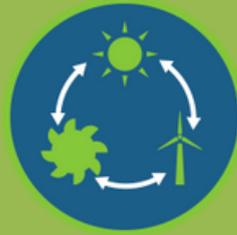


EERA JP ESI

ANNUAL REPORT



2024

**JANUARY
2025**

Prepared by
GLORIA BOTTON

Prepared for
EERA JP ESI

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WORD FROM THE COORDINATOR



**LAURENS
DE VRIES**

TU Delft, JP Coord.

preparing and recording meetings, keeping our website up to date, and with communication with the secretariat. Two of the results are this activity report and our financial overview.

We are looking forward to our internal spring meeting in the wonderful city of Zagreb, where we will focus on the energy transition (modeling, policy) in Southeast Europe and on the industrial energy transition. Mark your calendars for May 20-23! Late October, we will have our annual Research Meets Policy Conference in Brussels, on the energy systems aspects of the Clean Industrial Deal. I hope to see you at these events!

Laurens de Vries
Joint Program Coordinator

Dear members of the Joint Program on Energy Systems Integration of the European Energy Research Alliance,

It is my pleasure to present you with our first annual report. Last year, we made a significant step in professionalizing our program by hiring Gloria Botton as program manager. Gloria supports us one day per week and JP Geothermal and JP AMPEA the rest of the time. This arrangement has made it affordable for our program to have professional support.

Gloria makes it possible to expand our activities and professionalize our program. She helps with planning and organizing events, with the membership administration, with

34

RTOs and universities

19

Countries

>150

and more energy experts



THE ENERGY SYSTEMS INTEGRATION PROGRAMME

VISION

To drive the transition towards a resilient, efficient, and low-carbon energy system through integrated optimization across energy sectors, technologies, and infrastructures.

MISSION

To unite Europe's research strengths in energy systems integration, leveraging synergies between heating, cooling, electricity, renewable energy, and fuel pathways. We aim to provide scientific insights, innovative modeling approaches, and policy recommendations to enhance system flexibility, resilience, and consumer engagement while supporting policymakers in designing effective energy strategies.

THE ACTIVITIES THAT FUEL OUR JP

JP ESI ACTIVITIES



FORMAL MEETINGS

Management Board meetings
2 Annual Steering Committee Meetings
Periodic Team Meetings



RESEARCH MEETS POLICY CONFERENCE

Organised annually in Brussels



JP OTHER DEDICATED MEETINGS



POLICY WORKING GROUP

Participation to the organised monthly updates on recent policy developments and the work done by EERA



HEU CALLS

Open to all JP ESI members to identify collaboration opportunities within EC



COMMUNICATIONS

Collaboration for website and media posting



RESEARCH MEETS POLICY

2ND ANNUAL EERA JP ESI CONFERENCE IN BRUSSELS

On April 9, 2024, we organized the second Research Meets Policy Conference in Brussels. The conference programme is designed to facilitate dialogue between policy makers, administrators and analysts supporting policy making, energy network operators, market parties and researchers, also with a goal of making our program more visible.

The morning program was dedicated to the fast development of wind energy in the North Sea, addressing questions like how investment security and market efficiency should be balanced and how the vast amount of energy from the North Sea could be integrated in the onshore grids.

There were two morning sessions. The first, on market design for the offshore energy system, was led by Laurens de Vries and the speakers were Bryan Brard (Shell), Alexandra Armeni (TenneT) and Ceciel Nieuwenhout (Groningen University).

The second morning session was about Integration of offshore wind energy in the continental European energy system. Henrik Madsen (DTU Denmark) was the chair and the speakers were Jakob Hviid (Energinet), Goran Strbac (Imperial College) and Frederik Roose Øvlisen and Rasmus Ploug Jenle of the Danish Utility Regulator.

In the afternoon, the speakers delved into the complex interplay between technological advancements and societal implications within the energy transition. The goal of the related sessions is to examine and find solutions to the 'Justice paradoxes' that arise when efforts to speed up the energy transition conflict with the rights and preferences of citizens. The afternoon sessions were chaired by Kristiane Lindland (UiS), Ganna Gladkykh (EERA) and Gustav Resch (AIT). The following speakers contributed to the discussion: Giuseppe Pellegrini Masini (ENEA / NTNU), Manfred Paier (AIT), Nadejda Komendantova and Daniel Kroos, IIASA, Laura Tolnov Clausen (University of Agder), Dierk Bauknecht (University of Freiburg).

100

In-person participants

2nd and beyond

Conference organized every year



EERA JPS ESI & E3S AT LEI IN KAUNAS, LITHUANIA

OUR COLLABORATION WITH THE EERA NETWORK

The first week of June, the main annual event of EERA JP ESI was hosted by the Lithuanian Energy Institute in Kaunas. The event started with a dinner on June 3rd for the members to catch up with each other. On June 4, there was joint workshop together with JP E3S on how to include multiple perspectives in policy design and (model-based) analysis. The workshop was organized by Valentin Bertsch (Ruhr-University Bochum) and Witold-Roger Pogonietz (KIT) and featured Jürgen Kopfmüller (KIT), Juha Kiviluoma (VTT), Alessandro Sciallo (University of Turin) and Kristina Nienhaus (DLR).

On June 5, the ESI program organized a workshop on the energy transition in the Central-Eastern European countries. The workshop was divided into four sessions:

1. Decarbonization roadmaps for C-E Europe. Chair: Nelli Putkonen, VTT, Finland. Speakers: Gunars Valdmanis (Ministry of Climate and Energy, Latvia); László Szabo, (REKK), Eimantas Neniskis (LEI).
2. Key challenges in energy-related modelling: where do we stand in C-E Europe? Chair: Gustav Resch (AIT). Speakers: Gustav Resch (AIT), Arvydas Galinis (LEI), Pintér Gabor (University of Pannonia, Hungary), Maja Božičević Vrhovčak (Energy Institute Hrvoje Požar, Croatia).
3. Collaboration opportunities. Chair: Laurens J. de Vries (TU Delft). General discussion on possibilities.
4. The gap between research and realization? From pilot projects to policy adoption. Chair: Peter Breuhaus (NORCE). Speakers: Peter Breuhaus, Darius Milcius (LEI) and Attila Imre (REKK).

In the morning of June 6th there was a Steering Committee meeting and in the afternoon the Lithuanian Energy Institute hosted a tour of the facilities.

85

In-person & online
participants

1 and more

Expected collaborations
with other EERA JPs

EERA JP ESI PLANS FOR 2025

WORKSHOP “DIGITALIZATION FOR THE FUTURE LOW-CARBON SOCIETY”

NTNU, Trondheim, 31 March

Jointly organized by e3s and ESI as part of the NTNU Energy Transition Week.

Organizers: Henrik Madsen and Peter Breuhaus.

ANNUAL JP ESI EVENT

Zagreb, May 20-23.

Organizing team: Laurens de Vries, Maja Božičević Vrhovčak, Gustav Resch, Mariya Trifonova, Gloria Botton.

Program:

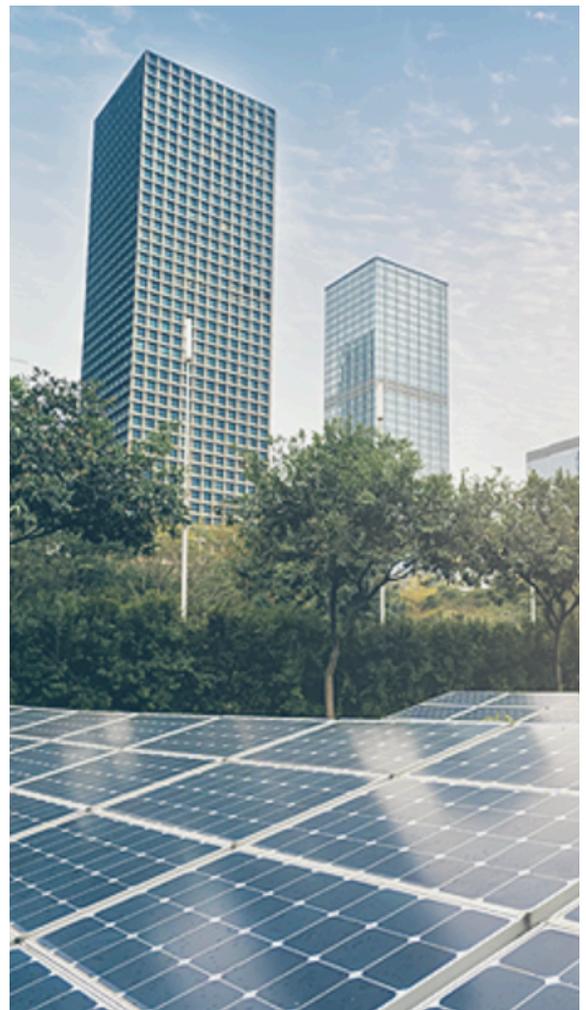
- Tuesday, May 20: welcome dinner
- Wednesday, May 21: workshop on the energy transition in Southeast Europe
- Thursday, May 22: workshop on the industrial energy transition and the links to the energy system development
- Friday, May 23: Steering Committee meeting (hybrid).

JP ESI WORKSHOP ON MODELING SYSTEM INTEGRATION ASPECTS OF TECHNOLOGIES

Brussels, October 22.

Organizing team: Laurens de Vries, Gloria Botton, Valentin Bertsch.

Purpose: provide other EERA JPs with methods for assessing system integration qualities of the technologies that they develop.



3RD RESEARCH MEETS POLICY CONFERENCE

Brussels, October 23.

Organizing team: Laurens de Vries, Gloria Botton, Kristina Nienhaus, Gustav Resch, Paola Mazzucchelli (TBC), EERA Secretariat.

Objective: discuss content and network with the European Commission, grid operators, energy companies and other stakeholders in the energy sector.

EERA JP ESI PROJECTS

The ESI Program was instrumental in the development of the following projects:

Spine Toolbox is an open source software to manage data, scenarios and workflows for modelling and simulation. Project lead: VTT (Finland). Completed in 2021.

TradeRES: New Market Designs & Models for 100 % Renewable Power Systems. Project lead: LNEG (Portugal). Completed in 2024.

Elexia sets out to advance the technological-readiness level (TRL) of tools for planning and operating local energy systems and to combine them into a robust Digital Services Platform (DSP) for local site managers and planners. Project lead: NORCE.

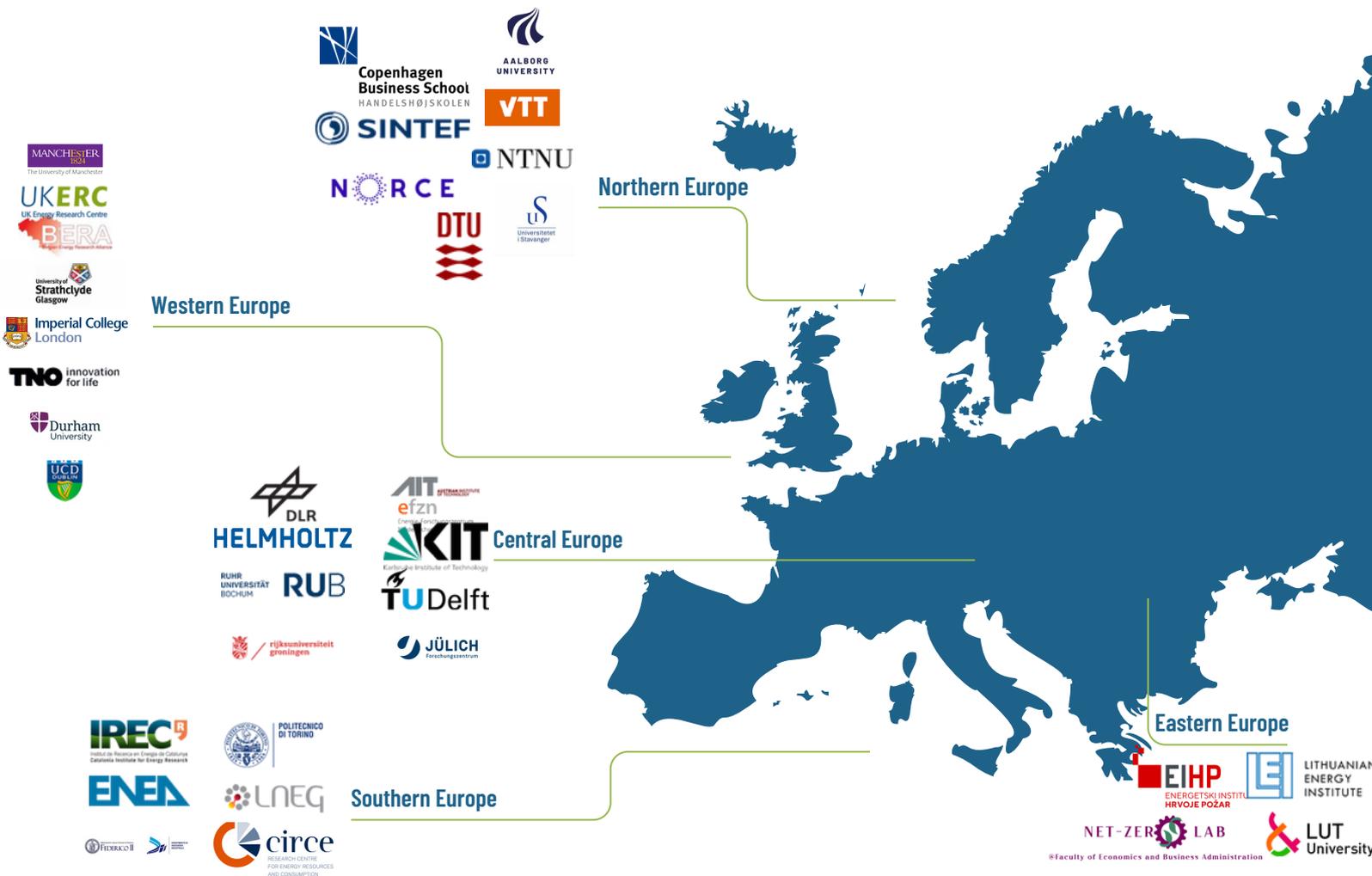


EMPOWERED EERA JP ESI NETWORK

IN 2024, JP ESI WELCOMED 2 NEW MEMBERS:

Sofia University | BGR

University of Naples Federico II | IT



EERA JP ESI MANAGEMENT TEAM



**LAURENS
DE VRIES**

TU Delft

Laurens de Vries is a full professor at Delft University of Technology (the Netherlands).

He specializes in the design and regulation of energy markets in transition. He has been the Joint Program Coordinator since 2017.

Role:

JP COORDINATOR



**GLORIA
BOTTON**

European Energy
Research Alliance

Gloria joined the European Energy Research Alliance (EERA) in January 2024. She works

as Operations and Communications Manager for the Joint Research programmes ESI, Geothermal and AMPEA.

Role:

JP MANAGER

AND THE EERA JP ESI MANAGEMENT BOARD MEMBERS



Henrik Madsen (DTU)

Focus area: digital twins and data spaces.



Kristiane Lindland (UiS)

Focus areas: society, consumers.



Peter Breuhaus (NORCE)

Focus area: infrastructure & technology.



Erik Delarue (KU Leuven)

Focus areas: markets and economics, policy and regulation, modeling.



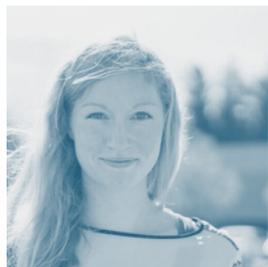
Goran Strbac (Imperial College)

Focus areas: modeling, markets & economics.



Valentin Bertsch (Ruhr Universität Bochum)

Focus areas: markets and economics, consumer & demand.



Nelli Putkonen (VTT)

Focus areas: impact & communication, partnership & collaboration.



Kenneth Bruninx (TUD)

Focus areas: markets and economics, policy and regulation, modeling.



Gustav Resch (AIT)

Focus areas: event organisation, energy system modeling, policy and regulation



Paola Mazzucchelli (CIRCE)

Focus area: EU representative for ESI

CONTACT US



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