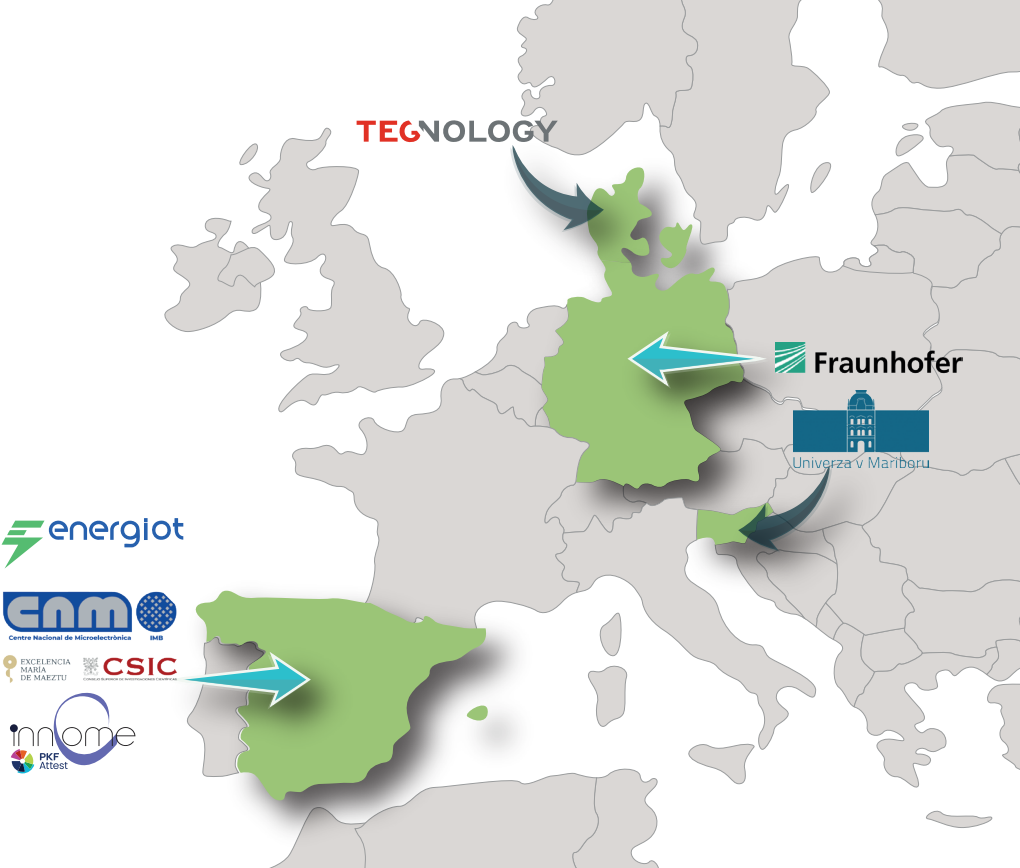


THE CONSORTIUM:

With 6 partners from 4 European countries, the **HEROGRID** consortium brings together complementary expertise across the entire value chain — from fundamental **research** and **energy harvesting technologies** to AI-driven modelling, **system validation**, test facilities, and project management.



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ABOUT

HEROGRID is a European research and innovation project funded by Horizon Europe (Project 101192630) to improve Dynamic Line Rating for HTLS power lines. The project addresses a key challenge in Europe's clean energy transition: increasing transmission capacity and grid reliability without new infrastructure.

What is DLR (Dynamic Line Rating)?

Dynamic Line Rating (DLR) is a smart way to calculate, in real time, how much electricity a power line can safely carry. Traditional grids use fixed "static" ratings based on worst-case weather conditions, DLR uses sensors and AI models to measure real conditions such as temperature, wind, and load. This enables operators to increase transmission capacity when conditions allow, without building new lines.

What is HTLS (High-Temperature Low-Sag) Conductor?

High-Temperature Low-Sag (HTLS) powerlines are modern conductors that can carry more electricity than conventional ones, even at high temperatures. Made from special composite materials, they remain strong and minimise sag when heated. This allows utilities to upgrade existing lines instead of constructing new infrastructure, providing a faster, cheaper, and more sustainable way to boost capacity.

OBJECTIVES:

HEROGRID aims to develop and validate a new concept of DLR for HTLS powerlines, using self-powered IoT devices to improve the efficiency and reliability of electricity transmission across Europe.

To achieve this, the project will focus on three main technological areas:



New AI-based DLR models specifically designed for HTLS powerlines, enabling accurate real-time monitoring and predictive control of grid performance.



Novel IoT sensor nodes capable of operating under the high-temperature and environmental conditions typical of HTLS lines.



Energy harvesting systems that ensure full power autonomy of the sensors, combining piezoelectric and thermoelectric harvesters with an integrated power management system.

KEY BENEFITS:



Reduced power losses



Lower operation and maintenance costs



Higher transmission capacity



Predictive analysis for demand and congestion reduction