



Bruxelles, 04 mars 2022

WK 3260/2022 INIT

LIMITE

TRANS
MAR
ENV
ENER

IND
COMPET
ECO
RECH
CODEC

Ceci est un document destiné à une communauté spécifique de destinataires. La manipulation et la distribution ultérieure sont sous la seule responsabilité des membres de la communauté.

DOCUMENT DE TRAVAIL

De:	Secrétariat général du conseil
A:	Groupe "Transports maritimes"
N° Cion doc.:	ST 10327/21 ADD 1-3
Sujet:	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 – Non-papier de la Présidence sur les Annexes I et II (sous-blocs A.4 et A.5)

Compte tenu des commentaires exprimés par les États membres au groupe « Transports maritimes » sur les annexes I et II de la proposition (sous-blocs A.4 et A.5 aux sens du document WK 15525/21), la Présidence a rédigé ce non-papier incluant à la fois des suggestions rédactionnelles de compromis sur la forme (partie I) et plusieurs approches possibles pour le contenu des annexes (partie II).

Les délégations sont invitées à exprimer leur avis sur les aspects indiqués ci-dessous dans les parties I et II.

Toutes nouvelles modifications portant sur le document ST 12813/1/21 REV1 sont indiquées dans le compromis ci-joint en « **gras souligné** » surligné en vert ou en « ~~barré~~ » surligné en vert.

Partie I

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;~~
 - (c) biofuels and biogas that do not comply with ~~point (a)~~ **the sustainability and greenhouse gas saving criteria set out in Article 29 of Directive (EU) 2018/2001** 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;
 - (d) renewable fuels of non-biological origin and recycled carbon fuels that do not comply with ~~point (b)~~ **the greenhouse gas emission savings thresholds set out in Article 27(3) of Directive (EU) 2018/2001** shall be considered to have the same emission factors as the least favourable fossil fuel pathway for this type of fuels.
2. 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 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 of biofuels, biogas, renewable fuels of non-biological origin and recycled carbon fuels delivered to the ship in the reporting period, provided that actual values are certified under a voluntary scheme of the Directive (EU) 2018/2001.

34. 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.

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 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 Article 5(1) applies, the connection to and use of on-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;
 - (d) the well-to-wake emission factors for each type of fuel consumed at berth and at sea, broken down by well-to-tank **and** tank-to-wake **including and** fugitive **and slipped** emissions, covering all relevant greenhouse gases;
 - (e) the amount of each type of substitute source of energy consumed at berth and at sea.

Rest of the Article : omissis

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
$GHG_{intensity} index \left[\frac{gCO_2eq}{MJ} \right] =$	$\frac{\sum_i^{n_{fuel}} M_{i,j} \times CO_{2eqWtT,i} \times LCV_i + \sum_k^c E_k \times CO_{2eq_{electricity,k}}}{\sum_i^{n_{fuel}} M_{i,j} \times LCV_i + \sum_k^c E_k}$	$\frac{\sum_i^{n_{fuel}} \sum_j^{n_{engine}} M_{i,j} \times \left[\left(1 - \frac{1}{100} C_{engineslipj} \right) \times (CO_{2eqTtW,j}) + \left(\frac{1}{100} C_{engineslipj} \times CO_{2eqTtW,slippage,j} \right) \right]}{\sum_i^{n_{fuel}} M_{i,j} \times LCV_i + \sum_k^c E_k}$

Equation (1)

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

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

Term	Explanation
i	Index corresponding to the fuels delivered to the ship in the reference reporting period
j	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, fuels cells, and waste incinerators
k	Index corresponding to the on-shore power supply connection points electrical charging connection points (e) where electricity is supplied per connection point
n	Total number of fuels delivered to the ship in the reporting period
c	Index corresponding to the number of electrical charging points Total number of on-shore power supply connection points
m	Index corresponding to the Total number of energy fuel consumers units
$M_{i,j}$	Mass of the specific fuel i oxidised in consumed by fuel consumer unit j [gFuel]
E_k	Electricity delivered to the ship per on-shore power supply connection electrical charging connection point k if more than one [MJ]
$CO_{2eqWtT,i}$	WtT GHG emission factor of fuel i [gCO _{2eq} /MJ]
$CO_{2eq_{electricity,k}}$	WtT GHG emission factor associated to the electricity delivered to the ship at berth per on-shore power supply connection electrical charging connection point k [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 used consumed by fuel consumer combustion unit j [%]. C_{slip} includes fugitive and slipped emissions (emissions before the "engine") and slipped emissions (unburnt fuel, measured after the "engine").
$C_{fCO_2,j}, C_{fCH_4,j}, C_{fN_2O,j}$	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 unit combustion-unit j [gCO _{2eq} /gFuel] $CO_{2eq,TtW,j} = \left(C_{fCO_2,j} \times GWP_{CO_2} + C_{fCH_4,j} \times GWP_{CH_4} + C_{fN_2O,j} \times GWP_{N_2O} \right)_i$
$C_{sfCO_2,j}, C_{sfCH_4,j}, C_{sfN_2O,j}$	TtW GHG emissions factors by slipped fuel towards in fuel consumer combustion unit j [gGHG/gFuel]

$CO_{2eq,TtWslippage,j}$	TtW CO₂ equivalent emissions of slipped fuel i towards fuel consumer combustion-unit j [gCO₂eq/gFuel] $CO_{2eq,TtWslippage,j} = \left(C_{sfCO_2,j} \times GWP_{CO_2} + C_{sfCH_4,j} \times GWP_{CH_4} + C_{sfN_2O,j} \times GWP_{N_2O} \right)_i$ 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, <u>which are:</u> $GWP_{CO_2} = 1; GWP_{CH_4} = 29,8, GWP_{N_2O} = 273$

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 factors

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

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 combustion¹. 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.

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

Actual values may be used for biofuels, biogas, renewable fuels of non-biological origin and recycled carbon fuel delivered to the ship in the reporting period, provided that they are certified under a voluntary scheme 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), 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.~~

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

Fuel Bunker Delivery Note (BDN)

For the purposes of this regulation, relevant BDNs of fuels used on board shall contain at least the following information:

- product identification
- fuel mass [t]
- fuel volume [m³]
- fuel density [kg/m³]
- WtT GHG emission factor ~~for CO₂ (carbon factor) [gCO₂/gFuel] and for CO_{2eq} [gCO_{2eq}/gFuel] and related certificate²~~
- Lower Calorific Value [MJ/g] **of the fuel batch, including blends.**

BDN Electricity

For the purposes of this regulation, relevant BDNs 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
- port: name, location (LOCODE), terminal/ berth
- ~~on-shore power supply connection~~~~connection~~~~electrical charging~~ point: OPS-SSE connection point, connection point details
- ~~connection~~~~electrical charging~~ ~~on-shore power supply~~ 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 factors

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

~~For the purpose of this Regulation, the TtW GHG emission factors ($CO_{2eq,TtW,j}$) that shall be used to determine the GHG emissions **default values** are contained in Annex II. The CO₂-eC_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.~~

2 This value is not required in case of fossil fuels referred to in Annex II. For all other fuels, including blends of fossil fuels, this value should be made available together with a separate certificate identifying the fuel production pathway.

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, **in application of Article 9(4)**.

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. 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 engine. The default values are contained in Annex II.

(1) 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	0,1
0,97	0,2
0,95	$\geq 0,3$

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.

(2) **Verification and Certification**

Fuel Class	WtT	TtW
Fossil	Default values shall be used as provided in Table 1 of this Regulation	MRV Regulation CO ₂ carbon factors shall be used for fuels for which such factor is provided For all other emissions factors, default values can be used as provided in Table 1 of this Regulation, alternatively Certified values by mean of laboratory testing or direct emissions measurements
Sustainable Renewable Fuels (Bio Liquids, Bio	CO _{2eq} values as provided in RED II (without combustion) can be used for all fuels whose pathways are included	Emissions factors, default values can be used as provided in Table 1 of this Regulation, alternatively

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

ANNEX II

DEFAULT EMISSION FACTORS

The **default** 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, **except when companies are entitled to divert from these default emissions factors in application of Article 9(3) and (4).**

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:

- (1) TBM stands for To Be Measured
- (2) N/A stands for Not Available
- (3) The dash means not applicable

Table 1 – Default factors

1	2	3	4	5	6	7	8	9
	WtT			TtW				
Class / Feedstock	Pathway name	LCV $\left[\frac{MJ}{g}\right]$	CO_{2eqWtT} $\left[\frac{gCO_2eq}{MJ}\right]$	Energy Converter Fuel consumer Class	C_{fCO_2} $\left[\frac{gCO_2}{gFuel}\right]$	C_{fCH_4} $\left[\frac{gCH_4}{gFuel}\right]$	C_{fN_2O} $\left[\frac{gN_2O}{gFuel}\right]$	C_{slip} As % of the mass of the fuel used by the engine
Fossil	HFO ISO 8217 Grades RME to RMK	0,0405	13,5	ALL ICEs	3,114 MEPC245 (66) Regulation (EU) 2015/757	0,00005	0,00018	-
				Gas Turbine				
				Steam Turbines and Boilers				
				Aux Engines				
	LSFO	0,0405	13,2, crude 13,7 blend	ALL ICEs	3,151	0,00005	0,00018	-

1 **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				
				Gas Turbine				
				Steam Turbines and Boilers				
				Aux Engines				
	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 ² 20.9	LNG Otto (dual fuel medium speed)	2,75 ¹⁵ MEPC245 (66) Regulation (EU) 2015/757	0	0,00011	3,1
				LNG Otto (dual fuel slow speed)				1,7
				LNG Diesel (dual fuel slow speed)				0,2
				LBSI				N/A - N/A
	LPG	0,046	7,8	All ICEs	3,03 ⁰ Butane 3,00 ⁰ Propane MEPC245 (66) Regulation (EU) 2015/757	TBM	TBM	

2 Please note that this figure was erroneously changed in doc. ST 12813/21 and it is not corrected, in line with Commission proposal. A more in-depth discussion on the values of this annex will be necessary at some point.

1	2	3	4	5	6	7	8	9
	WtT			TtW				
	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 E100	0,0268	Ref. to Directive (EU) 2018/2001 $E - \frac{C_{fCO_2}}{LCV}$	All ICEs	1,913 MEPC245 (66) Regulation (EU) 2015/757	TBM	TBM	-
	Bio-diesel Main products / wastes / Feedstock mix	0,0372	Ref. to Directive (EU) 2018/2001 $E - \frac{C_{fCO_2}}{LCV}$	ALL ICEs	2,834	0,00005 TBM	0,00018 TBM	-
	HVO Main products / wastes / Feedstock mix	0,044	Ref. to Directive (EU) 2018/2001 $E - \frac{C_{fCO_2}}{LCV}$	ALL ICEs	3,115	0,00005	0,00018	-
	Bio-LNG Main products / wastes / Feedstock mix	0,05	Ref. to Directive (EU) 2018/2001 $E - \frac{C_{fCO_2}}{LCV}$	LNG Otto (dual fuel medium speed)	2,7505 MEPC245 (66) Regulation (EU) 2015/757	0 0,00005	0,00011 0,00018	3,1
				LNG Otto (dual fuel slow speed)				1,7
				LNG Diesel (dual fuels)				0.2
				LBSI				N/A
Gas ^{eous} biofuels	Bio-H2 Main	0,12	N/A	Fuel Cells	0	0	0	-

1	2	3	4	5	6	7	8	9
	WtT			TtW				
	products / wastes / Feedstock mix			ICE	0	0	TBM	
Renewable Fuels of non-Biological Origin (RFNBO) - (e- fuels)	e-diesel	0,0427	Ref. to Directive (EU) 2018/2001 [TBM]	ALL ICEs	3,206 MEPC245 (66) Regulation (EU) 2015/757	0,00005	0,00018	-
	e-methanol	0,0199	Ref. to Directive (EU) 2018/2001 [TBM]	All ICEs	1,375 MEPC245 (66) Regulation (EU) 2015/757	0,00005 [TBM]	0,00018 [TBM]	-
	e-LNG	0,0491	Ref. to Directive (EU) 2018/2001 [TBM]	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	[3,6]	Fuel Cells	0	0	0	-
				ICE	0	0	TBM	
	e-NH3	0,0186	[0] [TBM]	No engine	0	N/A	TBM	N/A
	<u>e-LPG</u>							[]
	<u>E-DME</u>							[]
Others	Electricity	-	106,3 EU <u>ENERGY</u> MIX 2020 72 EU <u>ENERGY</u> MIX 2030	OPS	-	-	-	-

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

Column 2 identifies the name or the pathway 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 combustion³); 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].

Column 4 contains the **WtT** CO_{2eq} emissions values in [gCO_{2eq}/MJ]. For fossils fuels only the default values in the table shall be used. **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 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.**

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) 2018/2001 (or on basis of the corresponding provisions in the amended Directive, according to the progress of the co-legislators).

~~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 fuel⁴.~~

Column 5 identifies the main types/classes of energy converters such as 2 and 4 strokes Internal Combustion Engines (ICE) Diesel or Otto cycle, **Lean-Burn Spark-Ignited (LBSI) engines**, gas turbines, fuels 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 **are specified** contained 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.

3 ~~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.~~

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

Column 8 contains the emission factor C_f for nitrous oxide in $[gN_2O/gfuel]$. 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. 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 Table 1 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 Table (1) are calculated at 50% of the full engine load.

Partie II

- **Global warming potentials (GWP)**

In the latest compromise, GWP 100 values from IPCC AR6 are used (fossil value for GWP_{CH_4}) :

$GWP_{CO_2} = 1$; $GWP_{CH_4} = 29,8$; $GWP_{N_2O} = 273$.

The Directive (EU) 2018/2001 also proposes CO₂ equivalences in Paragraph 4 of Part C of Annex V. It could be referred to the Directive with the following mention: “CO₂, CH₄, N₂O Global Warming Potential over 100 years, **which are defined in Directive (EU) 2018/2001, Paragraph 4 of Part C of Annex V**”

Question 1: Would you rather maintain IPCC AR6 values or refer to the Directive (EU) 2018/2001?

- **BDN**

Under existing MARPOL Annex VI regulations, Appendix V, information to be included in the bunker delivery note is specified and does not contain some items needed for the application of this Regulation. The Presidency has identified two options:

OPTION 1/ Make reference to MARPOL Annex VI REGULATIONS and only add missing items necessary for the implementation of this regulation:

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, relevant BDNs of fuels used on board shall be complemented with at least the following information:

- **WtT GHG emission factor CO_{2eq} [gCO_{2eq}/gFuel] and related certificate¹**
- **Lower Calorific Value [MJ/g] of the fuel batch, including blends.**

OPTION 2/ Create another model of BDN that should be used in order to fulfil the obligation of this regulation:

For the purposes of this regulation, relevant BDNs of fuels used on board shall follow the template defined in Annex Va [TO BE DEFINED].

Question 2: Would you prefer option 1 or option 2 above? Do you see any other option?

1 This value is not required in case of fossil fuels referred to in Annex II. For all other fuels, including blends of fossil fuels, this value should be made available together with a separate certificate identifying the fuel production pathway.

- **Liquid biofuels pathways**

The Commission proposed to present some of the main production pathways for liquid biofuels in the Table of Annex II. For each row, a specific pathway and corresponding default values were chosen among many other pathways possible. In that way, the table illustrates the calculation of GHG intensity index for some liquid biofuels, but does not cover all liquid biofuel production pathways.

Among values useful to calculate GHG intensity index for liquid biofuels, LCV values and E values can be found in the Directive (EU) 2018/2001, respectively in Annex III, and in Annexes V and VI. However, CfC02, CfCH4 and CfN2O cannot be derived from the Directive.

Thus, possible options are the following:

OPTION 1/ Maintain the Table as it is in the Commission proposal for liquid biofuels, with numerical default values corresponding to specific pathways. Other pathways might be further added in a future revision. This option however allows to explicitly provide default values only for a few production pathways in the regulation.

OPTION 2/ Substitute numerical default values with references to the RED on the WtT part, and maintain numeric default values for the TtW part. With this option, there is no more mention to specific production pathways but to categories of biofuels (ethanol, biodiesel, HVO, biomethane, biomethanol for instance), to which a common default value on the TtW part is associated. An example could be:

HVO							
Main products - wastes - Feedstock mix	0,044	Ref. to Directive (EU) 2018/2001	ALL ICEs	3,115	0,00005	0,00018	-
Production Pathways of Directive (EU) 2018/2001	Annex III of Directive (EU) 2018/2001	$E - \frac{C_{fCO_2}}{LCV}$					

This option would also not display a few production pathways. Thus, a category “others” might need to be created, with a conservative value on the TtW part.

OPTION 3/ Remove liquid biofuels from the Table and consider *E* values from the RED as their GHG intensity index. While this option would allow a simpler presentation in the Annex for those fuels, it would 1/ not allow to have a calculation as accurate as for fossil fuels on the TtW part, 2/ imply that Equation 1 of Annex I is not applicable for liquid biofuels and blends containing liquid biofuels and 3/ prevent companies from using actual values certified by means of laboratory testing or direct emissions measurements for the tank-to-wake emission factors of those fuels.

Question 3: Would you prefer option 1, option 2 or option 3 above? Do you see any other option?

- **RFNBOs**

As already stated in “Partie I”, for RFNBO, default values should be calculated by using the methodology of the forthcoming delegated act taken on basis of Article 28.5 of Directive (EU) 2018/2001 (or on basis of the corresponding provisions in the amended Directive, according to the progress of the co-legislators), when available possibly this year according to the Commission.

Question 4: Would you prefer, in the meantime, to rely on JEC study numerical values, as proposed in the Commission proposal, or make reference to the upcoming delegated act?

- **Calculation of the reward factor for the use of wind propulsion systems**

The method to calculate f_{wind} in Annex I relies on two factors (P_{Wind} and P_{Tot}), which are not precisely defined.

Some delegations, in their written comments, proposed to refer to and use some factors defined in the *2021 Guidance on treatment of innovative energy efficiency technologies for calculation and verification of the attained EEDI and EEXI* (MEPC.1/Circ.896). The Presidency notes that $f_{\text{eff}} * P_{\text{eff}}$ as defined in this Guidance, as well as power factors such as P_{ME} and P_{AE} as defined in the EEXI calculation Guidelines (MEPC.333(76)), could be considered for this purpose.

Question 5: Would you agree to use EEDI/EEXI Guidelines to define more precisely P_{Wind} and P_{Tot} ? If yes, the Presidency welcomes any concrete proposal for amendments. Do you have any other suggestion on this provision?