

An aerial photograph of a port area, likely Danube, showing a grid overlay on the water. Numerous ships are visible, including cargo ships and tankers. In the background, there is a city and industrial facilities. The RightShip logo is in the top right corner.

RIGHTSHIP

Air Emissions, Data and Digital Solutions

Danube Port Days 2024

Jon Lane - RightShip

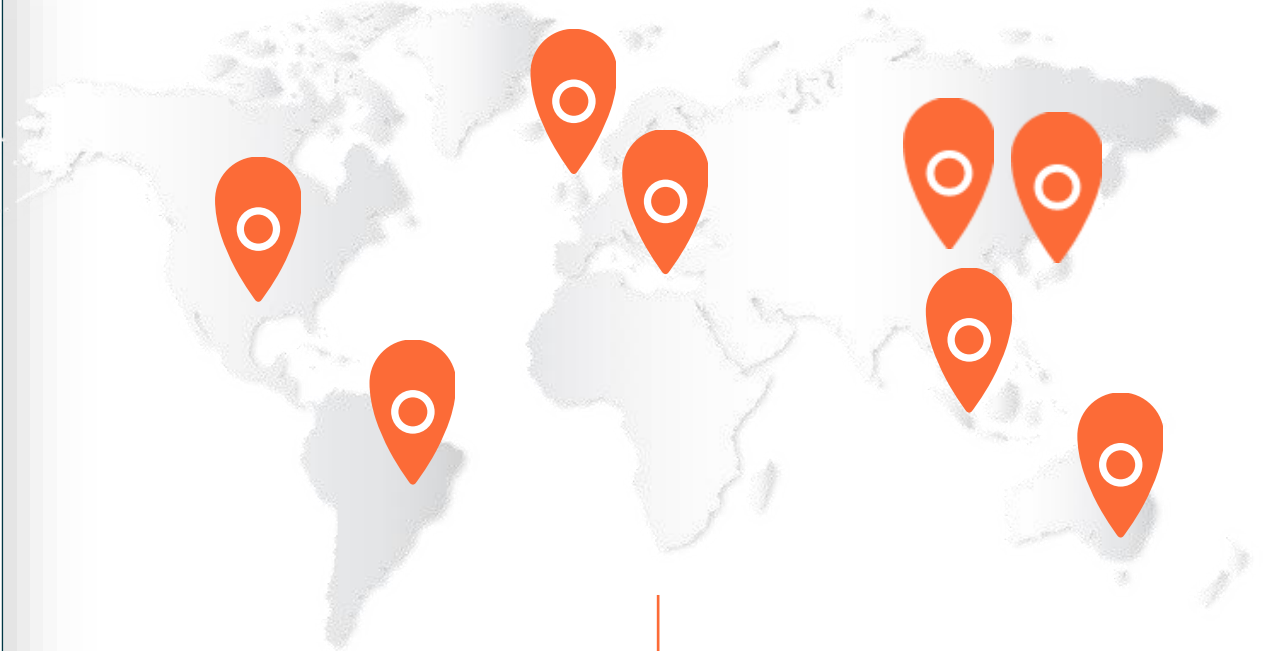
Who is RightShip?

RightShip is the world's leading ESG focused digital maritime platform, providing expertise in global safety, sustainability and social responsibility best practises.

We bring together years of industry expertise with the output from analytics and large data sets to provide our safety and environmental scoring systems, recommendations and consultancy services.

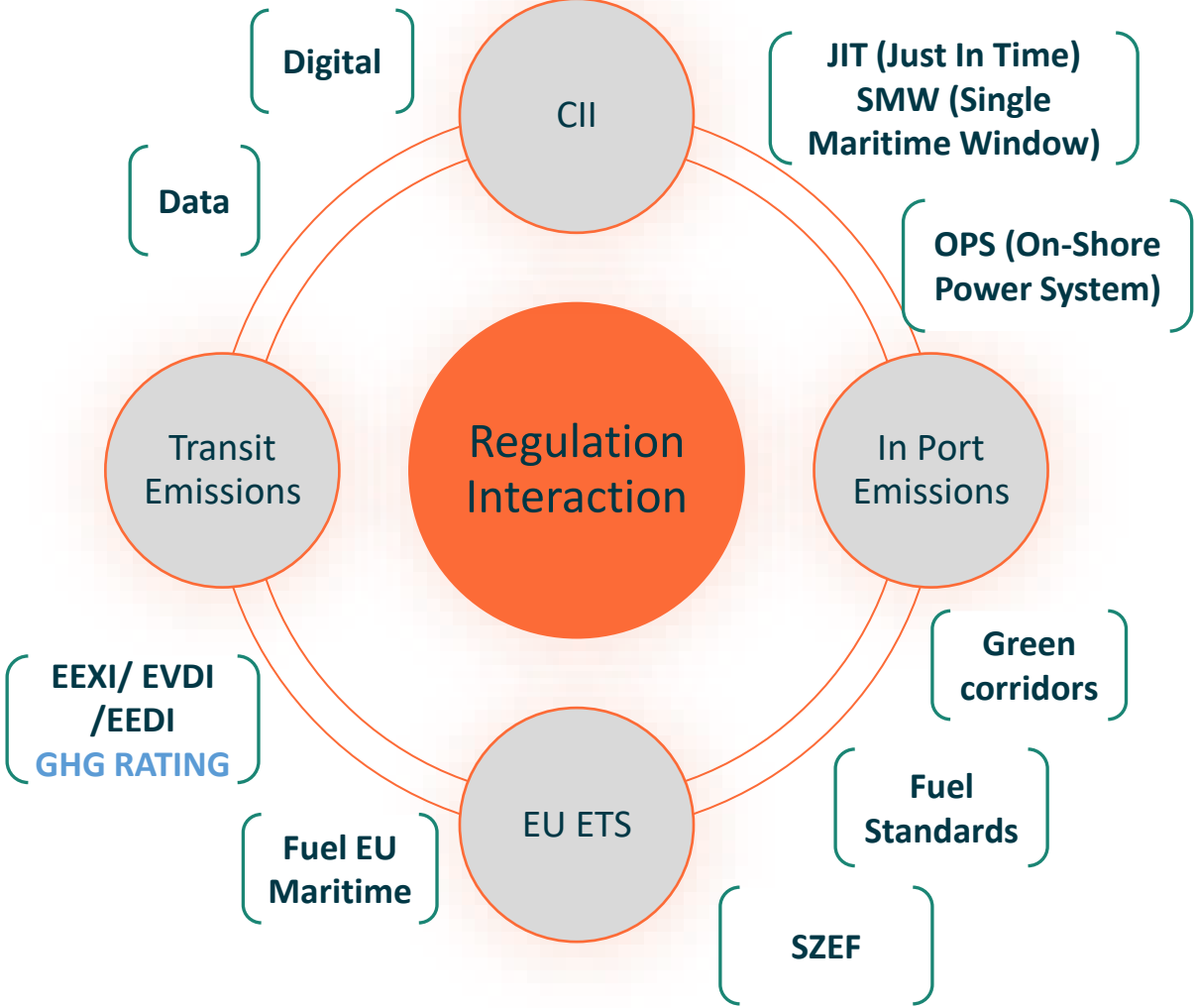
By working with RightShip, clients are supported in making decisions in an environment that is a constant state of flux, protecting their business from risk.

RIGHTSHIP



RightShip has
more than 220 colleagues
in Australia, UK, Malta, US, Singapore, China,
Vietnam, Brazil, and Japan.

Complexity and collaboration



The shipping eco-system

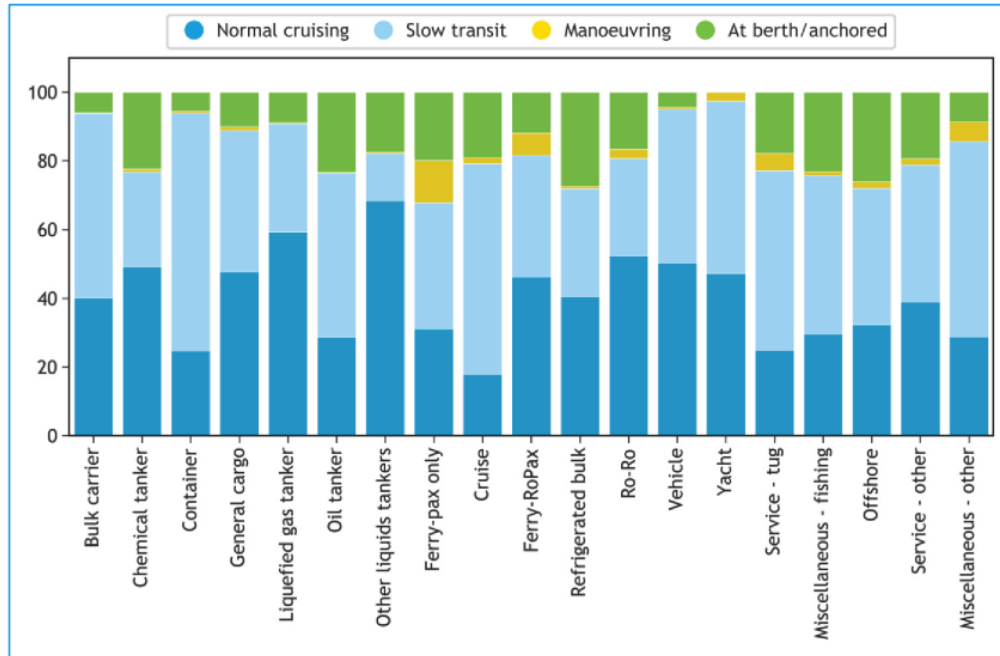


Figure 6 – Proportion of international GHG emissions (in CO₂e) by operational phase in 2018, according to the voyage-based allocation of emissions. Operational phases are assigned based on the vessel's speed over ground, distance from coast/port and main engine load (see Table 16)



Regulatory environment



Stakeholder pressure

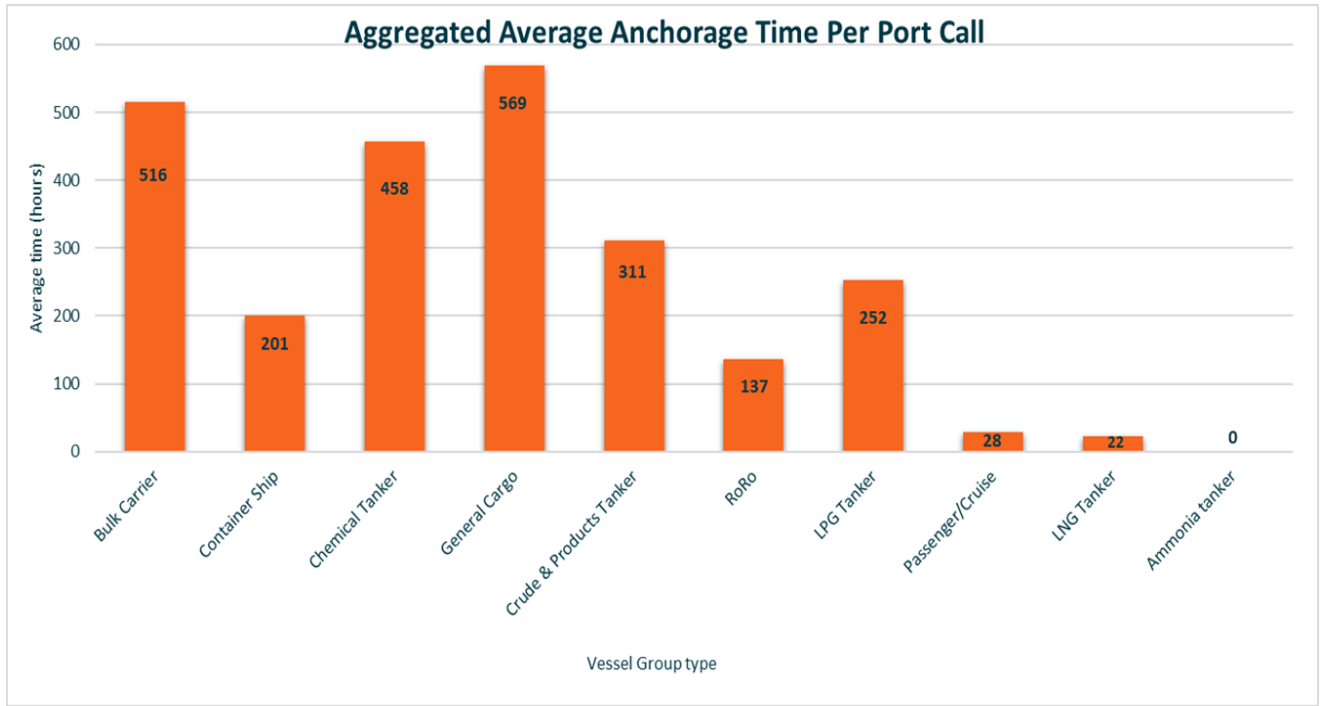


Green corridor & Net-zero



Trusted data and transparency

RightShip Trends



Aggregated for 11 port



Example Large River Port

What is the MEP?

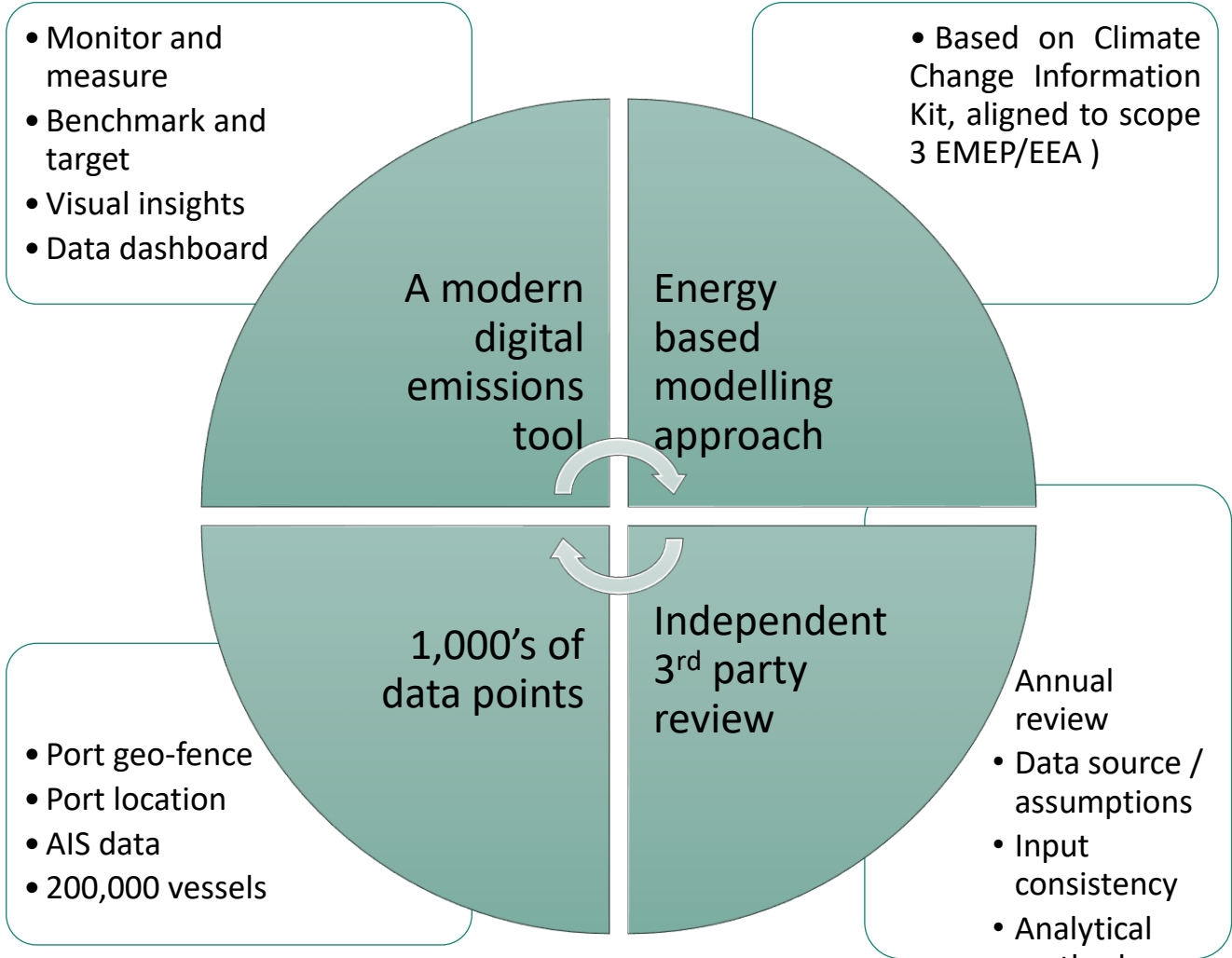
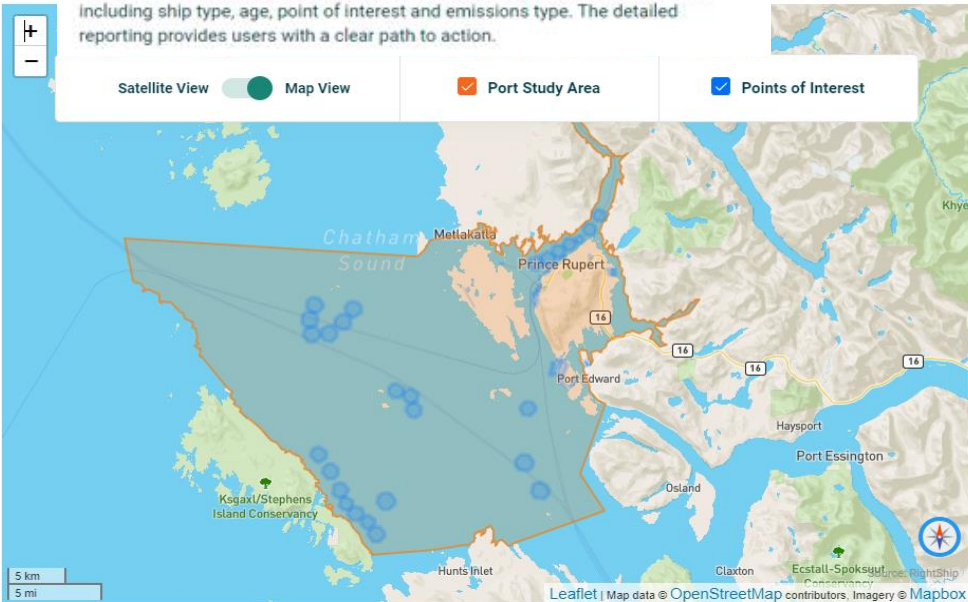
Maritime Emissions Portal

DEMONSTRATION PORTAL

RightShip's Maritime Emissions Portal (MEP) is a proprietary product designed to support ports in reducing their emissions outputs through data-driven insights.

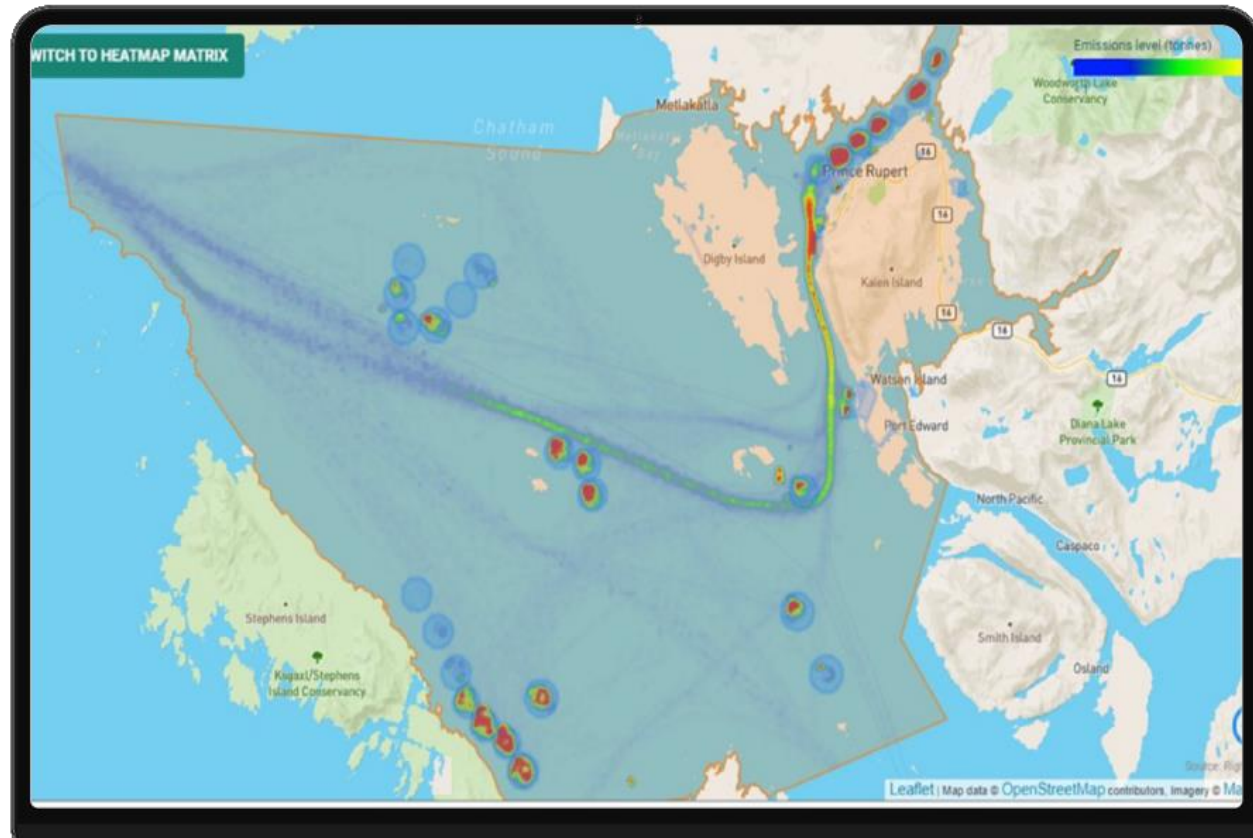
The MEP has been designed as a tool to support port operators to better and more accurately understand ship-based emissions and use that evidence to identify opportunities to reduce emissions. The tool combines sophisticated Automatic Identification System (AIS) movement data and RightShip's unique vessel insight data, to identify problem areas and opportunities to reduce environmental impact.

We have used best practice guidelines to build and test this product which monitors all vessel types and operating modes. Port authorities can use it to manage their emissions inventory and air quality through heatmaps and filters including ship type, age, point of interest and emissions type. The detailed reporting provides users with a clear path to action.



Heatmaps

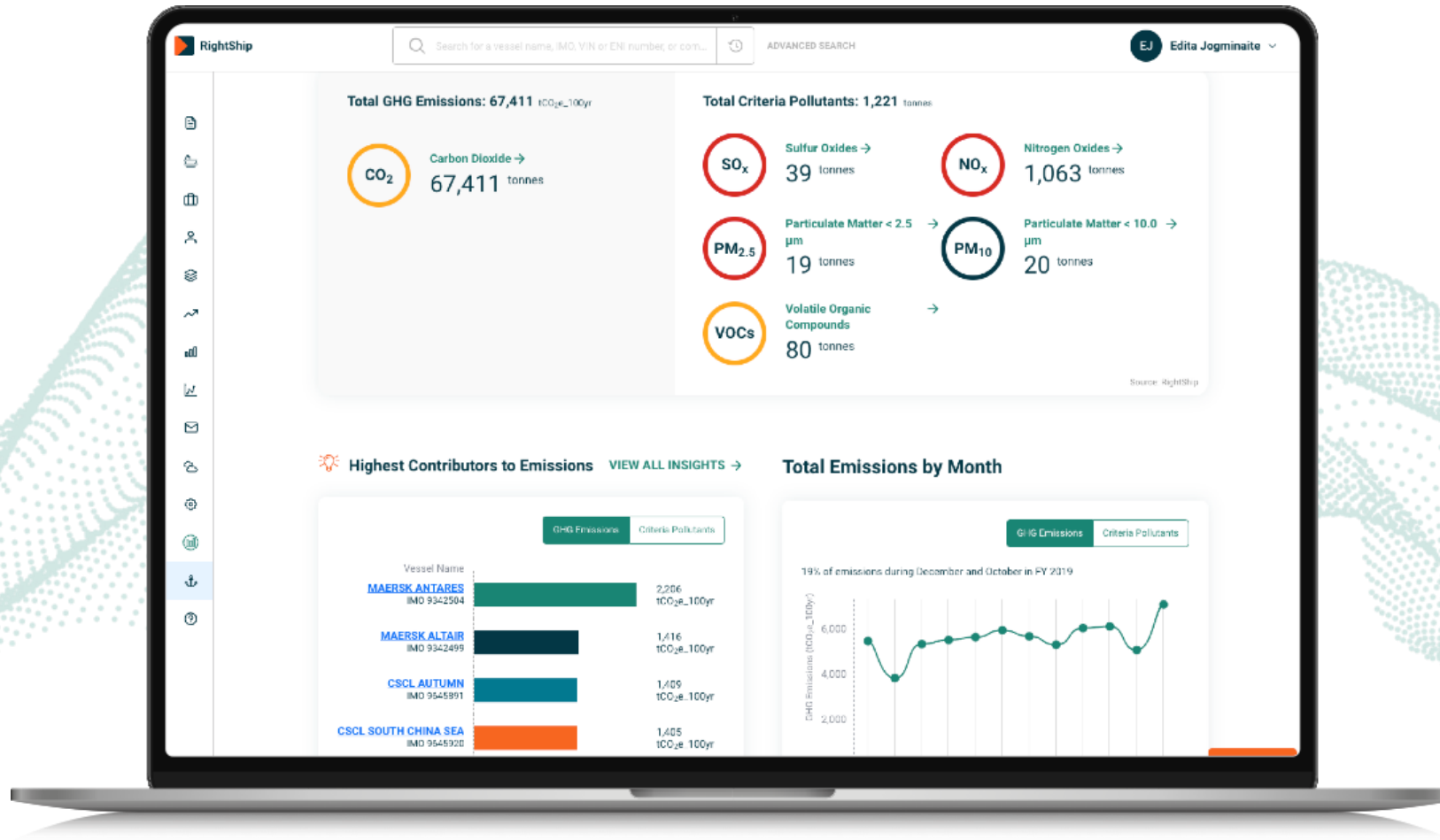
RIGHTSHIP



- Identify Hotspots at specific Points of Interest (Anchor, Berth, Transit, Manoeuvre)
- Develop strategies combined with **Digital Twins** to reduce emissions
- Help Prioritise On Shore Power
- Combine with insights from IoT and Digital Twins

Data transparency: emissions reduction

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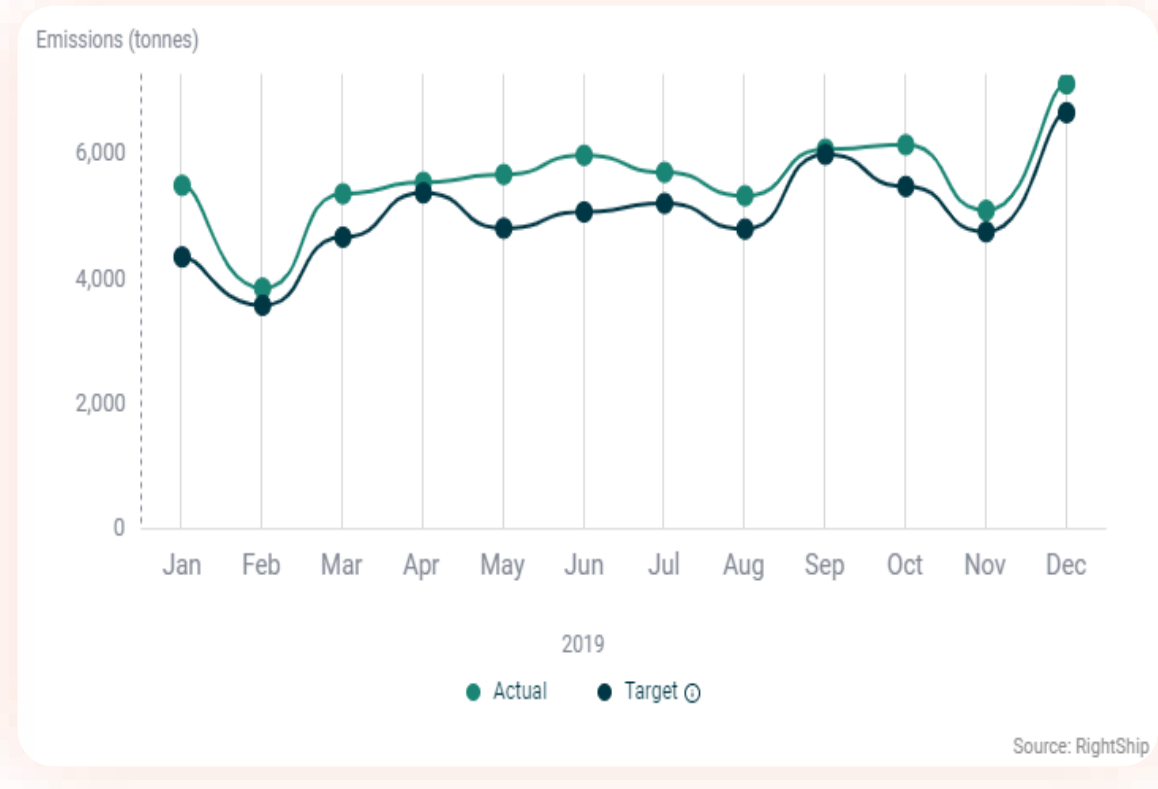
Source: RightShip

Highest contributors to emissions

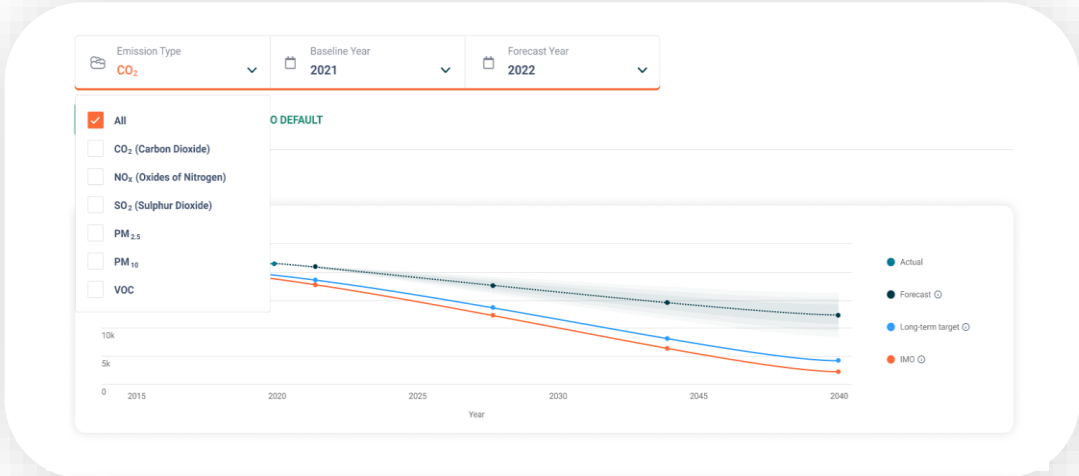
	Vessel Name	GHG Rating	CO ₂ (tonnes)	Port Activity	Operating Time ⓘ
1	MAERSK ANTARES IMO 9342504 Container Ship	E Unverified	2,206	7 port calls	22d:8hr:13m
2	MAERSK ALTAIR IMO 9342499 Container Ship	E Unverified	1,416	7 port calls	20d:11hr:27m
3	CSCL AUTUMN IMO 9645891 Container Ship	D Verified	1,409	6 port calls	21d:21hr:33m
4	CSCL SOUTH CHINA SEA IMO 9645920 Container Ship	D Verified	1,405	7 port calls	18d:11hr:17m
5	SMIT MISSISSIPPI IMO 9187241 Tugboat	N/A Unverified	1,277	464 Tug Jobs	41d:14hr:54m

Source: RightShip

Emissions by month



Scenario Planning - OPS



- Support Onshore Power Supply development
- Identify berth or vessel segment to focus on
- Access green finance

- Combine with other insights to aid your decarbonisation and air quality strategies

Vessel Type	Port Traffic			Shore Power			Vessels		
	FY 2021 - Actual			FY 20XX - Forecast			Total Port Calls ↑ 21.1% +79%	Total Emissions (tonnes) ↓ 18.8% -223,817 tonnes	
	Port Calls	Average Time in Port (hours)	Average Emissions (KG/port call/hour)	Port Calls	Average Time in Port (hours)	Average Emissions (KG/port call/hour)			
Product Tankers	958	1.8	169	1,250	1.3	150			
Bulk Carriers	386	4.7	331	525	4.0	250			
General Cargo	196	4.2	120	220	2.3	95			
Offshore Support Vessels	325	1.2	261	420	1.0	225			
Tugboats	1,859	0.5	85	2,150	0.3	75			
Others	45	2.5	50	0	0	0			

Digital tools and technologies

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IoT

Smart Sensors

Cloud Computing

Artificial Intelligence (AI)

Digital Twins / Simulation

Automation & Robotics

Cybersecurity

Thank you

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