

EERA DAY IN SPAIN

Summary

EERA Day in Spain, co-organised by the EERA Secretariat together with Tecnalia and CIEMAT, both members of the EERA Executive Committee (ExCo), took place on October 30 at the CIEMAT headquarters in Madrid. Under the title *"The Potential of Research and Innovation Collaboration for the Development of the Energy Transition,"* the event brought together representatives from the Spanish ministries responsible for research, innovation, and energy; national funding agencies; energy sector technology platforms and associations; energy companies; and the 29 research and development (R&D) institutions that are members of EERA.

WELCOME

➤ **Henk-Jan Vink. Managing Director at TNO and President of EERA.**

EERA is Europe's largest research and innovation community, closely linked to the SET Plan (European Strategic Energy Technology Plan). It comprises over 250 participating institutions, with CIEMAT as an active member playing a significant role in the Executive Committee alongside Tecnalia.

The challenges Europe faces can only be tackled through close collaboration between institutions. Drawing on the recent reports by Letta, Draghi, and Heitor, achieving greater competitiveness requires addressing Europe's weaknesses (lack of raw materials, high energy prices, elevated labor costs, and market fragmentation) through research and innovation. Increased funding is essential to meet these goals.

➤ **Luis Pedrosa. Director of Energy, Climate, and Urban Transition Strategy at TECNALIA and EERA ExCo member**

The European challenges of enhancing industrial competitiveness, advancing energy transition, and maintaining energy supply security demand a joint plan for decarbonization and competitiveness. This necessitates reforming the European R&D framework and increasing investment.

Adhering to European and national strategies and plans provides a roadmap that requires robust construction of industrial value chains. Research and innovation institutions hold an inherent responsibility to support industry. Collaboration is crucial for developing a strong European ecosystem and an R&D community that creates economic impact.

➤ **Yolanda Benito. Director General of CIEMAT and EERA ExCo member**

Alliances like EERA are key to building a robust ecosystem and supporting the design of strategies with actionable initiatives to achieve objectives as the energy transition progresses. At this stage, action and implementation are most critical. This event aims to highlight the opportunities provided by a community like EERA.

Spain participates in 17 of the 18 joint programmes, with CIEMAT taking full advantage of this opportunity, participating in 60% of the joint programmes and coordinating three of them.

The purpose of this event is to showcase and disseminate Spain's involvement in EERA, analyse the added value of participation across thematic areas, establish coordination mechanisms among various EERA working groups, explore synergies and actions, and encourage the membership of new partners while involving Spanish technology platforms to promote industrial and business sector participation.

EUROPEAN AND NATIONAL STRATEGIES TO ADDRESS THE CHALLENGE OF ENERGY TRANSITION

➤ **EERA: European Energy Research Alliance.** *Adel El Gammal, EERA Secretariat*

EERA is an alliance that catalyses European research. It holds a global perspective, addressing not only technological aspects but also increasingly relevant social dimensions. EERA's role is critical in confronting the current dual challenge of accelerating the energy transition and restoring competitiveness to achieve strategic autonomy.

EERA coordinates R&D across EU member states, collaborates with the strategic energy agenda, and helps reduce European fragmentation. European funds account for less than 10% of the total R&D expenditure in Europe. Hence, cooperation with member states, which contribute the remaining 90%, is crucial. EERA is expected to play a significant role in the SET Plan and the Industrial Plan.

EERA aligns national and European strategies, reduces fragmentation, and prevents redundancies. It fosters collaboration among European institutions, bridges the "valley of death" in R&D, and accelerates the journey from idea to market, shortening the development cycle. EERA plays a pivotal role in defining R&D objectives for implementation programmes and creating critical mass to overcome fragmentation, leveraging tools like Centres of Excellence.

➤ **European Strategic Energy Technology Plan (SET-Plan).** *Cristina Trueba, Spanish Representative for the SET Plan, General Secretariat of Innovation, Ministry of Science, Innovation, and Universities*

The SET Plan serves as the cornerstone of EU energy policies and represents the technological response to advancing the energy transition through common and coordinated strategic planning. It establishes synergies and promotes collaboration among member states, businesses, and R&D stakeholders.

The SET Plan's activities are carried out through implementation groups for each technology, which were reinforced during the latest revision in late 2023. These groups develop plans and define research and innovation areas, with EERA participating as a key stakeholder in setting priorities. The updated SET Plan aligns with Europe's new decarbonisation strategy, aiming to position Europe as a global leader in renewable energy. It also includes cross-cutting aspects beyond technology, such as circular economy principles, digitalisation, and social considerations.

Spanish entities must actively engage through Technology and Innovation Platforms (ETIPs) and EERA's Joint Programmes (JPs).

➤ **National Strategic Energy and Climate Plan (NECP).** *Lucía Blanco, Deputy Director of Energy Prospective and Statistics, Ministry of Ecological Transition*

The updated PNIEC serves as the master plan for ecological transition, maximising Spain's competitive advantages in technology and talent. It views ecological transition as an economic sector that strengthens industrial competitiveness while delivering socio-economic and environmental benefits.

The revised PNIEC includes 110 measures, one of which focuses on R&D. The plan employs internationally recognised forecasting models to set ambitious new targets: A 32% reduction in emissions compared to 1990, representing a 55% reduction from Spain's 2005 peak. Energy efficiency of 43% in final energy consumption. 48% renewable energy in final energy consumption. 81% renewable energy in the electricity system. These measures are expected to achieve 50% energy independence.

The plan aligns with climate neutrality goals, emphasises greater strategic autonomy, incorporates ambitious environmental and social objectives, and fosters the integration of cross-sectoral policies. Its collaborative design involved multiple ministries and promotes networks like EERA for its development.

- **State Plan for R&D&I.** *Amaya Ezcurra, Area Manager, Subdirector General for Planning, Monitoring, and Evaluation, Ministry of Science, Innovation, and Universities*

The State Plan for R&D&I, shaped by legislative and strategic developments at national and European levels, was developed through a highly participatory process. Its goal is to strengthen the science, technology, and innovation ecosystem as a driver of transformation in Spain. It aims to enhance talent attraction and retention, improve the quality of R&D, consolidate knowledge transfer, and increase innovative activity across public and private sectors.

The plan is structured into vertical programs (human resources, experimental research and development, transfer and collaboration, innovation, and R&D&I infrastructure) and cross-cutting programs (internationalisation, regional and local cooperation, and strategic lines).

One notable update includes revising strategic lines and priority intervention areas, aligned with sectoral planning for Strategic Projects for Economic Recovery and Transformation (PERTE) and Complementary Plans in collaboration with regional governments, with energy and mobility as key pillars.

ROUND TABLE I: ADDED VALUE OF SPANISH PARTICIPATION IN EERA JOINT PROGRAMMES

This round table aimed to identify the key aspects of participating in a Joint Programme (JP) and the added value for research centres, where 29 Spanish institutions participate in 17 of the 18 JPs, coordinating three of them. The panel included:

- **Lorenzo Malerba**, Researcher at CIEMAT and Coordinator of the JP on Nuclear Materials.
- **José Luis Villate**, Director of Renewable Energy and Energy Efficiency at Tecnalia and Vice-Coordinator of the JP on Ocean Energy.
- **Marcelo E. Domínguez**, Senior Scientist at CSIC, participant in the JP on Bioenergy, and coordinator of the sub-programme on Biochemical Platform.
- **José Luis Domínguez**, Group Leader for Energy Systems at IREC and participant in the JP on Wind Energy.

Advantages of participation

- Coordinating a JP offers a positive and enriching experience by bridging researchers and EERA's organisational structure.
- It allows a broad perspective across different technologies, fostering shared projects and collaborative opportunities.
- Being a coordinator provides visibility and privileged access to strategic information. However, proactive engagement is essential to maximise benefits.
- For non-coordinator members, a JP serves as an entry point to access early information, establish consortia, and foster collaborations.
- It creates a forum for exchanging information and connecting with experts in the same field.
- Participants can help shape strategic research lines and contribute to drafting position papers.
- Access to first-hand information on the SET Plan and Horizon Europe calls, along with direct contact with responsible institutions, is invaluable.
- JPs facilitate the formation of consortia and joint project proposals, increasing institutional visibility and connecting with top researchers in Europe.

Barriers and Areas for Improvement:

- Active involvement and visibility require significant effort and resources. The financial burden of participation, currently covered voluntarily by institutions, lacks public funding. Ministries should provide financial support to offset coordination costs.
- While there is some interaction among JPs, overlaps in activities persist. Enhanced national coordination among sectoral and cross-sectoral groups is needed. The suggestion includes organizing more thematic national meetings.
- Information flow to JP participants can be insufficient, necessitating better communication mechanisms.
- Coordination with EERA could be improved to streamline communication between JPs. The challenge lies in securing funding opportunities and fostering broader engagement.
- It is vital to involve industry more deeply in ambitious projects by inviting non-EERA members, such as companies.
- Strengthen the role of JPs within EERA's strategy and encourage the Secretariat to facilitate collaborations with external agents, including businesses and governments.
- Organise joint meetings on specific topics, with cross-disciplinary participation, and work towards setting realistic goals and targets within the available means.
- Utilise membership fees to subsidize researcher mobility and travel.

ROUND TABLE II: FUNDING OPPORTUNITIES FOR ENERGY R&D PROJECTS

This round table focused on analysing European and national opportunities for funding energy R&D projects.

- **Philippe Schild.** *Expert in Clean Energy Transition, DG Research & Innovation, European Commission*

In the new European context, EERA's role involves leveraging its knowledge network and researchers to develop technologies and anticipate future needs. Research is essential for technology implementation, while societal penetration requires more evidence-based approaches.

Funding opportunities include Horizon Europe (HE), where EERA engages in high-TRL activities and secures additional financing from Innovation Funds.

The interim evaluation of Horizon Europe (HE) was conducted against major challenges, such as the energy transition, rather than specific projects. Key recommendations include integrating social aspects (e.g., inclusion) alongside technology to make the transition feasible and adopting flexibility and adaptability. The current HE framework, though complex in its pillars and structure, requires synergy-building across its components.

➤ **Luisa Revilla.** *National Delegate for Energy, Cluster 5, Horizon Europe, CDTI-Innovation*

EERA is already capitalising on European funding opportunities. Horizon Europe has topics open to bottom-up technologies at Technology Readiness Level (TRL) 3-4, with notable Spanish participation. Research also targets higher-TRL applications (TRL 5-6), involving industry, and yielding excellent results.

Social aspects are becoming increasingly significant, and the primary directive is to "accelerate" transition implementation to achieve climate neutrality by 2050. Developing technologies not yet available will be crucial. EERA can serve as a lobbying platform, generating documents and "position papers" for the European Commission to guide research on immature technologies, especially for the upcoming FP10 framework program.

➤ **Carlos Alberto Fernández.** *Head of Strategic, Planning, and Policy Department, Institute for Energy Diversification and Saving (IDAE)*

Priority funding areas include renewables, hydrogen, electric mobility, and energy efficiency. Future initiatives focus on energy communities, value chains, hydrogen valleys, and innovative renewable technologies.

IDAE primarily utilises grant calls, with successful initiatives in photovoltaic self-consumption, energy storage, and pioneering hydrogen projects for electrolyzes.

Looking ahead, IDAE aims to implement investment strategies through equity stakes in companies linked to the energy transition, including battery recycling, small hydropower plants, plastic waste transformation, and hybrid panels.

➤ **Paloma Calzas.** *Head of the Industrial Technologies Department, CDTI-Innovation*

While CDTI funds companies based on technological neutrality, recent prescriptive calls include energy transition themes. For instance: **Transmissions Call**, addressing biofuels, advanced fuels, and circular economy topics such as product recycling. **Missions Call**, focusing on efficient construction and energy technologies.

➤ **Lourdes Armesto-** *Head of the Scientific and Technical Coordination Division, Evaluation, and Monitoring, State Research Agency (AEI)*

Although AEI provides non-thematic funding, there are specific opportunities for energy transition research, such as: Transmissions Call (in collaboration with CDTI). Funding and calls under the State

Plan's mobility and energy priority lines. Excellence Network Call, allowing national coordination proposals for EERA activities.

Discussion Highlights

- Difficulties aligning SET-Plan or EERA themes with multiple open technologies and non-thematic calls.
- A proposal to prioritize themes to ensure research usefulness for industry.
- Calls for longer preparation periods to form robust consortia and publish priority lines sooner.

ROUND TABLE III: ALLIANCES FOR ENERGY TRANSITION IN SPAIN

The purpose of this round table was to showcase the impact and potential of technology platforms, alliances, and collaboration frameworks operating in Spain.

- **Recovery, Transformation, and Resilience Plan: Complementary Plans for Renewable Energy and Hydrogen.** *Fernando Escobar, Chief of Staff, General Secretariat of Research, Ministry of Science, Innovation, and Universities*

The objective of Next Generation Funds is to ensure their benefits permeate across the entire territory. To achieve this, regional capabilities and contributions were assessed, resulting in a network of projects and capacities with anticipated private sector involvement.

The Complementary Plan for Renewable Energy and Hydrogen mobilised approximately €100 million between 2021 and 2025, involving 10 Spanish regions. This instrument reduces barriers between levels of governance, enabling multilevel coordination where regions collaborate on specific aspects of the hydrogen value chain.

- **Mission Innovation: Spanish Participation.** *Ignacio García Fenoll, Deputy Director for Innovation Policies, General Secretariat of Innovation, Ministry of Science, Innovation, and Universities*

Mission Innovation (MI) is a global initiative of 23 countries and the EU, aimed at advancing the Paris Agreement goals by reinforcing R&D. Spain joined MI in late 2022.

Through dialogue with national technology platforms, Spain identified the missions in which to participate. Currently, Spain engages in three of the seven missions: Clean Hydrogen Mission, Green Power Future Mission and Urban Transition Mission.

- **Alliance for Energy Research and Innovation (ALINNE).** *María Luisa Castaño, Advisor to the Director General, CIEMAT*

ALINNE is a national alliance comprising ministries, knowledge-generating entities, and companies (both large and medium-sized) representing various energy technologies.

Currently, ALINNE undertakes two main activities: Technical Secretariat for Spain's Participation in Mission Innovation (MI), funded by the State Secretariat for Innovation and a project funded by the State Research Agency (AEI) to analyse the supply chains of key PNIEC technologies and identify indigenous R&D activities that can address gaps in technological chains.

ALINNE aims to act as a unifying entity, listening to stakeholders and identifying their needs and priorities.

- **Energy Technology Platforms.** *Marian Ferre, Head of Thematic Scientific-Technical Programs Subdivision, State Research Agency (AEI)*

Technology platforms drive technological development and innovation, bringing together all stakeholders in the value chain to share ideas and resources. They can analyse markets, stay updated on regulations, and identify key actors.

Platforms also locate funding sources, form consortia, support public-private collaboration, and disseminate Spain's strategic positioning.

Discussion Highlights

- To enhance collaboration and coordination among stakeholders, existing mechanisms and instruments should be leveraged instead of creating new ones.
- There is a need for a global vision to anticipate 2050 challenges, moving beyond specific ministerial competences and administrative barriers.
- Competitiveness can be improved through Public Procurement of Innovation (CPI), applying innovation-based criteria instead of cost.
- Rigid state aid rules place Europe at a disadvantage compared to major powers outside the EU.