Demonstration of a digitised energy system integration across sectors enhancing flexibility and resilience towards an efficient, sustainable, cost-optimised, affordable, secure, and stable energy supply.

ELEXIA Kicked Off | October 2022

The 04th of October 2022 was a milestone for ELEXIA, as members of the Consortium got together in Bergen, Norway for the Kick-off meeting. Throughout the meeting, there was an online connection allowing the Partners who could not travel, to attend remotely. The assembly lasted for two full days, giving all project members the chance to meet one another and engage in an extensive and productive conversation about the project's objectives, work packages and pilot applications, as well as our forthcoming steps, under the coordination of the Norwegian Research Centre - NORCE.

ELEXIA IN A NUTSHELL

Duration	Location	Budget	Research Areas	Project Coordinator
48 Months	Stavanger	11M Euros	Energy, Social Sciences	Peter Breuhaus

ABOUT THE PROJECT

ELEXIA (Demonstration of a digitized energy system integration across sectors enhancing flexibility and resilience towards efficient, sustainable, cost-optimised, affordable, secure, and stable energy supply) is anchored under the EU Green Deal & the EU Strategy for Energy System Integration. It is in line with the Paris Agreement and the UN's 2030 Agenda for Sustainable Development.

ELEXIA contributes to establishing concrete pathways to achieve fossil fuel independence by harnessing the energy system's latent flexibility through integration across sectors, data intelligence, and planning towards 2050 European goals.

Co-funded by the European Union

22 partners from 8 countries will be working together under the coordination of NORCE. The solutions developed within ELEXIA will be demonstrated in three pilots: one in Bergen, Norway, the second in Taastrup, Copenhagen, DK and finally, the third one in Sines, Portugal.

The main aim of ELEXIA is:

- To develop/upgrade planning and operational tools for planning and managing integrated energy systems.
- To demonstrate the use of planning and operational tools in a one-stop-shop, modular and open, digital platform at TRL7–8 (demonstration in operational environment).
- To demonstrate the benefits of sector integration in three different geographical, climate and economic conditions in Europe: in an industrial port environment in Portugal, an urban-city hub environment in Denmark, and an industrial-urban-residential environment in Norway.

The expected impact of ELEXIA is:

Expected outcomes by 2028:

- 18.000 citizens engaged.
- A growth in national and international research and innovation networks.
- Provision of knowledge and services through stakeholder groups (local operators, IT experts, energy infrastructures, municipalities, ports, etc.) in at least 6 countries.
- 1.35TWh/y energy managed by the end of ELEXIA and 10 TWh/y managed by 2028.
- Governance/policy recommendations delivered to key policymakers, including European Parliament.
- Contribution to the Common European Energy Data Space.

Expected impacts by 2030:

- **Scientific**: Over 60 publications, Capacity building for over 50 000 individuals, jobs in R&D, Contribution to EC goals on open science through open-source solutions.
- **Societal**: 45-55% emissions reduction with >87M€/y in energy and CO_2 tax savings, 20-25% energy efficiency improvement; +40% demand reduction from the grid; Contribution to SDGs; Lowering costs contributing to reducing energy poverty; +15% renewable cost reduction towards climate neutrality in 2050; 1M citizens engaged.
- **Economical/Technological**: Total savings of over 87 M€; Energy cost reductions, access to flexibility services, and sector coupling will contribute to revenue increase by over 112M€; Job creation; 61 replication cases with 50+ TWh/y energy managed.

Expected impacts BEYOND 2030:

- Potential roll-out to 356 municipalities in Norway, 243 cities in Denmark, and 158 cities in Portugal. Potential replication in more than 300 ports.
- High potential of replication of components of ELEXIA (E.g., To school buildings reducing 25-40% CO_2 emissions; or e.g., to office buildings and residential houses (saving heating costs and enhancing occupants' well-being and performance).
- Accelerating transition towards CO_2 neutrality.
- Increased resource efficiency by 15%-20% for existing infrastructure and 50% for newly installed systems.

CONSORTIUM

FOR ADDITIONAL INFORMATION PLEASE CONTACT

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