

Infrastructure Monitoring Sensors

ANMD-MRS28-274 · Smart City & Infrastructure AI

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

Infrastructure monitoring sensors apply structural-health-monitoring (SHM), bridge and tunnel sensing, and pipeline and utility sensors to track the condition of ageing civil assets in real time. By detecting strain, corrosion, vibration and displacement before failure, they shift maintenance from reactive repair to predictive, risk-based asset management. This report is a comprehensive, decision-grade study of that market across sensor type, asset class, application, end user, business model and deployment scale, spanning history 2020–2024, a 2025 base year, a 2025–2032 forecast and long-term outlooks to 2035, 2040 and 2050.

SUSTAINABILITY & SDG IMPACT — THE ANMD LENS

The sustainability case is the report's backbone. Beyond safety, infrastructure monitoring delivers measurable failure avoidance, asset-life extension and resource-efficient maintenance, strengthening the resilient-infrastructure story. The analysis applies double materiality, maps outcomes to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, and links contributions to SDGs 11, 9 and 6. Sensor end-of-life, data governance, false-assurance risk and cybersecurity are treated as material risks — with greenwashing and SDG-washing screens applied throughout.

Mapped Sustainable Development Goals:

SDG 11 Sustainable Cities	SDG 9 Industry & Innovation	SDG 6 Clean Water & Sanitation
-------------------------------------	---------------------------------------	--

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

MARKET OVERVIEW

Infrastructure monitoring is moving from periodic inspection to continuous, sensor-driven assessment.

Demand is driven by ageing-asset risk, high-profile failures, and infrastructure-renewal funding. The market is read two ways — value and units (sensor nodes / monitored assets), with instrumented-asset penetration as a maturity lens — forecast under conservative, base, accelerated and disruption scenarios, every projection resolved to the 2025 base year and each region reported separately rather than folded into Rest of World.

- North America leads renewal-driven demand, anchored by U.S. infrastructure funding and bridge-safety priorities after notable failures.
- Europe scales on asset stewardship, with mature SHM practice across rail, road and water networks.
- Asia Pacific is the build-out engine, as China, India and Japan instrument new and existing megastructures.
- Sensor type and asset segment the value, across SHM, bridge/tunnel and pipeline sensors, each with distinct duty cycles and economics.

REGIONAL OUTLOOK

Across the seven reporting regions, the report separates deployment leaders from high-growth and emerging markets, profiling named country sub-markets, policy regimes and project pipelines in each. Latin America, Africa and the Middle East are assessed on their own merits — never aggregated into Rest of World — and every forecast resolves to the 2025 base year.

Region	Stage	Lead Country Markets & Drivers
North America	Renewal leader	United States, Canada — infrastructure funding, bridge safety
Europe	Stewardship-driven	Germany, UK, France — mature SHM across rail, road, water
Asia Pacific	Build-out engine	China, India, Japan — megastructure instrumentation
Latin America	Emerging	Brazil, Chile — bridge and pipeline monitoring
Africa	Frontier	South Africa — utility and transport-asset monitoring
Middle East	Frontier	UAE, Saudi Arabia — megaproject SHM, giga-project assets

KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
<ul style="list-style-type: none"> • Ageing-infrastructure risk & failures • Infrastructure-renewal funding • Predictive-maintenance cost savings • Asset-life-extension & safety mandates • MEMS, fibre-optic & IoT sensor advances 	<ul style="list-style-type: none"> • Sensor durability & long-term reliability • Installation cost on existing assets • Data-integration & analytics maturity • Power and connectivity in remote sites • Standards and inspection-replacement acceptance

SEGMENTATION SNAPSHOT

By Sensor Type	Strain / SHM · vibration · corrosion · displacement · fibre-optic
By Asset Class	Bridges · tunnels · pipelines · buildings · dams
By Application	Bridges · tunnels · pipelines · utility networks
By End User	Public works · utilities · transport authorities · engineering firms
By Business Model	CAPEX purchase · monitoring-service · managed-service · outcome-based
By Deployment Scale	Single-asset · network · citywide programme

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 — Infrastructure Monitoring Sensors
- › 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
- › Chapter 15. Latin America Market Intelligence
- › 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
- › Chapter 32. Carbon, Net-Zero and Climate-Mitigation Intelligence
- › Chapter 33. Water, Biodiversity and Natural-Capital Intelligence
- › Chapter 34. Circular Economy and Resource-Security Intelligence
- › Chapter 35. Social Impact, Human Capital and Community Intelligence
- › Chapter 36. Climate Risk, Adaptation and Resilience Intelligence

PART VII — SUPPLY CHAIN, POLICY, LEGAL, ECONOMICS AND FINANCE

- › Chapter 37. Value Chain, Supply Chain and Geopolitical Intelligence
- › 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 sensor and SHM vendors, platform specialists and integrated system providers. Profiled players include Siemens AG, Honeywell International Inc., Hexagon AB, Campbell Scientific, Inc. and GEOKON, Incorporated. Other profiled names include COWI A/S, Soletanche Freyssinet SAS, Nova Metrix LLC, Resensys LLC and Smart Structures, Inc. Deal activity — SHM platform acquisitions, sensor-analytics partnerships and network-monitoring contracts — signals a market organising around predictive, digital-twin-linked solutions. Investment intelligence spans venture, growth, infrastructure, climate and blended finance, green bonds and sustainability-linked loans, culminating in a bankability assessment and investment verdict.

KEY QUESTIONS THIS REPORT ANSWERS

- ? How large is the global infrastructure monitoring sensors market, and how fast will it grow to 2032?
- ? Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- ? How do technology and adoption shifts change value versus legacy approaches?
- ? 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 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 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 installed-base 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, conditional investment verdict.

WHO SHOULD BUY THIS REPORT

Investors and infrastructure / PE funds, sensor and SHM vendors, asset owners and operators, transport and water authorities, engineering and EPC firms, lenders and policymakers, and corporate strategy and ESG teams — alongside 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.

To license this report or commission related custom research, contact Anew Market Dynamics at research@anewmarketdynamics.com.