

WEBINAR

NAVIGATING EMISSIONS COMPLIANCE WITH EUMRV, EUETS, FuelEU Maritime and EUA procurement



11th December 2024

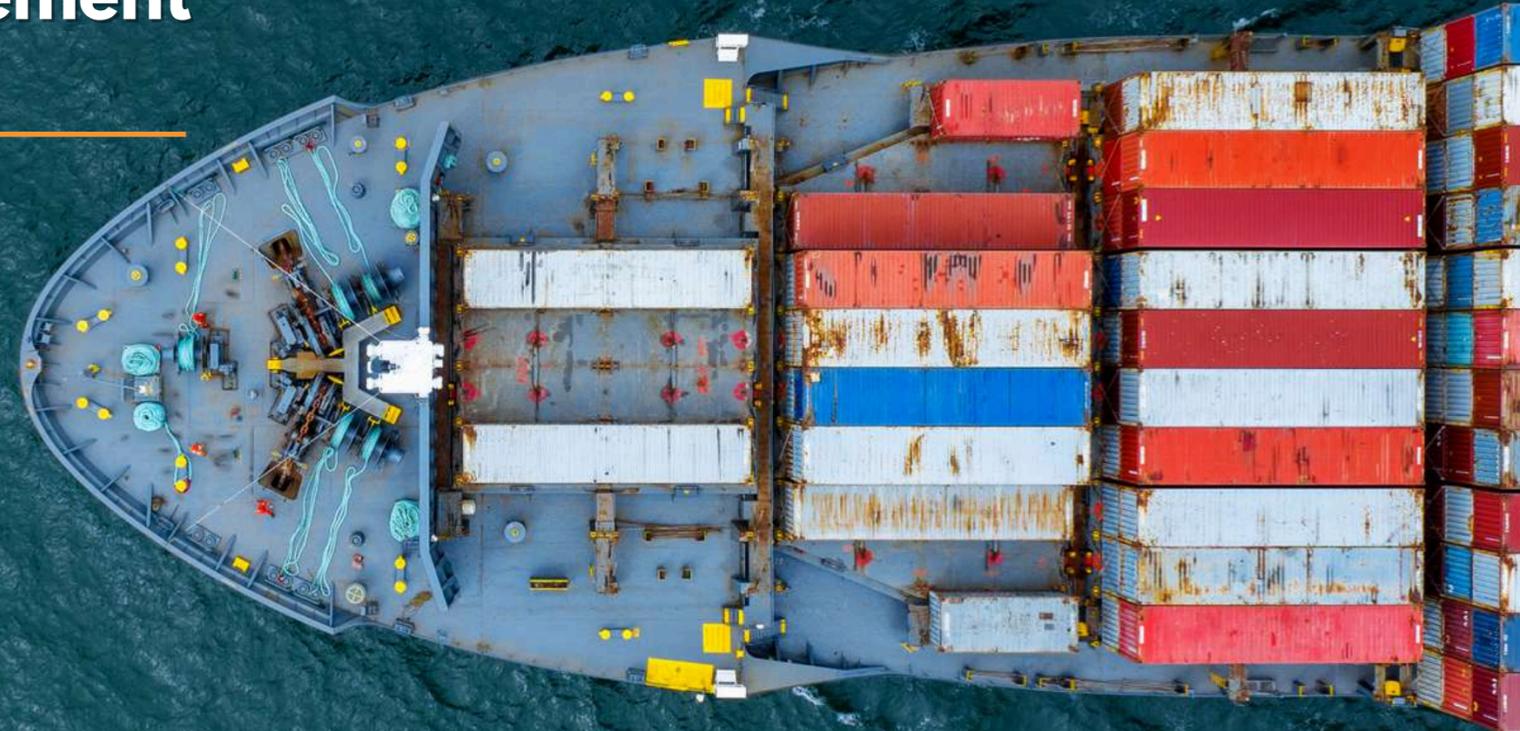


11 AM – 12.30 PM (CET)

ORGANISED BY:



Varuna Marine Services
SMART SUSTAINABLE SHIPPING



MODERATORS



Mr. Tomojit Ghosh

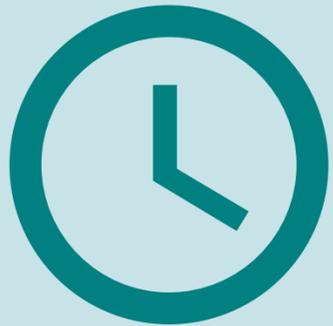
Sales Account Manager
- Varuna Marine Services B.V.



Ms. Deepthi Bennan

Marketing Manager
- Varuna Marine Services B.V.

BEFORE WE START...



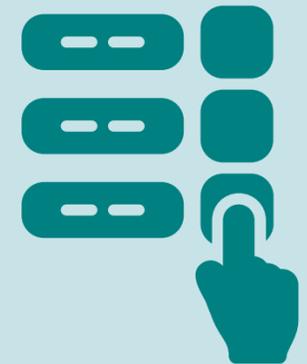
The webinar will run about 1 hour. Last 15 mins for Q&A.



The webinar will be recorded, and the recording will be shared after the webinar.



Feel free to use the Q&A function to send your questions anytime during the webinar



During the webinar, we will conduct polls to gather your opinions

WEBINAR

**NAVIGATING EMISSIONS COMPLIANCE WITH
EUMRV, EUETS, FuelEU Maritime and EUA procurement**



11th December 2024

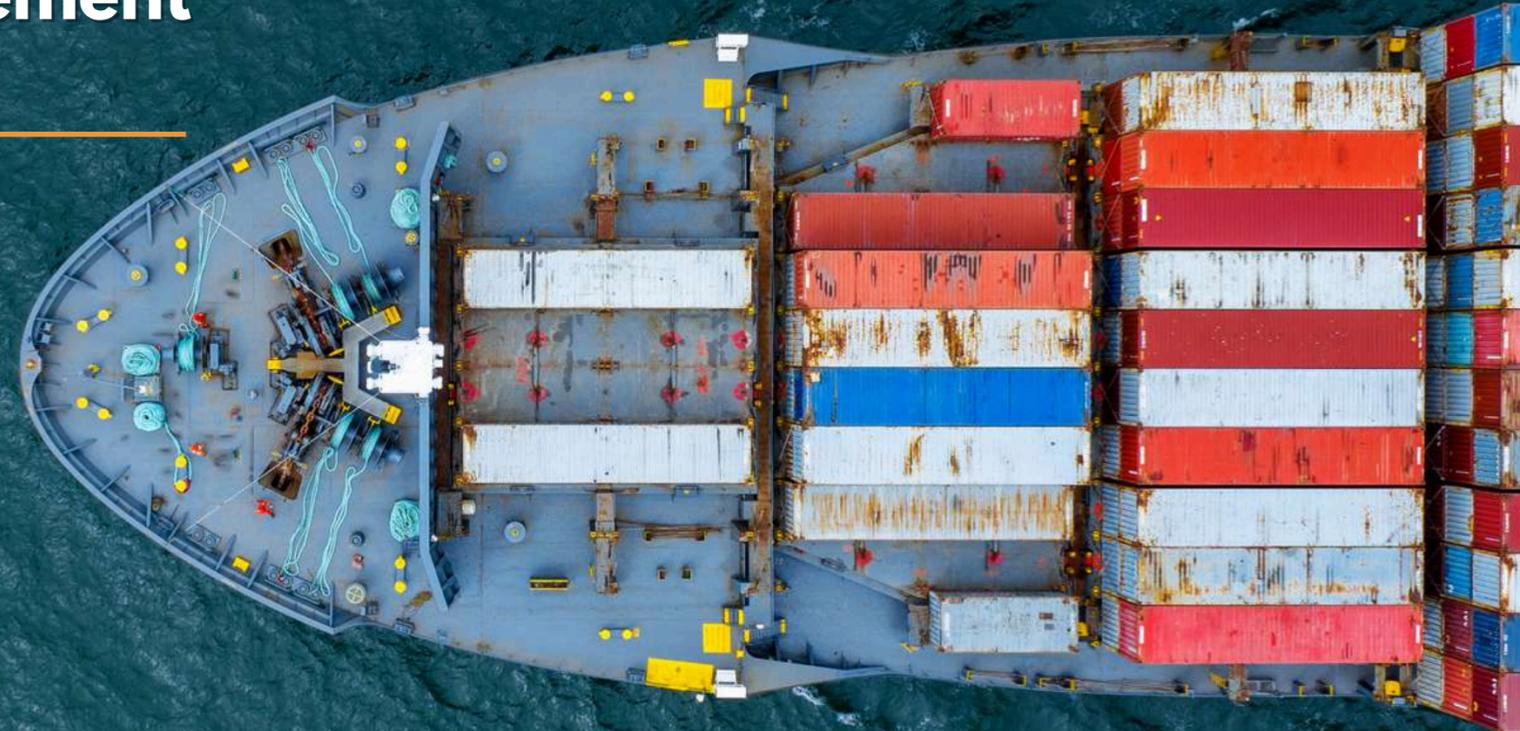


11 AM – 12.30 PM (CET)

ORGANISED BY:



Varuna Marine Services
SMART SUSTAINABLE SHIPPING



OUR PANELISTS



MR. SANJEEV WEWERINKE SINGH

MANAGING DIRECTOR

VARUNA MARINE SERVICES B.V.



MR. DOMINIC NG

HEAD OF APAC,

DNV VERACITY

POLL 01

What is the primary goal of the EU ETS?

- A) Promote renewable energy in the EU**
- B) Reduce greenhouse gas emissions in a cost-effective manner**
- C) Subsidize low-carbon technologies**
- D) Regulate fuel quality in member states**
- E) All of the Above**

A serene sunset over a calm ocean. The sun is a small, bright orange circle on the horizon, casting a long, shimmering reflection across the water. The sky is a soft gradient of orange and yellow, transitioning to a pale blue at the top. The water is a deep blue, with gentle ripples and a white foam line from a wave washing onto a sandy beach in the foreground. A teal-colored rounded rectangle is centered in the lower half of the image, containing the text "WHAT'S NEXT??".

WHAT'S NEXT??

INTRODUCING OUR FIRST PANELIST



MR. SANJEEV WEWERINKE SINGH

Managing Director

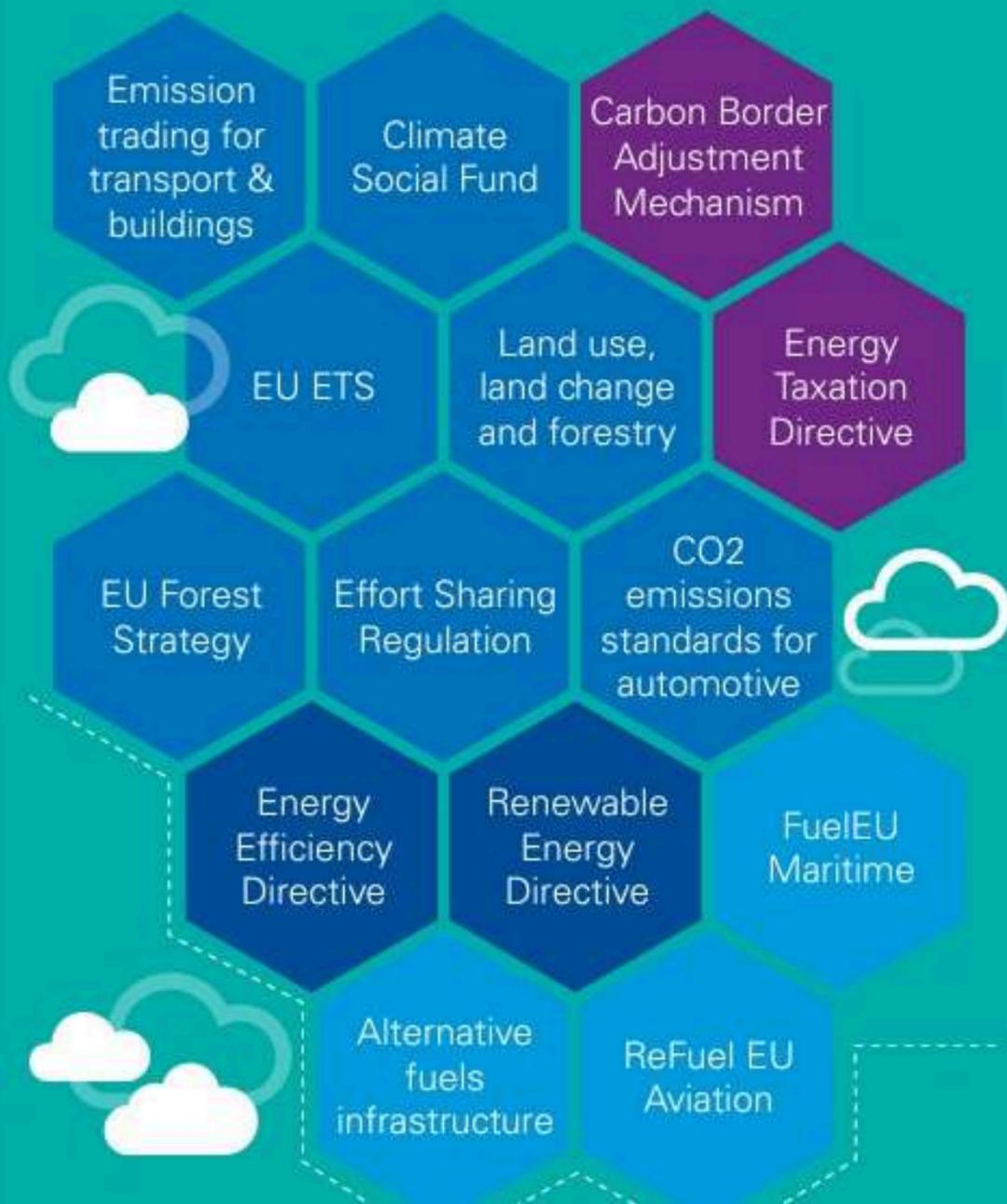
VARUNA MARINE SERVICES B.V.

THE EU EMISSIONS TRADING SYSTEM (EU ETS), EUA, FuelEU Maritime



Varuna Marine Services
Smart Sustainable Shipping

FIT FOR 55



FIT FOR 55	IN SHORT/OBJECTIVE
ETS - Extension of the Emission Trading Scheme to maritime transport	<ul style="list-style-type: none"> • Carbon tax/Trading scheme • Promote Energy Efficiency and Energy Transition
AFIR - Alternative Fuels Infrastructure Regulation	<ul style="list-style-type: none"> • Require EU ports to develop shore-power • Bunkering infrastructure for alternative fuels.
FuelEU Maritime Regulation	<ul style="list-style-type: none"> • Promote the use of renewable and low-carbon fuels in maritime transport.
Renewable Energy Directive (REDIII)	<ul style="list-style-type: none"> • Renewable Energy targets for transport sector • Sustainability criteria and Certification framework for renewable fuels.



WHAT IS THE EU ETS?

A single European "currency" for emissions

1 tCO₂e



1 Allowance

Rule for emitters Emitters must surrender enough allowances to fully account for their emissions

Allowances created
The EU Commission creates primary supply of allowances to the market

EU
Commission

Emitters

Allowances removed
Emitters **surrender** allowances back to the regulator to cover their emissions

Secondary market
Market participants trade allowances between each other

The EU ETS creates a level playing field for all emitters

It applies in all EU countries, and also Iceland, Norway, and Lichtenstein.

It applies to:



Around **10,000** installations
(power generation and industrials)



Airlines



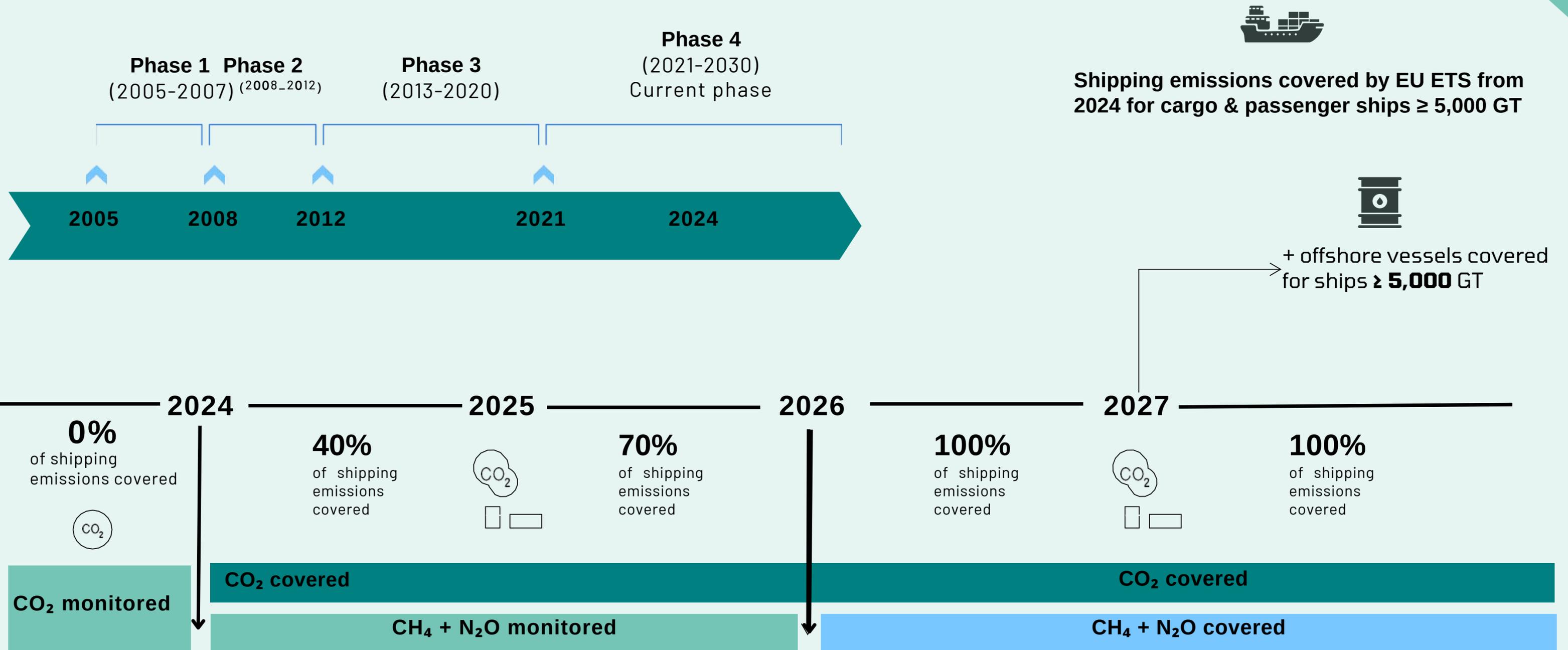
Shippers

EU Allowances ('EUAs') apply to all emitters and form part of a single emission market.

It is designed as a "cap and trade" system. As the regulator controls the volume of overall emissions by regulating the supply of allowances.



INCLUSION OF MARITIME TRANSPORT



CBAM



Certain goods imported covered by CBAM from 2026

- The EU Carbon Border Adjustment Mechanism (CBAM) applies to **importers of goods** to the EU (+NO, IS, CH, LI).
- Importers already have to report imbedded emissions in the imported goods, and from **January 1st 2026** will have to purchase "CBAM certificates".
- CBAM certificates are **linked to the EU ETS**, priced on the basis of EUA auctions.

CBAM applies to imports of:

Cement
Iron and steel
Aluminium
Fertilisers
Electricity
Hydrogen

Transitional period

(importers have a mandatory reporting obligation)

Definitive regime

(importers must purchase CBAM certificates)



EU ETS Vs. FuelEU MARITIME

EU ETS

- Ship Owner pays for each tonne of CO₂ emitted in the EU
- 1 tonne CO₂ = 1EUA = Market driven price (~70\$)
- Registered owner is the liable entity.

1 ton = \$70

FuelEU Maritime

- Ship Manager pays for each tonne of CO₂ produced by fuels with a GHG intensity above an upper limit.
- 1 ton CO₂ of LSF0 equivalent above upper limit = €2400
- DoC holder is the liable entity.
- The threshold for compliance is reduced over time, gradually increasing penalties. Container and passenger vessels over 5000 GT must use shore power from 2030.

1 ton = € 2400



How do I comply?

Borrowing

- Compliance can be borrowed from a future reporting year to become compliant in the current year (up to two consecutive years).
- This loan of compliance is accounted for in the subsequent year.
- Useful if an owner expects to be over compliant in the subsequent year.

Pooling

- Compliance can be pooled between vessels, allowing an overly compliant vessel to offset a noncompliant vessel.
- Pooling can be internal or external, providing a commercial opportunity for V. to market space in pools.
- LNG fueled vessels will remain over complaint until 2030, allowing LNG vessels to offset others in the fleet.



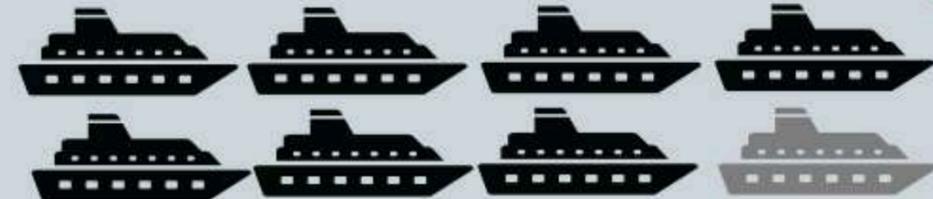
1 LNG vessel



4 HFO vessels



1 e-methanol vessel



40 HFO vessels

Banking

- Vessels which are over-compliant can “bank” the surplus compliance for a future reporting year.
- There is no expiration of the “banked” surplus
- Useful for complying with later years when compliance threshold is lowered

Bio or e-Fuels

- HFO fueled vessels could switch to using biofuels whilst operating in EU waters.
- LNG fueled vessel could switch to using biogas whilst operating in EU waters.
- Ship owners could also choose to retrofit an LNG dual fuel system to benefit from lower emissions.
- Longer term, vessels could switch to e-fuels (e.g. e-LNG, e-Ammonia.) The EU allows a 2x reward factor for vessel's using e-fuels.
- Wind-assisted propulsion and ice class vessels are also eligible for credits under the FuelEU rules.
- Only non-food stock biofuels are eligible. Modifications to ShipSure to store bunker delivery notes and fuel quality certificates will be required.



Aframax LR2 Tanker

Source: 2023 EU MRV data

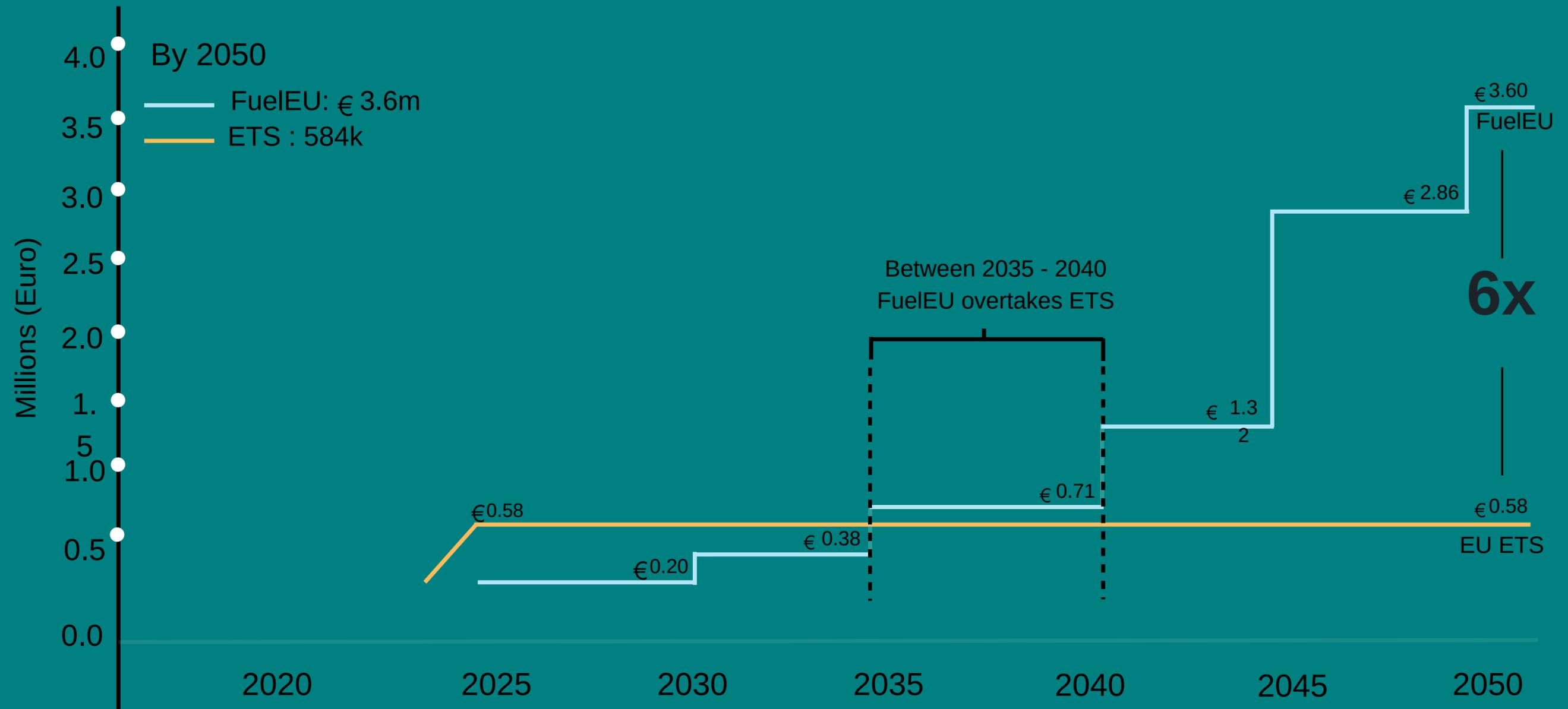
Built:	2008	Total energy used:	99,269,100 MJ	mass of fuel x calorific value of each fuel
Type:	Aframax LR2 Tanker	Average GHG intensity of fuels used:	91.11 gCO ₂ /MJ	proportional average of WtW emissions of fuel used
Dwt:	112,990	FuelEU GHG intensity limit:	89.34 gCO ₂ /MJ	set in FuelEU regulation
EU Applicable 2023 Consumptions		Difference to compliance:	-1.77 gCO ₂ /MJ	FuelEU limit – average GHG intensity
HFO:	1,246 tonnes	Compliance balance:	176 tonnes of CO ₂	compliance difference x total energy
MDO:	1,143 tonnes	Fine:	€115,410	compliance balance/(average GHG intensity x 0.041) x €2,400

VLCC LNG Dual Fuel

Built:	2023	Total energy used:	79,964,600 MJ	mass of fuel x calorific value of each fuel
Type:	LNG fuelled VLCC	Average GHG intensity of fuels used:	89.6 gCO ₂ /MJ	proportional average of WtW emissions of fuel used
Dwt:	300,000	FuelEU GHG intensity limit:	89.34 gCO ₂ /MJ	set in FuelEU regulation
2023 Consumptions		Difference to compliance:	-0.26 gCO ₂ /MJ	FuelEU limit – average GHG intensity
HFO:	1,040 tonnes	Compliance balance:	21 tonnes of CO ₂	compliance difference x total energy
MDO:	458 tonnes	Fine:	€13,770	compliance balance/(average GHG intensity x 0.041) x €2,400
LNG:	381 tonnes			



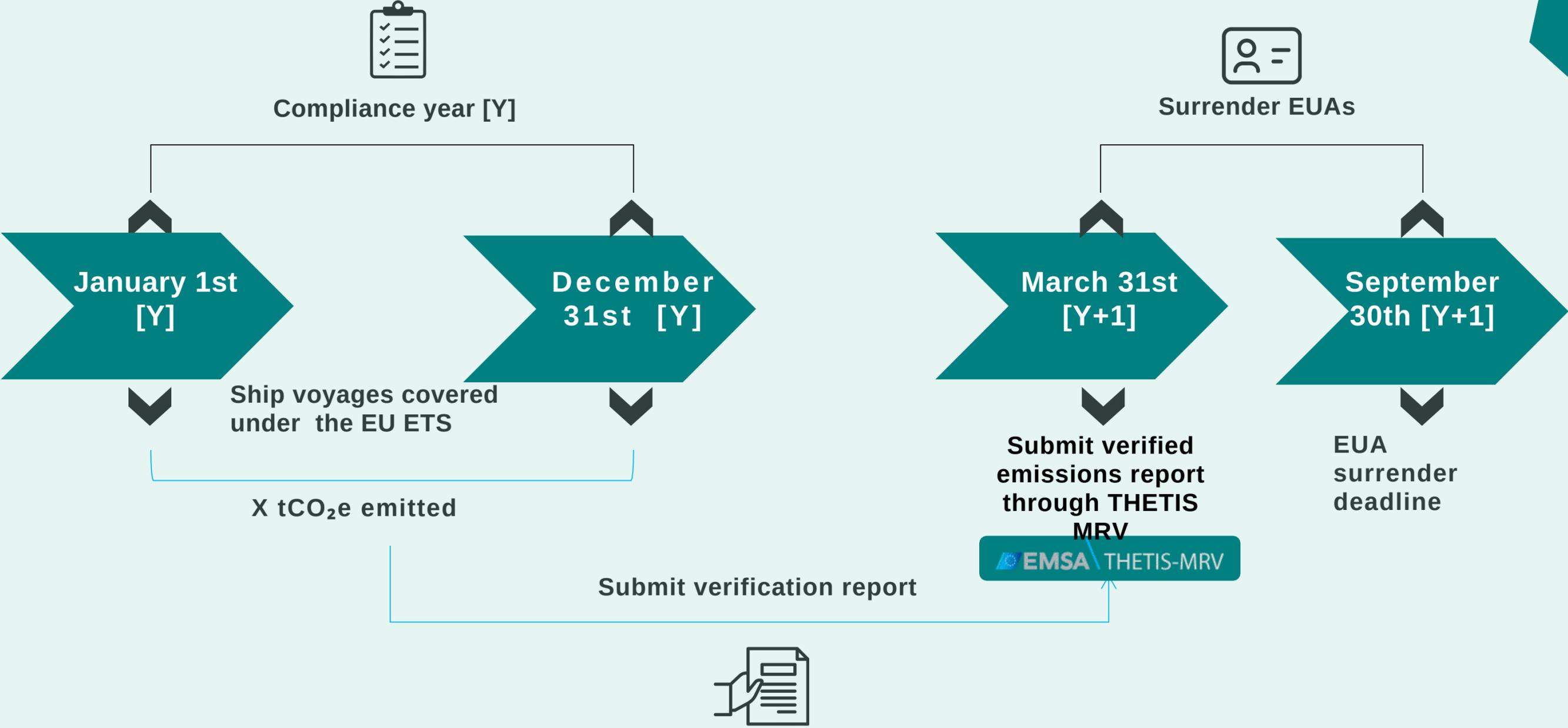
EU ETS and FuelEU Cost Comparision



Note - EUA and FuelEU penalty costs for vessel emitting 9725 tonnes of CO2 equivalent (CO2eq) on voyages to and from the EU, and 1,399 CO2eq tonnes on intra -EU voyages or at berth in EU ports ; excludes EUA price changes, potential impact of FuelEU penalties and penalty multipliers for non-complaint port calls without using onshore power supply or failing to meet 2% RNFB0 usage



AN EMITTER'S YEARLY SCHEDULE



Source: https://climate.ec.europa.eu/eu-action/transport/reducing-emissions-shipping-sector_en

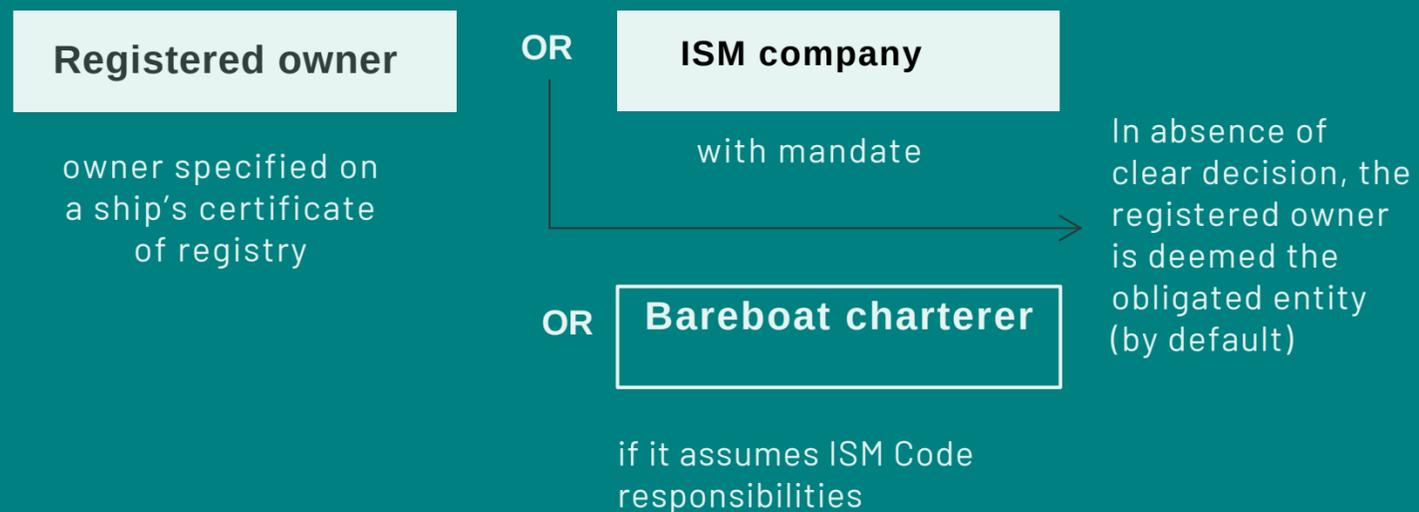


REGISTRY ACCOUNT

The entity responsible for meeting EU ETS obligations (reporting and surrendering EUAs) is the

“Shipping company”

“the shipowner or any other organisation or person, such as the manager or the bareboat charterer, that has assumed the responsibility for the operation of the ship from the shipowner and that, on assuming such responsibility, has agreed to take over all the duties and responsibilities imposed by the International Management Code for the Safe Operation of Ships and for Pollution Prevention, set out in Annex I to Regulation (EC) No 336/2006 of the European Parliament and of the Council.”



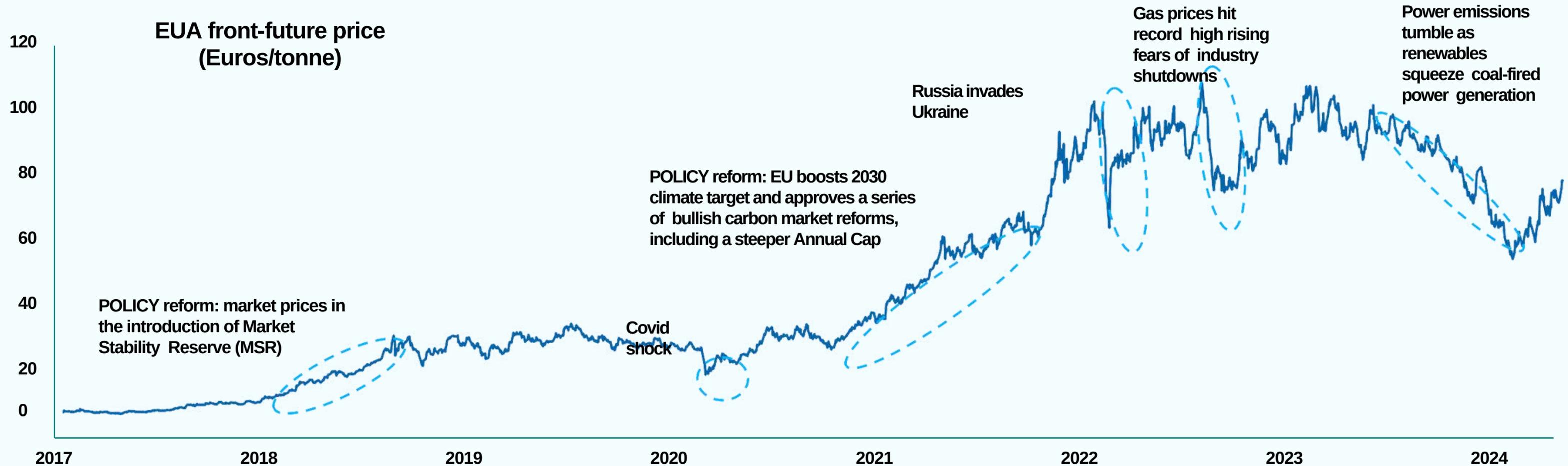
HOW DOES A REGISTRY ACCOUNT WORK?

The “shipping company” may open a “Maritime Operator Holding Account” (MOHA) to hold, receive, transfer, and surrender EUAs.



POLICY TYPICALLY DRIVES STRUCTURAL, MULTI-YEAR MOVES IN THE EUROPEAN CARBON PRICE

Policy changes affect supply of allowances in the market. Economic cycle and technological changes (i.e. renewable power) impact demand

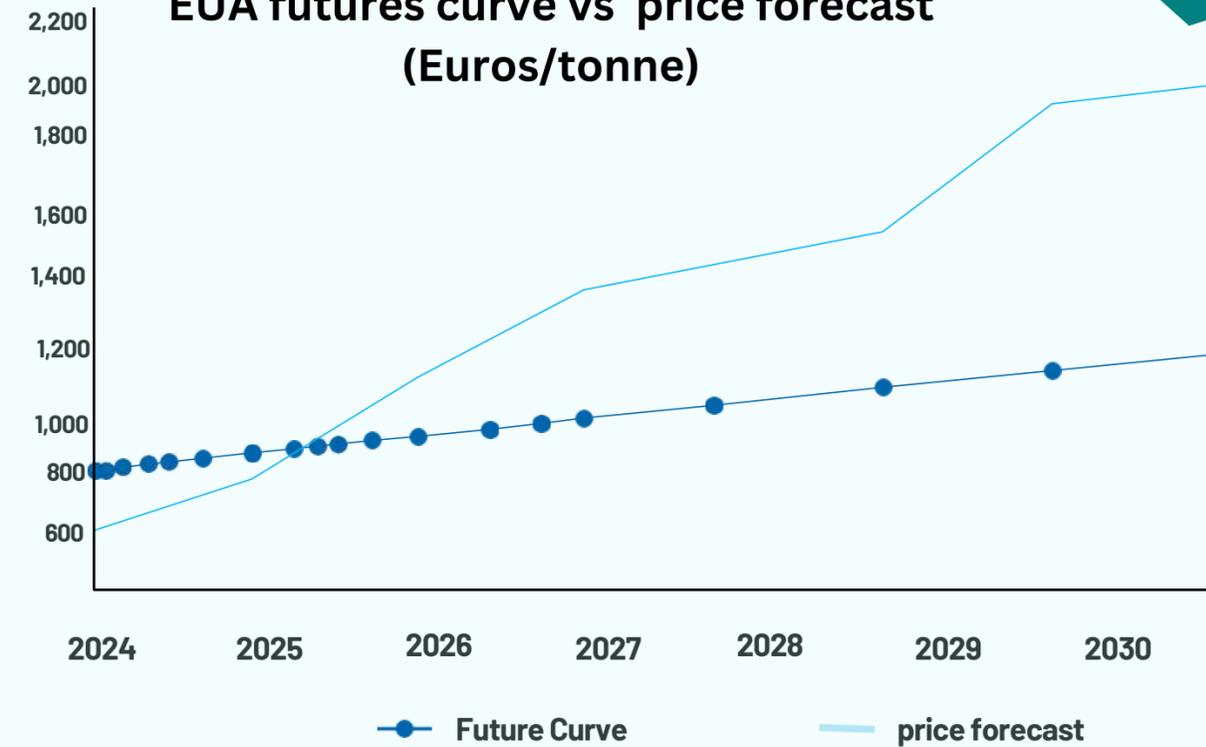


A SHRINKING ANNUAL CAP TO EVENTUALLY DRIVE EUA SUPPLY TO ZERO. WE EXPECT PRICES AT ~140 EUROS BY 2030

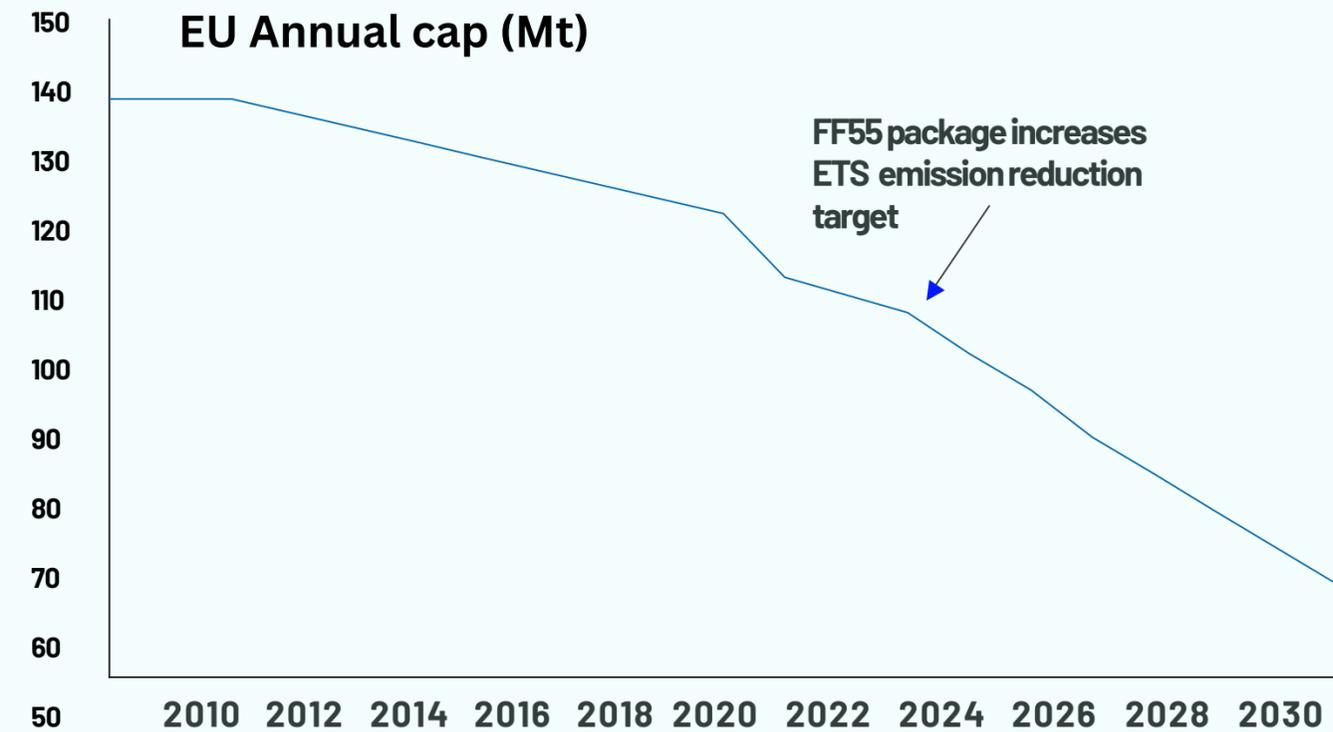
Slow progress on decarbonisation of industries in a market where both inventories and supply are falling mean high chances of a “price squeeze” at some point.



EUA futures curve vs price forecast (Euros/tonne)

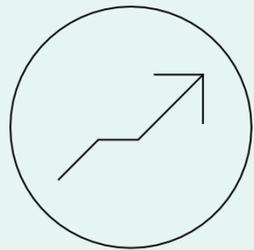


EU Annual cap (Mt)

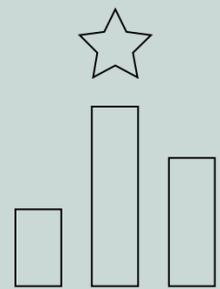




Steadying gas markets and expectations of an industrial recovery have driven carbon prices higher, but we are sceptical a sustained rally can take place



We see fair value in the **65-70 euros** range this year and next



Longer term, prices are expected to rise as supply of allowances is progressively reduced to zero



AN EEX-LISTED EUA TRADER

As an EEX-listed EUA trader, Varuna Marine Services BV offers comprehensive support to both Primary and Secondary market in acquiring European Union Allowances (EUAs) for maritime operators.

With our expertise, we help you navigate the complexities of the EU Emissions Trading System (ETS) and ensure seamless compliance with carbon emission regulations.



part of eex group

European Commodity Clearing AG
Augustplatz 9 • 04109 Leipzig • Germany

Varuna Marine Services BV
Kraaipanstraat 46
1091PM AMSTERDAM
NIEDERLANDE

Member Readiness
P: +49 341 24680-261
F: +49 341 24680-559
memberreadiness@ecc.de

Leipzig, 2024-10-04

Approval of Varuna Marine Services BV as Non-Clearing Member and Trading Participant at European Energy Exchange (EEX) with effective date 11 October 2024

Dear all,

We are glad to confirm that your company has been approved by European Commodity Clearing AG as Trading Participant.

The approval includes the transactions performed in the following products:

EEX Derivatives Market (Member ID: VMSEX):

- EEX Emission Allowances Futures
- EEX Emission Allowances Options (incl. FSM Options)

EEX Spot Market (Member ID: VMSEX):

- Spot Contracts on Emission Rights

Furthermore we would like to inform you that the approval of Varuna Marine Services BV as Non-Clearing Member and Trading Participant is conditional to the activation for the exchange trading and trade registration by the respective exchange.

Please kindly inform your Clearing Member about setting the respective SPOT limits in the ECC Member Area as soon as the exchange admission is finalized – not earlier!

Page 1/2

European Commodity Clearing AG
Augustplatz 9
04109 Leipzig, Germany
info@ecc.de, www.ecc.de
P: +49 341 24680-444
F: +49 341 24680-488

HRB 22362, Amtsgericht Leipzig
VAT ID: DE 245 156 757
Baden-Württembergische Bank
IBAN: DE57600501010002801566
S.W.I.F.T.: SOLADEST

Executive Board:
Dr. Dr. Tobias Paulin (CEO),
Dr. Götz Oßlich, Jens Rida
Chairwoman of the Supervisory Board:
Helga Eckert

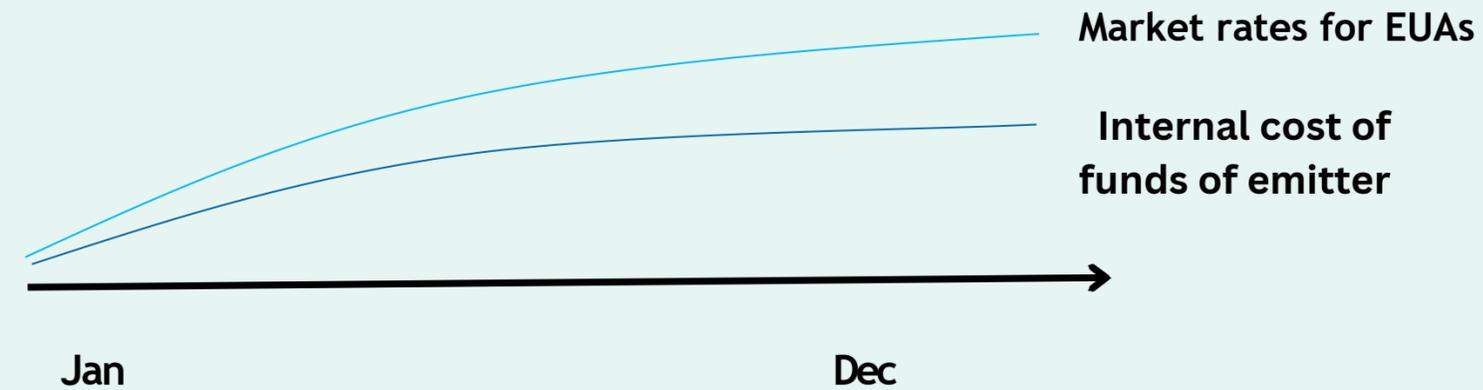


SPOT VS FORWARD

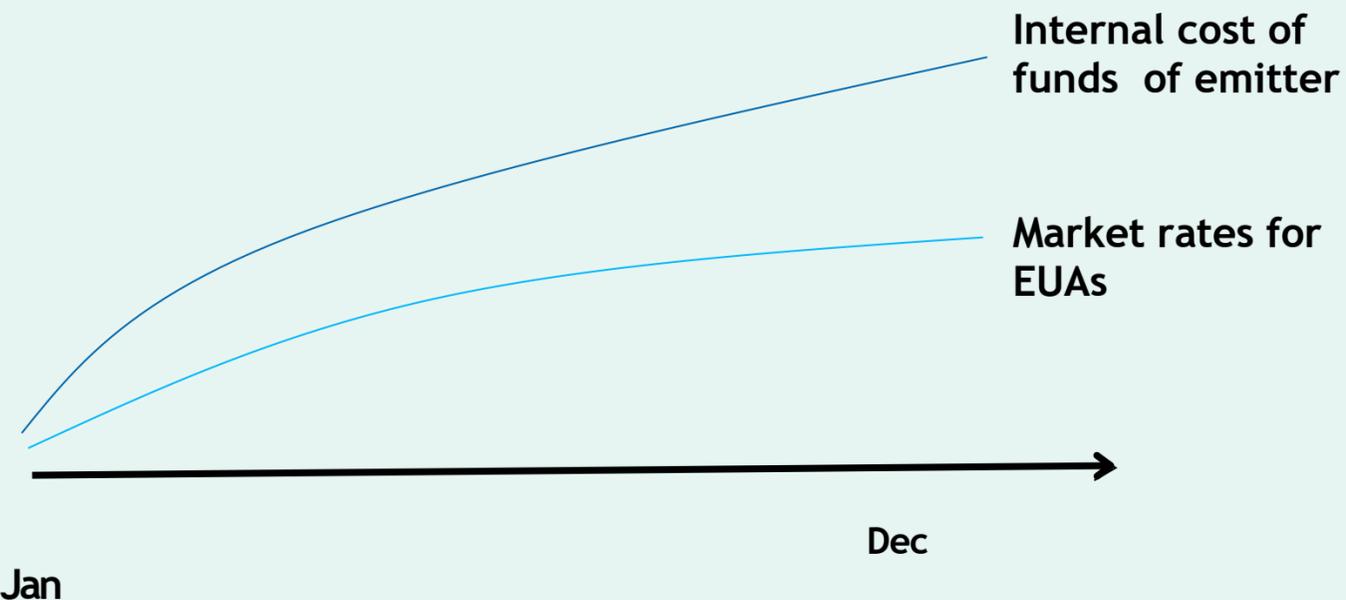
EU allowances issued on or after 2013 do not expire and may be banked for future years. An emitter who has not used their EUAs in one year can therefore use them the following year. This “bankability” of EUAs creates a smooth forward curve, which broadly reflects implied interest rates in the market (for a given market level– paying for EUAs later is generally priced higher than paying for them now).

When hedging, an emitter generally has the choice to pay for the EUAs now (spot) or pay for the EUAs later (forward). This is generally a Treasury/Credit-driven decision-making process. In both cases the emitter would be hedging the market risk by buying EUAs.

Buying spot



Buying forward



Where for an emitter the internal treasury cost of money is cheaper than the market forward rate for EUAs, it may be beneficial to buy spot and hold inventory until the surrender deadline.

In most cases, where the flipside is true, it may be beneficial to fix a higher price but pay later (e.g. closer to the surrender deadline).

Illustrative example only, non-referenceable prices, any deals subject to Credit approval.
Source: https://climate.ec.europa.eu/eu-action/transport/reducing-emissions-shipping-sector/faq-maritime-transport-eu-emissions-trading-system-ets_en



APPROACHES TO HEDGING

Physical spot

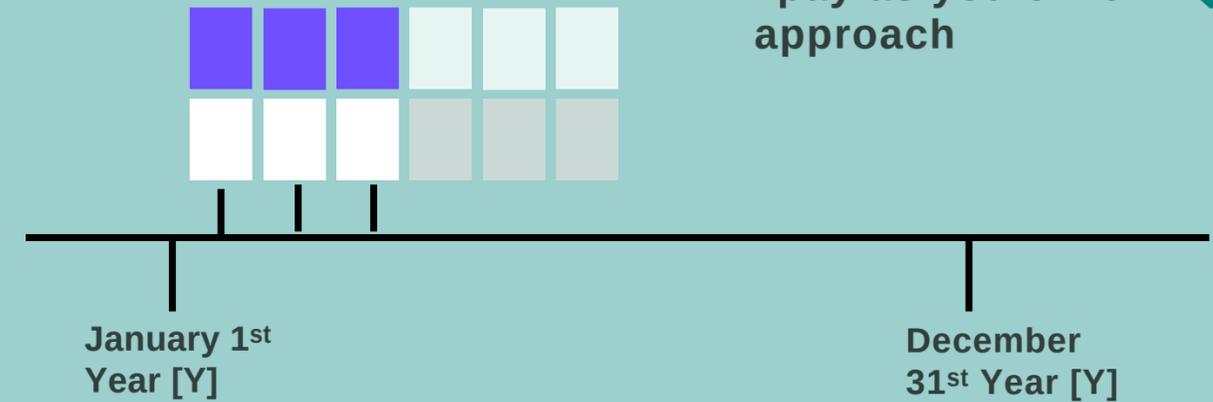
Spot transactions are administratively simplest, but are 'cash intensive' as a buyer ends up building up inventory, which may tie-up working capital.

- Common for smaller volumes, as it is administratively simpler.
- Payment = next business day after the deal is done
- Delivery = on the following business day after payment received. Delivery occurs simply by transferring units from one registry account to another.

20kt CO2
Emitted

20kt EUAs
bought and
received

"pay as you emit"
approach

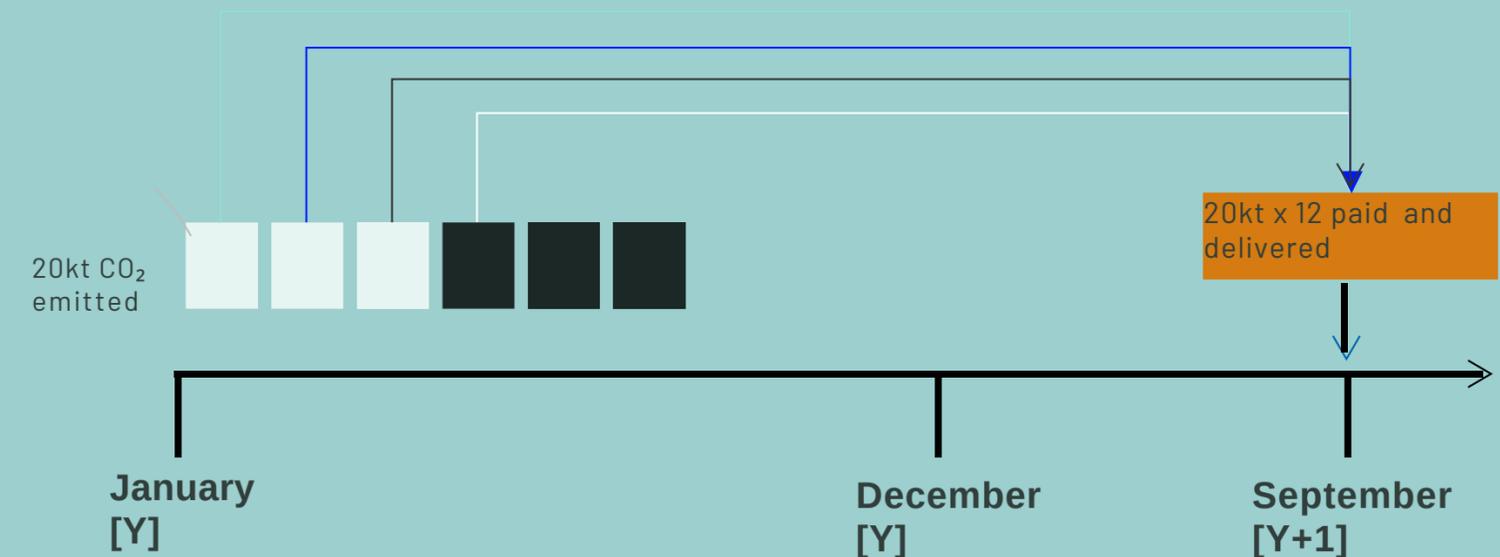


APPROACHES TO HEDGING

Physical forward

- Most common hedging approach with larger obligated entities, as forward trades are less cash-intensive than spot.
- It involves locking-in a price for delivery at an agreed date in the future.
- Typical tenors include December (by convention), September (surrender deadline), or increasingly with shippers monthly/quarterly (depending on specific owner-charterer arrangements).

Example with monthly emissions locked-in forward, all paid and delivered together by the compliance deadline



HOW VARUNA MARINE SERVICES BV CAN HELP



EUA PROCUREMENT

through Varuna Marine Services B.V

- Varuna Marine Services B.V holds a EUA (European Union Allowances) trading licence and have access to Primary market auctions.
- We can provide tailor made contracts for EUA procurement and transfer to your MOHA accounts. Since EUA are allocated via a bidding process we can tailor the size of the bid and value depending on our terms of engagement.
- EUAs owed are automatically calculated on voyage, vessel, and fleet levels. The calculation of applicable EUAs on a voyage basis is covered via our automated dashboard. This dashboard logs all vessel events and fuel consumption, applies the rules of EU ETS and EU MRV, and generates net CO2 emission and applicable EUA for a given voyage.
- Download Voyage based emission and EUA report right from the Dashboard. There is an option to get a verified report from a partner verifier for a fee, if needed. The generated report can also be submitted to any verifier of choice.
- We can arrange an online demo at your convenience to review the system in place and discuss specific needs and tailoring requirements.



VOYAGE OPTIMIZATION

- We provide voyage optimization which is built on NAPA and SPOS API allowing you to get the best in class voyage optimization for your vessels.
- Optimization takes into account vessel specific feature and weather pattern to advise best fuel efficient route for your planned voyages.
- Waypoints suggested are ECDIS compatible.



SEAMLESS DATA INTEGRATION WITH

VERACITY

by DNV

- As part of our ongoing efforts to streamline processes and enhance transparency, we are pleased to inform you that we are fully integrated with the DNV Veracity platform.
- We are integrated with DNV veracity platform - so are able to provide data DNV for verification and emission report generation seamlessly upon getting your consent.



WHAT IS CONSIDERED AS A “PORT OF CALL” FOR THE PURPOSE OF THE EU ETS?

A port of call is the port where a ship stops to load or unload cargo, to embark or disembark passengers, or where an offshore ship stops to relieve the crew.

The following stops are excluded:

- stops for the sole purposes of refueling,
- stops for obtaining supplies,
- stops for relieving the crew (other than an offshore ship),
- stops for going into dry-dock or making repairs to the ship and/or its equipment,
- stops in port because the ship needs assistance or in distress,
- ship-to-ship transfers carried out outside ports,
- stops for the sole purpose of taking shelter from adverse weather or rendered necessary by search and rescue activities,
- stops of containerships in the neighboring container transshipment ports listed in the implementing act to be adopted by the end of 2023





Smart EMRV

- CyberSmart's Smart EMRV simplifies the collection of emissions metrics for all voyages, streamlining the report generation and verification process for various compliance standards.
- Human machine interface powered by LLM to ensure best accuracy in data cleaning.
- Plug and play web-based portal, compliant with EU GDPR regulation
- Hosted on EU servers and regularly checked against best Cyber Security framework for Web based application.
- Flexibility of raw data collection via APIs , CSV and Excel etc.
- The platform also offers a comprehensive fleet-level overview, ensuring efficient and thorough management of environmental compliance across your maritime operations.

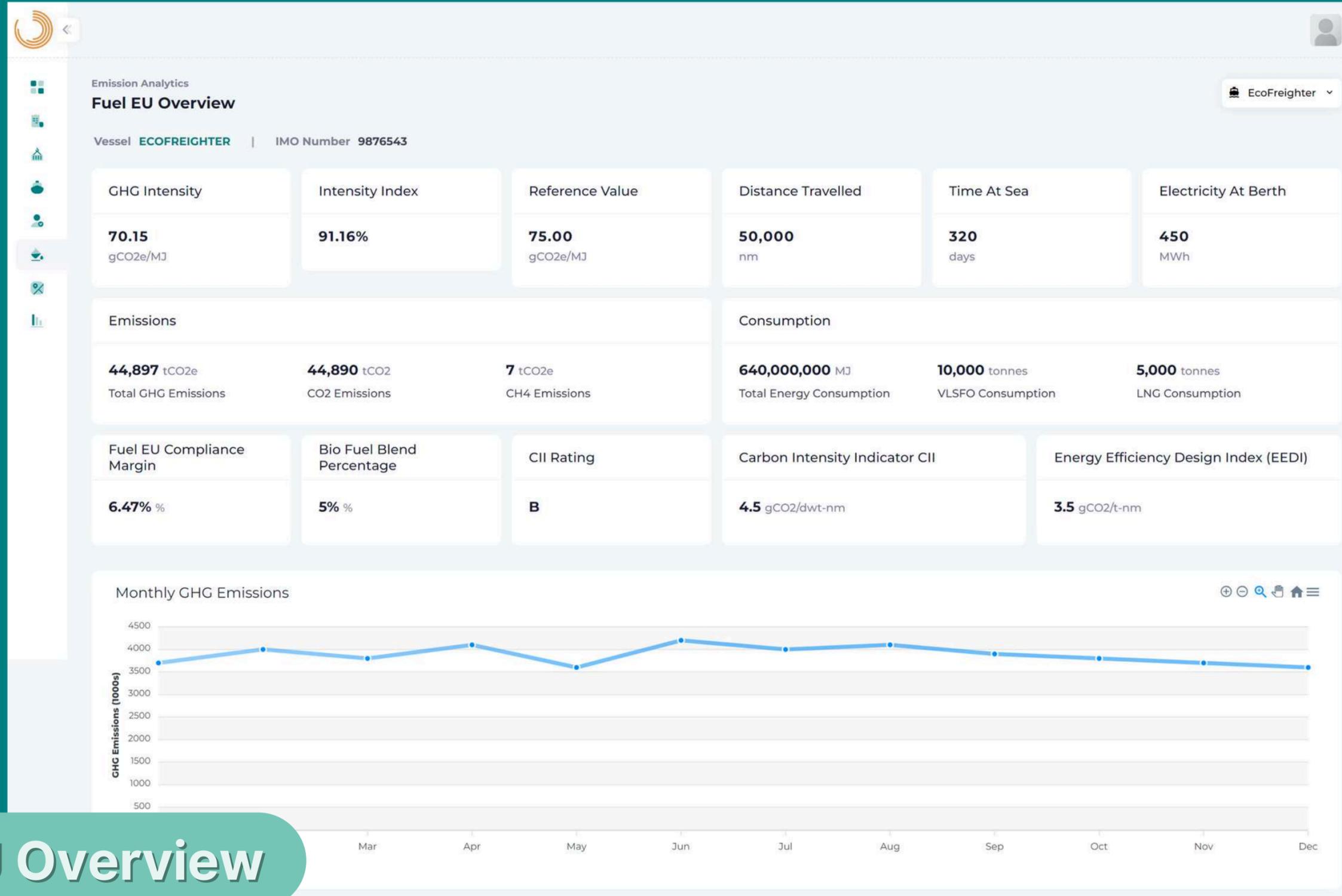




Smart FuelEU

- GHG Intensity Monitoring: Tracks GHG intensity with biofuel factors, ensuring adherence to FuelEU Maritime regulations.
- Month-on-Month Analysis: Provides monthly GHG intensity reports with predictive insights for future performance
- Optimized Fuel Management: Helps reduce fuel consumption and emissions, enhancing sustainability and cost efficiency.

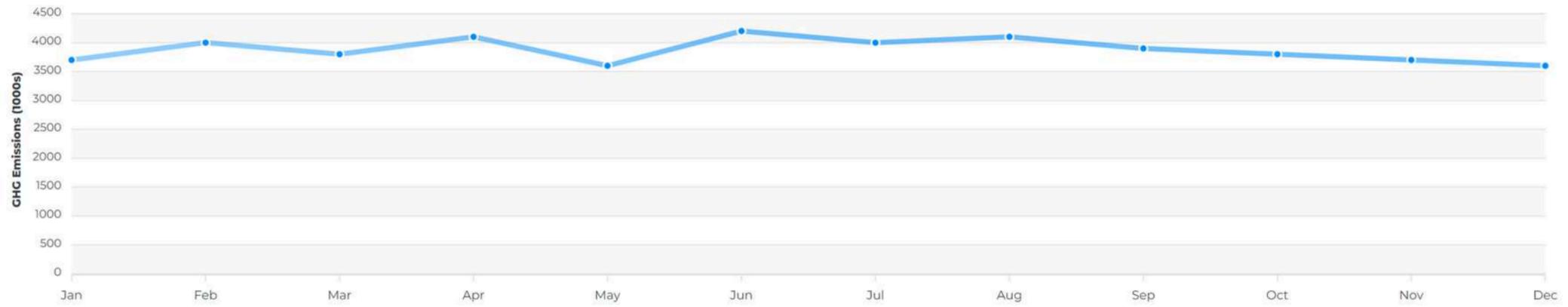




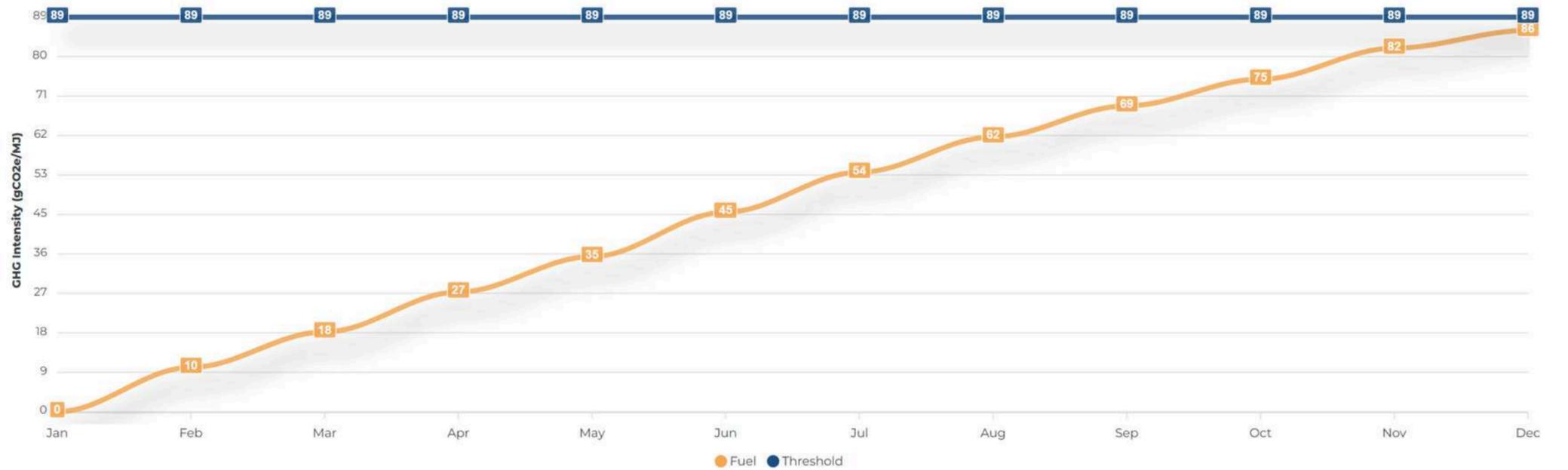
FuelEU Overview



Monthly GHG Emissions



Monthly GHG Intensity



FuelEU Overview



CHARTING THE COURSE AHEAD

with Varuna Marine Services B.V

- Accuracy in data collection and processing
- Route planning and optimization based on real time weather and vessel specific profile. Time based Simulation
- Voyage and Fleet level overview and reporting right in the dashboard
- Single pane of glass for all Emission related KPIs and compliance – EU ETS, FuelEU , EUA procurement, Vessel performance
- Web based portal and plug and play data collection via APIs, CSVs, Excels etc.
- Access to EUA via primary and secondary markets
- Guidance in setting up an EU Registry Account, Monitoring plan drafting and update
- Ease of data sharing to all stakeholders – integration with IACS member and other value-added maritime application
- FuelEU Maritime Monitoring Plans, Pooling arrangement , Alternate fuel Simulation
- Feasibility study and modelling analysis for various ESD ,OPS, and alternative fuels.



THANK YOU

We look forward to hearing from you soon!

Thanks for going through the presentation and appreciate your time taken!



Varuna Marine Services
Smart Sustainable Shipping

Address

H.J.E. Wenckebachweg 58,
1114 AD, Amsterdam-Duivendrecht,
The Netherlands

Phone

+ 31 107 640 935

Email

info@varunamarine.eu

Website

www.varunamarine.eu

Follow us on:

 /varunamarineservices

 @Varunamarine

WEBINAR

NAVIGATING EMISSIONS COMPLIANCE WITH EUMRV, EUETS, FuelEU Maritime and EUA procurement



11th December 2024

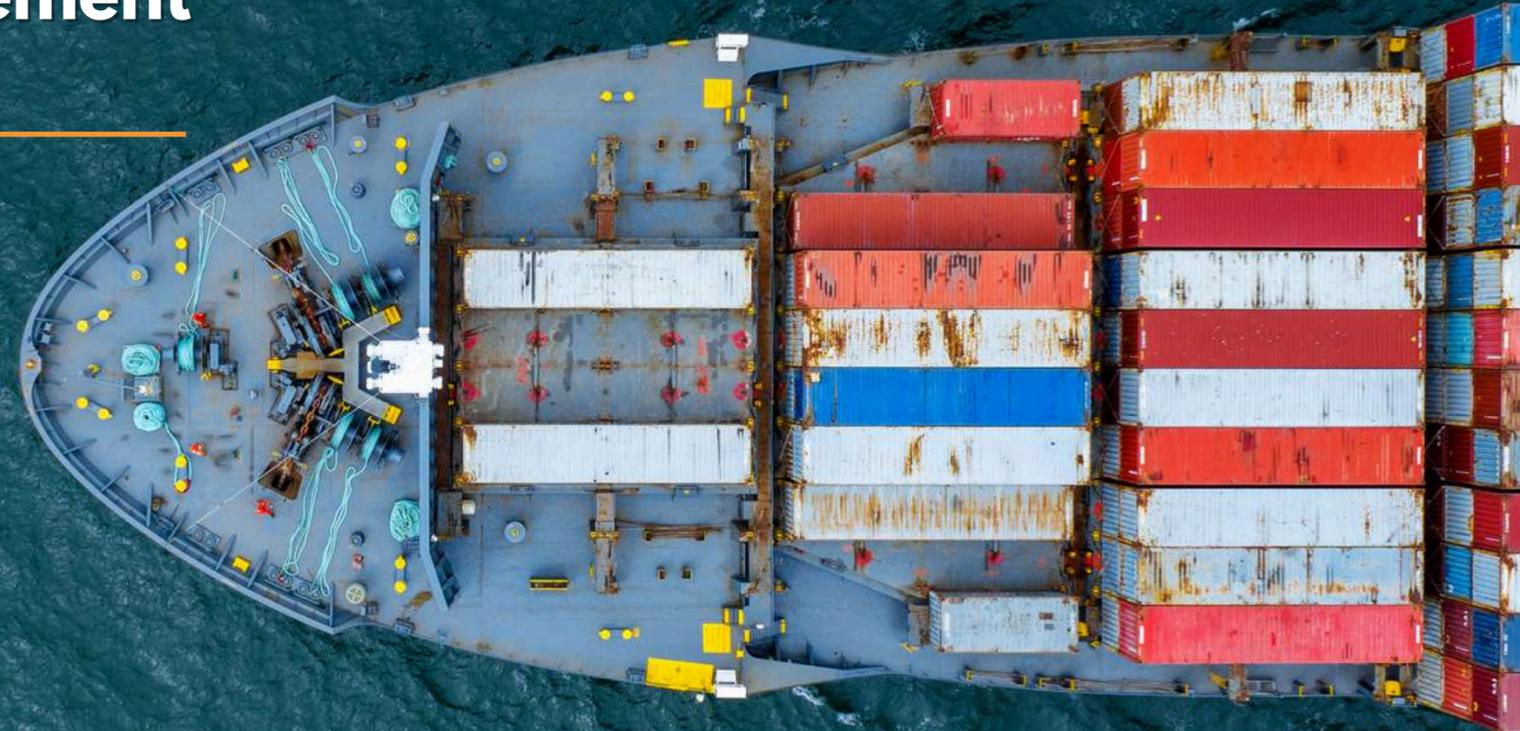


11 AM – 12.30 PM (CET)

ORGANISED BY:



Varuna Marine Services
SMART SUSTAINABLE SHIPPING



POLL 02

Under the EU ETS, what does one EUA represent?

- A) The right to emit 1 ton of SO₂**
- B) The right to emit 1 ton of CO₂ or equivalent greenhouse gases**
- C) The obligation to reduce emissions by 1%**
- D) A subsidy for green technologies**

PRESENTING OUR NEXT PANELIST



MR. DOMINIC NG

Head of APAC

DNV VERACITY



WHEN TRUST MATTERS

Navigating Through ETS / Fuel EU Maritime Complexities

Dominic Ng –DNV Veracity APAC

11 December 2024

Veracity delivers trust to industry digitalisation

Independent
cloud
platform

Built by DNV

Delivering
trust to
industry
digitalisation

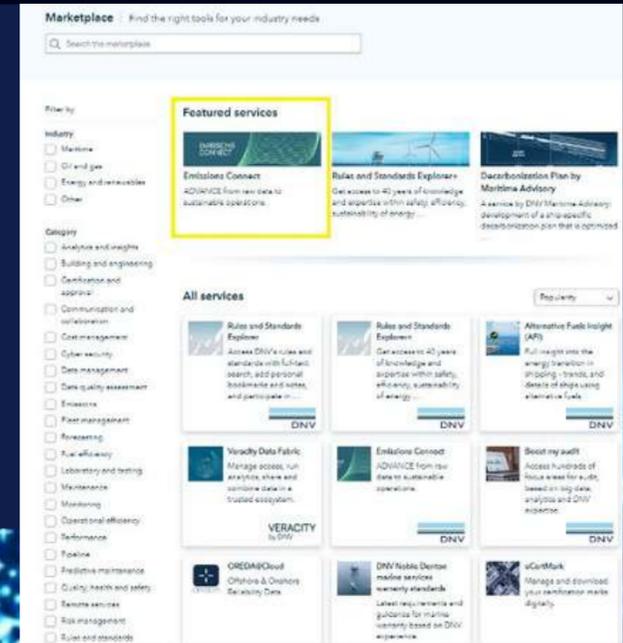
Veracity is a growing industry cloud

350 000
registered users

300
services in operation

10 000
Connected vessels

10m
API calls per month



Agenda for today:

01

Understanding
EU ETS
FEUM

02

Why is it getting
so much
attention?

03

How to deal with
it?

There is a price to pay for GHG emission intensity

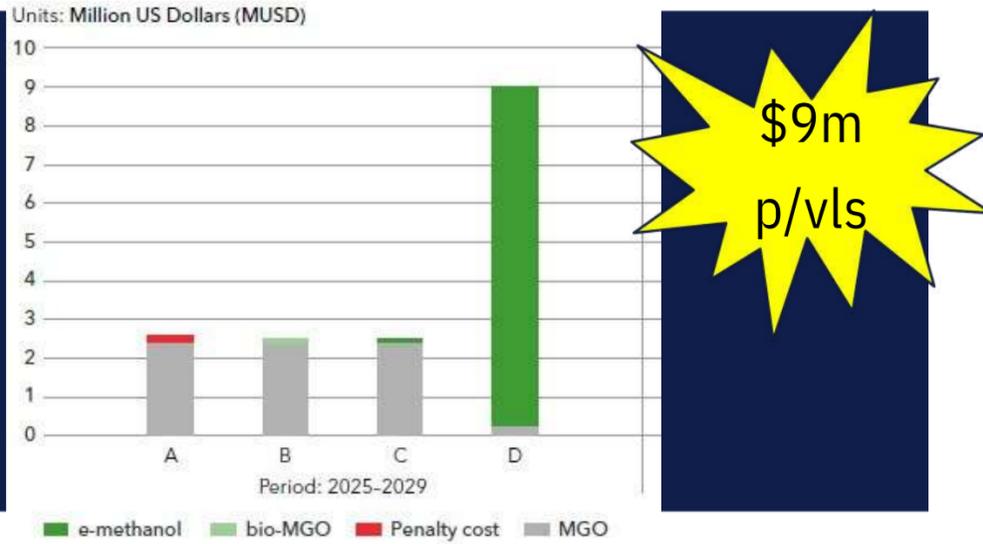
EU MRV
(IMO CO2 price: TBD)

Carbon pricing
(tank to wake)

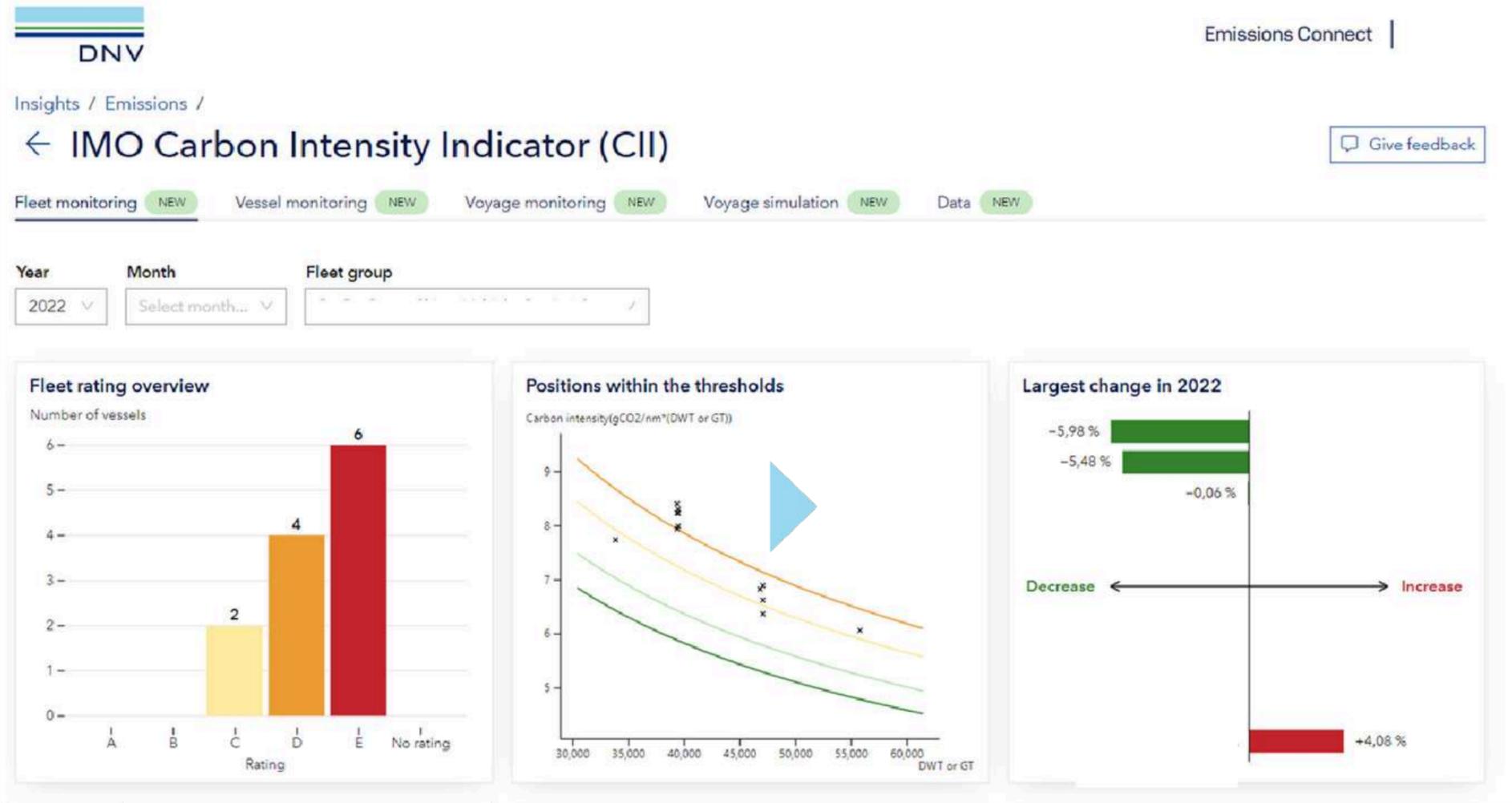


Fuel EU Maritime
(IMO GHG Fuel Standard: TBD)

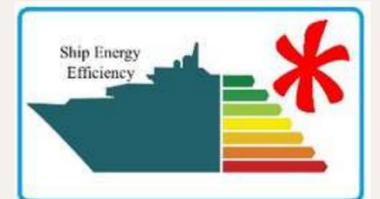
Fuel levy
(well to wake)



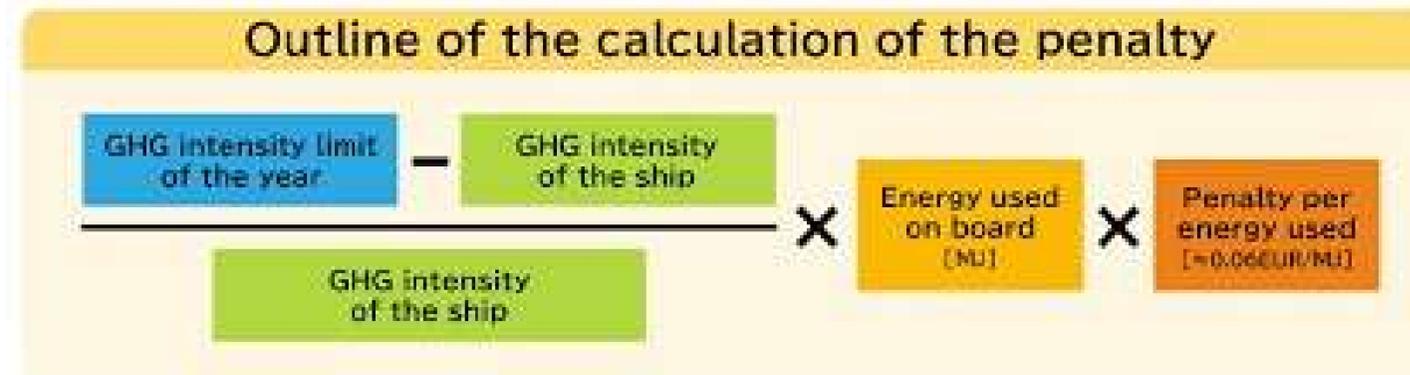
CII are becoming terms in commercial contracts and need to be controlled and managed



- To manage future commercial attractiveness and concerns that CII might affect asset value
- Could be used in financial arrangements, impacting cost and access to capital
- Could be used in ESG reporting



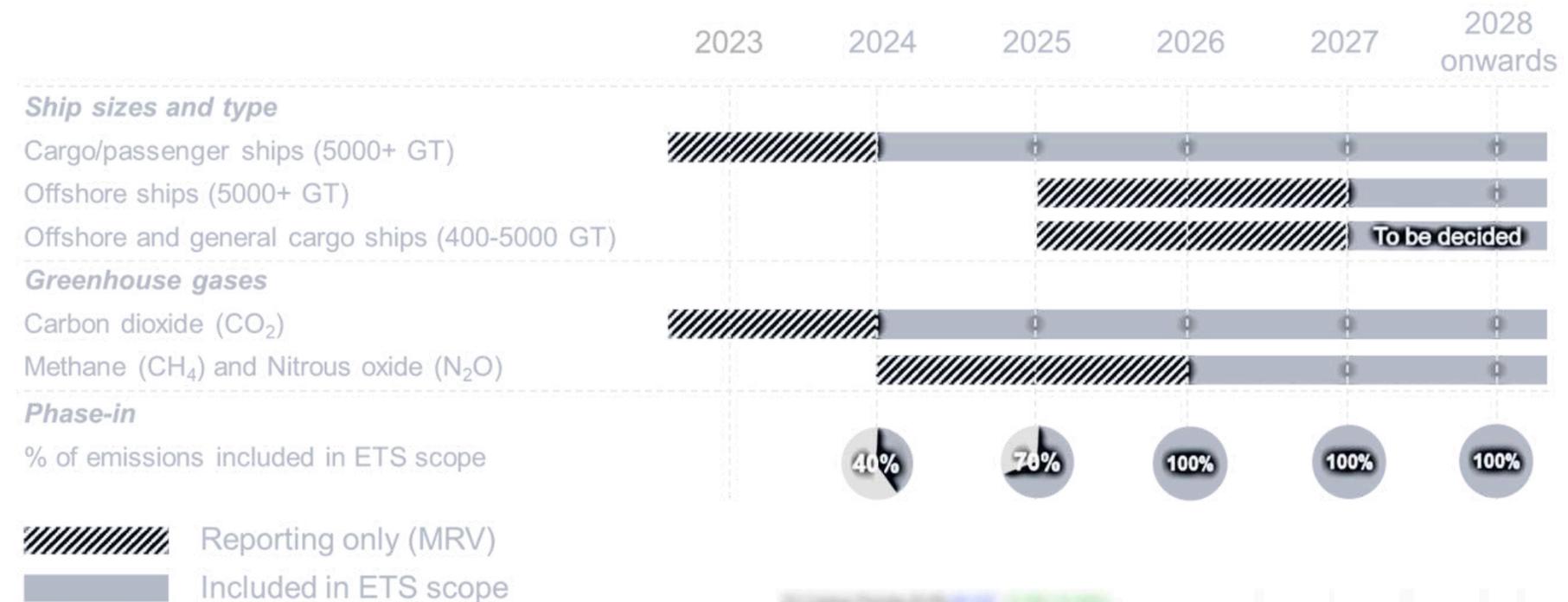
FuelEU Maritime sets requirements on energy consumption compared to ETS that measures emissions



•ETS cost = sum ETS emission x EUA cost x Phase-in %

Shipping to be included in the EU Emissions Trading System from 2024

- First reporting period: 1 January to 31 December 2024
- Shipping companies need to surrender emission allowances by 30 Sept. every year (starting in 2025) for emissions in the previous calendar year
- Starts with current MRV scope, then expands (see timeline)
50% of emissions into or out of EEA, 100% of CO₂ emissions between and within EEA ports
- Sustainable biofuels considered zero CO₂ emissions under MRV
- Annual revenues from 20M EUAs (~1.6 bill € annually) earmarked for shipping through the Innovation Fund

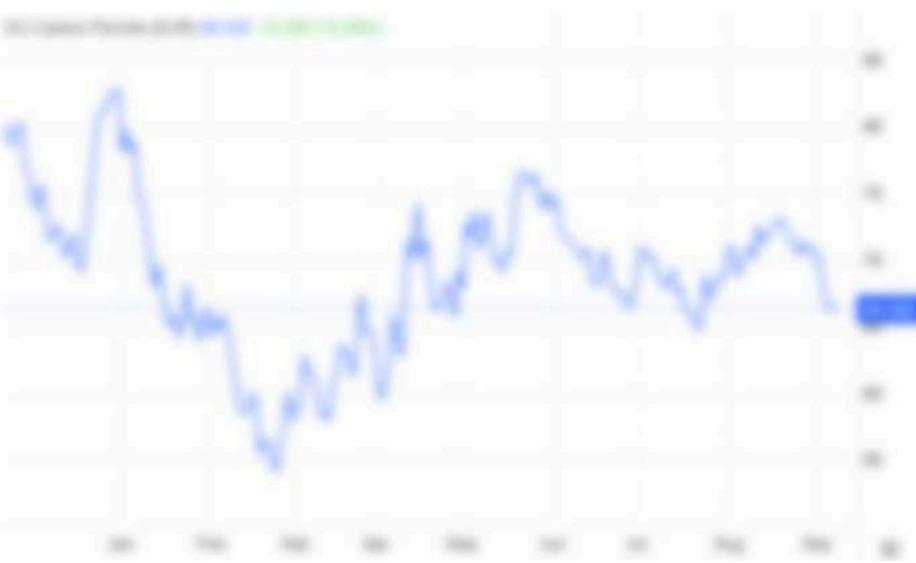


Impact

Current price: 66.3€/t CO₂e

Highest price: 100.0 € in Mar'23

Average '22 to '25: 84.0 €



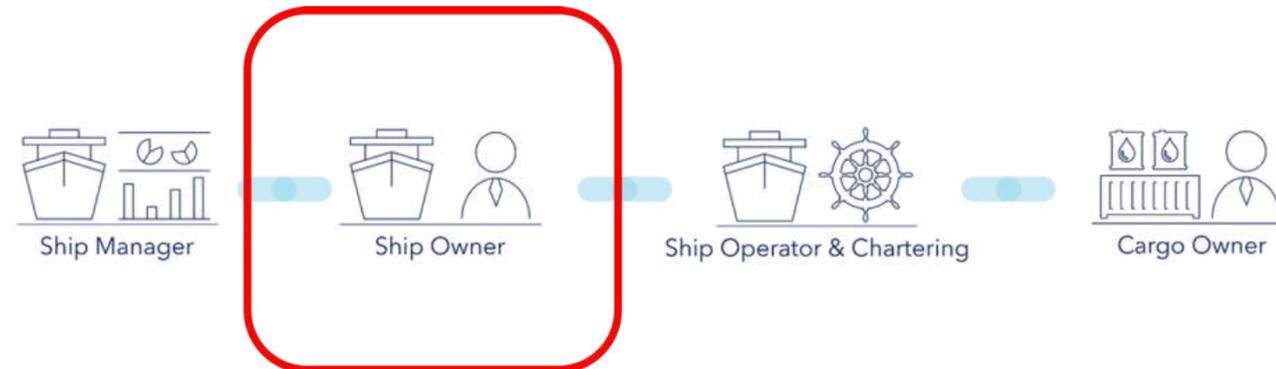
Source: <https://tradingeconomics.com/>

Industry Challenge

-EU ETS introduced commercial considerations into technical requirements

ETS wraps commercials over a statutory instrument

Commercial agreements need to be updated to achieve the polluter pays principle

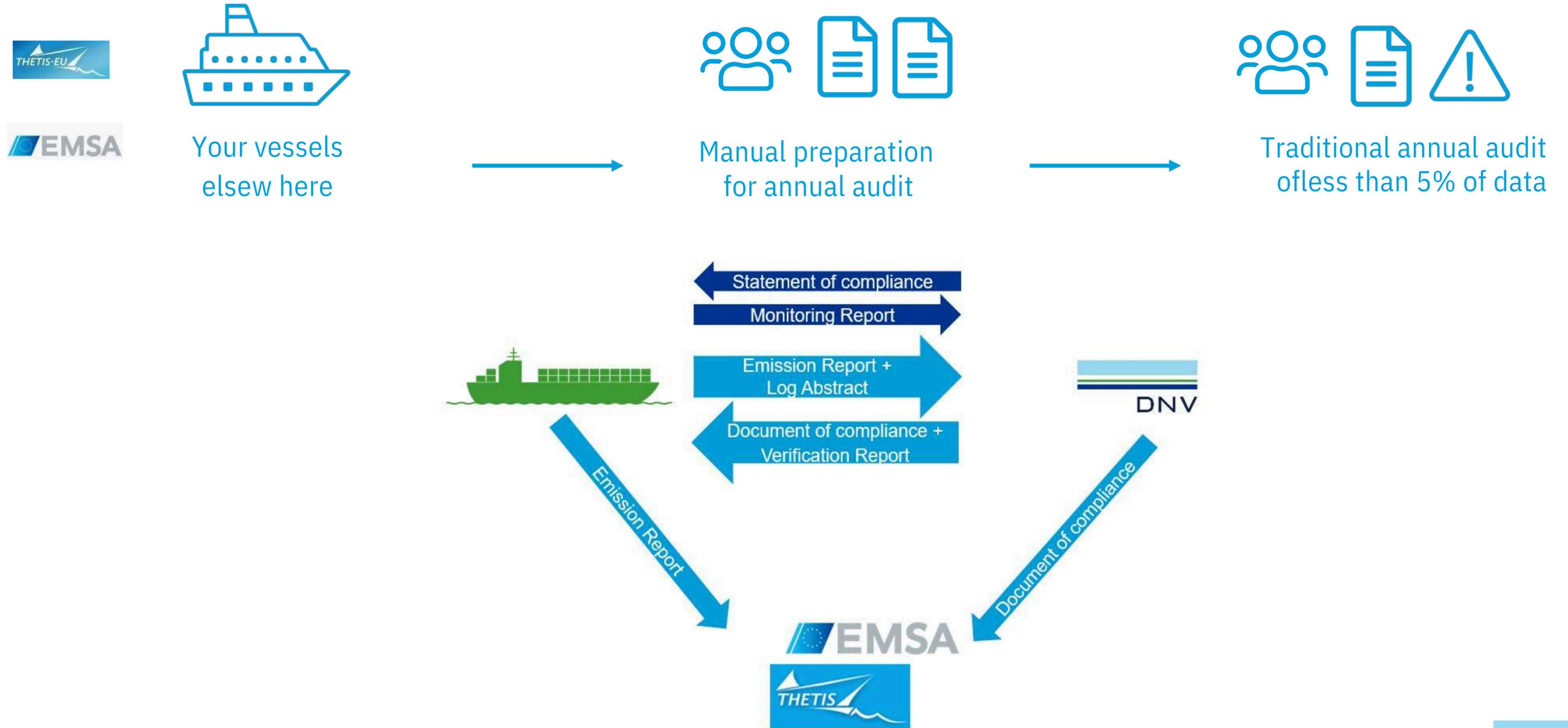


Registered owner default responsible for MRV and ETS

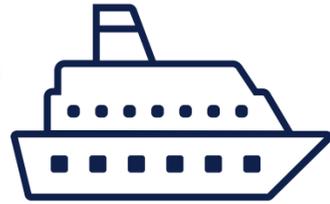
Trusted Emissions Data

Acquiring and managing EUA transactions

Recap: Annual reporting for MRV was sufficient



Transfer of liabilities (polluter pays) require accurate emission accounting



Your vessels with DNV /Veracity

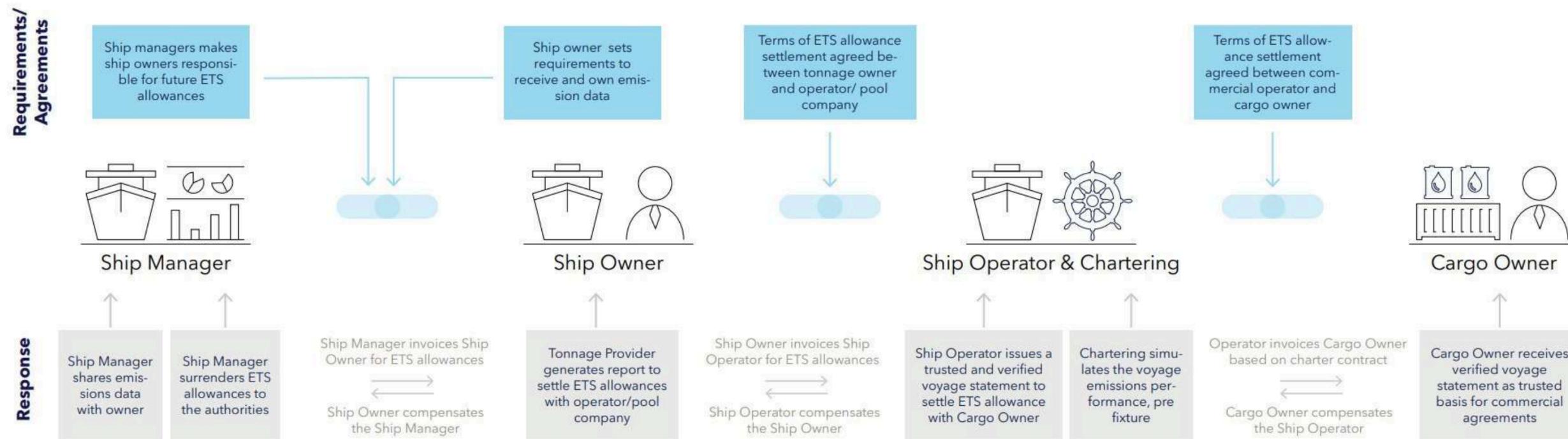


Automated, continuous reporting and data verification

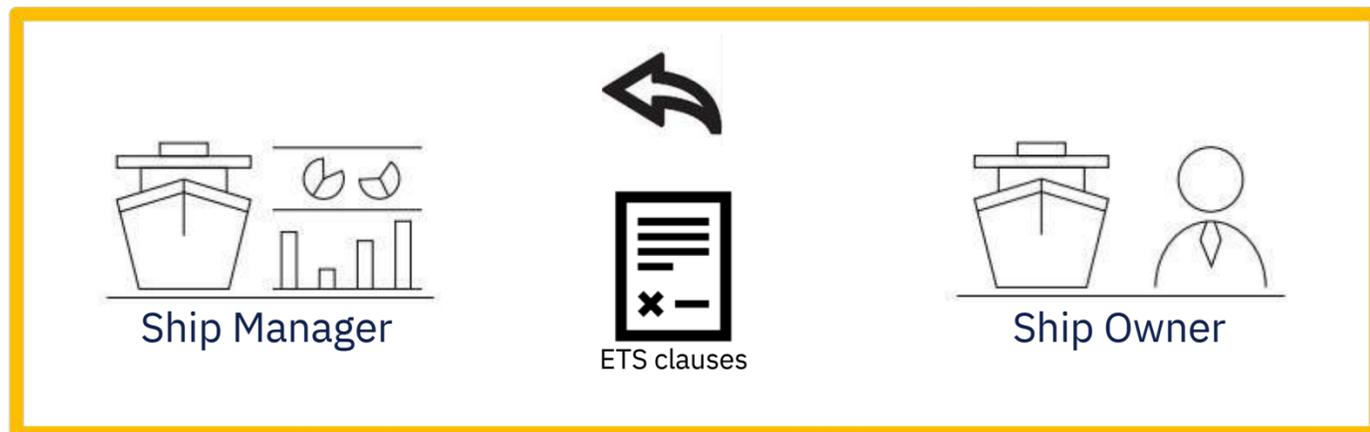


All data is 100% verified

VOYAGE STATEMENT	
Statement No.: 2	
Date of issue: 2022-11-08	
Particulars of ship*	
Vessel name	Vessel
MCO number	0228427
Gross tonnage	55,535
Deadweight	555,838
Type of ship	Oil Tanker
Required CI	5,000
Voyage details	
Voyage start time (UTC)	2022-05-09 12:00
Voyage end time (UTC)	2022-05-22 15:10
Departure port	Departure port
Arrival port	Arrival port
Voyage summary	
Distance (nm)	5,805
Total CO ₂ emissions (tE)	2,484
Total FCC HFO equivalents (tE)	2,484
Voyage CI without correction factors**	2,484
Voyage CI with correction factors**	1,688 (Voyage CI rating: C)



Industry Use Case 1: Complexity can be challenging, data sharing is key



ETS clauses



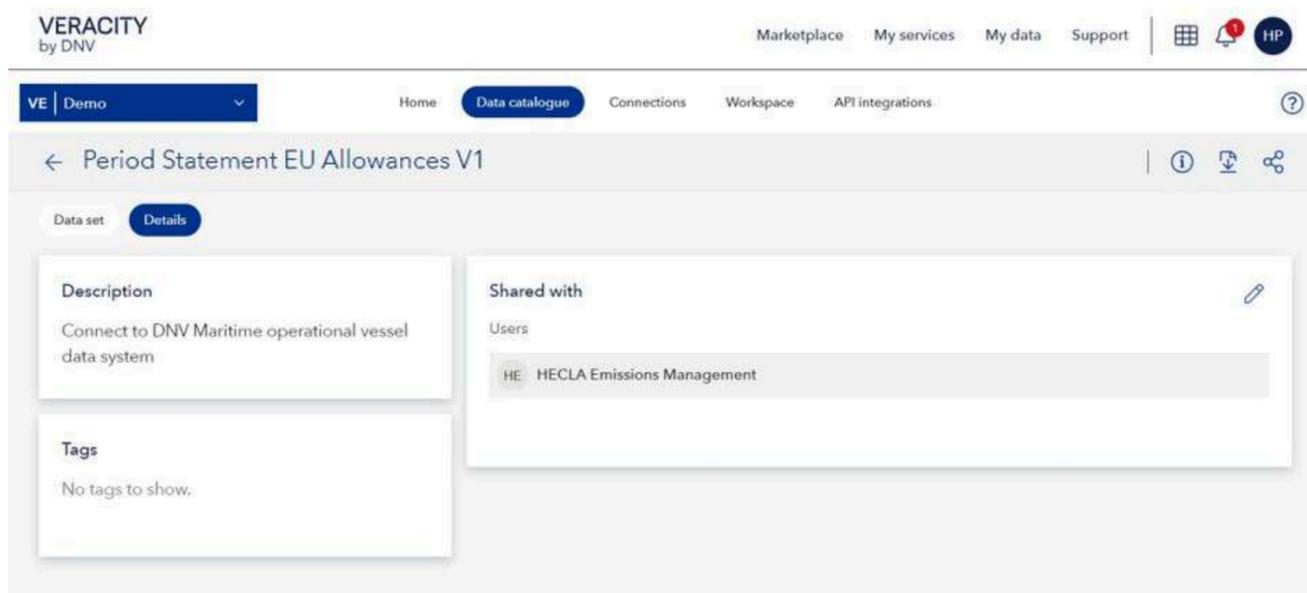
CII clauses



ETS clauses



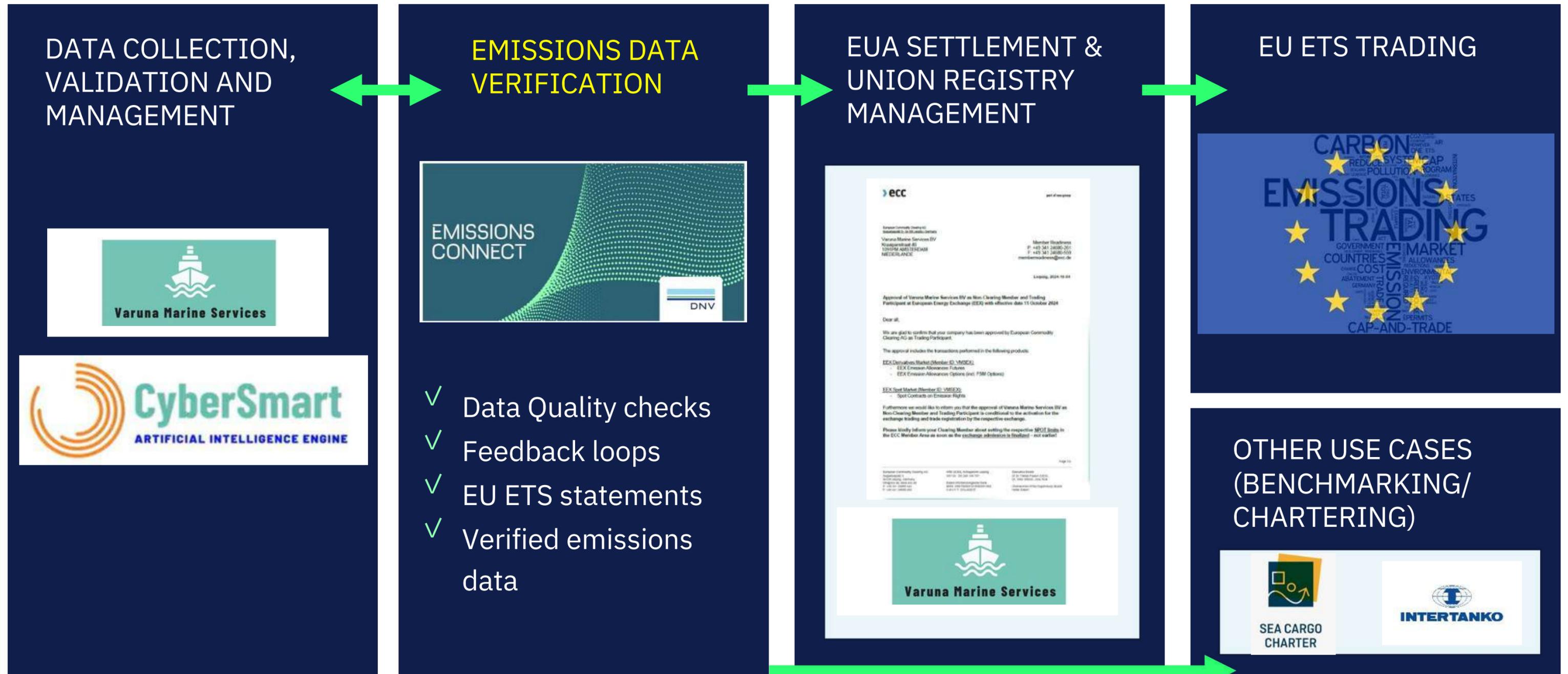
CII clauses



Key Success Factors

Shareable, real-time verified emissions data and voyage statements ready to facilitate contract settlements with trust

Seamless data sharing to support ETS processes



Our Partners receives your verified data

EUA Requests ?

To be requested **59** To be reviewed **0** To be closed **4** Closed **30**

Search 2023 ▾

Vessel name / IMO	Charterer	EUA request period	Off hire	Required EUA
Dreamer / 9000009	MSC Mediterranean Shipping Co AS	01.08.2023 00:00 UTC -	-	361
Rose / 9000006	Orient Overseas Container Line Ltd	01.01.2023 15:00 UTC - 31.01.2023 00:00 UTC	🕒	3849
Enigma / 9000005	Tailwind Shipping	01.04.2023 00:00 UTC - 30.04.2023 00:00 UTC	-	284
Rose / 9000006	Orient Overseas Container Line Ltd	01.03.2023 00:00 UTC - 31.03.2023 00:00 UTC	-	905
Shadow / 9000004	Hapag-Lloyd AG	01.05.2023 00:00 UTC - 31.05.2023 00:00 UTC	-	1172
Rose / 9000006	Orient Overseas Container Line Ltd	01.05.2023 00:00 UTC - 31.05.2023 00:00 UTC	-	0
Galore / 9000008	MSC Mediterranean Shipping Co AS	01.03.2023 00:00 UTC - 31.03.2023 00:00 UTC	-	1955
Rose / 9000006	Orient Overseas Container Line Ltd	01.06.2023 00:00 UTC - 30.06.2023 00:00 UTC	-	104
Shadow / 9000004	Hapag-Lloyd AG	01.02.2023 00:00 UTC - 28.02.2023 00:00 UTC	-	1194
Moonlight / 9000002	MSC Mediterranean Shipping Co AS	01.06.2023 00:00 UTC - 30.06.2023 00:00 UTC	-	0

Industry Use Case 2: Settle ETS cost at the end voyage

Clearlake Shipping begins emissions data project



Story By: Rob O'Dwyer | January 31, 2024 | Software, AI and Big Data

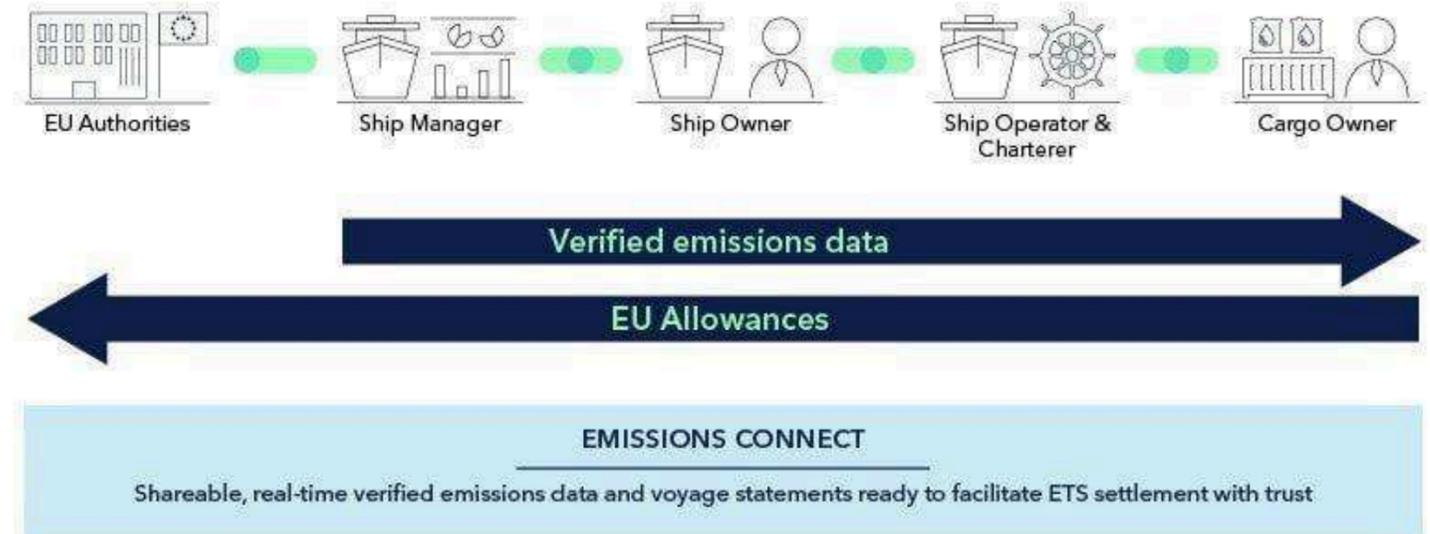
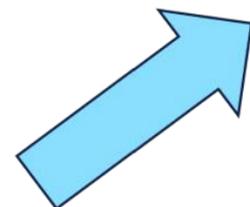
Clearlake Shipping is to overhaul its fuel consumption and emissions data analytics following a new project involving DNV and maritime software provider Bluewater.

Bluewater will integrate with DNV's Veracity data platform to enable direct sharing of fuel consumption and emissions data into DNV's verification services. The daily reporting of this information, verified by DNV, will provide the shipping company with a simplified central process to optimise voyages, reduce emissions, and control costs, while maintaining compliance with European Union regulations.

"This platform gives Clearlake Shipping a very granular view of fuel consumption and emission data, provided daily and continuously verified by DNV, enabling us to improve our environmental impact for our entire fleet," said Captain Siva Mani Raaj, Managing Director of Clearlake Shipping.

Trial data shared through the platform to date has already allowed for significant data quality advances to be made by Clearlake, according to the partners.

"Together with DNV, we are dedicated to providing Clearlake with top-notch emissions data management services and maritime solutions that will empower their operations, enhance efficiency, and contribute to their continued success in the maritime sector," said Kumaresh Gupta, Founder and Managing Director of Bluewater.



Feedback loop to manage data quality issues

DNV | [Dashboard](#) | [Vessels](#) | [Manage data](#) | [Data quality](#)
OVD Admin | | [DNV Maritime Demo Manager 10659392](#)

EU MRV UK MRV DCS VLV | 2024
Show only Issues and warnings EU/ETS Favorites

Vessel name or IMO

> Checks 5 issues 3 warnings

Status	Vessel name	IMO	Last event (UTC)	Last data update (LT)	Last check update (LT)
	DNV DEMO SUPERTANKER	5999999	2024-02-22 11:00	2024-02-27 01:56	2024-03-02 17:06
	UnderWay	2024-01-21 23:00 → 2024-02-14 15:54	Into the EU	ZARCB → NLRTM	
	UNLOCODE position distance (per voyage)	The reported UNLOCODE NLRTM at ARRIVAL on 2024-02-14 15:54 is 299.2 nm away from reported position 51.952 and -4.127.			
	Reported distance vs. reported positions	Reported distance (311.0 nm) is 138.8 nm shorter than distance to the position on previous event where distance was reported (449.8 nm).			2024-01-31 11:00, NOON
	Reported distance vs. reported positions	Reported distance (329.0 nm) is 478.1 nm shorter than distance to the position on previous event where distance was reported (807.1 nm).			2024-02-01 11:00, NOON
	InPort	2024-02-14 15:54 → 2024-02-22 02:12	Within EU	NLRTM → NLRTM	
	Consumption vs. available total fuel (per voyage)	Reported available total fuel (start ROB + bunker intake - end ROB) does not match reported consumption; Start ROB: 679.5 t, bunker intake: 198.1 t, end ROB: 1896.9 t; Reported consumption: 32.1 t; Deviation between available fuel and consumption: 3271.2%. (2024/02/14 - 2024/02/22) Please review if BDNs, ROBs and consumption are reported correctly.			
	Distance deviation (per voyage)	Reported distance (20.0 nm) shorter than the position on previous event where distance was reported (313.1 nm).			
	UNLOCODE position distance (per voyage)	The reported UNLOCODE NLRTM at ARRIVAL on 2024-02-14 15:54 is 299.2 nm away from reported position 51.952 and -4.127.			
	Reported distance vs. reported positions	0 distance was reported, or the entire event was reported as Time Elapsed Anchoring, and this is not matching the distance between reported positions (306.3 nm).			2024-02-16 11:00, NOON AT PORT
	UnderWay	2024-02-22 02:12 → 2024-02-22 11:00	Out of the EU	NLRTM → USNPT	

Mark relevant voyages for EUA settlement

Create voyage

For voyage charter: Select voyage change events and associated legs and port stays to be included in a voyage statement.

For time charter: Select voyage change events, month change events and associated legs and ports stays to be included in a monthly/period statement.

<input type="checkbox"/>	Voyage number	Date range	From	To	EU ETS	Mode	Loc	Avg. speed [kn]	Distance [nm]	EU ETS CO ₂ [mt]	EUA	Data quality
<input type="checkbox"/>	-	2023-02-03 - 2023-02-04	Bremerhav...	Bremerhav...	●	📍	Ballast	-	-	23	9	✓
<input type="checkbox"/>	-	2023-02-04 - 2023-02-07	Bremerhav...	Zeebrugge...	●	🌊	Ballast	10,2	333	119	47	✓
<input checked="" type="checkbox"/>	-	2023-02-07 - 2023-02-09	Zeebrugge...	Zeebrugge...	●	📍	Laden	-	-	19	7	✓
<input checked="" type="checkbox"/>	-	2023-02-09 - 2023-02-10	Zeebrugge...	Portbury (...)	↩	🌊	Laden	11,6	545	69	27	✓
<input checked="" type="checkbox"/>	-	2023-02-10 - 2023-02-11	Portbury (...)	Portbury (...)	●	📍	Laden	-	-	-	-	✓
<input checked="" type="checkbox"/>	-	2023-02-11 - 2023-02-14	Portbury (...)	Vigo (ESV...)	➔	🌊	Laden	12,6	706	99	39	✓
<input checked="" type="checkbox"/>	-	2023-02-14 - 2023-02-14	Vigo (ESV...)	Vigo (ESV...)	●	📍	Laden	-	-	9	4	✓
<input type="checkbox"/>	-	2023-02-14 - 2023-02-17	Vigo (ESV...)	Sagunto (E...)	●	🌊	Laden	15,2	968	335	134	✓
<input type="checkbox"/>	-	2023-02-17 - 2023-02-17	Sagunto (E...)	Sagunto (E...)	●	📍	Ballast	-	-	4	2	✓
<input type="checkbox"/>	-	2023-02-17 - 2023-02-19	Sagunto (E...)	Livorno (IT...)	●	🌊	Ballast	12,1	536	120	48	✓
<input type="checkbox"/>	-	2023-02-19 - 2023-02-20	Livorno (IT...)	Livorno (IT...)	●	📍	Ballast	-	-	13	5	✓
<input type="checkbox"/>	-	2023-02-20 - 2023-02-23	Livorno (IT...)	Piraeus (G...)	●	🌊	Ballast	14,2	929	276	110	✓
<input type="checkbox"/>	-	2023-02-23 - 2023-02-23	Piraeus (G...)	Piraeus (G...)	●	📍	Ballast	-	-	4	2	✓
<input type="checkbox"/>	-	2023-02-23 - 2023-02-24	Piraeus (G...)	Yenikoy-A...	↩	🌊	Ballast	12,2	408	55	22	✓

5
selected rows

From-To
Zeebrugge - Vigo

Date range
2023-02-07 - 2023-02-14

📊
12,16 kn
Avg. speed

📏
1 251 nm
Distance

☁️
195 mt
EU ETS CO₂

🏠
78
EUA

Generate statement

PERIOD STATEMENT EU ALLOWANCES ¹

Statement no.:
1660
DNV ID no.:
Date of issue:
2024-02-02

Particulars of ship ²

Name of ship:	MT Eco Tanker
Gross tonnage:	65 145
Deadweight:	109 999
Type of ship:	Tanker
IMO number:	1234567

Details

Start time [UTC]:	2024-01-15 05:30
End time [UTC]:	2024-01-31 11:00
From:	Marsaxlokk (MTMAR)
To:	Gibraltar (GIGIB)
Remarks (not subject to verification):	

Summary

EU-ETS distance [nm]:	2 972
Total EU-ETS CO ₂ emissions [mt]:	1 216,38
Total EU Allowances (EUA):	486,55
Total EU MRV CO ₂ emissions [mt]:	1 267,23

This is to confirm:

that the stated voyage data have been found to satisfactorily comply with the requirements of the Verification process. Legs not finished are not part of Verification scope.

Issued by DNV on **2024-02-02**



for DNV
This document is signed electronically. Validation and authorization can be obtained from trust.dnv.com by using the Unique Tracking Number (UTN):
EM-001660 and ID: **424**

This document is based on the data made available to DNV through our OVD reporting service as of day before date of issue.

¹ Directive 2003/87/EC extension to maritime shipping activities, include maritime transport activities in the EU Emissions Trading System (EU ETS) from 2024.
² Vessel data as of date of issuance and according to MARPOL.
LEGAL DISCLAIMER: This statement has been prepared based on available knowledge, technology and/or information at the time of issuance of this document. The use of this document by other parties than DNV is at the user's sole risk. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this statement.

Verified voyage statements for EU ETS settlements



Statement no.: **1660**
Date of issue: **2024-02-02**

Leg Summary

Leg	Start - end	Leg mode	Leg scope	Start time [UTC]	End time [UTC]	EU MRV CO ₂ [mt]	Distance EU ETS [nm]	CO ₂ EU ETS [mt]	EUA
1	Marsaxlokk (MTMAR) - La Pallice (FRLPE)	Underway	Within EU	2024-01-15 05:30	2024-01-22 15:00	651,02	2 019	651,02	260,41
2	La Pallice (FRLPE)	Port of call	Within EU	2024-01-22 16:00	2024-01-26 03:12	180,76	0	180,76	60,36
3	La Pallice (FRLPE) - Dunkerque (FRDKK)	Underway	Within EU	2024-01-26 03:12	2024-01-27 17:36	207,76	616	207,76	83,70
4	Dunkerque (FRDKK)	Port of call	Within EU	2024-01-27 17:36	2024-01-30 06:06	156,00	0	156,00	62,40
Total						1 165,54	2 837	1 165,54	468,27

Emissions per fuel type

Fuel Type	CO ₂ Conversion factor	CO ₂ EU ETS [mt]	EUA
LNG	2,750	389,71	136,89
MGO	3,206	482,62	163,13
LFO	3,151	333,85	132,54

Information on leg not finished - not subject to verification

Leg	Start - end	Leg mode	Leg scope	Start time [UTC]	End time [UTC]	EU MRV CO ₂ [mt]	Distance EU ETS [nm]	CO ₂ EU ETS [mt]	EUA
1	Dunkerque (FRDKK) - Gibraltar (GIGIB)	Underway	Out of the EU	2024-01-30 06:06	2024-01-31 11:00	101,69	335	50,84	20,34
Total						101,69	335	50,84	20,34

Industry Use Case 3: commercial contracts and need to be controlled and managed

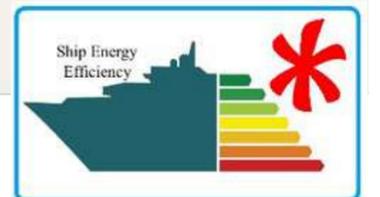
EU ETS terms are included in commercial contracts

- To transfer liabilities for ETS allowances towards the end charterer
- For financial control
- For P&L management



CII terms are applied in commercial contracts

- To manage future commercial attractiveness and concerns that CII might affect asset value
- Could be used in financial arrangements, impacting cost and access to capital
- Could be used in ESG reporting



A common requirement is emission data that can be trusted by multiple stakeholders in nearly real time.

Simulate amount of EUAs and cost based on input

IMO CII
EU ETS

Fleet Monitoring
Vessel Monitoring NEW
Voyage Monitoring
Voyage Simulation NEW

Create a virtual voyage consisting of one, or several legs, to simulate the resulting CII performance for any given vessel in your fleet by just adding main parameters for the voyage.

Step 1
Select vessel, year and allowance price

Search

Year

Allowance price

 €

Ice Class ?

 No

Step 2
Create voyage

Voyage 1: SGSIN - DEHAM
Extend to year end
Duplicate voyage
Delete voyage

LEG 1

From	To	Mode	Leg category	Fuel type	
SGSIN	DEHAM	At sea	Into the EU	HFO	

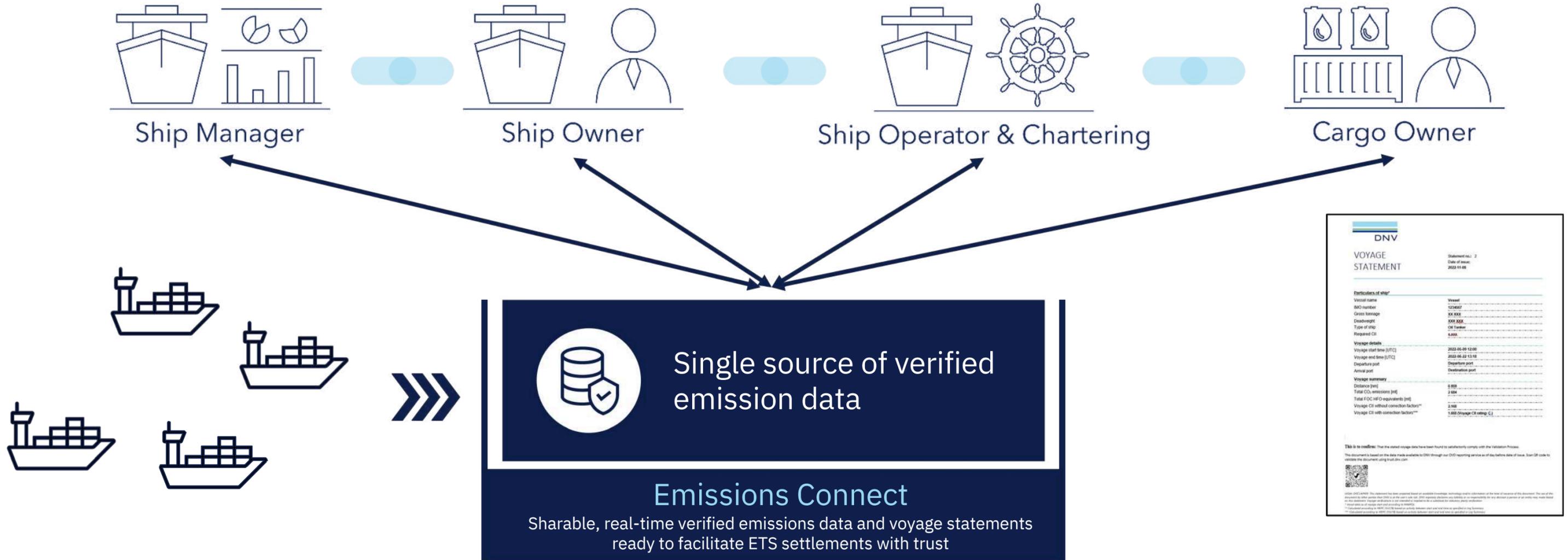
Distance	Days	Hours	Avg.speed	Load status	Ton fuels p/day	Adjustment	Ton fuels p/day Adjusted
6 000	nm	30	0 hrs	8,3	kn	Ballast	11,70 TPD
						0 %	11,70 TPD

Distance: 6 000 nm
Duration: 720 Hours
Avg.speed: 8,3 kn
+ Add leg

Calculate EUA
+ Create new voyage
Delete all voyages

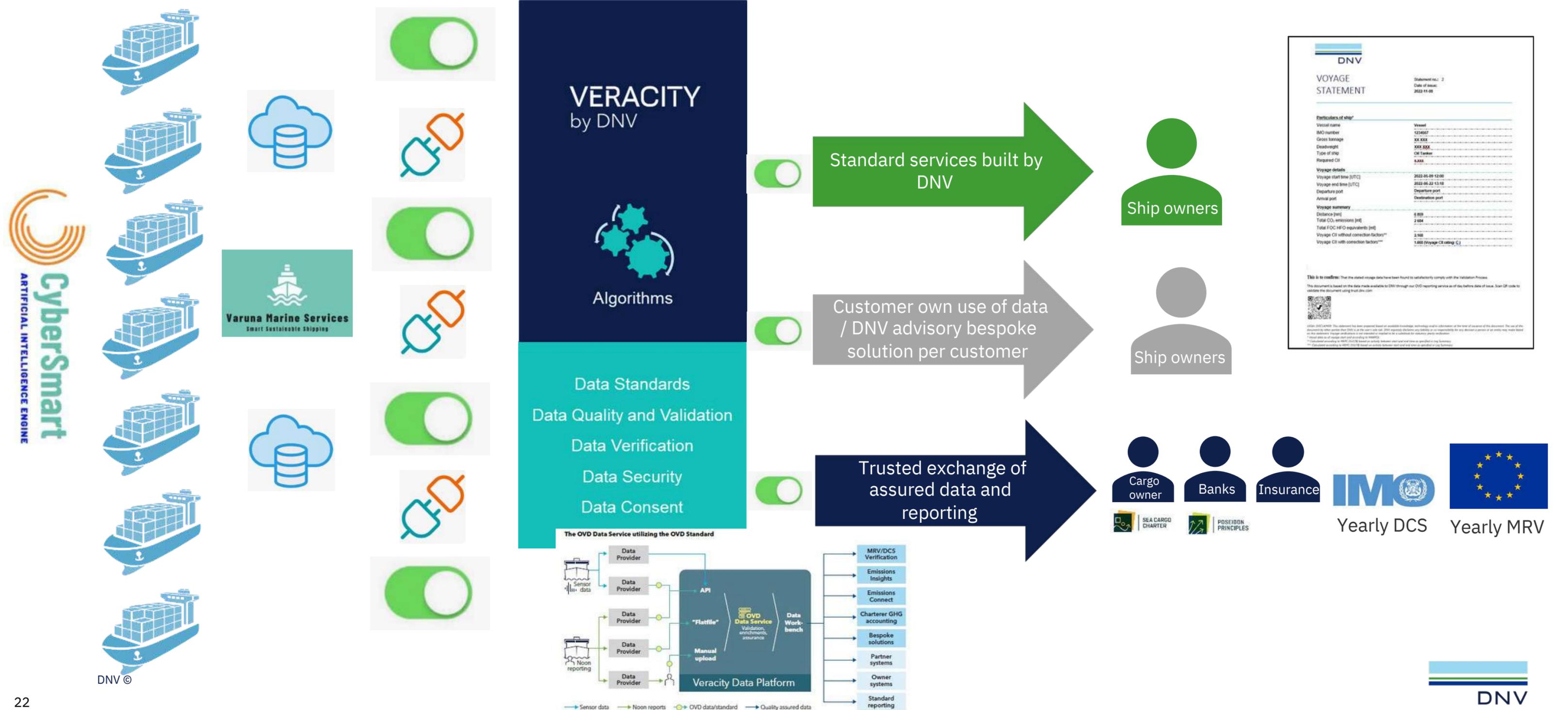
Voyage	Ton fuel per day	Total CO ₂	EU ETS CO ₂ (into/out of EU)	EU ETS CO ₂ (within EU)	Total EU ETS CO ₂	EUA	EU ETS cost (€)
Voyage 1	11,70	1 093	546	-	546	219	-

Seamless data integrations ensures continuous connections to support exchange of voyage data



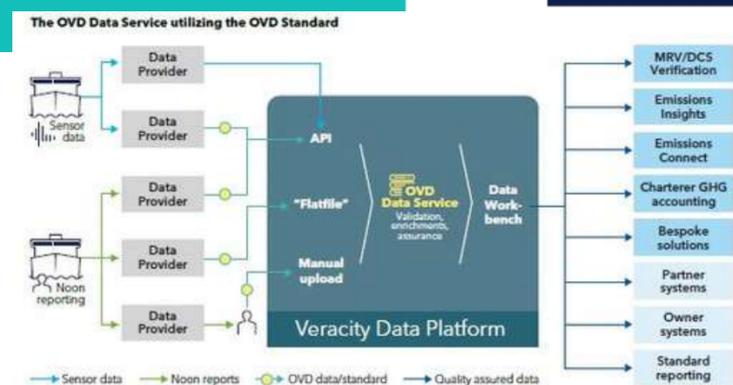
50,000+ ships ready to connect with daily data feed via the Veracity Integration Partners

Integrated vessel noon reporting via API to Veracity



DNV	
VOYAGE STATEMENT	Statement no.: 2 Date of issue: 2022-11-08
Particulars of ship*	
Vessel name	Vessel
IMO number	1234567
Gross tonnage	XX XXX
Deadweight	XXX XXX
Type of ship	Oil Tanker
Required CI	XXXX
Voyage details	
Voyage start time (UTC)	2022-05-09 12:00
Voyage end time (UTC)	2022-05-22 13:18
Departure port	Departure port
Arrival port	Destination port
Voyage summary	
Distance (nm)	5 800
Total CO ₂ emissions (mt)	2 804
Total EOC (HFO equivalent) (mt)	2 100
Voyage CI without correction factors**	2 100
Voyage CI with correction factors***	1.602 (Voyage CI rating: C)

This is to confirm: That the stated voyage data have been found to satisfactorily comply with the Validation Process.
This document is based on the data made available to DNV through our OVD reporting service as of the before date of issue. Scan QR code to validate the document using trust.dnv.com

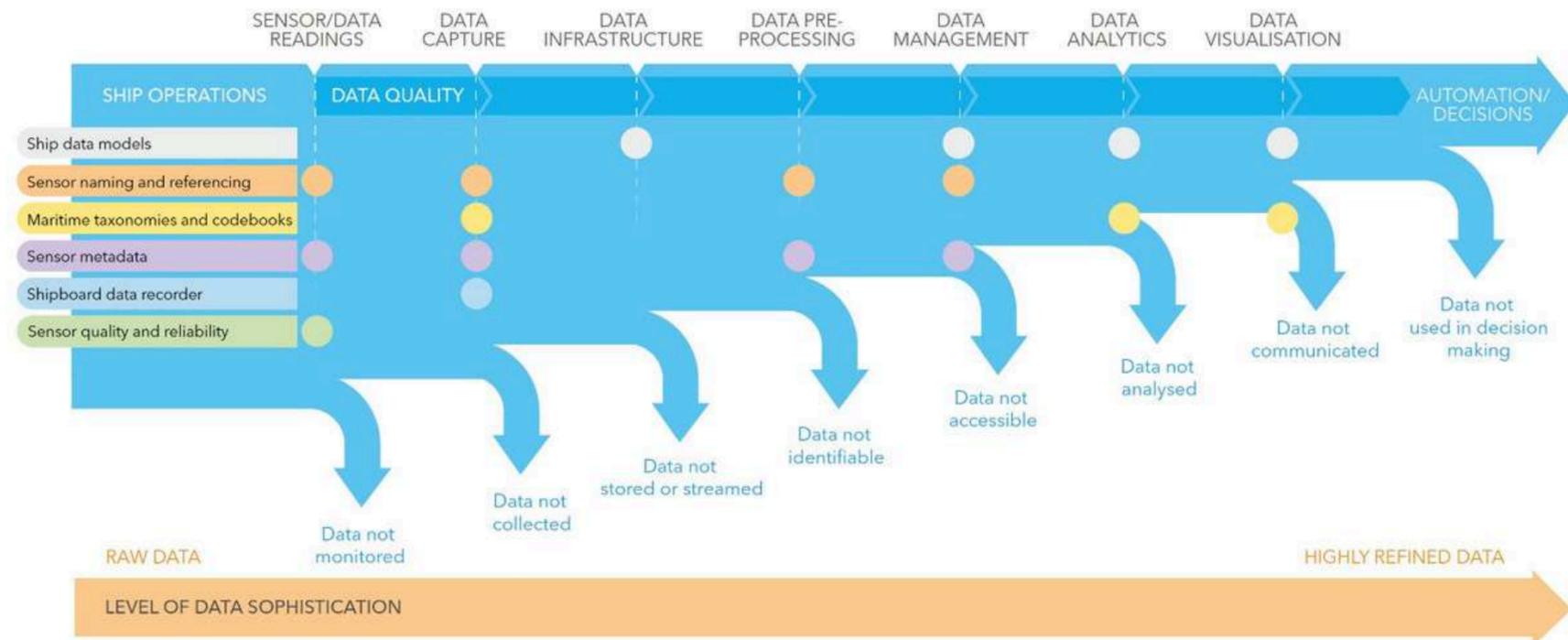
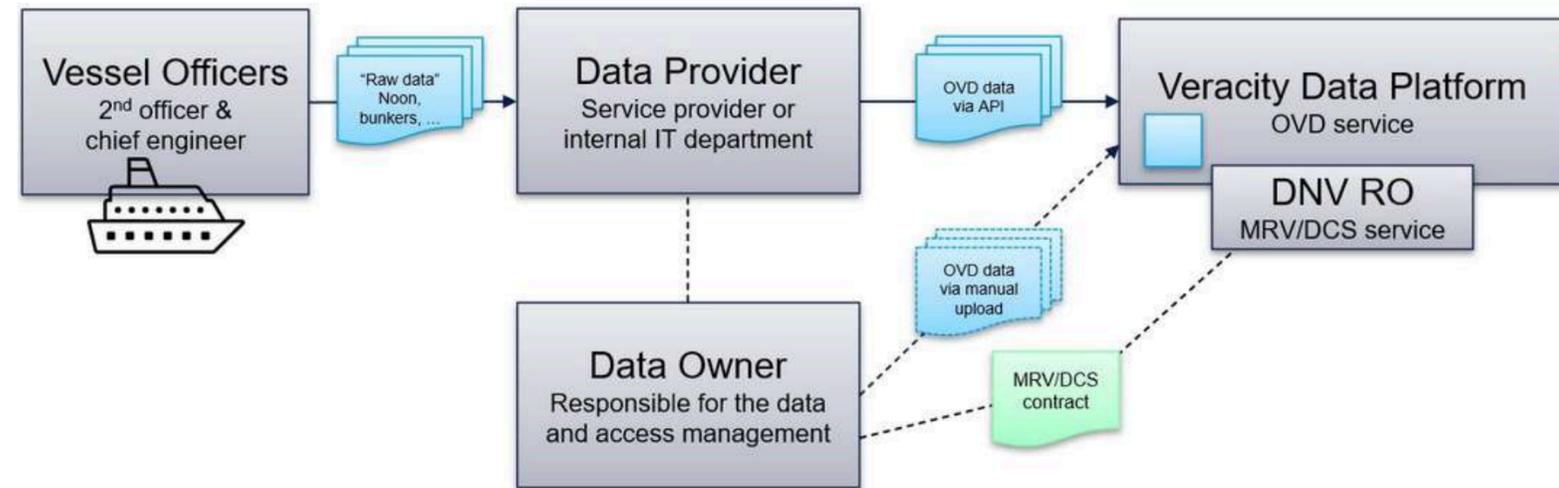


Operational Vessel Data (OVD) standard for reporting log abstracts and other operational data

VERACITY
by DNV

OPERATIONAL VESSEL DATA (OVD) STANDARD

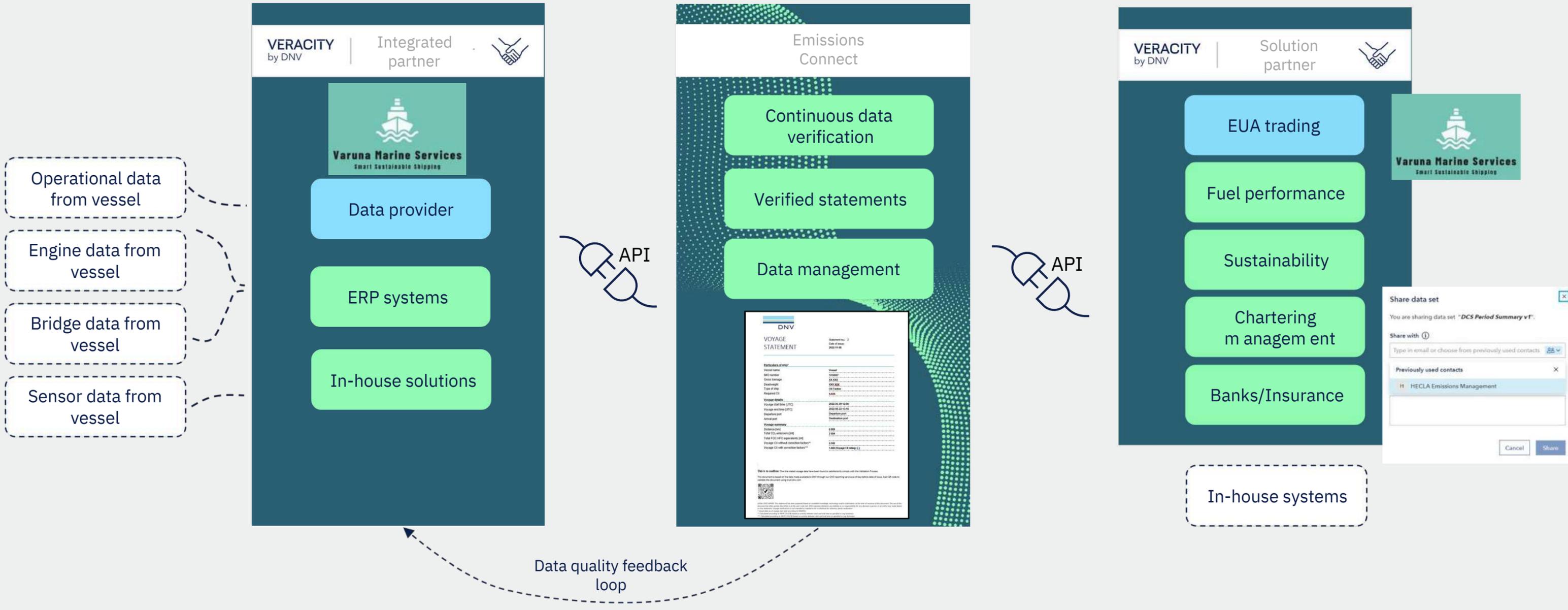
A contribution to maritime digitalization



The relevance of different standardisation topics in the data value chain, based on figure from McKinsey (19)

End-to-end datasharing

VALUE OF DATA



Data collection and quality improvements

Data standardization, quality control, verification and management

Trusted data is re-used in multiple use-cases

FuelEU Maritime – where are the complexities?

100% or 50% of energy, within/in/out EU or EEA



Penalty calculation

(a) FuelEU penalty with respect to compliance balance for GHG intensity of the ship according to Article 4(2)

$$\text{FuelEU Penalty} = \frac{|\text{Compliance Balance}|}{\text{GHGIE}_{\text{actual}} \times 11\,000} \times 2\,400$$

Well-to-wake emissions calculation

$$\text{GHG intensity} \left[\frac{\text{gCO}_2\text{eq}}{\text{MJ}} \right] = f_{\text{wma}} \times (\text{WtT} + \text{TtW}) \text{ Equation (1)}$$

WtT	$\frac{\sum_i^n \text{fuel}_i M_i \times \text{CO}_{2\text{eq}} \text{WtT}_i \times \text{LCV}_i + \sum_k^c E_k \times \text{CO}_{2\text{eq}} \text{electricity}_k}{\sum_i^n \text{fuel}_i M_i \times \text{LCV}_i + \sum_k^c E_k}$
TtW	$\frac{\sum_i^n \text{fuel}_i \sum_j^m \text{engine}_{i,j} M_{i,j} \times \left[\left(1 - \frac{1}{100} C_{\text{slip } j} \right) \times (\text{CO}_{2\text{eq}} \text{TtW}_{i,j}) + \left(\frac{1}{100} C_{\text{slip } j} \times \text{CO}_{2\text{eq}} \text{TtW}_{\text{slip}, i,j} \right) \right]}{\sum_i^n \text{fuel}_i M_i \times \text{LCV}_i + \sum_k^c E_k}$

Compliance Balance

For the purpose of calculating the compliance balance of a ship for GHG intensity as referred to in Article 4(2), the following formula shall apply:

$$\text{Compliance balance [gCO}_{2\text{eq}}] = (\text{GHGIE}_{\text{target}} - \text{GHGIE}_{\text{actual}}) \times \left[\sum_i^n M_i \times \text{LCV}_i + \sum_k^c E_k \right]$$

Ice navigation

Additional energy due to ice class

The additional energy consumption due to the technical characteristics of a ship having the ice class IA or IA Super or an equivalent ice class is calculated as follows:

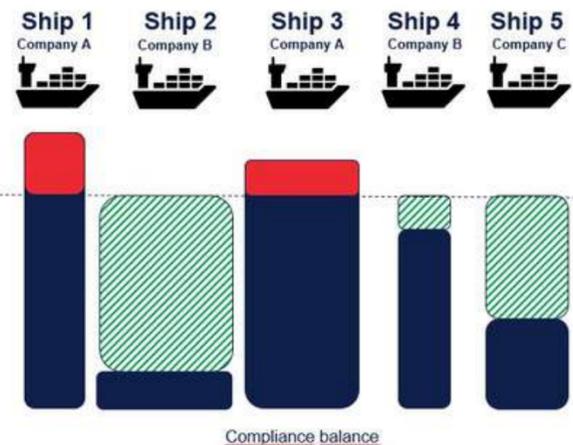
$$E_{\text{additional due to ice class}} = 0,05 \times (E_{\text{voyages total}} - E_{\text{additional due to ice conditions}})$$

RFNBO multiplier

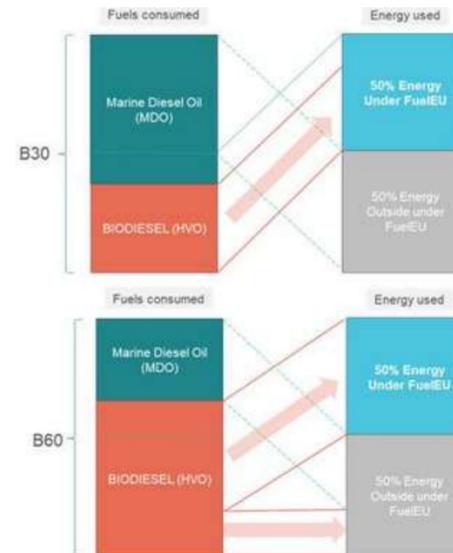
For the purpose of calculating the compliance balance of a ship with respect to the subtarget for RFNBO according to Article 5(3), the following formula shall apply:

$$CB_{\text{RFNBO}} [\text{MJ}] = \left(0,02 \times \left(\sum_i^n M_i \times \text{LCV}_i \right) \right) - \left(\sum_i^n M_i \times \text{LCV}_i \right) \times \text{RFNBO}$$

Compliance Balance Pooling



Allocation of biofuel component



Reporting biofuels

DNV		Page 3 of 4	
BDN number of the resulting fuel blend	For fuel components of fuel blends the BDN number value of the resulting blend	Used_BDN	Text(30)
BDN number of parent fuel	For fuel components of fuel blends the BDN number value of the parent fuel	Coming_From_BDN	Text(30)
EU GHG emission intensity	GHG intensity value 'E', expressed in gCO ₂ eq/MJ. This value should be reported for biofuels and e-fuels for the FuelEU Maritime Regulation. To be taken from Proof of Sustainability or equivalent documentation	EU_GHG_intensity	Decimal number gCO ₂ eq/MJ
IMO GHG emission intensity	GHG intensity value to be used for biofuel as per MEPC LCirc.380. This parameter needs to be reported for biofuels and e-fuels. Guidelines are completed and are applied in an IMO reporting scheme. This field will become optional/mandatory when fuel pathway code will define all required parameters and WtT, LCV, fuel class, fuel type	IMO_GHG_intensity	Decimal number gCO ₂ eq/MJ
Lower Calorific Value (LHV)	Lower Calorific Value (LCV) of fuel, as set out in Annex II of Directive(EU) 2018/2001. To be reported for biofuels for FuelEU Maritime. Under EU scheme LCV is different than under IMO scheme	EU_Lower_Calorific_Value	Decimal number MJ/kg
Energy share in fuel blend	Energy of component related to total energy of fuel blend, based on LCV (IMO). Only applicable to fuel blends, as required by Fuel Lifecycle Label (FLL). Where mass and LCV of components is available, this parameter is not mandatory	FLL_Energy_Share	Decimal number %
Sustainability	Reference to recognized certification scheme (ISCC, ISCC-EU) and/or Unique number of the Proof of Sustainability. This field	Sustainability	Text

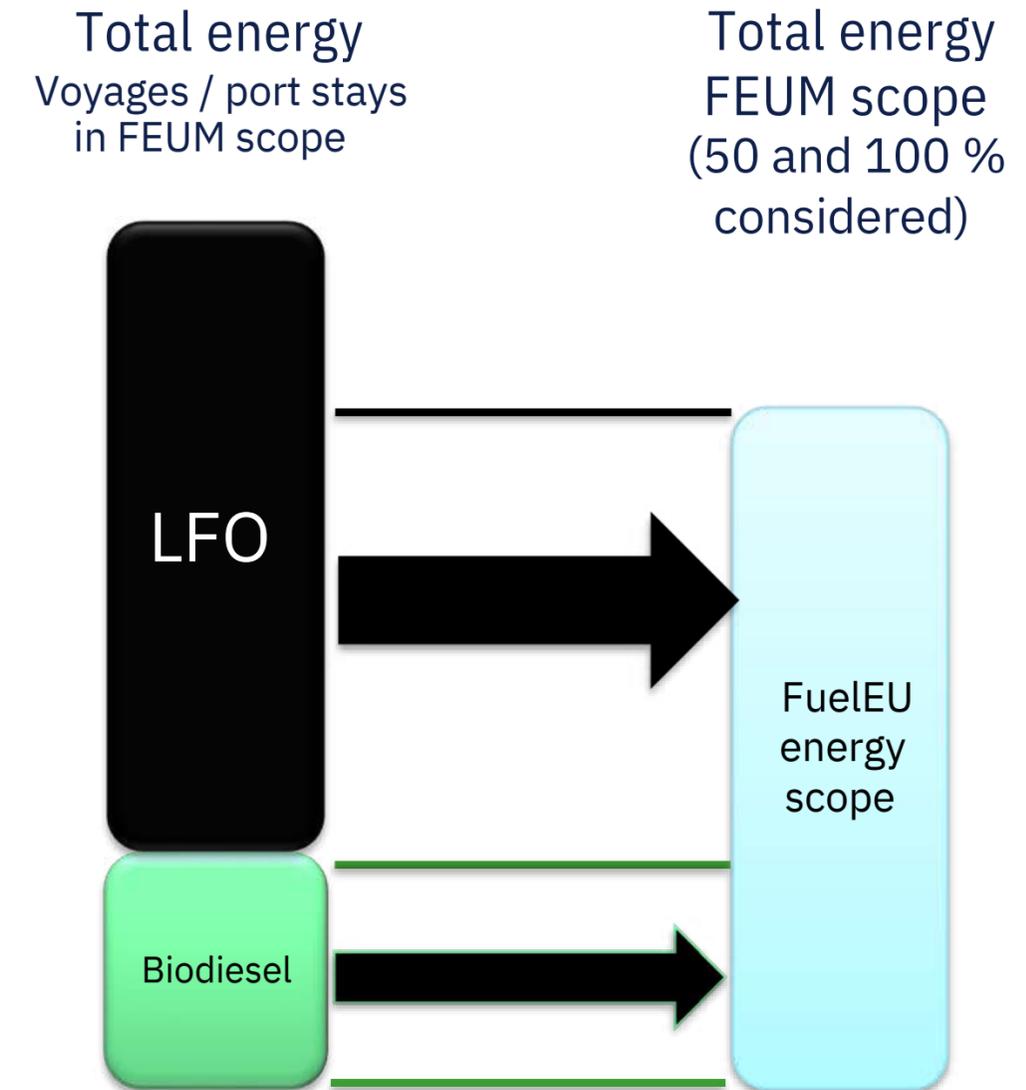
FEUM complexities in detail.....

#1 Energy in scope of FuelEU Maritime

Geographical scope of the voyage defines general applicability:

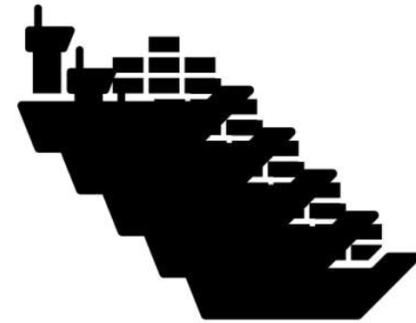
- 50% of energy used on voyage to EU/EEA or out of EEA/EU and on voyages to/from EU Outermost Regions
- 100% of energy used on voyage within EEA and in EEA ports

- In difference from the EU ETS -50% of the *energy* consumption on voyages to or out of EU/EEA (or 100% within), and *not emissions* as in EU ETS
- FEUM allows selected fuels to be assigned. As illustrated, the full benefit of biodiesel can be assigned to the FEUM scope



#2 Vessel compliance pool

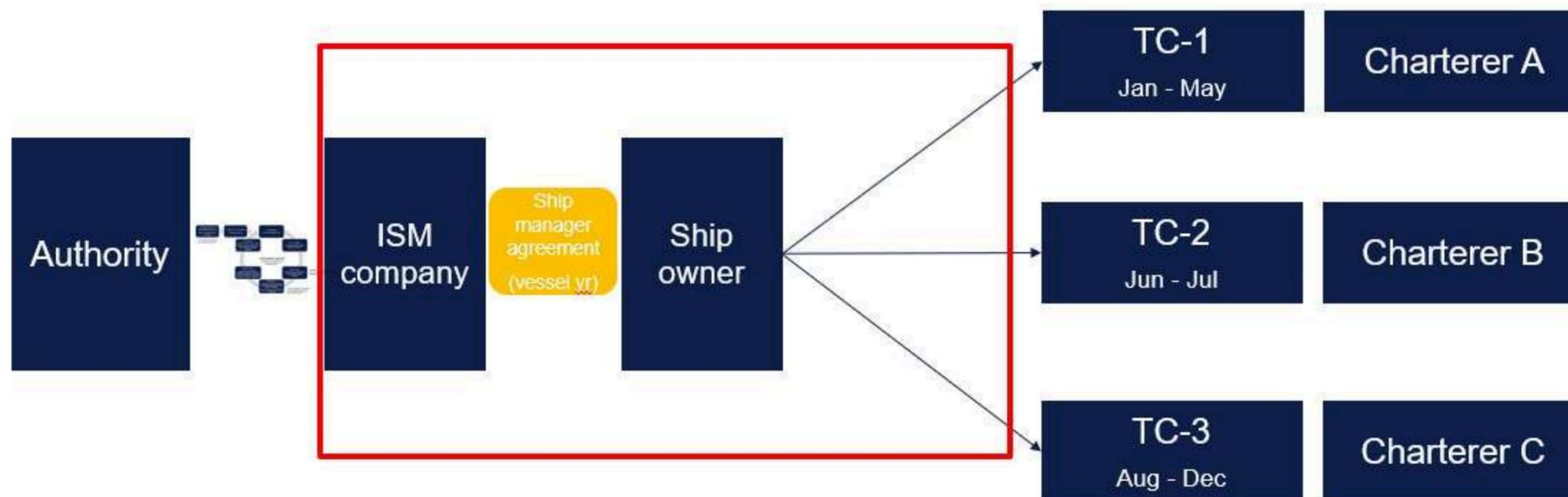
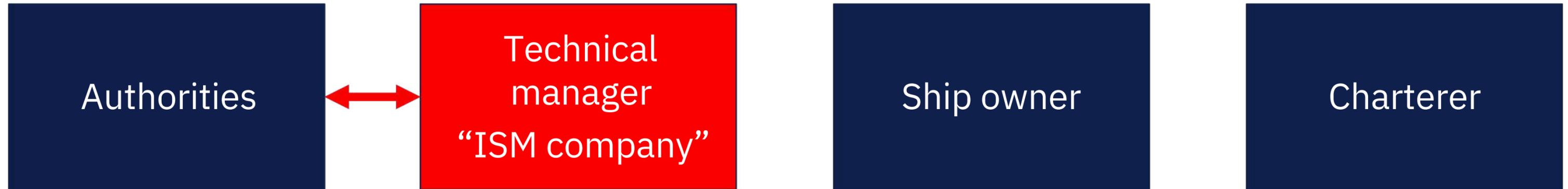
- General rules
- Total pool compliance balance must be positive
 - Ships with deficit before do not have a higher deficit
 - Ships with surplus before do not have deficit



Compliance balance
(width represents energy consumption, illustration only)

Total compliance balance
Pool members decide of allocation of compliance balance to individual ships
Surplus can be banked

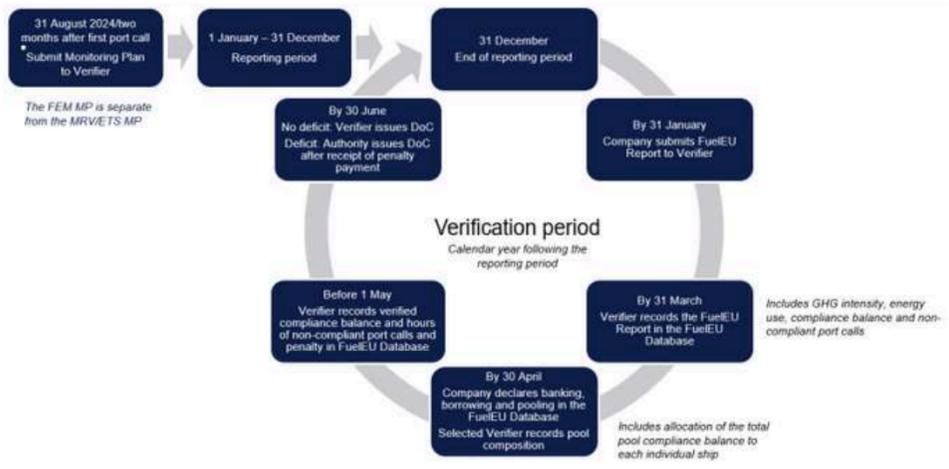
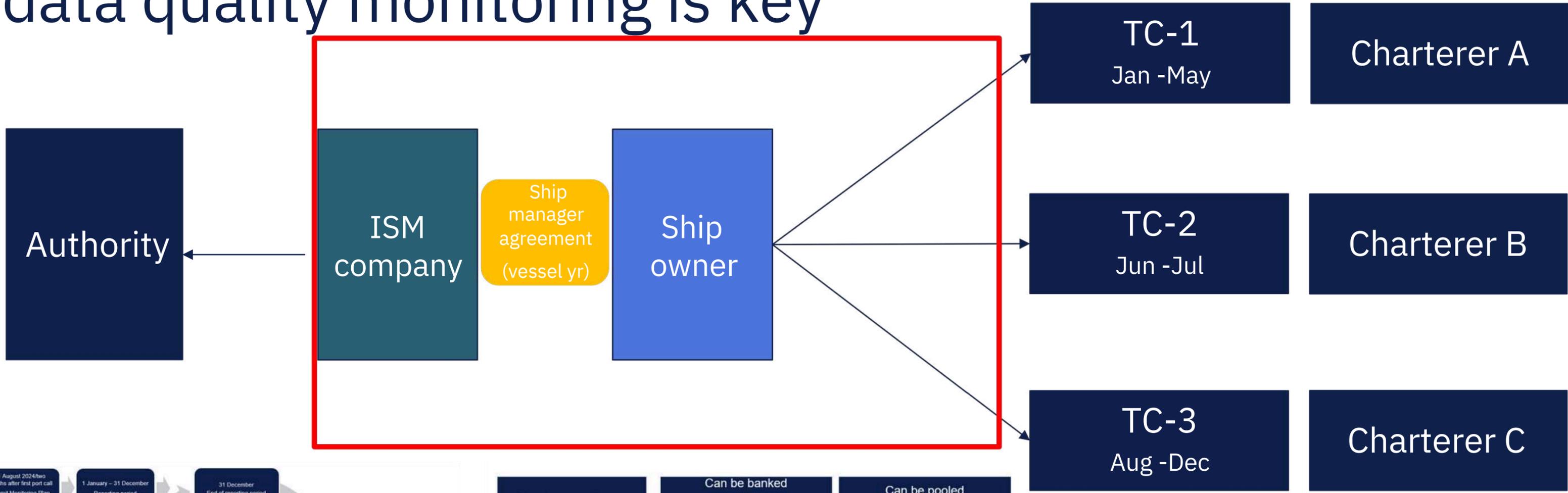
#3 Alignment of both regulatory and the commercial dimensions



TC = Time charter

- The ISM company on 31 December is the legal responsible towards the authorities
- Surplus compliance has a value since it can be used to make non-compliant vessel(s) compliant.

Compliance reporting obligations -data sharing and data quality monitoring is key



Surplus compliance	Can be banked (no interest, only used by the vessel)	Can be pooled (potential revenue)
Deficit compliance	Can borrow – Max 2 % (But loses 10%)	Can be pooled (At a cost)
If non of the above		
Deficit compliance	Pay Fine (Cost)	Second year fine is more exp

TC = Time charter

Value of verified emissions data in FEUM



Voyage view

Emissions Connect

IMO - CII | EU ETS | FuelEU

Search: Date range:

EU ETS: Exemptions:

Voyage ID	Date range	From	To	Add. information	EU ETS	Mode	Load	WtW CO2e [t]	Energy consumption [MJ]	GHG intensity [tCO2e/MJ]	Compliance balance WW [tCO2e]	Data quality
1.1	01.01.2022 - 03.01.2022	Oslo	New Yo...	Month break	🟢	🚢	Laden	40	500 000	80,30	-5	2 issues
1.2	01.01.2022 - 03.01.2022	Oslo	New Yo...	Month break	🟢	🚢	Laden	40	500 000	80,30	-5	2 issues
1.3	01.01.2022 - 03.01.2022	Oslo	New Yo...	Month break	🟢	🚢	Laden	40	500 000	80,30	-5	2 issues
1.4	01.01.2022 - 03.01.2022	Oslo	New Yo...	Month break	🟢	🚢	Laden	40	500 000	80,30	-5	2 issues
1.5	01.01.2022 - 03.01.2022	Oslo	New Yo...	Month break	🟢	🚢	Laden	40	500 000	80,30	-5	2 issues

1 Selected leg

Oslo - New York

Date range: 2023-04-04 - 2023-04-09

Summary Card:

- 40 tCO2e
- 500 000 MJ
- 80,30 GHG intensity
- 5 Compliance balance [tCO2e]

Fuel type	Fuel consumer type class	Fuel consumption [t]	Energy consumption [MJ]	GHG emissions				
				CO2e WW [tCO2e]	CO2e TIW [tCO2e]	CH4 TIW [tCO2e]	N2O TIW [tCO2e]	CO2e WW [tCO2e]
MGO	41 ICFs	25,1	1 093 000	16	81	0,03	1,2	928
Rin MGO	41 ICFs	1,6	70 000	1,1	0	0,002	0,08	1,1
Total			1 163 000	17	81	0,04	1,3	100

- Here you will have the opportunity to track compliance balance down to the individual voyage
- The FuelEU Maritime regulation have different re-allocation mechanisms
- You will have the possibilities to document FuelEU Maritime compliance for a specific Charter Period, where the re allocation mechanisms are used within the CP period
- This is where you can order 3rd party verified statements to be used to meet contractual terms between owner and charterer or ISM company and owner.

Periodic Statements for Compliance Balance and Penalty Cost



DNV

PERIOD STATEMENT FUELEU MARITIME
PRELIMINARY CALCULATIONS¹

Statement No: [REDACTED]
DNV Id No: [REDACTED]
Date of issue: (yyyy-mm-dd) [REDACTED]

Particulars of ship²

Name of Ship: [REDACTED]
Gross Tonnage: [REDACTED]
Deadweight: [REDACTED]
Type of Ship: [REDACTED]
IMO Number: [REDACTED]
Ice class: [REDACTED]
Wind propulsion (f_{wind} factor): [REDACTED]

Details

Start time [UTC]: [REDACTED]
End time [UTC]: [REDACTED]
From: [REDACTED]
To: [REDACTED]
Voyage number(s): [REDACTED]
Customer Remarks (not subject to verification): [REDACTED]

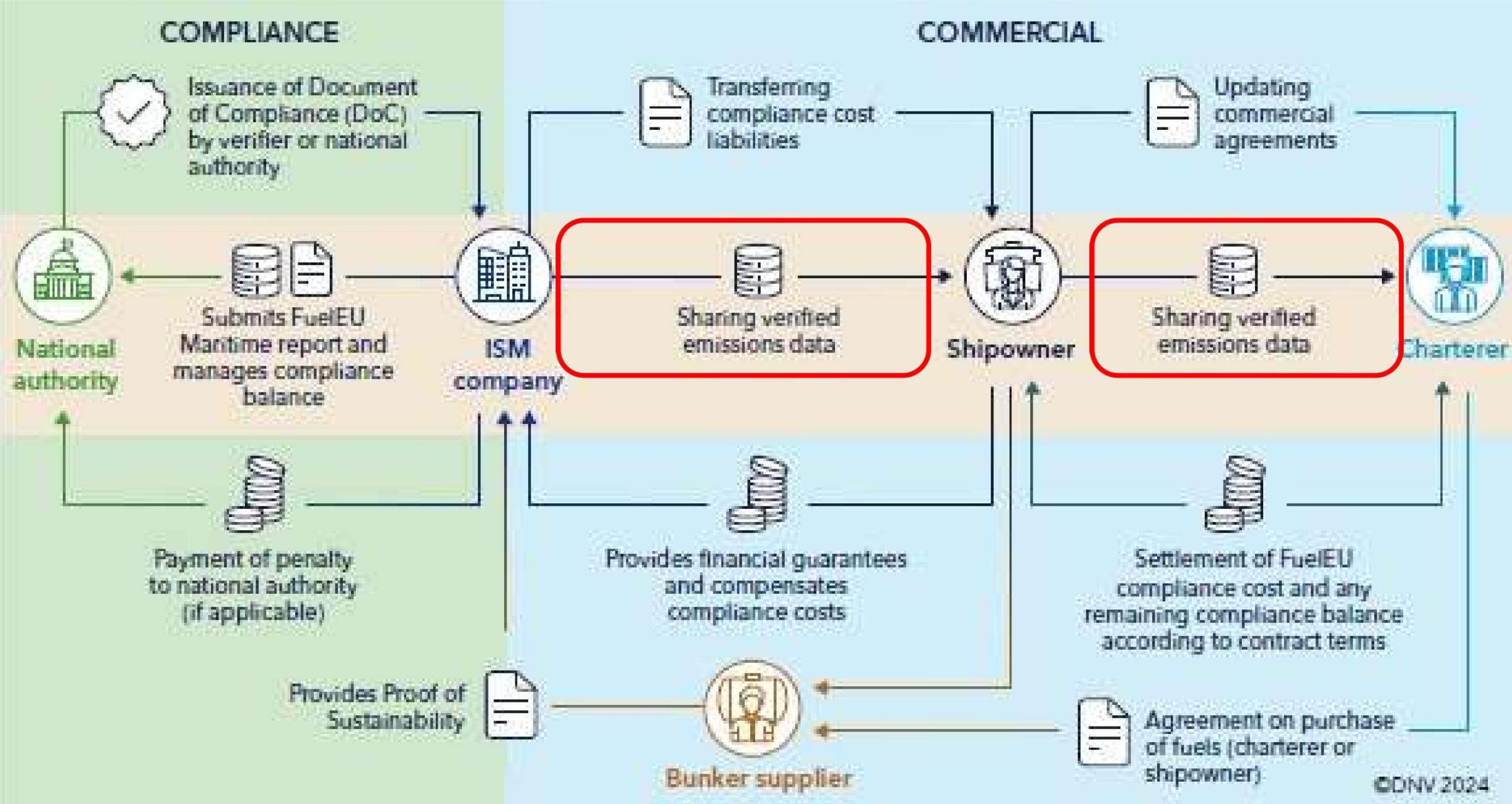
Summary

FuelEU Energy consumption [MJ]: [REDACTED]
FuelEU WW CO_{2e} emissions [mt]: [REDACTED]
FuelEU WW GHG Intensity [gCO₂/MJ]: [REDACTED]
FuelEU WW CO_{2e} compliance balance [mt]: [REDACTED]
Max FuelEU Penalty cost [EUR]: [REDACTED]

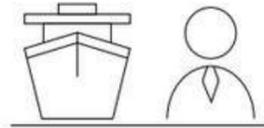
This is to confirm:
that the stated voyage data have been found to satisfactorily comply with the requirements of the Validation Process.

- Your statements will be issued and stored on the platform, sharing, printing, exporting.
- Verified statements can be used in commercial contract and terms for coverage of FEUM
- Provides transparency when financial implications increases
- Acts as documentation for compliance balance at CP level
- Allows sharing of high-quality data across stakeholders between shipmanager(ISM company), Owner and Charterer

Solution for commercial management in FEUM could look like this:

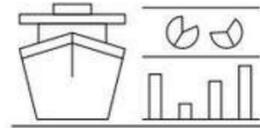


Recommendations



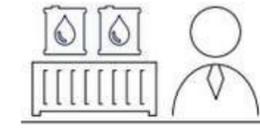
Ship owner/operator

- Update commercial contract to include terms for coverage of FEUM
- Secure access to high quality data (verified) in a format that enables efficient management of FEUM in commercial and business dimensions
- Establish practises that is fit for future when financial implications increases
- Make analysis on different compliance options to meet the FEUM requirements
- Be prepared to document FEUM compliance balance on CP level



Ship manager (ISM co)

- Your first deadline is 31 August 2024, delivering a Monitoring plan to the verifier.
- Secure that ship management contract are updated *before* January 1st 2025
- Be prepared to share high quality data (verified) with the owner
- Be prepared to receive data from owners for FEUM compliance management



Charterer

- Be prepared to increase the use of compliant fuel
- Secure that you get the maximum businessbenefit from fuel that generates a surplus compliance
- Secure that you can trust the point of reference in any settlement with owners/operators on FuelEU/EU ETS
- Set requirement in CP to receive data for your management of emissions data

Take-aways for today:

01

Availability of
data

02

Trusting your
data

03

Managing your
data



Emissions Connect

ADVANCE from raw data to sustainable operations.

Scan for contact details to your consultant

WEBINAR

NAVIGATING EMISSIONS COMPLIANCE WITH EUMRV, EUETS, FuelEU Maritime and EUA procurement



11th December 2024

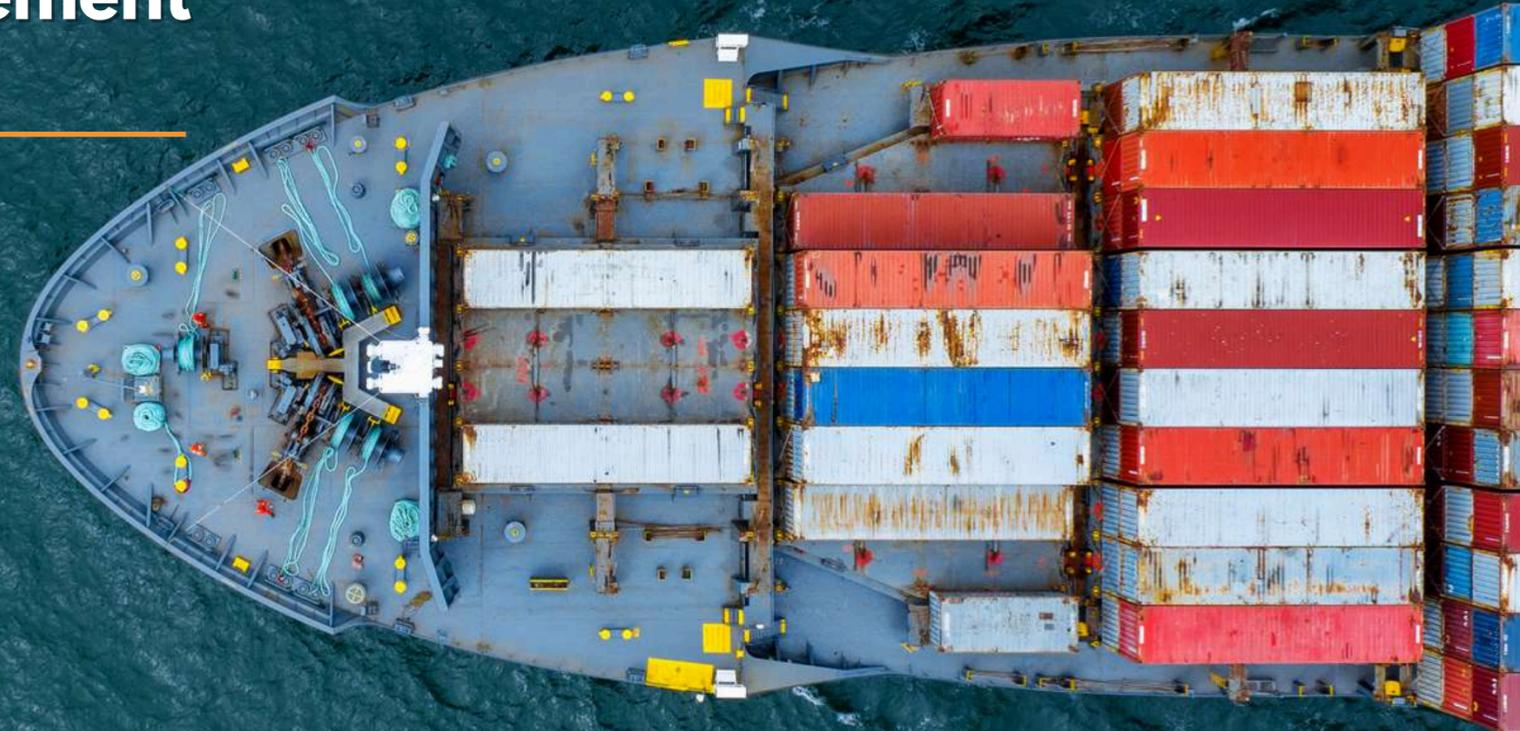


11 AM – 12.30 PM (CET)

ORGANISED BY:



Varuna Marine Services
SMART SUSTAINABLE SHIPPING



POLL 03

What is the main objective of the FuelEU Maritime initiative?

- A) Increase the use of alternative fuels in maritime transport**
- B) Promote ship recycling and scrapping**
- C) Reduce reliance on LNG for shipping**
- D) Enforce stricter port security protocols**

WEBINAR

NAVIGATING EMISSIONS COMPLIANCE WITH EUMRV, EUETS, FuelEU Maritime and EUA procurement



11th December 2024

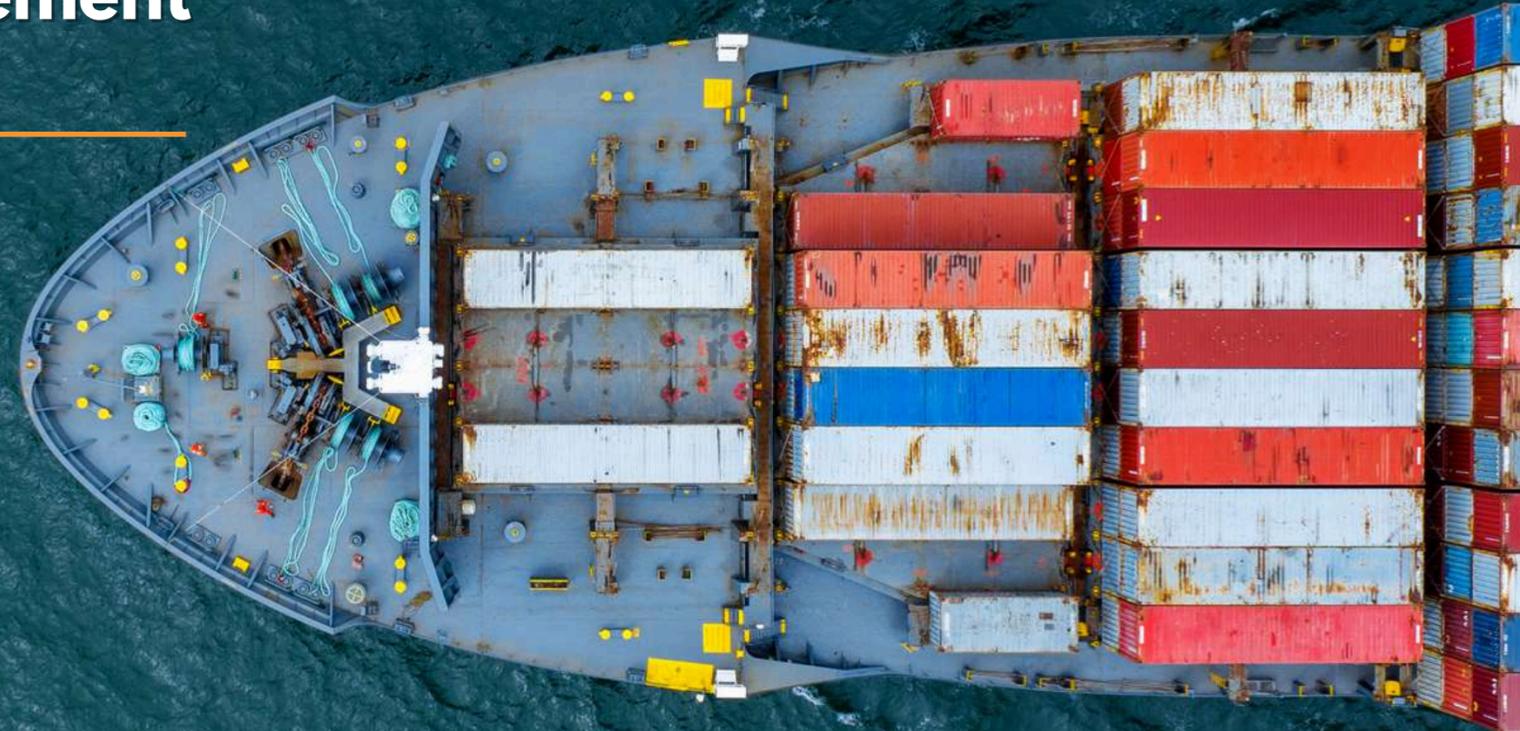


11 AM – 12.30 PM (CET)

ORGANISED BY:



Varuna Marine Services
SMART SUSTAINABLE SHIPPING





WEBINAR

NAVIGATING EMISSIONS COMPLIANCE WITH EUMRV, EUETS, FuelEU Maritime and EUA procurement



11th December 2024

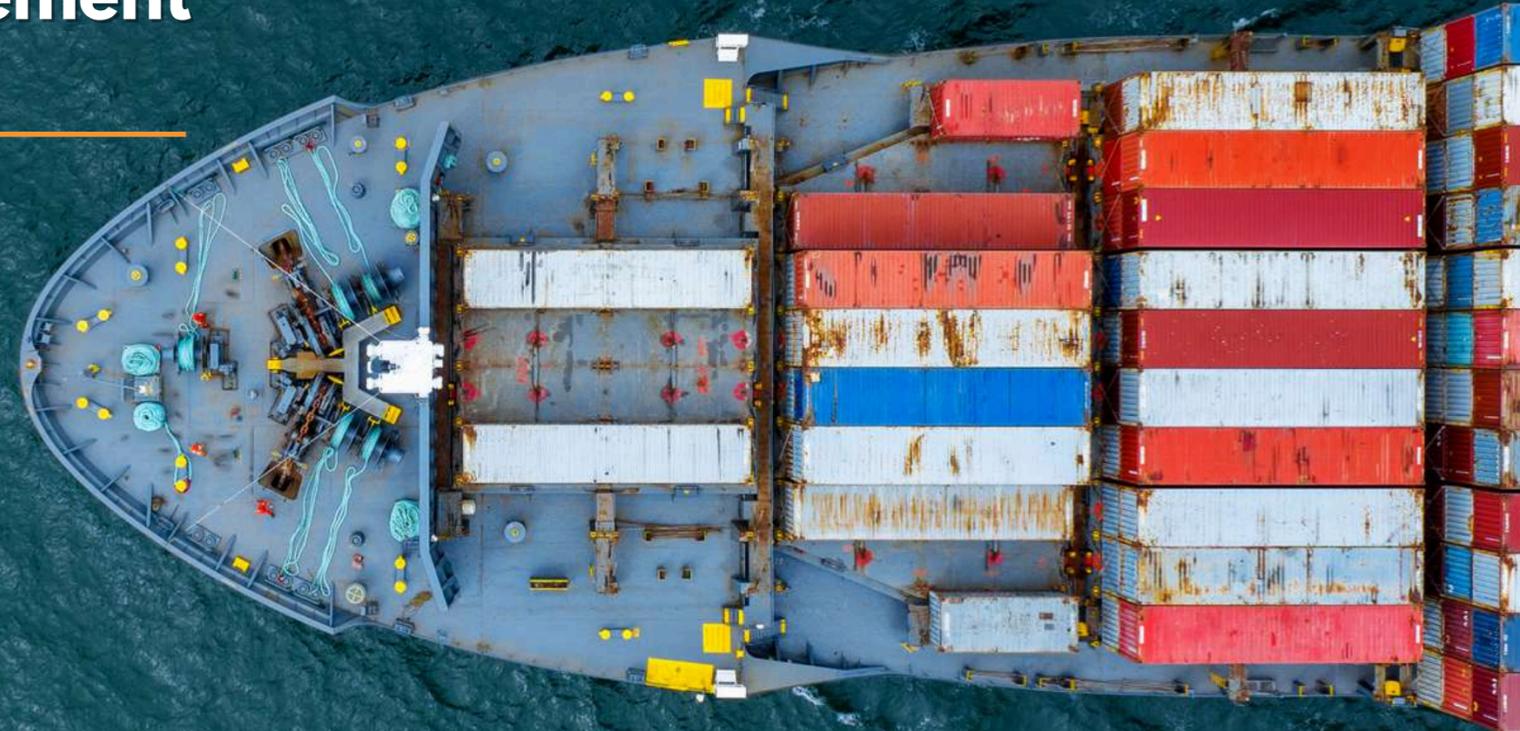


11 AM – 12.30 PM (CET)

ORGANISED BY:



Varuna Marine Services
SMART SUSTAINABLE SHIPPING



POLL 04

**What is the best strategy for an entity to manage
EUA procurement costs?**

- A) Purchase EUAs only when prices drop below €10**
- B) Hedge EUAs through forward contracts or auctions**
- C) Avoid purchasing EUAs and pay fines instead**
- D) Increase emissions to qualify for additional allowances**



KEY

TAKEAWAYS

THANK YOU!



Varuna Marine Services

SMART SUSTAINABLE SHIPPING

CONTACT US AT:



info@varunamarine.eu

marketing@varunamarine.eu



www.varunamarine.eu



+ 31 107 640 935

FOLLOW US ON:



@Varunamarine



@varunamarineservices

WEBINAR

NAVIGATING EMISSIONS COMPLIANCE WITH EUMRV, EUETS, FuelEU Maritime and EUA procurement



11th December 2024



11 AM – 12.30 PM (CET)

ORGANISED BY:



Varuna Marine Services
SMART SUSTAINABLE SHIPPING

