2025 EPSRC Supergen Energy Networks Hub Risk and Resilience Day Programme

09:30 – 09:35 Welcome and kick-off

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

Affordable, low-carbon and resilient: how weather and climate insights can improve energy sector decision-making

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

O1.1 A framework for developing extreme scenarios: Are we storm ready?

James Fallon, Paula Gonzalez, Anna Whitford, Michael Angus, Joe Osborne, Katie Chowienczyk (Met Office)

O1.2 CCC approach to analysing climate risk and adaptation options in the energy sector

Rachael Steller (Climate Change Committee)

O1.3 Dealing with large-scale offshore wind farm shutdown risk during a severe storm: an adaptive robust optimization approach

Oscar Damanik, Dirk Van Hertem, Hakan Ergun (KU Leuven and Etch EnergyVille, Belgium)

O1.4 Present-day risk from winter storms in the United Kingdom

Paula Gonzalez, Emily Wallace, Duncan Ackerley, Eloise Matthews, Daisy Harley-Nyang (Met Office)

11:05 – 11:35 Poster introduction session (speed round)

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)

11:35 – 12:00 Poster session and refreshments

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

O2.1 Decentralised coordination of local multi-energy microgrids for system-level resilience

Yi Wang, Goran Strbac (Imperial College London)

O2.2 Weather risk and generation adequacy: security of supply challenges for a weather dependent GB electricity system

Callum MacIver, Keith Bell, Shanay Skellern, Magnus Jamieson (University of Strathclyde)

O2.3 Balancing-aware security-constrained stochastic optimal power flow for hybrid AC/DC grids with polynomial chaos expansion

Kaan Yurtseven, Hakan Ergun, Dirk Van Hertem (KU Leuven and Etch EnergyVille, Belgium)

O2.4 Decadal predictions for the European energy sector

Benjamin Hutchins, David Brayshaw (University of Reading), Len Shaffrey (University of Reading, National Centre for Atmospheric Science), Hazel Thornton, Doug Smith (Met Office)

12:45 – 13:45 Lunch and posters

13:45 – 14:30 Keynote 2 | Tom Hughes (National Infrastructure Commission)

The NIC view of resilience in general and in energy

14:30 – 15:15 Oral session 3 | Strategic Innovation Fund Showcase

O3.1 Predict4Resilience

Jethro Browell (University of Glasgow)

O3.2 CREDO+

Elliot Christou (Connected Places Catapult)

O3.3 Multi-resilience

Andrew Webster (Northern Powergrid)

O3.4 D-SUITE

Ritika Das (SP Energy Networks), Matt Deakin (Newcastle University)

15:15 – 15:40 Poster session and refreshments

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

O4.1 Advances in “EXTRA-STRONG” (Resilience evaluation by experimental and theoretical approaches in electrical distribution systems with underground cables)

Luigi Calcara (University of Roma “La Sapienza”), Andrea Mazza (Politecnico di Torino), Paolo Roccato (Istituto Nazionale di Ricerca Metrologica, Italy)

O4.2 Predicting environmental risks to the electricity transmission & distribution network

Owen Lauder (Previsico), Tinashe Chikohora (National Grid Electricity Transmission), James Cooper (University of Liverpool), Chris Heaps (Frazer-Nash Consultancy)

	O4.3	Multiport power converter to enhance the resilience in a rural distribution network Montserrat Montalà-Palau, Marc Cheah-Mañé, Oriol Gomis-Bellmunt (CITCEA – UPC, Spain)
	O4.4	Provision of distributed grid resilience using EVs during extreme weather events Peter McCallum, Desen Kirli (University of Edinburgh), Laiz Souto, Killua Qin (University of Bath)
16:25 – 16:30		Closing remarks
16:30 – 17:30		Drinks reception