FLEXIA: the new frontier of industrial flexibility launched

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Turning industry from a passive energy consumer into an active contributor to national grid stability: this is the goal of FLEXIA, an ambitious research and development project launching in Storo, Trentino. The initiative involves FBK's Center for Sustainable Energy and enter for Cybersecurity and is funded by the

At a time of rapid growth in renewable energy sources and increasing decarbonization efforts, Europe's need for flexibility is set to rise sharply. **FLEXIA—short for Local Flexibility Services Enabled by Interoperable Digital Platforms to Aggregate Industries**—was created to meet this challenge by tapping into the largely unexploited potential of the industrial sector.

The project aims to **develop an interoperable digital platform capable of aggregating different energy management systems (EMSs).** In practical terms, FLEXIA enables neighboring industries to coordinate their energy consumption and production, offering "flexibility" to the electricity grid to help prevent congestion and support the integration of renewable sources such as solar and hydropower.

The project team recently met in **Storo**, where the pilot phase will begin, to define the next steps toward building a smarter, more resilient, and more sustainable electricity grid.

FBK's Center for Sustainable Energy (Sustainable Territories Area) is participating as a project partner with a twofold goal. First, it will **collect and structure the operational, technological, and strategic needs of end users**, actively engaging stakeholders and translating these needs into shared project requirements. This phase will define technological integration schemes, support testing and performance evaluation, and ensure effective coordination between the transmission system operator (TSO) and the distribution system operator (DSO). In parallel, the Center will contribute to **the development of a decision-support tool designed to assess an industry's "flexibility readiness**," encouraging informed decision-making and supporting the adoption of the proposed solutions.

"FLEXIA reflects FBK's commitment to guiding the Trentino region toward the power grids of the future, by actively involving industry and grid operators in innovative energy flexibility solutions based on new digital tools," says **Diego Viesi**, Advisor in the Sustainable Territories Area at FBK's Sustainable Energy Center. *"On the one hand, we are seeing increasingly rapid integration of variable, non-dispatchable photovoltaic generation; on the other, the electrification of mobility and heating. This requires swift action to identify effective and secure management solutions based on storage, sector coupling, and demand flexibility."*

Storo, in the Autonomous Province of Trento, was selected as a pilot site of excellence for the project. Here, collaboration among local stakeholders and research centers is fostering a unique ecosystem that combines intelligent management of the local electricity grid, development of an innovative green hydrogen hub, and optimization of energy consumption by leading industrial players such as Innova and Poncial.

FBK's [Center for Cybersecurity](#) is also involved in FLEXIA, with a cross-cutting role focused on **compliance with European cybersecurity directives and protection against cyberattacks.** In particular, the Center will help define a plan to support compliance with European Directive 2022/2555 (NIS2), both for directly affected entities and for supply-chain actors subject to the directive's security requirements. The Center will also contribute to the development of algorithms for detecting system anomalies and cyberattacks, applying artificial intelligence techniques to data exchanged among the various IT systems.

FLEXIA draws strength from a **diverse consortium of partners** that bring together digital, engineering, and scientific expertise:

- Maps S.p.A. (Lead partner): a leader in digital transformation and software platforms for the energy sector.
- Consorzio Elettrico di Storo (CEDIS): a historic electricity cooperative and local distribution system operator.
- Fondazione Bruno Kessler (FBK): a multidisciplinary research institution participating through its Center for Sustainable Energy and Center for Cybersecurity.
- HYDROALP S.r.l.: an EPC company specializing in renewable energy plants, with established expertise in hydropower and renewable gases.
- INNOVA S.r.l.: a company at the forefront of heating and air conditioning solutions.
- Rina Consulting S.p.A.: an engineering consultancy supporting projects across their entire lifecycle, with strong expertise in energy transition.

"FLEXIA is not just about technology—it represents a new way of thinking about the relationship between industry and the local area," says **Gian Luca Cattani**, Innovation & Development Director at Maps Group. *"Thanks to MASE's support, we are demonstrating that digital aggregation can generate economic value for companies while also enhancing stability across the national energy system."*

Fausto Fiorile, President of CEDIS, adds: "*We are living through a historic phase of profound transformation in the energy system. Rapid growth in renewable generation makes it increasingly important to manage consumption in a more conscious and intelligent way. Projects like FLEXIA offer a concrete response to this challenge. Balancing production and consumption helps protect the environment, strengthen grid security, and create lasting value for the local communities. As CEDIS, we want to remain a point of reference for the community by actively contributing to innovative solutions that combine environmental sustainability, social responsibility, and technological progress.*"

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