

EU Clean Energy Transition: Perspectives and Challenges for Energy Storage

hybrid event, taking place in-person in Ulm (DE) and online

Europe is facing the major challenge of implementing the energy transition to achieve climate neutrality by 2050, as adopted by the European Green Deal in December 2019. The future energy grid has to be flexible enough to accommodate higher shares of variable renewable generation such as solar and wind power in a secure way. Hence, the development and integration of affordable as well as sustainable energy storage capacity gets crucial for the clean energy transition.

A major challenge of ongoing research and industrial efforts is to connect technical research with environmental, economic and societal aspects. In this respect, user behaviour, acceptance of implemented technical solutions as well as an evaluation of different possible business cases for valorising offered current flexibility in electricity consumption are needed. Also, energy storage available at competitive market prices remains a missing piece in the large scale roll out of renewable energies worldwide. Finally, fostering transnational cooperation, supporting knowledge transfer and industry uptake is also a challenge that should be pursued.

What are the socio-economic energy storage expectations by 2030/2050 and what opportunities and challenges, including on access and affordability, does it imply for consumers? What are the industry plans for the future energy system with a focus on storage (mid and long-term)? How can research contribute to make storage resources more affordable? What R&I priorities, gaps and models of industry-research collaboration that can be shared and replicated in other EU countries and contexts in the batteries sector? How can StoRIES services enhance the innovation uptake? These are some of the questions the workshop will address.

This workshop, jointly organised by StoRIES, Joint Programme for Energy Storage (EERA) and SUPEERA project, is a timely opportunity for bringing together researchers, industry, end-users, policymakers and other stakeholders. The goal is to exchange views on key issues for the storage sector and discuss possible future scenarios of the energy system.

All participants will be invited to continue the interesting discussions and to network with other participants by attending the dinner that will take place right after the workshop.

[StoRIES: Storage Research Infrastructure Eco-System, 01.11.2021 – 30.10.2025, € 7 Mio]

[SUPEERA: Support to the coordination of national research and innovation programmes in areas of activities of the European Energy Research Alliance, 01.01.2020 – 30.06.2023, € 1.7 Mio]

[EERA JP ES: European Energy Research Alliance- Joint Programme on Energy Storage, launched in 2011]

PROGRAMME

| Programme | |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14:00 | Welcome Stefano Passerini, KIT-HIU & EERA JP ES |
| 14:10 | EERA JP Energy Storage, SUPEERA and StoRIES introduction Myriam E. Gil Bardají (KIT) |
| 14:20 | The policy perspective: The role of energy storage in the energy transition Gonzalo Fernández Costa (EC DG Just Energy Transition, Consumers, Energy Efficiency and Innovation) |
| SESSION 1 14:30 – 16:00 | Socio-economic energy storage expectations by 2030/2050 and industry plans for the future energy system with a focus on storage (mid and long-term) Chair: Manuel Baumann (KIT-ITAS) |
| 14:30 | Analysis of the size of the challenge Marco Ferraro (CNR) |
| 14:40 | Geothermal heat production and underground heat storage: a winning combination?! Martin Bloemendal (TU Delft) |
| 14:50 | Double the yield of wind energy with hydrogen as primary energy carrier, at lower cost than electricity Jan Willem Langeraar (HYGRO BV) |
| 15:00 | Energy storage solutions to boost the wave energy sector Giacomo Alessandri (VGA srl) |
| 15:10 | Energy storage from a utility point of view, what role can batteries play in future Philippe Stevens (EDF) |
| 15:20 | Eni's vision for storage in the Energy Transition Francesca Ferrazza (Eni) |
| 15:30 | ROUND TABLE DISCUSSION |
| 16:00 - 16:30 | Coffee Break |
| SESSION 2 16:30 – 17:50 | How can research contribute to make storage resources more affordable? StoRIES services for enhancing the innovation uptake Chair: Holger Ihssen (Helmholtz Association) |
| 16:30 | Outlooks for distributed and community storage in Australia, a RACE for 2030 Cooperative Research Centre Perspective Ariel Leibman (RACE2030) |
| 16:40 | Enabling accelerated design-to-device pipeline development for emerging energy storage technologies Kourosh Malek (FZJ) |
| 16:50 | Supply-demand challenges of raw materials for future energy storage Olli Salmi (EIT Raw Materials) |
| 17:00 | Estimation of cost for future storage devices Christian Breyer (Lapperanta University) |
| 17:10 | Accelerating innovation and uptake by industry in the storage sector. Main conclusions of the proposed energy measures in the National Energy and Climate Plans (NECPs) to support energy storage deployment Mónica de Juan (EERA AISBL) |
| 17:20 | StoRIES and long-lasting services for enhancing the innovation uptake Olga Suminska-Ebersoldt (KIT) |
| 17:30 | ROUND TABLE DISCUSSION |
| 17:50 | Concluding Remarks Stefano Passerini, KIT-HIU & EERA JP ES |
| 18:00 | End of meeting |

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