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**Dossier interinstitutionnel:
2021/0210(COD)**

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NOTE

Origine:	Secrétariat général du Conseil
Destinataire:	délégations
Objet:	Proposition de Règlement du Parlement Européen et du conseil relatif à l'utilisation de carburants renouvelables et bas carbone dans le transport maritime et modifiant la directive 2009/16/CE – Compromis de la Présidence

À la lumière des discussions qui se sont tenues jusqu'à présent, et compte tenu des commentaires écrits soumis par les délégations, veuillez trouver ci-joint une version consolidée de compromis, proposé par la Présidence.¹ Veuillez noter que, à ce stade, les considérants ne sont pas visés et par conséquent, ils n'apparaissent pas dans ce compromis.

Toutes nouvelles modifications portant sur le document ST 7601/22² sont indiquées dans le compromis ci-joint en « **gras souligné** » surligné en gris ou en « **barré** » surligné en gris.

¹ Le compromis peut inclure également des corrections de nature technique ou relatives à la mise en page.

² Les changements précédents indiqués dans le document ST 7601/22 en « **gras souligné** » surligné en gris ou en « **barré** » surligné en gris qui ont été, à ce stade, acceptés par la Présidence sont désormais indiqués en « **gras souligné** » ou en « **barré** ».

2021/0210 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on the use of renewable and low-carbon fuels in maritime transport and amending
Directive 2009/16/EC

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 100(2) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee³, Having regard to the opinion of the Committee of the Regions⁴, Acting in accordance with the ordinary legislative procedure,

Whereas:

³ OJ C , , p. .

⁴ OJ C , , p. .

HAVE ADOPTED THIS REGULATION:

CHAPTER I

GENERAL PROVISIONS

Article 1

Objective and purpose

This Regulation lays down uniform rules imposing:

- (a) the limit on the greenhouse gas ('GHG') intensity of energy used on-board by a ship arriving at, staying within or departing from ports under the jurisdiction of a Member State and
- (b) the obligation to use on-shore power supply or zero-emission technology in ports under the jurisdiction of a Member State,

in order to increase consistent use of renewable and low-carbon fuels and substitute sources of energy **in maritime transport** across the Union, while ensuring ~~the~~ **its** smooth operation and avoiding distortions in the internal market.

Article 2

Scope

1. This Regulation applies to all ships above a gross tonnage of 5000 **that serve the purpose of transporting passengers or cargo for commercial purposes**, regardless of their flag, in respect to:

- (a) the energy used during their stay within a port of call under the jurisdiction of a Member State,
- (b) the entirety of the energy used on voyages from a port of call under the jurisdiction of a Member State to a port of call under the jurisdiction of a Member State,

(c) a half of the energy used on voyages departing from or arriving to a port of call under the jurisdiction of a Member State, where the last or the next port of call is under the jurisdiction of a third country.

2. This Regulation does not apply to warships, naval auxiliaries, fish-catching or fish-processing ships, wooden ships of a primitive build, ships not propelled by mechanical means, or government ships used for non-commercial purposes.

Article 3

Definitions

For the purposes of this Regulation, the following definitions apply:

- (a) ‘greenhouse gas emissions’ means the release of carbon dioxide (CO₂), methane (CH₄) and nitrous oxides (N₂O) into the atmosphere;
- (b) ‘biofuels’ means biofuels as defined in Article 2, point (33), of Directive (EU) 2018/2001;
- (c) ‘biogas’ means biogas as defined in Article 2, point (28), of Directive (EU) 2018/2001;
- (d) ‘recycled carbon fuels’ means recycled carbon fuels as defined in Article 2, point (35), of Directive (EU) 2018/2001;
- (e) ‘renewable fuels of non-biological origin’ means renewable fuels of non-biological origin as defined in Article 2, point (36), of Directive (EU) 2018/2001;
- (f) ‘food and feed crops’ means food and feed crops as defined in Article 2, point (40), of Directive (EU) 2018/2001;
- (g) ‘zero-emission technology’ means a technology ~~fulfilling the requirements of Annex III~~ that does not imply, **when used to provide energy**, the release of the following greenhouse gases and air pollutants into the atmosphere by ships: carbon dioxide (CO₂), methane (CH₄), nitrous oxides (N₂O), sulphur oxides (SO_x), nitrogen oxides (NO_x) and particulate matter (PM);

- (h) ‘substitute sources of energy’ means renewable wind or solar energy generated on-board or electricity supplied from on-shore power supply;
- (i) ‘port of call’ means a port of call as defined in Article 3, point (b) of Regulation (EU) 2015/757;
- (j) ‘voyage’ means voyage as defined in Article 3, point (c) of Regulation (EU) 2015/757;
- (k) ‘company’ means company as defined in Article 3, point (d) of Regulation (EU) 2015/757;
- (l) ‘gross tonnage’ (GT) means GT as defined in Article 3, point (e) of Regulation (EU) 2015/757;
- (m) ‘ship at berth’ means ship at berth as defined in Article 3, point (n) of Regulation (EU) 2015/757;

(m2) ‘ship at anchorage’ means a ship at anchorage as defined in Article 2(7) of Directive 2009/16/EC;⁵

- (n) ‘energy use on-board’ means the amount of energy, expressed in mega joules (MJ), used by a ship for propulsion and for the operation of any on-board equipment, at sea or at berth;
- (o) ‘greenhouse gas intensity of the energy used on-board’ means the amount of greenhouse gas emissions, expressed in grams of CO₂ equivalent established on a well-to-wake basis, per MJ of energy used on-board;
- (p) ‘well-to-wake’ means a method for calculating emissions that takes into account the greenhouse gas impact of energy production, transport, distribution and use on-board, including during combustion;
- (q) ‘emission factor’ means the average emission rate of a greenhouse gas relative to the activity data of a source stream, assuming complete oxidation for combustion and complete conversion for all other chemical reactions;

⁵ The Presidency stresses that even without a general obligation to use OPS for ships at anchorage, this definition is necessary for the possible application of the option in Article 5(7).

(r) ‘on-shore power supply’ means the system to supply electricity to ships at berth, at low or high voltage, alternate or direct current, including ship side and shore side installations, when feeding directly the ship main distribution switchboard for powering hotel, service workloads or charging secondary batteries;

~~{(rbis) ‘off-shore power supply’ means the system to supply electricity to ships at anchorage, at low or high voltage, alternate or direct current, including ship side and shore side installations;}~~⁶

(r2) ‘electrical power demand at berth’ means...⁷the demand in electricity from a ship at berth for powering all energy needs based on electricity on board;

(r3) ‘established total electrical demand of the ship at berth’ means the highest value, expressed in kilowatts-hours, of the total demand in electricity of the ship at berth, including hotel and cargo handling workloads, provided in its Electrical load balance or Electrical load study referred to in Publication IEC 60092 - Electrical Installations in Ships. In case the ship is not able to provide this reference, the value considered is 30 25% of the total of the maximum continuous ratings rated installed power of the main engines of the ship as specified in their EIAPP certificate delivered in application of the MARPOL Convention or, if the engines are not required to have an EIAPP certificate, on the nameplate of the engines;

(s) ‘verifier’ means a legal entity carrying out verification activities, which is accredited by a national accreditation body pursuant to Regulation (EC) No 765/2008 and this Regulation;

(t) ‘reporting period’ means reporting period as defined in Article 3, point (m) of Regulation (EU) 2015/757;

(u) ‘FuelEU certificate document of compliance’ means a certificate document specific to a ship, issued to a company by a verifier, which confirms that that ship has complied with this Regulation for a specific reporting period;

⁶ The need for this definition might be considered depending on MS’ opinion on introducing Article 5(2bis), presented as a possible option;

⁷ A definition might be needed since the term is now used in the text; nevertheless, further work is needed in this respect.

- (v) ‘passenger ship’ means a ship **as defined in Article 2, point (i) of Directive 2016/802 that carries more than 12 passengers, including cruise ships, high speed passenger crafts, and ships with facilities to enable road or rail vehicles to roll on and roll off the vessel;**
- (w) ‘containership’ means a ship designed exclusively for the carriage of containers in holds and on deck;
- (x) ‘non-compliant port call’ means a port call during which the ship does not comply with the requirement of Article 5(1), and none of the exceptions provided for in Article 5(3) apply;
- (y) ‘least favourable pathway’ means the most carbon-intensive production pathway used for any given fuel;
- (z) ‘CO₂ equivalent’ means the metric measure used to compute the emissions from CO₂, CH₄ and N₂O on the basis of their global-warming potential, by converting amounts of CH₄ and N₂O to the equivalent amount of carbon dioxide with the same global warming potential;
- (aa) ‘compliance balance’ means the measure of a ship’s over- or under-compliance with regards to the limits to the yearly average greenhouse gas intensity of the energy used on-board by a ship, which is calculated in accordance with Annex V **Part A**;
- (bb) ‘compliance surplus’ means a compliance balance with a positive value;
- (cc) ‘compliance deficit’ means a compliance balance with a negative value;
- (dd) ‘total pool compliance balance’ means the sum of the compliance balances of all ships included in the pool;
- (ee) ‘managing body of the port’ means any public or private body as defined in Article 2(5) of Regulation (EU) 2017/352 of the European Parliament and of the Council^{8,9}

⁸ Regulation (EU) 2017/352 of the European Parliament and of the Council of 15 February 2017 establishing a framework for the provision of port services and common rules on the financial transparency of ports (OJ L 57, 3.3.2017, p. 1).

⁹ **The need for this definition might be reconsidered depending on the final drafting of Article 5(5).**

(ccbis) ‘port authority’ means the competent authority or body designated in application of Directive 2002/59/EC of the European Parliament and of the Council;

(ff) ‘administering State’ means the administering authority Member State in respect of a shipping company as defined in Article 3(w) of Directive 2003/87/EC of the European Parliament and of the Council and as determined in accordance with Article 3gd of Directive 2003/87/EC of the European Parliament and of the Council¹⁰;

(gg) ‘reporting year’ means a period of one year, starting 1 January and ending 31 December, in which the report referred to in Article 14 is to be submitted;

(hh) ‘reporting period’ means a period from 1 January until 31 December of the year preceding the reporting year.

¹⁰ **The Presidency refers to the Proposition by the Commission on the revision of Directive 2003/87/EC, depending on results of the negotiation.**

CHAPTER II

REQUIREMENTS ON ENERGY USED ON-BOARD BY SHIPS

Article 4

Greenhouse gas intensity limit of energy used on-board by a ship

1. The yearly average greenhouse gas intensity of the energy used on-board by a ship during a reporting period shall not exceed the limit set out in paragraph 2.
2. The limit referred to in paragraph 1 shall be calculated by reducing the reference value of [X grams of CO₂ equivalent per MJ]* by the following percentage:
 - -¹¹2% from 1 January 2025;
 - -6% from 1 January 2030;
 - -13% from 1 January 2035;
 - -26% from 1 January 2040;
 - -59% from 1 January 2045;
 - -75% from 1 January 2050.

[Asterix: The reference value, which calculation will be carried out at a later stage of the legislative procedure, corresponds to the fleet average greenhouse gas intensity of the energy used on-board by ships in 2020 determined on the basis data monitored and reported in the framework of Regulation (EU) 2015/757 and using the methodology and default values laid down in Annexes I and II to ~~this~~ Regulation.]

¹¹ **Please note that all symbols "minus" have been deleted.**

3. The greenhouse gas intensity of the energy used on-board by a ship shall be calculated as the amount of greenhouse gas emissions per unit of energy according to the methodology specified in Annex I.
4. The Commission is empowered to adopt delegated acts in accordance with Article 26 to amend Annex II in order to include the well-to-wake emission factors related to any new sources of energy or to adapt the existing emission factors to ensure consistency with future international standards or the legislation of the Union in the field of energy.

Article 5

Additional zero-emission requirements of energy used at berth

1. From 1 January 2030, a ship at berth ~~moored at the quayside~~ in a port of call under the jurisdiction of a Member State shall connect to on-shore power supply and use it for ~~its~~ **all energy electrical power demand needs** while at berth.
2. Paragraph 1 shall apply to:
 - (a) containerships;
 - (b) passenger ships.

POSSIBLE OPTION:

~~**2bis — From 1 January 2035, a passenger ship operating at anchorage within a port area under the jurisdiction of a Member State shall connect to off-shore power supply and use it for its electrical power demand at berth.**~~¹²

¹²~~**Note from the Presidency: if this option is agreed to be further considered, other provisions of this Regulation may need to be adapted.**~~

3. Paragraphs 1 ~~and 2bis~~ shall not apply to ships:

- (a) that are ~~at berth~~ **moored at the quayside** for less than two hours, calculated on the basis of hour of departure and arrival monitored in accordance with Article 14;
- (b) that use zero-emission technologies **for their electrical power demand at berth, while moored at the quayside,** as specified in Annex III;
- (c) that have to make an unscheduled **and not systematic** port call for reasons of safety or saving life at sea, **due to unforeseen circumstances beyond the control of the owner or master;**
- (d) that are unable to connect to on-shore power supply due to unavailable connection points in a port **or where exceptionally the electrical grid stability is at risk, due to insufficient available shore-power to satisfy the ship's required electrical power demand at berth;**
- (e) that are unable to connect to on-shore power supply because the shore installation at the port is not compatible with the on-board on-shore power equipment, **provided that the installation for shore-connection on-board the ship is certified in accordance with the standards specified in Annex II of AFIR¹³ for seagoing ships shore connection systems;**
- (f) which, for a limited period of time, require the use of on-board energy generation, under emergency situations representing immediate risk to life, the ship, the environment or for other reasons of force majeure;
- (g) which, for a period of time limited to the strict necessary, require the use of on-board energy generation for maintenance tests, or for functional tests carried out upon request of an officer from a competent authority or the representative of a recognised organization undertaking a survey or inspection.**

¹³ Correct title to be added later.

3bis. ~~A ship that intends to use zero-emission technologies as a substitute to on-shore, for, where applicable, off-shore power supply, in application of paragraph 3(b) above, shall inform the port authority concerned, along with the notification prior to entry into ports referred to in Article 4 notify the information referred to in point 1(e) of Annex I of Directive 2002/59/EC¹⁴, of the following elements:~~

~~(a) — the identification of the zero-emission technology used among the technologies listed in the implementing acts adopted pursuant to paragraph 4;~~

~~(b) — the location of the technology used on board, and any other information enabling the inspection of its use on board by competent authorities.~~

3ter. ~~The port authority entity receiving the information notified pursuant to paragraph 3bis shall record it in the FuelEU database the information received pursuant to paragraph 3bis without delay.~~

4. The Commission is empowered to adopt delegated **implementing** acts in accordance with Article 27(3) ~~6~~ to amend Annex III in order to establish the list and acceptance criteria of the technologies and the way they are operated to be considered as zero-emission technologies within the meaning of Article 3(g), for the uniform implementation of this Regulation. The Commission shall regularly update the list and acceptance criteria in the light of the scientific and technical progress to assess if new technologies can be considered as zero-emission technologies within the meaning of this Regulation ~~insert references to new technologies in the list of applicable zero-emission technologies or criteria for their use, where these new technologies are found equivalent to the technologies listed in that Annex in the light of scientific and technical progress.~~

¹⁴ Note from the Presidency: please see also new Article 28bis proposed below for amendment of Directive 2002/59/EC.

This reference enables the inclusion of this new reporting requirement in the current European reporting framework (as Annex I of Directive 2002/59/EC is listed in the Annex of Directive 2010/65/EU on reporting formalities for ships arriving in and/or departing from ports of the Member States) and in the future European Maritime Single Window environment (as Annex I of Directive 2002/59/EC is also listed in the Annex of Regulation 2019/1239 establishing a European Maritime Single Window environment and repealing Directive 2010/65/EU, entering into force from 15 August 2025). It would also enable the application of exemptions to these new reporting requirements for scheduled services as provided in Article 15 of Directive 2002/59/EC.

5. The managing body of the port of call shall determine whether the exceptions set in paragraph 3 apply and issue or refuse to issue the certificate in accordance with the requirements set out in Annex IV.

~~**Option 1: The port authority, after consultation of the managing body of the port where necessary,**~~

~~**Option 2: The competent authority of the Member State of the port of call or any entity duly authorized, after consultation of the managing body of the port where necessary,**~~ shall record in the FuelEU database, without delay, the following information:

- ~~**(a) the application of any exception set in paragraph 3 points (a), (b), (c), (d), (e), or (f);**~~
- ~~**(b) the non application by a ship of the requirement of paragraph 1^s and 2^{bis} without being eligible to any exception set in paragraph 3.**~~

6. From 1 January 2035, the exceptions listed in paragraph 3, points (d) and (e), may not be applied to a given ship, in total, more than five times during one reporting year. A port call shall not be counted for the purpose of compliance with this provision where the company demonstrates that it could not have reasonably known that the ship will be unable to connect for reasons referred to in paragraph 3, points (d) and (e). **From 1 January 2030, in ports mentioned in Article 9 of AFIR¹⁵ equipped to provide the required shore-side electricity to supply a given ship type, the exceptions provided for in paragraph 3, points (d) and (e), shall not be applied to a ship of that given type, in total, more than five times, during one reporting period. A port call shall not be counted for the purpose of compliance with this provision where the company demonstrates that it could not have reasonably known that the ship will be unable to connect for the reason referred to in paragraph 3, points (d) and (e).** Emergency situations resulting in the need to use on-board generators, referred to in paragraph 3, point (f), shall be documented and reported by the ship to the managing body of the port.

¹⁵ Correct title to be added later.

7. **A Member State may decide that, in a port or some parts of a port located in its jurisdiction, containerships or passenger ships at anchorage are covered by the same obligations made to ships moored at the quayside in this Article. The Member State shall notify its decision to the Commission a year prior to its application, which must start at the beginning of a reporting period. The Commission shall publish the information in the Official Journal of the European Union and provide an updated list of the concerned ports which shall be easily accessible.**

CHAPTER III

COMMON PRINCIPLES AND CERTIFICATION

Article 6

Common principles for monitoring and reporting

1. In accordance with Articles 7 to 9, companies shall, for each of their ships, monitor and report on the relevant data during a reporting period. They shall carry out that monitoring and reporting within all ports under the jurisdiction of a Member State and for any voyages ~~to or from a port under the jurisdiction of a Member State~~ **mentioned in Article 2(1)**.
2. Monitoring and reporting shall be complete and cover the energy used on-board by ships **at any time**, while the ships are at sea as well as at berth. Companies shall apply appropriate measures to prevent any data gaps within the reporting period.
3. Monitoring and reporting shall be consistent and comparable over time. To that end, companies shall use the same monitoring methodologies and data sets subject to modifications assessed by the verifier. Companies shall enable reasonable assurance of the integrity of the data to be monitored and reported.
4. Companies shall obtain, ~~record, compile,~~ analyse and ~~document~~ **store for at least three five years all** monitoring data **and documentation**, including assumptions, references, emission factors, Bunker Delivery Notes as complemented **pursuant to Annex I** and activity data, in a transparent and accurate manner, **in paper or electronic form**, so that the verifier can determine the greenhouse gas intensity of the energy used on-board by ships.
5. In undertaking the monitoring and reporting activities set out in Articles 7 to 9 and 14 of this Regulation, information and data collected for the purpose of Regulation (EU) 2015/757 shall be used where appropriate.

Article 7

Monitoring plan

1. By 31 August 2024¹⁶, companies shall submit to the verifiers a monitoring plan for each of their ships indicating the method chosen from among those set out in Annex I to monitor and report the amount, type and emission factor of energy used on-board by ships and other relevant information.
2. For ships falling under the scope of this Regulation for the first time after 31 August 2024, companies shall submit a monitoring plan to the verifier without undue delay and no later than two months after each ship's first call in a port under the jurisdiction of a Member State.
3. The monitoring plan shall consist of a complete and transparent documentation and shall contain at least the following elements:
 - (a) the identification and type of the ship, including its name, its IMO identification number, its port of registry or home port, and the name of the ship-owner;
 - (b) the name of the company and the address, telephone and e-mail details of a contact person;
 - (c) a description of the energy conversion systems installed on-board, and the related power capacity expressed in megawatt (MW);

¹⁶ **To be checked in conjunction with the date of the entry into force. Possible alignment with para 2 of this Article to be further considered.**

- (d) a description, **for ships within the scope of Article 5**, that the ship has installed and certified **of the standards and characteristics of the** equipment to allow connection to on-shore power supply, **or a zero-emission technology** at a specified voltage and frequency, including the gear specified in IEC/IEEE 80005-1 (High Voltage) and IEC/IEEE 80005-3 (Low Voltage) or is equipped with ~~or of the~~ substitute sources of energy or a zero-emission technology as specified in Annex III;
- (d2) the value of the established total electrical demand of the ship at berth, as defined in Article 3(r3), which shall be approved by its flag Administration State or a recognised organisation acting on its behalf pursuant to the IMO Code for Recognized Organizations adopted by Resolution MEPC237(65);**
- (e) a description of the intended source(s) of energy to be used on-board while in navigation and at berth to comply with the requirements set out in Articles 4 and 5;
- (f) a description of the procedures for monitoring the fuel consumption of the ship as well as the energy provided by substitute sources of energy or a zero-emission technology as specified in Annex III;
- (g) ~~well-to-wake emission factors referred to in Annex II;~~ **a description of the procedures for monitoring and reporting the well-to-tank and tank-to-wake emission factors of energy to be used on-board, in accordance with the methods specified in Article 9 and Annexes I and II;**
- (h) a description of the procedures used to monitor the completeness of the list of voyages;
- (i) a description of the procedures used for determining activity data per voyage, including the procedures, responsibilities, formulae and data sources for determining and recording the time spent at sea between the port of departure and the port of arrival and the time spent at berth;

- (j) a description of the procedures, systems and responsibilities used to update any of the data contained in the monitoring plan over the reporting period;
 - (k) a description of the method to be used to determine surrogate data for closing data gaps;
 - (l) a revision record sheet to record all the details of the revision history.
4. Companies shall use standardised monitoring plans based on templates. The Commission shall, by means of implementing acts, determine those templates, including the technical rules for their uniform application. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 27(3).

Article 8

Modifications to the monitoring plan

1. Companies shall check regularly, and at least annually, whether a ship's monitoring plan reflects the nature and functioning of the ship and whether any of the data it contains can be improved.
2. Companies shall modify the monitoring plan in any of the following situations:
 - (a) where a change of company occurs;
 - (b) where new energy conversion systems, new types of energy, **new systems for connection to on-shore power supply, or new** ~~including~~ substitute sources of energy or a zero-emission technology ~~as specified in Annex III~~ are in use;
 - (c) where a change in availability of data, due to the use of new types of measuring equipment, new sampling methods or analysis methods, or for other reasons, may affect the accuracy of the data collected;
 - (d) **where** data resulting from the monitoring method applied has been found to be incorrect;

- (e) where any part of the monitoring plan is identified as not being in conformity with the requirements of this Regulation and the company is required by the verifier to revise it.
3. Companies shall notify to the verifiers without undue delay any proposals for modification of the monitoring plan.
4. — Modifications of the monitoring plan referred to in paragraph 2, points (b), (c) and (d) of this Article shall be subject to assessment by the verifier. Following the assessment, the verifier shall notify the company concerned whether those modifications are in conformity with Article 6.¹⁷

Article 9

Certification of ~~biofuels and emission factors, biogas, renewable liquid and gaseous transport fuels of non-biological origin and recycled carbon fuels~~

1. Where biofuels, biogas, renewable fuels of non-biological origin and recycled carbon fuels, as defined in Directive (EU) 2018/2001, are to be taken into account for the purposes referred to in Articles 4(1) of this Regulation, the following rules apply:
- (a) ~~greenhouse gas emission factors of biofuels and biogas that comply with the sustainability and greenhouse gas saving criteria set out in Article 29 of Directive (EU) 2018/2001 shall be determined according to the methodologies set out in that Directive;~~
- (b) ~~greenhouse gas emissions factors of renewable fuels of non-biological origin and recycled carbon fuel that comply with the greenhouse gas emission savings thresholds set out in Article 27(3) of Directive (EU) 2018/2001 shall be determined according to the methodologies set out in that Directive;~~

¹⁷ **Note from the Presidency: for better chronological consistency, it is proposed to move this paragraph to Article 10(1bis).**

- (ea) biofuels and biogas that do not comply with **the sustainability and greenhouse gas saving criteria set out in Article 29 of Directive (EU) 2018/2001** ~~point (a)~~ or that are produced from food and feed crops shall be considered to have the same emission factors as the least favourable fossil fuel pathway for this type of fuel;
- (eb) renewable fuels of non-biological origin and recycled carbon fuels that do not comply with **the greenhouse gas emission savings thresholds set out in Article 25(2) of Directive (EU) 2018/2001** ~~point (b)~~ shall be considered to have the same emission factors as the least favourable fossil fuel pathway for this type of fuels.

2. **On the basis of the Bunker Delivery Notes as complemented pursuant to Annex I,** Companies shall provide accurate and reliable data on the GHG emission intensity and the sustainability characteristics of biofuels, biogas, renewable fuels of non-biological origin and recycled carbon fuel, **as verified by certified under** a scheme that is recognised by the Commission in accordance with Article 30(5) and (6) of the Directive (EU) 2018/2001.
3. **Companies shall be entitled to divert from the default values for the well-to-tank emission factors reported in Annex II provided that actual values are certified under a scheme that is recognised by the Commission in accordance with Article 30(5) and (6) of the Directive (EU) 2018/2001.**
4. Companies shall be entitled to divert from the ~~established~~ default values for the tank-to-wake emission factors **defined in Annex II** provided that actual values are certified by means of laboratory testing or direct emissions measurements. The Commission is empowered to adopt delegated acts in accordance with Article 26, in order to supplement this Regulation by establishing the rules on conducting the laboratory testing and direct emissions measurements **or by referring to ISO appropriate test standards in case such standards have been developed.**

CHAPTER IV

VERIFICATION AND ACCREDITATION

Article 10

~~Verification activities~~ Assessment of the monitoring plan

1. For each ship and in the case of change of verifier, ~~t~~The verifier shall assess the conformity of the monitoring plan with the requirements laid down in Articles 6 to 9~~8~~. Where the verifier's assessment identifies non-conformities with those requirements, the company concerned shall revise its monitoring plan accordingly and submit the revised plan for a final assessment by the verifier before the reporting period starts. The company concerned shall agree with the verifier on the timeframe necessary to introduce those revisions. That timeframe shall in any event not extend beyond the beginning of the reporting period.

1bis. The verifier shall record the monitoring plan, once satisfactorily assessed, in the FuelEU database. The monitoring plan shall be accessible to the administering State.

1bister. Modifications of the monitoring plan under points (b), (c) and (d) of Article 8(2) shall be subject to an assessment by the verifier. Following the assessment, the verifier shall notify the company concerned whether those modifications are in conformity with the requirements laid down in Articles 6 to 8.

1quater. The verifier shall record the modified monitoring plan, once satisfactorily assessed, in the FuelEU database. The modified monitoring plan shall be accessible to the administering State.

2. ~~The verifier shall assess the conformity of the information reported with the requirements laid down in Articles 6 to 9 and Annexes I, II and III before performing the operations set out in Article 15(2).~~¹⁸

¹⁸ **Note from the Presidency: for better chronological consistency and to avoid redundancies, it is proposed to replace this paragraph by Article 15(1) as amended below.**

- ~~3. Where the verification assessment identifies incorrect statements or non-conformities with this Regulation, the verifier shall inform the company concerned thereof in a timely manner. That company shall then amend the incorrect statements or non-conformities so as to enable the verification process to be completed in time.¹⁹~~

Article 11

General obligations and principles for the verifiers

1. The verifier shall be independent from the company or from the operator of a ship and shall carry out the activities required under this Regulation in the public interest. For that purpose, neither the verifier nor any part of the same legal entity shall be a company or ship operator, the owner of a company, or be owned by them, nor shall the verifier have relations with the company that could affect its independence and impartiality.
2. The verifier shall assess the reliability, credibility, ~~and~~ accuracy **and completeness** of the data and information relating to the amount, type and emission factor of the energy used on-board by ships, in particular:
 - (a) the attribution of fuel consumption and the use of substitute sources of energy to voyages **and at berth**;
 - (b) the reported fuel consumption data and related measurements and calculations;
 - (c) the choice and the employment of emission factors;
 - (d) the use of on-shore ~~for, where applicable, off-shore~~ power supply or the presence of exceptions certified in accordance with Article 5(5);-
 - (e) the information required under Article 9(2).**
3. The assessment referred to in paragraph 2 shall be based on the following considerations:
 - (a) the reported data are coherent in relation to estimated data that are based on ship tracking data and characteristics such as the installed engine power;

¹⁹ Note from the Presidency: for better chronological consistency, it is proposed to move this paragraph to Article 15(1ter).

- (b) the reported data are free of inconsistencies, in particular when comparing the total volume of fuel purchased annually by each ship and the aggregate fuel consumption during voyages;
- (c) the collection of the data has been carried out in accordance with the applicable rules; and
- (d) the relevant records of the ship are complete and consistent.

Article 12

Verification procedures

1. The verifier shall identify potential risks related to the monitoring and reporting process by comparing reported amount, type and emission factor of the energy used on-board by ships with estimated data based on ship tracking data and characteristics such as the installed engine power. Where significant deviations are found, the verifier shall carry out further analyses.
2. The verifier shall identify potential risks related to the different calculation steps by reviewing all data sources and methodologies used by the company.
3. The verifier shall take into consideration any effective risk control methods applied by the company concerned to reduce levels of uncertainty associated with the accuracy specific to the monitoring methods used.
4. **On the request of the verifier, the company concerned shall provide the verifier with any additional information that enables the verifier to carry out its verification procedures activities. Where necessary to determine the reliability, credibility, accuracy and completeness of reported data and information, the verifier may shall conduct checks during the verification process to determine the reliability of reported data and information. In case of doubts, the verifier may conduct site visits at the premises of the company or on-board the ship. The company shall allow the verifier to access the premises of the company or the ship, in order to facilitate its verification activities.**

5. The Commission shall adopt implementing acts in order to further specify the rules for the verification activities referred to in this Regulation, at least on the following elements²⁰: competencies of verifiers, documents to be provided by companies to verifiers, risk assessment – including checks – to be carried out by verifiers, assessment of the conformity of the monitoring plan, verification of the FuelEU report, materiality level, reasonable assurance of verifiers, misstatements and non-conformities, content of the verification report, recommendations for improvements, site visits and communication between companies, verifiers, competent authorities and the Commission. The rules specified in those implementing acts shall be based on the principles for verification provided for in Articles 10 to 12 and on relevant internationally accepted standards. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 27(3).

Article 13

Accreditation of verifiers

1. Verifiers shall be accredited for activities under the scope of this Regulation by a national accreditation body pursuant to Regulation (EC) No 765/2008.
2. Where no specific provisions concerning the accreditation of verifiers are laid down in this Regulation, the relevant provisions of Regulation (EC) No 765/2008 shall apply.

2bis. Verifiers shall be equipped at all times with means and staff commensurate with the size of the fleet for which they perform verification activities under this Regulation and with sufficient expertise to carry out the tasks required by this Regulation. They shall be capable of assigning their means and staff to every place of work, when and as needed for the tasks to be carried out in application of this Regulation.

²⁰ **Note from the Presidency: these elements are similar to those set out in Part A of Annex III of MRV Regulation, this paragraph being the equivalent of Article 15(5) of MRV Regulation.**

~~2ter. Any competent authority of the Member State of the port of call or of the administering State identifying non-conformities of a verifier's activities within the scope of this Regulation shall inform the verifier and the competent authority of the Member State of the national accreditation body having accredited the verifier. The competent authority of the Member State of the national accreditation body shall request its. The national accreditation body shall take into account this information as part of its surveillance activities.~~

~~2quater. At any time, a Member State may request its national accreditation body to assess the verifier's verification activities undertaken by a verifier it has accredited within the scope of this Regulation, related to one or several identified ship(s) within the scope of this Regulation. The national accreditation body shall take into account the results of this assessment as part of its surveillance activities.~~

3. The Commission is empowered to adopt delegated **implementing** acts in accordance with Article 26, in order to supplement this Regulation by establishing further methods and criteria of accreditation of verifiers, **at least on the following elements²¹: request for accreditation for shipping activities, assessment of verifiers by the national accreditation bodies, surveillance activities performed by the national accreditation bodies to confirm the continuation of the accreditation, administrative measures to be adopted in case the verifier does not satisfy the requirements of this Regulation, and requirements for national accreditation bodies in order to be competent to provide accreditation to verifiers for shipping activities, including reference to harmonised standards.** The methods **and criteria** specified in those delegated **implementing** acts shall be based on the principles for verification provided for in Articles 10 and 11 **to 12** and on relevant internationally accepted standards. **Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 27(3).**

²¹ **Note from the Presidency: these elements are similar to those set out in Part B of Annex III of MRV Regulation, this paragraph being the equivalent of Article 16(3) of MRV Regulation.**

CHAPTER V

RECORDING, VERIFICATION, REPORTING AND ASSESMENT OF COMPLIANCE

Article 14

Monitoring and recording

1. **As of 1 January 2025**, ~~B~~based on the monitoring plan referred to in Article 7, and following the assessment of that plan by the verifier, companies shall **monitor and** record, for each ship arriving in or departing from, and for each voyage to or from a port of call under the jurisdiction of a Member State, the following information:
 - (a) port of departure and port of arrival including the date and hour of departure and arrival and time spent at berth;
 - (b) for each ship ~~that the requirement of~~ **to which** Article 5(1) applies, the connection to and use of on-shore ~~and off-shore~~ power or the existence of any of the exceptions listed in Article 5(3);
 - (c) the amount of each type of fuel consumed at berth and at sea;
(cbis)the amount of electricity consumed at berth and at sea;
 - (d) ~~the well-to-wake emission factors for each type of fuel consumed at berth and at sea, broken down by well-to-tank, tank-to-wake and fugitive emissions~~ **for each type of fuel consumed at berth and at sea, the well-to-tank emission factor, the tank-to-wake emission factors of combusted fuel and the tank-to-wake emission factors of slipped fuel associated to the different fuel consumers onboard**, covering all relevant greenhouse gases;
 - (e) the amount of each type of substitute source of energy consumed at berth and at sea.

2. Companies shall record the information and data listed in paragraph 1 on annual basis in a transparent manner, that enables the verification of compliance with this Regulation by the verifier.

3. By ~~310 March~~ **31 January**²² of each year **the reporting year**, companies shall provide to the verifier **a ship-specific FuelEU report containing all** the information referred to in paragraph 1 **and the monitoring data and documentation referred to in Article 6(4) for the reporting period corresponding to the previous calendar year.**

~~3bis~~ **Companies shall notify to the verifier each ship that has borrowed an advance compliance surplus for the period preceding the reporting period and has not performed any voyage to or from a port of call under the jurisdiction of a Member State during the reporting period.**²³

4. ~~In case there is a change of company~~ **In the event of the transfer of a ship from one company to another: , the new company shall ensure that each ship under its responsibility complies with the requirements of this Regulation in relation to the entire reporting period during which it takes responsibility for the ship concerned.**

(a) **the previous company shall notify to the verifier the information referred to in paragraph 1 for the time during which it has assumed the responsibility for the operation of the ship. As close as practical to the day of the completion of the change and no later than one month thereafter** ~~Within two months after completion of the transfer,~~ **this information shall be verified and recorded in the FuelEU database in accordance with Article 15 by the verifier that performed verification activities for the ship under the previous company; and**

²² **Note from the Presidency: moving forward the deadline for the initial FuelEU report of the company to 31 January, which seems doable since the data will be collected continuously during the reporting period, would allow to let more time for the next steps, notably the verification procedures, and to possibly align the deadline of 31 March for the transmissions of the verified FuelEU report and the verified emissions report required under MRV for the ETS (as proposed in Article 11a of MRV Regulation in the ETS legislative proposal).**

²³ **Although the condition in Article 17(4) is maintained, the Presidency suggests to delete this paragraph, since this situation should automatically appear through the FuelEU database.**

(b) the new company assuming the responsibility for the operation of the ship on 31 December of the reporting period shall be responsible for the compliance of the ship with the requirements of Articles 4 and 5 for the entire reporting period during which the transfer or multiple transfers took place.

Article 15

Verification and calculation

1. Following the verification ~~laid down as set out~~ in Articles 10 to 12, the verifier shall assess the quality, completeness and accuracy of the ~~information provided by the company in accordance with Article 14(3)~~ **FuelEU report. To this purpose, the verifier shall use any information contained in the FuelEU database, including information provided on port calls in accordance with Article 5.**

1bis²⁴. Where the verification assessment concludes, with reasonable assurance from the verifier, that the FuelEU report is free from material misstatements, the verifier shall notify to the company a verification report stating that the FuelEU report complies with this Regulation. The verification report shall specify all issues relevant to the work carried out by the verifier.1ter²⁵. Where the verification assessment identifies misstatements or non-conformities with this Regulation, the verifier shall inform the company thereof in a timely manner. The company shall then correct the misstatements or non-conformities so as to enable the verification process to be completed in time and shall submit to the verifier an amended FuelEU report and any other information that was necessary to correct the non-conformities identified. In its verification report, the verifier shall state whether the amended FuelEU report complies with this Regulation. Where the communicated misstatements or non-conformities have not been corrected and lead to material misstatements, the verifier shall notify to the company a verification report stating that the FuelEU report does not comply with this Regulation.

2. On the basis of the **compliant FuelEU report** information verified according to paragraph 1, the verifier shall:
- (a) calculate, using the method specified in Annex I, the yearly average greenhouse gas intensity of the energy used on-board by the ship concerned;
 - (b) calculate, using the formula specified in Annex V **Part A**, the ship's compliance balance;
 - (c) calculate the number of non-compliant port calls in the previous reporting period including the time spent **moored at the quayside and, where applicable in accordance with Article 5(7), at anchorage,** at berth for each non-compliant port call **non compliant with the requirements set in Article 5.**(d) — calculate the amount of the penalties referred to in Article 20(1) and (2).

²⁴ **Note from the Presidency: this paragraph is inspired from Article 13(3) of MRV Regulation, for better consistency and robustness of the verification process.**

²⁵ **Note from the Presidency: this paragraph corresponds to the initial Article 10(3), with additional elements from Article 13(4) of MRV Regulation, for better consistency and robustness of the verification process.**

3. By 31 March of the reporting year, ~~the~~ the verifier shall notify to the company the information referred to in paragraph 2 **record in the FuelEU database the compliant FuelEU report, the verification report and the information referred to in paragraph 2.**

Article 15bis

Additional checks by a competent authority

1. At any time and for the two previous reporting periods, ~~the competent authority of the Member State of the port of call or the competent authority of the administering State may, for a ship under its administration to which this Regulation applies, conduct additional checks of any of the following:~~
- (a) the compliant FuelEU report established in application of Articles 14 and 15;
 - (b) the verification report established in application of Article 15;
 - (c) the calculations made by the verifier in application of Article 15(2).
2. ~~The competent authority may delegate these checks, at its own expenses, to a verifier accredited under Article 13(1) of this Regulation other than the verifier having issued the verification report and calculations mentioned in paragraph 1.~~
2. On the request of the ~~entity conducting such checks~~ competent authority, the company shall provide any necessary information or document and shall allow the access to the premises of the company or the ship to facilitate the checks.
3. The competent authority shall issue ~~or, where appropriate, endorse the~~ an additional checks report including, where applicable, the updated calculations made in application of Article 15bis(1)(c), the updated amount of the compliance surplus or of the advance compliance surplus and the updated amount of the remedial penalty ~~and record it in the FuelEU database.~~

5. Where such the report referred to in paragraph 4 finds misstatements, non-conformities or miscalculations resulting in a non-conformity to the requirements set out in Articles 4 or 5 of this Regulation and in a modification of the amount of the remedial penalty, the competent authority shall notify to the company the amount of the remedial penalty corresponding to the non-conformity found. Member States shall ensure that the company responsible for the ship during the period subject to the additional checks shall pay that amended remedial penalty within one month after its notification, in accordance with the modalities referred to in Article 21. :

a) — the competent authority shall notify to the company and, where applicable, to the competent authority of the administering State, through the FuelEU database, the additional checks report, the updated calculations to be made in application of Article 15(2), where applicable the updated amount of the compliance surplus or of the advance compliance surplus and where applicable the amount of the remedial penalty corresponding to the non-conformity found, calculated in accordance with Article 20;

(b) — the company responsible for the ship during the period subject to the additional checks shall pay the remedial penalty at the latest one month after receipt of the notifications mentioned in paragraphs 5.(a) at the latest, in accordance with the modalities referred to in Article 21;

(c) — the competent authority shall notify the additional checks report to the verifier, to its national accreditation body and to the Member State of the accreditation body.

6. The competent authority shall withdraw without delay in the FuelEU database the FuelEU document of compliance of the ship whose company has not paid in due time the penalties referred to in paragraphs 5.(b) and 5.(c) and shall notify this withdrawal to the company in a timely manner. It shall issue the document of compliance again when the remedial penalty has been paid, provided that the other conditions set out in this Regulation for holding this document are fulfilled by the company.

7. Paragraph 6 do not apply to a ship which has been transferred to a company other than the one that assumed the responsibility for its operation during the period subject to the additional checks.
8. The actions referred to in this Article as well as the proof of the financial payments in accordance with Article 21 shall be recorded without delay in the FuelEU database by the entities performing these actions.

Article 15ter

Supporting tools and guidance²⁶

The Commission, assisted by the European Maritime Safety Agency, shall endeavor to ~~should~~ develop appropriate monitoring tools, as well as guidance and risk-based targeting tools to facilitate and coordinate verification and enforcement activities related to this Regulation. As far as practicable, ~~s~~Such guidance and tools shall ~~should~~ be made available to the Member States, the verifiers and the national accreditation bodies for information sharing purpose and in order to better ensure robust enforcement of this Regulation.

²⁶ Note from the Presidency: this Article may have to be further considered and adapted taking into account the review of EMSA's mandate expected to start in 2022.

Article 16

Compliance FuelEU database and reporting

1. The Commission shall develop, ensure functioning and update an electronic ~~compliance~~ **FuelEU** database for the monitoring of compliance with ~~Articles 4 and 5~~ **this Regulation**. The ~~compliance~~ **FuelEU** database shall be used to keep a record of **the actions related to verification activities, of** the compliance balance of the ships, ~~including and~~ the use of the flexibility mechanisms set out in Articles 17 and 18, **and of the actions related to the payment of the penalties referred to in Article 20 and the issuance of the FuelEU document of compliance**. It shall be accessible to the companies, the verifiers, the ~~competent authorities~~ **Member States competent authorities and any duly authorized entity, the national accreditation bodies, the European Maritime Safety Agency** ~~the port authorities and~~ the Commission, **with appropriate access rights and functionalities corresponding to their respective responsibilities in the implementation of this Regulation**.

1bis. Any elements recorded or modified in the FuelEU database shall be notified to the entities to which they are accessible.

2. The Commission shall, by means of implementing acts, lay down the rules for access rights and the functional and technical specifications, **including notification rules and filtering,** of the ~~compliance~~ **FuelEU** database. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 27(3).
3. ~~By 30 April of each year, the company shall record in the compliance database for each of its ships the information referred to in Article 15(2), as ascertained by the verifier, together with information~~ **from the reporting period corresponding to the previous calendar year** allowing to identify the ship, the company, as well as the identity of the verifier that ~~carried out the assessment.~~

Banking and borrowing of compliance surplus between reporting periods

1. **On the basis of the information referred to in Article 15(2),** ~~W~~where the ship has a compliance surplus for the reporting period, the company may bank it to the same ship's compliance balance for the following reporting period. The company shall record the banking of the compliance surplus to the following reporting period in the ~~compliance~~ **FuelEU** database subject to approval by its verifier. The company may no longer bank the compliance surplus once the FuelEU ~~certificate~~ **document** of compliance has been issued.
2. **On the basis of the information referred to in Article 15(2),** ~~W~~where the ship has a compliance deficit for the reporting period, the company may borrow an advance compliance surplus of the corresponding amount from the following reporting period. The advance compliance surplus shall be added to the ship's balance in the reporting period ~~and subtracted from the same ship's balance in the following reporting period. The amount to be subtracted in the following reporting period shall be equal to the advance compliance surplus multiplied by 1.1~~ **shall be subtracted from the same ship's balance in the following reporting period.** The advance compliance surplus may not be borrowed:
 - (a) for the amount exceeding by more than 2% the limit set out in Article 4(2), multiplied by the energy consumption of the ship calculated in accordance with Annex I;
 - (b) for two consecutive reporting periods.
3. By 30 April of the ~~year following the reporting period~~ **reporting year**, the company shall record the advance compliance surplus, following approval by its verifier, in the ~~compliance~~ **FuelEU** database.
4. **When a ship with an advance compliance surplus for a reporting period does not have any port call in the Union during the following reporting period, the company shall pay the remedial penalty mentioned in Article 20 initially avoided by means of borrowing this advance compliance surplus, multiplied by 1.1.**

Article 18

Pooling of compliance

1. The compliance balances of two or more ships, **as calculated in application of Article 15(2)** which are verified by the same verifier, may be pooled for the purposes of fulfilling the requirements of Article 4. A ship's compliance balance may not be included in more than one pool in the same reporting period.
2. ~~By 31 March of the year following the reporting period~~ **To that end**, the company shall notify **in the FuelEU database** ~~to the verifier~~ the intention of including the ship's compliance balance in a pool, **the allocation of the total compliance balance of the pool to each individual ship, and the choice of the verifier selected for verifying this allocation** for the immediately preceding reporting period.
- 2bis.** In the case where the ships participating in the pool are controlled by two or more companies, the **notification, including the allocation of the total compliance balance of the pool to its ships and the choice of the verifier selected for verifying the allocation of the total compliance balance of the pool to each individual ship, shall be validated accepted by all the** companies shall make a joint notification to the **verifier concerned**.
3. **A pool is valid only if the total pooled compliance is positive and if ships which had a compliance deficit as calculated in application of Article 15(2) do not have a higher compliance deficit after the allocation of the pooled compliance.**

~~By 30 April of the year following the reporting period, the pool shall be recorded in the compliance database by the verifier. The composition of the pool shall not change after that date~~
4. **A ship shall not be included in a pool if it does not comply with the obligation set out in Article 22.**

In case of pooled compliance under paragraph 1 of this Article, and for the purposes of Article 15(2)(b), the company may decide how to allocate the total compliance balance of the pool to each individual ship, provided that the total pool compliance balance is respected. In case where the ships participating in the pool are controlled by two or more companies, the total compliance balance of the pool shall be allocated in accordance with the method specified in the joint notification.

5. If the **total pooled compliance balance** pool average compliance balance results in the a compliance surplus for an individual ship, Article 17(1) applies.
6. Article 17(2) does not apply to a ship participating in the pool.
7. ~~The company may no longer include the ship's compliance balance in a pool once the FuelEU certificate **document** of compliance has been issued.~~
- 8. By 30 April of the reporting year, the selected verifier shall record in the FuelEU database the definitive composition of the pool and allocation of the total pooled compliance balance to each individual ship.**

Article 19

FuelEU certificate document of compliance

1. By 30 June of the year following the ~~end of a reporting period~~ **reporting year**, the verifier shall issue a FuelEU certificate **document** of compliance for the ship concerned, provided that the ship does not have a compliance deficit, after possible application of Articles 17 and 18, and does not have non-compliant port calls **and complies with the obligation set out in Article 22 and, where applicable, has paid the penalties referred to in Article 20.**

1bis. Where remedial penalties pursuant to Article 20(1) or Article 20(2) are due, the competent authority of the administering State shall, by 30 June of the reporting year, issue a FuelEU document of compliance for the ship concerned, provided that the remedial penalties have been paid.

2. The FuelEU certificate **document** of compliance shall include the following information:

- (a) identity of the ship (name, IMO identification number and port of registry or home port);
- (b) name, address and principal place of business of the ship-owner;
- (c) identity of the verifier;
- (d) date of issue of this ~~certificate~~ **document**, its period of validity and the reporting period it refers to.
3. The FuelEU ~~certificate~~ **document** of compliance shall be valid for ~~the a~~ period of 18 months after the end of the reporting period, **or expire if a new certificate document is issued in the meantime.**
4. The verifier **or where applicable the competent authority of the administering State** shall **record in the FuelEU database inform the Commission, the flag State and the administering State,** without delay, the issuance of any FuelEU ~~certificate~~ **document** of compliance.
5. The Commission shall adopt implementing acts establishing models for the FuelEU ~~certificate~~ **document** of compliance, including electronic **templates** models. Those implementing acts shall be adopted in accordance with the advisory procedure referred to in Article 27(2).

Article 20

Remedial penalties²⁷

1. Where on 1 May of the year following the reporting period reporting year the ship has a compliance deficit, the company shall pay a remedial penalty. The verifier shall calculate the amount of the remedial penalty on the basis of the formula specified Annex V Part B. When a ship has a compliance deficit for two consecutive reporting periods or more, that amount shall be multiplied by $1 + (n - 1)/10$, where n is the number of consecutive reporting periods for which the company is subject to a remedial penalty for this ship.²⁸

2. The company shall pay a remedial penalty for each non-compliant port call. The verifier shall calculate the amount of the remedial penalty by multiplying the amount of EUR 250 1,5 by megawatts of power installed on board for electrical power demand needs while at berth the established total electrical power demand of the ship at berth and by the number of completed rounded up hours spent moored at the quayside and, where applicable in accordance with Article 5(7), at anchorage.

2bis. By 1 May of the reporting year, the verifier shall notify to the competent authority of the administering State and to the company the amounts of the penalties referred to in paragraphs 1 and 2.

2ter. The competent authority of the administering State may review the amounts referred to in paragraphs 1 and 2. If it identifies any possible errors in the calculation of the remedial penalties notified by the verifier, it shall inform the company and the verifier thereof by 1 June of the reporting year. After giving the opportunity to the company and the verifier concerned to submit their observations, the competent authority of the administering State shall notify to the verifier and the company, if applicable, the amended amount of the remedial penalties. The company shall pay these penalties at the latest one month after receipt of this notification.

²⁷ The Presidency is aware of the concerns expressed by some Member State about the pertinence of the term "penalties". Further reflection is needed in this respect.

~~2^{quater}. If the notification mentioned in paragraphs 2^{ter} is made after 1 June of the reporting year and the company has not paid the amended penalties by 30 June, a provisional document of compliance shall be issued to the company by the competent authority of the administering State on 30 June of the reporting year. This provisional document of compliance shall be valid until one month after the notification mentioned in paragraph 2^{ter}.~~

1. Before 1 May of the reporting year, where applicable on the basis of the calculation undertaken pursuant to Article 15(2) and after possible application of Articles 17 and 18, the verifier shall register in the FuelEU database the verified compliance deficit of the ship.

1bis. Member States shall ensure that for any ship under their administration which has a compliance deficit on 1 June of the reporting year, after a possible validation by their competent authority, the company shall pay by 30 June of the reporting year to a remedial penalty equal to the amount resulting from the application of the formula specified in Annex V Part B. When a ship has a compliance deficit for two consecutive reporting periods or more, that amount shall be multiplied by $1 + (n - 1)/10$, where n is the number of consecutive reporting periods for which the company is subject to a remedial penalty for this ship

2. Before 1 May of the reporting year, where applicable on the basis of the calculation undertaken pursuant to Article 15(2), the verifier shall register in the FuelEU database the total number of hours spent at berth by the ship in non-compliance with the requirements set in Article 5.

2bis. Member States shall ensure that for any ship under their administration which has at least one non-compliant port call, after a possible validation by their competent authority, the company shall pay by 30 June of the reporting year to a remedial penalty equal to the amount of EUR 1.5 multiplied by the established total electrical power demand of the ship at berth and by the total number of rounded-up hours spent at berth in non-compliance with the requirements set in Article.

2^{ter}. Member States shall have the necessary legal and administrative framework in place at national level to ensure the fulfilment of the obligations concerning the imposition and payment of the remedial penalties provided for in this Regulation.

3. Notwithstanding Article 19(1), the verifier shall issue a FuelEU certificate of compliance once the penalties referred to in paragraphs 1 and 2 of this Article have been paid.²⁹The actions referred to in this Article as well as the proof of the financial payments in accordance with Article 21 shall be recorded **without delay** in the FuelEU **database by the entities who had performed those actions** certificate of compliance.

3bis. The company shall remain responsible for the payment of the remedial penalties, without prejudice to the possibility to conclude contractual agreements with the commercial operators of the ship when the responsibility for the purchase of the fuel and/or the operation of the ship is assumed by that commercial operator. The above referred contractual agreements may foresee that commercial operator shall be liable for reimbursing the company for the payment of the remedial penalties referred to in this Article. For the purposes of this paragraph, operation of the ship shall mean determining the cargo carried, the itinerary, the routeing and/or the speed of the ship.³⁰

Where the shipping company concludes a contract with a commercial operator specifying that this operator is responsible for the purchase of the fuel or the operation of the ship, the shipping company and that commercial operator may, by means of a contractual arrangement, determine that the latter shall be liable for all or part of the costs arising from the payment of the remedial penalties referred to in this Article. For the purposes of this paragraph, operation of the ship shall mean determining the cargo carried, the itinerary, the routeing and/or the speed of the ship.

²⁹ This deletion is linked to the new addition in Article 19(1bis).

³⁰ The Presidency suggest to add the following recital:

Whilst the company should remain responsible for fulfilling monitoring and reporting obligations under this Regulation, as well as for paying the remedial penalties, in order to properly implement the ‘polluter pays’ principle and to promote the uptake of cleaner fuels, the entity responsible for purchasing the fuel and/or taking operational decisions that affect the greenhouse gas intensity of the energy used by the ship should, through contractual agreements with the company, in case of compliance deficit, reimburse or otherwise compensate the company with respect to the cost of the remedial penalties resulting from the operation of the ship. For the purpose of this Regulation operation of the ship means determining the cargo carried, the itinerary, the routing and/or the speed of the ship. The company may, on contractual basis and for the purpose of its internal accountancy, request the verifier to calculate the amounts of the penalties corresponding to the operation of the ship by the other entity during the reporting period.

4. The Commission is empowered to adopt delegated acts in accordance with Article 26 to amend Annex V in order to adapt **the factor defined in cells 7 of the table in Part B of that Annex and used in** the formula referred to in paragraph 1 of this Article, **based on the developments in the cost of energy**, and to amend the **numerical factor** amount of the fixed penalty laid down in paragraph 2 of this Article, **based on the indexation of the average cost of electricity in the Union** taking into account the developments in the cost of energy.

~~5.³¹ **Any Member State without maritime ports in its territory and which has closed its national ship register or has no ships flying its flag that fall within the scope of this Regulation, and as long as no such ships are flying its flag, may derogate from the provisions of this Article. Any Member State that intends to avail itself of that derogation shall notify the Commission at the latest on XXXXX. Any subsequent change shall also be communicated to the Commission.**³²~~

Article 21³³

Allocation of penalties to support renewable and low-carbon fuels in the maritime sector

1. The penalties referred to in **Article 15bis(5)**, Article 20(1) and 20(2) shall be allocated to support common projects aimed at the rapid deployment of renewable and low carbon fuels in the maritime sector. Projects financed by the funds collected from the penalties shall stimulate the production of greater quantities of renewable and low carbon fuels for the maritime sector, facilitate the construction of appropriate bunkering facilities or electric connection ports in ports, and support the development, testing and deployment of the most innovative European technologies in the fleet to achieve significant emission reductions.

³¹ ~~The Presidency intends to accommodate this aspect but wonders whether this paragraph is correctly placed here. Would it not be more appropriate in Article 23? Indications from the delegation sought.~~

³² ~~The following recital could be also added: "(XX) Member States that have no maritime ports in their territory and which have no ships flying their flag and falling under the scope of this Regulation, or which have closed their national ship registers, should be able to derogate from the provisions of this Regulation relating to penalties, as long as no such ships are flying their flag".~~

³³ ~~The written opinion of the Council Legal Service was not available at the time when this compromise was prepared. The Presidency is aware that further discussions might be needed on the basis of that opinion.~~

2. The revenues generated from penalties referred to in paragraph 1 shall be allocated to the the Innovation Fund referred to in Article 10a(8) of Directive 2003/87/EC. These revenues shall constitute external assigned revenue in accordance with Article 21(5) of the Financial Regulation, and shall be implemented in accordance with the rules applicable to the Innovation Fund.
3. **The Commission is empowered to adopt implementing acts in accordance with Article 27, paragraph 3 in order to specify the modalities for the payment of the remedial penalties referred to in paragraph 2 of this Article.** ~~The Commission is empowered to adopt delegated acts in accordance with Article 26 to supplement this Regulation concerning the modalities for the payment of the penalties referred to in Article 20(1) and 20(2).~~

Article 22

Obligation to ~~carry~~ **retain** ~~hold~~ a valid FuelEU document ~~certificate~~ of compliance ~~on-board~~

1. **By 30 June of the year following the end of a reporting period reporting year,** ~~The~~ ships calling at a port under the jurisdiction of a Member State, **arriving at, within or departing from a port under the jurisdiction of a Member State, and which have carried out voyages during that reporting period,** shall ~~carry on-board, in paper or electronic form,~~ **retain** ~~hold~~ a valid FuelEU **document** ~~certificate~~ of compliance.
2. The Fuel EU **document** ~~certificate~~ of compliance issued for the ship concerned in accordance with Article 19 shall constitute evidence of compliance with this Regulation.

Article 23

Enforcement

1. Member States shall lay down the rules on sanctions applicable to infringements of this Regulation and shall take all measures necessary to ensure that they are implemented. The sanctions provided for must be effective, proportionate and dissuasive. Member States

shall notify those provisions to the Commission by [dd/mm/20xx], and shall notify to the Commission without delay any subsequent amendments.³⁴

2. Each Member State shall ensure that any inspection of a ship in a port under its jurisdiction carried out in accordance with Directive 2009/16/EC includes checking that a valid FuelEU **document** certificate of compliance is carried on board.
3. Where a ship has failed to present a valid FuelEU **document** certificate of compliance for two or more consecutive reporting periods and where other enforcement measures have failed to ensure compliance, the competent authority of the Member State of the port of call may, **in respect of a ship not flying the flag of that Member State and** after giving the opportunity to the company concerned to submit its observations, issue an expulsion order. **In case of the competent authority of the Member State of the port of call decides to issue an expulsion order, it** shall notify ~~the expulsion order~~ **it** to the Commission, the other Member States and the flag State concerned **through the FuelEU database**. Every Member State, with the exception of any Member State whose flag the ship is flying, shall refuse entry of the ship which is subject to the expulsion order into any of its ports until the company fulfils its obligations. Where the ship flies the flag of a Member **State and enters one of its ports or is found with such failure while in one of its ports**, the Member State concerned shall, after giving the opportunity to the company concerned to submit its observations, order a flag detention until the company fulfils its obligations.
4. The fulfilment of those obligations shall be confirmed by the notification of a valid FuelEU **document** certificate of compliance to the competent national authority which issued the expulsion order. This paragraph shall be without prejudice to the provisions of international law applicable in the case of ships in distress.
5. Sanctions against a specified ship by any Member State shall be notified to the Commission, to the other Member States and to the flag State concerned **through the compliance FuelEU database**.
- ~~6. **Any Member State without maritime ports in its territory, which has closed its national ship register or has no ships flying its flag that fall within the scope of this**~~

³⁴ **The Presidency proposes to include a recital specifying that those sanctions should not duplicate the remedial penalties.**

Regulation and as long as no such ships are flying its flag, and which has no accredited verifier certifier may derogate from the provisions of this Article. Any Member State that intends to avail itself of that derogation shall notify the Commission at the latest on XXXXX. Any subsequent change shall also be communicated to the Commission.³⁵

Article 23b

Derogations

A Member State which has no maritime ports in its territory, has no shipping company registered, has no accredited verifier within the meaning of Article 13 and either has closed its national ship register or has no ships flying its flag that fall within the scope of this Regulation, and has no accredited verifier within the meaning of Article [13] may not apply this Regulation as long as any of the above mentioned requirements are fulfilled. Any Member State that intends to avail itself of that derogation shall notify the Commission at the latest on [to be defined]. Any subsequent change shall also be communicated to the Commission.³⁶

Article 24

Right to review

1. The companies shall be entitled to apply for a review of the calculations and measures addressed to them by the verifier under this Regulation, including the refusal to issue a FuelEU document certificate of compliance pursuant to Article 19(1). The application for review shall be lodged, within one month of the notification of the result of

³⁵ The following recital could be also added: "(XX) Member States that have no maritime ports in their territory and which have no ships flying their flag and falling under the scope of this Regulation or which have closed their national ship registers, and which have not accredited any verifier, should be able to derogate from the provisions of this Regulation relating to sanctions, as long as no such ships are flying their flag".

³⁶ Drafting under examination by the Council Legal Service.

calculation or of the measure by the verifier, with the competent authority of the Member State in which the verifier has been accredited.

2. ~~The companies shall be entitled to apply for a review of the decisions taken under this Regulation by the managing body of the port.³⁷ The application for review shall be lodged, within one month of the notification of the **decision, with the competent authority of the Member State of the port of call** result of calculation or of the measure by the verifier, with the competent authority of the Member State in which the verifier has been accredited. The decision of the competent authority shall be subject to judicial review~~
3. ~~The decisions taken under this Regulation by the **competent authority of a Member State** managing body of the port shall be subject to judicial review **by a court of the Member State of that competent authority concerned, respectively in which the verifier has been accredited or of the port of call.**~~

Article 25

Competent authorities

Member States shall designate one or more competent authorities as responsible for the application and enforcement of this Regulation ('competent authorities'). They shall communicate their names and contact information to the Commission. The Commission shall publish on its website the list of competent authorities.

³⁷ ~~Adjustments to this provision might be needed depending on the final drafting of Article 5(5).~~

CHAPTER VI

DELEGATED AND IMPLEMENTING POWERS AND FINAL PROVISIONS

Article 26

Exercise of delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to in Articles 4(~~46~~), 5(~~4~~), 9(3), 13(3), 20(4), and 21(3) shall be conferred on the Commission for an indeterminate period of time from [date of entry into force of this Regulation].
3. The delegation of power referred to in Articles 4(~~47~~), 5(~~4~~) 9(3), 13(3), 20(4), and 21(3) may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the *Official Journal of the European Union* or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.
4. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016.
5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.

6. A delegated act adopted pursuant to Articles 4(~~47~~), 5(~~4~~) 9(3), 13(3), 20(4), and 21(3) shall enter into force only if no objection has been expressed either by the European Parliament or by the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by two months at the initiative of the European Parliament or of the Council.

Article 27

Committee procedure

1. The Commission shall be assisted by the Committee on Safe Seas and the Prevention of Pollution from ships (COSS) established by Regulation (EC) 2099/2002 of the European Parliament and of the Council³⁸. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.
2. Where reference is made to this paragraph, Article 4 of Regulation (EU) No 182/2011 shall apply. Where the opinion of the Committee is to be obtained by written procedure, that procedure shall be terminated without result when, within the time-limit for delivery of the opinion, the chair of the committee so decides.
3. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply. Where the committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third subparagraph of Article 5(4) of Regulation (EU) No 182/2011 shall apply.

³⁸ Regulation (EC) No 2099/2002 of the European Parliament and of the Council of 5 November 2002 establishing a Committee on Safe Seas and the Prevention of Pollution from Ships (COSS) and amending the Regulations on maritime safety and the prevention of pollution from ships (OJ L 324, 29.11.2002, p. 1).

Article 28

Report and review³⁹

1. The Commission shall report to the European Parliament and the Council, by 1 January 2030, **and every five years thereafter**, the results of an evaluation on the functioning of this Regulation, **and on** the evolution of the technologies and market for renewable and low-carbon fuels, **and zero-emission technologies** in maritime transport **and on-shore power supply including at anchorage**, and **of** its impact on the maritime sector in the Union. The Commission shall consider possible amendments **including but not limited** to:

(0) the geographical and material scope of this regulation referred to in Article 2;

- (a) the limit referred to in Article 4(2);
- (b) the ship types **and size and situations** to which Article 5(1) applies **and the extension of the obligations referred to in Article 5(1) to ships at anchorage;**
- (c) the exceptions listed in Article 5(3);

(d) emission factor associated to the electricity delivered to the ship via on-shore power supply.

- 2. In the event of the adoption by the International Maritime Organization of a global low-GHG fuel standard for maritime transport, the Commission shall, without delay and in any event no later than 30 September 2028, present a report to the European**

³⁹ **The Presidency is aware that some Member States requested an IMO-related review clause. Further reflection is needed in this respect; an addition could be considered along the following lines: "2. The Commission shall consider possible amendments in relation to the adoption by the International Maritime Organization of a global low-GHG fuel standard for maritime transport. In the event of the adoption of such a measure, the Commission shall present a report to the European Parliament and to the Council examining such measure. Where appropriate, the Commission may follow to the report with a legislative proposal to the European Parliament and to the Council to amend this Regulation as appropriate."**

Parliament and to the Council. The Commission shall in that report examine that global measure as regards its ambition in light of the objectives of the Paris Agreement and its overall environmental integrity. It shall also examine any issue related to the possible coexistence or alignment of this Regulation with that measure such as the need to avoid double coverage of greenhouse gas emissions from maritime transport. Where appropriate, the report shall be accompanied by a legislative proposal to amend this Regulation, consistent with the Union economy-wide greenhouse gas emission commitments, and with the aim of preserving the environmental integrity and effectiveness of the Union climate action.

Article 28bis

Amendments to Directive 2002/59/EC

The following point shall be added in section 1 of Annex I to Directive 2002/59/EC: ‘(e) for ships to which Article 5(3bis) of Regulation (EU) xxxx on the use of renewable and low-carbon fuels in maritime transport applies, the identification of the zero-emission technology intended to be used at berth among the technologies listed in the implementing acts adopted pursuant to Article 5(4) of Regulation (EU) xxxx and any additional information enabling the inspection of its use on board by competent authorities.’

Article 29

Amendments to Directive 2009/16/EC

The following point shall be added to the list set out in Annex IV to Directive 2009/16/EC: ‘51. The FuelEU **document** ~~certificate~~ of compliance issued under Regulation (EU) xxxx on the use of renewable and low-carbon fuels in maritime transport’.

Article 30

Entry into force

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*. It shall apply from 1 January 2025, **with the exception of Articles 7(1), 7(2) and 8 that shall apply from 31 August 2024.**

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the European Parliament

The President

For the Council

The President

ANNEX I

METHODOLOGY FOR ESTABLISHING THE GREENHOUSE GAS INTENSITY LIMIT ON THE ENERGY USED ON-BOARD BY A SHIP

For the purpose of calculating the greenhouse gas intensity limit of the energy used on-board a ship, the following formula, referred to as Equation (1) shall apply:

GHG intensity index	WtT	TtW
<i>GHG intensity index</i> $\left[\frac{gCO_{2eq}}{MJ} \right]$	$\frac{\sum_i^n fuel M_i \times CO_{2eq\ WtT,i} \times LCV_i + \sum_k^c E_k \times CO_{2eq\ electricity,k}}{\sum_i^n fuel M_i \times LCV_i + \sum_k^c E_k}$	$+ \frac{\sum_i^n fuel \sum_j^m engine M_{i,j} \times \left(1 - \frac{1}{100} C_{engine\ slip\ j} \right) \times (CO_{2eq\ TtW,j}) + \left(\frac{1}{100} C_{engine\ slip\ j} \times CO_{2eq\ TtW,slippage,j} \right)}{\sum_i^n fuel M_i \times LCV_i + \sum_k^c E_k}$

Equation (1)

where the following formula is referred to as Equation (2):

$$CO_{2eq\ TtW,j} = \left(C_{fCO_2,j} \times GWP_{CO_2} + C_{fCH_4,j} \times GWP_{CH_4} + C_{fN_2O,j} \times GWP_{N_2O} \right)_i \quad \text{Equation (2)}$$

Term	Explanation
<i>i</i>	Index corresponding to the fuels delivered to the ship in the reporting reference period
<i>j</i>	Index corresponding to the fuel consumer combustion units on board the ship. For the purpose of this Regulation the fuel consumer units considered are the main engine(s), auxiliary engine(s), and fired oil boilers, fuel cells and waste incinerators
<i>k</i>	Index corresponding to the on-shore power supply connection points electrical charging connection points (e) where electricity is supplied per connection point.
<i>n</i>	Total number of fuels delivered to the ship in the reporting period
<i>c</i>	Total number of on-shore power supply connection points Index corresponding to the number of electrical charging points
<i>m</i>	Total number of fuel consumer units Index corresponding to the number of energy fuel consumers
$M_{i,j}$	Mass of the specific fuel i oxidised in consumed by fuel consumer unit j [gFuel]
E_k	Electricity delivered to the ship per electrical charging connection on-shore power supply connection point <i>k</i> if more than one [MJ]
$CO_{2eq\ WtT,i}$	WtT GHG emission factor of fuel <i>i</i> [gCO _{2eq} /MJ]
$CO_{2eq\ electricity,k}$	WtT GHG emission factor associated to the electricity delivered to the ship at berth per electrical charging connection on-shore power supply connection point <i>k</i> [gCO _{2eq} /MJ]

LCV_i	Lower Calorific Value of fuel i [MJ/gFuel]
$C_{engineslipj}$	Engine fuel slippage (non-combusted fuel) coefficient as a percentage of the mass of the fuel i consumed used by combustion fuel consumer unit j [%]. C_{slip} includes fugitive emissions (emissions before the "engine") and slipped emissions.
$C_{fCO_2,j}, C_{fCH_4,j}, C_{fN_2}$	TtW GHG emission factors by combusted fuel in fuel consumer combustion unit j [gGHG/gFuel]
$CO_{2eq,TtW,j}$	TtW CO ₂ equivalent emissions of combusted fuel i in fuel consumer combustion unit j [gCO ₂ eq/gFuel] $CO_{2eq,TtW,j} = (C_{cfCO_2,j} \times GWP_{CO_2} + C_{cfCH_4,j} \times GWP_{CH_4} + C_{cfN_2O,j} \times GWP_{N_2O})_i$
$C_{sfCO_2,j}, C_{sfCH_4,j}, C_s$	TtW GHG emission factors by slipped fuel towards combustion fuel consumer unit j [gGHG/gFuel]
$CO_{2eq,TtWslippage,j}$	TtW CO ₂ equivalent emissions of slipped fuel i towards fuel consumer combustion unit j [gCO ₂ eq/gFuel] $CO_{2eq,TtWslippage,j} = (C_{sfCO_2,j} \times GWP_{CO_2} + C_{sfCH_4,j} \times GWP_{CH_4} + C_{sfN_2O,j} \times GWP_{N_2O})_i$ where: $C_{sfCO_2,j}$ and $C_{sfN_2O,j}$ are set to zero.
$GWP_{CO_2}, GWP_{CH_4},$	CO ₂ , CH ₄ , N ₂ O Global Warming Potential over 100 years, which are: $GWP_{CO_2} = 1; GWP_{CH_4} = 29,8; GWP_{N_2O} = 273$ defined in Directive (EU) 2018/2001, Paragraph 4 of Part C of Annex V

~~In the case of fossil fuels, the default values in Annex II shall be used.~~

For the purpose of this regulation the term $\sum_k^c E_k \times CO_{2eq,electricity,k}$ in the numerator of Equation (1) shall be set to zero.

Method for determining [Mi]

The [Mi] mass of fuel shall be determined using the amount reported in accordance with the framework of the reporting under Regulation (EU) 2015/757 for voyages falling within the scope of this Regulation based on the chosen monitoring methodology by the company.

Method for determining WtT GHG emission factors

The WtT emissions are determined on the basis of the methodology contained in this Annex as provided in Equation (1).

The WtT GHG emission factors ($CO_{2eqWtT,i}$) default values are contained in Annex II.

In the case of fossil fuels, only the default values in Annex II shall be used.

Actual values may be used provided that they are certified under a scheme that is recognised by the Commission in accordance with Article 30(5) and (6) of the Directive (EU) 2018/2001, in application of Article 9(3).

~~For non-fossil fuels, wherever values different from the default values in Annex II are used, these shall be based on relevant Bunker Delivery Notes (BDNs), for the fuels delivered to the ship in the~~

reference period, for at least equal quantities of fuels as the one determined as being consumed in scope of the regulated journey in accordance with point A.

The WtT GHG ($CO_{2eqWtT,i}$) of the fuels (which are not fossil fuels) are established in Directive (EU) 2018/2001. The actual values, contained in the Directive that shall be used for the purpose of this Regulation, in accordance with the methodology, are those without combustion⁴⁰. For those fuels for which pathways are not included in the Directive and for fossil fuels, the WtT GHG emission factors ($CO_{2eqWtT,i}$) default values are contained in Annex II.

For non fossil fuels, wherever values different from the default values in Annex II are used, these shall be based on relevant Bunker Delivery Notes (BDNs), and need to be certified by an accredited certifier (under the relevant provisions made in Directive (EU) 2018/2001) for the fuels delivered to the ship in the reference period, for at least equal quantities of fuels as the one determined as being consumed in scope of the regulated journey.

Fuel Bunker Delivery Note (BDN)

Under existing MARPOL Annex VI regulations, the BDN is mandatory and information to be included in the bunker delivery note is specified.

For the purposes of this regulation:

1) **BDNs including fuels other than fossil fuels used on board shall be complemented with the following information regarding those fuels:**

– **Lower Calorific Value [MJ/g].**

– **For biofuels, E values as defined in Directive (EU) 2018/2001, Annexes V and VI [gCO₂eq/MJ] and related certificate identifying the fuel production pathway.**

– **For fuels other than fossil fuels and biofuels, WtT GHG emission factor CO₂eq [gCO₂eq/gFuelMJ] and related certificate identifying the fuel production pathway.**

2) **[In case of product blending, information required by this regulation shall be given for each product].**

BDN Electricity Delivery Note (EDN)

For the purposes of this regulation, relevant **EDNs** for electricity delivered to the ship shall contain at least the following information:

– supplier: name, address, telephone, email, representative

– receiving ship: IMO number (MMSI), ship name, ship type, flag, ship representative

⁴⁰ Reference is made to Directive (EU) 2018/2001, Annex V.C.1.(a) to the term e_u ‘emissions from the fuel in use’

- port: name, location (LOCODE), terminal/ berth
- ~~on-shore power supply connection~~ connection ~~electrical charging~~ point: ~~OPS-SSE~~ connection point, connection point details
- ~~on-shore power supply~~ ~~connection~~ ~~electrical~~ ~~charging~~ time: date/time of commencement/finalisation
- energy supplied: power fraction allocated to supply point (if applicable) [kW], electricity consumption (kWh) for the billing period, peak power information (if available)
- metering

Method for determining TtW GHG emission factors

The TtW emissions are determined on the basis of the methodology contained in this Annex as provided in Equation (1) and Equation (2)

The TtW GHG emission factors ($CO_{2eq,TtW,j}$) default values are contained in Annex II.

In accordance with its monitoring plan referred to in Article 7 and upon assessment by the verifier, other methods, such as direct CO_{2eq} measurement, laboratory testing, may be used if it enhances the overall accuracy of the calculation, in application of Article 9(4).

~~For the purpose of this Regulation, the TtW GHG emission factors ($CO_{2eq,TtW,j}$) that shall be used to determine the GHG emissions are contained in Annex II. The CO_2 ~~C_f~~ factors shall be the ones established in Regulation (EU) 2015/757 and are reported in the Table 1 of Annex II for easy reference. For fuels whose factors are not included in the said regulation, default factors as contained in Annex II shall be used.~~

~~In accordance with its compliance **monitoring** plan referred to in Article 6 ~~7~~ and upon assessment by the verifier, other methods, such as direct CO_{2eq} measurement, laboratory testing, may be used if it enhances the overall accuracy of the calculation.~~ **Method for determining TtW fugitive and slipped emissions**

Fugitive **and slipped** emissions are emissions caused by the amount of fuel that does not reach the combustion chamber of the combustion unit or that is not consumed by the ~~energy converter~~ **fuel consumer unit** because they are uncombusted, vented, or leaked from the system. For the purpose of this Regulation, fugitive **and slipped** emissions are taken into account as a percentage of the mass of the fuel used by the **fuel consumer unit** engine. The default values are contained in Annex II.

Methods for determining the reward factors linked to substitute sources of energy

In case substitute sources of energy are installed on board, a reward factor for substitute sources of energy can be applied. In case of wind power such reward factor is determined as follow:

Reward factor for substitute sources of energy- WIND (f_{wind})	$\frac{P_{Wind}}{P_{Tot}}$
0,99	0, 05

0,97	0, 12
0,95	\geq 0, 153

Where:

- **P_{Wind} is the available effective power of the wind assisted propulsion systems and corresponds to $f_{eff} * P_{eff}$ as calculated in accordance with the 2021 guidelines on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI and EEXI (MEPC.1/Circ.896);**
- **P_{Prop} is the propulsion power of the ship and corresponds to P_{ME} as defined in the 2018 guidelines on the method of calculation of the attained energy efficiency design index (EEDI) for new ships (IMO resolution MEPC.308(73), as amended) and the 2021 guidelines on the method of calculation of the attained energy efficiency existing ships index (EEXI) (IMO resolution MEPC.333(76)). In case where shaft motor(s) are installed, $P_{Prop} = P_{ME} + P_{PTI(i),shaft}$.**

Where:

P_{wind} is the installed power of a wind propulsion system

P_{tot} is the total installed power on board of the ship

The ship GHG intensity index is then calculated by multiplying the result of Equation (1) by the reward factor.

1. Verification and Certification

Fuel Class	WtT	TtW
Fossil	Default values shall be used as provided in Table 1 of this Regulation	<p>MRV Regulation CO₂ carbon factors shall be used for fuels for which such factor is provided</p> <p>For all other emissions factors, default values can be used as provided in Table 1 of this Regulation, alternatively</p> <p>Certified values by mean of laboratory testing or direct emissions measurements</p>

<p>Sustainable Renewable Fuels (Bio Liquids, Bio Gases, e-Fuels)</p>	<p>CO_{2eq} values as provided in RED II (without combustion) can be used for all fuels whose pathways are included in RED II, alternatively</p> <p>RED II approved certification scheme, including voluntary schemes, can be used</p>	<p>Emissions factors, default values can be used as provided in Table 1 of this Regulation, alternatively</p> <p>Certified values by mean of laboratory testing or direct emissions measurements.</p>
<p>Others (including electricity)</p>	<p>CO_{2eq} values as provided in RED II (without combustion) can be used for all fuels whose pathways are included in RED II, alternatively</p> <p>RED II approved certification scheme, including voluntary schemes, can be used</p>	<p>Emissions factors, default values can be used as provided in Table 1 of this Regulation, alternatively</p> <p>Certified values by mean of laboratory testing or direct emissions measurements.</p>

ANNEX II

DEFAULT EMISSION FACTORS⁴¹

The default emissions factors contained in the table below shall be used for the determination of the greenhouse gas intensity index referred to in Annex I of this Regulation, except when companies divert from these default emissions factors in application of Article 9(3) and (4).

The emissions factors for fossils fuels contained in this Annex ~~the table below~~ shall be used for the determination of the greenhouse gas intensity index referred to in Annex I of this Regulation.

~~The WtT emissions factors of liquid and gaseous biofuels, biogas, renewable fuels of non-biological origin and recycled carbon fuels shall be determined according to the methodologies set out in Annex 5 part C of Directive (EU) 2018/2001, the WtT emissions factors for said Directive the latter are included in this Annex.~~

In the table:

- TBM stands for To Be Measured
- N/A stands for Not Available
- The dash means not applicable
- **E is defined in Directive (EU) 2018/2001, Annexes V and VI**

Where a cell indicates either TBM or N/A, the highest default value of the fuel class in the same column shall be used. Where, for a particular fuel class, all cells in the same column indicate either TBM or N/A, default value of the least favourable fossil fuel pathway shall be used.

Table 1 – Default factors

1	2	3	4	5	6	7	8	9
	WtT			TtW				
Fuel Class/ Feedstock	Pathway name	<i>LCV</i> [$\frac{MJ}{g}$]	<i>CO_{2eq} WtT</i> [$\frac{gCO_2eq}{MJ}$]	Energy Converter Fuel Consumer Unit Class	<i>C_{f CO₂}</i> [$\frac{gCO_2}{gFuel}$]	<i>C_{f CH₄}</i> [$\frac{gCH_4}{gFuel}$]	<i>C_{f N₂O}</i> [$\frac{gN_2O}{gFuel}$]	<i>C_{slip}</i> As % of the mass of the fuel used by the engine
Fossil	HFO ISO 8217	0,0405		ALL ICES	3,114 MEPC245	0,00005	0,00018	-

⁴¹ ~~The Presidency is aware of the questions raised/concerns expressed by the Member States as regards this Annex. Therefore, a more in depth reflection will be needed in this respect.~~

1	2	3	4	5	6	7	8	9
	WtT			TtW				
	Grades RME to RMK		13,5	Gas Turbine Steam Turbines and Boilers Aux Engines	(66) Regulation (EU) 2015/757			
	LSFO	0,0405	13,2 crude 13,7 blend	ALL ICES Gas Turbine Steam Turbines and Boilers Aux Engines	3,151	0,00005	0,00018	-
	ULSFO	0,0405	13,2	ALL ICES	3,114	0,00005	0,00018	-
	VLSFO	0,041	13,2	ALL ICES	3,206 MEPC245 (66) MRV Regulation	0,00005	0,00018	-
	LFO ISO 8217 Grades RMA to RMD	0,041	13,2	ALL ICES	3,151 MEPC245 (66) Regulation (EU) 2015/757	0,00005	0,00018	-
	MDO MGO ISO 8217 Grades DMX to DMB	0,0427	14,4	ALL ICES	3,206 MEPC245 (66) Regulation (EU) 2015/757	0,00005	0,00018	-
	LNG	0,0491	18.5 20.9	LNG Otto (dual fuel medium speed) LNG Otto (dual fuel slow speed)	2,7505 MEPC245 (66) Regulation (EU) 2015/757	0	0,00011	3,1 1,7

1	2	3	4	5	6	7	8	9
	WtT			TtW				
				LNG Diesel (dual fuel slow speed)				0 ₂
				LBSI				N/A
	LPG	0,046	7,8	ALL# ICEs	3,030 Butane 3,000 Propane MEPC245 (66) Regulation (EU) 2015/757	TBM	TBM	N/A
	H2 (natural gas)	0,12	132	Fuel Cells	0	0	-	N/A
				ICE	0	0	TBM	
	NH3 (natural gas)	0,0186	121	No engine	0	0	TBM	-
	Methanol (natural gas)	0,0199	31,3	ALL# ICEs	1,375 MEPC245 (66) Regulation (EU) 2015/757	TBM	TBM	-
Liquid biofuels	Ethanol Production Pathways of Directive (EU) 2018/2001 100	Value as set out in Annex III of Directive (EU) 2018/2001	$E - \frac{C_{fCO_2}}{LCV}$	ALL# ICEs	1,913 MEPC245 (66) Regulation (EU) 2015/757	TBM	TBM	-
	Bio-diesel Production Pathways of Directive (EU) 2018/2001 Main products / wastes /	0,0268 0,0372 0,044 0,05		Ref. to Directive (EU) 2018/2001	ALL ICEs	2,834	0,00005 TBM	0,00018 TBM

1	2	3	4	5	6	7	8	9
		WtT		TtW				
	Feedstock mix							
	<u>Hydrotreated Vegetable Oil (HVO)</u> <u>Production Pathways of Directive (EU) 2018/2001</u> Main products / wastes / Feedstock mix			ALL ICES	3,115	0,00005	0,00018	-
	<u>Liquefied Bio-LNG methane as transport fuel</u> <u>(Bio-LNG)</u> <u>Production Pathways of Directive (EU) 2018/2001</u> Main products / wastes / Feedstock mix			LNG Otto (dual fuel medium speed)	2,7505			3,1
				LNG Otto (dual fuel slow speed)	MEPC245 (66),	0	0,00011	1,7
				LNG Diesel (dual fuels)	Regulation (EU) 2015/757	0,00005	0,00018	0.2
				LBSI				N/A
	<u>Bio-methanol Production Pathways of Directive (EU) 2018/2001</u>			ALL ICES	1,375	TBM	TBM	⋮
	<u>Other Production Pathways of Directive (EU) 2018/2001</u>			ALL ICES	3,115	0,00005	0,00018	⋮
<u>Gaseous</u>	Bio-H2	<u>Value as set out in</u>	N/A	Fuel Cells	0	0	0	-

1	2	3	4	5	6	7	8	9
	WtT			TtW				
biofuels	Production Pathways of Directive (EU) 2018/2001 Main products / wastes / Feedstock mix	Annex III of Directive (EU) 2018/2001 0,12		ICE	0	0	TBM	
Renewable Fuels of non-Biological Origin (RFNBO) - (e- fuels)	e-diesel	0,0427	N/A Ref. to Directive (EU) 2018/2001	ALL ICES	3,206 MEPC245 (66) Regulation (EU) 2015/757	0,00005	0,00018	-
	e-methanol	0,0199	N/A Ref. to Directive (EU) 2018/2001	All ICES	1,375 MEPC245 (66) Regulation (EU) 2015/757	0,00005	0,00018	-
	e-LNG	0,0491	N/A Ref. to Directive (EU) 2018/2001	LNG Otto (dual fuel medium speed)	2,7505 MEPC245 (66) Regulation (EU) 2015/757	0	0,00011	3.1
				LNG Otto (dual fuel slow speed)				1,7
				LNG Diesel (dual fuels)				0.2
				LBSI				N/A
	e-H2	0,12	N/A 3,6	Fuel Cells	0	0	0	-
				ICE	0	0	TBM	
	e-NH3	0,0186	N/A 0	Fuel Cells No engine	0	N/A	TBM	N/A
				ICE	0	N/A	TBM	N/A

1	2	3	4	5	6	7	8	9
	WtT			TtW				
	<u>e-LPG</u>	<u>N/A</u>	<u>N/A</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
	<u>E-DME</u>	<u>N/A</u>	<u>N/A</u>		<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Others	Electricity	-	106,3 EU <u>ENERGY</u> MIX 2020 72 EU <u>ENERGY</u> MIX 2030	<u>On-shore</u> <u>power</u> <u>supply</u> <u>(OPS)</u>	-	-	-	-

Column 1 identifies the class of the fuels namely Fossils, Liquid Biofuels, Gaseous Biofuels, e-Fuels;

Column 2 identifies the name or the pathways of the relevant fuels within the class. For the Liquid Biofuels, Gaseous Biofuels, RFNBO (e-Fuels) the values for the WtT section shall be taken from Directive (EU) 2018/2001 (without combustion⁴²); for fossils fuels only the default values in the table shall be used.

Column 3 contains the Lower Calorific Value of the fuels expressed in [MJ/g]. **For liquid biofuels, values of Energy content by weight (lower calorific value, MJ/kg) as set out in Annex III of Directive (EU) 2018/2001 shall be converted in MJ/g and used.**

Column 4 contains the WtT GHG emission factors in [gCO_{2eq}/MJ]. **For liquid biofuels, the default values shall be calculated by using the values of E established in accordance with the methodologies laid down in Directive (EU) 2018/2001, Part C of Annex V for all liquid biofuels except bio-LNG and in Part B of Annex VI for bio-LNG, and on the basis of default values associated to the particular biofuel used as a transport fuel and its production pathway, laid down in that Directive, Part D and E of Annex V for all liquid biofuels except bio-LNG and in Part D of Annex VI for bio-LNG. However, the values of E need to be**

⁴² Reference is made to Directive (EU) 2018/2001, Annex V.C.1.(a) to the term e_u 'emissions from the fuel in use'. **The methodology proposed in this Regulation accounts for the combustion of the fuels in the TtW part. For bio-derived fuels, the combustion emissions shall be subtracted by the WtT value. The e_u term is therefore zero for fossil fuels, while the value of the stoichiometric combustion for the bio-derived fuels should be subtracted in the WtT.**

adjusted by subtracting the ratio of the values contained in column 6 (C_f CO₂) and column 3 (LCV). This is required in this regulation, which separates the WtT and the TtW calculations, to avoid double counting of emissions.

contains the CO_{2eq} emissions values in [gCO_{2eq}/MJ]. For fossils fuels only the default values in the table shall be used. For all other fuels, (except were expressly indicated), values shall be calculated by using the methodology or the default values as per in Directive (EU) 2018/2001 deducted of the combustion emissions considering full oxidation of the fuel⁴³.

For RFNBO, default values are to be calculated by using the methodology of the delegated act taken on basis of Article 28(5) of Directive (EU) 2018/2001⁴⁴.

Column 5 identifies the main types/classes of ~~energy converter~~ **fuel consumer units** such as 2 and 4 strokes Internal Combustion Engines (ICE) Diesel or Otto cycle, **Lean-Burn Spark-Ignited (LBSI) engines**, gas turbines, fuel cells, etc.

Column 6 contains the emission factor C_f for CO₂ in [gCO₂/gfuel]. Emissions factors values as specified in the Regulation (EU) 2015/757 (or IMO MEPC245 (66) as amended) shall be used. For all those fuels not contained in Regulation (EU) 2015/757, the default values **contained are specified** in the ~~Table~~ should be used. Values certified by a by ~~an accredited~~ **trusted certifier** (under the relevant provisions made in Directive (EU) 2018/2001) can be used in place of the default values.

Column 7 contains the emission factor C_f for methane in [gCH₄/gfuel]. ~~Default values as contained in the table shall be used. Values certified by an accredited certifier mean of testing can be used in place of the default values.~~ For LNG fuels, C_f for methane are set to zero.

Column 8 contains the emission factor C_f for nitrous oxide in [gN₂O/gfuel]. ~~Default values as contained in the table shall be used. Values certified by an accredited certifier mean of testing can be used in place of the default values.~~

Column 9 identifies the part of fuel lost as fugitive **and slipped** emissions (C_{slip}) measured as % of mass of fuel used by the specific ~~energy converter~~ **fuel consumer unit**. ~~Default values as contained in the table shall be used. Values certified by an accredited certifier mean of testing can be used in place of the default values.~~ For fuels such as LNG for which the fugitive **and slipped** emissions (slip) exists, the amount of fugitive **and slipped** emissions as presented in ~~the~~ Table 4 is expressed in % of the mass of fuel used (Column 9). ~~The values contained in Column 9 shall be used, in accordance with equation (1).~~ The values of C_{slip} in ~~the~~ Table (4) are calculated at 50% of the **full** engine load.

⁴³ Reference is made to Directive (EU) 2018/2001, Annex V.C.1.(a) to the term e_{fu} 'emissions from the fuel in use'

⁴⁴ **or on basis of the corresponding provisions in the amended Directive, according to the progress of the co-legislators**

ANNEX III

~~CRITERIA FOR THE USE OF ZERO-EMISSION TECHNOLOGY AS REFERRED TO IN ARTICLES 5(3)(b) and 7(3), points (d) and (f)~~

The following table provides a list of zero-emission technologies as referred to in Article 5(3)(b), as well as, specific criteria for their use as applicable.

Zero-emission technology	Criteria for use
Fuel cells	Fuel cells used on board for power generation while at berth should be fully powered by renewable and low carbon fuels.
On-board Electricity Storage	The use of on-board electricity storage is allowed irrespective on the source of energy that produced the stored power (on board generation or on shore in case of battery swapping).
On-board Electricity production from wind and solar energy	Any ship that is capable to sustain energy electricity production needs power demand at berth through the use of wind and solar energy.

~~The use of these zero-emission technologies shall continuously achieve emissions that are equivalent to the emissions reductions that would be achieved by using on-shore power supply.~~

ANNEX IV

~~CERTIFICATE TO BE ISSUED BY THE MANAGING BODY OF THE PORT OF CALL IN CASES WHERE SHIPS CANNOT MAKE USE OF OPS FOR JUSTIFIED REASONS (ARTICLE 5(5)) – MINIMUM ELEMENTS TO BE INCLUDED IN THE CERTIFICATE~~

For the purposes of this Regulation, the certificate referred to in Article 5(5) shall contain at least the following information:

- (1) Ship identification
 - (a) IMO number
 - (b) Ship name
 - (c) Call sign
 - (d) Ship type

- (e) Flag
- (2) Port of call
- (3) Location/terminal name
- (4) Arrival date and time (ATA)
- (5) Departure date and time (ATD)

The confirmation from the managing body of the port that the ship was found among any of the following cases:

- the ship made an unscheduled port call for reasons of safety or saving life at sea (Article 5(2-3), point (e))
- the ship was unable to connect to on shore power supply due to unavailable connection points in the port (Article 5(2-3), point (d))
- the on shore power supply equipment on board was found to be incompatible with the shore installation at the port (Article 5(2-3), point (e))
- that the ship used, for a limited period of time on board energy generation, under emergency situations representing immediate risk to life, the ship, or the environment (Article 5(2-3), point (f)).

- (6) Details of the managing body of the port
 - (a) Name
 - (b) contact (phone, email)
- (7) Date of issue

ANNEX V

FORMULAS FOR CALCULATING THE COMPLIANCE BALANCE AND REMEDIAL PENALTY LAID DOWN IN ARTICLE 20(1)

A. FORMULA FOR CALCULATING THE SHIP'S COMPLIANCE BALANCE

For the purpose of calculating the compliance balance of a ship the following formula shall apply:

Compliance balance [gCO_{2eq}/MJ] =	$(GHGIE_{target} - GHGIE_{actual}) \times [\sum_i^{n_{fuel}} M_i \times LCV_i + \sum_i^l E_i]$
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Where:

gCO_{2eq}	Grams of CO ₂ equivalent
$GHGIE_{target}$	Greenhouse gas intensity limit of the energy used on-board a ship according to Article 4(2) of this Regulation
$GHGIE_{actual}$	Yearly average of the greenhouse gas intensity of the energy used on-board a ship calculated for the relevant reporting period

B. FORMULA FOR CALCULATING THE REMEDIAL PENALTY LAID DOWN IN ARTICLE 20(1)

The amount of the **remedial** penalty laid down in Article 20(1) shall be calculated as follows:

Remedial Penalty =	$\frac{ (\text{Compliance balance}) }{GHGIE_{\text{actual}} \times 41000} \times 2400$ <p><i>Compliance balance / GHGIE_{actual}) x conversion factor from MJ to tonnes of VLSFO (41.0 MJ/kg) x EUR 2400</i></p>
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1. Remedial Penalty	2. Is in EUR
3. abs(Compliance balance)	4. Is the absolute value of the compliance balance
5. 41000	6. Is 1 metric ton of VLSFO that is equivalent to 41000 MJ
7. 2400	8. Is the amount to be paid in EUR per equivalent metric ton of VLSFO