging Strategies for Electric Bus fleets: A Pathway to Grid-Friendly and Cost-Efficient Operations J. Brendel, P. Scheer (Reiner Lemoine Institut, Germany) (Submission-ID EMOB24-115) • Optimal Cross-Route Dispatching in Electrified Bus Networks K. Keshavarzian, A. Moradi Amani, M. Jalili (1. RMIT University, Australia) (Submission-ID EMOB24-023) • 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) • The Influence of Electricity Storage on the Economic Viability of High-Performance Charging Infrastructure: An Investigation into the Challenges and Opportunities A. Mertins, J. H. Prause, S. Lahmann (NOW GmbH, Germany) (Submission-ID EMOB24-125) 	
9:45 – 10:00	Discussions

10:00 – 10:20 COFFEE BREAK & POSTER SESSION

10:20 – 11:55	SESSION 5A – MOBILITY ASPECTS
03:20 New York 04:20 Rio de Janeiro 09:20 Berlin 12:50 New Delhi 14:20 Jakarta 15:20 Beijing 16:20 Tokyo 18:20 Sydney	
> Session Chair TBA	
10:20 – 11:32	Presentations (18 min. each)
<ul style="list-style-type: none"> • Towards Federated Mobility-as-a-Service (FMaaS): Existing Initiatives, Emerging Requirements, and Challenges. O. Ekpo (IMT School of Advanced Studies, Italy) (Submission-ID EMOB24-148) • Finding the Best Power Supply Strategy for High Power Charging Infrastructure Using PPA's. N. A. Müller, L. Ebbert, B. Engel (elenia Institute for High Voltage Technology and Power Systems, Germany) (Submission-ID EMOB24-171) • Development of the Electrical Vehicle Business Ecosystem in Turkiye: Recommendations for Sustainable Business Models S. Sağlık (Kadir Has University, Turkey) (Submission-ID EMOB24-006) • Understanding the Electric Vehicle Gender Gap Y. Zhang, S. Deb (Newcastle University, United Kingdom) (Submission-ID EMOB24-050) 	
11:32 – 11:55	Discussions

10:20 – 11:55	SESSION 5B – GRID ASPECTS III
03:20 New York 04:20 Rio de Janeiro 09:20 Berlin 12:50 New Delhi 14:20 Jakarta 15:20 Beijing 16:20 Tokyo 18:20 Sydney	
> Session Chair TBA	
10:20 – 11:32	Presentations (18 min. each)
<ul style="list-style-type: none"> • The Potential for V2G – Logging of EV Driving and Charging Patterns in Sweden Y. Kobayashi, M. Taljegard, F. Johnsson (Chalmers University of Technology, Sweden) (Submission-ID EMOB24-168) • Practical Implementation and Field Test Evaluation of a Decentralized Grid-Friendly Charging Algorithm for Electric Vehicles D. Masendorf, N. Rhein, P. Henzel, S. Hempel, R. Alsayed, T. Schlößer, E. Tröster (Energynautics, Germany) (Submission-ID EMOB24-304) • TBA NN • Approximation Approach for V2G Capacity Over Project Lifetime A. Rutgers (ChargeSim, Netherlands) (Submission-ID EMOB24-067) 	
11:32 – 11:55	Discussions

10:20 – 11:55	SESSION 5C – TITLE TBA
03:20 New York 04:20 Rio de Janeiro 09:20 Berlin 12:50 New Delhi 14:20 Jakarta 15:20 Beijing 16:20 Tokyo 18:20 Sydney	
> Session Chair	TBA
10:20 – 11:32	Presentations (18 min. each)
<ul style="list-style-type: none"> • TBA NN • Regenerative Test Bench for the Evaluation of Software and Hardware Behaviour of HPC A. Stadler, F. Grumm, D. Schulz (Helmut Schmidt University/University of the Bundeswehr Hamburg, Germany, Germany) (Submission-ID EMOB24-265) • Charging Ahead: Firm-level Optimisation Strategies for Sustainable and Cost-Effective Electric Vehicle Workplace Charging M. Seger, C. Brand (University of Oxford, United Kingdom), C. Clement (University of Bern, Switzerland), J. Dixon (University of Strathclyde, United Kingdom), C. Wilson (University of Oxford, United Kingdom International Institute for Applied Systems An (Submission-ID EMOB24-160) • Optimizing the Design and Placement of Off-Grid Hybrid Electric Vehicle Charging Infrastructure in Zimbabwe B. Mahere, L. Tenghiri (Al Akhawayn University in Ifrane, Morocco) (Submission-ID EMOB24-005) 	
11:32 – 11:55	Discussions

11:55 – 12:00 SHORT BREAK

12:00 – 13:00	SESSION 6 – CLOSING SESSION
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	
12:00 – 12:30	Panel discussion
TOPICS ADDRESSED: TBA	
Panelists:	
<ul style="list-style-type: none"> - TBA - TBA - TBA - TBA 	
12:30 – 12:55	Discussions
12:55 – 13:00	Closing Remarks

13:00 – 14:00 LUNCH

POSTER PRESENTATIONS

- **Reliability of Electric Vehicle Chargers: A Global Perspective**
S. Deb (Newcastle University, United Kingdom) (Submission-ID EMOB24-001)
- **Conventional Diesel Heaters in Electric Buses - The scale of emissions**
J. Anttila, R. Pettinen (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)

- **Exploring the Potential of Physics-Informed Neural Networks for Battery Cell Modeling**
H. Andersen, K. Qian, K. Paasch, T. Ebel (University of Southern Denmark, Denmark) ([Submission-ID EMOB24-095](#))
- **An Adaptive Phase Shedding and Interleaving Technique for Modular Dual Active Bridge Converter Applied to Fast Battery Charging**
A. A. Nkembi (University of Parma, Italy), I. Kortabarria (University of the Basque Country, Spain), P. Cova, N. Delmonte, D. Santoro (University of Parma, Italy), E. Sacchi (Poseico Electronics Genova, Italy) ([Submission-ID EMOB24-098](#))
- **Simulative Evaluation of High Temperature Versus Low Temperature Heating Networks to Utilize the Waste Heat from Large Fuel Cells for Powering Districts**
N. Gaikwad, N. Reininghaus, C. Muñoz, M. Kröner, 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 (Stadtwerke München, Germany), C. Steinhart (SWM Infrastruktur, Germany), S. Greif (Stadtwerke München, Germany), M. Kreißl, C. Gutzmann (SWM Infrastruktur, Germany), M. Fi ([Submission-ID EMOB24-118](#))
- **Sparking the Future: Accelerating Towards Sustainable Mobility with Electric Vehicles in Thailand**
G. Jongsanguan, S. Sangdee (EGAT, Thailand) ([Submission-ID EMOB24-166](#))
- **Enhancing Vehicle-to-Grid (V2G) Technologies: Interoperability in Electric Vehicles within the framework of the Car2Flex Project**
G. Fritscher, Y. Guo (University of Applied Sciences Technikum Vienna, Austria) ([Submission-ID EMOB24-215](#))
- **Analysis of electric vehicle public charging station usage and environmental sustainability in the UK.**
K. Kulkarni, S. Deb (Newcastle University, United Kingdom) ([Submission-ID EMOB24-305](#))