

SUCCESS CASE 8.2024

FIRMe

INTEGRATED FLEXIBILITY IN A MARKET REGIME: E-REDES INNOVATES NETWORK PLANNING WITH THE CREATION OF 1ST LOCAL FLEXIBILITY MARKET



THE CHALLENGE

The achievement of climate and energy objectives set out by European policy, the National Energy and Climate Plan for 2030 and the goal to reach carbon neutrality by 2050, requires a significant effort from electricity networks for the overall decarbonisation of the electricity system.

Distribution networks are the key to incorporating an exponential growth of decentralised renewables, as well as empowering consumers, making them active agents in the transition of the system. This responsibility requires **new models of network management and, above all, planning**. Hence, the Distribution Network Operator (DSO) is now asked to consider alternatives to investment in new infrastructure, seeking to maximise the hosting capacity of the existing network and to operate more efficiently while contributing to greater integration of renewable energy sources in the territory.

THE SOLUTION

E-REDES is responding to this challenge by creating the first Portuguese **local market for flexibility services**: the **FIRMe project** (Integrated Flexibility in a Market Regime), which started in March 2023. This mechanism allows the DSO to manage network planning **using flexibility services as a complement to investment** in specific situations of network constraints. This also enables saving on programmable maintenance costs and improves the quality of service, avoiding outages and even increasing capacity for new connections.

How? By contracting flexibility from aggregators and/or individual owners of consumption, production and storage assets. These market agents make themselves available to manage their assets, reducing consumption or injecting energy into the grid, depending on the needs pre-defined by the DSO.

The contracted flexibility services can be categorised into three different types of products:

- **Restore**: Post-failure service to support the re-establishment of the network after sporadic events resulting from **network failures** (in contingency situations).

- **Dynamic:** Service to respond to constraints during **scheduled unavailability** of national distribution network assets (i.e., maintenance).
- **Secure:** Service to support the operation of the network under normal conditions to manage **consumption peaks** at certain points on the network.

The set-up of FIRMe followed the following line of action:

- **Identification of opportunities** to provide flexibility services. Eight opportunities, i.e. sites where the procurement of flexibility would be beneficial, were identified in various locations from the north to the south of Portugal (Bragança, Paredes de Coura, São Martinho do Campo, Tondela, Marinha Grande, Bombardeira, Beja, Vila Nova de Milfontes).
- **Procurement of suppliers** for the described flexibility services through auctions. For this purpose, E-REDES used the PICLO platform, a British company specialized in flexibility markets. Any market agent registered on the platform could take part in the auction. Currently, more than 100 different organisations are registered on the platform as potential suppliers for this type of service.
- Conduction of **qualification tests** for the service providers who submitted competitive bids.
- **Signature of bilateral contracts** between E-REDES and the service providers, valid for two years until the end of 2025. Remuneration follows different models for the three services, combining availability and/or activation payments.
- **Utilisation** of contracts within the scope of network operation.

RESULTS

Between July and September 2023, **21 flexibility service providers** (FSPs) tendered in all eight areas identified in the project, using a total of **43 different assets** with a **cumulative power of 36 MW**. In total, the capacity offered was above that ones recorded from the first editions of the flexibility markets launched in the UK and France.

The 15 FSPs selected out of the total applicants include 12 industrial customers, a producer, an aggregator/trader and a storage developer, securing together seven of the eight identified zones and 29.5 MW of power. The first local flexibility contracts in Portugal were signed in March 2024. The participating pioneers include E-REDES and the offerors (Bragança Municipality, BA Glass Portugal, Tratave -Tratamento de Águas Residuais do Ave, BioSmart - Soluções Ambientais, Vizelpas Flexible Films, Neiperhome, Elergone Energia; Endutex and Águas do Centro Litoral).

WAY FORWARD

New auctions are planned for the end of 2024.