

# RISK and Resilience Day

13 March 2025

## EPSRC Supergen Energy Networks Hub Risk and Resilience Day 2025

The Exchange, University of Birmingham  
Birmingham City Centre, UK

### Programme Overview

09:00	Registration and refreshments
09:30	Welcome and kick-off
09:35	Keynote 1   Emily Wallace (Met Office) <i>Talk title TBC</i>
10:20	Oral session 1   Wild Weather
11:05	Poster introduction session (speed round)
11:25	Poster session and refreshments
12:00	Oral session 2   Securing Supply
12:45	Lunch and posters
13:45	Keynote 2   Ed Beard (National Infrastructure Commission) <i>Talk title TBC</i>
14:30	Oral session 3   SIF Showcase
15:15	Poster session and refreshments
15:40	Oral session 4   Infrastructure Insights
16:25	Closing remarks
16:30	Drinks reception
17:30	

09:30 – 09:35 Welcome and kick-off

09:35 – 10:20 Keynote 1 | Emily Wallace (Met Office)

Talk title TBC

10:20 – 11:05 Oral session 1 | Wild Weather

<p>O1.1 A framework for developing extreme scenarios: Are we storm ready?</p> <p><i>James Fallon, Paula Gonzalez, Anna Whitford, Michael Angus, Joe Osborne, Katie Chowienczyk (Met Office)</i></p>	<p>O1.2 CCC approach to analysing climate risk and adaptation options in the energy sector</p> <p><i>Rachael Steller (Climate Change Committee)</i></p>	<p>O1.3 Dealing with large-scale offshore wind farm shut-down risk during a severe storm: an adaptive robust optimization approach</p> <p><i>Oscar Damanik, Dirk Van Hertem, Hakan Ergun (KU Leuven and Etch EnergyVille, Belgium)</i></p>	<p>O1.4 Present-day risk from winter storms in the United Kingdom</p> <p><i>Paula Gonzalez, Emily Wallace, Duncan Ackerley, Eloise Matthews, Daisy Harley-Nyang (Met Office)</i></p>
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11:05 – 11:35 Poster introduction session (speed round)

See next page for a full list of all poster presentations

11:25 – 12:00 Poster session and refreshments

12:00 – 12:45 Oral session 2 | Securing Supply

<p>O2.1 Decentralised coordination of local multi-energy microgrids for system-level resilience</p> <p><i>Yi Wang, Goran Strbac (Imperial College London)</i></p>	<p>O2.2 Weather risk and generation adequacy: security of supply challenges for a weather dependent GB electricity system</p> <p><i>Callum MacIver, Keith Bell, Shanay Skellern, Magnus Jamieson (University of Strathclyde)</i></p>	<p>O2.3 Balancing-aware security-constrained stochastic optimal power flow for hybrid AC/DC grids with polynomial chaos expansion</p> <p><i>Kaan Yurtseven, Hakan Ergun, Dirk Van Hertem (KU Leuven and Etch EnergyVille, Belgium)</i></p>	<p>O2.4 Decadal predictions for the European energy sector</p> <p><i>Benjamin Hutchins, David Brayshaw (University of Reading), Len Shaffrey (University of Reading, National Centre for Atmospheric Science), Hazel Thornton, Doug Smith (Met Office)</i></p>
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12:45 – 13:45 Lunch and posters

13:45 – 14:30 Keynote 2 | Ed Beard (National Infrastructure Commission)

Talk title TBC

14:30 – 15:15 Oral session 3 | SIF Showcase

<p>O3.1 Predict4Resilience</p> <p><i>Jethro Browell (University of Glasgow)</i></p>	<p>O3.2 CREDO+</p> <p><i>Elliot Christou (Connected Places Catapult)</i></p>	<p>O3.3 Multi-resilience</p> <p><i>Andrew Webster Northern Powergrid)</i></p>	<p>O3.4 D-SUITE</p> <p><i>Andrew Moon (SP Energy Networks), Matt Deakin (Newcastle University)</i></p>
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15:15 – 15:40 Poster session and refreshments

15:40 – 16:25 Oral session 4 | Infrastructure Insights

<p>O4.1 Advances in “EXTRA-STRONG” (Resilience evaluation by experimental and theoretical approaches in electrical distribution systems with underground cables)</p> <p><i>Luigi Calcara (University of Roma “La Sapienza”), Andrea Mazza (Politecnico di Torino), Paolo Roccato (Istituto Nazionale di Ricerca Metrologica, Italy)</i></p>	<p>O4.2 Predicting environmental risks to the electricity transmission &amp; distribution network</p> <p><i>Owen Lauder (Previsico), Tinashe Chikohora (National Grid Electricity Transmission), James Cooper (University of Liverpool), Chris Heaps (Frazer-Nash Consultancy)</i></p>	<p>O4.3 Multiport power converter to enhance the resilience in a rural distribution network</p> <p><i>Montserrat Montalà-Palau, Marc Cheah-Mañé, Oriol Gomis-Bellmunt (CITCEA – UPC, Spain)</i></p>	<p>O4.4 Provision of distributed grid resilience using EVs during extreme weather events</p> <p><i>Peter McCallum, Desen Kirli (University of Edinburgh), Laiz Souto, Killua Qin (University of Bath)</i></p>
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16:25 – 16:30 Closing remarks

16:30 – 17:30 Drinks reception

## List of Posters

P1 State of the climate for the UK energy sector 2023-24

*Benjamin Hutchins (University of Reading), Matthew Wright (University of Oxford), Hannah Bloomfield (Newcastle University), James Fallon (Met Office)*

P2 Delivering resilience in multi-level, multi-vector energy systems

*David Greenwood (Newcastle University), Laiz Souto (University of Bath), Kaiqing Qiu, Shuai Yao (Cardiff University)*

P3 Limits of EV flexibility potential which can be utilised based on the network conditions

*Emir Nukic, Victor Levi (The University of Manchester)*

P4 Scenarios for Nordic grid resilience in the energy transition

*Freja Bruncrona, Robert Eriksson (Uppsala University, Sweden)*

P5 Challenges and opportunities for improving resilience of electricity distribution networks

*Laiz Souto (University of Bath)*

P6 Enabling characterisation of dynamic interactions with probabilistic small-signal analysis

*Luke Benedetti (The University of Manchester), Agustí Egea-Àlvarez (University of Strathclyde), Robin Preece, Panagiotis N. Papadopoulos (The University of Manchester)*

P7 A framework to identify and map uncertainties in distribution system planning

*Matthew Deakin (Newcastle University) on behalf of the IEEE Modern and Future Distribution System Planning Working Group*

P8 Optimal pricing of electricity in microgrids under the uncertainty of PV, wind and load demand

*Mohamed Seralkhatm (Helwan University, Egypt)*

P9 Resilience-driven strategies for the planning of future electricity distribution systems

*Saif Al Omairi, Daniel Donaldson (University of Birmingham)*

P10 Quantification and attribution of uncertainty in wind power modelling

*Saskia Salwey (University of Bristol), Hannah Bloomfield (Newcastle University), Francesca Pianosi (University of Bristol)*

P11 Adaptive probabilistic method for wind energy forecasting based on generalised logit transformation

*Tao Shen, Jethro Browell, Daniela Castro-Camilo (University of Glasgow)*

P12 Whole energy system resilience vulnerability assessment

*Yitian Dai, Eduardo A. Martínez Ceseña, Robin Preece (The University of Manchester)*

P13 Network resilience enhancement strategy via coordinated flexibility from electric vehicles and soft open points

*Wei Gan, Xun Jiang, Daniel Carr, Jianzhong Wu (Cardiff University)*

P14 Embedding resilience into energy systems: A new or an old challenge?

*Natalia-Maria Zografou-Barredo, David Greenwood (Newcastle University), Yitian Dai, Victor Levi (The University of Manchester), Xinyuan He, Laiz Souto (University of Bath), Kaiqing Qiu (Cardiff University)*