



A SERIES OF VOICES SHAPING SUSTAINABLE CHANGE

Meet the STEP-CHANGERS

Valeria Baiocco: Strengthening Energy System Models for Policy Support under Deep Uncertainty

This research investigates how energy system models can better support long-term energy planning in the context of the energy transition. While widely used to inform policy, their results depend on assumptions about future developments that are deeply uncertain, which can limit their reliability. The work explores how deep uncertainty can be more explicitly represented within modelling frameworks, applying a Robust Decision Making approach to evaluate alternative decarbonization strategies across a range of plausible futures. The methodology is applied to the Italian energy system, focusing on key technological pathways including electrification, hydrogen, and carbon capture.

Khaled Gad: A protocol for the Holistic Analysis of Decarbonisation Strategies in the Transport Sector - Applied to the Italian Railway System

Decarbonising transport is a critical challenge for Europe's energy transition, yet current analytical tools remain fragmented. This seminar presents a novel six-step Protocol for holistic decarbonisation analysis, validated on the Italian railway system.

By integrating energy demand modelling, renewable optimisation at station level, and national energy system scenarios, the framework bridges infrastructure-level modelling with whole-system planning. Results show that conventional aggregated models systematically underestimate infrastructure costs and investment needs. Offering specificity, robustness, and transferability, this approach delivers evidence-based policy recommendations for governments and operators, fundamentally reshaping investment priorities compared to fragmented, traditional approaches.

The event will be followed by a networking aperitif.

7th May 2026

5:00 - 6:00 pm

**Sala Vento,
EN:lab, Building 31,
Department of Energy,
Campus Bovisa**

Register here



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MILANO 1863**

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