

Quantum Europe Strategy

Context

Quantum technologies have developed significantly in the past few years, and are now reaching a commercial tipping-point that could potentially redefine computing, communications, and security. The EU is already well-equipped for this transformation, as it has around one-third of the world's quantum companies, and nearly half of all hardware and software suppliers. However, it still lags behind global competitors such as the US and China in translating this knowledge into market capitalisation – in fact the EU ranks third in patent filings.

The core obstacle being experienced is market fragmentation. Over the last five years, the EU and its Member States have invested more than €11 billion, but national programmes often duplicate efforts and compete for scarce talent, which is diluting the necessary critical mass. Secondly, European startups still face a structural funding gap, especially once they leave the laboratory. Europe captures barely 5% of global private quantum investment, leaving high-potential companies vulnerable to forcibly relocating to other markets, or being bought out by international companies. Thirdly, due to the fact that only a few companies are adopting quantum technology early, market demand in Europe remains weak, thus hurting small economies such as Malta.

As such, the European Commission's Quantum Europe Strategy aims to transform Europe's research leadership into an integrated, sovereign industrial base while safeguarding economic security and dual-use capabilities.

Objectives

The Strategy proposes a “lab-to-fab-to-market” cycle, structured in five linked workstreams. The cycle's main goals are the following:

1. Research & Innovation

- a. Align national and EU funding under a Quantum Europe Research and Innovation Initiative, pooling agendas and targets through an amended EuroHPC Joint Undertaking and a future Quantum Act Quantum Europe Strategy.
- b. Launch Grand Challenges (2025-27) on fault-tolerant quantum computing and quantum navigation to fast-track breakthrough prototypes into industrial environments Quantum Europe Strategy.

2. *Infrastructure*

- a. Publish EU roadmaps by 2026 and expand EuroHPC quantum computers and simulators, progressing towards 100 error-corrected qubits per system by 2030 Quantum Europe Strategy.
- b. Deliver the first experimentally interconnected terrestrial–space quantum-secure network by 2030 and pilot a European Quantum Internet facility in 2026 Quantum Europe Strategy.
- c. Roll out distributed gravimeter networks and a European Q-MRI pilot from 2025 onwards to spur sensing applications Quantum Europe Strategy.

3. *Ecosystem & Industrialisation*

- a. Establish six quantum pilot production lines under the Chips Joint Undertaking in 2025, followed by a Quantum Chips Industrialisation Roadmap and a dedicated design facility in 2026 Quantum Europe Strategy.
- b. Transform existing labs into an EU-wide network of open-access quantum testbeds for SMEs and start-ups, and broaden Quantum Competence Clusters to every Member State Quantum Europe Strategy.
- c. Mobilise public–private finance (EIC, EIB Tech Champions, InvestEU) and innovation-oriented public procurement to create lead markets Quantum Europe Strategy.

4. *Space, Security & Defence*

- a. Sign an ESA partnership in 2025 and draft a quantum sensing, space and defence roadmap by 2026 to embed ultra-secure communications, navigation and gravimetry in EU missions Quantum Europe Strategy.

5. *Skills*

- a. Found the European Quantum Skills Academy in 2026, develop joint Master’s programmes, apprenticeships and talent-mobility schemes, and run Advanced Digital Skills Competitions to tackle severe workforce shortages Quantum Europe Strategy.

Projected Impact on businesses

The Quantum Europe Strategy opens new opportunities for Maltese businesses. Instead of investing in expensive equipment, such as cryogenic or photonic labs, local SMEs will be able to try out ideas on shared EU testbeds, speeding up proofs-of-concept in finance, logistics and maritime services. Innovation-focused public procurement and sector-specific challenges in energy, pharma, and manufacturing, will provide early-adopters a seat at the design table, so Maltese companies will be able to team up with larger European players from day one. Growth finance is also set to improve: the Scale-up Europe Fund, InvestEU guarantees, and re-targeted Cohesion funds will all be focused on supporting breakthrough quantum ventures.

On a more pragmatic level, quantum-powered optimisation could enhance algorithmic trading, risk models and secure cross-border payments for Malta's financial sector, while EuroQCI links will enable bank-grade encryption without the need for intense capital investments. Quantum sensors for navigation and seabed mapping can all benefit our islands' port and ship registration systems. Meanwhile quantum-enhanced MRI and environmental monitoring could add value to niche industries such as medical tourism and climate-resilience services. Finally, the planned European Quantum Skills Academy and mobility fellowships will support Maltese universities and companies to host high-quality researchers, helping to bridge the national talent gap.

Way Forward

The Quantum Europe Strategy sets an ambitious but time-bound agenda. Key milestones between now and 2026 include amending the EuroHPC mandate, launching pilot production lines, adopting multiple technology roadmaps and formalising the Quantum Act. Early engagement will allow Maltese companies to move from mere observers to active contributors in Europe's quantum value chain, ensuring they capture early-adopters advantages as the Strategy develops.

The Quantum Europe Strategy can be accessed [here](#).

Disclaimer: This is a policy brief to create awareness about this initiative and for information purposes. It is not an official position of the Malta Business Bureau.

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