



Press Release

AI.grids: Towards the First Pan-European **AI Foundation Model** for Energy Grids

An initiative under the aegis of the European Commission (DG ENER), presented by the EnerTEF Project

On **3 June 2026**, at an official signature event in Brussels following the publication of the European Commission's **Strategic Roadmap for Digitalisation and AI in Energy**, **48 European entities** committed to a bottom-up, legally binding cooperation with a single ambitious goal: the development and deployment of **pan-European, sovereign AI foundation models for the management of energy grids**. The initiative is called **AI.grids**.

What began as a shared vision between three researchers - **Elissaios Sarmas** (EPU-NTUA), **Prof. Antonello Monti** (Fraunhofer FIT & RWTH Aachen University), and **Dr. Ricardo Bessa** (INESC TEC) - has grown, through an open and transparent process supervised by DG ENER and facilitated by the research association **CRESYM**, into a European flagship effort uniting grid operators, research organisations, and industry.



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Why AI.grids?

The rapid transformation of energy systems - driven by renewable energy integration, electrification of demand, and the growing presence of distributed energy resources - is dramatically increasing the complexity of grid operations. System operators must manage highly dynamic networks with millions of connected assets, bidirectional power flows, and rising operational uncertainty, while new loads such as heat pumps, AI data centres, and electric vehicles add further pressure.

At the same time, modern grid operations generate massive volumes of heterogeneous data - time-series measurements, network topology, market signals, weather forecasts, and operational reports. Traditional analytical tools and task-specific machine learning models struggle to exploit this data efficiently, remaining limited to isolated operational tasks.

With no commercial solutions currently available, Europe saw both an emergency and an opportunity: to create the conditions for a **sovereign, appropriate, and trustworthy solution** before proprietary alternatives could emerge in a sector where public interest should prevail. Inspired by advances in large-scale AI in other domains, AI.grids explores a new paradigm - a **shared foundation AI model for energy system operations**, capable of learning from diverse grid datasets and supporting multiple applications, from forecasting and congestion management to planning and asset monitoring.

Objectives

AI.grids aims to build the first pan-European AI foundation model for energy grid operations through a collaborative ecosystem of system operators, research organisations, and technology providers. The initiative will:

- Develop a **foundation AI model** supporting multiple operational tasks across transmission and distribution networks
- Leverage **diverse European grid datasets** to capture the structural, temporal, and operational characteristics of energy systems
- Enable **secure and interoperable data sharing** aligned with the Common European Energy Data Space (CEEDS)
- Integrate **high-performance computing resources** from the EuroHPC AI Factories for large-scale model training
- Validate AI capabilities on **real operational use cases**: forecasting, congestion management, asset monitoring, planning support, and flexibility services
- Create an **open collaborative ecosystem** where operators, research institutions, and industry jointly develop and validate AI solutions for grid operations

The initiative builds on European infrastructures such as CEEDS, the **Energy AI Testing and Experimentation Facilities (TEFs)** - where EnerTEF plays a central role - and the EuroHPC AI Factories, creating a scalable and collaborative framework for AI innovation in the energy sector.

Three founding principles

Open & transparent - so all European grid operators can benefit **Open source** - so every action is transparent and acceptable to grid operators **Joining forces** - research centres, grid operators, and manufacturers contributing together to speed up the solution

A Binding European Partnership

Following an open call by DG ENER and a stakeholder workshop in Brussels co-organised with Fraunhofer FIT, more than 100 stakeholders backed the idea, and the open research association **CRESYM** was tasked with creating the legal

structure and supervising the activities. The project agreement signed on 3 June 2026 binds **48 partners across four categories**:

- **18 TSOs and DSOs** for electricity & gas, financing the effort and jointly owning, in equal share, every piece of developed IP
- **22 public research organisations** undertaking the research
- **5 industry players**, each contributing according to their skills and potential
- **3 NGOs & IGOs**, ensuring the broader connection with the industry

Beyond the original core of partners - Fraunhofer FIT, INESC TEC, NTUA, TUCN, Alliander, ELES, ESO, RTE, Swissgrid, HEDNO, IPTO, Artelys, and more - the process remains open: new rounds of signatures will take place during 2026, and AI.grids is further leveraged by proposals submitted to Horizon Europe calls in 2026 and 2027.

What Comes Next

At the beginning of **2027**, the first **Minimum Viable Product** will be released to the partners as **open-source software**, with a specific focus on grid operators - reducing adaptation costs and boosting interoperability across the national networks of the 27 EU Member States. In parallel, the European Commission and the project partners will continue building a strong governance framework, in line with the EU's long-term vision: ensuring the benefits of data-driven energy systems innovation remain accessible across the entire European grid.

Interested in joining AI.grids?

Get in Touch

“While Europe has been somehow lagging in commercial exploitation of AI application, it is taking a clear, open, and a democratic approach to the application of AI in critical energy infrastructures. This is a fantastic example of cooperation of science and policy that will bring unique value to the European society.”

Read the Full Story in the Press

- [AI and critical infrastructures: The EU approach](#) - Naftemporiki (Greece, in English)
- [Bernie Sanders tem razão - e está alinhado com a União Europeia](#) - Público (Portugal, in Portuguese)



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