



AGENDA AS OF 21 MARCH 2023

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

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TIMETABLE 7TH INTERNATIONAL HYBRID POWER PLANTS & SYSTEMS WORKSHOP

TUESDAY, 23 MAY 2023		WEDNESDAY, 24 MAY 2023	
Hybrid Power Plants & Systems Workshop Day 1		Hybrid Power Plants & Systems Workshop Day 2	
08:00 – 09:00	FOYER		
	REGISTRATION		
09:00 – 09:10	ROOM A + B		
	OPENING: WELCOME AND INTRODUCTION		
09:10 – 10:50	ROOM A + B	09:00 – 10:40	ROOM A
	SESSION 1: KEYNOTE SESSION	SESSION 5A: HYBRID POWER SYSTEM EXPERIENCE FROM HAWAII	ROOM B SESSION 5B: TBA
COFFEE BREAK (30 MIN)		COFFEE BREAK (30 MIN)	
11:20 – 13:00	ROOM A	11:10 – 12:50	ROOM A
	SESSION 2A: PROJECT EXPERIENCE HYBRID POWER SYSTEMS	SESSION 2B: TITLE TBA	SESSION 6A: HYBRID SYSTEM DESIGN ASPECTS
LUNCH (1 H)		LUNCH (1 H)	
14:00 – 15:40	ROOM A	13:50 – 15:50	ROOM A
	SESSION 3A: FREQUENCY STABILITY ASPECTS HYBRID POWER SYSTEMS		ROOM B SESSION 3B: HYDROGEN ASPECTS
COFFEE BREAK (20 MIN)		COFFEE BREAK (20 MIN)	
16:00 – 18:20	ROOM A	16:10 – 17:10	ROOM A+B
	SESSION 4A: MODELLING HYBRID POWER SYSTEMS		SESSION 4B: TITLE TBA
19:30	WORKSHOP DINNER		

TUESDAY, 23 MAY 2023

08:00 – 09:00 REGISTRATION

09:00 – 09:10 WELCOME

09:10 – 10:50 SESSION 1 – KEYNOTE SESSION

> Session Chair Thomas Ackermann (Energynautics, Germany)

09:10 – 10:30 Presentations (20 min. each)

- **Suðuroy Hybrid Power System – a 100% IBR Power System**
B. Joensen (SEV, Faroe Islands) ([Submission-ID HYB23_056](#))
- **Faroese Energy policy with Focus on Increased Renewable Electricity Production, Electrification, Smartgrid and PtX.**
K. M. Mortensen (Head of Department, US-Orka / Energy Directorate, Umhvørvisstovan /Environment Agency, Faroe Islands) ([Submission-ID HYB23_055](#))
- **Roadmap toward 100% Renewable Energy in the Faroe Islands**
H. M. Tróndheim (SEV, Faroe Islands) ([Submission-ID HYB23_053](#))
- **TBA**
NN

10:30 – 10:50 Discussions

10:50 – 11:20 COFFEE BREAK

11:20 – 13:00 SESSION 2A – PROJECT EXPERIENCE HYBRID POWER SYSTEMS

> Session Chair TBA

11:20 – 12:40 Presentations (20 min. each)

- **Optimization-Based Operation of Isolated Hybrid Power Systems: A Case Study In Suðuroy, Faroe Islands**
M. Alferink (University of Bremen, Germany), L. Reus, F. Goudarzi, L. Hofmann (Leibniz University Hannover, Germany), K. Michels (University of Bremen, Germany) ([Submission-ID HYB23_006](#))
- **Toward High Levels of Renewable Energy Sources in The French Insular Systems**
G. Prime (EDF-R&D, France), J. Witkowski (EDF-SEI, France) ([Submission-ID HYB23_029](#))
- **TBA**
P.-P. Schierhorn (Energynautics, Germany) ([Submission-ID HYB23_057](#))
- **How To Transition from 0% to 100% Renewable Energy in Less than 15 Years on the Isle of Man?**
D. Quirk (DTU Offshore, Denmark | Energy & Sustainability Centre Isle of Man, Isle of Man) J. Boucher, P. Østergaard, H. Lund, F. Camara, F. Da Silva (Aalborg University, Denmark), R. Peake (Energy & Sustainability Centre Isle of Man, Isle of Man) ([Submission-ID HYB23_030](#))

12:40 – 13:00 Discussions

11:20 – 13:00	SESSION 2B – TBA
> Session Chair	TBA
11:20 – 12:40	Presentations (16 min. each)
•	Transforming Small Island Power Systems G. Nair (IRENA, Germany) (Submission ID 066)
•	Revealing the Potential of Hybrid Power Plants: Highlights of NREL Research and Project Experiences V. Gevorgian (National Renewable Energy Laboratory – NREL, USA) (Submission-ID HYB23_038)
•	Implementations of Utility Scale Hybrid Power Plants in the Australian NEM J. Dyson (Greenview Strategic Consulting, Australia) (Submission-ID HYB23_041)
•	TBA NN (Minesto, Sweden) (Submission ID 000)
•	Airborne Wind Energy - a New Pillar of the Renewable Energy Supply N. Taphorn (SkySails Power, Germany) (Submission-ID HYB23_015)
12:40 – 13:00	Discussions

13:00 – 14:00 LUNCH BREAK

14:00 – 15:40	SESSION 3A – FREQUENCY STABILITY ASPECTS HYBRID POWER SYSTEMS
> Session Chair	TBA
14:00 – 15:20	Presentations (16 min. each)
•	Fixed Frequency Operation of an Island Grid with Multiple Grid-Forming Inverters and GPS-Based Synchronization R. Strunk, L. Reus, L. Hofmann, A. Mertens (Leibniz University Hannover, Germany) (Submission-ID HYB23_021)
•	Grid forming wind for island power systems V. Gevorgian (National Renewable Energy Laboratory – NREL, USA) (Submission-ID HYB23_039)
•	Power Grids Regain Missing Inertia with Synchronous Condensers C. Payerl (ABB, Sweden) (Submission-ID HYB23_047)
•	Improved Grid-Forming Control Method with Current Limiting for Converter-based Generation Plants W. Schulze, P. Weber, M. Suriyah, T. Leibfried (Karlsruhe Institute of Technology – KIT), Germany) (Submission-ID HYB23_406)
•	Simulations and Validation of PQ Coupling of Grid-Forming Converters Connected to High Resistive System L. Salagamsetty, L. Cai (University of Rostock, Germany) (Submission-ID HYB23_033)
15:20 – 15:40	Discussions

14:00 – 15:40	SESSION 3B – HYDROGEN ASPECTS
> Session Chair	TBA
14:00 – 15:20	Presentations (16 min. each)
	<ul style="list-style-type: none"> • Optimal Hydrogen Production based on Wind Power Generation G. A. Raducu, S. Kanev (Vattenfall Wind Power, Denmark), O. Sahin, B. Alahmad, N. Espinoza, D. V. Pombo (Vattenfall R&D, Sweden) (Submission-ID HYB23_017) • Techno-Economic Effects of Electricity Market Conditions in the Optimal Operation of Hybrid Power Plants J. Martinez Rico, I. Ruiz de Argandoña, E. Zulueta, M. Armendia, U. Fernandez-Gamiz (Basque Research and Technology Alliance, Spain) (Submission-ID HYB23_013) • How Efficient Can Hydrogen Be? - Hydrogen Technologies and Their Limits of Optimizability N. Eggers (Fraunhofer Institute for Factory Operation and Automation IFF, Germany), T. Birth (Fraunhofer Institute for Factory Operation and Automation IFF University of Applied Life Sciences Hamburg, Germany), M. Scheffler, S. Jentsch (Fraunhofer Institute for Factory Operation and Automation IFF, Germany), A. Hurtado (Technische Universität Dresden, Germany) (Submission-ID HYB23_020) • Techno-Economic Modeling of Stationary Energy Storage Systems with a Focus on Temperature's Influence on Aging C. T. Schwarz, J. Kapeller, Y. Wimmer (Austrian Institute of Technology – AIT, Austria) (Submission-ID HYB23_018) • Opportunities for Battery Energy Storage in Stand-Alone and Co-Located Hybrid Power Plant in Distribution Grid A. Baviskar (Technical University of Denmark – DTU, Denmark), A. Anand (Technical University of Munich – TUM, Germany), K. Das, A. Hansen (Technical University of Denmark – DTU, Denmark) (Submission-ID HYB23_022)
15:20 – 15:40	Discussions

15:40 – 16:00 COFFEE BREAK

16:00 – 18:20	SESSION 4A – MODELLING HYBRID POWER SYSTEMS
> Session Chair	TBA
16:00 – 18:00	Presentations (20 min. each)
	<ul style="list-style-type: none"> • The Evolution of Hybrid Systems: Insights from 30 years of Modeling P. Lilienthal (UL Solutions, USA) (Submission-ID HYB23_007) • Development of a Software in the Loop Environment to Control a Microgrid M. Mütterig, G. Puleo, M. Zdrallek (University of Wuppertal, Germany), A. Schönbauer (RheinEnergie, Germany) (Submission-ID HYB23_023) • Comparison of Outage Calculations with Corrective Measures in Hybrid Energy Systems J. Mehlem, C. Gerdon, S. Thams, A. Moser (RWTH Aachen, Germany) (Submission-ID HYB23_027) • Transient Stability Study for a Developing Island Power System with Increasing Shares of VRE A. Jotwani, N. Martensen (Energynautics, Germany) (Submission-ID HYB23_050) • Coupling Wind Power and Heating with a Thermal Grid: Simulation Case Study Isle of Barra M. Auer (Lucerne University of Applied Sciences and Arts, Switzerland) (Submission-ID HYB23_063) • Capacity Tariffs and Heat Pump Lockdown Periods for Residential Consumers as Grid-Relieving Measures in Future Low-Voltage Power Systems S. Candas (Technical University of Munich – TUM, Germany) (Submission-ID HYB23_012)
18:00 – 18:20	Discussions

16:00 – 18:20	SESSION 4B – TBA
> Session Chair	TBA
16:00 – 18:00	Presentations (17 min. each)
	<ul style="list-style-type: none"> • TBA E. Quitmann (Enercon, Germany) • Developing the Geo-Techno-Economic Analysis of Hydrogen Ecosystems F. Weise (Fraunhofer ISE, Germany) (Submission-ID HYB23_062) • Utility Scale PV Plant OPEX Optimization with BESS D. Jaber (BayWa r.e., Germany) (Submission-ID HYB23_065) • Developing Standardized Plant Controls and Sizing Methodologies - In the face of an Industry in Flux B. J. Braun, B. Lang (Fluence Energy, Germany) (Submission-ID HYB23_035) • Smart Energy Network Demonstrator for a Town Sized Campus N. Bhadra (Siemens, United Kingdom) (Submission-ID HYB23_042) • Optimal Operation of Hybrid Power Plants: A Case Study of an Operation Park in Sweden O. Lindberg (Uppsala University, Sweden), R. Zhu (Technical University of Denmark – DTU, Denmark), D. Lingfors (Uppsala University, Sweden), K. Das, P. E. Sørensen (Technical University of Denmark – DTU, Denmark) (Submission-ID HYB23_109) • Techno-Economic Feasibility of Hybrid Pumped Hydro/Battery/PV Power Plants in Germany Ø. Klyve (Institute for Energy Technology – IFE, Norway), A. Hensel (Fraunhofer ISE, Germany) (Submission-ID HYB23_044)
18:00 – 18:20	Discussions

19:30 **Dinner** (*to be booked separately*)

WEDNESDAY, 24 MAY 2023

09:00 – 10:40 **SESSION 5A – HYBRID POWER SYSTEM EXPERIENCE FROM HAWAII**

> Session Chair **Thomas Ackermann, Energynautics**

09:00 – 10:20 **Presentations (20 min. each)**

- **Introduction to the Situation in Hawaii**
T. Ackermann (Energynautics, Germany) (Submission ID HYB23_058)
- **Experience from High Share PV on Kauai (TBC)**
B. Rockwell (Kauai Island Utility Cooperative – KIUC, USA) (Submission ID 000)
- **Renewable Energy Procurement and PPA Evaluation in Hawaii**
L. R. Roose (Hawaii Natural Energy Institute, University of Hawaii at Manoa, USA)
- **TBA**
NN (Submission ID 000)

10:20 – 10:40 **Discussions**

09:00 – 10:40 **SESSION 5B – TBA**

> Session Chair **TBA**

09:00 – 10:20 **Presentations (20 min. each)**

- **TBA**
Name (Company, Country) (Submission ID 000)
- **TBA**
Name (Company, Country) (Submission ID 000)
- **TBA**
Name (Company, Country) (Submission ID 000)
- **TBA**
Name (Company, Country) (Submission ID 000)

10:20 – 10:40 **Discussions**

10:40 – 11:10 COFFEE BREAK

11:10 – 12:50	SESSION 6A – HYBRID SYSTEM DESIGN ASPECTS
> Session Chair	TBA
11:10 – 12:30	Presentations (17 min. each)
	<ul style="list-style-type: none"> • Optimally Dispatching the US Virgin Islands to Increase Renewable Rates in Saint Croix D. Vazquez Pombo (Vattenfall R&D, Denmark), V. Gevorgian (National Renewable Energy Laboratory – NREL, USA) (Submission-ID HYB23_010) • Decarbonising the Electricity System of the Island of Guernsey E. Williams (Siemens Power Technologies International, United Kingdom) (Submission-ID HYB23_040) • Increasing Grid Resilience through Combined Active and Reactive Power Flow Optimization to Integrate Renewable Energies into Island Power Systems M. S. Thams, J. Mehlem, A. Moser (RWTH Aachen, Germany) (Submission-ID HYB23_026) • Photovoltaic-Wind Hybrid System Power Stations to Produce Electricity in Adrar Regionu B. Hemza (Université Ahmed Draïa, Algeria) (Submission-ID HYB23_005)
12:30 – 12:50	Discussions

11:10 – 12:50	SESSION 6B – TBA
> Session Chair	TBA
11:10 – 12:40	Presentations (15 min. each)
	<ul style="list-style-type: none"> • Selection of Energy Storage Parameters to Cover the Annual Demand Curve in Cooperation with Wind and Photovoltaic Farms P. Kacejko, M. Wancerz, P. Pijarski (Lublin University of Technology, Poland) (Submission-ID HYB23_031) • Geospatial Analysis of Co-Locating PV at Existing Wind Power Parks in Sweden D. Lingfors, O. Lindberg (Uppsala University, Sweden) (Submission-ID HYB23_025) • Load Shifting to Increase the Match of Consumption and Renewable Generation by Means of Added Thermal Storage, Analysed for the Case of Domestic Heating on the Faroe Islands T. Balle, H.-G. Beyer (University of the Faroe Islands, Faroe Islands) (Submission-ID HYB23_049) • Profitability of hybrid power plants in European markets J. P. Murcia Leon, K. Das (DTU, Denmark) (Submission-ID HYB23_034) • Critical Assessment of the German Innovation Tender for the Promotion of Hybrid Energy Systems on the Basis of a Revenue Model for Photovoltaics Plus Storage Hybrid Power Plant F. Mendler (BayWa r.e., Germany) (Submission-ID HYB23_064) • Energy Intense Industrial Processes Powered by Decentralized Hybrid Energy Plants B. Vargas (NitroCapt, Sweden) (Submission-ID HYB23_028)
12:40 – 12:50	Discussions

12:50 – 13:50 LUNCH BREAK

13:50 – 15:50	SESSION 7A – STORAGE ASPECTS
> Session Chair	TBA
13:50 – 15:32	Presentations (17 min. each)
	<ul style="list-style-type: none"> • On the Usage of Hybrid Storage Systems for the Provision of Services for Local Grids A. Anta, D. Cifelli (Austrian Institute of Technology – AIT, Austria) (Submission-ID HYB23_011) • Advanced Battery Energy Storage Systems for Optimal Hybrid Power and Energy Management F. Baccino, M. Santarelli (Hitachi Energy, Italy) (Submission-ID HYB23_016) • Optimal Design of Wind/Solar Hybrid Power Plant by Minimizing Need For Energy Storage E. Jonasson, O. Lindberg, D. Lingfors, I. Temiz (Uppsala University, Sweden) (Submission-ID HYB23_008) • Alternative and Combined Procedure for Parameter Identification and Validation of Governor and Automatic Voltage Regulator Dynamic Models H. M. Tróndheim (SEV, Faroe Islands Aalborg University, Denmark University of the Faroe Islands, Faroe Islands), F. F. da Silva (Aalborg University, Denmark), C. L. Bak (Aalborg University, Denmark), T. Nielsen (SEV, Faroe Islands), A. Niclasen (University of the Faroe Islands, Faroe Islands), R. S. Nielsen, N. Weikop (AFRY, Denmark) (Submission-ID HYB23_051) • Cost-Effective Hybrid Energy Storage for Arctic Regions R. Mierisch (3S Power, Australia), H. Mackenzie (Hard Software, Australia) (Submission-ID HYB23_009) • Long-Duration Energy Storage in Hybrid Wind and Solar Power Plants V. Gevorgian (National Renewable Energy Laboratory – NREL, USA) (Submission-ID HYB23_037)
15:32 – 15:50	Discussions

13:50 – 15:50	SESSION 7B – TITLE
> Session Chair	TBA
13:50 – 15:30	Presentations (20 min. each)
	<ul style="list-style-type: none"> • Optimizing a Solar-Battery-Plant for Peak-Time (9 a.m.–10 p.m.) Operation With Constant Power Output B. Schropp, I. Caschetto (SMA Solar Technology, Germany) (Submission-ID HYB23_014) • Strategies for Communication and Coordination of Operations that Improve Hybrid Power Infrastructure Performance R. E. Dansby (Ceboids, USA) (Submission-ID HYB23_032) • Obtaining Value from Sub-seasonal to Seasonal (S2S) Renewable Power Forecasts for Hybrid Power System Applications J. W. Zack (MESO Inc., USA) (Submission-ID HYB23_052) • Optimal Design of Ecological Hybrid Power System Using HOMER Software under Safi Climates T. Aissi (ChoaiB Doukkali University, Morocco), K. Kandoussi, R. El Otmani (ENSAJ, Morocco) (Submission-ID HYB23_001) • Distributed Energy Resources and the Future of Distribution Utilities F. Sioshansi (Menlo Energy Economics, USA) (Submission-ID HYB23_003)
15:30 – 15:50	Discussions

15:50 – 16:10 COFFEE BREAK

16:10 – 17:10	SESSION 8 – CLOSING SESSION
> Session Chair	Eckard Quitmann + Terji Nielsen (tbc)
16:10 – 16:40	Panel discussion
Topics addressed: TBA	
Panelists:	
-	Terji Nielsen (SEV, Faroe Islands)
-	TBA
-	TBA
-	TBA
16:40 – 17:00	Discussions
17:00 – 17:10	Closing Remarks

POSTER

- **Microgrid an Energy Solution for Remote Isolated Communities in Indonesia**
M. Ali (Aalborg University, Denmark) ([Submission-ID HYB23_036](#))