



## EPSRC Supergen Energy Networks Hub Risk and Resilience Day 2023

City, University of London,  
London, UK

# Programme Overview

09:00	Registration and refreshments
09:30	Welcome and kick-off
09:35	Keynote 1   <b>Dr Ian Llewellyn (Department of Business Energy and Industrial Strategy)</b> Modelling and controlling the risks in future energy systems
10:20	Oral session 1   <b>Risks in distribution systems</b>
11:05	Poster introduction session (speed round)
11:25	Poster session and refreshments
12:00	Oral session 2   <b>Models for risk assessment and mitigation</b>
12:45	Lunch and posters
13:45	Keynote 2   <b>Dr Anupama Sen (University of Oxford)</b> The new energy state
14:30	Oral session 3   <b>Power system resilience</b>
15:15	Poster session and refreshments
15:40	Oral session 4   <b>Weather and climate risks</b>
16:25	Closing remarks
16:30	Drinks reception
17:30	

09:30 – 09:35	Welcome and kick-off
09:35 – 10:20	Keynote 1   Dr Ian Llewellyn (Department of Business Energy and Industrial Strategy, BEIS)
<b>Modelling and controlling the risks in future energy systems</b>	
10:20 – 11:05	Oral session 1   Risks in distribution systems
O1.1	<b>A robust mixed-integer convex model for optimal scheduling of integrated energy storage – soft open point devices</b> <i>Ilias Sarantakos, Matt Deakin (Newcastle University), Phil Taylor (University of Bristol)</i>
O1.2	<b>Decomposition and forecasting of distribution locational marginal prices</b> <i>Arman Sarjou, Azad Deihim, Eduardo Alonso, Dimitra Apostolopoulou (City, University of London)</i>
O1.3	<b>A novel formulation of LV distribution network equivalents for reliability analysis</b> <i>Mike Brian Ndawula, Chenghong Gu (University of Bath), Sasa Z. Djokic (University of Edinburgh), Ignacio Hernando-Gil (ESTIA Institute of Technology, France)</i>
11:05 – 11:25	Poster introduction session (speed round)
P1	<b>Probabilistic assessment of heat electrification impacts on gas and electricity networks</b> <i>Ali Ehsan, Robin Preece (The University of Manchester)</i>
P2	<b>Provision of energy and frequency containment services in unit commitment</b> <i>Carlos Matamala, Luis Badesa, Goran Strbac (Imperial College London)</i>
P3	<b>Flexibility needs assessment for distribution networks</b> <i>Md Umar Hashmi, Arpan Koirala, Hakan Ergun, Dirk Van Hertem (KU Leuven, Belgium)</i>
P4	<b>Long-term economic equilibrium for distributed energy resources deployment</b> <i>Miguel Sanchez-Lopez (The University of Manchester, Universidad de Chile), Robin Preece, Eduardo Alejandro Martinez Cesena (The University of Manchester), Rodrigo Moreno (Universidad de Chile, Imperial College London)</i>
P5	<b>Cybersecurity of battery energy storage</b> <i>Nina Kharlamova (Technical University of Denmark)</i>
P6	<b>Joint modelling of regional electricity net-demand in Great Britain</b> <i>Vincenzo Gioia (University of Udine, Italy), Matteo Fasiolo (University of Bristol), Jethro Browell (University of Glasgow), Ruggero Bellio (University of Udine, Italy)</i>
P7	<b>Towards resilient communities: Strengthening infrastructure for critical service provision under severe weather conditions</b> <i>Laiz Souto, Philip C. Taylor, Maria Pregolato (University of Bristol)</i>
P8	<b>Robust optimal power flow for multi-area AC/DC grids under multi-purpose interconnector setup</b> <i>Oscar Damanik, Hakan Ergun, Dirk Van Hertem (KU Leuven, Belgium)</i>
P9	<b>Heat impacts on power and transport infrastructure resilience</b> <i>Zixuan Jia, Daniel L. Donaldson, Emma Ferranti (University of Birmingham)</i>
P10	<b>Assessing the impact of energy shocks on consumer tariff choice and distribution network planning</b> <i>Matthew Deakin (Newcastle University), Cheng Wen (Leeds University), Mohammad S. Rafaq (Loughborough University), Paraskevi Vatougiou (Heriot-Watt University), Shandelle Steadman (Cranfield University)</i>
P11	<b>Split-based sampling for Machine learning based power system security assessment</b> <i>Al-Amin B Bugaje (Imperial College London), Jochen L Cremer (Delft University of Technology, Netherlands), Goran Strbac (Imperial College London)</i>
11:25 – 12:00	Poster session and refreshments
12:00 – 12:45	Oral session 2   Models for risk assessment and mitigation
O2.1	<b>Multilevel Monte Carlo with surrogate models for resource adequacy assessment</b> <i>Ensieh Sharifnia, Simon Tindemans (Delft University of Technology, Netherlands)</i>
O2.2	<b>Reliable design and operation of offshore energy hubs: the Belgian first-of-its-kind energy hub</b> <i>Giacomo Bastianel, Hakan Ergun, Dirk Van Hertem (KU Leuven, Belgium)</i>
O2.3	<b>Mapping the potential contribution of offshore wind-derived hydrogen electrolysis to energy system resilience</b> <i>Graeme Hawker, Emily Chapman (University of Strathclyde), Katriona Edlmann (University of Edinburgh)</i>
12:45 – 13:45	Lunch and posters
13:45 – 14:30	Keynote 2   Dr Anupama Sen (University of Oxford)
<b>The new energy state</b>	
14:30 – 15:15	Oral session 3   Power system resilience
O3.1	<b>Prediction of cascading failures and simultaneous learning of functional connectivity in power systems</b> <i>Tabia Ahmad, Panagiotis N Papadopoulos (University of Strathclyde)</i>
O3.2	<b>Risk assessment of cascading failures in power systems with high renewable penetration</b> <i>Yitian Dai, Robin Preece (The University of Manchester), Mathaios Panteli (University of Cyprus)</i>
O3.3	<b>Changing pathways to power system collapse: an updated review of large disturbances and blackout events</b> <i>Callum MacIver, Keith Bell, Abigail Colson and Tim Bedford (University of Strathclyde)</i>
15:15 – 15:40	Poster session and refreshments
15:40 – 16:25	Oral session 4   Weather and climate risks
O4.1	<b>Dynamic risk assessment of power systems against wildfires</b> <i>Rosa Serrano, Alessandra Parisio (The University of Manchester), Mathaios Panteli (University of Cyprus)</i>
O4.2	<b>How might compound wind and flood risks impact UK infrastructure?</b> <i>Hannah Bloomfield (University of Bristol), John Hillier (Loughborough University), Paul Bates (University of Bristol), Len Shaffrey (University of Reading), Adam Griffin, Alison Kay (UK Centre for Ecology &amp; Hydrology), Francesca Pianosi, Rachel James (University of Bristol), Adrian Champion (AON)</i>
O4.3	<b>Effects of compound events of low winds and cold temperature on Britain's power system</b> <i>Lucie Lücke, Chris Dent, Gabi Hegerl, Amy Wilson, Andrew Schurer (University of Edinburgh)</i>
16:25 – 16:30	Closing remarks
16:30 – 17:30	Drinks reception