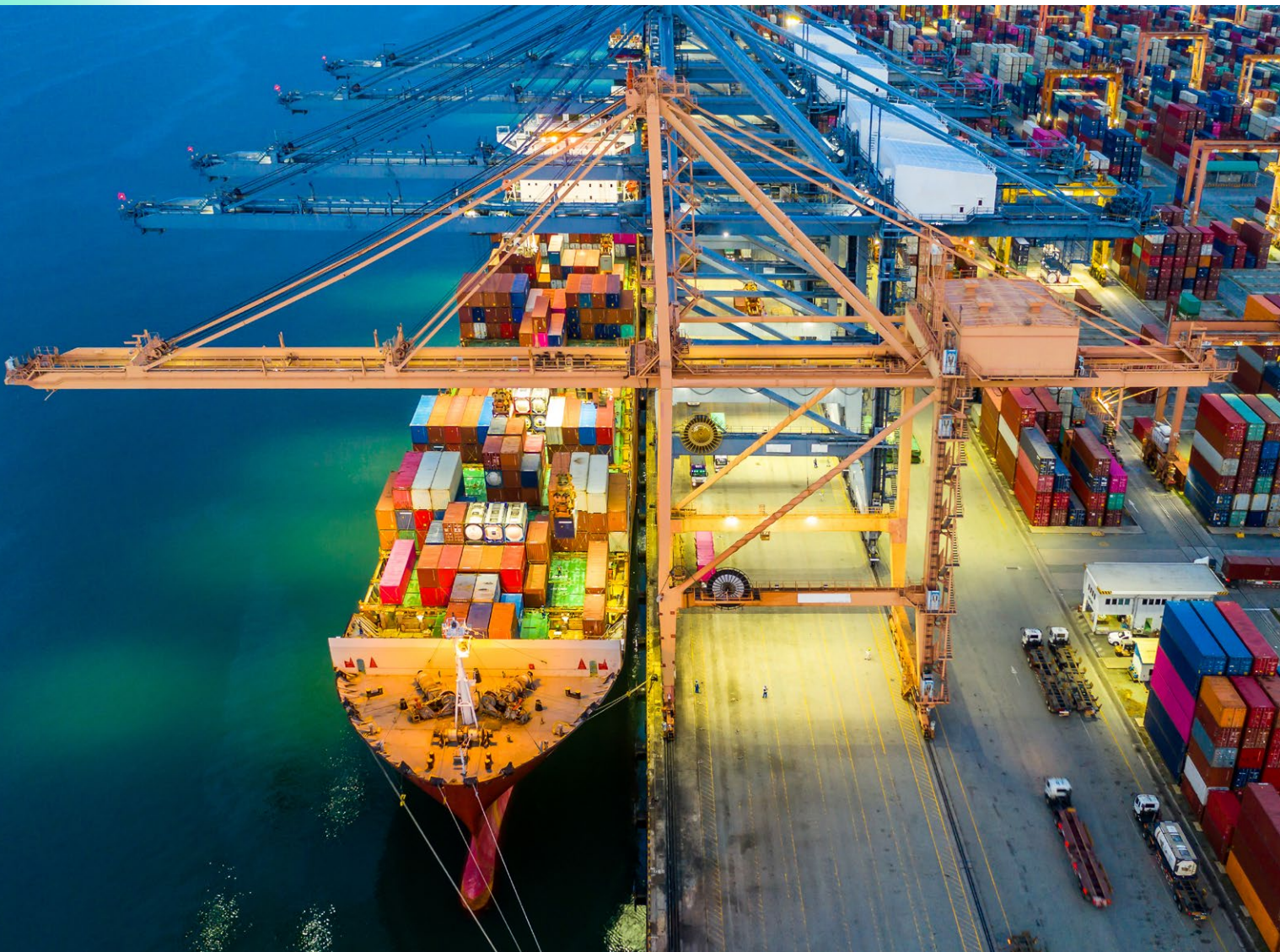




Navigating the Future of Ports

Strategic Advisory for a
Sustainable Maritime Industry





Ports Advisory

The maritime industry is undergoing a profound transformation to meet global decarbonisation and net-zero goals. Ports are at the forefront of this transition — tasked with implementing strategies to reduce emissions, enhance sustainability, and future-proof operations. This includes:



**Adopting
cleaner energy
sources**



**Improving
operational
efficiency**



**Investing in green
technologies and
infrastructure**

A Strategy for Change

Lloyd's Register (LR) is at the forefront of transforming port operations worldwide. Our comprehensive advisory services range from enhancing operational efficiency to implementing sustainable practices. We combine a rich legacy of technical innovation with forward-thinking strategy to help ports thrive in a rapidly evolving global landscape.

As ports confront the demands of the energy transition, our Ports Advisory team is a trusted partner, providing reliable expertise and support to help clients navigate the complex challenges that lie ahead – offering the strategic guidance and technical support necessary to embrace a sustainable future.

Collaborating for Performance

Collaborating with our global team of ports experts ensures a strategic approach to achieving optimal port performance. We prioritise efficiency, reliability, and value, working closely with you to identify solutions that:

Navigate complex regulatory policies

Manage operating costs

Promote environmentally sustainable operations

Implement precise digital solutions

Help the industry meet its toughest challenges



Who We Serve

We provide tailored solutions to a wide range of stakeholders across the global port and maritime ecosystem, including:

Port Authorities

Private Ports

Government/Public Ports

Port Operators

Container Terminals

Dry Bulk Terminals

Liquid Bulk Terminals

Multi-purpose & General Cargo Terminals

Passenger Terminals

Shipyards

Our Core Pillars of Service

Risk Management & Port Resilience

Ports and terminals face ongoing challenges in operating efficiently and securely amid constant change. Proactive risk management is essential for seamless integration with the supply and logistics value chain and protection against emerging threats like climate change. A robust, comprehensive approach is needed to assess and enhance the effectiveness of mitigation strategies, ensuring long-term resilience and sustainability.

Our risk assessments cover your entire operation—identifying threats to efficiency, security, compliance, and resilience—so your port remains a vital link in the global supply chain.

- Enhanced Risk Management Framework
- Safe and Future-Ready Fuel Bunkering Operations
- Operational Resilience and Navigation Safety
- Safe Handling of Hazardous Cargo and Materials
- Resilience in Community Impact and Critical Infrastructure
- Environmental Sustainability and Regulatory Compliance
- Port Security Assessment



Ports Performance & Efficiency

To stay competitive, ports must optimise performance through faster turnaround, efficient berth use, and smart resource allocation. Automation is key to reducing costs while meeting environmental, social, and governance (ESG) goals, but balancing efficiency, sustainability, and compliance requires alignment across sea and shore operations.

Our experts deliver tailored solutions that enhance operational value, help ensure regulatory readiness, and support long-term, digitally enabled growth.

- Operational performance and governance optimisation
- Master plan development & logistics analysis
- Green Corridor Operational Planning
- Port Rules, Policy, and QHSE Assessment
- Workforce Development and Safety Training
- Maritime traffic optimisation and integration
- Capacity assessments, congestion management, and expansion planning
- Digital maturity assessments and automation strategies



Energy Transition & Decarbonisation

With increasing regulatory pressures and societal expectations surrounding environmental responsibility, our services help clients understand the risks of inaction and develop strategies to thrive in a low-carbon future.

These include support for identifying alternative fuels, optimising fleet performance, regulatory guidance, and implementation strategies to facilitate the shift towards greener energy solutions.

Safe and Future-Ready Fuel Bunkering Operations Assessment

Alternative fuels feasibility, safety, and marine operations studies

Scalable energy transition and decarbonisation strategies

Green port infrastructure consultancy (e.g. carbon capture and storage (CCS), onshore-power supply (OPS), power-to-X (P2X), nuclear)

Port planning for clean energy facilities (e.g. wind, green bunkering)



Sustainability Advisory

Our Sustainability Advisory service helps clients develop and implement actionable ESG strategies that balance impact, compliance, and value creation. We offer practical roadmaps for environmental, social, and governance integration that safeguard long-term performance without compromising financial sustainability.

From ESG reporting and due diligence to lifecycle assessments and green ship recycling, we provide the tools and insights needed to meet stakeholder expectations, unlock funding opportunities, and manage ESG-related risks with confidence.

ESG Strategy, Reporting & Assurance

Sustainable Procurement & Supply Chain

Lifecycle Analysis and Scope 1,2,3

Green Ship Recycling

Carbon in setting, Book & Claim, and GHG emissions trading

Underwater Radiated Noise Analysis



Ports Investments

- Port investments are pivotal to advancing infrastructure, with targeted initiatives aimed at significantly enhancing capacity and operational efficiency in the near to midterm and beyond.
- Our experts provide financial structuring, project finance, and advisory services to support sustainable growth and long-term value in port operations and infrastructure.
- Financial structuring, procurement of project finance, investment / divestment
 - Merger & Acquisition assistance, including post integration
 - Design and audit support for Cost-Benefit Analyses and Multi-Criteria Analyses
 - Guidance through Public-Private Partnerships in port development, regulatory framework, funding strategies and contract negotiations
 - Pre-transaction due diligence (technical, financial, operational, and commercial)
 - Due diligence for CAPEX in energy transition and smart infrastructure
 - Advisory on green financing and sustainability-linked bonds
 - Advise on port transactions, including competitive tenders and concession agreements



Asset Management for Ports

- Our industry-leading expertise in Class and Statutory compliance helps port-owned fleets stay fit-for-purpose and future-ready. With deep lifecycle knowledge of vessels, we support strategic decisions that enhance compliance, improve performance, and maximise returns on fleet investments.
- With 260 years of innovation – we have the solutions to help you comply.
- Marine and landside asset integrity and performance studies
 - Digital services for vessel compliance and operational efficiency
 - Vessel lifecycle advisory for port-owned fleets
 - Regulatory assurance as a Recognised Organisation for global Flag Administrations
 - Classification and Statutory compliance



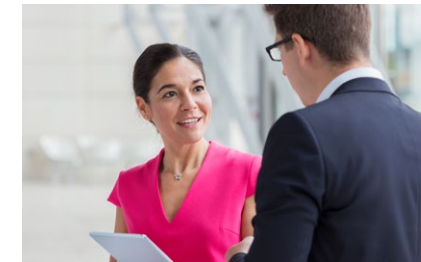
Port State Control

Port State Control (PSC) inspections are critical for ensuring ships meet international standards for safety, environmental protection, and crew welfare.

As part of our comprehensive support, we assist shipowners and operators—especially port-owned fleets—by deploying experienced surveyors to help manage PSC interventions, rectify deficiencies, and secure timely vessel release. We also offer tools like our [PSC pocket checklist app](#) to support inspection readiness, along with advisory services on compliance, risk mitigation, and operational resilience. Our goal is to reduce disruption, support the Master and crew, and ensure smooth, compliant port departures.



Market Challenges and How LR Can Help



Evolving Regulatory Landscape

Ports must navigate a complex web of international, regional, and local regulations—ranging from emissions standards to safety protocols. We provide regulatory assurance and compliance support, acting as a Recognised Organisation for Global Flag Administrations. Our experts help ports stay ahead of evolving standards with proactive guidance and certification services.



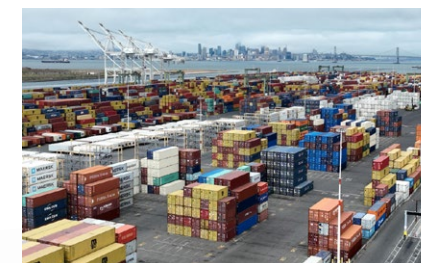
Rising Operational Costs

Energy prices, labour shortages, and infrastructure maintenance are driving up costs, threatening profitability. Our performance and efficiency services identify cost-saving opportunities through digital transformation, automation strategies, and optimised logistics planning.



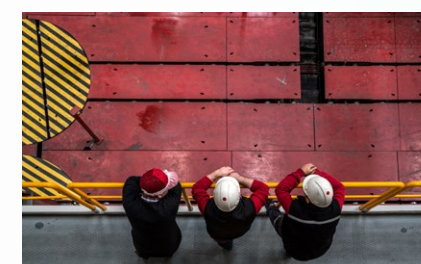
Sustainability and Decarbonisation Pressures

Stakeholders demand greener operations, but transitioning to low-carbon infrastructure is complex and capital-intensive. We deliver scalable decarbonisation strategies, feasibility studies for alternative fuels, ESG strategy, reporting, and performance, and green port infrastructure consultancy to support sustainable growth.



Supply Chain Disruptions

Geopolitical tensions, climate events, and pandemics have exposed vulnerabilities in global supply chains. Our risk management frameworks and resilience planning services help ports anticipate disruptions, safeguard operations, and maintain continuity.



Talent and Skills Gaps

The maritime sector faces a shortage of skilled professionals, particularly in digital and sustainability roles. We support workforce development through training programs, safety culture initiatives, and strategic planning for future-ready talent.

Project Experience

Collaborating with our global team of ports experts ensures a strategic approach to achieving optimal port performance. We prioritise efficiency, reliability, and value.

By working closely with you, we identify solutions that help navigate regulatory policies, manage operating costs, promote sustainable operations, and implement precise digital technologies.

Saudi Arabia Port Standardisation

CHALLENGE

Saudi Ports Authority – Mawani – needed to standardise operational and maritime procedures at Saudi ports. The challenge was to separate regulatory and operational roles within the ports sector while establishing enhanced procedures that promote operational excellence.

SOLUTION

LR was selected as the partner to provide comprehensive standardisation services, in alignment with the National Transport and Logistics Strategy. These services include development of quality and environmental procedures manuals, creation of good practice codes, technical manual development, international certifications acquisition and comprehensive training programmes.

APPROACH TAKEN

The collaboration follows a standards-led strategy focused on process improvement and regulatory alignment. Manuals are being developed to meet operational requirements and supported by structured training aligned with international benchmarks. The initiative also incorporates digital solutions to strengthen sustainability and efficiency.



PROJECT EXPERIENCE

LR and Saudi Red Sea Authority (SRSA) collaborate to enhance coastal tourism maritime compliance

CHALLENGE

SRSA needed a comprehensive framework for inspection, compliance and audit across a wide range of marine and maritime tourism activities along Saudi Arabia's Red Sea coastline, including Jeddah, Yanbu, Allith, Al Wajh, Jazan and Tabuk. This included identifying diverse stakeholders, aligning with international standards such as IMO Instruments, Blue Flag, Golden Anchor, ISO 13687 and 16304, and addressing infrastructure, regulatory compliance, environmental risks and social responsibility. The goal was to enhance coastal tourism readiness while ensuring safe and sustainable coastal operations across several high-profile locations.

APPROACH TAKEN

LR Advisory has deployed a dedicated team of maritime experts to collaborate with SRSA in association with Takamol Holdings, using a structured methodology to ensure alignment with ISO, IMO and civil regulations. The approach combines site-specific technical reviews, periodic audits and stakeholder consultations, culminating in phased visits and feedback-driven documentation for each location.

SOLUTION

LR Advisory is working with SRSA over a two-year engagement to design and implement Standard Operating Procedures (SOPs), conduct technical and monthly infrastructure reviews, and carry out compliance visits to marinas, cruise terminals, beaches and other tourism assets in association with Takamol Holdings. This includes establishing international benchmarking, training SRSA staff, and developing audit and reporting systems. The project covers a broad set of operational focus areas, including emergency response, safety measures, risk management, environmental planning, sustainability, waste and water quality management, international security and community involvement.



PROJECT

ON-SHORE POWER SUPPLY (OPS) INFRASTRUCTURE ASSESSMENT

LR was commissioned for a capability assessment to ensure the new construction of vessels will be fully compatible with on-shore power infrastructure at port. This project resolves the technical uncertainties relating to OPS compatibility, a challenge that had previously hindered shipowners and shipyards from specifying and installing the correct equipment. By successfully clarifying these requirements, LR has solved a key issue for vessels visiting port oil terminals to ensure they comply with emission control requirements.

PROJECT

PORTS MARKET ADVISORY STUDY

LR was engaged to conduct a comprehensive market advisory study to assess the demand and supply of various import/exports and coastal commodities. The project involved identifying key countries and regions for import/export and understanding preferred ports for these activities. The study included an analysis of competing ports, examining their development, cargo profiles and cargo handling facilities. Traffic forecasts were created considering competitive influences and the impact of critical issues at ports. The project also involved investigating existing cargo and vessel-based tariffs as well as assessing the equipment and facilities provided at select terminals.

PROJECT

GLOBAL - PORTS MARITIME MARKET & LOGISTICS ANALYSIS

As part of an engagement to support the development of an investment strategy, LR undertook a detailed examination of the market for shipping and marine logistics, port terminal operations, and maritime support services (including towage & pilotage). The exercise incorporated a detailed analysis of containerised trade flows and patterns across the full trade spectrum (inbound, outbound and transshipment). Additional consideration was given to the scale and distribution of port facilities in the region and their future development potential.

PROJECT

PORTS MASTER PLAN TRAFFIC ASSESSMENT

LR delivered a comprehensive market and traffic assessment for updating a ports master plan. This project involved analysing current and future market trends, traffic flow, and operational requirements to provide critical insights for the strategic revision of the port's master plan ensuring it aligns with future growth and development needs.

PROJECT

DUE DILIGENCE STUDY FOR SEAPORT, DRY PORT, AND ECONOMIC ZONE FACILITY

Working in collaboration with industry partners, LR brought together specialised expertise to conduct a comprehensive due diligence study for a regional port. Our integrated approach ensured a rigorous assessment of port infrastructure, market viability, and technical feasibility, enabling data-driven decision-making for future growth.

Why LR?

Heritage of Maritime Excellence

Multidisciplinary Expertise

Tailored, Future-Ready Solutions

Global Reach, Local Insight

Our Commitment

Ports Advisory is committed to delivering tailored, high-impact advisory services that drive operational excellence and sustainable growth for our clients. Our expertise and innovative approach make us a trusted partner in navigating the complexities of the port, shipyard, naval, and broader maritime sectors.

With a commitment to technical excellence and strategic foresight, we are prepared to support ports in making informed decisions that drive operational efficiency and long-term sustainability.





Let's Shape the Future of Ports Together

Contact us: lr.org/en/contact-us/

Visit our website: lr.org/portsadvisory

