



# Project Kick-off

Press Release I \_ January 2025

European Commission-funded project **GRAVITEQA - GRAVITational Storage, Quantum computing, and AI for enhanced Circularity and Reliability in Clean transition-affected sector-coupled electricity grids** launched on the 1st of January 2025 to tackle the challenges posed by the climate change and the EU clean energy goals for 2050.

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The **overall aim of GRAVITEQA project** is to foster innovation and accelerate the deployment of cutting-edge solutions across Europe, boosting EU leadership in clean energy transition.

The project **targets five cross-linked sectors**: i) Demand-side orchestration, ii) Renewable Energy Sources planning, iii) Distribution grids management, iv) Green seaports and cold ironing, and v) Circular decommissioning of coal-fired plants and mines, showcasing innovative Use Cases that demonstrate the transformative potential of technology integration in real-world applications. This approach will facilitate the development of scalable, high-impact technological solutions and ensures their alignment with the Green Deal's and CEP's targets.

## **GRAVITEQA develops and validates 9 methodologies:**

- 1) Quantum Computing and Quantum Inspired Computing for the Facility Location Allocation and Load-side assets management problems,
- 2) A generic and holistic methodology to find the optimal energy storage technology or mix of them, to transform a coal power plant and mine into a long duration energy storage plant,

- 3) Repurposing of available assets case study capable of providing long-term storage and enhancing recyclability of a under-decommissioning thermal power plant and an abandoned coal plant,
- 4) Conformal prediction for robust energy demand of cold ironing,
- 5) Optimal charging of cold ironing and EVs respecting grid constraints for reliable green port operation,
- 6) Seaport electrification strategy for seaports: analysis and scenarios planning,
- 7) Fast nodal flexibility region estimation algorithm for 3-phase grids unlocking the flexibility services procurement from distributed RES,
- 8) End-to-end trustworthy learning for non-convex optimization problems, and a
- 9) A reference design for edge inference in smart grid applications.

## Kick-Off Meeting completed successfully in Athens

On the 21st of January 2025, the GRAVITEQA Consortium officially launch the project in Athens and discuss its immediate next steps for a successful development.

The GRAVITEQA project has set high-standard objectives to be implemented during the project lifetime. By harnessing **the synergetic power of gravitational storage, Quantum Computing, and Qunatum Inspired Computing, along with trustworthy Artificial Intelligence-based analytics**, GRAVITEQA aims to significantly enhance the reliability and circularity of sector-coupled electricity grids.

**More information will follow soon!**

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## About us:

GRAVITEQA brings together ten (10) partners representing research institutes, technology providers and large companies from three (3) EU countries, namely Bulgaria, Greece, and Spain. This international joint is necessary to implement the rising requirements of clean transitioning in the cross-sector coupled Transmission & Distribution grids utilizing the GRAVITEQA solutions.

### Disclaimer

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