IBM Newsroom

IBM and Basque Government announce plan to install Europe's first IBM Quantum System Two at the IBM-Euskadi Quantum Computational Center in Spain

- IBM Quantum System Two to be powered by a utility-scale 156-qubit IBM Quantum Heron processor.

- Installation of IBM Quantum System Two at the IBM-Euskadi Quantum Computational Center expected to be completed by the end of 2025.

- Members of the IBM-Euskadi Quantum Computational Center intend to use IBM's most performant architecture to advance discovery and solutions in physics, information science, and materials science.

YORKTOWN HEIGHTS, N.Y., March 13, 2025 /PRNewswire/ -- The Basque Government, and IBM (NYSE:IBM) today announced plans to install Europe's first IBM Quantum System Two at the IBM-Euskadi Quantum Computational Center on Ikerbasque Foundation's main campus in San Sebastian, Spain (Gipuzkoa, Spain). The deployment builds on the organizations' partnership, which began in 2023 as part of the BasQ initiative to further establish the Basque Country as a leading technology hub. Since the initial announcement, the parties have agreed to update the original plan to install an IBM Quantum System One, to now deploy IBM's most advanced modular quantum computer, IBM Quantum System Two, which is expected to be complete by the end of 2025.

BasQ's IBM Quantum System Two, to be managed by IBM, will be powered by an IBM Quantum Heron, the company's most performant quantum processor to date, engineered to expand to multiple processors in the future. IBM Heron is capable of executing utility-scale algorithms beyond the capabilities of brute-force, classical simulation methods, including leveraging Qiskit software to accurately run certain classes of quantum circuits with up to 5,000 two-qubit gate operations.

Caption: Representatives from IBM, the Basque Government, and the Basque Foundation for Science in the Basque Country of Spain at the IBM Thomas J Watson Research Center in Yorktown Heights, New York, in front of the first IBM Quantum System Two, to announce plans to install Europe's first IBM Quantum System Two at the IBM-Euskadi Quantum Computational Center by the end of 2025. (Credit: IBM)*

This installation dedicated to Spain's quantum innovators across academia, research labs, and industries represents IBM's continued effort to expand Europe's quantum ecosystem. Members of the IBM-Euskadi Quantum Computational Center will have access to these capabilities and resources to help build a quantum workforce, promote economic development, and develop new, useful algorithms to, in turn, help accomplish the Basque Country Government's IKUR 2030 vision for quantum technologies. These efforts in algorithm development would be directly applied toward accomplishing IKUR 2030 goals, such as research into modeling new materials, research into how quantum computing can be used as part of the initiative's broader sustainability efforts.

"With this scientific infrastructure, the Basque Country will be positioned as a global reference hub in quantum computing. This technology will help progress in the digital transformation and provide us with a state-of-the-art scientific infrastructure that will strengthen the scientific, technological and innovation ecosystem that must facilitate this transformation. The IBM Quantum System Two will be a key tool for the Basque Network for Science, Technology and Innovation to generate cutting-edge knowledge in the Basque Country, to implement highly specialized higher education programs at our universities, and to be prepared for the impact of quantum computing in the coming years by both the Basque public sector and the industry. The arrival of this computer will be a great opportunity for the Basque Country's economic and social development and will enable us to cooperate with other regions, countries and actors in the development and impact of this technology," said the President of the Basque Country Government, Mr. Imanol Pradales.

"The IBM-Euskadi Quantum Computational Center's dedicated IBM Quantum System Two will give Spain's quantum community of researchers, developers, and industry experts unparalleled access to our most performant, most advanced quantum

technologies—including the tools to develop algorithms that will help drive the entire quantum ecosystem toward achieving a quantum advantage within the next two years," said Jay Gambetta, Vice President, IBM Quantum.

About the IBM-Euskadi Quantum Computational Center

The IBM-Euskadi Quantum Computational Center was announced in 2023 to promote the use of advanced technology across all the Basque Country Government and the General Deputations (Araba, Bizkaia and Gipuzkoa), further elevating research institutions by expanding international research collaborations, performing world-class fundamental scientific research, and increasing the quantum-trained talent in the region. The center will provide computational infrastructure for researchers from the Basque Government and its partners to help researchers meet these goals.

IBM and the Basque Government are also collaborating to develop workforce programs aimed at building and establishing world-class talent in the Basque Country and across Spain. The IBM-Euskadi Quantum Computational Center programs are driving internal and external awareness, education, and skill building through the development of immersive and integrated learning programs.

About IBM

IBM is a leading global hybrid cloud and AI, and business services provider, helping clients in more than 175 countries capitalize on insights from their data, streamline business processes, reduce costs and gain the competitive edge in their industries. Nearly 4,000 government and corporate entities in critical infrastructure areas such as financial services, telecommunications and healthcare rely on IBM's hybrid cloud platform and Red Hat OpenShift to affect their digital transformations quickly, efficiently and securely. IBM's breakthrough innovations in AI, quantum computing, industry-specific cloud solutions and business services deliver open and flexible options to our clients. All of this is backed by IBM's legendary commitment to trust, transparency, responsibility, inclusivity and service.

For more information, visit https://research.ibm.com.

About Ikerbasque

In 2007, The Basque Government created Ikerbasque to reinforce the Basque scientific system through the attraction, recovery and retention of researchers from all around the world. The Basque Foundation for Science is a consolidated organization with 373 researchers from 35 different countries, from all fields of knowledge, and currently working in 25 partner institutions.

**L-R: Horacio Morell, IBM Spain, Portugal, Greece, Israel General Manager; Jay Gambetta, Vice President, IBM Quantum; Mr. Imanol Pradales, President of the Basque Country Government; Eider Mendoza, General Deputy of Gipuzkoa.*

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