Quantum Security Products

ANMD-MRS24-234 · Quantum & Advanced Computing

A Global Sustainability Due Diligence & Market Research Study

History 2020–2024 · Base Year 2025 · Forecast 2025–2032 · Outlooks 2035 / 2040 / 2050 · Currency US$

WHY THIS REPORT

Quantum security products defend data against both classical and quantum adversaries — spanning quantum key distribution (QKD), quantum random-number generation (QRNG) and PQC hardware. As the "harvest-now, decrypt-later" threat drives migration deadlines, telecom, finance and government buyers are deploying physically secure key exchange and entropy sources. This decision-grade study sizes the global market three ways — value, deployed products and protected endpoints — across segmentation, seven regions and four scenarios to 2032, with outlooks to 2050.

SUSTAINABILITY & SDG IMPACT — THE ANMD LENS

The sustainability case centres on trust and resilience. Quantum security underpins critical-infrastructure protection, digital sovereignty and data-integrity for the institutions society depends on. The analysis applies double materiality, maps outcomes to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, and Dual-use governance, equitable access and responsible-disclosure practices are treated as material risks — with greenwashing and SDG-washing screens applied throughout.

Mapped Sustainable Development Goals:

SDG 9 Industry & Infrastructure	**SDG 16** Peace & Strong Institutions	**SDG 8** Decent Work & Growth

Measurable sustainability outcomes assessed:

- Quantum-resistant protection of critical data
- Resilient communications and infrastructure
- Trust for the post-quantum transition
- Migration complexity and standards as material risks

Framework alignment: Double materiality mapped to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, with greenwashing and SDG-washing screens applied throughout.

WHAT'S INSIDE AT A GLANCE

53 Chapters	**9** Report Parts	**7** Regions Covered	**40+** Country Markets
2025–32 Forecast Horizon	**4** Forward Scenarios	**25+** Companies Profiled	**3** SDGs Mapped

REPORT COVERAGE

Geographic scope: North America, Europe, Asia Pacific, Latin America, Africa, Middle East and Rest of World — with named country intelligence. North America and Europe lead post-quantum and QKD products; Asia Pacific scales deployment; other regions on their own merits.

MARKET OVERVIEW

From cryptographic theory to deployed post-quantum and QKD security.

Quantum security is shifting from pilot links to networked deployment. Demand is driven by national-security mandates, critical-infrastructure protection and the looming obsolescence of classical public-key cryptography. The market is read three ways — value, deployed products and protected endpoints — and forecast under four scenarios (conservative, base, accelerated and disruption), each region reported separately.

- **Asia Pacific leads QKD deployment** — anchored by China, where QuantumCTek and CAS-linked networks operate the largest metropolitan and backbone links.
- **Europe builds secure infrastructure** — with the UK, France, Switzerland and Spain advancing Thales, ID Quantique, Arqit and LuxQuanta under EuroQCI.
- **North America scales QRNG & integration** — as the United States and Canada combine Quantum Xchange, QuSecure, Qrypt and evolutionQ with enterprise demand.
- **Product type and deployment segment the value** — across QKD, QRNG and PQC hardware and on-premise, network-integrated, satellite and chip-level form factors.

REGIONAL OUTLOOK

Across seven reporting regions, the report separates commercialisation and supply leaders from high-growth and emerging markets — each profiled in full rather than aggregated into Rest of World.

Region	Stage	Lead Markets & Drivers
Asia Pacific	Deployment leader	China, Japan, India — QuantumCTek, Toshiba, QNu Labs
Europe	Strong contender	UK, France, Switzerland, Spain — Thales, ID Quantique, Arqit, LuxQuanta
North America	Scaling	United States, Canada — Quantum Xchange, QuSecure, Qrypt, evolutionQ
Latin America	Emerging	Brazil, Chile — financial-sector security pilots
Africa	Frontier	South Africa, Egypt — government & telecom security
Middle East	Frontier	Saudi Arabia, UAE, Israel — sovereign & defence security

KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
• Harvest-now-decrypt-later threat urgency • National-security & critical-infrastructure mandates • Telecom & financial-network protection demand • QKD network & satellite roll-outs • Standards momentum (ETSI, ITU, NIST)	• QKD distance, cost & trusted-node limits • Competition from cheaper PQC-software routes • Integration complexity with legacy networks • Certification & interoperability gaps • Dual-use export controls

SEGMENTATION SNAPSHOT

By Product Type	QKD · QRNG · PQC hardware
By Deployment	On-premise · network-integrated · satellite · chip-level
By Application	Telecom / network · financial services · government / defence
By End User	Telecom · banking & finance · government / defence · data centres
By Business Model	Product sale · managed service · network-as-a-service
By Deployment Scale	Point-to-point · metro network · backbone / satellite

TABLE OF CONTENTS — PARTS & CHAPTERS

The full report is organised into nine parts across 53 chapters, listed below. Detailed sub-headings, country tables and directories are provided in the full report.

COMPETITIVE & INVESTMENT SNAPSHOT

The competitive field spans QKD pioneers, QRNG specialists and security primes.

Representative players profiled in the full report:

ID Quantique SA · Toshiba Corporation · Thales S.A. · QuintessenceLabs Pty Ltd · SandboxAQ, Inc. · and 20+ further profiled players across post-quantum, QKD and quantum-security innovators.

Investment intelligence: venture, infrastructure, development, climate and blended finance, green bonds and sustainability-linked loans — culminating in a bankability assessment and a clear, decision-ready investment verdict.

KEY QUESTIONS THIS REPORT ANSWERS

- ? How large is the global quantum security products market, and how fast will it grow to 2032?
- ? Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- ? How does quantum-resistant security change resilience value versus classical cryptography?
- ? Who leads, and where is the competitive and patent white space?
- ? Is the investment case bankable — and under what conditions?
- ? How does the category align with the SDGs, circular-economy and resource-security and disclosure regulation?

WHY ANMD — THE DIFFERENCE

Most market studies stop at units and revenue. This report is built as a sustainability due diligence instrument — fusing market sizing with ESG, SDG, climate, water and natural-capital intelligence and a decision-ready bankability verdict in a single architecture.

- **Triangulated sizing** — every market read three ways (value, deployed products and protected endpoints) so value-led and volume-led views reconcile rather than conflict.
- **Region-honest forecasting** — Latin America, Africa and the Middle East reported in full, never hidden inside Rest of World, every forecast resolved to the 2025 base year.
- **Integrated evidence base** — company, patent and project databases linked to the analysis, with published-filing patents and FTO treated as an indicator, not a legal conclusion.
- **No-fabrication discipline** — every estimate carries a data-confidence rating and disclosed sources; gaps are flagged for further diligence, never filled with invented numbers.
- **Anti-greenwashing rigour** — SDG-washing and greenwashing screens plus claim-substantiation checks built into the ESG and project analysis.
- **Decision-first structure** — 9 Parts and 53 Chapters culminating in stakeholder playbooks and a clear, decision-ready investment verdict.

WHO SHOULD BUY THIS REPORT

Investors and cyber / PE funds, governments and critical-infrastructure operators, financial institutions and enterprises, OEMs and integrators, regulators and lenders, and strategic corporate planners and decision-makers.

Access the Full Report

The complete report delivers all 53 chapters in full, with every sub-heading, country table, company and patent directory, forecast model and due diligence checklist.

Purchase at **www.anewmarketdynamics.com** · Standard & Premium licences · Single-Site (SSL) and Global-Site (GSL) options at checkout.

Want the Complete Detailed Table of Contents?

This prospectus lists the nine parts and 53 chapters. The complete detailed table of contents — every sub-heading, country table, exhibit, company and patent directory and annex — is available on request to registered users. To receive it, register with your official company email at **www.anewmarketdynamics.com**. The full detailed table of contents will be sent directly to your registered company email address.