

RESPONDENT



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Renewable Energy Sources Power
FOrecasting and SyNchronisation for
Smart Grid NETworks MaNagement

Project Duration: 42 months | 8 partners across Europe | €2.7m EU-funded Horizon Europe Project

Power Generation Forecasting

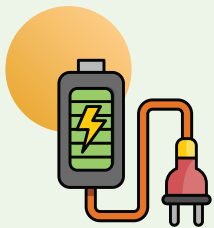


Historical data, weather forecasting, and advanced AI/ML models are combined to accurately predict renewable energy output and address concerns of intermittency and grid integration.

Leverages data from the EU's Copernicus Earth Observation Programme and FINT's IoT weather stations with an estimated 8-12% higher range of accuracy compared to existing solutions.

Exploits freely available Copernicus EO data to support the utilisation of renewable energy sources as an alternative to traditional, carbon-intensive energy sources.

Power Demand Forecasting



Advanced AI/ML and multi-physics simulations, ensuring accurate predictions for a resilient and efficient energy supply.

Considers historical consumption data, weather forecasts, and socio-economic factors to predict future electricity demand, vital for managing energy supply efficiently and preventing blackouts or shortages.

Seamless integration into legacy and modern systems, offering superior accuracy and reliability to serve a diverse range of socio-economic conditions.

Smart Grid Timing & Synchronisation



Integrates high-accuracy Galileo receivers into existing PMUs, ensuring sub-microsecond-level accuracy and resilience against GNSS vulnerabilities.

Introduces a cloud-based monitoring module for Galileo-enabled PMUs, offering remote access to time-stamped measurements for enhanced grid operation.

Galileo-enabled PMUs contribute to reliable and robust grid operation by improving measurement accuracy, reducing response time, identifying fast transient events, preventing timing malfunctions, jamming, and spoofing.

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