

Welcome

Energy Innovation Basecamp

28 February 2023 ICC Birmingham



Incorporating the impact of climate change in power system modelling

EIP038

28 February 2023

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Background

- Over the last 5-10 years there has been substantial growth in the capacity of wind and solar generation. In addition, large changes in electricity demand are expected from electrification of heat and transport. This is leading to a growing sensitivity of supply and demand to meteorological conditions. Consequently, to model the behaviour of the power system, detailed meteorological data is required.
- At short lead times (< 2 weeks ahead), meteorological data is provided by the latest weather forecast, but at longer lead times there is reliance on historic weather data.
- However, the climate is changing and there are concerns that the historic data is not representative of the future conditions, particularly at longer time horizons.
- There is a need to identify the best available meteorological data to model the power system at different time horizons.
- ***How do we include the impact of climate change in our analysis of the electricity system beyond 2025?***

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Enablers

- Mapping the Impacts and Visualization of Risks of extreme weather on system operation (MIVOR) https://smarter.energynetworks.org/projects/nia_ngso0023/
- The Adverse Weather Scenarios for future electricity systems: long duration events project led by the Met Office. <https://nic.org.uk/studies-reports/national-infrastructure-assessment-old/adverse-weather-scenarios-for-future-electricity-system-long-duration-events/>
- The ETI Natural Hazards project: <https://www.imeche.org/policy-and-press/from-our-perspective/energy-theme/enabling-resilient-uk-energy-infrastructure>

Constraints

Potential constraints, and barriers to progress to be considered include:

- Systems integration
- Appropriate guidance to users to allow for correct application
- Difficult to identify standard solution.
 - Data requirements vary from study to study
 - Lots of climate datasets available (different warming scenarios, different climate centres)
- Presentation of results

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Involvement and Implementation

- Key Stakeholders – DNOs, ESO FES and Electricity Market Reform teams, DESNZ, meteorological data providers
- Target Market – DNOs, ESO FES and Electricity Market Reform teams, DESNZ
- Target Implementation Date – 2024/25

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Participant joining code
[Slido.com](https://www.slido.com)

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