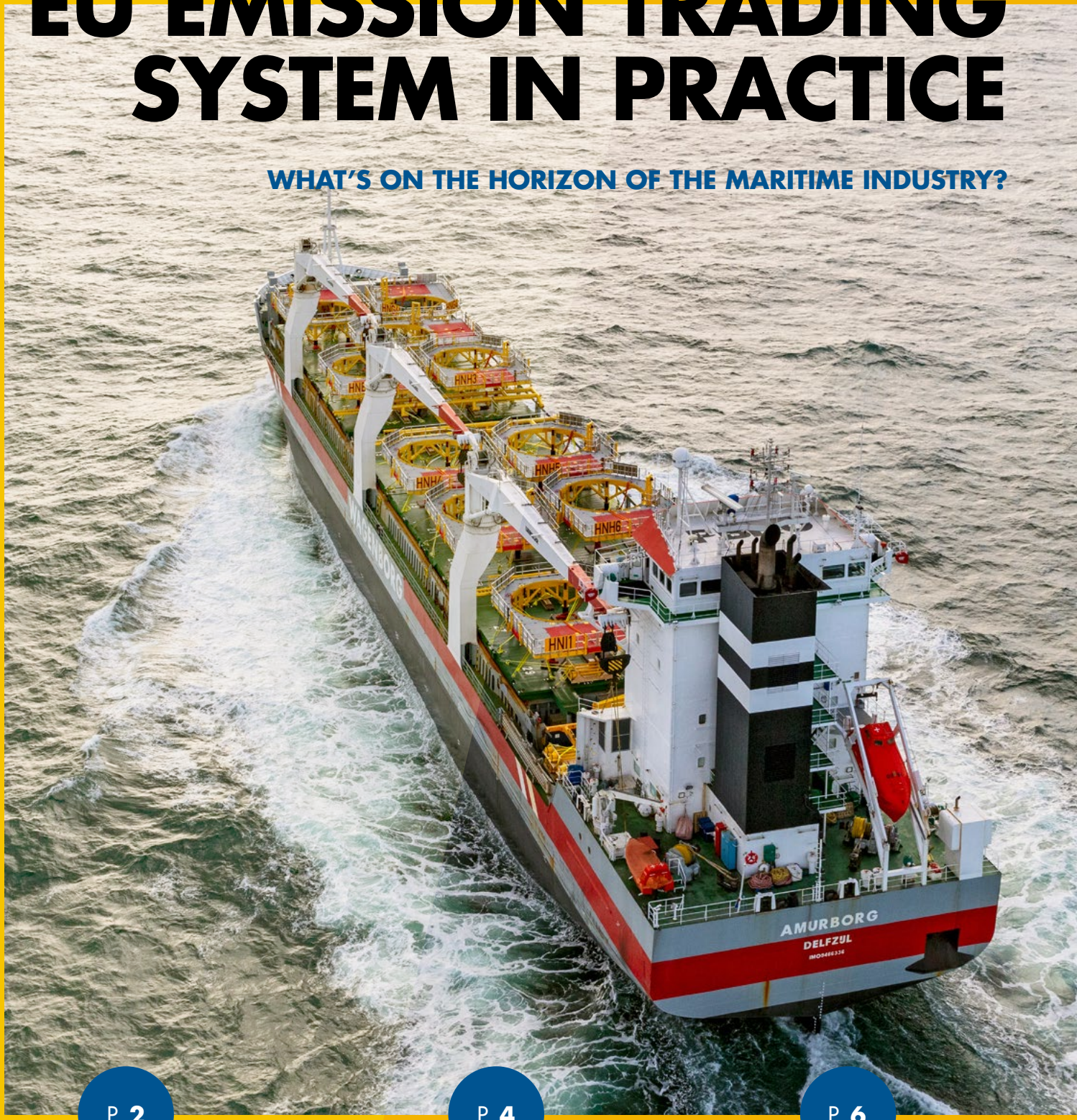
ROYAL WAGENBORG

STAKEHOLDER INFO BULLETIN
Revision date: **JULY 2023**

EU EMISSION TRADING SYSTEM IN PRACTICE

WHAT'S ON THE HORIZON OF THE MARITIME INDUSTRY?



Starting in 2024:
This is the EU ETS
European Union Emission Trading System

Vessels over 5.000 GT comprise 55% of the sailing world fleet and about 90% of CO_2 emissions of the shipping sector. From 2024 onwards the shipping sector will participate in the EU's 'Emission Trading System' (ETS). This means that the entity controlling a vessel which measures more than 5.000 Gross Ton, will have to purchase and remit allowances (emission rights) in order to be allowed to burn fuel and therefore emit CO_2.

Threshold
Only for vessels which measure more than 5.000 GrossTon (GT)[1]

Phased introduction
Introduction will be phased in from 2024 onwards (40 % in 2024, 70 % in 2025, 100 % in 2026)

Payment
100% payment for intereuropean voyages, 50% payment for travel to and from Europe

Discount
Discount of 5% for ice classed vessels

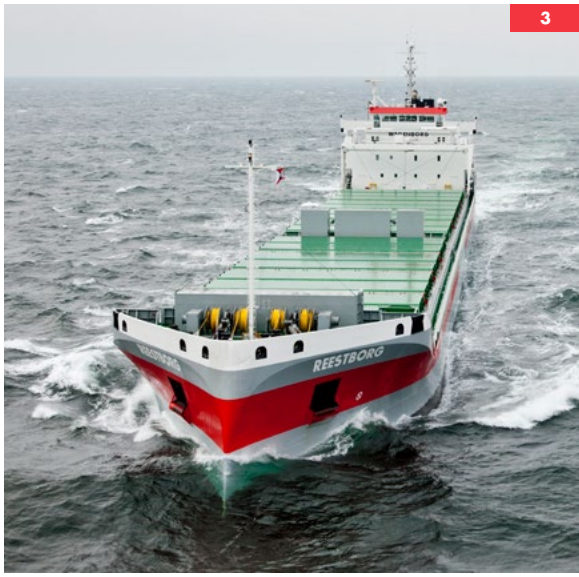
[1] Gross Tonnage is a volumetric data and should therefore not be confused with the cargo capacity or DWT of a ship.

In each EU-country **the entity controlling the vessel** should buy, sell and remit allowances.

To accommodate the introduction of the shipping sector in EU ETS, the number of available allowances will be increased by approx. 90 million in 2024 to reach a total of 1,4 billion allowances available in the current ETS. The significance of the shipping sector for EU ETS is therefore relatively small. It is difficult to predict which influence the participation of the shipping sector and the increase of allowances will have on the prices of the allowances. An important note on this matter is that the EU has built in a mechanism to withdraw allowances from the market should prices of allowances decline too much. The current price of one CO_2 emission allowance is about EUR 91.

In the Netherlands, this system is regulated by the Dutch Emissions Authority (NEa). In each EU-country the responsible company – which has for now been defined as the entity controlling the vessel – should hold an operating account with the NEa to buy, sell and remit allowances. The responsible company will be held accountable for the number of allowances to be remitted through the well-known 'Monitoring Reporting and Verification' system of the EU (with an additional check by the applicable Emission Authority).

Transparency is key in the relationship between Wagenborg and her costumers. Full insight in the types and the amount of fuel used is essential to be able to report to all stakeholders. Therefore, as of 01-01-2024 we will provide you with a detailed settlement per voyage showing type and amount of consumed fuel as well as the emitted tons of CO_2.



As of 2024 we will provide you with **a detailed settlement per voyage** showing the type and amount of fuel used.

Costs of allowances:
The contract type
determines our settlement.

The costs of the allowances to be remitted, will have to be settled between shipowner and customer. The costs made during ballast will be for Wagenborg. At Wagenborg, we discern three contract-types:

The additional costs made during **ballasttrips and in port** will be for Wagenborg.

SPOT FIXTURES. We will incorporate the costs of the required allowances compensating the CO2 emissions of your voyage in the freight rate. After completion you will receive detailed information showing type and amount of consumed fuel as well as the emitted tons of CO_2. Any deviation between our prognosis and the final result will be for us.

TIME CHARTER CONTRACT. The entity controlling the vessel is responsible for remitting the allowances. In case of a Time Charter, the company hiring the vessel from us is the controlling entity and will have to apply for an operating account in their country of registration.

HOW DO YOU CALCULATE IT?

Let's look at the costs of allowances at a simplified level:

$$\text{ETS} = \frac{\text{Fuel consumption}^{(1)} * CO_2 \text{ factor}^{(2)} * \text{year-rate}^{(3)}}{\text{Trading within or from/to Europe}^{(4)}} \text{ x ice class discount}^{(5)} * CO_2 \text{ price}^{(6)}$$

(1) Fuel consumption is determined by the average speed of a vessel (kts), the total distance between loading port and discharging port and the fuel consumption of a vessel per day.

(2) CO_2 emission factor
1 mton HFO = 3,114 mton CO_2
1 mton VLSFO = 3,206 mton CO_2
1 mton MGO = 3,206 mton CO_2

(3) Phased introduction
2024: 40%
2025: 70%
2026: 100%

(4) Trade
Within EU: 100%
From/to EU: 50%

(5) Discount
Ice class: 5%

For both new and existing contracts **the terms will need to be updated**.

CONTRACTS OF AFFREIGHTMENT. Contracts of affreightment will from 2024 onwards (both new and existing), will also face invoices for the purchase of allowances. From arrival load port until completion of discharge the vessel is at your service and the costs CO_2 emitted will need to be settled between you and Wagenborg. For both new and existing contracts the terms will need to be updated.

Our intention is to either separate the freight from bunkers and EU ETS, invoice the freight when loading completed and after completion of discharge, when the final consumption is known, we will invoice you the bunker clause and the emission costs. This second invoice will include all details and show type and amount of consumed fuel as well as the emitted tons CO_2.

The other possibility is to invoice freight and bunkers (as per today) and include the expected tons of CO_2 to be omitted on this trip. This would mean a more lean approach and avoid the processing of additional invoices on either side. After completion of the voyage we will off course provide you with detailed information showing type and amount of fuel consumed, as well as the emitted tons CO_2. Any deviation between our prognosis and the final result will be for us.

We will inform you at a later stage which option will be implemented in our ERP system.

(6) EU carbon permits The price of emissions allowances traded on the European Union's Emissions Trading Scheme (ETS)

Source: https://tradingeconomics.com/commodity/carbon - June 26, 2023

In numbers & figures
Example

In today's market, the right to emit 1 ton of CO_2 ('one allowance') costs about EUR 91. One ton of gasoil produces 3,2 tons of CO_2 when burned. A short sea and deep sea voyage in one of our F-types, would add following costs to the voyage:

VESSEL DETAILS

Vessel type	F-class	
Ice class	1A	
Averge speed	10,0	knots
Fuel type	MGO	
Average fuel consumption	11,0	mton/day

EMISSIONS

Emission factor	3,206	
CO_2 price	91	Euro

VOYAGE DETAILS

Loading port	Stockholm	
Loading port in EU	Yes	
Cargo carried	14.000	ton

EXAMPLE 1:
INTER EUROPEAN VOYAGE

Discharge port	Barcelona	
Discharge port in EU	Yes	
Sailing distance	3.000	miles
Sailing duration	13	days
Total fuel consumption	143	mton
Total CO_2 emissions	458	mton

EXAMPLE 2:
LOAD- OR DISCHARGE PORT OUTSIDE EU

Discharge port	Philadephia	
Discharge port in EU	No	
Sailing distance	4.337	miles
Sailing duration	18	days
Total fuel consumption	198	mton
Total CO_2 emissions	635	mton

$$\text{ETS} = \frac{\text{Fuel consumption} * CO_2 \text{ factor} * \text{year-rate}}{\text{Trading within or from/to Europe}} \times \text{ice class discount} * CO_2 \text{ price}$$

2024	143 * 3,206 * 40% / 100%	x 0,95 * 91	= € 15.853	= 1,13 €/ton cargo
2025	143 * 3,206 * 70% / 100%	x 0,95 * 91	= € 27.744	= 1,98 €/ton cargo
2026	143 * 3,206 * 100% / 100%	x 0,95 * 91	= € 39.634	= 2,83 €/ton cargo

2024	198 * 3,206 * 40% / 50%	x 0,95 * 91	= € 10.975	=0,78 €/ton cargo
2025	198 * 3,206 * 70% / 50%	x 0,95 * 91	= € 19.207	= 1,37 €/ton cargo
2026	198 * 3,206 * 100% / 50%	x 0,95 * 91	= € 27.439	= 1,96 €/ton cargo

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Founded in 1898, Royal Wagenborg is an international maritime logistics conglomerate. The family-owned and managed company offers a variety of sustainable maritime logistics services with regard to shipping, ports & terminals and offshore services. Managed out of the Delfzijl (NL) headquarters, Wagenborg has built a global commercial network. With about 2,900 employees Wagenborg serves clients predominantly in the Baltic, northwest Europe, the Mediterranean, the Americas and the Far East.

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