



# Alternative Fuels Services



## REPORTS

In-depth quarterly market reports and monthly market briefs



## VALUATIONS

Current and forecast asset values, including earnings and operating costs



## MODELS

Interactive econometric models for scenario and sensitivity analysis



## BENCHMARKING

AI-augmented AIS data tools for operation and emissions benchmarking



## CONSULTANCY

Bespoke consultancy services across all maritime sectors



# Why MSI for Shipping, Ports, Logistics, and Alternative Fuels



MSI is a dedicated boutique, focussing solely on maritime consultancy and research

<b>Approach</b>	MSI specialises in model-based forecasting of shipping, offshore and allied industries and offers independent structured quantitative analysis to support business decisions.
<b>Expertise</b>	MSI's team is comprised of professionals with extensive academic credentials, deep industry knowledge and many years experience of delivering successful client projects.
<b>Coverage</b>	MSI's depth and quality of market coverage is unparalleled, providing reports, models, valuations and consultancy across all commercial shipping and offshore sectors.
<b>Independence</b>	MSI provides unbiased, independent market forecasting and business advisory services.
<b>Network</b>	MSI can draw upon a number of corporate partners and our extensive network of industry contacts to offer a broad range of consulting and analytical services.

## Project experience

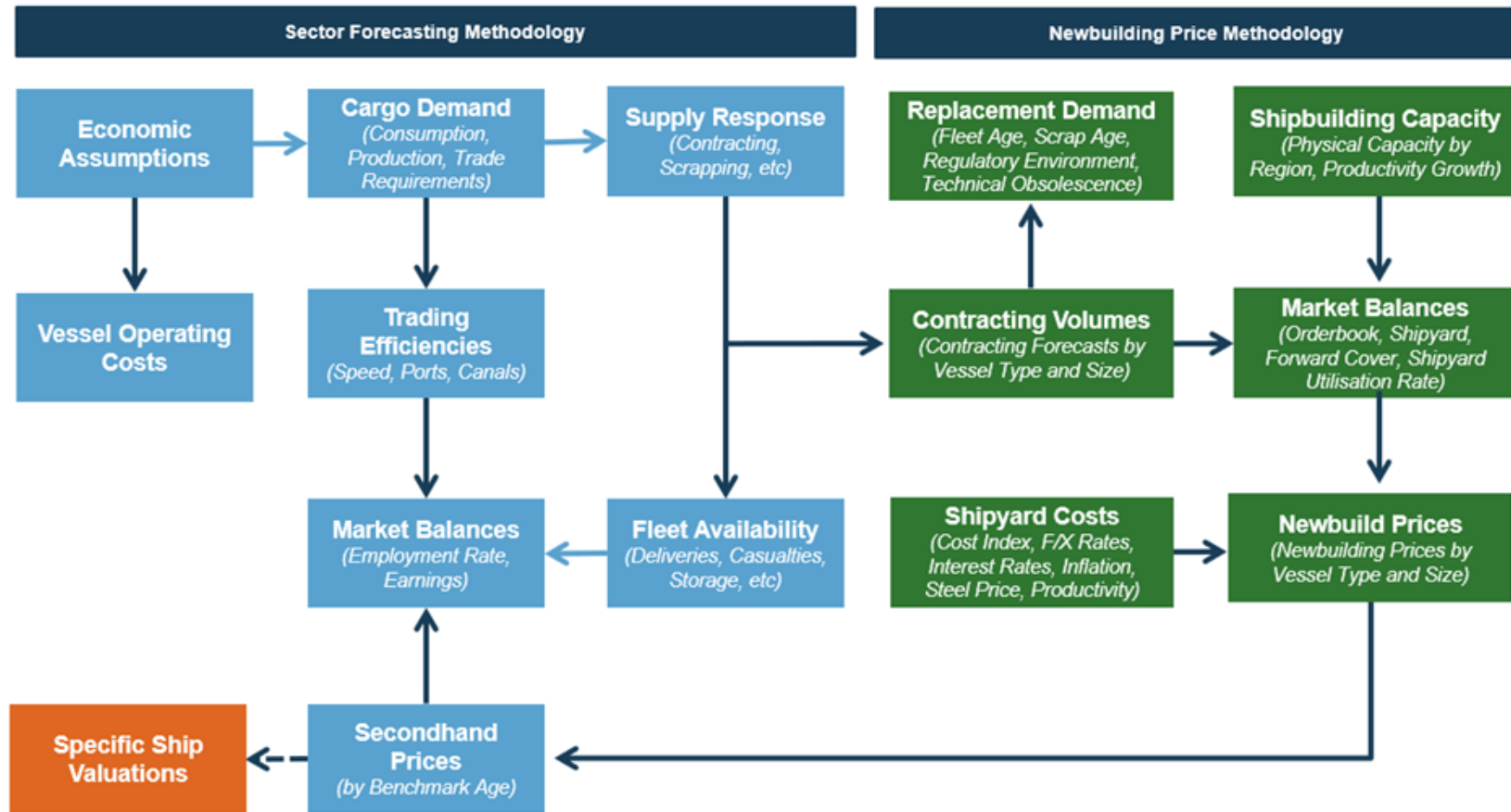
- MSI has over 40 years experience dedicated to maritime consultancy, focussed on vessels, trade, ports and terminals
- Track record in consultancy for major energy and mining companies, delivering strategic market insight
- Recognised as a leading specialist supply of consultancy services, with deep and exclusive industry expertise
- Strong industry links with vessel operators, shipbrokers, shippers, ports and project cargo specialists



# Demand Dynamics: MSI's Model-Based Approach



MSI's approach and forecasting methodology is based on sector specific supply demand fundamentals. By comparing the required tonnage to service specific cargo flows on bilateral trades (taking into consideration consumption and production dynamics along with trading efficiencies) against the physical fleet enables an employment rate to be derived. This gives a robust understanding of how macro trends, regulation, shipbuilding activity, and vessel operations interact to drive the future cost and uptake of alternative fuels in shipping.

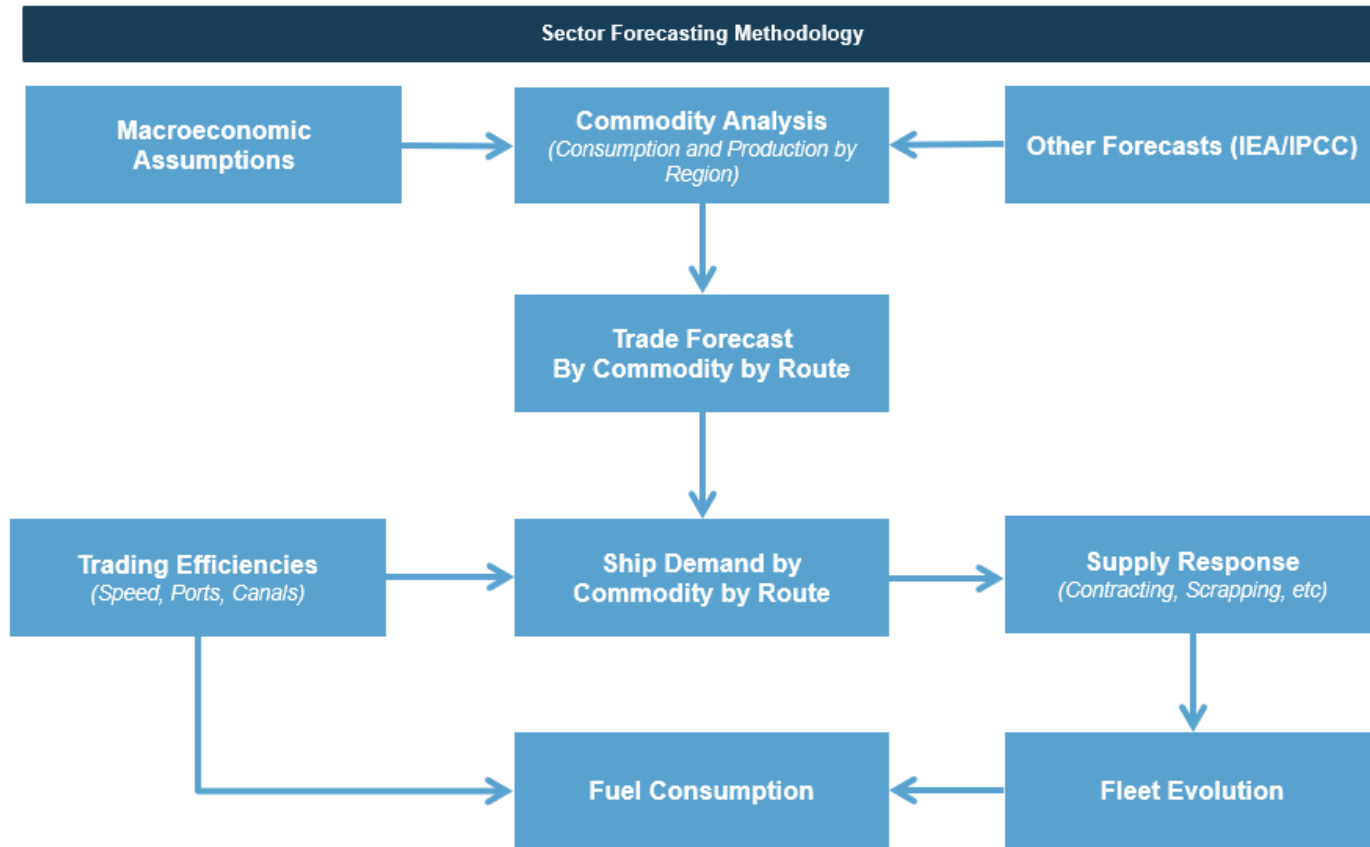




# Applying MSI's Model to Forecast Fuel Consumption



MSI applies its sector forecasting framework to quantify fuel demand. By linking macroeconomic drivers and commodity trade flows to fleet evolution and trading efficiencies, we produce robust forecasts of bunker consumption by fuel type and route. This underpins our analysis of alternative fuels, FuelEU, and the IMO Net-Zero Framework analysis.





# Interactive Forecasting Models

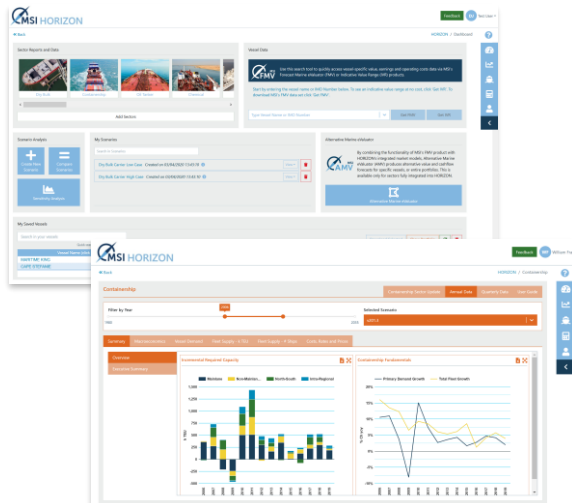


*“Amid the noise and volatility of global shipping markets, MSI HORIZON provides a welcome shot of quantitative transparency. The system’s analytical tools empower the user, enabling them to model alternative scenarios for market fundamentals and visualise the impact these changes will have on vessels’ earnings and values.”*

**Dr Adam Kent, Managing Director**

Launched in 2019, MSI’s proprietary online intelligence platform, **MSI HORIZON** provides clients with on-demand access to our range of market intelligence services on the shipping, offshore and allied industries. Integrated into this system is Forecast Marine eValuator (FMV), MSI’s online asset valuation product.

Designed for ease of use, MSI HORIZON combines a user-friendly interface with the latest data and technology to give users unparalleled insights into the hydrogen and related products shipping market.



## AMEND INPUTS

Easy-to-modify assumptions across a range of inputs.

Timeseries	2021	2022
Canada GDP (% Ch)	5.51	3.51
US GDP (% Ch)	6.32	3.64
Latin America GDP (% Ch)	4.34	4.31
Western Europe GDP (% Ch)	4.53	4.32
Eastern Europe GDP (% Ch)	4.29	4.43
FSU GDP (% Ch)	3.31	4.41
Africa GDP (% Ch)	3.53	4.69
Middle East GDP (% Ch)	3.46	3.94
South Asia GDP (% Ch)	7.92	6.77
China GDP (% Ch)	8.54	5.53
Japan GDP (% Ch)	2.35	2.93
South Korea GDP (% Ch)	4.12	3.43

## VISUALISE

Instant visual comparison of MSI’s base case vs. the client’s own scenario.



## EASY-TO-EXPORT

Detailed, easy-to-export time-series data from 1980 to 2035.

LPG Carrier Fleet Dynamics		History	
Timeseries	Unit	2016	2017
Contracting	MmCuM	0.01	0.08
6,500-22,000 CuM	MmCuM	0	0
22,000-40,000 CuM	MmCuM	0	0
40,000+ CuM	MmCuM	0	0
Total Contracting	MmCuM	0.01	1.13
% Change	% Ch yoy	56.87	521.93

<https://www.msilt.com/#horizon>



# Analysing Fuel Price Trends in the Context of FuelEU and IMO NZF



MSI closely monitors global regulations, including FuelEU and the IMO Net-Zero Framework, to quantify their impact on effective fuel prices, bunker demand, and emissions. By linking regulation to our fleet and fuel consumption forecasts, MSI can evaluate the real-world implications of FuelEU and the IMO Net-Zero Framework on shipping markets.

## How MSI analyses this

1

- Forecasting bunker price trajectories for the full range of fossil and clean fuels. Assessment of the potential penalties/rewards under the IMO's Net Zero Fuel EU regulations.

2

- Use MSI Seascope's data to track voyage patterns, vessel speeds, port stays to assess real world vessel efficiency. MSI processes raw AIS data to fill >2 Mn "dark periods" per month. This enables us to generate robust emissions estimates from operational profiles.

3

- Combine machine learning + economic modelling to link policy requirements with cost implications for shipowners and charterers.



# Alternative Fuels Reports



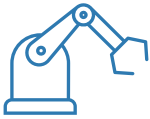
MSI's market reports are at the heart of our services, bringing together an exceptional range and depth of market knowledge.

## How We Build the Alternative Fuels Outlook



### Policy & Regulation Tracking

- Continuous monitoring of global policy, from CBAM, FuelEU, RED III to national subsidy schemes and comparison of different country approaches to assess impact and likelihood of project development.



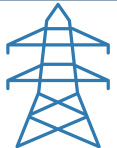
### Project & Technology Monitoring

- Tracking project pipelines, including financing, delays, and cancellations, to identify which supply will realistically come online.



### Trade & Agreements

- Monitoring import/export agreements and bilateral deals to understand how global hydrogen, ammonia, and methanol trade flows will evolve.



### End-Use Demand Analysis

- Evaluating hydrogen's role across industries (shipping, power, industry, aviation) to test whether demand can scale sufficiently across sectors.



### MSI Modelling Expertise

- Leveraging MSI's Final Energy Consumption by Fuel Type to 2050 modelling to place hydrogen within the broader energy mix, assessing regional needs.



# Alternative Fuels Reports



MSI's market reports are at the heart of our services, bringing together an exceptional range and depth of market knowledge.

## Coverage of Data and Analysis

- Macroeconomic drivers (GDP, IIP, Forex..)
- Consumption, production and trade dynamics for clean hydrogen and its derivatives
- Clean ammonia landscape ( projects, offtakes and contracts, trade flow and demand drivers)
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- Vessel supply – capacity changes due to newbuilding, scrapping, orderbook slippage
- Trading efficiencies – speeds, port days, ballasting, tonne-miles
- Market balances – demand by cargo, supply and employment/utilisation for the sector)
- Market Risks – operating cost, freight rates and price data



## HORIZON BIENNIAL Comprehensive, in-depth analysis

- Executive Summary
- Hydrogen in a low-carbon economy
- Hydrogen demand dynamics
- Clean ammonia landscape
- Clean methanol landscape
- Fleet supply by commodity type
- Market balances, rates and prices
- Scenario analysis
- Summary tables

Frequency of Publication: Bi-Annual  
Length: 60 pages  
Forecast Horizon: 5 years

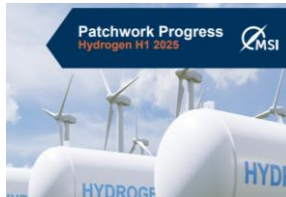


Chart 1D: Hydrogen Projects by Stage of Development

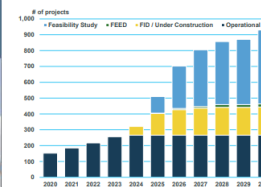


Chart 1G: Hydrogen Consumption by Region

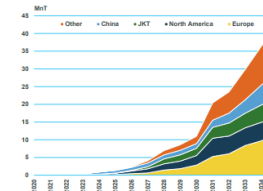


Table 2B: Green Corridors

Corridor	Description	Date
LA-Northern and LA-Texas	The Port of Los Angeles has entered into MOUs with the Port of Tampa and the Port of Manzanillo - to collaborate on sustainability and environmental issues from January.	March 2023
Dominican Republic-Cuba	The US Maritime Administration (MARAD) has awarded a grant to the Green Corridor West Coast (GCWC) consortium's feasibility study to establish a zero-carbon trade route, a partnership that also includes Florida, other ports, Cuba, and Puerto Rico.	October 2024
Vancouver (Green Hub) - The Shipping Corridor Project	Officially launched a green shipping corridor project to connect the two ports to decarbonize shipping routes with low-carbon fuel cells.	December 2024
Halle-Hamburg	The Havel Port Authority has been awarded funding of €200 million (€100 million from Transport Canada) to accelerate the development of the Halle-Hamburg green shipping corridor and prepare the port for the decarbonized fuel and energy sector.	February 2025
GreenHaven Production Plant Study	Conducting a plant study to assess the feasibility of using a hydrogen generator to supply electricity to other industrial plants.	May 2025



# Alternative Fuels Reports



## Comprehensive Outlook on Hydrogen and Derivatives

### Sample Hydrogen Report Structure

#### 0.0 Executive Summary

- Hydrogen Projects by Stage of Development
- Clean Ammonia Exports by Region
- Clean Ammonia Imports by Region

#### Chapter 1: Hydrogen Market Overview

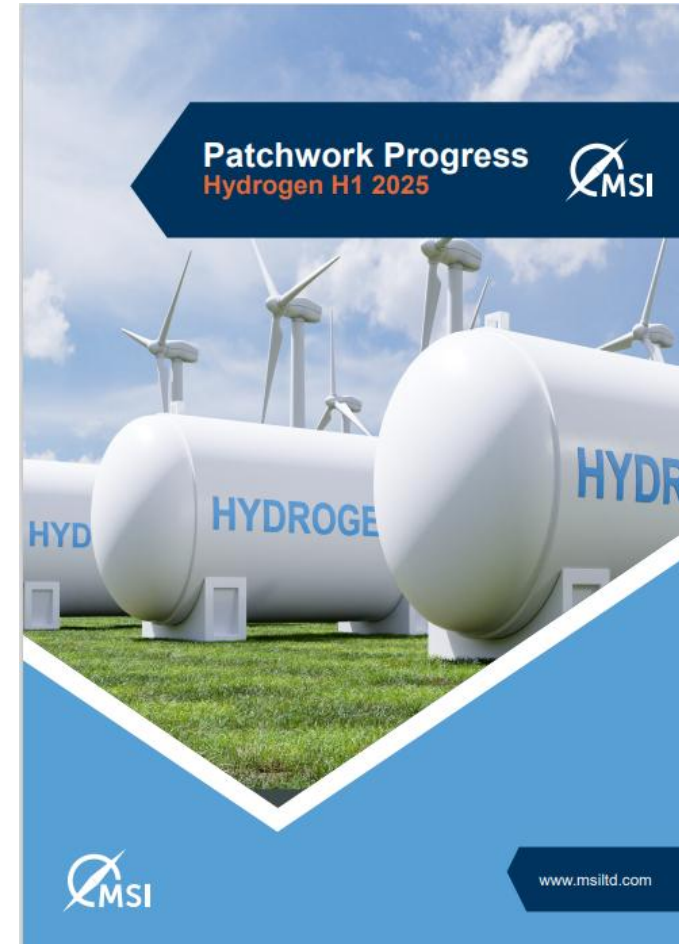
- The Energy Transition (Final Energy Consumption by Fuel Type, Region, and Transport)
- Hydrogen Policy and Regulation Drivers
- Hydrogen Production (by Project Stage, Colour, and Region)
- Hydrogen Consumption by Region

#### Chapter 2: Clean Ammonia Trade Dynamics

- Regional Ammonia Capacity Overview (Announced Capacity to 2030)
- Key Exporters (North America, Oceania, Middle East, SAS)
- Key Importers (Europe, JKT, South East Asia)
- Offtake Agreements and Green Corridors
- Selected Project Capacity and Bilateral Agreements (Green and Blue Ammonia)

#### Chapter 3: Shipping Market Implications

- Alternative Fuel Bunkering (LNG, Methanol, Ammonia demand by region; Singapore and Rotterdam case study)



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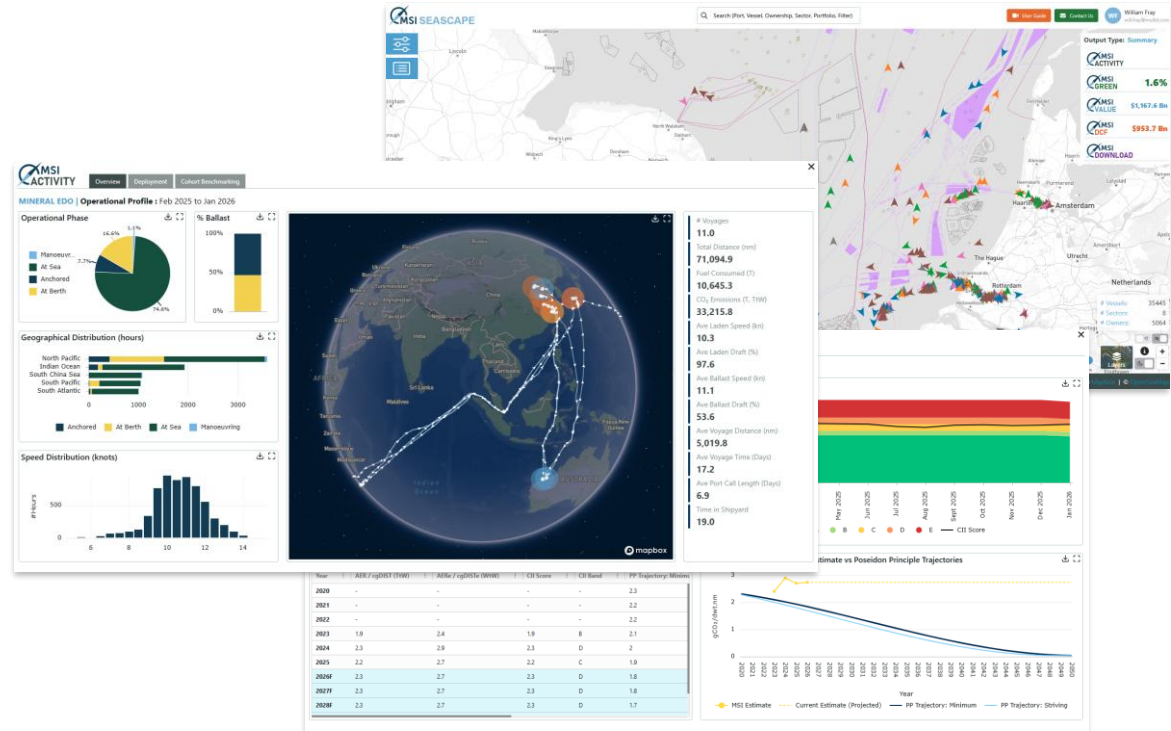
# Operational Benchmarking & Emissions



MSI SEASCAPE is a powerful online platform designed to provide a 360-degree view of ship performance, environmental compliance, and asset valuation.

Through AI-augmented AIS data, SEASCAPE transforms complex global shipping activity into clear, measurable and benchmarkable KPIs.

- **Operational Benchmarking:** Track speed, port stays, and voyage patterns. Compare your fleet's efficiency against real-world peer cohorts.
- **Green Metrics:** Stay ahead of the curve with AER and CII ratings. Visualize emissions (Tank-to-Wake and Well-to-Wake) and track alignment with the Poseidon Principles.
- **Asset Valuation:** Access fair market values, coupled with expert-led DCF assessments to identify "buy" or "sell" signals.



Whether you are a shipowner optimizing trading patterns, a lender performing due diligence, or an investor seeking undervalued assets, SEASCAPE provides the retrospective clarity and forward-looking insight required to navigate the future of shipping. Stop guessing, start benchmarking with MSI SEASCAPE.

<https://www.msilt.com/#seascape>





# Consultancy



MSI's advisory services draw upon our deep industry knowledge and expertise to develop innovative, data-driven solutions for our clients. MSI's team of consultants have broad experience from a range of sectors, industries and projects, complemented by a pool of external independent industry specialists. Our range of advisory services include:

## Strategic Advisory Services

- Project evaluation and market studies
- Business case development
- Market risk and sensitivity studies
- Strategic market positioning
- Competitor intelligence and benchmarking
- Port planning and feasibility studies

## Credit Markets & Modelling

- Advanced Credit Modelling

## Corporate Structuring & Litigation Support

- Corporate Restructuring and Insolvency
- Expert Witness Testimony and Litigation Support
- Business valuation services
- Mergers and acquisitions

## MSI Analytics

- Bespoke Model Development and Data Feeds
- Niche Market Modelling

Examples of successful projects delivered by MSI include:

### Market Outlook for Maritime Classification Society

A maritime classification society required MSI support to provide an outlook for the global alternative fuel market. Analysis included:

- Detailed analysis on key hydrogen projects and infrastructure, including status and profiles of major projects.
- Production and consumption trends for clean hydrogen, with focus on the prospects for maritime use.
- Detailed assessment of clean hydrogen, methanol and ammonia trade and key drivers for future evolution.
- The role of clean methanol as a bunker fuel and implications for trade.
- The role of clean ammonia exports in providing employment opportunities for very large ammonia carriers (VLACs).
- Forecasts for future clean hydrogen products trade to 2050, including a deep-dive into key bilateral trade routes by cargo type.

### Market Outlook for Major Shipping Company In Asia

One of the world's largest ship owning companies required MSI support to provide a market outlook for the future evolution of alternative fuels as bunker fuels.

Analysis included:

- Detailed assessment of global supply and demand for different alternative fuel bunkering, including infrastructure development and availability across key regions.
- Evaluation of alternative fuel bunker vessel provision and whether current and planned fleets are sufficient to meet expected demand growth.
- Economic outlook for different bunker fuels, including price competitiveness against conventional oil-based fuels from a medium- and long-term perspective.
- The influence of regulatory frameworks (IMO, EU and regional initiatives) on alternative fuel bunker adoption and compliance strategies.
- Forecasts for LNG bunker demand to 2050, segmented by vessel type, trade route and scenario.



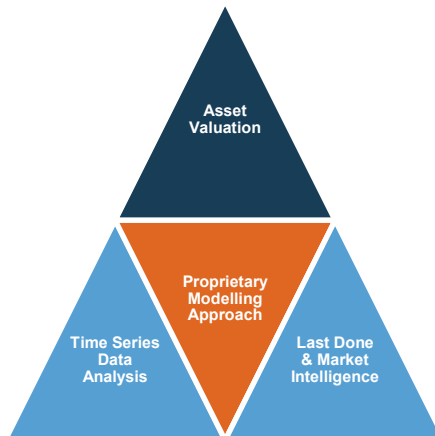
# Valuations



For over 40 years MSI has been providing independent spot and forecast prices and cash flows for all vessel types. MSI's methodology and approach is widely accepted and is the preferred choice for many industry stakeholders across the globe.

## MSI's independent valuations are derived by applying a meta-analysis approach in most instances:

- Benchmarked and analysed in relation to MSI's regularly published timeseries data across 80+ vessel types, sizes and ages
- Compared to last done sales and current market intelligence on likely sales candidates and quoted prices
- Assessed using MSI's proprietary econometric modelling process and algorithms developed over the last 40+ years



## MSI's valuation services include:

- Certificated spot current valuations
- Vessel forecasts (values, earnings, newbuilding prices, scrap price and operating costs)
- Charter attached valuations
- Forecast value sensitivity and stress testing
- Alternative values including: soft value, forced value, recessionary value, cautious plausible value, 1 in 100 value etc.
- Valuation reports and briefing notes
- Restructuring support and benchmarking
- Expert witness/Expert testimony



## MSI's online valuation services

Forecast Marine eValuator (FMV) provides instant online access to historical, current and forecast earnings, operating costs and values on a vessel-by-vessel or portfolio basis.





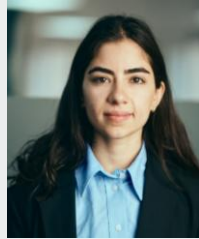
## Meet the Team



**Stuart Nicoll**  
Director  
+44 (0) 207 940 0070  
stuart.nicoll@msiltd.com

Stuart manages the Shipbuilding, and the Specialist Sector services, as well as coordinating and participating in a wide range of consultancy projects.

Prior to joining MSI in 1996, Stuart was Deputy Editor at the magazine Lloyd's Shipping Economist. He wrote on all aspects of the international shipping industry, in addition to having editorial responsibility for the coverage of the shipbuilding, dry bulk, tanker and liquefied gas markets.



**Mariam Tzannatos**  
Decarbonisation Analyst  
+44 (207) 940 7196  
mariam.tzannatos@msiltd.com

Mariam is a Decarbonization Analyst at MSI. She focuses on sustainability initiatives within the shipping industry, specifically alternative fuels and the role of green hydrogen in decarbonisation.

Mariam has an MSc in Environmental Technology from Imperial College, London, with a specialization in Global Environmental Climate Policy. She also holds a BSc in International Social and Public Policy with Politics from the London School of Economics.



**Will Fray**  
Director  
+44 (207) 940 0075  
will.fray@msiltd.com

Will has nearly 20 years of experience researching and modelling the shipping markets and is MSI's principal dry bulk analyst. He has also served as a container trade specialist at OOCL, giving him a broad perspective across sectors. His expertise covers dry bulk fundamentals, stochastic risk modelling, and the impact of emissions policies and regulations. In addition to client advisory, Will leads the development of MSI's online data and modelling platform. He holds a BEng in Ship Science from the University of Southampton, is a member of the Royal Institute of Naval Architects, and is a graduate of FitchLearning's Certificate in Quantitative Finance (CQF).



**Andrew Buckland**  
Senior Gas Analyst  
+ +44 (207) 940 0072  
andrew.buckland@msiltd.com

Andrew has over 25 years of gas shipping research and consultancy experience. At MSI he is responsible for maintaining and developing the LNG and LPG sector market reports, data, and models. Andrew previously working at Wood Mackenzie and at Drewry Shipping Consultants. He has also worked as an independent Shipping consultant; primarily involved in gas shipping research and consultancy but also worked on tanker, petrochemical, chemical and dry bulk shipping projects. Andrew holds a MSc (Econ) in Strategic Studies and a BA in Geography from Aberystwyth University.



# About MSI

For over 40 years, MSI has developed integrated relationship with a diverse client base of financial institutions, ship owners, shipyards, brokers, investors, insurers and equipment and service providers.

MSI's experience covers a broad range of shipping and offshore sectors, providing clients with a combination of sector reports, forecasting models, vessel valuations and bespoke consultancy services.



## Markets Covered by MSI:

- Crude Oil
- Oil Products
- LPG
- LNG
- Chemicals
- Shuttle Tankers
- MODUs
- AHTS/PSVs
- FPSO/FSRU
- Dry Bulk
- Container
- PCTC
- RoRo/RoPax
- Cruise and Ferry
- Open Hatch
- Shortsea
- MPP
- Hydrogen
- Ports
- Shipbuilding
- Container boxes

MSI balances analytical power with service flexibility, offering a comprehensive support structure and a sound foundation on which to build investment strategies and monitor/assess exposure to market risks.



**To discuss our range of services further, please  
contact us:**

+44 (0)20 7940 0070

[info@msiltd.com](mailto:info@msiltd.com)

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