

Subject

Handling of IMO Interim Guidance on the Use of Biofuels under IMO-DCS and CII regulation

ClassNK Technical Information

No. TEC-1307

Date 13 September 2023

To whom it may concern

At the 80th Marine Environment Protection Committee (MEPC 80), the Interim Guidance on the use of biofuels under regulations 26, 27, and 28 of MARPOL Annex VI (IMO-DCS and CII regulations) (MEPC.1/Circ.905) was approved. As a result, it is possible to calculate the CO₂ emission factor (Cf) for biofuels that meet the conditions, and to use it under the IMO-DCS and CII regulations.

The following summary is the IMO Interim Guidance on the Use of Biofuels.

1. Summary of the Interim Guidance about using Biofuels

In the 2022 Guidelines on Operational Carbon Intensity Indicators and Calculation Methods (RESOLUTION MEPC.352(78) 2022 GUIDELINES ON OPERATIONAL CARBON INTENSITY INDICATORS AND THE CALCULATION METHODS (CII GUIDELINES, G1)), it is stipulated that if the type of fuel oil is not included in the relevant guidelines, the fuel supplier is required to provide the CO₂ emission factor (Cf) for that type of oil, along with documentary evidence.

On the other hand, at the IMO, guidelines on Life Cycle Assessment (LCA) of greenhouse gas (GHG) emissions from the production to consumption of marine fuels (Well-to-Wake) are continually being discussed. Until the LCA guidelines are developed, it has become possible to use the interim guidance on the use of biofuels to calculate the CO₂ emission factor (Cf) for biofuels that meet the following conditions, for use in IMO-DCS and CII regulations.

Conditions for biofuels that can be used in IMO-DCS and CII regulations:

- (1) Certified to meet sustainability criteria through an international certification system (such as ISCC, RSB, etc.)¹, and
- (2) the Well-to-Wake GHG intensity of the fuel is 33gCO₂e/MJ or less.

Formula for calculating the CO₂ emission factor (Cf) for biofuels:

$$\text{Cf [gCO}_2\text{eq/g]} = \text{GHG Intensity [gCO}_2\text{eq/MJ]} \times \text{Lower Calorific Value (LCV) [MJ/g]}$$

¹ Refer to ICAO's [Approved Sustainability Certification Scheme](#) and the CORSIA Sustainability Criteria (Chapter 2) for CORSIA Eligible Fuels.

(To be continued)

NOTES:

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Note that in any case, the Cf value of biofuels cannot be less than zero. For blended (mixed) fuels, the Cf is calculated based on the weighted average of the Cf for the respective amount of fuels by energy.

Additionally, biofuels that are not certified by an international certification system as "sustainable", or that do not meet the above GHG intensity criteria (33gCO₂eq/MJ or less), will be assigned a Cf equal to the Cf of the equivalent fossil fuel type.

This guidance is temporary and will be discontinued once a more comprehensive Well-to-Wake GHG emission calculation method, based on the IMO LCA guidelines, has been developed.

2. Procedures for the Use of Biofuels in ClassNK Verification of IMO-DCS and CII Regulations

In verification for IMO-DCS and CII regulations, in order to use the above CO₂ emission factor (Cf) for biofuels, re-approval of SEEMP Part II is required. Please add the biofuels into the section about fuels type used on the SEEMP Part II and submit it to us through the ClassNK MRV Portal. Also, at that time, please submit the documents specified in 1. above (Proof of Sustainability certificate or similar documents), along with a copy of the Bunker Delivery Note.

Regarding how to input fuel oil consumption into the MRV Portal, we will separately inform MRV Portal users through revised MRV Portal user manual accordingly.

For any questions about the above, please contact:

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Attachment:

1. MEPC.1/Circ.905; Interim guidance on the use of biofuels under regulations 26, 27, and 28 of MARPOL Annex VI (DCS and CII)
2. Sample of Proof of Sustainability and example calculations for the CO₂ Conversion Factor (Cf)

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MEPC.1/Circ.905
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**INTERIM GUIDANCE ON THE USE OF BIOFUELS UNDER REGULATIONS 26, 27
AND 28 OF MARPOL ANNEX VI (DCS AND CII)**

1 The Marine Environment Protection Committee, at its eightieth session (3 to 7 July 2023), approved the *Interim guidance on the use of biofuels under regulations 26, 27 and 28 of MARPOL Annex VI (DCS and CII)*, as set out in the annex.

2 Member Governments are invited to bring the annexed Interim Guidance to the attention of their Administrations, shipowners, ship operators, fuel oil suppliers and any other interested relevant stakeholders concerned for application as of 1 October 2023.

ANNEX

INTERIM GUIDANCE ON THE USE OF BIOFUELS UNDER REGULATIONS 26, 27 AND 28 OF MARPOL ANNEX VI (DCS AND CII)

1 The 2022 *Guidelines on operational carbon intensity indicators and the calculation methods* (resolution MEPC.352(78) CII Guidelines, G1) provide the possibility for the CO₂ Emission Conversion Factor (C_f) to be obtained from the fuel oil supplier, supported by documentary evidence, in case the type of the fuel oil is not covered by the relevant guidelines.

2 Pending the development of the comprehensive method to account for well-to-wake GHG emissions and removals based on the *Guidelines on life cycle GHG intensity of marine fuels (LCA Guidelines)* (resolution MEPC 376(80)), biofuels that have been certified by an international certification scheme,* meeting its sustainability criteria, and that provide a well-to-wake GHG emissions reduction of at least 65% compared to the well-to-wake emissions of fossil MGO of 94 gCO₂e/MJ (i.e. achieving an emissions intensity not exceeding 33 gCO₂e/MJ) according to that certification, may be assigned a C_f equal to the value of the well-to-wake GHG emissions of the fuel according to the certificate (expressed in gCO₂eq/MJ) multiplied by its lower calorific value (LCV, expressed in MJ/g) for the purpose of regulations 26, 27 and 28 of MARPOL Annex VI for the corresponding amount of fuels consumed by the ship. In any case, the C_f value of a biofuel cannot be less than 0. For blends, the C_f should be based on the weighted average of the C_f for the respective amount of fuels by energy.

3 A Proof of Sustainability or similar documentation from a recognized scheme should be provided along with the Bunker Delivery Note, to facilitate the verification of the reported biofuel consumption.

4 Biofuels not certified as "sustainable" or not fulfilling the well-to-wake emission factor criterion above should be assigned a C_f equal to the C_f of the equivalent fossil fuel type.


5 This guidance should be considered as an interim simplified method until a more comprehensive method is developed to calculate a fuel's Emission Conversion Factor reflecting its well-to-wake GHG emissions and removals based on the LCA Guidelines. This guidance does not intend to prejudice or delay the process of developing such a comprehensive method.

6 This Interim Guidance will be rescinded immediately upon operationalization of a well-to-wake GHG methodology through the LCA Guidelines.

7 Administrations are invited to inform the Committee on which international certification schemes have been used when applying this guidance.

* Refer to ICAO's [Approved Sustainability Certification Schemes](#) and the CORSIA Sustainability Criteria (chapter 2) for CORSIA Eligible Fuels

Attachment 2. to
 ClassNK Technical Information No. TEC-1307
 Sample of Proof of Sustainability and Example Calculations for the CO2 Emission Factor (Cf)

Proof of Sustainability (PoS) for Biofuels, Bioliquids and Biomass Fuels		V2.3
Applies under the Renewable Energy Directive (EU) 2018/2001 (RED II)		
Unique Number of the PoS:	<input type="text"/>	 www.iscc-system.org
Date of Issuance of the PoS:	17/02/2022	
Supplier		Recipient
Name: <input type="text"/>		Name: <input type="text"/>
1. General information		
Type of Product:	Biodiesel	
Type of Raw Material	Used cooking oil (UCO) entirely of veg. origin	
Additional Information (voluntary):	<input type="text"/>	
Country of Origin (of the raw material):	MY	
Quantity:	<input type="text" value="21.890"/> mt	<input type="checkbox"/> m ³ <input checked="" type="checkbox"/> metric tons
Energy content (MJ):	<input type="text" value="809,930"/> MJ	
EU RED Compliant material ¹	<input checked="" type="checkbox"/> Yes	
ISCC Compliant material (volunt.) ²	<input checked="" type="checkbox"/> Yes	
Chain of custody option (voluntary)	<input type="text" value="Mass balance"/>	
2. Scope of certification of raw material		
The raw material complies with the relevant sustainability criteria according to Art. 29 (2) - (7) RED II ³	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
The agricultural biomass was cultivated as intermediate crop (if applicable)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
The agricultural biomass additionally fulfills the measures for low ILUC risk feedstocks (if applicable)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
The raw material meets the definition of waste or residue according to the RED II ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
3. Greenhouse Gas (GHG) emission information		
Total default value according to RED II applied	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
E = Total GHG emissions from supply and use of the fuel (gCO ₂ eq/MJ)	<input type="text" value="14.9"/> gCO ₂ eq/MJ	
GHG emission saving ⁵ :		
84.1% Biofuels for transport	91.9% Biomass fuels for the production of electricity	
91.9% Bioliquids for electricity	81.4% Biomass fuels for the production of useful heat, as well as for the production of energy for heating and/or cooling	
81.4% Bioliquids for the production of useful heat, as well as for the production of energy for heating and/or cooling	88.0% Biomass fuels for the production of useful heat, in which a direct physical substitution of coal can be demonstrated	
Date when the final biofuel, bioliquid or biomass producer started operation ⁷	<input type="text" value="06/05/2014"/>	
For biogas supply chains: Were incentives/subsidies received for the production of the biogas? If yes, please specify	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="text"/>	
This form is valid without signature. By issuing this PoS, the issuing party guarantees that all information made on this Proof of Sustainability are correct, in compliance with the requirements of ISCC and the RED II, and that the biofuel or bioliquid has not already been used to fulfil a national quota obligation.		

■ Example Calculation 1:

For an unblended biofuel certified by the above PoS sample:

- Lower Calorific Value (LCV) [MJ/g] = $809,930 \text{ [MJ]} / 21.890 \times 10^6 \text{ [g]} = 0.037 \text{ [MJ/g]}$
- GHG Intensity [gCO₂eq/MJ] = $14.9 \text{ [gCO}_2\text{eq/MJ]} (< 33 \text{ [gCO}_2\text{eq/MJ]})$

$$\bullet \text{Cf [gCO}_2\text{eq/g]} = 14.9 \times 0.037 = 0.551 \text{ [gCO}_2\text{eq/g]}$$

■ Example Calculation 2:

For 75MT of blended biofuel (a blend of 21.890MT of the biofuel from Example 1 and 53.110MT of VLSFO):

- Energy of biofuel [MJ] = $0.037 \text{ [MJ/gFuel]} \times 21.890 \times 10^6 \text{ [g]} = 809,930 \text{ [MJ]}$
- Energy of VLSFO [MJ] = $0.041 \text{ [MJ/gFuel]} \times 53.110 \times 10^6 \text{ [g]} = 2,177,510 \text{ [MJ]}$

(In the case that LCV and Cf of LFO are used for VLSFO.)

$$\bullet \text{Ratio of energy between biofuel and VLSFO} = 809,930 / (809,930 + 2,177,510) : 2,177,510 / (809,930 + 2,177,510) = 0.271 : 0.729$$

$$\bullet \text{Blend Cf [gCO}_2\text{eq/g]} = 0.271 \times 0.551 + 0.729 \times 3.151 = 2.446 \text{ [gCO}_2\text{eq/g]}$$

	Lower Calorific Value [MJ/g]	Fuel Weight [g]	Energy Amount [MJ]	Ratio of Energy	Cf [gCO ₂ eq/g]	Blend Cf (Weighted Average based on Energy) [gCO ₂ eq/g]
FAME	0.037	21.890×10 ⁶	809,930	0.271	0.551	0.149
VLSFO	0.041	53.110×10 ⁶	2,177,510	0.729	3.151	2.297
Total		75.000×10 ⁶	2,987,440	1.000		2.446