# EERA JP e3s Scientific Conference

## 24th May 2023 – Helsinki and online

## Agenda

**Date** 24th May 2023

**Time** **Scientific Conference:** 9.00 – 16.45

**Location** Helsinki, Finland - meeting room Galileo in Technopolis Innopoli 1, Tekniikantie 12. FI-02150 Espoo.

## Participants

| | Name & Surname | Organization | Country | Online/ in presence |
|---|---|---|---|---|
| 1 | Eleonora Annunziata | SSSA | Italy | Online |
| 2 | Michael Belsnes | SINTEF | Norway | Online |
| 3 | Guillermo Borragán Pedraz | VITO | Belgium | In presence |
| 4 | Gulben Calis | EGE University | Turkey | Online |
| 5 | Cristiano Franceschinis | UNIPD | Italy | Online |
| 6 | Ganna Gladkykh | EERA | Belgium | In presence |
| 7 | Kristina Haaskjold | IFE | Norway | Online |
| 8 | Muhittin Hakan Demir | IEU | Turkey | Online |
| 9 | Fabio Iannone | SSSA | Italy | In presence |
| 10 | Izaskun Jimenez Iturriza | TECNALIA | Spain | Online |
| 11 | Tiina Koljonen | VTT | Finland | In presence |
| 12 | Hanna Kuittinen | TECNALIA | Spain | In presence |
| 13 | Charles Lansu | TNO | The Netherlands | Online |
| 14 | Gabriele Manella | UNIBO | Italy | In presence |
| 15 | Margherita Menon | EERA | Belgium | In presence |
| 16 | Manfred Paier | AIT | Austria | In presence |
| 17 | Giuseppe Pellegrini Masini | NTNU | Norway | Online |
| 18 | Witold-Roger Poganietz | KIT | Germany | In presence |
| 19 | Alessandro Sciullo | UNITO | Italy | In presence |
| 20 | Lassi Similä | VTT | Finland | In presence |
| 21 | Aysen Sivrikaya | HU | Turkey | Online |
| 22 | Laura Sokka | VTT | Finland | In presence |
| 23 | Mara Thiene | UNIPD | Italy | Online |
| 24 | Asgeir Tomasgard | NTNU | Norway | Online |
| 25 | Karina Veum | TNO | The Netherlands | Online |

## Notes from the presentations and discussion

***Sub-programme 1 - Fostering changes in energy consumption: a pathway to demand reduction***
***(Presented by Mara Thiene – University of Padova & Aysen Sivrikaya – Hacettepe University)***

1. SP1 has been primarily involved by the EERA Secretariat in the writing process of the **flagship report on demand reduction** that will be presented at the EERA High Level Political Event (17 October 2023 – Brussels). In particular, SP1 main contribution will be on section 3 of the flagship report dedicated to the current debate on energy demand reduction in research.

- JP e3s commitment in the flagship report will be functional for the organization of the **Padova Conference on Demand Reduction** (26 October 2023 - Padova) and for the **White Paper on demand reduction** that will be released in spring/summer 2024.
- An **e3s core working group** has already been established and is composed by:
    - Mara Thiene – UNPD | SP1 coordinator and host of the Padua Conference
    - Aysen Sivrikaya – HU | SP1 co-coordinator
    - Manfred Paier – AIT | SP2 coordinator
    - Witold-Roger Poganietz – KIT | SP3 coordinator
    - Michael Belsnes – SINTEF | SP4 coordinator
    - Tiina Koljonen – VTT | SP5 co-coordinator and JP e3s vice-coordinator
    - Izaskun Jimenez Iturriza - TECNALIA | JP e3s vice-coordinator
    - Alessandro Sciullo – UNITO | JP e3s coordinator

  In view of the finalization of the flagship report, the e3s core working group will **closely collaborate with the EERA sec** (i.e., Adel El Gammal and Ganna Gladkykh).
- **Other members from the JP e3s and from other EERA JPs** already expressed interest in participating in the demand reduction working group and thus will be involved in the activities.

**Comments for the discussion:**

- As concerns the topic "**individual and collective behavioural change"** of the flagship report (section 3, for which e3s is responsible):
    - It is better to not include "drivers" and "barriers" as sub-topics since the sub-topics "determinants of energy behaviours" already include both.
    - It is preferable to include as sub-topic not only social practices but also social norms.
- As regards the topic **"energy efficiency":**
    - Include not only rebound effects but also prebound effects as sub-topic of energy efficiency.
    - Make reference in the sub-topics also to energy sharing and flexibility.
- In order to identify speakers at the Padova Conference, a **call for an abstract** will be launched soon and it will be opened to all EERA members and beyond.
- Speakers will be invited to submit also a short paper that will be evaluated by the e3s core working group (Scientific Committee) in order to have the chance to be selected to collaborate to the White Paper on demand reduction.
- The e3s members present in the meeting agreed on the proposal of hiring a **Young Researcher** to support the demand reduction working group in the release of the White Paper. The procedure to follow and timing will be discussed with the EERA Secretariat.

***Sub-programme 2 - Just Transition and Governance of the ET***
***(Presented by Manfred Paier – AIT & Ganna Gladkykh – EERA SEC)***

- SP2 has been the main e3s SP involved in the release of the **White Paper on the Just Energy Transition** in the EU which will be published soon.
- **Main messages of the White Paper:**
  - **The clean energy transition** has the potential (if not suitably addressed by equitable policies) to **maintain or even deepen socioeconomic inequalities**. Therefore, a comprehensive and fair clean energy transition strategy is crucial.
  - **Energy justice scholarship can serve as a guiding framework** to add to the coherence and consistency of the European policy
  - A categorization under the **three energy justice pillars can support generating effective policies** to guide the clean energy transition towards fairer energy systems, ensuring that no relevant aspects of the just energy transition are overlooked
- The White paper provides both overarching recommendations as well as recommendations **structured around procedural, distributional and recognition energy justice pillars**. The basic assumption is that incorporating the energy justice framework in the regulatory and legal frameworks in Europe could help achieve a just transition holistically.
- **Overarching policy recommendations to achieve JET:**
  - Incorporate **JET frameworks in all stages** of the clean energy transition planning and implementation
  - Adopt **reliable metrics** and measures for monitoring JET progress in Europe
  - Support **energy literacy** at all levels
  - The scope of the JET should go **beyond the energy sector only**
- **Policy recommendations - Distributional Justice:**
  - Extend distributional justice principles to the **global supply and value chains** necessary for energy transition in Europe
  - Enable **community ownership of energy infrastructures** with policy and regulatory frameworks
  - Design **austerity measures** considering the distributional justice aspects
- **Policy recommendations - Procedural Justice:**
  - Shift the policy and the initiatives' implementation focus **from the technology acceptance to the holistic implementation** of the procedural justice principles
  - **Empower affected citizens** and other stakeholders to shape the just transition agendas
  - **Include the voices of multiple stakeholders** in the European just energy transition discussions
  - Design and implement participatory tools that **acknowledge vulnerable groups' needs**
- **Policy recommendations – Recognition Justice:**
  - Take an intersectional approach to **address multiple issues** connected to energy poverty and energy vulnerability
  - **Support social innovation** within the energy transition to leave "no one behind"
  - Prioritize the recognition justice principles when implementing the **skills agenda** for the clean energy transition
- **Future activities** SP2 will be involved in to **disseminate the White Paper**:
  - Groningen conference on 21 June.
  - European Week of Regions and Cities in October.
- Considering the consistent effort and commitment of SP2 in the past months for the release of the White paper on the JET, it will play a minor role in the coming year within the activities of JP e3s.

***Sub-programme 3 - Sustainability of the ET***
***(Presented by Witold Roger Poganietz – KIT)***

SP3 delivered a presentation about **sustainability assessment of existing energy scenarios by using MCDA** (multi-criterial decision approach). Here below the main insights are reported:

- The aim of the transformation process is the establishment of a climate-neutral and sustainable energy system.
- What does it mean **sustainability**? *"Sustainable development is [a] development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* (Report of the World Commission on Environment and Development: Our Common Future, 1987, p. 41). This definition shows that when we are talking about sustainability, we have a systemic but also a systematic conflict between at least two generations.
- Looking at the UN sustainability development goals as an operational application of the sustainability definition there are 17 goals, each goal has 8 to 12 targets, and each target has 1 to 4 indicators. That means that they are **conflicting goals** and there is the need to understand how to deal with these conflicting situations when sustainability is assessed. In other words, the identification of proper approaches to assess and settle conflicting aims is needed.
- A famous approach is the **Multicriterial Decision Approach (MCDA)** according to which goals are weighted along societal preferences and necessities. It presents some challenges linked to how to weigh goals and how to combine quantitative with qualitative indicators.
- 2 types of MCDA exist:
    - **Multi Objective Decision Making (MODM):** indicated approach for decision between a continuous number of alternatives, optimization of an objective function.
    - **Multi Attribute Decision Making (MADM):** indicated for decision between (discrete number of) alternatives. It includes three types of approaches:
        - **Classical approaches**: according to which decision makers know their preferences (alternative A it is better than alternative B because, for example, it allows to save 5kg of CO2). The classical approaches allow to precisely describe the benefit from option A compared to option B.
        - **Outranking approaches**: decision makers do not know their preferences, but could compare alternatives. According to this type of approaches is not possible to know whether the entire option A is better than the entire option B but is it possible to know which is the preferred one.
        - **Miscellaneous**: it is a mixture of the previous approaches. An example is the **Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS)** based on the idea that the selected alternative should have the shortest distance from the positive-ideal solution and the longest distance from the negative-ideal solution.
- Different approaches can thus be used according to the specific case. The **challenge** of MCDA is precisely to identify which is the most appropriate method to be used by:
    - **Weighting of goals, targets, or indicators:**
        - Non-Weighting is no solution;
        - Econometric approaches to estimate weighted preference functions (more helpful in case of objective functions);
        - Typification of perspectives, e.g., individualist, hierarchist, egalitarian;
        - Involvement of experts, stakeholder, citizens).
    - **Combining quantitative with qualitative information**:
        - Not every information is prima facie quantifiable, e.g., participation options;

- Defining appropriate data / numbers;
- Ranking of alternatives, with translating the result in numbers).

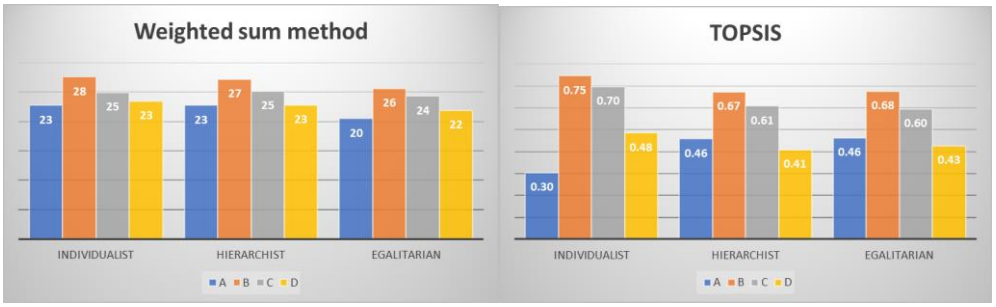
- **Example: sustainability assessment of the future energy system of the district Steinburg (Germany)**
  - Steinburg is a district with 130,000 inhabitants, with a long tradition of generating electricity starting with nuclear power plants.
  - Based on national scenario, four energy scenarios were developed for the district, mostly focusing on electricity but also transport, mobility and heating. The aim was to make a sustainability assessment of the local energy system, considering local and induced upstream impacts on a global scale.
  - **Scenario A:**
    - It is the reference scenario, that follows the national development plan for the electricity system (NEP 2019 Scenario B)
    - Greenhouse gas reduction by 85% until 2050
  - **Scenario B:**
    - Aims to contribute to the 1.5°C target
  - **Scenario C:**
    - Aims to contribute to the 2.0°C target
    - European oriented electricity system
  - **Scenario D:**
    - Aims to contribute to the 2.0°C target
    - Decentralized oriented electricity system
  - 18 indicators have been identified in total. The table below indicates the best scenario for each indicator (Note: 1:= best performance; 0:= worst performance)

| No. | Criterion | Scenario A | Scenario B | Scenario C | Scenario D |
|---|---|---|---|---|---|
| 1 | Air pollutant emissions | 0.00 | 0.69 | 1.00 | 0.60 |
| 2 | Optical and noise emissions | 0.82 | 1.00 | 0.22 | 0.00 |
| 3 | Energy import dependency | 0.47 | 0.91 | 1.00 | 0.00 |
| 4 | Energy poverty | 0.35 | 1.00 | 0.52 | 0.00 |
| 5 | Employment effects | 0.00 | 1.00 | 0.55 | 0.11 |
| 6 | Distributive justice | 0.00 | 1.00 | 0.19 | 0.19 |
| 7 | Financial participation | 0.00 | 0.92 | 0.74 | 1.00 |
| 8 | Land use conflict due energy plants | 0.04 | 0.31 | 0.00 | 1.00 |
| 9 | Direct land use of energy system | 1.00 | 0.03 | 0.00 | 0.81 |
| 10 | Resource use non-renewable energy | 0.00 | 0.86 | 1.00 | 0.51 |
| 11 | Resource use non-energy | 0.61 | 0.39 | 1.00 | 0.00 |
| 12 | Contribution to climate change | 0.00 | 0.89 | 1.00 | 0.65 |
| 13 | Eutrophication | 0.55 | 1.00 | 0.00 | 0.00 |
| 14 | Acidification | 0.38 | 1.00 | 0.09 | 0.00 |
| 15 | Regional value added | 0.00 | 0.84 | 0.50 | 1.00 |
| 16 | Regional participation | 0.00 | 1.00 | 0.50 | 1.00 |
| 17 | Landscape | 1.00 | 0.31 | 0.44 | 0.00 |
| 18 | Human rights | | | | |

  - People living in the district were then categorized in:
    - **Individualist:** people not accepting social pressure and with weak solidarity beyond rules
    - **Hierarchist:** people with high relevance of social order and strong "tribal" identity (very important to belong to a group)
    - **Egalitarian:** people with strong solidarity and cooperation (equity is very important)

| No. | Criterion | Weights | | |
|---|---|---|---|---|
| | | Individualist | Hierarchist | Egalitarian |
| 1 | Air pollutant emissions | 3.30 | 7.70 | 9.00 |
| 2 | Optical and noise emissions | 8.70 | 7.70 | 3.00 |
| 3 | Energy import dependency | 9.20 | 5.50 | 3.20 |
| 4 | Energy poverty | 6.50 | 4.40 | 4.50 |
| 5 | Employment effects | 9.20 | 5.50 | 3.20 |
| 6 | Distributive justice | 0.90 | 2.20 | 10.30 |
| 7 | Financial participation | 9.20 | 5.50 | 3.20 |
| 8 | Land use conflict due energy plants | 10.50 | 7.70 | 2.60 |
| 9 | Direct land use of energy system | 3.50 | 7.70 | 6.90 |
| 10 | Resource use non-renewable energy | 3.10 | 5.50 | 8.60 |
| 11 | Resource use non-energy | 3.50 | 9.90 | 13.70 |
| 12 | Contribution to climate change | 2.60 | 6.60 | 5.20 |
| 13 | Eutrophication | 2.60 | 6.60 | 5.20 |
| 14 | Acidification | 10.50 | 4.40 | 0.90 |
| 15 | Regional value added | 2.60 | 2.20 | 3.90 |
| 16 | Regional participation | 6.50 | 4.40 | 4.50 |
| 17 | Landscape | 6.50 | 4.40 | 4.50 |
| 18 | Human rights | 1.30 | 2.20 | 7.70 |
| | Sum | 100 | 100 | 100 |

- Using those weights (individualist, Hierarchist and Egalitarian) a comparison between the 4 different scenarios has been made.




- Key message: different perspectives could have influences in the final results of the scenario. It is very important to consider the circumstances of the context analyzed.

Considering the above, the following is proposed for SP3:

- Considering that in Europe there is a huge amount of energy scenarios and the main questions they deal with are:
  - Is climate-neutrality achievable? When and where?
  - Future energy mix / electricity mix?
  - Import (from where?) vs. domestic production of hydrogen?
- And considering also that the **sustainability of the future energy systems** is seldom questioned, the **idea for SP3** is to:
  - develop a proposal for a general MCDA-based sustainability assessment;
  - conducting then an MCDA based sustainability assessment of a small set of energy tenants.
- **Approach:**
  - Identification a set of comprehensive indicators using SDG Energy as a reference that goes beyond typical questions (like climate neutrality etc.).
  - Using a small set of scenarios (already existing) assessing the indicators.
  - Identification and using an appropriate MCDA-approach conducting a sustainability assessment.

- **Output:** a report and, based on it, (at least) one paper
- **Next steps:**
  - Find contributors (at least 3 people) to develop the idea proposed by SP3 coordination team;
  - Prepare a report about how to make this MCDA approach more feasible;
- **Comments:**
  - Results from the open entrance project are accessible and can be used and useful for the activity proposed.
  - Would be ideal to structure the process to develop the proposed activity by the end of November 2023 to start concretely working on the activity from early 2024.
  - Try to create an e3s group coordinating an application process for Horizon Europe to get funding to develop the proposed activity.

### *SP4 - Market and business models for ET*
### *(Presented by Michael Belsnes – SINTEF Energy & Eleonora Annunziata - SSSA)*

SP4 delivered a presentation about **how the market design can contribute or make the energy transition more difficult**. Here below the main insights are reported:

- **Objective:**
  - understanding the proposed changes to the power market regulation published by the European commission in February
  - What can SP4/e3s do about this topic and does it trigger new research projects, e.g., what will it mean for business models for RES and traditional generators?
- The energy situation in 2021, 2022 and 2023 called for urgent actions because of the increase in fuel prices also led to extremely high electricity prices. This called for an urgent action at EU level to find a common strategy for filling up the gas storage before the winter.
- The EU Commission first reacted with the **Repower EU** strategy and then with more concrete information about what this strategy would have meant in terms of policy changes.
- One of the proposed policy changes is the **Electricity Market Design reform** which explicates the direction in which the EU Commission wants to go through:
  - **The power market as it is known stays** (even if some discussion took place about the possibility of regulating it completely). Indeed, so far it proves to be very useful for keeping prices down and getting competitive electricity production. Moreover, it proves that it was possible to find a market balance between energy generation and consumption.
  - The market remains regulated according to the **paid-as-cleared principle,** but surveillance and reporting measures will be increased by amending the REMIT (Regulation on Wholesale Energy Market Integrity and Transparency).
- **Main points and objectives** of the regulation:
  - insufficient tools to protect consumers, including businesses, against high short-term prices so that more instruments should be put in place to secure electricity bills at a lower level.
  - The excessive influence of fossil fuel prices on electricity prices and the failure of low-cost renewables and low carbon energy to be better reflected in electricity bills.
  - the impact of extreme price volatility and regulatory interventions on investment.
  - the lack of sufficient non-fossil flexibility (such as storage or demand response) that could reduce dependence on gas-fired generation.
  - the limited choice of supplier contract types.
  - the difficulties to directly access renewable energy though energy sharing.
  - the need for robust monitoring of the energy market to better protect against market abuse.

- **Concrete tools** under discussion for more electricity contracts:
  - **Power Purchase Agreements (PPA's):**
    - Long-term fixed price contract.
    - The uncertainty on the price is taken out of the equation, which means that the energy provider knows exactly how will earn and the consumer will know exactly what the price will be for the next "x" years.
  - **Contracts for difference (CfD's):**
    - In this case, instead of a completely secured price there is a cap.
    - Two-way contract with a guaranteed minimum price with a market price component on top but also a maximum price to reduce wind-fall profits. A strike price is agreed at a certain level which means that the producer will be always paid according to the strike price for the energy delivered, but if the price becomes to high the regulator/government will take the overhead for the hours when the market price is higher than the strike price in order to mitigate the windfall profits seen in the system for the last 1/2 years when renewable supplies has received very large incomes.
- **Infrastructure** developments foreseen by Repower EU:
    - Mediterranean H2 corridor
    - North Sea H2 corridor
    - Spanish H2 corridor
    - Nordic/Baltic H2 corridor
  - Energy infrastructures have an impact on the energy price (areas with huge renewable potential most probably pay lower prices compared to areas with lower renewable potential). The way the infrastructures are developed will also impact on how fair the market will look like for the consumer.
- Southern Europe countries and northern Europe countries reacted quite differently to the proposed Electricity Market Design Reform.

<u>Proposal for SP4 activities in 2024:</u>

- collect countries answers and feedbacks to the Electricity Market Design Reform trying to figure out the differences and organize them according to the location in order to understand what can make the transition easier and what are the challenges in different regions of Europe.
- Analyse how the Electricity Market Reform will be implemented in the different countries (most probably first results can be observed from late 2024 and especially in 2025).
- **Comments:**
  - SP4 can built on the work that SP1 is doing on energy demand reduction.
  - A workshop with JP ESI is scheduled for November and SP4 can support and steer this process, starting designing the event.
  - SP4 could also regularly update JP e3s members about what is going on with the energy market regulation.

### *SP5 – Transition pathway modelling*

### *(Presented by Asgeir Tomasgard – NTNU & Tiina Koljonen - VTT)*

- SP5 **mission**: develop and provide state-of-the-art tools and methods for assessment of policy, social and environmental aspects of clean energy transition and energy system development and ensure the integrity of these in the contribution to transition pathway development.
  - High interest of the EU Commission and national governments in the development of transition pathways.

    - **Proposed activity**: circulate a survey among EERA JP e3s in order to understand what kind of modelling e3s members can elaborate.
- SP5 **areas of intervention**:
    - regulation of the energy market
    - policy ex-ante assessment and ex-post impact evaluation
    - robust transition pathways (affacted by technological, policy, demand uncertainties)
    - socio-technical energy system modelling (which is also about interactions between humans and technological systems)
    - environmental impact evaluation of pathways (how to better represent land use and biodiversity and conflicts between economic interests and environmental interests into system models?)
    - decision-support systems and scenario planning
- **Proposal**: try to develop in the next years Horizon Europe projects addressing SP5 questions.
    - **First step:** understand what kind of capacity and capabilities do e3s members already have in SP5 areas.
- **Objectives:**
    - The objective of JP e3s requires ability to consider the social science aspects and socio-economic modelling of the energy transition across economic sectors in Europe. SP5 will contribute to the competence base and research capacity needed within socio-economic models across sectors and societal needs including the modelling of policy and tools for assessment and evaluation of the progress of clean energy transition. The subprogram will work with the following topics:
    - Build competence and models for analysis of different regulations for the energy market including tools for assessment of market operation of the at-all-times active energy market regulation. This includes actor-based models for understanding the competition levels in the energy market.
    - Build models and methodology that are suitable for pre-assessment of policy measures and for post-impact evaluation of current policies. Do research on which policy that effectively pushes forward the energy transition and suggest policy changes that will benefit the transition and the development of the energy system and energy market.
    - Ensure the integrity of the environmental, social and policy aspects in models used for analysis of the integrated European energy system modelling and include policy and social impacts into the modelling of transition pathways.
    - Analyse the impact of uncertainty and how do design robust transition pathways

**Ongoing activities:**

- EERA acts as stakeholder in the **European Forum for Energy and Climate Transition (EFECT)**, and JP e3s and JP ESI are the two groups in EERA that could best contribute into to this forum.
    - EFECT was established in 2021 by a group of European universities and research organizations working in energy and climate modelling, as well as relevant stakeholders.
    - EFECT will contribute to collaborative modelling exercises with the aim of better understanding the ground breaking energy and climate transition in Europe.
    - It focuses on open and transparent modelling processes and the development of tools open for use by all stakeholders.
    - All e3s members are welcome to join EFECT.
    - EFECT vision:
        - Contribute to modelling activities with a relevance for understanding the ground-breaking energy and climate transition in Europe;
        - Contribute to open, transparent, and democratic modelling processes;

        - Be relevant for policy making as well as corporate decision-making in Europe;
        - Have a technology-neutral perspective;
        - Facilitate continuous involvement of stakeholders (industry NGO's, policy makers, governmental organizations etc.);
        - Have a broad geographical representation in Europe;
        - Have a focus on interdisciplinarity (e.g., by inclusion of aspects related to the social sciences and humanities);
        - Bring the European energy and climate modelling community together (by preparation of joint publications, organizations of events for discussion of modelling results, etc.).
    - Each year, EFECT will launch a modelling mission addressing a key question in the landscape of European energy transition strategies for climate neutrality;
    - The fist modelling mission (2021-2022) focused on "sustainable infrastructure and energy commodities for sector integration";
    - EFECT's modelling mission for 2023 focuses on "Climate change and energy security: modelling extreme climate and geopolitical events". A call for contribution is open.
- **EERA Centre of Execellence (CoE) on Energy Transition Modelling**: an initiative from the Belgium Energy Research Alliance (BERA) with support from EERA JP ESI, JP e3s and EFECT.
    - Aim: use the strategic forces in EER to create a center that in the future might be funded under some kind of center of excellence initiative in Europe.
    - Mission statement: bridge the gap between academic energy system models and real-life applications that support the clean energy transition. With models results, software/hardware development and dedicated consulting, the CoE will support policy makers, utilities and industry with the planning and operation of industrial and energy infrastructures.
    - Main differences between the CoE on ETM and JP ESI: the CoE will be involved in higher-TRL innovation, typically TRL 6-9, and work together closely with industrial parties.

**SP5 proposed activities:**

- Organization of a workshop on Energy Transition Modelling on 25th October in Padua after the General assembly or working together with SP4 in the organization of the November workshop with JP ESI.
- Alternative: dedicate the afternoon of the 25th October to find the research questions about sustainability assessment (SP3) and transition modelling (SP5). Possibility to invite some expert outside JP e3s.

***Impacts and communication***

***(Presented by Izaskun Jimenez Iturriza & Hanna Kuittinen - TECNALIA)***

- **Objectives of the session:**
    - Reminding the objectives and impacts defined by the SRIA
    - Reflecting on the activities foreseen by SPs and their alignment with the impacts included in the SRIA
    - Having a first flavour of the potential contribution of the SPs to the achievement of e3s' outcomes and impacts
- **Objectives of the JP e3s SRIA**: eight main objectives to contribute to the effective and successful achievement of the European energy and climate targets grouped around three intertwined pillars:
    - **Research:**
        - addressing a systemic perspective and balancing societal, economic, and environmental impacts.

        - align different and dispersed scientific profiles, research capacities and experience to deal with the complexity of the energy system and its boundary conditions, market-technology evolution, and transition management.
        - foster the dissemination of knowledge and to make research data available and accessible to feed research, public debate, and policy design
    - **Policy:**
        - input for policy design and implementation for green and smart energy technologies, a competitive EU industry and a just CET
        - enhance the integration of SSH-E aspects in energy technologies development processes
        - a better comprehension of factors influencing the participation of citizens and effective strategies of dialogue with policymakers, industry, markets and citizens.
    - **EERA:**
        - support EERA on the implementation of the SET-Plan and improving EERA's strategic position and influence in EU and international
        - increase collaboration and mutual learning with EERA's other JPs to improve the dialogue between STEM and SSH-E
- **Proposed activity**: try to estimate how the activities proposed by each SP contribute to the impacts defined in the SRIA in the short, medium, and long term on different target audience (e3s research community, EERA, policy makers and industry), by providing a score:
    - +++ Significant contribution
    - ++ Moderate contribution
    - + Limited contribution