



### **Energy, Weather and Climate Forum 2023 Breakout Session Descriptions**

These session descriptions and guiding questions are designed to help people choose which breakout group to attend, and facilitate discussion. They give ideas for questions to discuss - and challenges and opportunities to focus on - gathered from the RMetS Energy Special Interest Group, and other engagement work we have carried out, including at the International Conference on Energy and Meteorology. Not all questions need to be addressed, and the chair and other subject experts will be able to steer the discussion as it makes sense on the day.

#### **Operations and maintenance**

This breakout session will focus on using weather data to predict network faults, extreme weather events, and power outages. This also includes applications relating to maintenance and delivering warnings to consumers.

Key questions to discuss will include:

- What are the gaps in near-term weather prediction (NWP) forecasts for predicting faults in energy networks?
- What is the best practice for efficiently preparing for and recovering from weather-induced faults in energy networks?
- How will the transition to a distribution system operator (DSO) in the UK impact the energy sectors' use of short-term weather forecasts?
- How do regulations governing outages need to change due to climate change?
- How well do system operator(s) and generator companies integrate meteorological forecasting and data for wind?

#### **Trading and medium-term planning**

This breakout session will focus on energy traders, and season-ahead planning of supply and demand.

Key questions to discuss will include:

- How do different stakeholders in the energy sector use sub-seasonal to seasonal forecasts? How do we reconcile these different needs?
- How prepared are electricity generators and networks for a sustained wind drought? How can we stress-test this?
- What further useful information can sub-seasonal to seasonal forecasts provide for energy traders?
  - What are the gaps and opportunities for traders?
- What is the state of the art in seasonal forecasting and what are the gaps in our knowledge? (including for wind speed)
  - How can probabilistic information from ensemble forecasts be used most effectively?
  - Can we learn from colleagues overseas?
  - Are there any examples of best practice R&D in industry or abroad?

#### **Long-term planning and climate change adaptation**

This breakout session will focus on climate projections and their applications to the energy sector. This includes future projections of extreme weather events' frequency and severity, ensuring resilience of network assets in a changing climate, and updating standards as the energy system changes.

Key questions to discuss will include:

- How common will compound extreme events be under climate change and how will they affect the energy sector? Which types of compound events should we be focusing research on?



- What climate projections are most useful for the energy sector? How can we provide these at a resolution which is useful?
- How can we move away from using historical weather data, and sufficiently stress-test the energy system in 2050 and beyond?
  - Implications of general stilling for NW Europe
- What regulatory or governance changes are necessary to achieve Net Zero from an energy sector perspective?
  - How do legal obligations to meet Net Zero impact long-term planning?
- How are companies in the energy sector assessing and disclosing climate-related risks? How could this be improved?