

EERA Joint Programme e3s

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Number participants and associates:	39 from 16 European countries, 25 full and 15 associated members

Why a Joint Programme on the Economic, Environmental and Social Impacts of Energy Policies and Technologies (“e3s”)?

Europe has adopted ambitious energy and climate policy objectives to achieve a low carbon society by 2050. The changes in energy and climate policy reflect a re-orientation away from conventional technological solutions and markets towards ‘system’ transformation. This reorientation recognizes that technological solutions alone are likely to be insufficient to address the ‘grand challenges’ in future energy systems and that enhanced policy support is necessary to understand the complex interaction of a variety of socio-economical and techno-economical elements, such as consumer and investor behavior, acceptance, market and technological development.

JP e3s – Visions and Objectives

E3s aims at mobilizing and sharing knowledge, tools, and methodologies to support the long-term goals of European energy and climate policy, especially those related to using energy in a much more efficient way. This implies that energy supply has to be adapted to regional and local demand profiles and available renewable resources, increasing energy efficiency in transport, residential and commercial sectors, industries, and in conversion processes within the energy supply chain, but it also means changing demand patterns at large.

The **vision** for e3s is:

- to generate innovative multidisciplinary knowledge on the impacts that energy policies, market transformation, and clean energy technologies will have for the future of the EU’s citizens and the society as a whole
- to evaluate costs and benefits over time from a holistic life cycle perspective in order to achieve greater acceptance of the necessary policy measures and true EU-wide cooperation.

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Joint Programme e3s Sub-programmes (SP)

Sub-programme 1: Public perception and engagement *Coordinated by Prof. Asgeir Tomasgard, NTNU (NO)*

The aim of this sub-programme is to provide a comprehensive and nuanced understanding of public involvement with environmentally friendly energy, including new renewable energy and carbon sequestration and storage. The objective is to suggest effective strategies of dialogue, brokering and collaboration between policy makers, industrial stakeholders and the public.

Sub-programme 2: Analysis of innovation support for low-carbon technologies *Coordinated by Erwin Cornelis, VITO (BE)*

This SP will assess the policies implemented in the EU and its Member States for a transition towards a low carbon economy. We will study how these policies were decided, how they relate to a vision on the energy system and how they are translated into policy instruments. This ex-post assessment will lead to a better understanding of how energy technologies can be diffused more efficiently and effectively in future.

Sub-programme 3: Life Cycle Approach for evaluating the sustainability performance of energy technologies - *Coordinated by Yolanda Lechón, CIEMAT (ES)*

The objective of this sub-programme is to further develop and harmonize indicators and methodologies used to evaluate environmental, social and economic impacts of energy technologies, and to provide robust information for the design and implementation of a sustainable energy supply chain, including assessment of critical raw materials.

Sub-programme 4: Energy models for a system assessment of European low-carbon energy futures: markets, environmental and economic impacts - *Coordinated by Dr. Maria R. Virdis, ENEA (IT)*

SP 4 will improve and develop knowledge and tools to assess the impacts of energy technologies in their systemic context and to implement decarbonisation policies in Europe. The analysis will consider the long-term sustainability in terms of energy, environment and economics, but will be extended to include social and spatial aspects. The approach is pragmatic, seeking to link energy system models with more detailed sectoral and/or environmental and macro-economic models.

Sub-programme 5: Sustainable low-carbon platform - *Coordinated by Tiina Koljonen VTT (FI)*

The sustainable low carbon platform aims at building a transition management framework and an interactive meeting place, which creates and analyses sustainable pathways to low carbon economies and successful green growth strategies for the EU, the Member States and on international level. The platform integrates knowledge derived from other sub-programmes as well as other EERA Joint Programmes.