

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
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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
<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • 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.

Part I — Report Foundation, Discovery and Strategic Intelligence

- › Chapter 1. Scope, Methodology and Report Architecture
- › Chapter 2. Industry Discovery Summary — Quantum Security Products
- › Chapter 3. Executive Intelligence and Decision Dashboard
- › Chapter 4. Strategic Findings, Materiality and Investment Verdict Preview

Part II — Market Intelligence, Sizing, Forecasting and Segmentation

- › Chapter 5. Industry Overview and Market Evolution
- › Chapter 6. Market Dynamics
- › Chapter 7. Global Market Size and Forecast, 2020–2032
- › Chapter 8. Market Segmentation Analysis
- › Chapter 9. End-User and Demand-Side Intelligence
- › Chapter 10. Pricing, Cost and Commercial Model Intelligence

Part III — Regional and Country Intelligence

- › Chapter 11. Global Regional Intelligence Framework
- › Chapter 12. North America Market Intelligence
- › Chapter 13. Europe Market Intelligence
- › Chapter 14. Asia Pacific Market Intelligence
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- › Chapter 16. Africa Market Intelligence
- › Chapter 17. Middle East Market Intelligence
- › Chapter 18. Rest of World Market Intelligence

Part IV — Technology, Innovation and Category-Specific Intelligence

- › Chapter 19. Technology Landscape and Architecture
- › Chapter 20. Emerging and Next-Generation Technology Intelligence
- › Chapter 21. Category-Specific Intelligence Module
- › Chapter 22. Research, Innovation and Funding Landscape

Part V — Company, Competition, Patent and Project Intelligence

- › Chapter 23. Competitive Landscape
- › Chapter 24. Company Profiles
- › Chapter 25. Mergers, Acquisitions, Partnerships and Ecosystem Intelligence
- › Chapter 26. Patent Landscape and Intellectual Property Intelligence
- › Chapter 27. Project, Deployment and Case-Study Intelligence

Part VI — Sustainability, ESG, SDG, Climate and Natural-Capital Intelligence

- › Chapter 28. Sustainability Intelligence Suite
- › Chapter 29. ESG Intelligence and Double Materiality
- › Chapter 30. ESG and Sustainability Framework Alignment
- › Chapter 31. SDG Intelligence
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- › Chapter 33. Water, Biodiversity and Natural-Capital Intelligence
- › Chapter 34. Circular Economy and Resource-Security Intelligence
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Part VII — Supply Chain, Policy, Legal, Economics and Finance

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- › Chapter 38. Policy, Regulation and Incentive Intelligence
- › Chapter 39. Legal, Contracting and Risk-Allocation Intelligence
- › Chapter 40. Unit Economics, CAPEX, OPEX and Return Analysis
- › Chapter 41. Investment, Sustainable Finance and Bankability Intelligence

Part VIII — Scenario, Future Intelligence and Final Due Diligence Verdict

- › Chapter 42. Scenario Analysis and Future Intelligence
- › Chapter 43. Sustainability Due Diligence Framework and Data-Room Index
- › Chapter 44. Risk Register, RAG Rating and Anti-Greenwashing Screen
- › Chapter 45. Bottom-Line Verdict and Strategic Recommendations
- › Chapter 46. Implementation Roadmap and Stakeholder Playbooks

Part IX — Annexes, Directories and Reference Material

- › Chapter 47. Methodology Annex
- › Chapter 48. Corporate Directory and Company Intelligence Annex
- › Chapter 49. Patent Directory and Patent Intelligence Annex
- › Chapter 50. Project Intelligence Annex
- › Chapter 51. Forecast Annex
- › Chapter 52. Sustainability KPI Annex
- › Chapter 53. Reference Annexes

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.