

European Energy Research Alliance

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A Summary
EDDIE Consortium

The European Energy Research Alliance [1] is the largest energy research community in Europe, which brings together 250 universities and public research centres in 30 countries. EERA's joint research programmes cover the whole range of low-carbon technologies as well as systemic and cross-cutting topics.

The EERA Joint Programmes

The scientific work within EERA happens in 18 joint research programmes, the so-called EERA Joint Programmes (JPs). A JP is a permanent structure that allows EERA members working on defined topics to collaborate. These topics range from energy materials over technologies to systemic topics.

A JP allows EERA members which work on a specific topic to define a common research agenda, coordinate their activities, build up a sustainable network, and elaborate joint project proposals. It also is a way to speak with a common voice and increase impact.

These subjects and activities of the EERA JPs are aligned with the priorities of the SET-Plan. Many JPs are closely linked to the respective SET-Plan Implementation Working Groups and European Technology and Innovation Platforms (ETIPs).

The different governing bodies within a JP are typically:

- The Steering Committee, which consists of a representative of each member organization;
- The Management Board, which is composed of the leaders of the different sub-programmes;
- The Joint Programme Coordinator, who is the head of management.

The EU SET-Plan

The Strategic Energy Technology Plan (SET-Plan) [2], adopted by the European Union in 2008, was a first step to establish an energy technology policy for Europe.

The SET-Plan was Europe's technology response to the pressing challenges of meeting its targets on greenhouse gas emissions, renewable energy and energy efficiency over the coming decades. It provides a common vision, defines goals and ensures pan-European coordination. It is the principal decision-making support tool for European energy policy, with the goals to:

- Accelerate knowledge development, technology transfer and up-take;
- Maintain EU industrial leadership on low-carbon energy technologies;
- Foster science for transforming energy technologies to achieve the 2020 Energy and climate change goals;
- Contribute to the worldwide transition to a low-carbon economy by 2050.

In parallel to the launch of the SET-Plan, the EERA was created to align the research and development activities of individual research organisations with the needs of the SET-Plan priorities, and to establish a joint programming framework at the EU level. EERA acts as the research pillar of the SET-Plan. It was created on the principle of voluntary participation of research organisations, materialised in their contribution to one or several of the EERA Joint Programmes.

To date, EERA operates 18 distinct Joint Programmes, clustered along different technologies but also on cross-cutting issues. The SET-Plan is further supported by the SET-Plan Information System (SETIS) and the European Technology and Innovation Platforms (ETIPs).

In the context of the Clean Energy Transition, digitalisation is identified as one of the technologies and initiatives that will enable such transition. Even more, digitalisation should be perceived as an opportunity and an enabler that will connect energy technologies in a cross-cutting and holistic fashion. Advanced digitalisation can be enhanced by changing the way in which research is being done providing new results, impact, revenue, and value-producing opportunities, a fact that will have a positive impact in EERA's community practices.

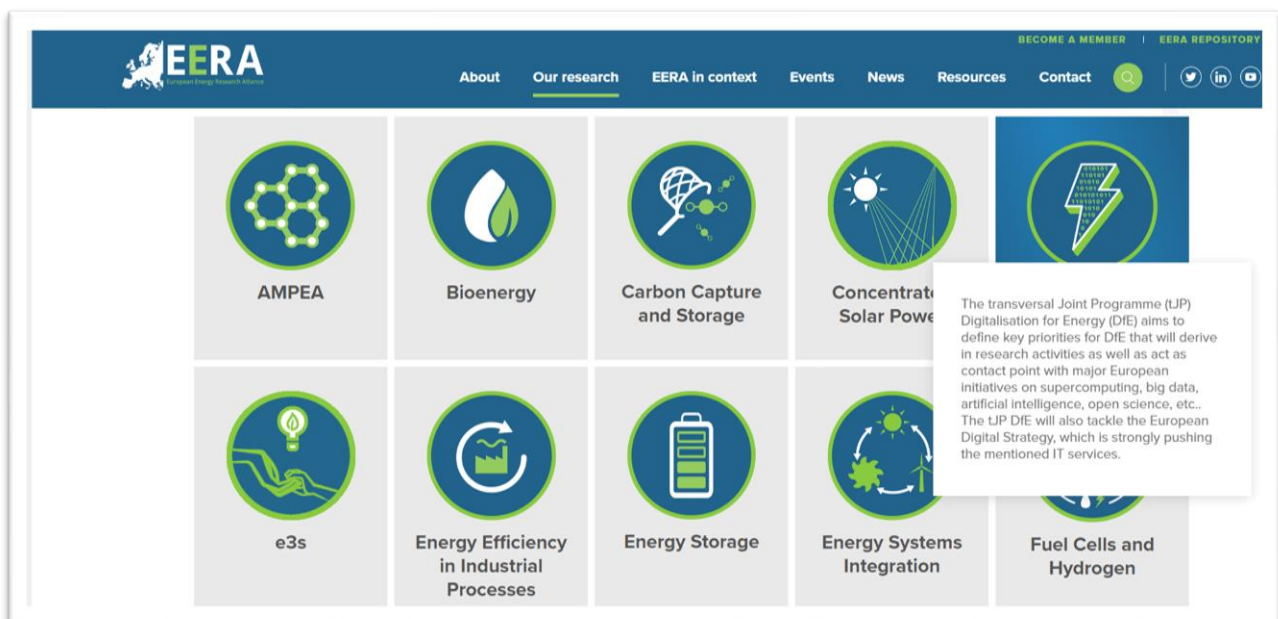
Transversal Joint Programme Digitalisation for Energy

In order to maximize the impact of digitalisation as a cross-cutting activity within EERA, this new JP is conceived as a transversal (tJP) structure, constituting a new concept that could be later addressed by new initiatives, if the opportunity arises. The transversal Joint Programme Digitalisation for Energy (tJP DfE) [3] aims at defining key priorities for this field that will derive in research activities, as well as act as a contact point with major European initiatives on supercomputing, big data, artificial intelligence, open science, etc. It will also tackle the European Digital Strategy, which is strongly pushing these IT services.

The tJP DfE has a modular structure, i.e. profiting from ongoing EERA initiatives by keeping and integrating their structure as Subprogrammes (SPs) into the new tJP while also kicking-off specific SPs to the transversal Joint Programme focused on digital activities in a transparent and agnostic way. By doing so, in the future it will be straightforward to integrate new SPs and initiatives coming from either vertical JPs as they evolve in time or coming from the tJP itself.

As those of May 2022, the transversal Joint Programme Digitalisation for Energy has organised its work in 2 sub-programmes (SP) and 4 transversal sub-programmes (tSP):

- SP1: High Performance Computing (HPC);
- SP2: Data Science & Artificial Intelligence;
- ESI tSP: Technology;
- AMPEA tSP: Multiscale modelling of materials, processes and devices;
- Hydropower tSP: Digitalisation;
- Nuclear Material tSP: Physical modelling, materials health monitoring and non-destructive microstructure examination for nuclear materials.





References

- [1] <https://www.eera-set.eu/>
- [2] https://energy.ec.europa.eu/topics/research-and-technology/strategic-energy-technology-plan_en
- [3] <https://www.eera-set.eu/component/projects/projects.html?id=183>