

# Iberdrola and Multiverse Computing Announce Pilot Project Success to Optimize Battery Installation in the Grid

*Quantum and quantum-inspired algorithms matched or outperformed classical solutions for determining the quantity and placement of grid batteries*

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/EINPresswire.com/ -- [Iberdrola](#), one of the world's largest clean energy companies, and [Multiverse Computing](#), a global leader in value-based quantum computing solutions, have successfully delivered a pilot project in northern Spain to optimize the installation of grid-scale batteries, which will become increasingly important as the energy transition progresses.



As electricity grids are integrating increasing amounts of renewable generation, electric vehicles, heat pumps and other distributed energy resources, battery storage is providing an increasingly important service to ensure grid stability. Multiverse Computing's solution uses quantum and quantum-inspired algorithms to select the optimal number, type and locations of batteries on the grid network. This reduces the costs of adding batteries to the grid and increases network performance.

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*Estibaliz Goñi, Process and Technology director of i-DE*

i-DE, Iberdrola's distribution company in Spain, oversaw the pilot project, which was focused on Guipuzkoa's electricity grid (Basque Country, Spain). During the ten-

month pilot, quantum and quantum-inspired algorithms matched or outperformed classical

benchmarks to maximize grid reliability and voltage control.

The project was developed as part of Iberdrola's [Global Smart Grids Innovation Hub](#) and part of the Gipuzkoa Quantum Program.



“With the power of quantum computing, private and public institutions can meet sustainability goals while saving on both fixed and variable costs,” said Enrique Lizaso

Olmos, CEO of Multiverse Computing. “We are proud to support the development of more reliable and economical green energy in Spain alongside a world-leading clean energy provider like Iberdrola.”

Estibaliz Goñi, Process and Technology director of i-DE, also stated, “The results of this pilot project are encouraging, and we will continue exploring the deployment of this technology. There are many challenges to overcome to ensure we have the smart and robust grids required to deliver the energy transition, and innovations like this will help us get there.”

According to a recent report by the IEA, meeting climate goals will require adding or refurbishing 80 million kilometers (~50 million miles) of electricity grids by 2040 – the equivalent of the entire existing global grid. Another report by the same agency showed that the investment ratio between renewables and networks has been imbalanced for the past years. Meanwhile, the investment ratio between renewables and grids was \$1.00 to \$0.40. To achieve climate goals, that ratio must be adjusted to 1:1, at minimum.

## The Project

To achieve the pilot's goal, the 10-month project used a quantum annealer and classical hardware to test the optimization solution. This algorithm was tested in grids of different sizes, exploring this solution first on small-scale grids and then in larger ones, such as Gipuzkoa's grid.

To address the need for more resilient and cost-effective electric grids, Multiverse Computing and Iberdrola implemented quantum and quantum-inspired solutions to achieve improvements in grid batteries across three key areas:

- Initial cost: Optimize the cost of buying and installing multiple batteries in the electrical grid.
- Voltage control: Maximize the capacity of maintaining voltage levels in the nodes of the grid.
- Reliability: Minimize the impact to customers of power outages in the grid.

The project team used Singularity, Multiverse Computing's platform for quantum and quantum-inspired software, to optimize the network. Quantum-inspired techniques use insights and mathematical models from quantum physics to develop better classical algorithms. The tool enables users without experience in quantum computing to utilize quantum optimizations to boost the speed and accuracy of solutions for complex problems in the energy sector and other industries.

## The Partnerships

This pilot was developed under the umbrella of Iberdrola's Global Smart Grids Innovation Hub. This innovative space, located in Bilbao, is a world-class center for innovation and knowledge in smart grids. The Hub serves as a collaborative platform, bringing together Iberdrola's technological expertise with over 100 partner entities and companies. The Hub focuses on addressing the challenges of the energy transition, including digitalization, data management, and adaptability to new consumption models like electric mobility and self-consumption. Its mission is to lead the energy transition by fostering talent and accelerating innovation in smart grids.

The project, initially announced in 2023, is also part of the Gipuzkoa Quantum Program in the Basque Country of Spain, a quantum computing hub and smart grid innovation center, offers financial incentives for collaborations between quantum startups and potential customers.

## About Iberdrola

Iberdrola, Europe's largest electricity utility by market capitalization and one of the world's top three electricity companies, is a leader in renewables, spearheading the energy transition to a low carbon economy. The group supplies energy to almost 100 million people in dozens of countries. With a focus on renewable energy, smart networks and smart solutions for customers, Iberdrola's main markets include Europe (Spain, the United Kingdom, Portugal, France, Germany, Italy and Greece), the United States, Brazil, Mexico and Australia. The company is also present in growth markets such as Japan, Taiwan, Ireland, Sweden and Poland, among others.

The company has a workforce of over 42,200 and assets in excess of €150 billion. In 2023, Iberdrola posted revenues of nearly €50 billion, net profit of €4.8 billion, with nearly €9.3 billion paid in tax contributions in the countries where it operates. The company helps to support more than 500,000 jobs in communities across its supply chain, and global supplier purchases topped €18.1 billion in 2023. A benchmark in the fight against climate change, Iberdrola has invested more than €150 billion over the past two decades to help build a sustainable energy model, based on sound environmental, social and governance (ESG) principles.

## About Multiverse Computing

Multiverse Computing is a leading quantum software platform dedicated to applying quantum and quantum-inspired AI solutions to address complex challenges in finance, energy, manufacturing, logistics, space, life sciences, healthcare, and defence, delivering tangible value today.

Leveraging expertise in quantum and quantum-inspired AI algorithms, the company maximizes results from both current quantum devices and classical high-performance computers. Its flagship product, Singularity, allows professionals across all industries to leverage quantum computing to speed up and improve the accuracy of optimization and AI models with existing and familiar software tools. The company also has developed CompactifAI, a LLM compressor which uses quantum-inspired tensor networks to make AI systems such as large language models more efficient and portable, reducing size by over 80% while maintaining accuracy, and with over 50% savings in retraining and inference costs.

Our team of over 130 full-time employees, comprising 40% PhDs and representing more than 43 nationalities, is dedicated to pushing the boundaries of quantum computing. With a portfolio of 95 patents and over 40 research publications, our intellectual property portfolio underscores our commitment to innovation. Over the past 3 years MVC has won numerous industry awards uncommon for an early-stage startup, including recognition as one of the 100 Most Promising Companies in AI and most recently 2024 Future Unicorn award from DigitalEurope, a leading trade association representing digitally transforming industries in Europe.

Multiverse has offices in Spain, Canada, France, Germany, UK and Italy. For more information, please contact us at [growth@multiversecomputing.com](mailto:growth@multiversecomputing.com)

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