

ANMD-MRS32-315 · Sustainable Aviation & Maritime

Fuel Efficiency Retrofit Kits

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

Fuel efficiency retrofit kits cut existing-fleet fuel and emissions without new ships. Hull and air-lubrication systems, propeller and rudder upgrades and engine-efficiency kits let shipowners, operators and shipyards decarbonise the in-service fleet at a fraction of newbuild cost. This decision-grade study sizes the global market three ways — value, kits installed and vessels retrofitted — across retrofit type, sub-type, component 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 retrofit performance, fuel efficiency kits deliver measurable existing-fleet fuel-and-emissions reduction, compliance and capital efficiency, while retrofit-material circularity shapes the resource-security story.

Mapped Sustainable Development Goals:

SDG 7 Affordable Clean Energy	SDG 9 Industry & Infrastructure	SDG 12 Responsible Consumption	SDG 13 Climate Action	SDG 14 Life Below Water
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Measurable sustainability outcomes assessed:

- Existing-fleet fuel-and-emissions reduction and fast payback
- IMO CII / EEXI compliance and capital efficiency
- Savings-verification integrity and lifecycle emissions as material risks
- Retrofit-material circularity and drydock impact

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	5 SDGs Mapped

REPORT COVERAGE

Geographic scope: North America, Europe, Asia Pacific, Latin America, Africa, Middle East and Rest of World — with named country intelligence. Europe leads technology supply; Asia Pacific is the retrofit-yard hub; North America is selective on domestic and offshore fleets.

MARKET OVERVIEW

From newbuild ambition to in-service action — where fast payback decarbonises today's fleet.

The fuel efficiency retrofit kit market is scaling as owners decarbonise existing tonnage ahead of newbuild cycles. Demand is driven by IMO CII / EEXI compliance, bunker-fuel cost and charterer pressure, supported by air-lubrication and energy-saving-device advances. The market is read three ways — value, kits installed and vessels retrofitted — and forecast under four scenarios, each region reported separately.

- Europe leads technology supply, anchored by the UK, Germany and the Nordics, where energy-saving-device makers cluster
- Asia Pacific is the retrofit-yard hub, as China, Singapore and South Korea install kits at scale
- North America is selective, retrofitting domestic and offshore fleets
- Retrofit type and sub-type segment the value — across hull / air-lubrication, propeller / rudder upgrades and engine-efficiency kits

REGIONAL OUTLOOK

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

Region	Stage	Lead Markets & Drivers
Europe	Technology leader	UK, Germany, Nordics, Netherlands — ESD makers, IMO / EU rules, R&D;
Asia Pacific	Retrofit-yard hub	China, Singapore, South Korea, Japan — yards, installation scale
North America	Selective	United States, Canada — domestic & offshore fleet retrofits
Middle East	High-growth	UAE, Saudi Arabia — fleet investment, bunkering, sovereign capital
Latin America	Emerging	Brazil, Panama — fleet decarbonisation, canal logistics
Africa	Frontier	South Africa, Egypt, Morocco — shipping routes, retrofit demand

KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
<ul style="list-style-type: none"> • IMO CII / EEXI compliance pressure • Bunker-fuel cost & savings payback • Existing-fleet decarbonisation need • Charterer & cargo-owner demand • Air-lubrication & energy-saving-device technology gains 	<ul style="list-style-type: none"> • Drydock & downtime cost • Savings-verification & guarantee gaps • Retrofit vs newbuild trade-offs • Vessel-specific engineering complexity • Financing & split-incentive barriers

SEGMENTATION SNAPSHOT

By Retrofit Type	Hull / air-lubrication · propeller & rudder upgrades · engine-efficiency kits
By Sub-Type	Air-lubrication · ducts / fins · waste-heat recovery
By Application	Container · bulk · tanker · other vessels
By End User	Shipowners · operators · shipyards · charterers
By Component	Air-lubrication units · propellers · rudders · ESDs · heat-recovery units
By Business Model	Kit sale · savings-share · service contract

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 — Fuel Efficiency Retrofit Kits
- › 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 established marine-equipment majors, specialist energy-saving-device providers and integrators. Deal activity — retrofit partnerships, savings-share programmes and fleet-wide installations — signals a market consolidating around verifiable, bankable kits.

Representative players profiled in the full report:

Wärtsilä Oyj Abp · Silverstream Technologies Ltd · Becker Marine Systems GmbH & Co. KG · ABB Ltd · Kongsberg Gruppen ASA · and 20+ further profiled players across air-lubrication, ESDs and heat-recovery.

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

KEY QUESTIONS THIS REPORT ANSWERS

- ? How large is the global fuel efficiency retrofit kit market, and how fast will it grow to 2032?
- ? Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- ? How does fast payback change returns versus newbuild on existing tonnage?
- ? Who leads, and where is the competitive and patent white space?
- ? Is the investment case bankable — and under what conditions?
- ? How does the technology align with the SDGs and emerging IMO 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 adoption 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, evidence-based investment recommendation.

WHO SHOULD BUY THIS REPORT

Investors and infrastructure / PE funds, shipowners and operators, shipyards and charterers, classification societies, 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.