Modeling at the Edge: Navigating Trade-offs in Energy System Analysis

25 June 2025

Workshop Structure

This workshop aims to facilitate an **interactive discussion** regarding the paramount necessity for the development of large-scale, high-fidelity energy models that are readily accessible to planners and policymakers.

Such models are indispensable for **investigating realistic decarbonization pathways amidst uncertainty and complexity**.

The session will focus on **three fundamental dilemmas** in the optimisation of energy systems.

Simplicity vs. Complexity

Should our models prioritize clarity and ease of use or capture the full messiness of reality?

Separation vs. Integration

Should we develop solvers and models independently to encourage innovation, or integrate them tightly for reliability and performance?

Scenarios vs. Stochastic Methods

Should we embrace probabilistic, uncertainty-rich approaches, or stick with simpler scenario analysis that's easier to communicate?

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