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The European DATA CELLAR project will create a public energy data space for EU Local Energy Communities

• Funded by the Horizon Europe programme under Grant Agreement nº 101069694, DATA CELLAR will run for 42 months with a budget of almost nine million euros

'Data Hub for the Creation of Energy communities at Local Level and to Advance Research on them' (DATA CELLAR) is a new project, funded by the Horizon Europe programme under Grant Agreement nº 101069694 and led by RINA Consulting Spa. DATA CELLAR aims to create a public energy data space to support the creation, development, and management of Local Energy Communities (LECs) in the European Union. The project will last 42 months and will have a budget of almost nine million euros.

To carry out this project, RINA Consulting will work with an international consortium including companies and institutions from fifteen European countries: Italy (RINA Consulting, Politecnico di Torino, Fondazione Links, IRAN), Greece (Certh, QUE Technologies), Spain (Fundación Circe centro de Investigación de Recursos y Consumos Energéticos, Centro Tecnológico para el Desarrollo en Asturias de las Tecnologías de la Información, Zabala Innovation, Fundación Asturiana de la Energía), Belgium (Ubitech energy, Zabala Innovation Europe), Norway (NODES), Switzerland (Azienda Elettrica di Massagno), France (Commisariat à l'énergie atomique et aux énergies alternatives, Electricite de France), Portugal (Centre for New Energy technologies, Empresa Municipal de Ambiente de Cascais), Bulgaria (Cez Distribution Bulgaria, SETEHCO), Germany (EUNICE Energy Technologies), Ireland (Trilateral Research, ARAN), Netherlands (Rijksuniversiteit Groningen, Noord-Holland), Cyprus (EPL Technology Frontiers Limited, University of Cyprus), Austria (AustriaCard).

Origin of the Project

Local Energy Communities (LECs) have been recognised by the **European Commission** to play a key role in driving the European Union's **energy transition**. At the same time, **the digitisation of the EU energy system** and the proper exchange of data between energy actors seem crucial to foster the exchange of best practices and the creation of a knowledge community to tackle one of the most urgent global crises of our society: **climate change**.

DATA CELLAR will launch a collaborative platform that will provide an **interoperable, modular, and secure energy** data space capable of providing access to consumer data. It will operate through decision support tools and artificial intelligence (AI) models to serve and support LECs.

The final public data space will be easy to populate and easy to interact with, it will also ensure seamless interoperability with other EU energy data spaces, and will provide LEC stakeholders with services and tools to develop and better manage their activities.

Data cellar

How will the project be implemented

DATA CELLAR and its services will be first tested by representatives of **nine validation cases** around the EU and with different levels of maturity promoted by different types of actors.

The project will also be used to **drive cross-cutting activities such as EU energy scenarios and market planning**. DATA CELLAR will facilitate the collection of data from both LEC stakeholders, researchers, and tenants, to develop a market and tokenisation reward approach that can stimulate these actors to use and populate the data space.

To this end, and taking into account the interaction of the data with other existing EU data spaces or energy initiatives towards the creation of a federated EU energy data space, **DATA CELLAR will also study the ethical, regulatory, cybersecurity, and governance aspects of data handling.**

DATA CELLAR main objectives

Over its 42 months of duration, the project will seek to achieve five main objectives: 1)Development, validation and demonstration of a Dynamic data hub ensuring continuously updated, reliable and credible data; 2) Implement privacy and cybersecurity-by-design measures according to GDPR & national data handling regulations and security standards; 3) Provide access to AI models and data-driven energy services by making use of the stored and exchanged data, supporting the energy transition; 4) Create and sustain a highly engaged data sharing ecosystem of EC data providers through a DLT-based open Marketplace; 5) Evaluate DATA CELLAR novel business models upon real Energy Community use cases and collaboration with other relevant EU on-going initiatives participating in BRIDGE to facilitate interoperability testing and demonstration.

What is expected to achieve

DATA CELLAR will develop a dynamic, interoperable energy-oriented data platform to support the uptake of the Energy Communities leveraging a blockchain-based tokenization scheme for the remuneration in data and pretrained AI models provisioning/acquisition cycle.

The project will support the need for common dataspaces, focusing on user-friendliness and easy-to-access for non-ICT experts thanks to the availability of a data Marketplace; cities decarbonization through the creation of energy communities and new user-centric designed and datadriven energy services; and will have the advantage of using decentralized solution to reward and align the incentives of the stakeholders for any possible services provided to support the evolution of a federated and interoperable DATA CELLAR.

The marketplace will allow the different entities to trade (buy, rent and sell) data and pretrained AI models, leveraging algorithms and software libraries for processing the collected data and simplify operations of data analytics and business intelligence thus aligning the incentives of the stakeholders through an onchain tokenization scheme.

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