Figures from Countdown Explainer How IMO NZF Compliance Works in Practice

Countdown to IMO NZF 2025



Pre-reporting period

二1 Oct: **GFI** Registry account setup

△ Deadline varies by flag State: **Update SEEMP** 31 Dec: Flag State issues **Confirmation of** Compliance

Reporting period



31 December:

End of annual data collection



31 October:

Flag State reports Statement of Compliance - GFI in GFI Registry



30 September:

Flag State issues Statement of **Compliance - GFI**

31 August:







Flag State, or any organization authorized by it



Shipping company



GFI Registry



Account Statement

GFI Registry issues Ship

📮 31July : Record selected GFI compliance approaches



Flag State verifies GFI data and reports to GFI Registry



30 June:

Pay annual GFI Registry fee

Existing ships will need to pay this fee for the first time during the 2028 Reporting period





Information on the annual GFI to be submitted to flag State



Section

Identity of the ship

Details

- Ship name
- IMO number
- Port of registry
- Company name and contact details
- Calendar year period

Technical characteristics of the ship

- Year of delivery
- Ship type
- Gross tonnage, net tonnage, deadweight tonnage
- Power output (in kW) of main and auxiliary engines over 130 kW

Information related to the annual GFI

- Fuel use by type (in metric tonnes): main engine(s), auxiliary engine(s)/generator(s), fire boiler(s), etc.
- Methods used for collecting fuel consumption data
- Power capacity of other energy conversion systems installed on board (in MJ), such as fuel cells, electric battery, wind assisted propulsion system, along with methods used for collecting data
- Total amount of onshore power supplied (kwh)
- Reference to the Fuel Lifecycle Label by fuel or energy source type used
- Attained GFI (gCO₂eq/MJ), including WTW GHG intensity of each fuel type (gCO₂eq/MJ), amount of energy used by fuel/energy type (MJ), total amount of energy used by ship (MJ)
- Target annual GFI including base target GFI and direct compliance GFI from the regulation
- GFI compliance balance (tCO₂eq):
 - For ships in direct compliance, the amount of surplus units the ship is eligible to receive.
 - For ships with compliance deficit, the compliance deficit for Tier 1 and Tier 2 respectively
- The amount of surplus units banked from the previous reporting periods (in tCO₂eq)



Information related to uptake of ZNZs

The list of different ZNZs used, along with the associated emissions (tCO₂eq) per ZNZ

Compliance cycle checklist

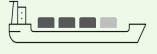


Period	Document or confirmation
Pre-reporting period	 □ SEEMP updated with GFI-related information □ Confirmation of IMO GFI Registry account setup □ Confirmation of Compliance issued by flag State
Reporting period	 Confirmation of annual fee payment to IMO GFI Registry Fuel consumption and GFI data (IMO NZF; Appendix XII) Fuel Lifecycle Label (FLL) and Bunker Delivery Note (BDN)
Verification period	 □ Confirmation of GFI data submitted to flag State □ Confirmation that selected GFI compliance approach has been performed □ Confirmation of annual fee payment to IMO GFI Registry □ Ship Account Statement capturing compliance balance, Surplus Units, and Remedial Unit transactions □ Statement of Compliance related to annual GFI issued by flag State (IMO NZF, Appendix XIII) □ Documents related to Remedial Units or Surplus Units, where applicable: □ Remedial Unit proof of payment issued by IMO Net Zero Fund □ Surplus Unit transfer confirmation



Scenario 1: Fossil-only in 2028





Case: A 10,000 TEU container vessel

Year:

2028

Operation:

Trans-Pacific ocean route

Fuels used:

HFO

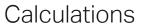
MDO

For 2028, the vessel reports the following consumptions:

Fuel type	Annual fuel consumption	Emissions intensity (gCO ₂ eq/MJ)	LCV (MJ/g)
HFO	12,000 tonnes	95.48	0.0402
MDO	1,400 tonnes	93.93	0.0427

We have the following GFI targets for Tier 1 and Tier 2 for 2028:

Year	Base target annual GFI (Tier 2)	Direct compliance target annual GFI (Tier 1)
2028	89.57 gCO₂eq/MJ	77.44 gCO ₂ eq/MJ

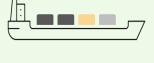


Unit	Equation	Result
Energy _{total}	$\sum_{j=1}^{J} Energy_{j}$	542,180,000 MJ
$\mathit{GFI}_{attained}$	$\frac{\sum_{j=1}^{J} EI_{j} \times Energy_{j}}{Energy_{total}}$	95.31 gCO2eq/MJ
Compliance Balance	$(GFI_{attained} - GFI_{Direct\ compliance\ target}) \times Energy_{total}$	9,688 tCO2eq
Tier 1 Compliance Deficit	$(GFI_{Base\ compliance\ target} - GFI_{Direct\ compliance\ target}) \times Energy_{total}$	6,577 tCO2eq
Tier 2 Compliance Deficit	$(GFI_{attained} - GFI_{Base\ compliance\ target}) \times Energy_{total}$	3,112 tCO2eq
Cost of RUs	Tier 1 Compliance Deficit \times 100 + Tier 2 Compliance Deficit \times 380	\$1,840,082



Scenario 2: Blending with biodiesel in 2028





Case: A 10,000 TEU container vessel

Year:

2028

Operation:

Trans-Pacific ocean route

Fuels used:

HFO

FAME

MDO

For 2028, the vessel reports the following consumptions:

Fuel type	Annual fuel consumption	Emissions intensity (gCO ₂ eq/MJ)	LCV (MJ/g)
HFO	10,945 tonnes	95.48	0.0402
FAME	1,142 tonnes	22.12	0.0372
MDO	1,400 tonnes	93.93	0.0427

We have the following GFI targets for Tier 1 and Tier 2 for 2028:

Year	Base target annual GFI (Tier 2)	Direct compliance target annual GFI (Tier 1)
2028	89.57 gCO ₂ eq/MJ	77.44 gCO ₂ eq/MJ



Calculations

Unit	Equation	Result
$Energy_{total}$	$\sum_{j=1}^{J} Energy_{j}$	542,251,400 MJ
$\mathit{GFI}_{attained}$	$\frac{\sum_{j=1}^{J} EI_{j} \times Energy_{j}}{Energy_{total}}$	89.56 gCO2eq/MJ
Compliance Balance	$(\mathit{GFI}_{attained} - \mathit{GFI}_{\mathit{Direct compliance target}}) \times \mathit{Energy}_{total}$	6,573 tCO2eq
Tier 1 Compliance Deficit	$(\mathit{GFI}_{\mathit{Base\ compliance\ target}} - \mathit{GFI}_{\mathit{Direct\ compliance\ target}}) \times \mathit{Energy}_{total}$	6,573 tCO2eq
Tier 2 Compliance Deficit	$(GFI_{attained} - GFI_{Base\ compliance\ target}) \times Energy_{total}$	0 tCO2eq
Cost of RUs	Tier 1 Compliance Deficit \times 100 + Tier 2 Compliance Deficit \times 380	\$657,305
Premium of Fuel Cost	Fuel Cost of Scenario 2 – Fuel Cost of Scenario 1	\$820,777
Total Cost of Compliance	Cost of RUs + Premium of Fuel Cost	\$1,478,082

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The current series, **Countdown to IMO NZF**, is looks at the historic regulations coming out of the IMO. Find more on the IMO NZF and read previous editions on the Net-Zero Framework homepage.

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