

EERA JP e3s & JP ESI joint workshop on "Sustainability in Energy Systems: Considering Multiple Perspectives in Design and Assessment"

FINAL AGENDA

TUESDAY, 4 JUNE 2024

Location: Lithuanian Energy Institute, Kaunas (Lithuania)

Morning session (9.00 – 12.30) will be streamed online and accessible [here](#).

09.00 – 10.00		
Opening and Introduction		
09.00 – 09.30	Scope and Objectives of the Workshop	Valentin Bertsch Ruhr-University Bochum & Witold-Roger Poganietz Karlsruhe Institute of Technology
09.30 – 10.00	What is Sustainability?	Jürgen Kopfmüller Karlsruhe Institute of Technology
10.00 – 12.15		
Methods		
10.00 – 10.30	Energy Systems Modelling	Juha Kiviluoma VTT Technical Research Centre of Finland
10.30 – 11.00		
Coffee Break		
11.00 – 11.30	Integrating society into Energy Systems: addressing societal challenges and opportunities that influence Energy Systems Integration pathways	Alessandro Sciallo University of Turin
11.30 – 12.00	Life Cycle Sustainability Analysis of Energy Systems	Witold-Roger Poganietz Karlsruhe Institute of Technology
12.00 – 12.30	Multi-Criteria Decision Making	Valentin Bertsch Ruhr-University Bochum
12.30 – 14.00		
Posters exhibition and lunch		
14.00 – 16.00		
World Café - (Coffee Break from 15.00 to 15.15)		
	Table 1 - Approaches for impact assessment of energy scenarios	Moderated by: Jürgen Kopfmüller Karlsruhe Institute of Technology
	Table 2 - Benefits & limitations of soft-linking vs hard-linking with multiple criteria	Moderated by: Juha Kiviluoma VTT Technical Research Centre of Finland



	Table 3 – Macro-economic and socio-economic impact analysis	Moderated by: Kristina Nienhaus <i>Institute of Networked Energy Systems</i>
	Table 4 – Limitations of modelling/quantification and scenarios in general	Moderated by: Alessandro Sciuillo <i>University of Turin</i>
	Table 5 – Next steps towards future research agenda, next workshops and white paper	Moderated by: Witold-Roger Poganietz <i>Karlsruhe Institute of Technology</i>
16.00 – 17.00	Wrap-up & Conclusions	

Background

A central aim of the energy transition is not only to achieve climate-neutrality, but also that the future energy system is sustainable. Today, energy systems models (ESMs) are the dominant tool used for the model-based construction of energy scenarios aimed at providing policy advice to achieve climate-neutrality typically by the middle of the century. However, in most cases the models used minimise total system costs under different decarbonisation constraints and, more generally, focus on techno-economic aspects, i.e. they fall short in considering sustainability aspects in a wider sense. A comprehensive sustainability assessment of the resulting scenarios and energy systems is typically missing and, in the few cases where it is carried out, the scenarios typically perform poorly with respect to sustainability criteria beyond global warming potential since these criteria are not taken into account in the scenario construction. As a result, the produced scenarios and systems lack practical feasibility.

Objectives

This one-day workshop is aimed at discussing the methodological challenges and possible solutions to provide the required pre-conditions to develop sustainable energy systems and transition scenarios from a holistic perspective. Therefore, the focus will be on multidisciplinary approaches, which are suitable for considering environmental, economic and social aspects as well as their cross-impacts and for dealing with the target conflicts that arise inevitably. The aim is to summarise the possible solutions and research requirements discussed in a white paper.

Format

This is a roll-up-your-sleeves workshop. The morning session will be also streamed online. Lunchtime and afternoon sessions can only be joined onsite. Participants are encouraged to present a poster at lunchtime, which should focus on possible contributions to the topic of the workshop (solutions for constructing transition scenarios towards sustainable energy systems more holistically). Potential posters should ideally address at least two of the following topics:

- Energy Systems Modelling
- Life Cycle Sustainability Analysis of Energy Systems
- Multi-Criteria Decision Analysis
- Macro-Economic Modelling