2

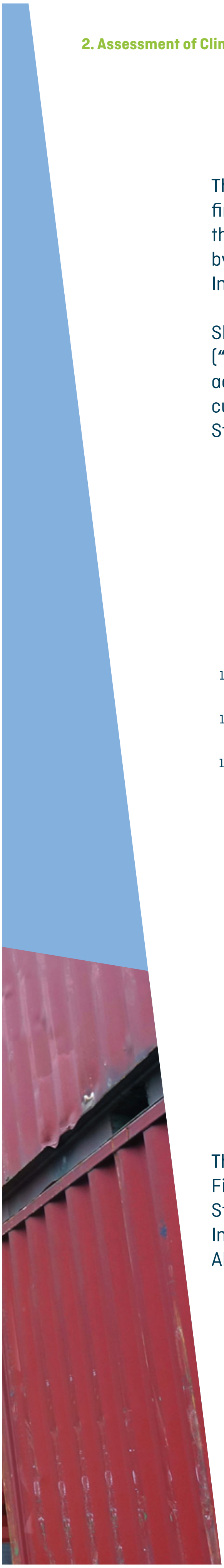
Assessment of climate alignment

PRINCIPLE

"We will annually assess climate alignment in line with the Technical Guidance for all Business Activities"

REQUIREMENTS

Signatories will, on an annual basis, measure the carbon intensity and assess climate alignment (carbon intensity relative to established decarbonization trajectories) of their shipping portfolios. 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 financial institutions' shipping portfolios. The guidance is framed in the context of the existing IMO environmental regulations and climate agreements. It is informed by recommendations made by the CDP, the TCFD, and the Science Based Targets Initiative.

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 per transport work by at least 40% by 2030, pursuing efforts towards 70% by 2050 compared to 2008 (**"the IMO Intensity Targets"**). See Figure 3.

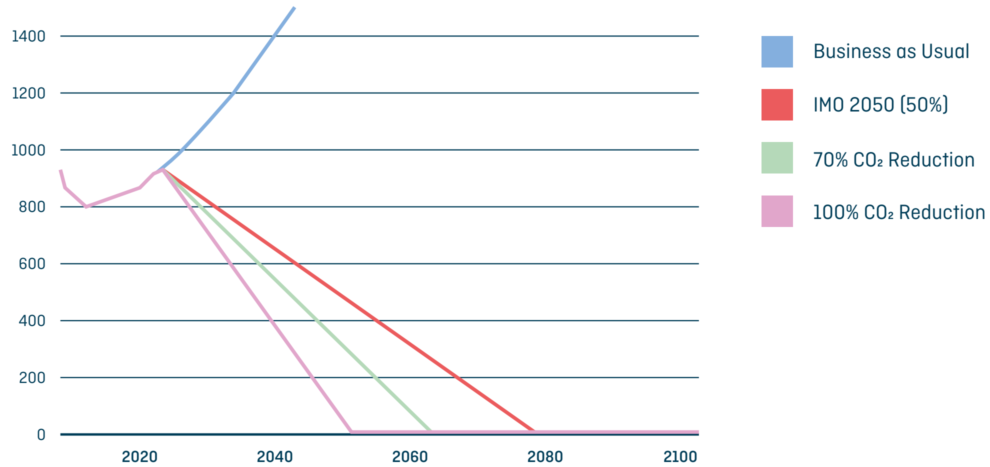


Figure 2.
Global fleet's CO_2 targets and trajectories under IMO targets (million tonnes of CO_2)

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.

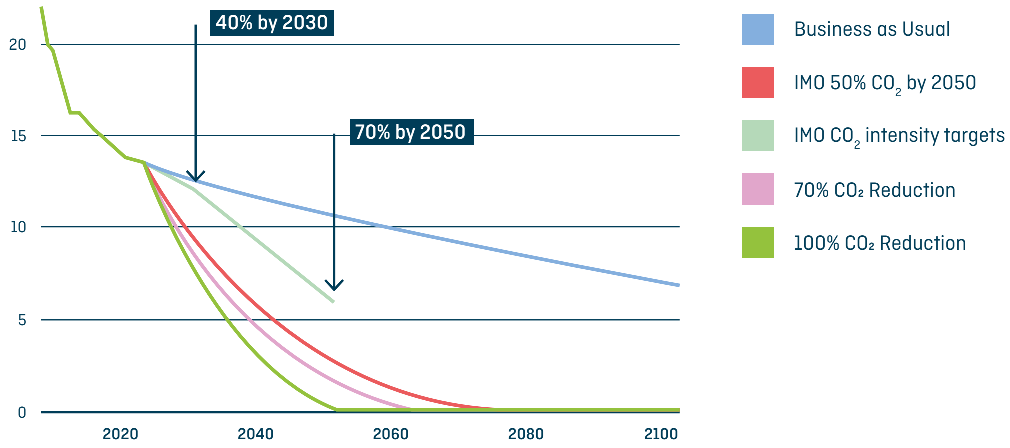


Figure 3.
Global fleet's carbon intensity targets and trajectories (grams of CO_2 per tonne-nautical mile [gCO_2/tnm])

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 at the forthcoming review process for the IMO's Initial GHG Strategy.

For these reasons, and to enable alignment with climate goals (both IMO and Paris Agreement) the Poseidon Principles will be linked to the IMO Absolute Target.

2.1 Selecting the right metric for measuring climate alignment

Both absolute and intensity-level measurements of CO_2 emissions are useful for meeting the IMO levels of ambition, and both measurements are recommended by other initiatives like the CDP. 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 vessels or a group of vessels because vessels have different production units and need to be compared on a like-for-like basis. For this reason, a relative intensity-level metric will be used in the Poseidon Principles.

In shipping, carbon intensity represents the total operational emissions generated to satisfy a supply of transport work (grams of CO_2 per tonne-nautical mile [gCO_2/tnm]). Carbon intensity is typically quantified for multiple voyages over a period of time (e.g., a year). To provide the most accurate representation of a vessel's climate impact, the carbon intensity of a vessel should be measured from its performance in real operating conditions instead of using a design specification metric (e.g., the Energy Efficiency Design Index).

The selection of this single metric is guided by an ambition that the Poseidon Principles use a carbon intensity metric which produces the closest measure of the vessel's true carbon intensity, while ensuring consistency with the policies and regulations of the IMO and the IMO DCS regulation and associated guidelines.

The IMO DCS defines the data that the IMO has mandated for shipowners to collect and report per calendar year. The IMO DCS is an amendment to MARPOL Annex VI which entered into force in March 2018. The IMO DCS specifies the data to be collected and reported for each calendar year for ships which are 5,000 gross tonnage and above engaged on international trade:

1. The amount of fuel consumption for each type of fuel in metric tonnes
2. Distance travelled
3. Hours underway
4. Technical characteristics of the ship including design deadweight

Figure 4 shows the implementation schedule for the IMO DCS. The first data collection period is for the calendar year 2019. Prior to reporting to the IMO, the data must be checked to be in accordance with the regulation by the relevant flag state or any organization duly recognized by it (an RO). A Statement of Compliance ("SoC") will be issued by the relevant flag state or RO no later than 5 months from the beginning of the following calendar year (e.g., for the calendar year 2019, it would be issued by the end of May 2020) provided the data is in accordance with the regulation. The reported data is transferred to the IMO Ship Fuel Oil Database no later than one month after issuing the relevant SoC.

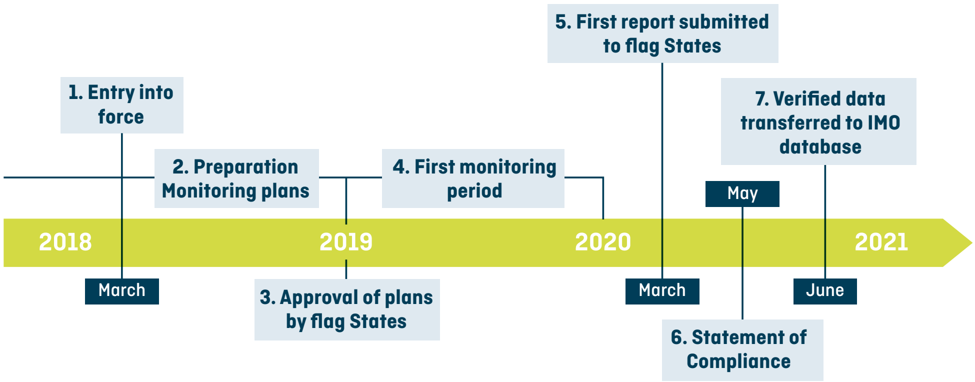


Figure 4.
The IMO DCS' implementation schedule

The data reported to the IMO is anonymized and confidential, and therefore it cannot be accessed from the IMO by the Signatories. However, because the regulation requires that all shipowners annually collect and report parameters relevant to the calculation of carbon intensity, the administrative burden placed on shipowners is minimized and simplifies the application of the Poseidon Principles.

The IMO DCS enables the calculation of a carbon intensity metric known as the Annual Efficiency Ratio ("AER"), using the parameters of fuel consumption, distance travelled, and design deadweight tonnage ("DWT"). AER is reported in unit grams of CO_2 per tonne-mile (gCO_2/dwt-nm):

$$AER = \frac{\sum_i C_i}{\sum_i dwtD_i}$$

Equation 1

where *Ci* is the carbon emissions for voyage i computed using the fuel consumption and carbon factor of each type of fuel, *dwt* is the design deadweight of the vessel, and *Di* is the distance travelled on voyage *i*. The AER is computed for all voyages performed over a calendar year.

This metric is calculated using an approximation of the total annual transport work performed by a ship, obtained from its total distance travelled and DWT (in tonne units). It is recognized that AER is less accurate at estimating a vessel's carbon intensity than some other metrics (e.g., Energy Efficiency Operational Indicator ["EEOI"] because the actual cargo carried by a ship is often less than its maximum capacity and many ships (e.g., tankers and bulkers) operate with ballast voyages where for several voyages a year they have no cargo.

Currently, data collection on the mass of cargo carried on individual voyages is not globally collected through the IMO DCS or available globally from publicly accessible data sources to enable the calculation of EEOI. Should the IMO amend the DCS regulation to include data on mass of cargo carried, or this data becomes available elsewhere at appropriate coverage and accuracy, the metric used to calculate climate alignment under the Poseidon Principles may be adapted to reflect this.

2.2 Calculating vessel carbon intensity

Vessel carbon intensity can be calculated using data provided by the shipowner as collected in the IMO DCS[4]. This data has already been independently checked to ensure compliance in accordance with the IMO DCS but requires the shipowner to provide consent for the data as submitted to the relevant flag state to be shared with the Signatory. The Poseidon Principles require that all Signatories use this method for calculating carbon intensity.

There may be circumstances where it is not possible to gain access to the data as reported under the IMO DCS from shipowners. Section 3.3.4 outlines how this should be addressed.

2.3 Assessing climate alignment

For the purposes of the Poseidon Principles, climate alignment is defined as the degree to which a vessel, product, or portfolio's carbon intensity 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 a single ship can emit to move one tonne of goods one nautical mile (gCO_2/tnm) over a time horizon (as shown in Figure 2 and Figure 3). The decarbonization trajectories rely on two assumptions:

- Projections of transport demand for different shipping sectors out to 2050, including those available in the Third IMO GHG Study.
- The total CO_2 shipping emissions permitted to be in-line with the IMO's 2050 target.

While these trajectories 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.[5]

To assess climate alignment of a single vessel, the vessel's annual carbon intensity is compared with the decarbonization trajectory for its respective ship type and size class. To assess climate alignment at the product and portfolio level, the vessel carbon intensities in each product and the portfolio are aggregated. Section 2.5 discusses the method that is used.

4 See Appendix 2
5 See Appendix 2

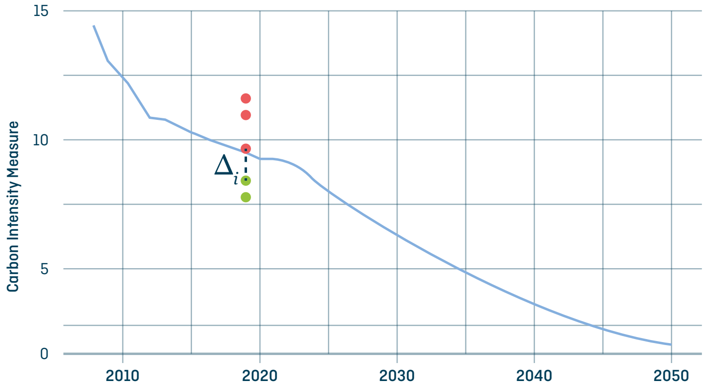


Figure 5.
Assessing alignment at the vessel level

In Figure 5, each dot represents the annual carbon intensity of a vessel. The blue curve represents the decarbonization trajectory. The green dots are aligned, and the red dots are misaligned.

Climate alignment at the vessel level is the percentage difference between a vessel's carbon intensity and the decarbonization trajectory at the same point in time. It is expressed as a (+/-) %. In mathematical terms, alignment at time t is:

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

Equation 2

where x_i is the carbon intensity of vessel *i* and r_s is the required carbon intensity for the ship type and size class for time period *t* multiplied by 100 to convert into percentage terms. A positive alignment score means a vessel is misaligned (above the decarbonization trajectory), whereas a negative or zero score means a vessel is aligned (on or below the decarbonization trajectory).

2.4 Decarbonization trajectories

Standard decarbonization trajectories will be produced by the Secretariat of the Poseidon Principles based on agreed and clearly-stated assumptions. These will be produced for each ship type and size class and will be produced in a format that allows for simple weighting aggregation. This is to ensure that once the carbon intensity of vessels is understood, it is simple and practical to understand climate alignment. This also ensures that numbers are comparable between Signatories.

Appendix 3 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 trajectory from 2012 out to 2050. The method is derived from IMO Secretariat commissioned data sources, both the Third IMO GHG Study and IMO MEPC 68 Inf. 24 publication. Assumptions for formulating the trajectory are also taken from the Initial Strategy, including the use of a 2008 baseline.

2.5 Aggregating alignment for product and portfolios

In order to calculate portfolio climate alignment, one must first calculate the climate alignment of each vessel within the portfolio. Then, the climate alignment of the portfolio can be calculated.

Steps for calculating climate alignment of the portfolio:

For each vessel in a relevant financial product, compare the annual carbon intensity of that vessel with the required decarbonization value[6]. The alignment delta at time t is given by Equation 2.

Compute the weighted average of the vessel alignment deltas using the debt outstanding[7] of each vessel in the portfolio. Equation 3 below is the computation for the portfolio alignment delta, Δ_p:

$$\Delta_p = \sum_{i=1}^{N} w_i \Delta_i$$

Equation 3

where w_i is the vessel's debt outstanding as a share of the total debt outstanding and Δi is the vessel alignment, from Equation 2.

6 The required decarbonization value is the maximum carbon intensity (gCO_2/tnm) that a vessel can achieve and still be aligned with the decarbonization trajectory. It is taken from the decarbonization trajectory that corresponds to the specific vessel's type/class size.

7 See specific guidance for calculations below, which gives a thorough explanation of this term.

Specific guidance for calculations:

- In general, when lenders are aggregating alignment scores to the portfolio level, the weighted average should be computed using the outstanding loan amount on 31 December of the year for which climate alignment is measured.
- In general, when lessors are aggregating alignment scores to the portfolio level, the weighted average should be computed using outstanding capital payments under the lease on 31 December of the year for which climate alignment is measured.
- In general, when guarantors are aggregating alignment scores to the portfolio level, the weighted average should be computed using amount outstanding under guarantee on 31 December of the year for which climate alignment is measured.
- When calculating the climate alignment of products with guarantees, the Poseidon Principles do not attempt to avoid double counting. For example, if an ECA guarantees a loan, it should base climate alignment calculations on the portion of that loan that it covers. The lender should disregard the guarantee and base climate alignment calculations on the outstanding loan amount on 31 December of the year. In their disclosures of their portfolio climate alignment, Signatories are welcome to recognize that there may be some double counting in the case of guarantees.
- Where there may be multiple lenders involved in one transaction, such as in a syndicated loan, an individual Signatory should base climate alignment calculations on only its portion of that loan.

Example:
Calculating alignment at the vessel and portfolio level

In this example, a Signatory starts measuring its climate alignment in 2019. Table 1 illustrates a simple example of a portfolio with two products and shows the alignment deltas for each vessel in the products and portfolio. The portfolio alignment delta shown in Table 2 is calculated using a weighted average according to Equation 3. Weighting is applied according to the debt outstanding designated to each vessel. The portfolio is not climate aligned because it is on average 14% above the carbon intensity required for decarbonization.

Financial Product	Year	IMO	Actual Value (CO_2 Intensity)	Required Value (CO_2 Intensity)	Alignment Delta	Debt Outstanding (million $)	Debt Outstanding (Share of Portfolio)
1	2019	9511349	7	8.3	-16%	150	19%
1	2019	9340635	10.4	9.8	6%	150	19%
2	2019	9293739	10.1	8.3	21%	100	13%
2	2019	9331517	9.5	7.5	26%	400	50%

Table 1.
Vessel alignment

Financial Product	Capital Exposure (million $)	Aligment Delta
Portfolio	800	14%

Table 2.
Portfolio alignment