

Carbon Intensity Indicator (simplified)

$$\text{CII} = \frac{\text{Annual fuel consumption} \cdot \text{CO}_2 \text{ factor}}{\text{Annual distance sailed} \cdot \text{Capacity}} \cdot \text{Correction factors}$$

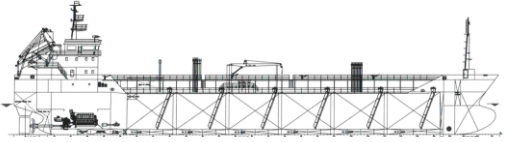
Example
4.60 gram per mT nm

$$= \frac{8,500,000,000 \text{ grams} \cdot 3.114}{93,690 \text{ nm} \cdot 61,215 \text{ mT}} \cdot x$$

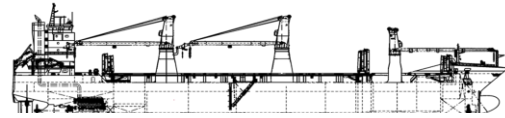
This is CII – a **number** calculated each year based on IMO DCS data

The resulting number is cross-referenced with a value for your ship type to obtain a rating from A (good) to E (bad)

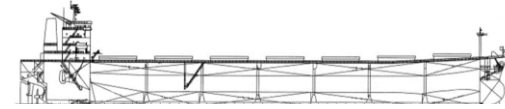
Applies to...



Tankers



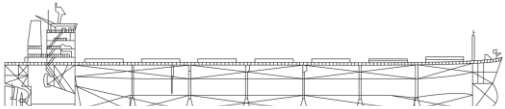
Bulk carriers



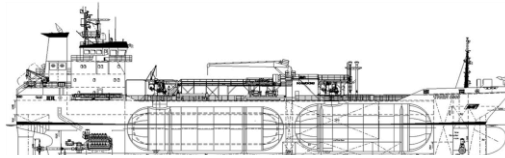
Combination carrier



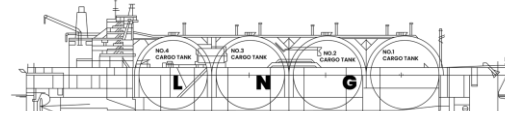
Container ships



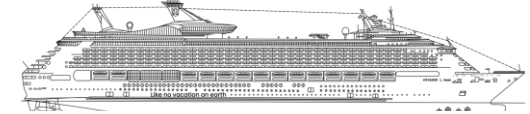
General cargo ship



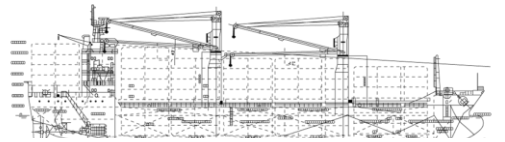
Gas carrier



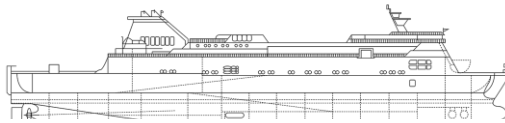
LNG carrier



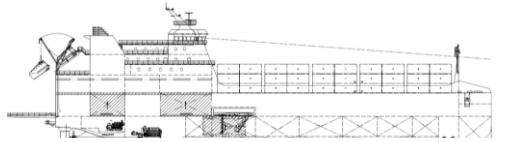
Cruise passenger ship



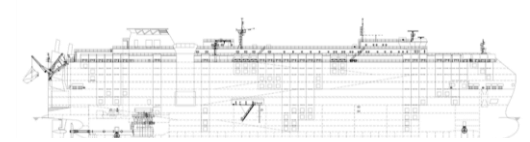
Refrigerated cargo carrier



RoRo passenger



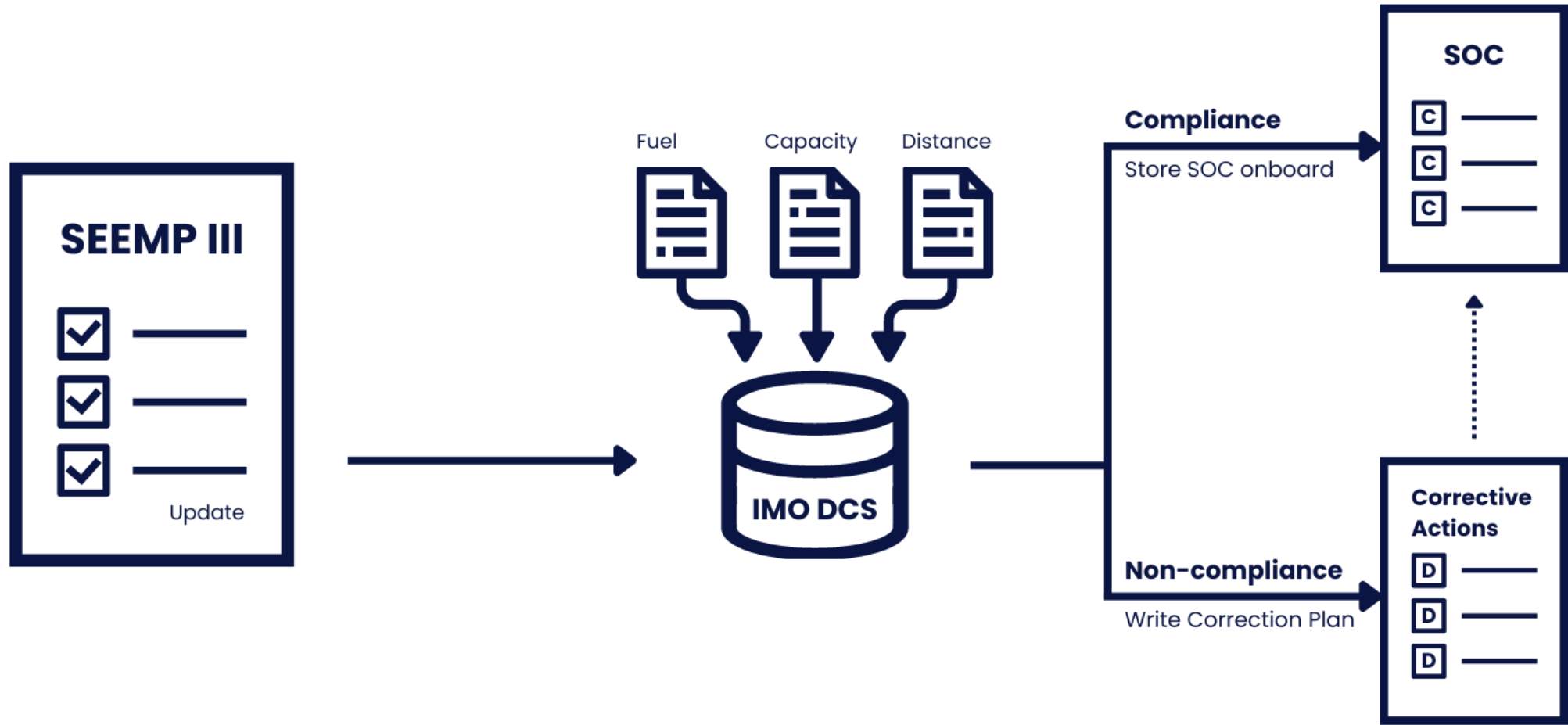
RoRo cargo



RoRo vehicle carrier

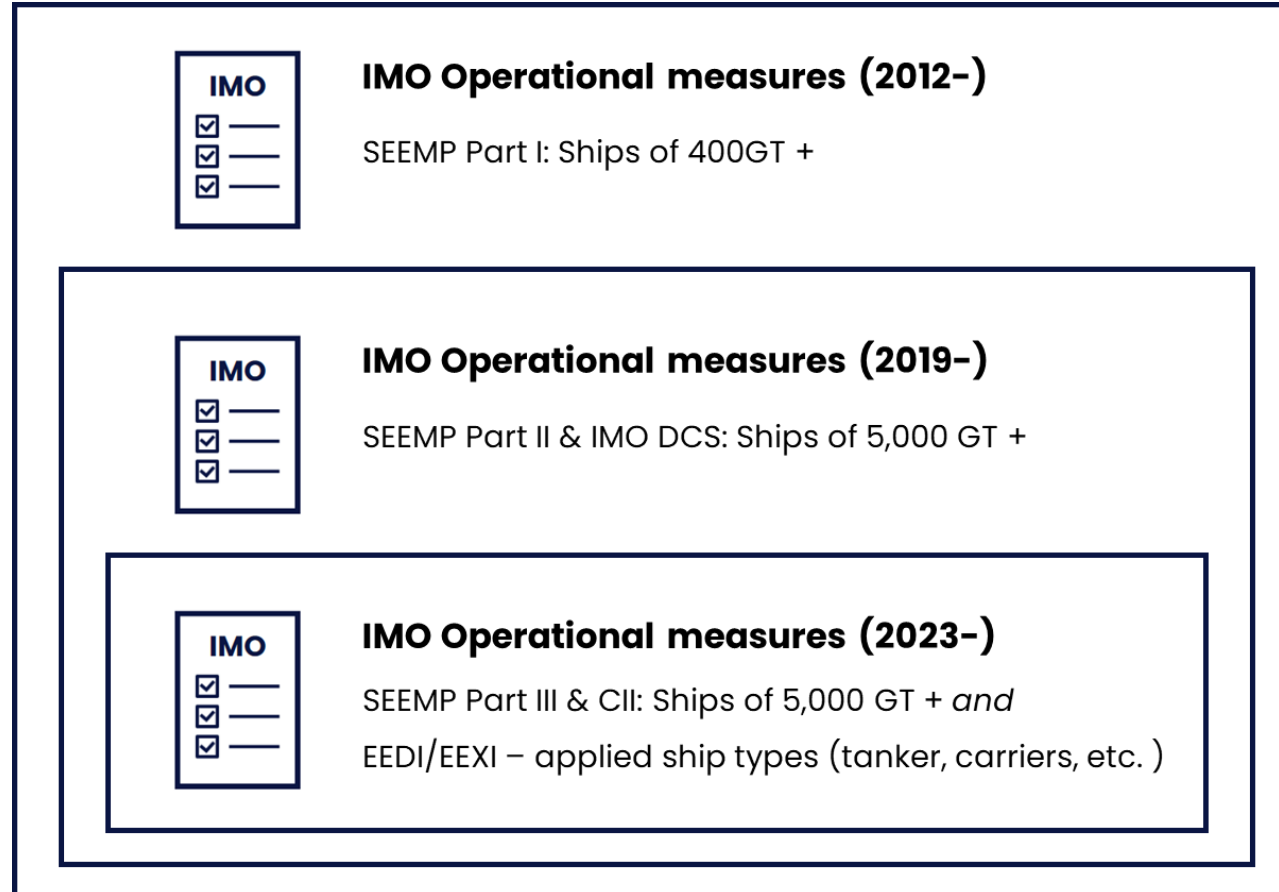
CII applies to ships above 5,000 GT of the above ship types
Always check with class to make sure if CII applies to your ship

Process of CII



SEEMP III is to be updated with a Fuel Data Collection Plan every 3 years, data reported into IMO DCS every year
Results are verified by Recognized Organization (RO), resulting in Statement of Compliance (SOC) after approval

Relation to SEEMP and IMO DCS



CII is part of IMO's operational measures to reduce carbon emissions

It can be considered the 'carbon-rating' in SEEMP III (Ship Energy Efficiency Management Plan)

CII Calculation in 3 steps

Step 1 - Calculate CII Attained		
Ship type	Bulk Carrier	
GT	34,515	
Deadweight	61,215	[mT]
Distance sailed	93,960	[nm/year]
Fuel consumption	8,500	[mT / year]
Fuel type	HFO	
Emission factor	3.114	[mT/mT]
CO ₂ emissions	26,469,000,000	[g/year]
CII Attained	4.60	[g/mT nm]

$$CII_{Attained} = \frac{CO_2 \text{ emissions}}{\text{Deadweight or GT} \cdot \text{Distance Travelled}}$$

Step 2 - Calculated CII Reference		
a	4,745	
c	0.622	
Capacity	61,215	Deadweight
CII Reference	5.00	

$$CII_{Reference} = a \cdot Capacity^{-c}$$

Step 3 - Calculate CII Rating		
Reduction (R)	11%	2026 as reference
CII Required	4.45	
Attained / Required	1.03	
CII Rating	C	

$$CII_{Required} = \frac{100 - R}{100} \cdot CII_{Reference}$$

$$CII_{Rating} = \frac{CII_{Attained}}{CII_{Required}}$$

Sustainable Ships divides the calculations into three parts for simplify the steps

Use the CII Quickscan on the top of the page to calculate CII for your ship type or check the guide for more

From number to letter

if	then	explanation
CII Rating < d1	A	If CII Rating (number) is under d1 value, CII rating (letter) is A
CII Rating < d2	B	If CII Rating (number) is under d2 value and above d1, CII rating (letter) is B
CII Rating < d3	C	If CII Rating (number) is under d3 value and above d2, CII rating (letter) is C
CII Rating < d4	D	If CII Rating (number) is under d4 value and above d3, CII rating (letter) is D
CII Rating > d4	E	If CII Rating (number) is above d4 value, CII rating (letter) is E

CII Number	CII Letter	Bulk carrier example
1.03	C	The calculated CII rating is 1.03, below d3 for a bulk carrier, resulting in a C

Your rating – the letter ranging from A to E – is determined using ‘d-values’ that are fixed values for ship types
If you receive a D-rating for three consecutive years, or an E-rating for a single year, you are non-compliant

Correction factors

$$CII_{Attained} = \frac{\sum_j C_{Fj} \cdot \left\{ FC_j - \left(FC_{voyage,j}^* + TF_j + (0.75 - 0.03y_i) \cdot (FC_{electrical,j} + FC_{boiler,j} + FC_{others,j}) \right) \right\}}{f_i \cdot f_m \cdot f_c \cdot f_{iVSE} \cdot Capacity \cdot (D_t - D_x^*)}$$

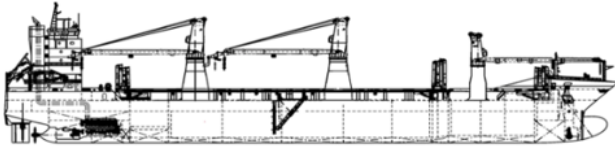
* Voyage correction factor
Ship correction factors

EEDI / EEXI correction factors

Correction factors may apply to your ship type, which could positively impact your results

Check the guide for more information, or contact the helpdesk for help

CII Rating and result

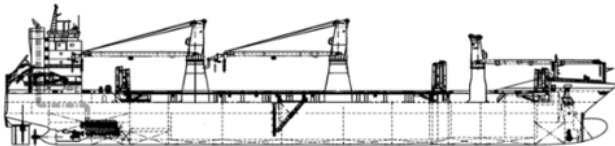


2023	2024	2025	2026
C	C	D	D



Compliant

You do not have to do anything



2023	2024	2025	2026
C	D	D	D

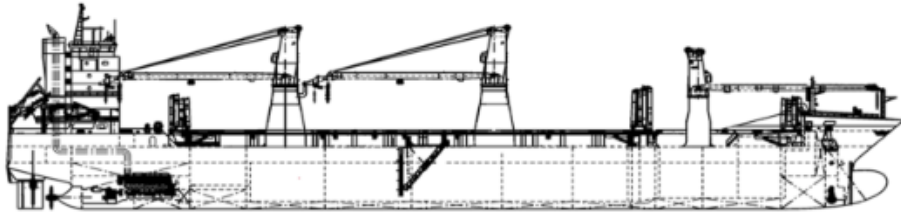


Non-compliant

You must submit a plan

In case of non-compliance, you are to develop a Corrective Actions Plan as part of your SEEMP 3

Only a *plan* is officially required, limiting impact and costs on your operation



Sustainable Ships

CII QUICKSCAN

2023	2024	2025	2026
C	C	C	C

Ship main type	Bulk Carrier <input type="text"/>	
Ship type	General Bulk Carrier <input type="text"/>	
Fuel type	HFO <input type="text"/>	
GT	34,515	
Deadweight	61,000	mT
Distance sailed	93,960	nm per year
Fuel consumption	8,500	mt per year

You are compliant to CII. Change the parameters to see how it impacts your rating or ask the Regulator AI for more clarifications.

[Ask Regulator AI](#) ?

Use the CI Quickscan to quickly determine your CII rating
Download the guide for more information