Rigetti Wins Innovate UK's Quantum Missions Pilot Competition to Advance Quantum Error Correction Capabilities on Superconducting Quantum Computers

April 22, 2025

Rigetti, in collaboration with Riverlane and the National Quantum Computing Centre (NQCC), has been selected as one of the winners of Innovate UK's Quantum Missions pilot competition. Leveraging Rigetti's quantum computer hosted at the NQCC, the £3.5 million Rigetti-led consortium aims to benchmark and enhance the quantum error correction capabilities of superconducting quantum computers —a requirement for achieving large-scale fault-tolerant quantum computing.

BERKELEY, Calif., April 22, 2025 (GLOBE NEWSWIRE) -- Rigetti UK Limited, a wholly owned subsidiary of Rigetti Computing, Inc. (Nasdaq: RGTI) ("Rigetti" or the "Company"), a pioneer in full-stack quantum-classical computing, today announced that it has been selected as one of the winners of Innovate UK's Quantum Missions pilot competition to benchmark and enhance quantum error correction (QEC) capabilities on superconducting quantum computers. Rigetti will lead a £3.5 million consortium alongside Riverlane and the NQCC Superconducting Circuits Team to leverage Rigetti's superconducting quantum computer hosted at the NQCC to conduct ambitious QEC tests that advance state-of-the-art metrics and demonstrate real-time QEC capabilities — a requirement for universal, fault-tolerant quantum computing.

Fault-tolerant quantum computing has the potential to usher in a new era of computational power to solve real-world problems. Achieving fault tolerance requires QEC to be effectively integrated with quantum computing technology, and with that comes addressing critical challenges. These include processing bottlenecks in classical control systems and their integration with quantum error decoding technology, as well as the high error rates of current quantum computers. The project aims to make measurable advancements towards overcoming these challenges by developing key capabilities required for executing a large number of quantum operations on Rigetti's UK-based quantum computer.

As part of the project, Rigetti will upgrade its existing NQCC quantum computer. The upgrades will include:

- Deploying a larger 36-qubit quantum processing unit (QPU), updating from the current 24-qubit QPU
- Integrating Rigetti's latest generation control system, enabling improved qubit control and a fully programmable, low-latency interface with Riverlane's Quantum Error Correction (QEC) Stack

Riverlane will lead the QEC experiments, identifying key improvements to enhance system performance and meet crucial QEC metrics. The NQCC Superconducting Circuits Team will support the system upgrade and provide quality assurance for the QEC experiments.

"Our NQCC testbed continues to serve as a critical resource for advancing our technology capabilities. We believe that we have a tremendous advantage on our path to fault-tolerant quantum computing with Riverlane's QEC expertise and our modular, open architecture that lends itself to flexible and innovative solutions to scale our technology," says Dr. Subodh Kulkarni, Rigetti CEO. "Moreover, we benefit from the strong advantages of superconducting qubits, which we believe are the winning qubit modality given their fast gate speeds and clear path to scaling."

"Developing high-performance quantum error correction is critical to achieving fault-tolerant quantum computing, and this project provides an ideal environment to advance those capabilities," said Steve Brierley, Riverlane CEO & Founder. "By integrating our QEC stack with Rigetti's upgraded superconducting quantum computer, we aim to achieve measurable improvements in key performance metrics, including throughput, latency, and decoding accuracy, which are essential for real-time error correction. We look forward to making significant progress through this collaboration."

The Quantum Missions pilot competition was established to accelerate quantum computing and quantum networking projects by increasing their capabilities and removing technological barriers to their commercialization and adoption. Rigetti was also awarded two additional Quantum Missions pilot competition projects:

- Collaboration with SEEQC to integrate its digital chip-based technology with Rigetti's 9-qubit Novera™ QPU hosted at the NQCC with the goal of identifying and understanding the key system components needed for scalable QEC. The project partners also include Cambridge Consultants, Oxford Instruments Nanotechnology Tools, NQCC, and University of Edinburgh.
- Collaboration with TreQ, Qruise, Q-CTRL, and Oxford Ionics to create an open-architecture quantum computing testbed. The project will offer eight unique configurations by combining two quantum processors, two control systems, and two quantum software stacks. The project will also deliver an open specification for quantum workflows, creating a common interface between quantum software and hardware.

These projects build on Rigetti's leadership in the UK's quantum computing ecosystem, including launching the first fully operational quantum computer at the NQCC and leading a three-year £10 million consortium to deploy one of the first UK-based quantum computers hosted at Oxford Instruments' Tubney Woods facility.

About Rigetti
Rigetti is a pioneer in full-stack quantum computing. The Company has operated quantum computers over the cloud since 2017 and serves global enterprise, government, and research clients through its Rigetti Quantum Cloud Services platform. In 2021, Rigetti began selling on-premises quantum computing systems with qubit counts between 24 and 84 qubits, supporting national laboratories and quantum computing centers. Rigetti's 9-qubit Novera QPU was introduced in 2023 supporting a broader R&D community with a high-performance, on-premises QPU designed to plug into a customer's existing cryogenic and control systems. The Company's proprietary quantum-classical infrastructure provides high-performance integration with public and private clouds for practical quantum computing. Rigetti has developed the industry's first multi-chip quantum processor for

scalable quantum computing systems. The Company designs and manufactures its chips in-house at Fab-1, the industry's first dedicated and integrated quantum device manufacturing facility. Learn more at https://www.rigetti.com/.

Rigetti Computing Media Contact:
press@rigetti.com

Cautionary Language Concerning Forward-Looking Statements

Certain statements in this communication may be considered "forward-looking statements" within the meaning of the federal securities laws, including but not limited to, expectations with respect to the Company's business and operations, including its expectations related to the Innovate UK grants as part of the Quantum Missions pilot competition and work with Riverlane to benchmark and enhance quantum error correction (QEC) capabilities on superconducting quantum computers; SEEQC, NQCC, Cambridge Consultants, Oxford Instruments Nanotechnology Tools, and University of Edinburgh to integrate a digital chip-based technology with Rigetti's 9-qubit Novera™ QPU hosted at the NQCC with the goal of identifying and understanding the key system components needed for scalable QEC; and TreQ, Qruise, Q-CTRL, and Oxford Ionics to create an open-architecture quantum computing testbed. Forward-looking statements generally relate to future events and can be identified by terminology such as "commit," "may," "should," "could," "might," "plan," "possible," "intend," "strive," "expect," "intend," "will," "estimate," "believe," "predict," "potential," "pursue," "aim," "goal," "outlook," "anticipate," "assume," or "continue," or the negatives of these terms or variations of them or similar terminology. Such forward-looking statements are subject to risks, uncertainties, and other factors which could cause actual results to differ materially from those expressed or implied by such forward-looking statements. These forward-looking statements are based upon estimates and assumptions that, while considered reasonable by Rigetti and its management, are inherently uncertain. Factors that may cause actual results to differ materially from current expectations include, but are not limited to: Rigetti's ability to achieve milestones, technological advancements, including with respect to its roadmap, help unlock quantum computing, and develop practical applications; the ability of Rigetti to complete ongoing negotiations with government contractors successfully and in a timely manner; the potential of quantum computing; the ability of Rigetti to obtain government contracts and the availability of government funding; the ability of Rigetti to expand its QCS business; the success of Rigetti's partnerships and collaborations; Rigetti's ability to accelerate its development of multiple generations of quantum processors; the outcome of any legal proceedings that may be instituted against Rigetti or others; the ability to continue to meet stock exchange listing standards; costs related to operating as a public company; changes in applicable laws or regulations, including taxes and tariffs; the possibility that Rigetti may be adversely affected by other economic, business, or competitive factors; Rigetti's estimates of expenses and profitability; the evolution of the markets in which Rigetti competes; the ability of Rigetti to execute on its technology roadmap; the ability of Rigetti to implement its strategic initiatives, expansion plans and continue to innovate its existing services; disruptions in banking systems, increased costs, international trade relations, political turmoil, natural catastrophes, warfare, and terrorist attacks; and other risks and uncertainties set forth in the section entitled "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements" in the Company's Annual Report on Form 10-K for the year ended December 31, 2024, and other documents filed by the Company from time to time with the SEC. These filings identify and address other important risks and uncertainties that could cause actual events and results to differ materially from those contained in the forward-looking statements. Forward-looking statements speak only as of the date they are made. Readers are cautioned not to put undue reliance on forward-looking statements, and the Company assumes no obligation and does not intend to update or revise these forward-looking statements other than as required by applicable law. The Company does not give any assurance that it will achieve its expectations.