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Quantum Technology: A Policy Primer for EU Policymakers

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Brussels, 30 January 2025 - The European Competitiveness Compass mentions quantum technology several times, and rightly so. Quantum technology is a transformative force with the potential to revolutionise sectors where EU companies are global leaders such as aerospace, automotive, pharmaceuticals, or finance.

"Establishing a framework to position EU companies at the forefront of quantum innovation and ensuring broad diffusion of these technologies across the economy must be a top priority for European policymakers," says Dyuti Pandya, co-author of the latest ECIPE Policy Brief.

However, rather than adopting a policy frame based on "quantum autonomy" or "quantum sovereignty", the EU should instead adopt an open and collaborative approach to quantum innovation. The EU's success will depend on its ability to harness collective efforts. Strong partnerships with both EU and non-EU stakeholders will be critical to fostering innovation in quantum technologies.

"The EU is a pivotal hub in the global quantum collaboration network. For the development of quantum technology, EU companies rely on a web of collaboration that includes EU and non-EU companies. Collaborations with non-EU companies in quantum technologies is a crucial opportunity for growth, not a threat", adds Oscar Guinea, co-author of the study.

To ensure the EU becomes a leader in quantum technologies, the upcoming EU's Quantum Strategy should follow three guiding principles:

Interdependency is a strength, not a weakness: Building mutually beneficial partnerships reduces R&D risks, facilitates knowledge sharing, and creates positive spillovers that accelerate quantum breakthroughs.

Collaboration is essential: The complexity of quantum systems requires coordinated efforts that draw on specialised expertise. Working together will shorten the path to technological progress.

Adopt an open R&D strategy: Encouraging interaction between European and non-European public and private sectors will enhance the diffusion and application of quantum technologies across industries.

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