



## ENI LAUNCHES ENIQUANTIC, A NEW VENTURE FOR THE TECHNOLOGICAL DEVELOPMENT OF QUANTUM COMPUTING

*The initiative reflects Eni's continuous commitment to innovation and digitalisation, leveraging the supercomputing power of the Green Data Center, to support the energy transition process.*

Rome, 15 July 2024 – Eni and ITQuanta have agreed to form a joint venture, Eniquantic<sup>1</sup>, with the aim of developing an integrated hardware and software quantum machine<sup>2</sup> capable of solving complex problems (mathematical optimisation, modelling and simulation, artificial intelligence) and initiating specific and significant quantum computing applications to support the energy transition.

In developing its technological roadmap, Eniquantic will benefit from the computational power of Eni's HPC (High Performance Computing) supercomputers both to explore possible integrations between quantum and classical architectures and to test the effectiveness of algorithms that simulate the principles of quantum computing on energy-related use cases directly relevant to Eni, such as:

- energy generation and storage, for improving the production efficiency of energy resources, in particular for renewable energy;
- simulation and modelling of the behaviour of matter using molecular dynamics and quantum mechanics techniques for the discovery of new high-performance materials to be applied to the development of new energy sources, such as magnetic confinement fusion;
- carrying out and processing advanced analyses of complex systems to improve and optimize operational activities across the entire value chain, such as the trading of energy and other commodities.

The new venture Eniquantic will leverage Eni's operational and industrial excellence and the know-how of the start-up ITQuanta, which includes among its founders internationally recognised experts in atomic physics, information and quantum computation.

With this project, Eni strengthens its leadership in high-performance computing for industrial use and asserts itself as a highly innovative company.

The establishment of Eniquantic, the second venture launched as part of Eniverse's (Eni's corporate venture builder) initiatives, fits into the company's strategy aimed at enhancing in-house skills and technological solutions, whether proprietary or third-party, to create new high-potential entrepreneurial initiatives.

## **TECHNICAL NOTE FOR EDITORS:**

<sup>1</sup> Eniquantic shares will initially be held 94% by Eni and 6% by ITQuanta. Prof. Massimo Inguscio (ITQuanta) has been appointed Chairman, and Mr. Dario Pagani (Eni) has been appointed CEO.

<sup>2</sup> Full-stack quantum computing integrates all hardware, software, firmware, and cloud portal components, which were developed by applying quantum physics principles. The fundamental information units are quantum bits (or qubits) and, unlike classical bits, they can hold multiple values between 0 and 1. The quantum computer uses the microscopic properties of matter to perform complex operations, exponentially increasing the computing power achievable by traditional computers today. The quantum computer's architecture will be based on a memory register of single ultracold ytterbium atoms trapped with laser light. Ytterbium (Yb) is a chemical element of the rare earth group. It is often associated with yttrium and other lanthanides, in monazite, euxenite, and xenotime minerals.

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