FORTIFYING AMERICAN ADVANTAGE BY ADVANCING QUANTUM TECHNOLOGY POLICY

The nations that lead in quantum technology will define the global balance for intelligence, defense, and economic competition in the next century. US leadership in Quantum Information Science, Engineering, and Technology (QISET) is essential to winning this race. Below are key strategies to strengthen US quantum discovery, development, and commercialization. These policy positions emphasize robust investment, strong public–private collaboration, secure supply chains, a proactive national security posture, and growing a quantum-ready workforce.

QUANTUM ECONOMIC DEVELOPMENT CONSORTIUM (QED-C) POLICY POSITIONS

Legislation: *Reauthorize the National Quantum Initiative (NQI)*: If US investment in QISET falters, the US risks ceding global leadership in this critical area. Reauthorizing the NQI preserves US leadership and accelerates QISET development. Benefits of the NQI include: a) expanding the DOE's role in hybrid quantum–classical computing; b) ensuring robust execution of the QUEST program; c) expanding NIST's mission in standards, metrology, and quantum engineering centers; d) strengthening NSF's role in growing the talent pipeline; and e) accelerating work at US universities and national labs to advance critical knowledge and grow the quantum workforce. *Support Department of War Investments*: Quantum investments under the National Defense Authorization Act are critical to national competitiveness and security.

R&D, Government Role, and Partnerships: Policies that foster partnerships across academia, national labs, and private sector support alignment and accelerate development across the US quantum ecosystem. Congress can stimulate public–private partnerships, position government customers as early adopters, promote international collaboration, and ensure sustained funding for QISET-related programs at NIST, NSF, DOE, and other agencies. To do this, Congress can leverage the QED-C as a resource for coordination with the quantum ecosystem.

Commercialization, Industry, and Supply Chain: Realizing quantum's potential requires transitioning systems from laboratory science into commercial products for use in defense, intelligence, and industry. Congress can accelerate this by: a) expanding applied research testbeds; b) investing in the on-shoring and friend-shoring of the quantum supply chain; c) deepening trade partnerships with allied countries; d) providing R&D funding for enabling technologies (such as cryogenics, lasers, photonics, and electronics); and e) incentivizing private investment through prizes, grants, contracts, and advanced market commitments.

Cybersecurity and National Security: Many nations are investing heavily in QISET, including US adversaries. Maintaining US quantum superiority is critical to national security. To protect US interests and ensure readiness, we must accelerate migration to post-quantum cryptography (PQC) standards, raise awareness, and ensure that the US and its allies lead in secure communications, sensing, and defense applications.

Workforce and Education: The quantum industry a prepared workforce to scale. Demand for quantum talent already exceeds supply and is accelerating. Congress can close the gap by: a) expanding community college and technician programs for quantum-relevant skillsets; b) engaging secondary schools, as with the Q12 program; c) establishing quantum upskilling programs; d) developing end-user education programs to promote adoption across finance, energy, defense, and healthcare; and e) encouraging talent exchange with allied countries.