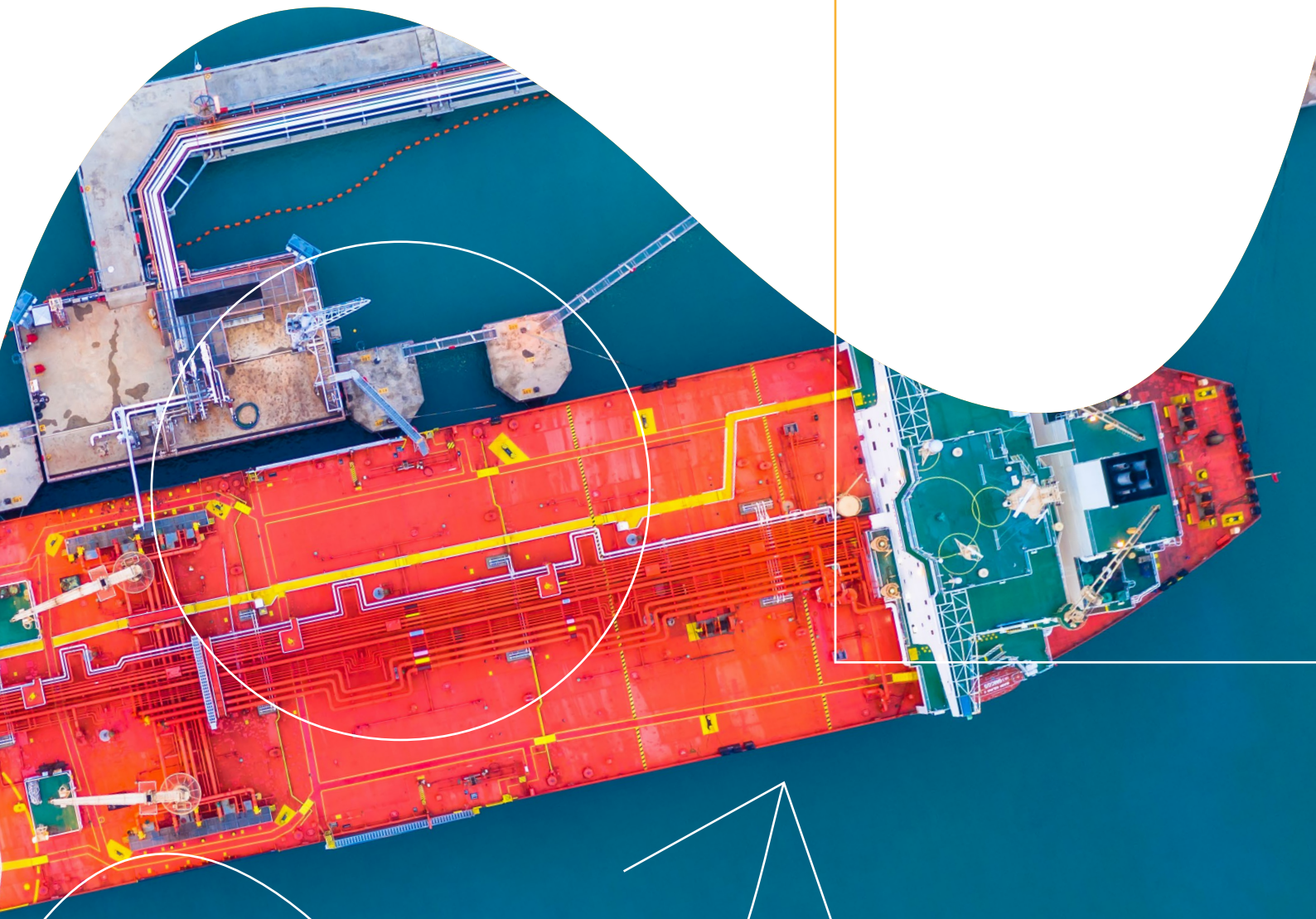
# SEA CARGO CHARTER

## Aligning global shipping with society's goals



Version 2.3
March 2023

*"Sea Cargo Charter" is a reference to the arrangements set out in the Membership Agreement and the Governance Rules of the Sea Cargo Charter Association, a non-profit association registered in Denmark, which are available on www.seacargocharter.org and any interested party is encouraged to consult. This document is intended only as guidance and does not interpret, replace or amend the Membership Agreement or the Governance Rules.*

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# The Sea Cargo Charter

As Signatories and members of the Sea Cargo Charter drafting group, we are proud to announce our commitment to addressing the environmental impacts of global seaborne trade.

Inspired by the launch of the Poseidon Principles in June 2019, the Sea Cargo Charter was developed in recognition of our role as charterers in promoting responsible environmental stewardship throughout the maritime value chain. We believe that industry-wide change is possible when we all take responsibility for contributing to meeting the greater goals of the society we serve.

The Sea Cargo Charter is aligned with the Poseidon Principles and is consistent with the policies and ambitions of the International Maritime Organization (IMO), including its ambition for greenhouse gas (GHG) emissions to peak as soon as possible and to reduce shipping's total annual GHG emissions by at least 50% by 2050 compared to 2008. As such, it sets a standard for reporting emissions, thus enhancing transparency and creating a global baseline to support and work towards the greater goals for our society and the goal to align our maritime activities to be environmentally responsible.

The Sea Cargo Charter is applicable to charterers with interest in the cargo on board; those who simply charter out the vessels they charter in; as well as the disponent owners and all charterers in a charterparty chain. They apply globally, to all chartering activities where a vessel or vessels fall under the purview of the IMO.

Currently, climate alignment is the only factor considered by the Sea Cargo Charter. However, we recognize that they are intended to evolve over time and agree to contribute to a review process to ensure that the Charter is practical and effective, aligned with the goals set by the IMO, and that further adverse impacts are identified for inclusion in due course. While the Sea Cargo Charter establishes a global baseline, we recognize that some Signatories may wish to go beyond this individually, and nothing in the Charter prevents that.

As Signatories, we commit to implementing the Sea Cargo Charter in our internal policies, procedures, and standards, and to work in partnership with our business partners on an ongoing basis to implement the Charter. The Sea Cargo Charter will not only serve our institutions to improve decision making at a strategic level, but will also shape a better future for the shipping industry and our society.

We believe now is the time to take this initiative, and we invite you to join us.

**7 October 2020**

**Jan Dieleman**
President,
Cargill Ocean Transportation

**Richard Head**
Head of Health, Safety,
Environment and Communities,
Trafigura

**Peter Lye**
Head of Shipping,
Anglo American

**Jan Rindbo**
Chief Executive Officer,
Norden

**Lance Nunez**
Marine and Terminal
Logistics Director,
Dow Chemical

**Luc Gillet**
Senior Vice President Shipping,
Total Trading & Shipping

# Preamble

The maritime sector has provided efficient economic services that have played a key role in enabling the growth of global trade and global economic development. However, this has not been without some adverse consequences unique to the maritime sector. The continued success of the maritime sector is intrinsically linked to the well-being and prosperity of the society we serve. Therefore, all industry participants must play a role in addressing adverse impacts. Financial institutions already took the first step in June 2019 by launching the Poseidon Principles, which we as charterers support.

As charterers, we also recognize that our role in the industry affords us opportunities to promote responsible environmental stewardship throughout the maritime value chain. Thus, we have established the Sea Cargo Charter, which serves as a framework for creating common, global baselines that are consistent with, and supportive of, broader societal goals. This will enable us to better align our chartering activities with responsible management of environmental impacts.

The Sea Cargo Charter is consistent with the policies and ambitions of the IMO, including its ambition for GHG emissions to peak as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008. They are aligned with the Poseidon Principles and are also intended to support other initiatives, such as the United Nations' Sustainable Development Goals, the Global Logistics Emissions Council (GLEC) Framework, the Carbon Disclosure Project (CDP), Energy Transitions Commission, and the many others that are developing to address adverse impacts.

As Signatories, we commit to implementing the Sea Cargo Charter in our internal policies, procedures, and standards. We will work in partnership with our business partners on an ongoing basis to implement the Sea Cargo Charter. We welcome the establishment of global baselines through the Sea Cargo Charter and recognize that some Signatories may choose to go beyond them. This offers significant benefits to us as Signatories, to the global maritime industry, and to society as a whole.

The Sea Cargo Charter recognizes that there are different types of charterers and wants to facilitate participation by giving Signatories reporting options. The Sea Cargo Charter will always strive to achieve the best balance between wide adoption, transparency as to options chosen, and confidentiality as to the reporting voyages.

We recognize that the Sea Cargo Charter is intended to evolve over time and agree to contribute to a review process when we, as Signatories, decide to undertake it. This process will ensure that the Sea Cargo Charter is practical and effective, that it is linked to and supports the goals set by the IMO, and that further adverse impacts are identified for inclusion.

# Scope

All charterers are eligible to join the Sea Cargo Charter: those with interest in the cargo on board; those who simply charter out the vessels they charter in; disponent owners; all charterers in a charterparty chain; companies involved in pools.

The Sea Cargo Charter must be applied by Signatories in bulk chartering activities that are:

1. on time or voyage charters, including contracts of affreightment and parceling, with a mechanism to allocate emissions from ballast voyages,
2. for voyages carried out by dry bulk carriers, chemical tankers, oil (crude and product) tankers and liquefied gas carriers,
3. and where a vessel or vessels are engaged in international trade (excluding inland waterway trade)[1].

In recognition of the diversity of a charterer's role, the Sea Cargo Charter adopts a twin approach: firstly, flexibility as to the Signatories' choice of reporting segments, so as to encourage the widest adoption possible; secondly, certain minimum reporting requirements so as to maximize impact.

1 Until 31 December 2021, vessels under 5,000 gross tonnage are excluded. Starting from 1 January 2022, vessels under 5,000 GT are also included.

As to choice of reporting segments:

- **SEGMENT 1** – Charterparties where the Signatory is the only time charterer and there is no charterparty chain or, if there is a charterparty chain, the Signatory is the final time charterer.

- **SEGMENT 2** – Charterparties where the Signatory is the voyage charterer.

- **SEGMENT 3** – Charterparties where the Signatory is an intermediate time charterer in a charterparty chain, or the bareboat charterer.

- **SEGMENT 4** – Owned vessels: if, in addition to being a charterer on certain transactions, Signatories or companies within the same group also own vessels, they can also choose to include voyage of their owned vessels in their reporting.

As to minimum reporting requirements:

- Segments 1 and 2 are mandatory. All Signatories must report their activities that fall within those segments. As to Segment 1, the percentage of non-reporting voyages is expected to be zero, or close to zero. As to Segment 2, the percentage of non-reporting voyages is expected to be higher, as the data need to be sourced from business partners. As adoption of the Sea Cargo Charter spreads within the industry, the percentage of non-reporting voyages is expected to decrease.

- Segment 3 is optional. If a Signatory chooses to report within this segment, the percentage of non-reporting voyages is expected to be similar to those in Segment 2 because the Signatory would similarly rely on data sourced from business partners.

- Segment 4 is optional and is only open to Signatories who are also reporting in Segments 1-3. The percentage of non-reporting voyages within Segment 4 is expected to be low, especially as owners would need to collect such data for other mandatory purposes.

The Sea Cargo Charter does not extend to parties involved in a contract for the purchase and sale of commodities, if such parties do not occupy the position of a charterer (e.g., FOB sellers or CIF/CFR/DES/DAP buyers). However, the Sea Cargo Charter recognizes that such parties can influence maritime decarbonization and, therefore, Signatories are encouraged to persuade their contractual counterparties who occupy the position of a charterer in a trade to become Signatories of the Sea Cargo Charter.

Climate alignment to the IMO absolute GHG reduction target is currently the only environmental factor considered by the Sea Cargo Charter.

The scope of the Sea Cargo Charter will be reviewed and may be expanded by Signatories on a timeline that is at their discretion.

SEA CARGO CHARTER

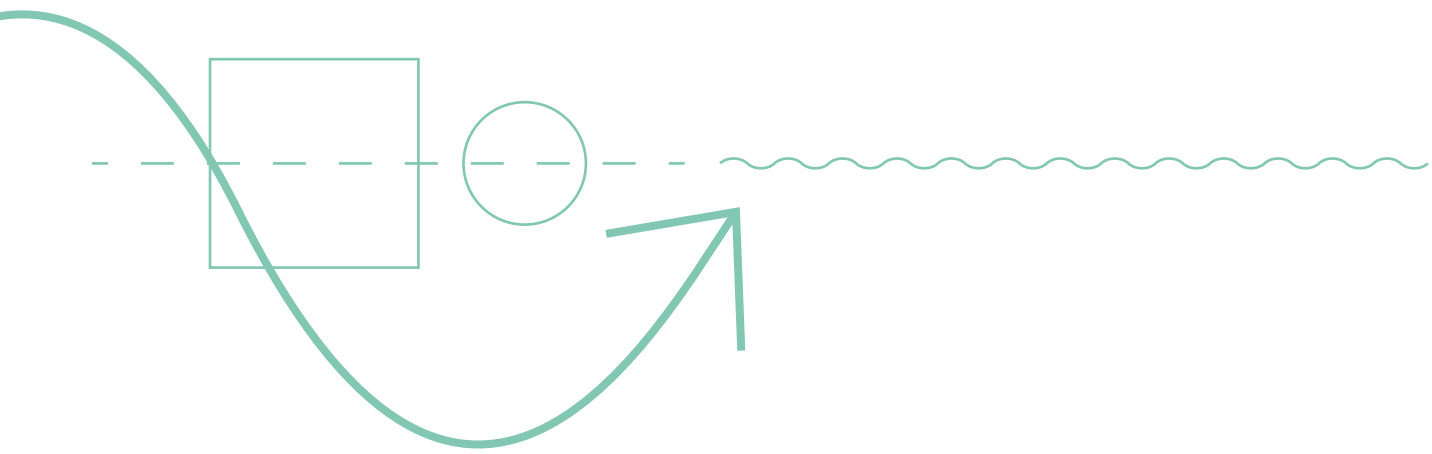
Principle 1

# Assessment of climate alignment

> We will annually assess climate alignment in line with the Technical Guidance for all chartering activities.

**Our commitment:**

Signatories will, on an annual basis, calculate the GHG emission intensity and total GHG emissions of their chartering activities, and will assess their climate alignment (carbon intensity relative to established decarbonization trajectories). This requirement takes effect for each Signatory in the following calendar year after the calendar year in which it became a Signatory.



Principle 2

# Accountability

> We recognize the important role that verification mechanisms play in providing unbiased information to the industry. We will make our best effort to rely on such mechanisms, and any mandatory regulations, as explicitly identified in the Technical Guidance, for the provision of information used to assess and report on climate alignment.

**Our commitment:**

For each step in the assessment of climate alignment, Signatories will rely exclusively on the data types, data sources, and reporting pathways identified in the Technical Guidance.

SEA CARGO CHARTER

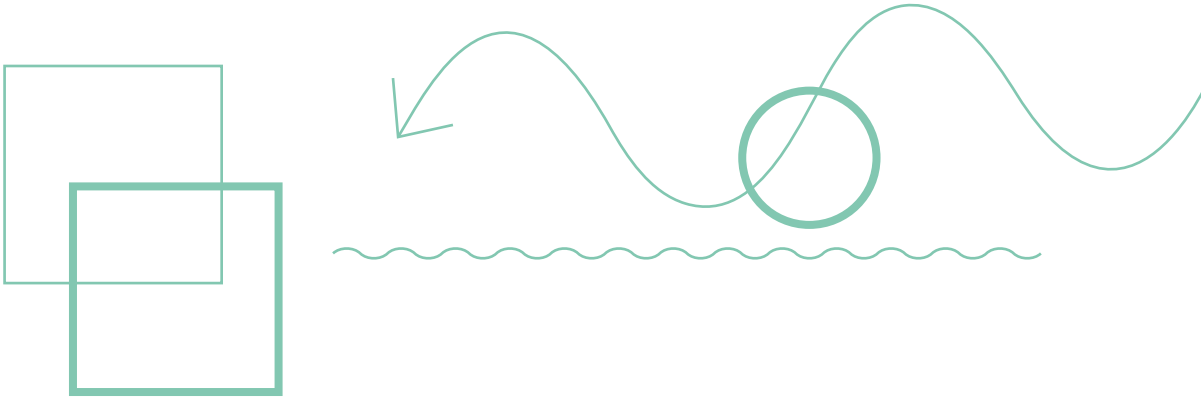
Principle 3

# Enforcement

> We will ensure ongoing compliance with the Sea Cargo Charter for new chartering activities through contractual means by using the Sea Cargo Charter Clause in charter parties. We will contribute to the update of the Sea Cargo Charter Clause through the annual review process.

**Our commitment:**

Signatories will agree to work with owners, disponent owners and business partners to collect and process the information necessary to calculate carbon intensity and total GHG emissions, and assess climate alignment.



Principle 4

# Transparency

"We will publicly acknowledge that we are a Signatory of the Sea Cargo Charter and we will publish the results of the climate alignment scores of our chartering activities on an annual basis in line with the Technical Guidance."

**Our commitment:**

1. Upon becoming a Signatory, the Signatory will publicly acknowledge that it is a Signatory of the Sea Cargo Charter.
2. On an annual basis, each Signatory will report the vessel category climate alignment scores and total annual activity climate alignment score of its chartering activities and supporting information, as per the Accountability requirements, to the Secretariat no later than April 30. This requirement takes effect for each Signatory in the calendar year after the calendar year in which it became a Signatory.
3. On an annual basis, each Signatory will publish the vessel category climate alignment scores and total annual activity alignment score of its chartering activities in relevant institutional reports on a timeline that is appropriate for that Signatory. This requirement takes effect for each Signatory in the calendar year after the calendar year in which it became a Signatory.

# Technical guidance

1

# Introduction

The purpose of the Technical Guidance is to clearly state the requirements and expectations for each principle under the Sea Cargo Charter: Assessment, Accountability, Enforcement, and Transparency.

The Sea Cargo Charter is a framework for assessing and publishing the climate alignment of Signatories' chartering activities. It is supported by a robust and industry-appropriate climate alignment methodology and carefully considered accountability and enforcement requirements that support practical and robust data collection and analysis practices. The Sea Cargo Charter also establishes transparency requirements for Signatories.

These requirements are stated in the boxes at the top of each section of the guidance, followed by a more detailed overview of what these requirements entail. A general timeline of the requirements for Signatories is shown in Figure 1.

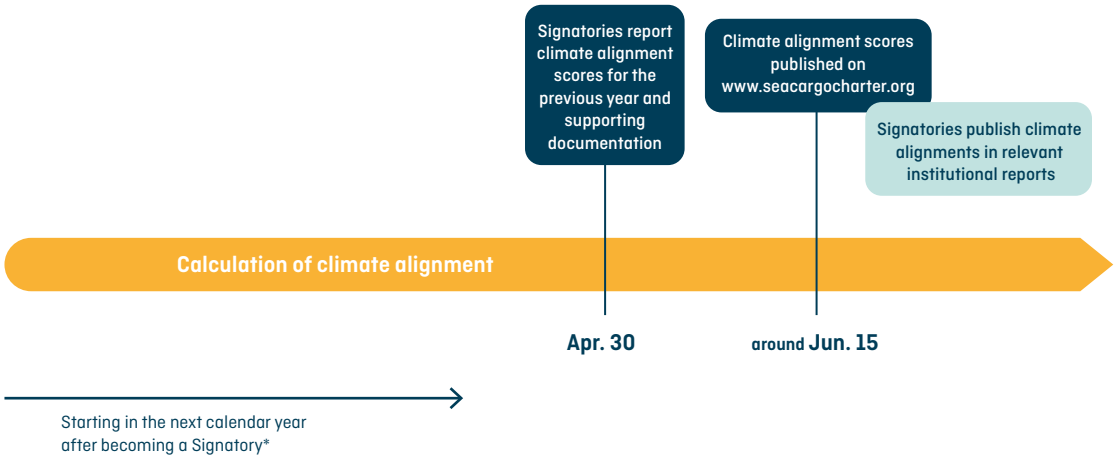



**Figure 1.**
Timeline for implementation of the Sea Cargo Charter

*The first calendar year of reporting, the Signatory reports on its chartering activities for the previous year (year of becoming a Signatory), starting from the next fiscal quarter date after the date of becoming a Signatory. Fiscal quarters starting dates are set as follows: Q1 - January 1, Q2 - April 1, Q3 - July 1, Q4 - October 1.
Starting from the second calendar year of reporting, the Signatory reports on the entire previous calendar year.

The Sea Cargo Charter is consistent with the IMO's ambition for GHG emissions from international shipping to peak as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008.[2]

It is recognized that some Signatories may choose to not only fulfil their obligations under the Sea Cargo Charter but to go beyond these obligations. Some Signatories may choose to do this through assessing their chartering activities relative to the Paris Agreement's well-below 1.5°C objectives, which require a steeper decarbonization trajectory. It is recommended that, where possible, these additional efforts rely on the assessment, accountability, enforcement, and transparency practices established by the Sea Cargo Charter to ensure that these further efforts are robust in their demonstration of industry leadership.

It should be noted that, while being a Signatory of the Sea Cargo Charter does not preclude the use of carbon offsetting, this mechanism is not considered when reporting emissions; thus the full extent of operational emissions are captured in the assessment of climate alignment.

2 IMO. (2018). Resolution MEPC.304 (72) (adopted on 13 April 2018), Initial IMO strategy on reduction of GHG emissions from ships, IMO doc MEPC 72/17/Add. 1, Annex 11.

2

# Assessment of climate alignment

## PRINCIPLE

> We will annually assess climate alignment in line with the Technical Guidance for all chartering activities

## REQUIREMENTS

Signatories will, on an annual basis, calculate the GHG emission intensity and total GHG emissions of their chartering activities, and will assess their climate alignment (carbon intensity relative to established decarbonization trajectory). This requirement takes effect for each Signatory in the following calendar year after the calendar year in which it became a Signatory.

This section provides step-by-step guidance for measuring the climate alignment of Signatories' annual GHG emission intensity. The guidance is framed in the context of the existing IMO environmental regulations and climate agreements. This will apply for international voyages carried out by dry bulk carriers, chemical tankers, oil (crude and product) tankers and liquefied gas carriers.

Shipping's governing body, the IMO, approved an Initial GHG Strategy **("the Initial Strategy")** in April 2018 to reduce GHG emissions generated by shipping activity, which represents a significant shift in climate ambition for a sector that currently accounts for 2%–3% of global carbon dioxide emissions. This Initial Strategy sets out the following levels of ambition:

1. To reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008 **("the IMO Absolute Target")**. See Figure 2.
2. To reduce $CO_2$ emissions[3] per transport activity by at least 40% by 2030, pursuing efforts towards 70% by 2050 compared to 2008 **("the IMO Intensity Targets")**. See Figure 3.

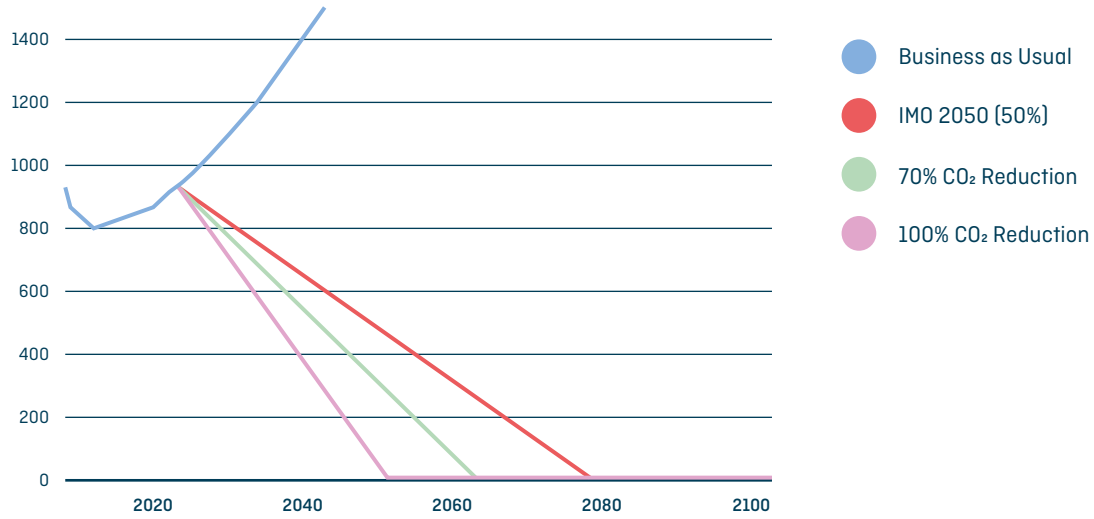



**Figure 2.**
Global fleet's $CO_2$ targets and trajectories under IMO targets (million tonnes of $CO_2$)

3 The IMO's climate goals are currently expressed in terms of reducing operational $CO_2$ emissions. The quantification of GHG emission intensity according to the Sea Cargo Charter will, initially, also be expressed in terms of $CO_2$ emissions, with the intent to move to $CO_2$ equivalent in line with any changes agreed by the IMO.

The IMO Absolute Target can be converted into a relative (carbon intensity) target. Figure 3 shows three possible intensity trajectories consistent with the Initial Strategy compared to the pathway drawn using the IMO Intensity Targets. The IMO Intensity Targets lie significantly above the other pathways consistent with the IMO Absolute Target; i.e. there is some misalignment between the IMO Absolute Target and the IMO Intensity Targets:

1. The IMO Intensity Targets were set prior to the determination of the IMO Absolute Target. Depending on future demand for shipping services, the IMO Absolute Target and IMO Intensity Targets may or may not align. Alignment is unlikely, however.
2. The wording of the IMO Initial Strategy does not state that meeting the IMO Intensity Targets ensures compliance with the IMO Absolute Target.
3. It is expected that the IMO will update the IMO Intensity Targets to better align with the IMO Absolute Target during the forthcoming review process for the IMO's Initial GHG Strategy.

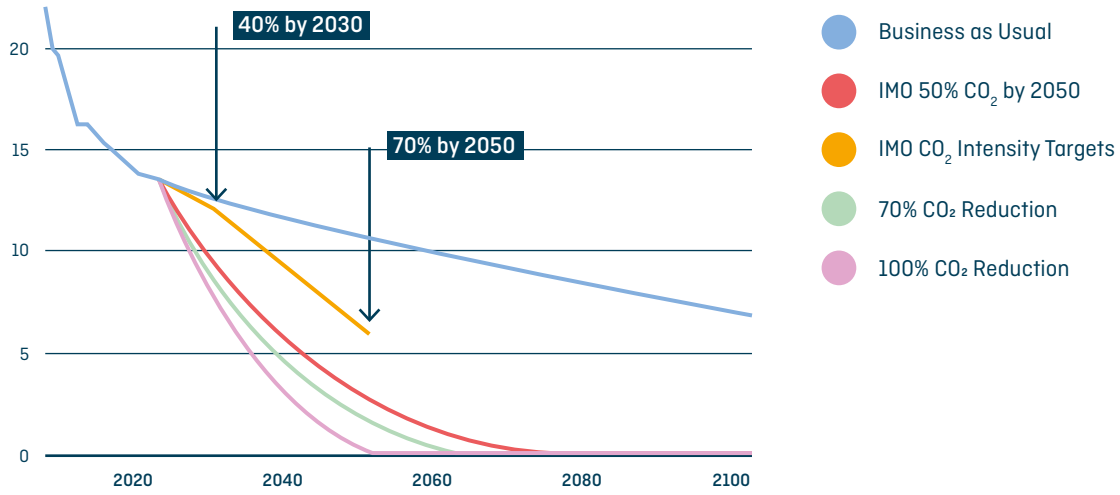



**Figure 3.**
Global fleet's carbon intensity targets and trajectories (grams of $CO_2$ per tonne-nautical mile [$gCO_2$/tnm])

## 2.1 Selecting the right metric for measuring climate alignment

Both absolute and intensity-level measurements of GHG emissions are useful to assess progress towards meeting the IMO levels of ambition, and both measurements are recommended by other initiatives (e.g. CDP, GLEC etc.). Absolute emissions are important as they represent the total emissions figure that will ultimately need to be reduced to mitigate climate change. However, an absolute emissions measure is not well-suited to the management or comparison of emissions/decarbonization at the level of individual voyages as these need to be compared on a like-for-like basis. For this reason, a relative intensity-level metric will be used in the Sea Cargo Charter.

Moreover, to enable alignment with climate goals (IMO), the intensity metric used in the Sea Cargo Charter will be linked to the IMO Absolute Target.

In shipping, carbon intensity represents the total operational emissions generated to satisfy a supply of transport activity (measured as grams of $CO_2$ per tonne-nautical mile [$gCO_2$/tnm]). To provide the most accurate representation of a voyage's actual climate impact, the carbon intensity of a voyage should be measured from its performance in real operating conditions (e.g. following the Energy Efficiency Operating Indicator (EEOI)), instead of using a design specification metric (e.g., the Energy Efficiency Design Index (EEDI)).

The selection of this single metric is guided by an ambition to use a carbon intensity metric which produces the closest measure of the voyage's true carbon intensity in operation, to a high level of granularity.

The EEOI does not distinguish between the role of the shipowner and the charterer in terms of subsequent use and reporting of this information, so implying that the approach is applicable to all stakeholders. The carbon intensity metric requires the following data to compute:

1. The amount of fuel consumption for each type of fuel in metric tonnes (over both ballast and laden legs)
2. The GHG emission factor[4] of each fuel type
3. Actual distance traveled in nautical miles (while laden with transported cargo)
4. Amount of cargo transported in metric tonnes over the given voyage as per the bill of lading[5]

The IMO's EEOI sets out data requirements for calculating carbon intensity on a voyage basis as per Equation 1.

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4 Emission factors for marine fuels can be found in the Fourth IMO GHG Study (2020) and MEPC.308(73). It should be noted that no correction is required for low sulfur fuels as the carbon content is not altered. As only operational emissions are captured in line with the IMO emission reduction ambition, carbon factors for net zero carbon fuels based on lifecycle emissions are not considered. If desired, the consumption of these fuels can be documented in the supplementary fuel fields in the recommended Sea Cargo Charter Clause's Data Collection Templates for data reporting, which is available on the website. See Appendix 6 for the fuel carbon factors for alternative fuels.
Methane slip (during operation) is not currently accounted for in the methodology. This is dependent on several factors including the propulsion system installed, and additional technologies applied. It is expected to be included in the methodology once a suitable method of quantification that includes non-$CO_2$ GHGs is established.

5 For liquified gas carriers, the amount of cargo discharged is to be used for the calculation of carbon intensity.

$$x_i = \frac{C_i}{T_i D_i}$$

**Equation 1.**

where $C_i$ is the total $CO_2$ emissions computed using the fuel consumption and emission factor of each type of fuel, $T_i$ is the amount of cargo transported[6], and $D_i$ is the laden distance travelled on voyage $i$.

For the purposes of this framework, a voyage shall be considered to start at the point of discharge of the previous cargo and continue to the point of discharge of the cargo for the voyage under consideration.

While there is no standardized method of operational data collection, the most basic form of reporting is the noon report which can provide all required information to calculate carbon intensity. Owners and operators are obliged to document this data to comply with the IMO Data Collection System (DCS) and the EU Monitoring, Reporting and Verification (MRV) schemes. However, charterers may not always have access to this data, prohibiting them from calculating carbon intensity directly. The carbon intensity is computed for all voyages that end during the reporting period, i.e. a calendar year.

6 See Appendix 3 for guidance on particular cases.

## 2.2 Sourcing of data

The chartering regime in bulk shipping can be broadly divided into time charters (TC) and voyage charters (VC)[7]. When on TC, charterers pay a daily rate for a fixed time period as well as all voyage costs including bunker. Given that the charterers also dictate operations, all three elements (fuel, load and distance) required to calculate carbon intensity on distinct voyages are already known to them. In situations where required data is not known to the charterer, the vessel owner, or the disponent owner, shall be requested to commit to provide noon reports or voyage reports to the charterer in the charter party, thus establishing an agreement to share the relevant data. In this case, all emissions from the laden leg, ballast leg and port emissions are included implying full transparency between owners and charterers.

More typical in the wet bulk market, on VC, the charterer pays a transactional rate (usually per tonne of cargo or on WorldScale) based on the route and amount of cargo transported, with the owner bearing both the operational costs and voyage costs. In this case, charterers do not, in normal circumstances, have access to fuel consumption for the voyage and, in the case of vessels carrying multiple cargoes, the proportion of cargo each charterer has on board is unknown. For the purposes of calculating carbon intensity, the exact distance sailed is also unknown although it may be estimated or obtained from standard route tables.

In both cases, data and consent for use is to be provided by owners to Signatories of the Sea Cargo Charter through additional clauses in the respective charter parties as described under Principle 3 – Enforcement.

In some cases, there may be a chain of charters; for example, a company may take a vessel on a long-term TC arrangement and then charter out on a VC arrangement. In such a case it would be expected that the time charterer, who has all the necessary information, would provide the subset of information relevant for the voyage charterer to meet the requirements of the Sea Cargo Charter.

7 Bareboat charter can be considered a special case of TC.

## 2.3 Assessing climate alignment

For the purposes of the Sea Cargo Charter, climate alignment is defined as the degree to which voyage carbon intensity of a vessel category is in line with a decarbonization trajectory that meets the IMO ambition of reducing total annual GHG emissions by at least 50% by 2050 based on 2008 levels.

A decarbonization trajectory is a representation of how many grams of $CO_2$ can be emitted to move one tonne of goods one nautical mile ($gCO_2$/tnm) over a time horizon (as shown in Figure 3). The decarbonization trajectory relies on two assumptions:

- projections of transport demand for different shipping sectors out to 2050, including those available in the Fourth IMO GHG Study[8],
- the total $CO_2$ shipping emissions permitted to be in-line with the IMO's 2050 target.

While the trajectory will be drawn and updated with the latest available research and will be aligned to or equal to the IMO's projections, there are uncertainties within them because of the two assumptions noted above.

To assess the climate alignment of a single voyage, the voyage carbon intensity is compared to the required baseline carbon intensity for its respective ship type and size category. To assess climate alignments at the vessel category and annual activity level, the voyage carbon intensities are aggregated as discussed in Section 2.5.

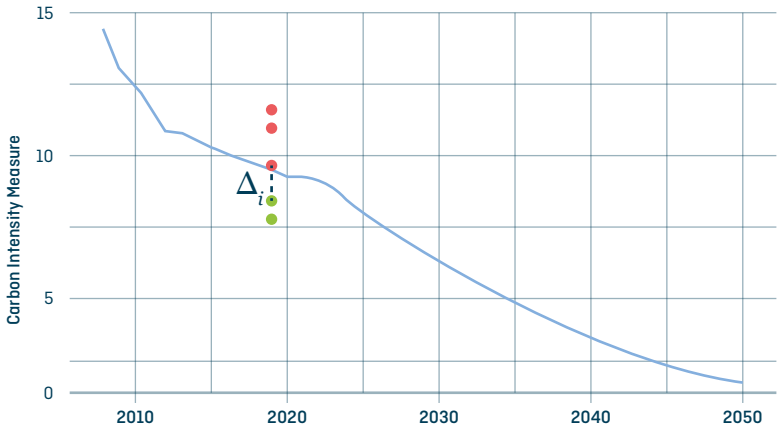



**Figure 4.**
Assessing alignment at the voyage level

8 Jasper Faber, Shinichi Hanayama, Shuang Zhang, Paula Pereda, Bryan Comer, Elena Hauerhof, Wendela Schim van der Loeff , Tristan Smith, Yan Zhang, Hiroyuko Kosaka, Masaki Adachi, Jean-Marc Bonello, Connor Galbraith, Ziheng Gong, Koichi Hirata, David Hummels, Anne Kleijn, David S. Lee, Yiming Liu, Andrea Lucchesi, Xiaoli Mao, Eiichi Muraoka, Liudmila Osipova, Haoqi Qian, Dan Rutherford, Santiago Suárez de la Fuente, Haichao Yuan, Camilo Velandia Perico, Libo Wu, Deping Sun, Dong-Hoon Yoo and Hui Xing. 2021, Fourth IMO GHG Study 2020. International Maritime Organization, London, UK.

In Figure 4, each dot represents the carbon intensity of a voyage and the blue curve represents the required carbon intensity baseline for a given ship type and size. The green dots are aligned, and the red dots are misaligned.

Climate alignment at the voyage level is the percentage difference between a voyage carbon intensity and the decarbonization trajectory at the same point in time. It is expressed as a (+/-) %. In mathematical terms, alignment at a particular year is:

$$\Delta_i = \left( \frac{x_i - r_s}{r_s} \right) 100$$

**Equation 2.**

where $x_i$ is the carbon intensity (from Equation 1) of voyage i and $r_s$ is the required carbon intensity for the vessel for the year multiplied by 100 to convert into percentage terms. A positive alignment score means a voyage is misaligned (above the decarbonization trajectory), whereas a negative or zero score means a voyage is aligned (below or on the decarbonization trajectory).

## 2.4 Decarbonization trajectory

A decarbonization trajectory is produced by the Secretariat of the Sea Cargo Charter based on agreed and clearly-stated assumptions. This is accompanied by a baseline for each ship type as defined in the Fourth IMO GHG Study and is produced in a format that allows for simple weighting aggregation. This is to ensure that once the carbon intensity of voyages is understood, it is simple and practical to understand climate alignment. This also ensures that numbers are comparable between Signatories.

Appendix 4 describes the method used for establishing the target carbon intensity for a given ship type and size class in a given year. This is carried out by calculating a decarbonization-consistent carbon intensity from 2012 out to 2050. The method is derived from the IMO Secretariat commissioned Fourth IMO GHG Study and EU MRV data. Assumptions for formulating the trajectory are also taken from the Initial Strategy, including the use of a 2008 baseline.

## 2.5 Aggregating alignment at the vessel category level and total annual activity

In order to calculate annual activity climate alignment, one must first calculate the climate alignment of activity within the type and size category (also called vessel category)[9].

Example 1 on the next page shows a simple calculation of climate alignment. Appendix 5 illustrates climate alignment calculations for bulk and chemical parceling.

9 See Appendix 3 for guidance on particular cases and Appendix 4 for further clarification on the provision of trajectories and definition of vessel categories.

## Steps for calculating climate alignment by vessel category:

The vessel category activity alignment is computed by applying Equation 3.

$$\Delta_j = \frac{\Sigma_{i=1}^{Nj} CO_{2i}}{\Sigma_{i=1}^{Nj} W_i \cdot r_{sjDWT}} - 1$$

**Equation 3.**

where $\Delta_j$ is the category activity alignment for $N_j$ voyages by vessels in category $j$ with carbon emissions $CO_{2i}$ and transport work $W_i$ with $r_{sjDWT}$ being the required carbon intensity for the vessel category and size for the year under assessment.

## Steps for calculating climate alignment of total annual activity:

The annual activity alignment is computed similarly by applying Equation 4 over all voyages.

$$\Delta_k = \frac{\Sigma_{i=1}^{Nk} CO_{2i}}{\Sigma_{i=1}^{Nk} W_i \cdot r_{sjDWT}} - 1$$

**Equation 4.**

where $\Delta_k$ is the annual activity alignment for $N_k$ voyages by vessels in category $j$ with carbon emissions $CO_{2i}$ and transport work $W_i$ with $r_{sjDWT}$ being the required carbon intensity for the vessel category and size for the year under assessment.

The following table determines the vessel size categories used in the worked example on page 23.

| Vessel type | Vessel size category | Size | Units |
|---|---|---|---|
| Bulk Carrier | 1 | 0-9999 | dwt |
| Bulk Carrier | 2 | 10000-34999 | dwt |
| Bulk Carrier | 3 | 35000-59999 | dwt |
| Bulk Carrier | 4 | 60000-99999 | dwt |
| Bulk Carrier | 5 | 100000-199999 | dwt |
| Bulk Carrier | 6 | 200000-+ | dwt |
| Chemical tanker | 1 | 0-4999 | dwt |
| Chemical tanker | 2 | 5000-9999 | dwt |
| Chemical tanker | 3 | 10000-19999 | dwt |
| Chemical tanker | 4 | 20000-39999 | dwt |
| Chemical tanker | 5 | 40000-+ | dwt |
| Liquefied gas tanker | 1 | 0-49999 | cbm |
| Liquefied gas tanker | 2 | 50000-99999 | cbm |
| Liquefied gas tanker | 3 | 100000-199999 | cbm |
| Liquefied gas tanker | 4 | 200000-+ | cbm |
| Oil tanker | 1 | 0-4999 | dwt |
| Oil tanker | 2 | 5000-9999 | dwt |
| Oil tanker | 3 | 10000-19999 | dwt |
| Oil tanker | 4 | 20000-59999 | dwt |
| Oil tanker | 5 | 60000-79999 | dwt |
| Oil tanker | 6 | 80000-119999 | dwt |
| Oil tanker | 7 | 120000-199999 | dwt |
| Oil tanker | 8 | 200000-+ | dwt |

**Table 1.**
Vessel size categories.

## Example 1: Calculating alignment at the category level and total annual activity

In this example, a Signatory measures its climate alignment for 2022.

- Table 2 illustrates a simple example of a series of voyages showing the alignment deltas.
- The category alignment delta shown in Table 3 presents the average for each vessel category (type and size).
- The annual activity alignment in Table 4 is calculated using a weighted average according to Equation 4. Weighting is applied according to transport activity undertaken by each category.

The Signatory's chartering activities are climate aligned because they are on average 16.8% below the carbon intensity required for decarbonization in 2021.

| Vessel type | Vessel size category | IMO | DWT | Voyage ID | Year | Transport Work (Mtnm) | $CO_2$ (t) | Actual $CO_2$ Intensity ($gCO_2$/tnm) | Required $CO_2$ Intensity ($gCO_2$/tnm) | Alignment Delta (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Bulk Carrier | 3 | 9511349 | 45,000 | #### | 2022 | 76.98 | 1,000 | 12.99 | 8.96 | 44.9 |
| Bulk Carrier | 3 | 9511349 | 59,000 | #### | 2022 | 109.34 | 890 | 8.14 | 7.90 | 3.0 |
| Bulk Carrier | 5 | 9762148 | 188,000 | #### | 2022 | 1,428.57 | 7,000 | 4.90 | 4.60 | 6.5 |
| Bulk Carrier | 6 | 9112654 | 230,000 | #### | 2022 | 1,559.63 | 8,500 | 5.45 | 4.19 | 30.2 |
| Oil Tanker | 3 | 9293739 | 17,000 | #### | 2022 | 25.46 | 600 | 23.57 | 29.12 | -19.0 |
| Oil Tanker | 4 | 9331517 | 46,000 | #### | 2022 | 348.26 | 2,800 | 8.04 | 16.77 | -52.1 |
| Oil Tanker | 2 | 9268416 | 8,000 | #### | 2022 | 9.24 | 300 | 32.47 | 44.22 | -26.6 |
| Oil Tanker | 4 | 8962134 | 53,000 | #### | 2022 | 418.99 | 3,000 | 7.16 | 15.50 | -53.8 |

Values for Actual $CO_2$ Intensity and Required $CO_2$ Intensity are rounded to two decimals.

**Table 2.**
Voyage alignment

| Vessel type | Vessel size category | Year | Transport work (Mtnm) | $CO_2$ (t) | Average $CO_2$ intensity ($gCO_2$/tnm) | Weighted average required $CO_2$ intensity | Alignment delta (%) |
|---|---|---|---|---|---|---|---|
| Bulk Carrier | 3 | 2022 | 186.3 | 1,890 | 10.1 | 8.3 | 21.6 |
| Bulk Carrier | 5 | 2022 | 1,428.6 | 7,000 | 4.9 | 4.6 | 6.5 |
| Bulk Carrier | 6 | 2022 | 1,559.6 | 8,500 | 5.5 | 4.2 | 30.2 |
| Oil Tanker | 2 | 2022 | 9.2 | 300 | 32.5 | 44.2 | -26.6 |
| Oil Tanker | 3 | 2022 | 25.5 | 600 | 23.6 | 29.1 | -19.0 |
| Oil Tanker | 4 | 2022 | 767.3 | 5,800 | 7.6 | 16.1 | -53.0 |

Values for Actual $CO_2$ Intensity and Required $CO_2$ Intensity are rounded to two decimals.

**Table 3.**
Category alignment

| Year | Transport Work (Mtnm) | $CO_2$ (t) | Alignment Delta (%) |
|---|---|---|---|
| 2022 | 3,976.5 | 24,090.0 | -14.4 |

**Table 4.**
Annual activity alignment

3

# Accountability and enforcement

This section provides the requirements and technical guidance for both the accountability and enforcement principles for the sake of clarity and simplicity.

The accountability and enforcement principles are intended to ensure that the assessment and disclosure of climate alignment under the Sea Cargo Charter is practical, fair, and accurate. The intent of this approach is to ensure the development of trust in the Sea Cargo Charter and amongst Signatories.

The Technical Guidance for the accountability and enforcement principles lays out the steps in the Sea Cargo Charter's information flow process. At each step, the assessment and enforcement requirements are clearly identified.

## 3.1 Accountability

**PRINCIPLE**

> **We recognize the important role that verification mechanisms play in providing unbiased information to the industry. We will make our best effort to rely on such mechanisms, and any mandatory regulations, as explicitly identified in the Technical Guidance, for the provision of information used to assess and report on climate alignment.**

**REQUIREMENTS**

For each step in the assessment of climate alignment, Signatories will rely exclusively on the data types, data sources, and service providers identified in the Technical Guidance.

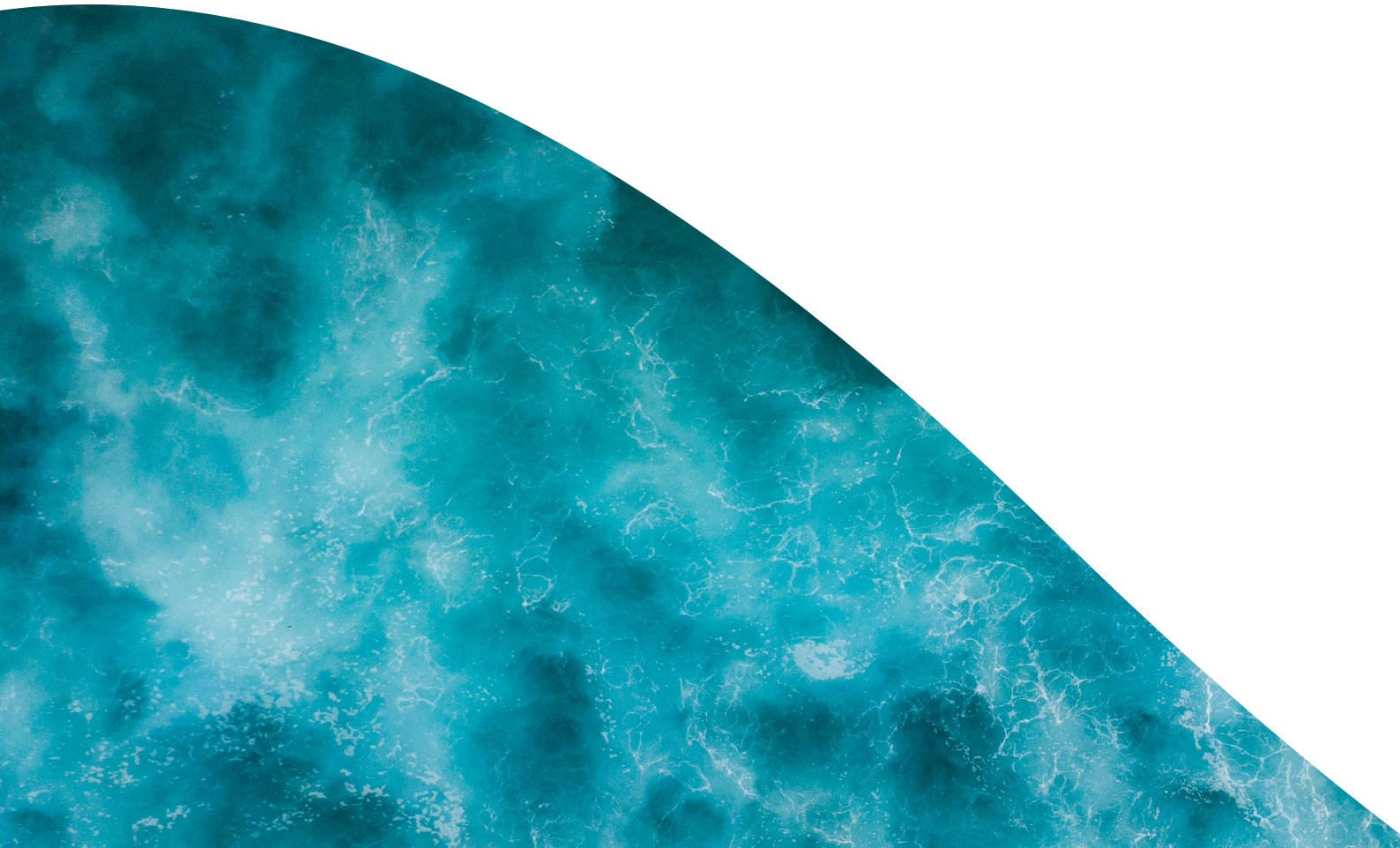
## 3.2 Enforcement

**PRINCIPLE**

> **We will ensure ongoing compliance with the Sea Cargo Charter for new chartering activities through contractual means by using the Sea Cargo Charter Clause in charter parties. We will contribute to the update of the Sea Cargo Charter Clause through the annual review process.**

**REQUIREMENTS**

Signatories will agree to work with owners, disponent owners and business partners to collect and process the information necessary to calculate carbon intensity and total GHG emissions, and assess climate alignment.



## 3.3 Requirements at each information flow step

This section is broken into four steps with information flowing from one to the next. The intent of this section is to give appropriate background and clearly demonstrate how information flows between parties. Specific accountability requirements regarding data types, data sources, and service providers are stated at each step. The enforcement requirement of using a recommended charter party clause is detailed in Section 3.4, while the Sea Cargo Charter Clause itself and Data Collection Templates are available on the website. The Sea Cargo Charter's information flow process relies on data that owners are required to report to Signatories as stated in the recommended Sea Cargo Charter Clause.

Figure 5 provides an overview of the potential information flow pathways. The pathways are divided into "preferred pathways" and "allowed pathways" tracks. Preferred pathways are those that include verification mechanisms to maintain data veracity.

For sake of clarity, once a Signatory has chosen either the preferred or allowed pathways track, it may choose any option available for that step. For example, if a Signatory chooses the preferred pathways track, it may choose to use either of the two available options for steps 2 and 3.

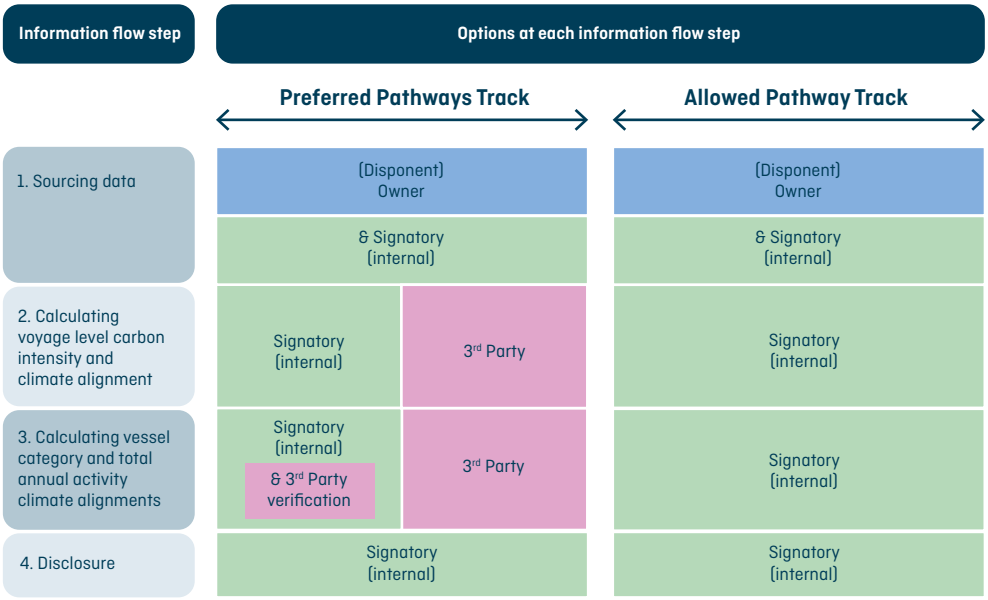



**Figure 5.**
Information flow pathway tracks

### 3.3.1 Step 1: Sourcing data

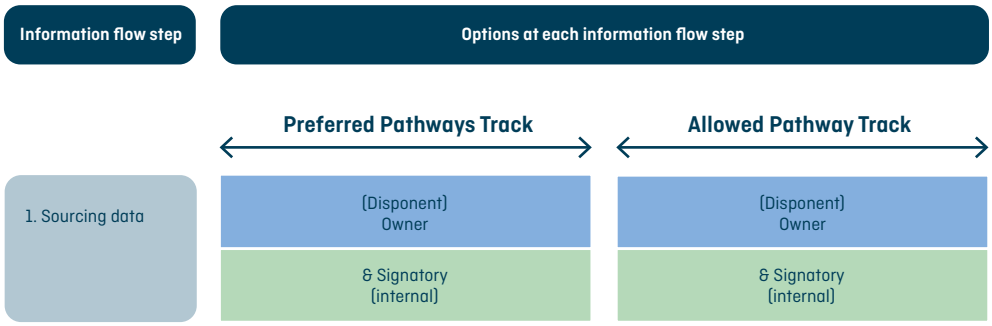



**Figure 6.**
Data sourcing

Step 1 requires the sourcing of data for the calculation of carbon intensity. As Figure 7 indicates, there is one method for sourcing measured data, which is applicable to both the preferred and allowed pathway tracks. Signatories are expected to already have all the necessary data for time charters, so will likely only need to source data from owners for voyage charters. If, and only if, measured data can't be sourced for ballast legs, the Signatory will source estimated data. The recommended charter party clause - the Sea Cargo Charter Clause - ensures that the appropriate data and information are requested by, and provided to, Signatories by their contractual counterparties, the appropriate consents are given for the sharing of data, and appropriate privacy protections are established.[10]

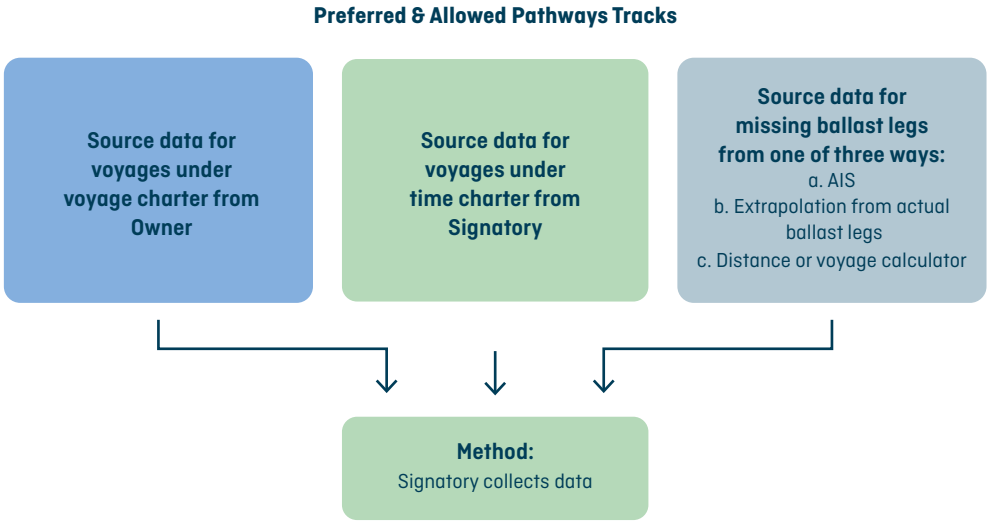



**Figure 7.**
Method for sourcing data

10 See Section 3.4 and Appendix 6. The Sea Cargo Charter Clause is available on the website.

## Method (preferred and allowed pathways):

Owners provide measured data as noon or voyage reports for voyages under voyage charter[11]. Signatory provides data for voyages under time charter.

1. Signatory requests owners to provide noon or voyage reports for each voyage under voyage charter, containing:
   **a.** Fuel type and consumption for all bunker consumed by main propulsion, auxiliary machinery, boilers, gas combustion unit, inert gas generators and all primary energy consumers in metric tonnes over the preceding ballast and laden leg of interest[12]
   **b.** Actual distance sailed laden with the charterer's cargo in nautical miles[13]
   **c.** Amount of cargo transported in metric tonnes over the given voyage as per the bill of lading[14]
2. Owners provide the data as requested above.

- Signatories are to ensure that obvious errors are corrected at source (vessels/shipowners from where the data originated). If data can't be corrected at source, it should be categorized and reported under the percentage of eligible chartering activities non-reporting.
- No filters/omission should be applied to voyage EEOI result calculation for the higher order reporting (vessel category and total annual climate alignments) if the input raw data for voyages are correct (i.e., distance, cargo, consumption etc.).

3. Signatory gathers the same data (1.a, 1.b, 1.c) for each voyage under time charter.
4. If and only if measured data can't be sourced for ballast legs, the Signatory will source estimated data.[15] Estimated data can be sourced in one of three ways:
   **a.** From AIS based estimated data.
   **b.** From extrapolation from actual ballast leg data for other voyages or other vessels within the missing vessel's reporting category.
   **c.** By using a distance table or voyage calculator with vessels' ballast speed and consumption.

Note that consent for the owner to share data with the Signatory is given through the recommended Sea Cargo Charter Clause.

### How to meet the requirements:

Measured voyage data and related noon reports or voyage reports must be sourced from the owners for each voyage under voyage charter. Data must be gathered by the Signatory for each voyage under time charter. Estimated data must be sourced by the Signatory for missing ballast legs if measured data can't be sourced.

---

11 A set of guidelines or standards will be developed for owners to follow when submitting fuel/cargo data that supports the reporting requirements of the Sea Cargo Charter. It is anticipated that these will include recommendations with regards to the process for verification (e.g. by Recognized Organizations) as well.
12 If the charterer's cargo forms only part of the total amount of cargo transported, an amount of fuel (for each fuel type) proportional to the share of the total cargo carried should be used to calculate the emissions.
13 In exceptional circumstances where owners are not able to provide the actual distance sailed, input from distance tables is accepted. Given that table distances are usually shorter than actual distances, this will increase carbon intensity making alignment more challenging.
14 For liquified gas carriers, the amount of cargo discharged is to be used for the calculation of carbon intensity.
15 Estimated data can only be used for missing ballast legs and as a fallback option if measured data can't be sourced. This is to ensure that the methodology does not create disincentives to source data for ballast legs when the laden leg is reported. Estimated data can't be used for voyages other than ballast legs; other data gaps will be reflected in the percentage of eligible chartering activities non-reporting in line with the reporting requirements in Section 3.3.4.

### 3.3.2 Step 2: Calculating voyage level carbon intensity and climate alignment

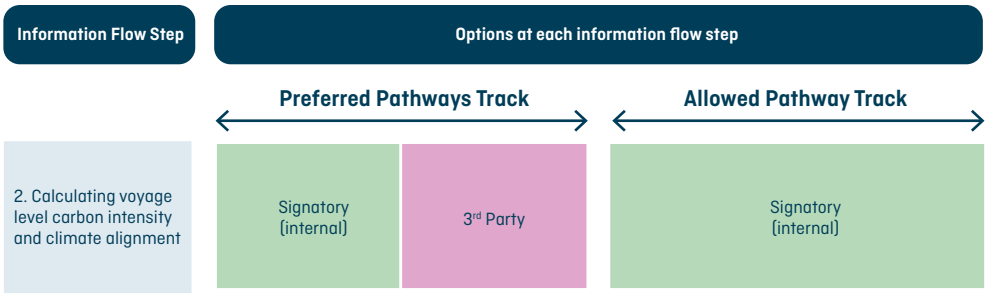



**Figure 8.**
Voyage climate alignment calculation

Step 2 requires the calculation of voyage carbon intensity using both data from the owner and from the Signatory itself, and the calculation of voyage climate alignment with decarbonization trajectories. There are 2 methods for undertaking these calculations: either internally by the Signatory itself or by a third party.

EEOI is used as the carbon intensity metric and is detailed in Section 2.1. Standard decarbonization trajectories for each ship type and size class are produced specifically for the purposes of the Sea Cargo Charter so that all calculations are made in the same way.[16] These are available through the Sea Cargo Charter Secretariat. Figure 9 demonstrates where to source the information and who can perform calculations.

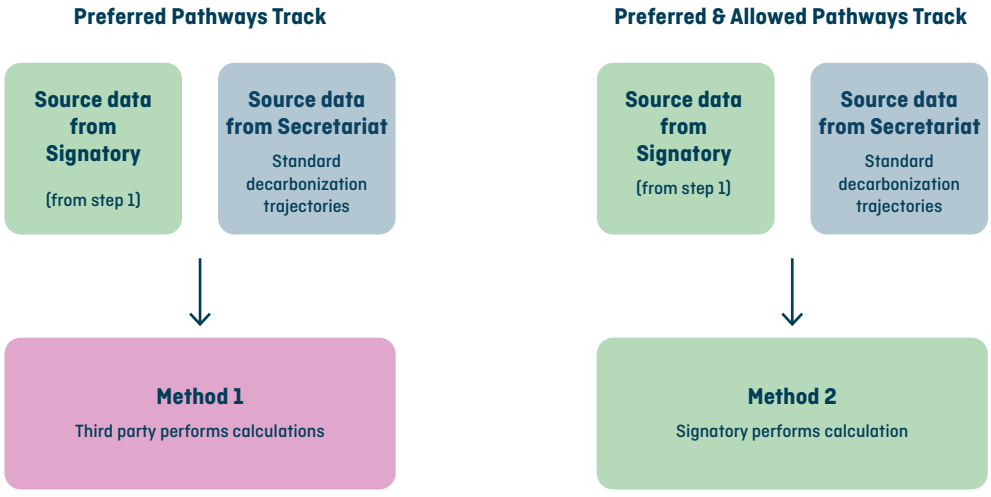



**Figure 9.**
Method for calculating carbon intensity & voyage climate alignment

16 See guidance in Section 2.4 and Appendix 4 for further clarification on the provision of trajectories.

## Permissible methods for calculation

**Method 1 (preferred pathway):** Third party performs voyage carbon intensity and climate alignment calculations on behalf of the Signatory.

1. The third party will source the data for all voyages from step 1 from the Signatory and the standard decarbonization trajectories from the Secretariat.
2. The third party calculates the carbon intensity of the voyages and the decarbonization delta for the voyages.

**Method 2 (preferred & allowed pathways):** Signatory performs voyage carbon intensity and climate alignment calculations.

1. The Signatory will source the standard decarbonization trajectories from the Secretariat.
2. The Signatory calculates the carbon intensity of the voyages and the decarbonization delta for the voyages, using data from step 1 and the decarbonization trajectories.

**How to meet the requirements**

1. Voyage carbon intensity and climate alignment calculations must rely solely on reliable data for the voyages and on standard decarbonization trajectories provided by the Sea Cargo Charter Secretariat.
2. Voyage carbon intensity (EEOI) and voyage decarbonization delta calculations can be performed by a third party or by the Signatory.

### 3.3.3 Step 3: Calculating vessel category and total annual activity climate alignment

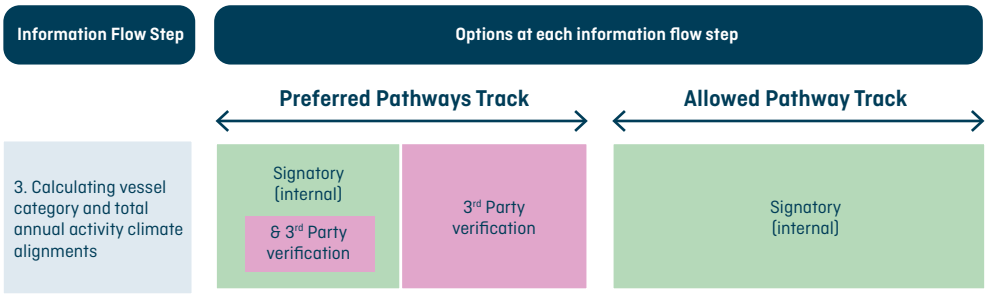



**Figure 10.**
Vessel category and total annual activity alignment calculations

Step 3 requires the calculation of vessel category climate alignment and the total annual activity climate alignment using the voyage climate alignment data from step 2. There are three methods for undertaking these calculations: under the preferred pathway track, the calculation is either performed by a third party on behalf of the Signatory, or by the Signatory together with a validation of the data (from step 1) and verification of the methodology for the calculation (from steps 2 and 3) by a third party. The allowed pathway track allows the Signatory to perform the calculation internally.

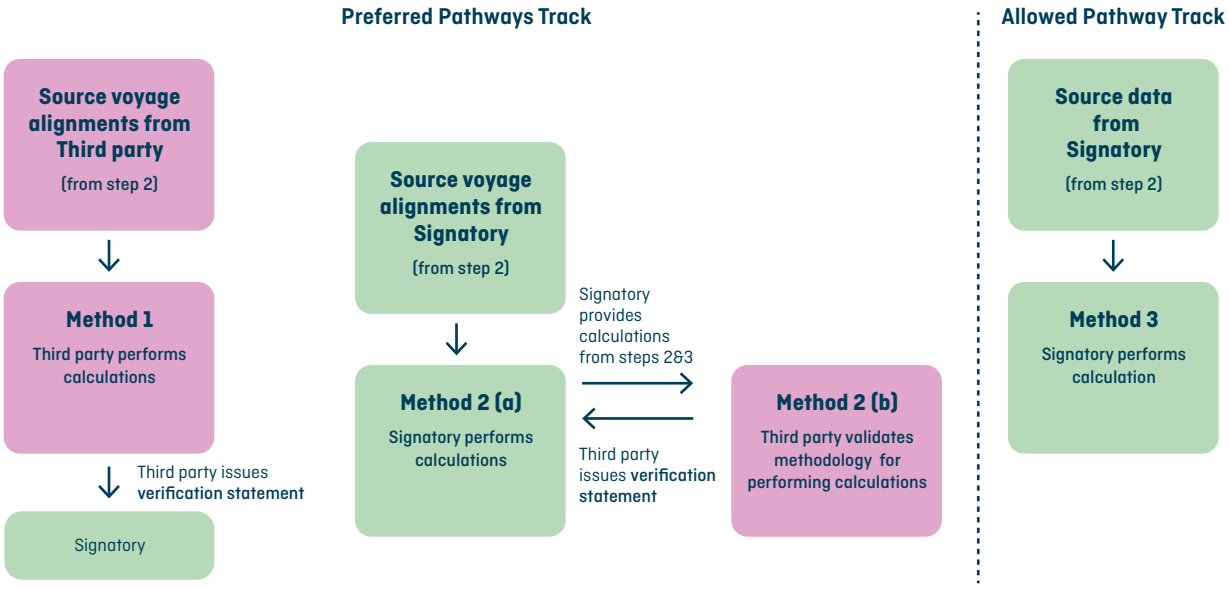



**Figure 11.**
Method for calculating climate alignment of chartering activities

## Permissible calculation methods

**Method 1 (preferred pathway):** Third party performs total annual and vessel category climate alignment calculations on behalf of the Signatory.

1. The third party calculates the decarbonization delta for each vessel category and the total annual decarbonization delta, using data from step 2.
2. The third party validates the data used to perform the calculations. The third party issues a verification statement / report.
3. The third party provides the Signatory with the alignment deltas and verification statement / report.

**Method 2 (preferred pathway):** Signatory performs total annual and vessel category alignment calculations which are verified by a third party.

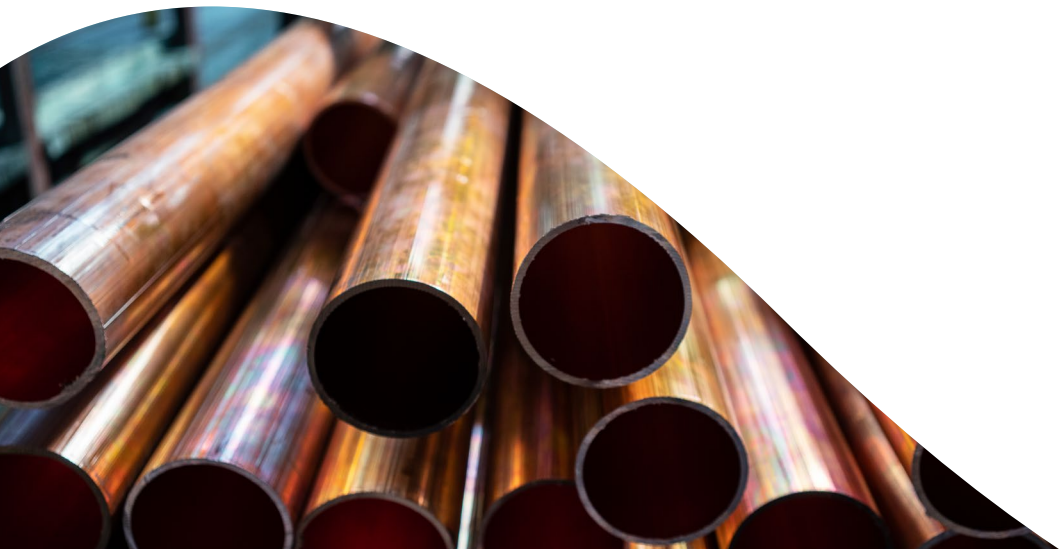
1. The Signatory calculates the decarbonization delta for each vessel's category and the total annual decarbonization delta, using data from step 2.
2. The selected third party sources calculations from the Signatory.
3. The selected third party validates the data and methodology used to perform the calculations by the Signatory, in line with the methodology outlined in Section 2.
4. The third party provides the Signatory with the verification statement / report.

**Method 3 (allowed pathways):** Signatory performs total annual and vessel category climate alignment calculations.

1. The Signatory calculates the decarbonization delta for each vessel's category and the total annual decarbonization delta, using data from step 2.

**How to meet the requirements**

1. Calculations of vessel category and total annual activity climate alignment must rely solely on reliable data provided by the owner and on standard decarbonization trajectories provided by the Sea Cargo Charter Secretariat.
2. Total and vessel category climate alignment can be performed by a third party or by the Signatory.
3. Under the preferred pathway, the third party issues a verification statement / report.



### 3.3.4 Step 4: Disclosure

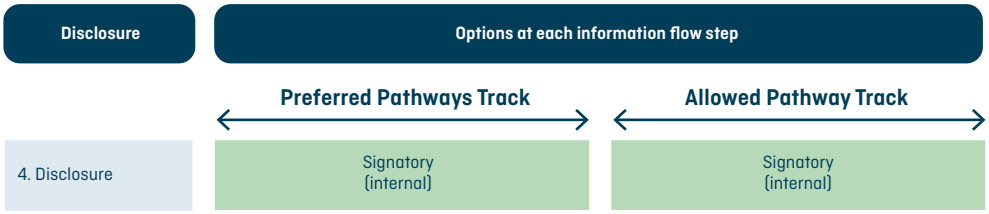



**Figure 12.**
Method for disclosure

Step 4 establishes disclosure requirements that will serve as a quality control mechanism. The information outlined below will be submitted to the Secretariat and made available only to Signatories with the intent of informing the actions of the Steering Committee. Information submitted under these requirements will not be made public. This is intended to establish a quality control mechanism for Signatories while also ensuring that information that may be regarded as sensitive by some Signatories is not publicly disclosed. There is one method, which is applicable to the preferred and allowed pathway tracks.

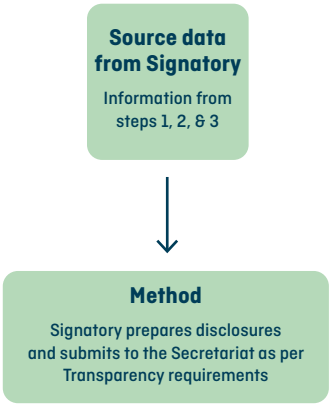



**Figure 13.**
Disclosure

**Method (preferred and allowed pathways):** Signatory prepares disclosures and submits to the Secretariat.

1. If the Signatory is unable to collect data for some portion of its chartering activities, the Signatory should calculate the percentage of its eligible chartering activities for which it cannot report. This percentage is calculated out of the total number of voyages, relying on the methodology outlined in Section 2.5.
2. The Signatory should also:
   **a.** calculate the percentages of eligible chartering activities reported through preferred pathway and allowed pathways tracks, relying on the methodology outlined in Section 2.5;
   **b.** calculate the percentages of eligible chartering activities for which measured and estimated data were used, relying on the methodology outlined in Section 2.5;
   **c.** list the source(s) used for estimated data (4.a, 4.b or 4.c as outlined in Section 3.3.1);
   **d.** list the names of service providers (i.e. third party) it used, if any, to complete steps 2 and 3 (i.e., those steps identified in Sections 3.3.2–3.3.3)
   **e.** source third party verification statement(s) / report(s).
3. The Signatory should provide the following information to the Secretariat:

- vessel category climate alignment scores (percentage),
- total annual activity climate alignment score (percentage),
- the list of the scope's segments included in the eligible reporting chartering activities,
- percentage of eligible chartering activities non-reporting as outlined above in (1),
- additional information as outlined above in (2.a), (2.b), (2.c), (2.d), (2.e).

**How to meet the requirements**

The Signatory should provide the following information to the Secretariat in line with transparency requirements identified in Section 4:

- vessel category climate alignment scores (percentages),
- total annual activity climate alignment score (percentage),
- scope's segments included in the eligible reporting chartering activities,
- percentage of eligible chartering activities non-reporting ,
- percentages of eligible chartering activities for which preferred and allowed pathway tracks were used,
- percentages of eligible chartering activities for which measured and estimated data were used,
- and a list of sources used for estimated data,
- a list of the names of the third parties it used, if any, to complete steps 2 and 3,
- and third parties' associated verification statement(s) / report(s).

## Example 2: Meeting disclosure requirements

In this example, a Signatory successfully completes the assessment of its chartering activities climate alignment.

In addition to reporting its climate alignment scores to the Secretariat, it also reports the following information, which is demonstrated in Table 5 below.

The information in Table 5 is not made public by the Secretariat.

The Signatory Reporting Template is available from the website.

| **Reporting vs. non-reporting** | | | *Validation* |
|---|---|---|---|
| *(L1)* | Proportion of activities **reported**, against % of eligible chartering activities (calculated out of the total number of voyages) | 99% | L1 + L2 = 100% |
| *(L2)* | Portion of activities **not reported**, against % of eligible chartering activities (calculated out of the total number of voyages) | 1% | |
| **Measured vs. estimated data** | | | *Validation* |
| *(L3)* | Proportion of eligible chartering activities for which **measured data** were used (calculated out of the total number of voyages) | 97% | L2 +L3 + L4 = 100% |
| *(L4)* | Proportion of eligible chartering activities for which **estimated data** were used (calculated out of the total number of voyages) | 2% | |
| | Source for estimated data*:<br>*Estimated data can be sourced by one of three ways:<br>a. from AIS based estimated data,<br>b. from extrapolation from actual ballast leg data for other voyages or other vessels within the missing vessel's reporting category,<br>c. by using a distance table or voyage calculator with vessels' ballast speed and consumption. | a. AIS data | |
| **Preferred vs. allowed pathway** | | | *Validation* |
| *(L5)* | Proportion of eligible chartering activities for which **preferred pathway** was used (calculated out of the total number of voyages) | 90% | L2 + L5 + L6 = 100% |
| | Third party/service providers used:<br>Note: Method statement for validation presented by third party to be provided at submission. — Step 1. Sourcing data | Sourced internally | |
| | Third party/service providers used:<br>Note: Method statement for validation presented by third party to be provided at submission. — Step 2. Calculating voyage level carbon intensity and climate alignment | Made calculations internally | |
| | Third party/service providers used:<br>Note: Method statement for validation presented by third party to be provided at submission. — Step 3. Calculating vessel category and total annual activity climate alignments | Made calculations internally. Verification by third party: company name XXX | |
| *(L6)* | Proportion of eligible chartering activities for which **allowed pathway** was used (calculated out of the total number of voyages) | 9% | |

**Table 5.**
Example of disclosure requirement submission

## 3.4 Recommended charter party clause

Key to supporting the accurate assessment of climate alignment and to creating an equal burden on all Signatories is a contractual mechanism that ensures that the appropriate data and information are requested by, and provided to, Signatories by their contractual counterparties, that the appropriate consents are given for the sharing of data, and that appropriate privacy protections are established. The mechanism agreed for the Sea Cargo Charter to achieve this is a recommended clause to be proposed and included as part of the charterparty agreement negotiated with the contractual counterparty.[17] The Sea Cargo Charter Clause and supporting Data Collection Templates are available on the website.

The Sea Cargo Charter Clause - and supporting Data Collection Templates - are designed to be generic and broad in its nature (so as to be consistent with any charter party form or type of trade) and non-prescriptive (so as to reduce the impulse for amendment from contractual counterparties).[18] It is hoped that this approach will maximize the appeal and widen the future endorsement of a charter party clause linked to the Sea Cargo Charter.[19]

### How to meet the requirements

In all new chartering activities that are finalized after a charterer becomes a Signatory of the Sea Cargo Charter, the Signatory must use commercially reasonable efforts to include the wording, and particularly the data requirement, set out in the recommended Sea Cargo Charter Clause in the negotiated charter party documentation.

17 See Appendix 6.

18 Because there are slight differences in the way that time and voyage charter agreements are formulated, it may be necessary in the future to develop two different charter party clauses.

19 The Secretariat will endeavor to engage with those organizations to whom the market has entrusted the production of contractual terms with a view to including the wording of this recommended charter party clause as part of the recognized industry standard terms.

4

# Transparency

This section states the requirements for the transparency principle and provides the expectations and intent of each requirement. It also provides an outline of the timeline for the participation in and compliance with the Sea Cargo Charter.

## PRINCIPLE

> **We will publicly acknowledge that we are a Signatory of the Sea Cargo Charter and we will publish the results of the climate alignment scores of our chartering activities on an annual basis in line with the Technical Guidance.**

## REQUIREMENTS

1. Upon becoming a Signatory, the Signatory will publicly acknowledge that it is a Signatory of the Sea Cargo Charter.
2. On an annual basis, each Signatory will report the vessel category climate alignment scores and total annual activity climate alignment score of its chartering activities and supporting information, as per the Accountability requirements, to the Secretariat no later than April 30. This requirement takes effect for each Signatory in the calendar year after the calendar year in which it became a Signatory.
3. On an annual basis, each Signatory will publish the vessel category climate alignment scores and total annual activity alignment score of its chartering activities in relevant institutional reports on a timeline that is appropriate for that Signatory. This requirement takes effect for each Signatory in the calendar year after the calendar year in which it became a Signatory.

## 4.1 Information flow

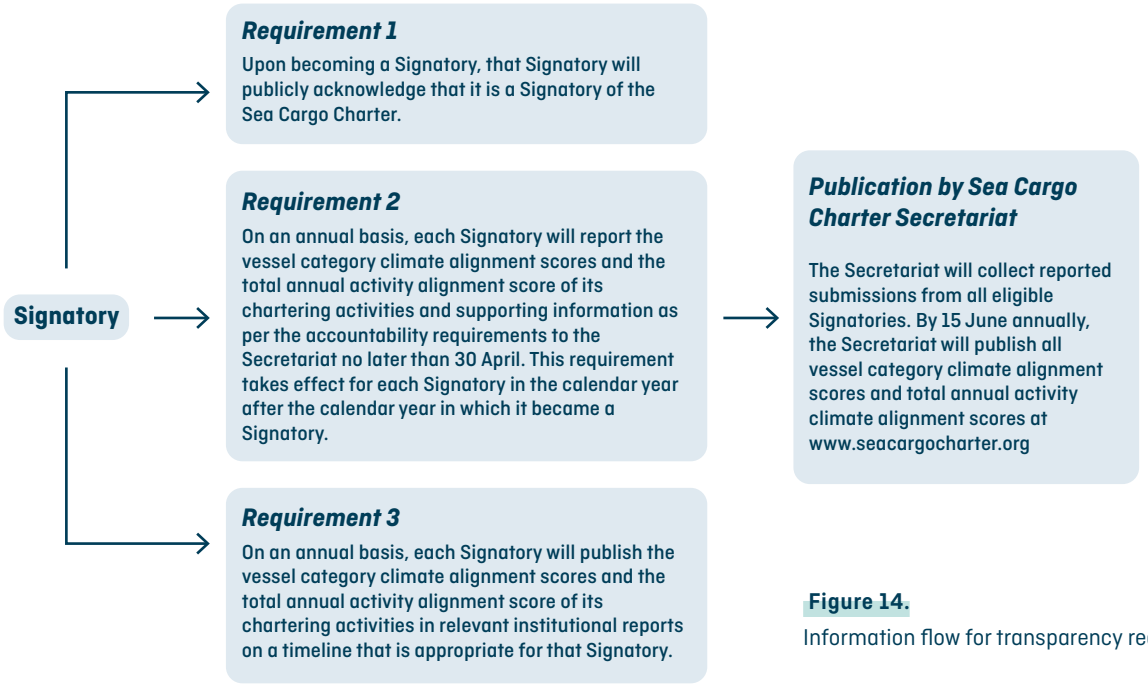



**Figure 14.**
Information flow for transparency requirements

Figure 14 demonstrates the information flow for each transparency requirement. Below, expectations and intent of each transparency requirement are further clarified.

### How to meet the requirements

1. The expectations of transparency requirement 1 are that a Signatory should make publicly known that it is a Signatory of the Sea Cargo Charter in a manner that is suitable for its organization. The intent of this requirement is to simply ensure awareness of the Sea Cargo Charter and to ensure that it is clear which organizations are Signatories without creating any significant burden to them. Announcement Guidelines are available from the Secretariat.
2. The expectations of transparency requirement 2 are that a Signatory should report all required information to the Sea Cargo Charter Secretariat (total annual and vessel category climate alignments and supporting information as per the accountability requirement) in a timely manner (no later than 30 April) in accordance with the Assessment, Accountability and Enforcement, and Transparency Technical Guidance. Figure 15 shows which information becomes public and which information remains confidential. The intent of this requirement is to ensure that accurate information can be published by the Sea Cargo Charter Secretariat to www.seacargocharter.org in a timely manner (no later than 15 June). The required reporting timeline is intended to create as little burden as possible to Signatories.
3. The expectations of transparency requirement 3 are that a Signatory should identify relevant institutional reports and ensure that the climate alignments of its chartering activities are included in them. Due to different institutional timelines, no specific expectations have been set for when reports including vessel category and total annual climate alignment scores should be published. The intent of this requirement is not to specify precisely where this information should be published or create a significant burden for Signatories. Instead, it is intended to ensure awareness of the Sea Cargo Charter and its approach.

**Signatory reporting requirements**

**Becomes public**

- Vessel category climate alignment
- Total annual activity climate alignment
- Scope's segments included in eligible reporting chartering activities

**Only shared with Secretariat and other Signatories**

- Percentage of eligible chartering activities non-reporting.
- Percentages of eligible chartering activities for which preferred and allowed tracks were used.
- Percentages of eligible chartering activities for which measured and estimated data were used, and the source for estimated data.
- A list of the names of the third parties it used, if any, to complete steps 2 and 3 and the associated verification statement / report.

**Figure 15.**
Signatory reporting requirements

**Specificities for the first calendar year of reporting:**

For the first calendar year of reporting (i.e., the following calendar year after the calendar year of becoming a Signatory), the Signatory reports on its chartering activities for the previous year (i.e., for the year of becoming a Signatory) starting from the next fiscal quarter date after the date of becoming a Signatory.
Fiscal quarter dates are set as follows:

1. Q1 - starts January 1st
2. Q2 - starts April 1st
3. Q3 - starts July 1st
4. Q4 - starts October 1st

Starting from the second calendar year of reporting, the Signatory reports on the entire previous calendar year (from January 1st to December 31st of that year).

## Example 3: Start of reporting obligations

Signatory A becomes a Signatory on 10 February 2021 (during Q1):
- Signatory A reports in 2022 on its chartering activities from 1 April 2021 (start of Q2) to 31 December 2021.
- In 2023, Signatory A will report on its chartering activities for the entire 2022 year.

Signatory B becomes a Signatory on 2 August 2021 (during Q3):
- Signatory B reports in 2022 on its chartering activities from 1 October 2021 (start of Q4) to 31 December 2021.
- In 2023, Signatory B will report on its chartering activities for the entire 2022 year.

Signatory C becomes a Signatory on 20 November 2021 (during Q4):
- Signatory C will not report in 2022 on its chartering activities for 2021.
- In 2023, Signatory C will report on its chartering activities for the entire 2022 year.

## Example 4: Transparency

In this example, a lender becomes a Signatory of the Sea Cargo Charter in May 2021.

**Requirement 1:** Charterer issues a press release announcing that it is a Sea Cargo Charter Signatory in May 2021.

The Signatory starts collecting data for all its chartering activities from the beginning of the next fiscal quarter after becoming a Signatory; in this example from the beginning of Q3, which starts on 1 July 2021.

**Requirement 2:** Prior to 30 April 2022, the Signatory submits its climate alignment scores (total annual and by vessel category) for 2021 and supporting information as per the accountability requirements. In this example, the Signatory is climate aligned because it has a score of -2.6% indicating that it is 2.6% below the decarbonization trajectory.

**Requirement 3:** The Signatory includes in its annual sustainability report its vessel category and total annual climate alignment scores.

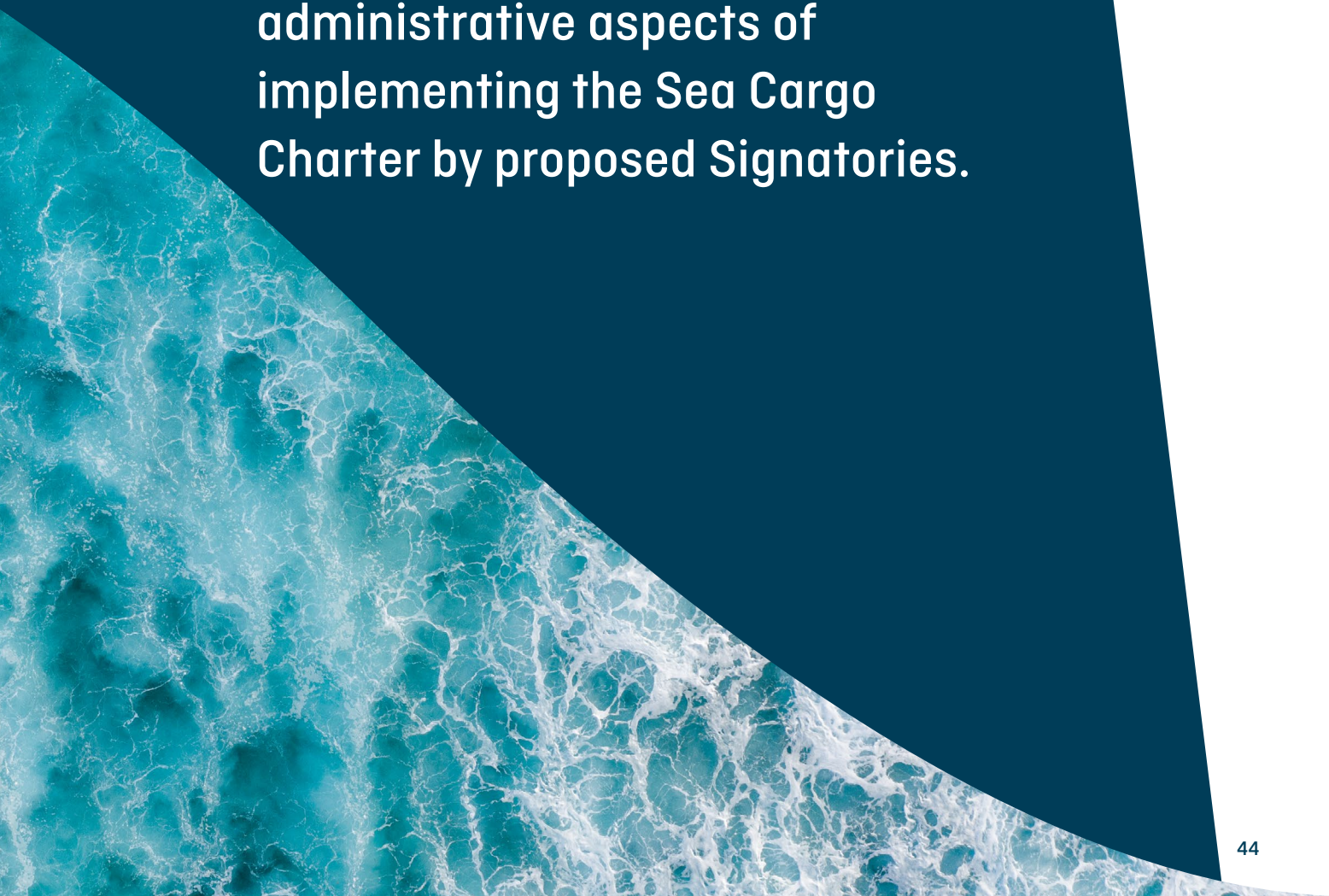
**Publication by Sea Cargo Charter Secretariat:** All eligible Signatories' 2021 vessel category climate alignment scores and total annual activity climate alignment scores will be published online around 15 June 2022.

5

# How to become a Signatory

The following outlines the process for charterers to become Signatories and highlights the necessary documents.

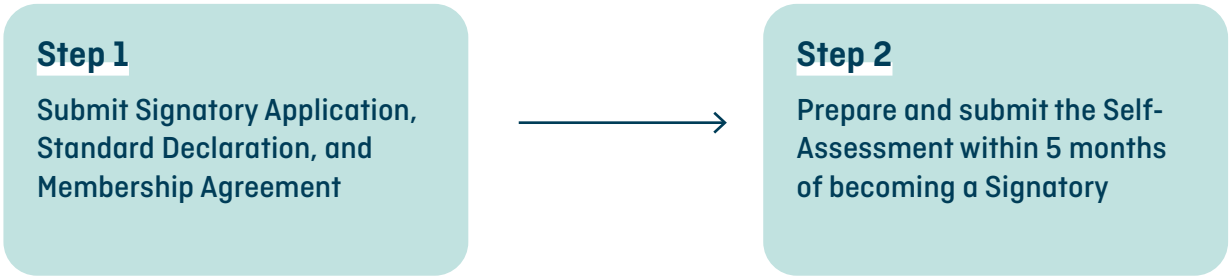
This document is intended to be a how-to guide for the administrative aspects of implementing the Sea Cargo Charter by proposed Signatories.



Charterers falling under the scope and wishing to become a Signatory of the Sea Cargo Charter must adhere to the following process:

1. Using the Standard Declaration and Signatory Application provided by the Secretariat, a charterer wishing to become a Signatory must complete and send both documents to the Secretariat.
2. The charterer must complete and submit the Sea Cargo Charter Self-Assessment to the Secretariat within five (5) months of becoming a Signatory.

All onboarding documents are available from the Secretariat.




## 5.1 Standard Declaration

The Standard Declaration is the formal commitment required of charterers to become a Signatory. Step one of the process, the Standard Declaration, announces the intent of the charterer to follow all legally binding requirements of the Sea Cargo Charter. This means that the institution is prepared to take the necessary steps to comply with all four Principles under the Sea Cargo Charter, and have this commitment and related reporting made public.

## 5.2 Signatory Application

Along with the Standard Declaration, the charterer wishing to become a Signatory must also complete the Signatory Application document.

This document outlines who is responsible for contact, reporting, invoicing, and other necessary functions to implement and maintain the Sea Cargo Charter within the Signatory's organization.

## 5.3 Self-Assessment

Upon becoming a Signatory, each Signatory has five (5) months to complete this Self-Assessment and return it to the Sea Cargo Charter Secretariat.

The purpose of this is to ensure that each Signatory has made appropriate arrangements to fulfill its obligations under the Sea Cargo Charter and identified any challenges to doing so. The Self-Assessment is as brief as possible to reduce the administrative burden, while still addressing the core responsibilities of Signatories of the Sea Cargo Charter. The questions focus on ensuring that Signatories are aware of timelines and obligations under the Sea Cargo Charter, have engaged internal stakeholders, have engaged business partners, and have a plan for engaging the necessary third parties to verify their climate alignment assessment.

## 5.4 Timeline

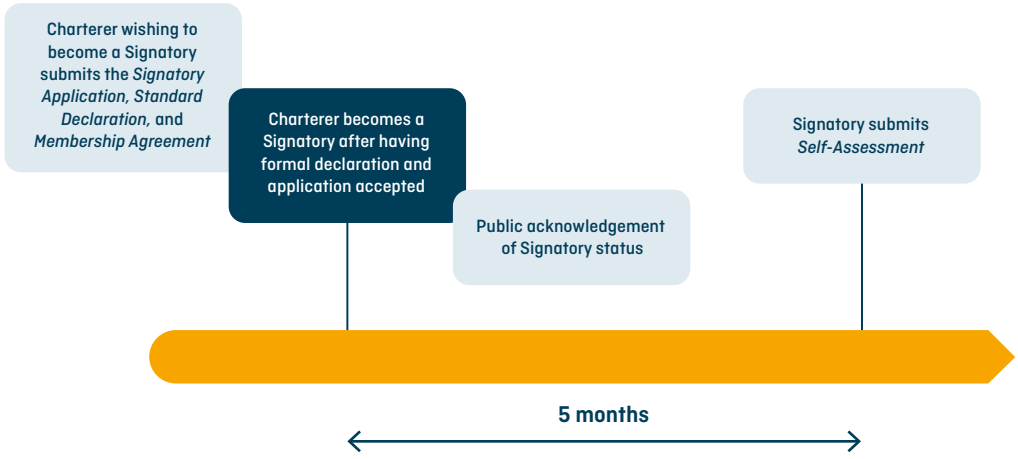



**Figure 16.**
Timeline for becoming a Signatory of the Sea Cargo Charter

Figure 16 details the steps to becoming a Signatory. The Sea Cargo Charter aims to be easily implementable and achievable for each Signatory. To these ends, the timetable for implementation in Figure 1 assists the Self-Assessment so that Signatories know when there are important deadlines for alignment and reporting to comply with the Sea Cargo Charter.

## 5.5 Governance

Information regarding the founding of the Sea Cargo Charter Association, the selection of the Steering Committee, and the role of the Secretariat can be found in the Governance Rules of the Association (available on the website).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# Appendices

# Appendix 1

| | |
|---|---|
| **CBM** | Cubic Meter |
| **CDP** | Carbon Disclosure Project<br>*a not-for-profit charity that runs a global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts.* |
| **DWT** | Deadweight Tonnes<br>*a measure of how much weight a ship is designed to carry at maximum summer draught* |
| **EEOI** | Energy Efficiency Operational Indicator<br>*developed by the IMO in order to allow shipowners to measure the fuel efficiency of a ship in operation. A carbon intensity metric calculated in accordance with Equation 1 as set out in Section 2.1 of the Technical Guidance.* |
| **EEDI** | Energy Efficiency Design Index<br>*A design specification metric developed by the IMO.* |
| **FOB & DAP** | Free On Board & Delivered At Place<br>*FOB and DAP are Incoterms (or International Commercial Terms), which are a series of terms of trade for the sale of goods published by the International Chamber of Commerce relating to international commercial law.* |
| **GHG** | Greenhouse Gas |
| **GLEC** | Global Logistics Emissions Council<br>*an industry-led partnership to drive emission reduction and enhance efficiency across global logistics supply chains.* |
| **IMO** | International Maritime Organization<br>*a specialized agency of the United Nations, and the global standard-setting authority for the safety, security and environmental performance of international shipping.* |
| **IMO DCS** | IMO's MARPOL Annex VI Data Collection System for Fuel Consumption |
| **TC** | Time Charter |
| **tnm** | Tonne-Nautical Mile |
| **VC** | Voyage Charter |

## Appendix 2

# Glossary

**Activities not reported / Non-reporting percentage**
If Signatories are unable to obtain data for voyages or if there are obvious errors that can't be corrected, these voyages are to be considered as activities eligible for non-reporting. Percentage of chartering activities not reported (non-reporting percentage) is to be calculated out of the total number of voyages and submitted to the Secretariat in Step 4 of the information flow step (pages 34-35).

**Ballast leg** (also called ballast voyage) is a voyage that takes place between ports of discharge and loading ports where the vessel is carrying no cargo and hence takes on ballast (usually water) to make the vessel more manageable at sea. Ballast legs may result from strategic decision-making by the (disponent) owner to ensure the vessel is geographically well-placed to secure a higher rate for the subsequent charter, or may result from a charterer requesting a particular vessel.

**Bunkering** is the supplying of fuel for use by ships.

**Charterers** are defined as the party who buys freight services from a (disponent) owner under time or voyage charters.

**Chartering activities** are defined as business activities that are 1) on time and voyage charters, including contracts of affreightment and parceling, with a mechanism to allocate emissions from ballast voyages, and 2) for voyages carried out by dry bulk carriers, chemical tankers, oil (crude and product) tankers and LNG carriers, and 3) where a vessel or vessels are engaged in international trade (excluding inland waterway trade).

**Continuous baselines**
In order to avoid bias against vessels due to their position within a vessel category due to their size which could make alignment more challenging, continuous baselines are introduced in the Sea Cargo Charter. This implies that the required intensity is directly related to the size of the vessel through a power law relationship similar to what is currently in place for the Energy Efficiency Design Index (EEDI). Thus, each vessel type has an annual continuous baseline that defines required carbon intensity which are defined in Appendix 4.

**Decarbonization trajectory**
A decarbonization trajectory is produced by the Secretariat based on agreed and clearly-stated assumptions. The current decarbonization trajectory used by the Sea Cargo Charter defines the rate of reduction of carbon intensity required to be aligned with the IMO's Initial Strategy absolute emission reduction ambition of at least 50% by 2050 on 2008 levels.
The method used for establishing the decarbonization trajectory up to 2050 is derived from emission and transport work data from the Fourth IMO GHG Study.

**Disponent owner** is a person or company that "displaces" or takes the place of the legal, registered owner in charter parties. References to owner or shipowner include the potential for a disponent owner to have taken their place and in this case to fulfil the requirement.

**Signatory** is a charterer that has sent a formal declaration to the Sea Cargo Charter Secretariat, has had that declaration accepted, and has had that declaration announced.

**Third party** is a reputable service provider that is commissioned by the Signatory to perform part of its obligations under the Sea Cargo Charter on its behalf.

**Time charter** is a contract for the hire of a named vessel from a (disponent) owner, for a specified period of time for the charterer's purposes subject to agreed restrictions.
When on time charter, the (disponent) owner is responsible for the vessel's running expenses; the (disponent) owner operates the vessel technically, and the charterer directs the ship's commercial operations. Charterers pay a daily rate for a fixed time period and all voyage costs including bunker.

**Vessel type and size (vessel categories)**
Carbon intensities vary as a function of ship type and size, as well as a ship's technical and operational specification. To enable the carbon intensity of ships to be compared to a peer group of ships of a similar type and size, a classification system is applied. The classification system is taken from the Fourth IMO GHG Study, to enable consistency with the IMO's process. Under the Sea Cargo Charter, Signatories are required to report, among other, their vessel category climate alignments, which categories are defined by vessel type and size. They can be found in Appendix 4.

**Voyage charter** is a contract for the transportation of a stated quantity by a stated type of cargo on a named vessel between named ports against an agreed price.
On voyage charter, the charterer pays a transactional rate based on the amount of cargo transported and the route. The (disponent) owner bears both the operational costs and voyage costs. In this case, charterers do not have access to the actual fuel consumption during the voyage and, in the case of vessels carrying multiple cargos, the proportion of cargo each charterer has on board is unknown. Contracts of affreightment and parceling fall under voyage charter operated under the same cost regime.

- **Contract of Affreightment** is a contracting model that can be considered as being an agreement for several voyage charters over a period of time which may include parceling.
- **Parceling** is defined as when vessels are carrying cargo from various charterers at the same time.

# Appendix 3

## List and guidance for particular cases

| | Particular cases |
|---|---|
| **Ballast legs** | Ballast legs are included in each voyage by accounting for the $CO_2$ emissions from the preceding ballast leg while no transport work is carried out, noting that, as stated below, off-hire periods due to dry-docking are specifically excluded from the calculation. |
| **Drifting periods** | Drifting periods, and associated emissions and distances, should be included in the overall duration of the voyage. |
| **Floating storage / Stationary time** | Floating storage/stationary time and related emission should be captured in the reporting without any exemption if it is part of the charter. In case of a pure floating storage operation where EEOI/voyage alignment cannot be calculated on a voyage basis, the operations should still be captured at the aggregated reporting levels (i.e. vessel category and annual activity alignment) by including the emissions in the annual total. |
| **Parceling** | Parceling operations are characterized by a vessel carrying multiple cargoes from various charterers. Individual cargoes often remain on board through multiple port calls before being unloaded, while other cargoes are loaded and unloaded in the interim. Within the Sea Cargo Charter, two separate situations are considered:<br>• general parceling,<br>• chemical parceling.<br><br>For **general parceling**, all charterers with cargo onboard the vessel should use the carbon intensity for the whole voyage, including the ballast leg, to calculate their voyage climate alignment and as input to subsequent category and overall alignment calculations.<br><br>For **chemical parceling**, more detailed data collection is needed to collect data for the emissions that occur in port. Climate alignment should be based on a carbon intensity value calculated for each parcel as follows:<br>• total emissions for the parcel divided by the total transport work for the parcel<br>• total emissions for the parcel consist of its share of a prior ballast leg (if applicable) plus its share of the emissions across all laden journey legs that the parcel is onboard plus its share of the port call emissions<br>• the emissions associated with any ballast legs, which are uncommon in this subsector, will be allocated to the cargoes on board on departure from the first port after the ballast leg in proportion to their share of the transport work on the first subsequent journey leg<br>• the emissions associated with transportation are calculated on a leg by leg basis in proportion to the parcel's share of the total transport work, recognizing that this will vary as other cargoes are loaded and unloaded during the voyage<br>• the emissions associated with a port call are allocated across all cargo that is unloaded, loaded or transits through that port. This allocation is based solely on the mass share of each cargo compared to the total (i.e. distance within port is set to zero)<br>• the total transport work for the parcel is the sum of its total transport work summed across all laden journey legs that it remains on the vessel.<br>If a vessel leaves a port and then re-enters the same port (for example for tank cleaning or to free up a berth while awaiting access to the next point of loading / unloading), this will be considered as part of the same port call. Because vessels may spend considerable time in port, loading and unloading several cargoes, reporting of emissions for this subsector should be within 30 days of final cargo discharge. Reporting may occur at the level of an individual parcel or per fixture, i.e., covering multiple parcels belonging to the same charterer, as agreed between the shipowner and the charterer. |
| **Off-hire period** | The amount of fuel consumption relating to off-hire periods are to be included in the voyage's overall fuel consumption unless the vessel is off-hire due to dry-docking, pre-agreed or emergency maintenance. |
| **Voyages spanning multiple years** | The voyage should be captured in the reporting period that it ends in. |

Appendix 4

# Definition of decarbonization trajectory and vessel continuous baselines

The following describes the method applied for establishing an overall decarbonization trajectory by defining the rate of decline of carbon intensity from 2012 out to 2050. The method used for establishing the decarbonization trajectory up to 2050 is derived from emission and transport work data from the Fourth IMO GHG Study.

## Defining overall decarbonization trajectory:

The overall improvement required in carbon intensity is calculated from:

1. a projection of the foreseeable growth in transport work (in tonne-nautical mile) across all ship types between baseline (2012) and the target year (2050),
2. the target $CO_2$ emissions in 2050 defined by the IMO Initial Strategy absolute emission reduction ambition.

The projection of foreseeable growth is taken from the Fourth IMO GHG Study scenario RP2.6 SSP2-L. This scenario is selected because it is most aligned with decarbonization in the wider economy, and most closely represents the rate of GDP and trade growth that has been observed in recent years.

The estimate of the target $CO_2$ emissions in 2050 is taken by applying the IMO's Initial Strategy Objective 3 minimum target (at least a 50% reduction), to the IMO Initial Strategy's baseline year (2008) total $CO_2$ emissions (921Mt), taken from the Fourth IMO GHG Study. It should be noted that as indicated by the "at least", this currently represents the minimum level of ambition and therefore the maximum absolute emissions and least ambitious aggregate carbon intensity. The estimate of 2012 emissions is taken from the Fourth IMO GHG Study.

Rounded values for the total transport demand, total $CO_2$ emissions, and aggregate carbon intensity in 2008, 2012 and 2050 are given in Table 6.

| | 2008 | 2012 | 2050 |
|---|---|---|---|
| Total transport demand (billion tonne nautical miles) | 46,000 | 54,000 | 119,000 |
| Total $CO_2$ emissions (million tonnes) | 921 | 848 | 461 |
| Estimated aggregate carbon intensity ($gCO_2$/tnm) | 20.0 | 15.7 | 3.9 |

**Table 6.**
Transport demand, emissions, and carbon intensity for international shipping

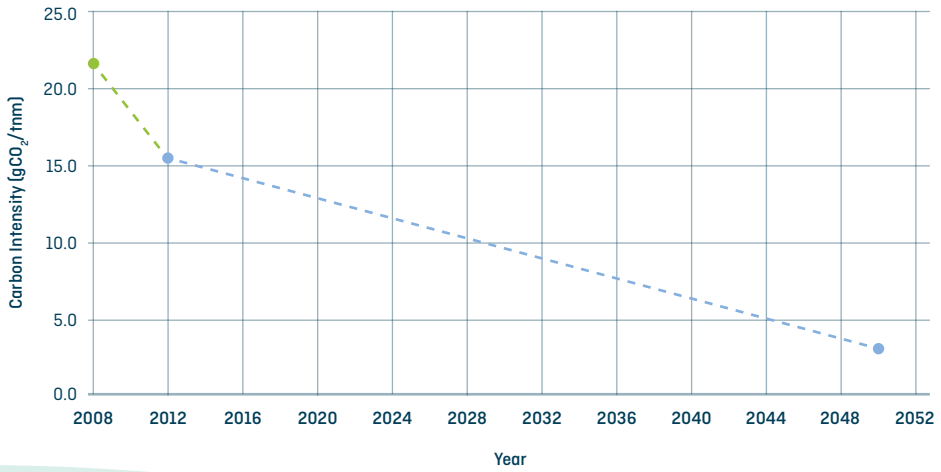


**Figure 17.**
Global decarbonization trajectory

Figure 17 plots the intensity values in Table 6 and a linear trend line connecting them. There are many different assumptions that could be applied to specify the shape of the curve that defines the rate of carbon intensity reduction between 2012 and 2050. The chosen trajectory represents a gradual and consistent rate of improvement on average across the fleet; the assumption applied here is for a constant improvement year-on-year, which is described by a straight line between 2012 and 2050.

The trajectory exceeds the IMO Initial Strategy Objective 2 intensity reduction values of 40% (2030) and 70% (2050), because it is derived to ensure achieving the IMO Initial Strategy Objective 3 (the absolute emissions objective). Meeting Objective 3 ensures that all IMO Initial Strategy Objectives are achieved.

## Ship type and size definitions:

Carbon intensities vary as a function of ship type and size, as well as a ship's technical and operational specification. To enable the carbon intensity of ships to be compared to a peer group of ships of a similar type and size, a classification system is applied. The classification system is taken from the Fourth IMO GHG Study, to enable consistency with the IMO's process. Full details of the definitions can be found in that document. In the event that the IMO updates the classification system used in future work, a decision on whether to update the classification system used in the Sea Cargo Charter will be taken.

## Estimating the ship type and size specific carbon intensity:

The Fourth IMO GHG Study contains a dataset estimating the carbon intensities of individual ship types and sizes between 2012 and 2018. The dataset currently provides the most up to date source of IMO-recognized information for the calculation of decarbonization trajectories, but as more recent data becomes available, the trajectories can be updated.

Based on feedback from Signatories after the first reporting cycle, the carbon intensity benchmarks set for chemical tankers and liquefied gas carriers based on the Fourth IMO GHG Study were found to not be representative. This was evidenced through extensive independent verification of measured data by the Advisory as well as evaluation of the validation carried out for the Fourth IMO GHG Study against EU MRV data.

For **chemical tankers**, uncertainty around the way that cargo on board is estimated in the Fourth IMO GHG Study is specifically high for chemical tankers when compared to EU MRV data (comparing like for like journeys). **For liquefied gas tankers** several reasons have been identified which might be causing misalignment including uncertainty around specific fuel consumption of propulsion systems, uncertainty around cargo on board which is estimated using draught and may be highly inaccurate and the difference in operating profile and vessel characteristics for smaller LPG tankers (size 1 and 2) and larger LNG tankers (size 3 and 4).

Following data analysis, the baselines for these two vessels types have been modified to be based on EU MRV data from 2021, however, the same method of curve fitted described in the following sections is applied.

The most recent and the most accurate data in the publication is for the year 2018, and therefore this is used as the historical data edge for subsequent steps of the method.

## Calculating the target carbon intensity in a given year as a function of the ship type and size:

The rate of reduction required per year is relative to the last historical data point (2012). The trajectory is shown relative to 2012 carbon intensity (indexed to 2012 carbon intensity) in Figure 18.

While the trajectory is presented for the time period 2012 to 2050, it is consistent with the 2008 baseline year as specified in the IMO Initial Strategy Objectives as the end point is determined by a 50% reduction relative to the baseline. The formula for the trajectory is given in Figure 18, and allows the index value to be calculated for a given year. The index value represents the required carbon intensity value relative to the carbon intensity in 2012.

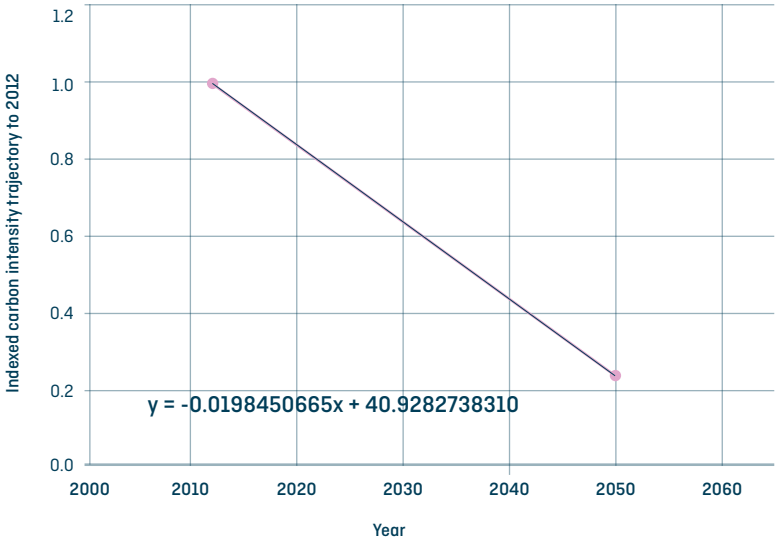


**Figure 18.**
Indexed decarbonization trajectory, from 2012 to 2050

## Impact of stepped alignment baseline

A concern that has been raised by Signatories is the impact of discrete EEOI carbon intensity benchmark values per ship type/size presenting a challenge for alignment especially for vessels at the edges of existing vessel categories. To tackle this, a continuous required carbon intensity baseline is introduced that avoids step changes by creating a relationship with the vessels' size.

## Methodology

Continuous baselines are already widely used in maritime benchmarking such as the International Maritime Organisation Maritime Environment Protection Committee (IMO MEPC) Energy Efficiency Design Index (EEDI)[20] and the more recent Carbon Intensity Index (CII) regulation[21].

Drawing on the above examples, a continuous baseline is fit through the required carbon intensity median values for each ship type covered in the Sea Cargo Charter. Figure 19 illustrates a stepped and a continuous baseline.

20 MEPC, "Guidelines on the method of calculation of the attained energy efficiency design index (EEDI) for new ships. MEPC.308(73)," MEPC 73/19/Add.1, 2018.
21 IMO, "Guidelines Supporting the CII Framework. Considerations on CII targets - ISWG-GHG 8/3/3," IMO, London, 2021.

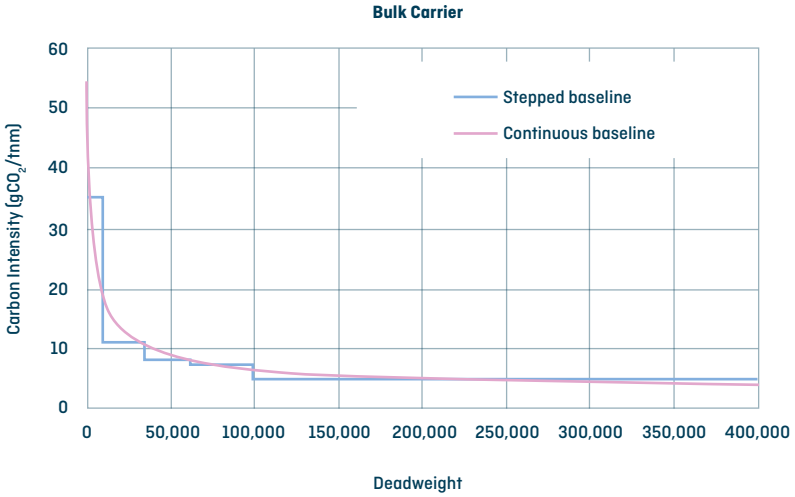


**Figure 19.**
Existing and proposed required carbon intensity baseline for bulk carriers for 2021

To obtain the continuous baseline, a curve is fitted through a plot of the median carbon intensity of each vessel size bin vs. the median vessel size in that bin. This is based on data published in the Fourth IMO GHG Study[22] and EU MRV data[23]. This results in a power law fit for the required carbon intensity values for 2021. Given the current ambition of the Sea Cargo Charter to reduce carbon intensity in line with the minimum requirement for IMO 2050 emission reduction ambition (at least 50% reduction by 2050 on 2008 levels[24]), a continuous curve is required for each year up to 2050.

The required carbon intensity can be expressed by the following expression:

$$r_s = (a.Year + b).\,Size^c$$

Where $r_s$ is the required carbon intensity, *Year* is the year for which the carbon intensity is required and *Size* is the size of the vessel in question in deadweight or capacity. The coefficients *a*, *b* and *c* arising from the fitted curves can be found in Table 7.

22 J. Faber et al., "Fourth Greenhouse Gas Study 2020," International Maritime Organization, London, 2020.
23 EMSA. (2022). THETIS-MRV 2021 (Version 109). https://mrv.emsa.europa.eu/#public/emission-report
24 IMO, "Initial IMO Strategy on reduction of GHG emissions from ships - MEPC.304(72) Annex 11," International Maritime Organization, London, 2018.

| Vessel type | a | b | c |
|---|---|---|---|
| Bulk Carrier | -32.9076311594104 | 67868.3811973505 | -0.4665737506683 |
| Chemical tanker | -967.757242172079 | 1995893.20483341 | -0.75201864284 |
| Liquefied gas tanker[25] <= 100.000 $m^3$ | -630.360943170038 | 1300050.33105373 | -0.6464410414616 |
| Liquefied gas tanker > 100.000 $m^3$ | -18.271811272965 | 37683.6073867636 | -0.298440517676 |
| Oil Tanker | -159.5594839048190 | 329073.9410821450000 | -0.5543325979509 |

**Table 7.**
Coefficients for determination of required carbon intensity for vessel types

Figure 20 presents the proposed baselines for the vessel types covered by the Sea Cargo Charter.

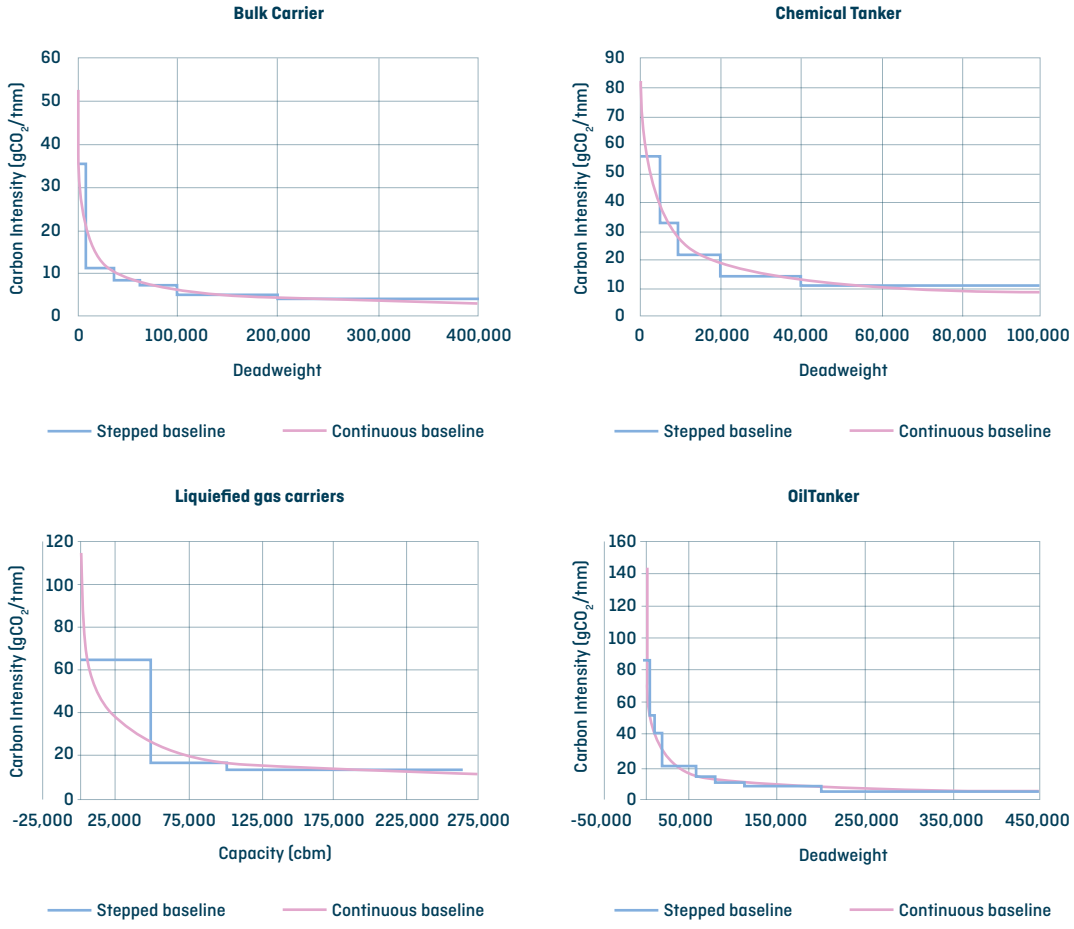


**Figure 20.**
Stepped and continuous carbon intensity trajectory for vessels covered in SCC for 2021z

25 Given the differences in operating profile and vessel design, the liquefied gas tanker trajectory has been split based on a capacity cut off of 100,000 $m^3$ capacity which resulted in the most representative baselines for both segments.

## Example 3

Considering a typical 80,000 DWT Aframax tanker, the required carbon intensity in 2022 can be compiled as follows:

| | |
|---|---|
| **a = -159.56** | Year = 2022 |
| **b = 329,073.94** | Size = 80,000 |
| **c = -0.55** | |

$$r_s = (-159.56 \cdot 2022 + 329{,}073.94) \cdot 80{,}000^{-0.55} = 12.34 \ \frac{g_{CO_2}}{tnm}$$

## Continuous updating of trajectories as further data becomes available:

Over the timescale that the decarbonization trajectories are estimated, a number of the parameters that are used in their calculation may change. These include:

- The IMO may modify the Objectives, including when the IMO revises its strategy (expected 2023) (e.g., if the Objectives increase in ambition, the carbon intensity trajectory will steepen).
- Transport demand growth may develop differently to the estimate used here to calculate the carbon intensity trend consistent with a 2050 absolute GHG objective (e.g., if demand growth exceeds the trend used in these calculations, the carbon intensity objective will steepen).
- Demand growth may develop differently between ship types and increase the demand for ships with different carbon intensity than the 2012 fleet (e.g., if demand modifies the fleet composition to increase the share of emissions by ships which have higher carbon intensity, the carbon intensity objective will steepen).
- Utilization may differ from the values estimated for 2012, which will modify the relationship between EEOI and mean the climate alignment trajectory set using EEOI will need to be modified (e.g., if utilization reduces relative to 2012, the carbon intensity objective will steepen).

While the decarbonization trajectory and the ship continuous baselines for types have been calculated using the best available data, there is a number of foreseeable reasons why these values may need to change in the future. For this reason, it is proposed that these are reviewed when new information becomes available. Any update to these should be applied for future climate alignment, not re-analysis of historical climate alignment.

Appendix 5

# Worked examples for calculating climate alignments

## Bulk parceling example

The following example sets out how the principles of the approach can be applied to bulk parceling operations.

The example concerns a voyage where the vessel or disponent owner charters space on the vessel to two charterers who transport goods from different locations in South America to two locations in Asia.

Calculations are made at the level of the single round trip because it is a one-off journey within which all necessary information for quantification and reporting is available from empty to empty. Both charterers, and the (disponent) owner, benefit in terms of better overall efficiency from the presence of each other's cargo.

The round trip consists of the following elements:

| | Ballast Leg | Laden leg 1 | Laden leg 2 | Laden leg 3 | Total |
|---|---|---|---|---|---|
| From: | A (Asia) | B (S. America) | C (S. America) | D (Asia) | |
| To: | B (S. America) | C (S. America) | D (Asia) | A (Asia) | |
| Distance (nm) | 4085 | 787 | 6395 | 773 | |
| Total Freight (T) | 0 | 39,369 | 56,855 | 17,486 | |
| Charterer A Freight (T) | 0 | 39,369 | 39,369 | 0 | |
| Charterer B Freight (T) | | | 17,486 | 17,486 | |
| Total Transport Activity (tnm) | 0 | 30,993,522 | 363,601,847 | 13,520,492 | 408,115,861 |
| Charterer A Activity (tnm) | 0 | 30,993,522 | 251,774,533 | 0 | 282,768,055 |
| Charterer B Activity (tnm) | 0 | 0 | 111,827,313 | 13,520,492 | 125,347,806 |
| Fuel (LFO) (T) | 381.3 | 83.8 | 780.2 | 82.3 | 1327.5 |
| Fuel (MGO) (T) | 1.0 | 0.4 | 15.4 | 3.1 | 19.9 |
| CO2 (LFO) (T) | 1,201.4 | 263.9 | 2,458.4 | 259.2 | 4,182.9 |
| CO2 (MGO) (T) | 3.3 | 1.2 | 49.4 | 9.9 | 63.7 |
| CO2 (Total) (T) | 1,204.7 | 265.1 | 2,507.8 | 269.1 | 4,246.6 |
| Overall emission intensity (gCO2e/tnm) | | | | | 10.41 |

**Table 8.**
Characteristics of the bulk parceling example

The above is based on calculation of $CO_2$ emissions using the values for MDO and LFO in Appendix 6. The emission intensity value of 10.41 $gCO_2$/tnm is what would be used by both charterers for their subsequent alignment calculations. Charterer A would apply this for its transport activity of 282,768,055 tnm and Charterer B would apply it for its transport activity of 125,347,806 tnm.

## Chemical parceling example

The following example sets out how the principles of the approach can be applied to chemical parceling operations.

The example shows how the emissions are assigned across the various charterers with an interest in the cargo onboard. Because chemical parceling vessels can spend significant periods of time in port, the vessel emissions that occur when the ship is in port are specifically included in the assignment process in the same way that ballast leg emissions so that the emissions assigned across all customers are the same as the total emissions calculated for the whole journey.

The example is based on an extract from a continuous journey, where freight belonging to Brown LLP is already on board at Port A as the example starts and freight belonging to Cork Ltd and Evans GmbH remains on board as it prepares to leave Port F. Cargoes are continuously loaded and loaded as the vessel travels between intermediate ports.

The trip and operational characteristics are as follows:

| | Fuel (t) | | Distance (nm) | Freight amount per charterer (t) | | | | |
|---|---|---|---|---|---|---|---|---|
| **Location** | **MGO** | **LFO** | | **Adams Inc** | **Brown LLP** | **Cork Ltd** | **Davis Int'l** | **Evans GmbH** |
| Port A | 78.7 | | | 0 → 3,430 | 2,100 | 0 → 3,771 | 0 | 0 |
| At sea | 41.6 | | 713 | 3,430 | 2,100 | 3,771 | 0 | 0 |
| Port B | 42.1 | | | 3,430 | 2,100 | 3,771 → 0 | 0 → 1,798 | 0 |
| At sea | 38.5 | | 687 | 3,430 | 2,100 | 0 | 1,798 | 0 |
| Port C | 156.2 | | | 3,430 → 12,312 | 2,100 → 12000 | 0 → 9,094 | 1,798 → 14,110 | 0 |
| At sea | | 441.1 | 9314 | 12,312 | 12,000 | 9,094 | 14,110 | 0 |
| Port D | | 20.1 | | 12,312 | 12,000 | 9,094 | 14,110 → 7,473 | 0 |
| At sea | | 85.1 | 1792 | 12,312 | 12,000 | 9,094 | 7,473 | 0 |
| Port E | | 135.5 | | 12,312 → 5714 | 12,000 → 0 | 9,094 → 6,152 | 7,473 → 0 | 0 |
| At sea | | 62.9 | 1102 | 5,714 | 0 | 6,152 | 0 | 0 |
| Port F | | | | 5,714 → 0 | 0 | 6,152 | 0 | 0 → 20,000 |

x → y indicates a loading operation in port where *x* is the original value and *y* is the final value.

**Table 9.**

Characteristics for the chemical parceling example

| | $CO_2$ (LFO) (t) | $CO_2$ (MGO) (t) | $CO_2$ (Total) (t) |
|---|---|---|---|
| Port A | 252.3 | 0 | 252.3 |
| At sea | 133.4 | 0 | 133.4 |
| Port B | 135.0 | 0 | 135.0 |
| At sea | 123.4 | 0 | 123.4 |
| Port C | 500.8 | 0 | 500.8 |
| At sea | 0 | 1,389.9 | 1,389.9 |
| Port D | 0 | 63.3 | 63.3 |
| At sea | 0 | 268.2 | 268.2 |
| Port E | 0 | 427.0 | 427.0 |
| At sea | 0 | 198.2 | 198.2 |
| Port F | 0 | 144.9 | 144.9 |

**Table 10.**
Emission totals by leg of journey

The $CO_2$ emission calculation uses the emission factors for MDO and LFO in Appendix 6 and the amount of fuel used from the operational characteristics table above.

| | Adams Inc | Brown LLP | Cork Ltd | Davis Int'l | Evans GmbH | Total |
|---|---|---|---|---|---|---|
| Port A (t) | 3,430 | 2,100 | 3,771 | 0 | | 9,301 |
| At sea (tnm) | 2,445,590 | 1,497,300 | 2,688,723 | 0 | 0 | 6,631,613 |
| Port B (t) | 3,430 | 2,100 | 3,771 | 1,798 | | 11,099 |
| At sea (tnm) | 2,356,410 | 1,442,700 | 0 | 1,235,226 | 0 | 5,034,336 |
| Port C (t) | 12,312 | 12,000 | 9,094 | 14,110 | | 47,516 |
| At sea (tnm) | 114,673,968 | 111,768,000 | 84,701,516 | 131,420,540 | 0 | 442,564,024 |
| Port D (t) | 12,312 | 12,000 | 9,094 | 14,110 | | 47,516 |
| At sea (tnm) | 22,063,104 | 21,504,000 | 16,296,448 | 13,391,616 | 0 | 73,255,168 |
| Port E (t) | 12,312 | 12,000 | 9,094 | 7,473 | | 40,879 |
| At sea (tnm) | 6,296,828 | 0 | 6,779,504 | 0 | 0 | 13,076,332 |
| Port F (t) | 5,714 | 0 | 6,152 | 0 | 20,000 | 31,866 |

**Table 11.**
Values used for assignment of emissions by charterer and leg of journey

| | Adams Inc | Brown LLP | Cork Ltd | Davis Int'l | Evans GmbH |
|---|---|---|---|---|---|
| Port A | 36.9% | 22.6% | 40.5% | - | - |
| At sea | 36.9% | 22.6% | 40.5% | - | - |
| Port B | 30.9% | 18.9% | 34.0% | 16.2% | - |
| At sea | 46.8% | 28.7% | - | 24.5% | - |
| Port C | 25.9% | 25.3% | 19.1% | 29.7% | - |
| At sea | 25.9% | 25.3% | 19.1% | 29.7% | - |
| Port D | 25.9% | 25.3% | 19.1% | 29.7% | - |
| At sea | 30.1% | 29.4% | 22.2% | 18.3% | - |
| Port E | 30.1% | 29.4% | 22.2% | 18.3% | - |
| At sea | 48.2% | - | 51.8% | - | - |
| Port F | 17.9% | - | 19.3% | - | 62.8% |

**Table 12.**
Assignment percentages by charterer and leg of journey

| t $CO_2$ | Adams Inc | Brown LLP | Cork Ltd | Davis Int'l | Evans GmbH |
|---|---|---|---|---|---|
| Port A | 93.0 | 57.0 | 102.3 | 0 | 0 |
| At sea | 49.2 | 30.1 | 54.1 | 0 | 0 |
| Port B | 41.7 | 25.5 | 45.9 | 21.9 | 0 |
| At sea | 57.8 | 35.4 | 0 | 30.3 | 0 |
| Port C | 129.8 | 126.5 | 95.8 | 148.7 | 0 |
| At sea | 360.1 | 351.0 | 266.0 | 412.7 | 0 |
| Port D | 16.4 | 16.0 | 12.1 | 18.8 | 0 |
| At sea | 80.8 | 78.7 | 59.7 | 49.0 | 0 |
| Port E | 128.6 | 125.3 | 95.0 | 78.1 | 0 |
| At sea | 95.4 | 0 | 102.8 | 0 | 0 |
| Port F | 26.0 | 0 | 28.0 | 0 | 91.0 |

**Table 13.**
Emissions by charterer and leg of journey

Sample calculation for Adams Inc, whose freight is first loaded at Port A and finally unloaded at Port F:

- Total $CO_2$ emission for Adams Inc is the total of their share for all port and journey legs their cargo is on board, which is actually all of the above = 93.0+49.2+41.7+57.8+129.8+360.1+16.4+80.8+128.6+95.4+26.0 = 1,078.8 t
- Total transport activity is the sum of their share of the transport work for journey legs = 2,445,590+2,356,410+114,673,968+22,063,104+6,296,828 = 147,835,900 tnm
- The emission intensity for Adams Inc while their cargo is on board = 7.30 $gCO_2$/tnm
- The value of 7.30 $gCO_2$/tnm is what would be used by both charterers for their subsequent alignment calculations. Adams Inc would apply this for its transport activity of 147,835,900 tnm

Because Brown LLP's cargo is already on board, we would need to know about prior journey legs to perform their calculation.

There are two separate calculations for Cork Ltd. For the cargo loaded at Port A and off loaded at Port B:

- Total $CO_2$ emissions = 3,771+2,688,723+3,771 = 202.2 t
- Total transport activity = 2,688,723 tnm
- The emission intensity for this parcel is 75.20 $gCO_2$/tnm
- Cork Ltd's cargo loaded at Port C remains on board after Port F meaning we would need to know about subsequent journey legs to perform the calculation for this cargo.

Davis Int'l has cargo loaded at Port B that is fully offloaded by departure at Port E.

Total $CO_2$ emissions = 21.9+30.3+148.7+412.7+18.8+49.0+78.1 = 759.5 t

Total transport activity = 1,235,226+131,420,540+13,391,616 = 146,047,382 tnm

The emission intensity for this parcel is 5.20 $gCO_2$/tnm

Appendix 6

# Recommended charter party clause for voyage data reporting

In order to ensure consistent and complete data collection by Signatories of the Sea Cargo Charter, a recommended charter party clause for voyage data reporting has been developed. The basis for this approach is set out in the following paragraphs and the recommended charter party clause itself — the Sea Cargo Charter Clause — is available on the website.[26]

In entering into charterparties envisaging carriage of goods by sea, Signatories shall use their best endeavors to incorporate into contracts with their contractual counterparties (head-owner or disponent owner) a contractual provision requiring the head owner or disponent owner to provide the information set out in the Sea Cargo Charter Clause — the recommended charter party clause — for voyage data reporting within a reasonable time from the end of the performance of the relevant contract alternatively on a monthly basis. To support data collection, various Data Collection Templates have been developed and can be found in the Sea Cargo Charter Clause on the website.

Such information shall be provided by the owner or the disponent owner to the Signatory or a Third party designated by the Signatory solely for the purpose of calculating the EEOI and associated climate alignment.

Recognizing the wide variety of contracts, the Signatory and the contractual counterparty shall decide on the mechanism for incorporation into the contract, and the wording in the Sea Cargo Charter Clause is an example of a provision that may be appropriate.

## Bunker emission factors:

In order to calculate the $CO_2$ emissions associated with the combustion of fuels, emission factors are found in MEPC.308(73). As alternative fuels become more commonplace in the market, a provision for reporting “other fuels” in the Sea Cargo Charter Clause’s Data Collection Templates is included. Due to the absence of emission factors for these fuels provided by the IMO, the fuel map below should be used to determine the appropriate carbon factor to be used to calculate voyage carbon intensity as per Equation 1.

26 The Sea Cargo Charter Clause is available here: https://www.seacargocharter.org/resources/

| | Reported Fuel | Reference | Matched fuel | Carbon factor (tCO2/tfuel) |
|---|---|---|---|---|
| Conventional Fuels | MGO/MDO | ISO 8217 Grades DMX through DMB | | 3.206 |
| | Light Fuel Oil (LFO) | ISO 8217 Grades RMA through RMD | | 3.151 |
| | Heavy Fuel Oil (HFO/VLSFO) | ISO 8217 Grades RME through RMK | | 3.114 |
| | Liquefied Petroleum Gas (LPG) | Propane | | 3.000 |
| | Liquefied Petroleum Gas (LPG) | Butane | | 3.030 |
| | Liquefied Natural Gas (LNG) | | | 2.750 |
| | Methanol | | | 1.375 |
| | Ethanol | | | 1.913 |
| Alternative Fuels | Bio-methanol | | Methanol | 1.375 |
| | e-methanol | | Methanol | 1.375 |
| | Bio-gasoil | | MGO/MDO | 3.206 |
| | e-gasoil | | MGO/MDO | 3.206 |
| | e-LNG | | LNG | 2.75 |
| | Hydrogen (from natural gas) | | n/a | n/a |
| | e-Hydrogen | | n/a | n/a |
| | Ammonia (from natural gas) | | n/a | n/a |
| | e-Ammonia | | n/a | n/a |
| | Electricity | | n/a | n/a |

**Table 14.**
Fuel carbon factors for conventional and alternative fuels

These carbon factors are only a provisional option until a widely agreed set of carbon factors is put in place by the IMO which will ideally capture all GHG species and lifecycle emissions.

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