Zero Trust Architecture for Energy Networks

ANMD-MRS15-147 · Grid & Energy Cyber-Physical Security

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

Zero trust architecture for energy networks replaces implicit network trust with continuous verification, least-privilege access and micro-segmentation across IT and OT energy environments, turning flat, trusted control networks into continuously authenticated systems. This decision-grade study sizes the global market three ways — value, seats/licences and protected assets — across architecture component, deployment model and application, across seven regions and four scenarios to 2032, with outlooks to 2050.

SUSTAINABILITY & SDG IMPACT — THE ANMD LENS

Sustainability is this report's backbone, not an afterthought. Beyond function, zero trust architecture secures the energy networks delivering the clean-energy transition, while continuous verification prevents disruptive incidents, reduces outage emissions and losses and strengthens the resilience story.

Mapped Sustainable Development Goals:

SDG 7	SDG 9	SDG 13
Affordable & Clean Energy	Industry & Infrastructure	Climate Action

Measurable sustainability outcomes assessed:

- Continuously authenticated, least-privilege energy networks
- Reduced incident-driven outages, emissions and losses
- Resilient delivery of the clean-energy transition
- Identity integrity and segmentation coverage 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 is the policy leader (United States, Canada) on federal zero-trust and NERC CIP mandates; Europe is the standards leader (Germany, France, United Kingdom) on NIS2 and IEC 62443; Asia Pacific is the scale engine; other regions assessed on their own merits.

MARKET OVERVIEW

From implicit network trust to continuous verification across energy networks.

The zero trust architecture for energy networks market is moving from implicit trust to continuous verification. Demand is driven by critical-infrastructure threat escalation and IT/OT convergence converging with federal and regulatory mandates, supported by strong momentum across North America, Europe and Asia Pacific. The market is read three ways — value, seats/licences and protected assets — and forecast under four scenarios, each region reported separately.

- **North America is the policy leader** — United States and Canada, on federal zero-trust and NERC CIP mandates
- **Europe is the standards leader** — Germany, France and United Kingdom, on NIS2 and IEC 62443
- **Asia Pacific is the scale engine** — China, Japan and India, on grid and industrial build-out
- **Continuous verification is the differentiator** — least-privilege access, micro-segmentation and identity assurance

REGIONAL OUTLOOK

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

Region	Stage	Lead Markets & Drivers
North America	Policy leader	United States, Canada — federal zero-trust, NERC CIP mandates
Europe	Standards leader	Germany, France, United Kingdom — NIS2, IEC 62443
Asia Pacific	Scale engine	China, Japan, India — grid and industrial build-out
Middle East	High-growth	Saudi Arabia, UAE — critical-infrastructure investment
Latin America	Emerging	Brazil, Mexico — zero-trust adoption demand
Africa	Emerging	South Africa, Nigeria — infrastructure-security build-out

KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
• Critical-infrastructure threat escalation • IT/OT convergence and remote-access growth • Federal and regulatory mandates (zero-trust, NERC CIP, NIS2) • Least-privilege and breach-containment value • Identity, micro-segmentation and SASE technology gains	• Legacy OT and brownfield identity gaps • Latency and availability sensitivity in OT • Architectural complexity and migration burden • Skills shortage and operational maturity • Standards, validation and interoperability scrutiny

SEGMENTATION SNAPSHOT

By Component	Identity & access · micro-segmentation · policy engine · secure remote-access · continuous monitoring
By Deployment	On-premise · cloud-managed · hybrid · air-gapped
By Application	Generation · transmission · distribution · DER / renewables
By End User	Utilities · grid operators · IPPs · MSSPs · integrators
By Business Model	Subscription / SaaS · seat-based · managed-service · outcome-based
By Scale	Site · enterprise · multi-site critical-infrastructure

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 zero-trust platform leaders, specialist OT-identity vendors, and emerging energy-sector innovators. Deal activity — M&A;, technology acquisition and platform expansion — signals a market consolidating around scalable, energy-grade zero-trust architectures.

Representative players profiled in the full report:

Zscaler, Inc. · Palo Alto Networks, Inc. · Cisco Systems, Inc. · Fortinet, Inc. · Xage Security, Inc. · and 20+ further profiled players across zero-trust and OT-identity innovators.

Investment intelligence: venture, infrastructure, development, climate and blended finance, green bonds and sustainability-linked loans — culminating in a bankability assessment and a Go / No-Go / Conditional-Go investment verdict.

KEY QUESTIONS THIS REPORT ANSWERS

- ? How large is the global zero trust architecture for energy networks market, and how fast will it grow to 2032?
- ? Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- ? How does continuous verification change resilience value versus perimeter-based trust?
- ? 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 so value, volume and coverage 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 Go / No-Go / Conditional-Go investment verdict.

WHO SHOULD BUY THIS REPORT

Investors and infrastructure / PE funds, utilities and grid operators, IPPs and MSSPs, zero-trust and resilience leaders, regulators and standards bodies, and corporate strategy and security teams.

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.