Council Directive (EU) 2015/652 of 20 April 2015 laying down calculation methods and reporting requirements pursuant to Directive 98/70/EC of the European Parliament and of the Council relating to the quality of petrol and diesel fuels

COUNCIL DIRECTIVE (EU) 2015/652

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laying down calculation methods and reporting requirements pursuant to Directive 98/70/EC of the European Parliament and of the Council relating to the quality of petrol and diesel fuels

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998 relating to the quality of petrol and diesel fuels and amending Council Directive 93/12/EEC[(1)], and in particular Article 7a(5) thereof,

Having regard to the proposal from the European Commission,

Whereas:

(1) The method for calculating greenhouse gas emissions of fuels and other energy from non-biological sources to be established pursuant to Article 7a(5) of Directive 98/70/EC should yield reporting of sufficient accuracy, so that the Commission can critically assess the performance of suppliers in meeting their obligations under Article 7a(2) of that Directive. The calculation method should ensure accuracy, while having due regard for the complexity of the associated administrative requirements. At the same time, it should incentivise suppliers to reduce the greenhouse gas intensity of the fuel they supply. Careful consideration should also be given to the impact of the calculation method on refineries in the Union. Hence, the calculation method should be based on average greenhouse gas intensities that represent an industry average value which is typical for a particular fuel. This would have the advantage of reducing the administrative burden on suppliers and Member States. At this stage, the proposed calculation method should not require differentiation of the greenhouse gas intensity of fuel on the basis of the source of the raw material, as this would affect current investments in certain refineries in the Union.

(2) Reporting requirements for suppliers which are small and medium-sized enterprises (SMEs) as defined in Commission Recommendation 2003/361/EC[(2)] should be minimised as far as possible in the context of Article 7a(1) of Directive 98/70/EC. Similarly, importers of petrol and diesel refined outside the Union should not be obliged to provide detailed information about the sources of the crude oils used to make those fuels, as this information may not be available or may be difficult to obtain.

(3) In order to incentivise further greenhouse gas emission reductions, savings claimed from upstream emission reductions (UERs), including from flaring and venting, should

be included in the calculation of suppliers' life cycle greenhouse gas emissions. In order to facilitate the claiming of UERs by suppliers, the use of various emission schemes should be allowed for calculating and certifying emission reductions. Only UER projects which start after the date of the establishment of the fuel baseline standard set out in Article 7a(5)(b) of Directive 98/70/EC, i.e. 1 January 2011, should be eligible.

(4) Weighted average greenhouse gas default values representing the crude oils consumed in the Union provide a simple calculation method by which suppliers may determine the greenhouse gas content of the fuel they supply.

(5) UERs should be estimated and validated in accordance with principles and standards identified in International Standards, and in particular ISO 14064, ISO 14065 and ISO 14066.

(6) It is furthermore appropriate to facilitate the implementation by Member States of legislation on UERs, including from flaring and venting. To this end, non-legislative guidance should be prepared under the auspices of the Commission on approaches to quantify, verify, validate, monitor and report such UERs (including reductions in flaring and venting at production sites) prior to the end of the transposition period set in Article 7 of this Directive.

(7) Article7a(5)(b) of Directive 98/70/EC requires the establishment of a method to determine the fuel baseline standard based on the life cycle greenhouse gas emissions per unit of energy from fossil fuels in 2010. The fuel baseline standard should be based on the quantities of diesel, petrol, non-road gas oil, liquefied petroleum gas (LPG) and compressed natural gas (CNG) consumed using data officially reported by the Member States to the United Nations Framework Convention on Climate Change (UNFCCC) in 2010. The fuel baseline standard should not be the fossil fuel comparator that is used for calculating greenhouse gas savings from biofuels, which should remain as set out in Annex IV to Directive 98/70/EC.

(8) Since the composition of the relevant fossil fuel mix changes little from year to year, the aggregate variation in the greenhouse gas intensity of the fossil fuels from year to year will also be small. It is therefore appropriate that the fuel baseline standard be based on the 2010 Union average consumption data as reported by the Member States to the UNFCCC.

(9) The fuel baseline standard should represent an average upstream greenhouse gas intensity and the intensity of the fuel of a refinery of average complexity for fossil fuels. Hence, the fuel baseline standard should be calculated using the respective average fuel default values. The fuel baseline standard should remain unchanged for the period up until 2020, in order to provide regulatory certainty to suppliers in respect of their obligations to reduce the greenhouse gas intensity of the fuels they supply.

(10) Article 7a(5)(d) of Directive 98/70/EC provides for the adoption of a method to calculate the contribution of electric road vehicles to reduce life cycle greenhouse gas emissions. Pursuant to that Article, the calculation method should be compatible with Article 3(4) of Directive 2009/28/EC of the European Parliament and of the

Council[3]. To ensure this compatibility, the same adjustment factor should be used for the powertrain efficiency.

(11) Electricity supplied for use in road transport may be reported by suppliers, as laid down in Article 7a(1) of Directive 98/70/EC, as part of their annual reports to the Member States. In order to limit administrative costs, it is appropriate that the calculation method be based on an estimate rather than on an actual measurement of the consumption of electricity in an electric road vehicle or motorcycle for the purpose of supplier reporting.

(12) It is appropriate to include a detailed approach for estimating the quantity and the greenhouse gas intensity of biofuels in cases where processing of a biofuel and a fossil fuel occurs during the same process. A specific method is needed because the resulting quantity of the biofuel is not measurable, such as during co-hydro treatment of vegetable oils with a fossil fuel. Article 7d(1) of Directive 98/70/EC stipulates that the life cycle greenhouse gas emissions of biofuels are, for the purposes of Article 7a and Article 7b(2) of that Directive, to be calculated with the same method. Therefore, the certification of greenhouse gas emissions by recognised voluntary schemes is as valid for the purposes of Article 7a as it is for the purposes of Article 7b(2) of Directive 98/70/EC.

(13) The supplier reporting requirement laid down in Article 7a(1) of Directive 98/70/EC should be supplemented by a harmonised format and harmonised definitions of the data to be reported. A harmonisation of the definitions of data is needed for the proper execution of the greenhouse gas intensity calculation linked to an individual supplier's reporting obligations, as the data form key inputs into the calculation method harmonised pursuant to Article 7a(5)(a) of Directive 98/70/EC. These data include the supplier's identification, the quantity of fuel or energy placed on the market and the fuel or energy type placed on the market.

(14) The supplier reporting requirement laid down in Article 7a(1) of Directive 98/70/EC should be supplemented by harmonised reporting requirements, a reporting format and harmonised definitions for Member State reporting to the Commission pertaining to the greenhouse gas performance of fuels consumed in the Union. In particular, these reporting requirements will enable the updating of the fossil fuel comparator described in point 19 of Part C of Annex IV to Directive 98/70/EC and point 19 of Part C of Annex V to Directive 2009/28/EC, and they will facilitate the reporting required pursuant to Articles 8(3) and 9(2) of Directive 98/70/EC as well as the updating of the calculation method to technical and scientific progress, in order to ensure that it meets its intended purpose. These data should include the quantity of fuel or energy placed on the market and fuel or energy type, the place of purchase and the origin of the fuel or energy placed on the market.

(15) It is appropriate for Member States to allow suppliers to fulfil their reporting requirements by relying on equivalent data being collected pursuant to other Union or national legislation so as to reduce the administrative burden, provided that the reporting is conducted in accordance with the requirements set out in Annex IV and the definitions laid down in Annexes I and III.

(16) In order to facilitate reporting by groups of suppliers pursuant to Article 7a(4) of Directive 98/70/EC, Article 7a(5)(c) of that Directive allows for the establishment of any necessary rules. It is desirable to facilitate such reporting in order to avoid disruption to physical fuel movements, since different suppliers place different fuels of differing proportions on the market, and hence may have to deploy different levels of resources to meet the greenhouse gas reduction target. It is therefore necessary to harmonise the definitions of the suppliers' identification, the quantity of fuel or energy placed on the market, the fuel or energy type, the place of purchase and the origin of the fuel or energy placed on the market. Furthermore, to avoid double counting in joint supplier reporting pursuant to Article 7a(4), it is appropriate to harmonise the implementation of the calculation and reporting method in the Member States, including the reporting to the Commission, so that the requisite information from a group of suppliers relates to a specific Member State.

(17) Pursuant to Article 8(3) of Directive 98/70/EC, Member States are to submit an annual report of national fuel quality data for the preceding calendar year in accordance with the format established in Commission Decision 2002/159/EC[(4)]. To cover the amendments introduced to Directive 98/70/EC by Directive 2009/30/EC of the European Parliament and of the Council[(5)], and the subsequent additional reporting requirements on the Member States, and in the interest of effectiveness and harmonisation, it is necessary to clarify which information should be reported, and to adopt a format for the submission of data by suppliers and Member States.

(18) The Commission presented a draft measure to the Committee established by Directive 98/70/EC on 23 February 2012. The Committee was unable to adopt an opinion by the necessary qualified majority. It is therefore appropriate for the Commission to present a proposal to the Council pursuant to Article 5a(4) of Council Decision 1999/468/EC[(6)],

HAS ADOPTED THIS DIRECTIVE:

Article 1

Subject matter — Scope

1 This Directive lays down rules on calculation methods and reporting requirements in accordance with Directive 98/70/EC.

2 This Directive applies to fuels used to propel road vehicles, non-road mobile machinery (including inland waterway vessels when not at sea), agricultural and forestry tractors, recreational craft when not at sea and electricity for use in road vehicles.

Article 2

Definitions

For the purposes of this Directive, and in addition to the definitions already contained in Directive 98/70/EC, the following definitions apply:

(1) 'upstream emissions' means all greenhouse gas emissions occurring prior to the raw material entering a refinery or a processing plant where the fuel, as referred to in Annex I, was produced;

(2) 'natural bitumen' means any source of refinery raw material that:

(a) has an American Petroleum Institute (API) gravity of 10 degrees or less when situated in a reservoir formation at the place of extraction as defined pursuant to the testing method of the American Society for Testing and Materials (ASTM)[7] D287;

(b) has an annual average viscosity at reservoir temperature greater than that calculated by the equation: Viscosity (Centipoise) = $518{,}98^{e-0{,}038T}$, where T is the temperature in Celsius;

(c) falls within the definition for tar sands under combined nomenclature (CN) code 2714 as outlined in Council Regulation (EEC) No 2658/87[8]; and

(d) where the mobilisation of the source of the raw material is achieved by mining extraction or thermally enhanced gravity drainage where the thermal energy is mainly derived from sources other than the feedstock source itself;

(3) 'oil shale' means any source of refinery raw material as situated in a rock formation containing solid kerogen and falling within the definition for oil shale under CN code 2714 as outlined in Regulation (EEC) No 2658/87. Mobilisation of the source of the raw material is achieved by mining extraction or thermally enhanced gravity drainage;

(4) 'fuel baseline standard' means a fuel baseline standard based on the life cycle greenhouse gas emissions per unit of energy from fossil fuels in 2010;

(5) 'conventional crude' means any refinery raw material exhibiting an API gravity that is higher than 10 degrees when situated in a reservoir formation at its place of origin as measured per testing method ASTM D287, and not falling within the definition for CN code 2714 as set out in Regulation (EEC) No 2658/87.

Article 3

Method for calculating the greenhouse gas intensity of fuels and energy supplied other than biofuels and reporting by suppliers

1 For the purposes of Article 7a(2) of Directive 98/70/EC, Member States shall ensure that suppliers use the calculation method set out in Annex I to this Directive to determine the greenhouse gas intensity of the fuels they supply.

2 For the purposes of the second subparagraph of Article 7a(1) and of Article 7a(2) of Directive 98/70/EC, Member States shall require suppliers to report data using the definitions and the calculation method set out in Annex I to this Directive. The data shall be reported annually using the template set out in Annex IV to this Directive.

3 For the purposes of Article 7a(4) of Directive 98/70/EC, any Member State shall ensure that a group of suppliers choosing to be considered as a single supplier meets its obligation under Article 7a(2) within that Member State.

4 For suppliers that are SMEs, Member States shall apply the simplified method set out in Annex I to this Directive.

Article 4

Calculation of fuel baseline standard and greenhouse gas intensity reduction

For the purposes of verifying compliance by suppliers with their obligation under Article 7a(2) of Directive 98/70/EC, Member States shall require suppliers to compare their achieved reductions of life cycle greenhouse gas emissions from fuels and from electricity to the fuel baseline standard set out in Annex II to this Directive.

Article 5

Reporting by Member States

1 When submitting reports to the Commission under Article 8(3) of Directive 98/70/EC, Member States shall provide the Commission with data related to compliance with Article 7a of that Directive, as defined in Annex III to this Directive.

2 Member States shall use the ReportNet tools of the European Environment Agency provided pursuant to Regulation (EC) No 401/2009 of the European Parliament and of the Council[9] for the submission of the data set out in Annex III to this Directive. The data shall be transmitted by the Member States by means of electronic data transfer to the Central Data Repository managed by the European Environment Agency.

3 The data shall be provided annually using the template set out in Annex IV. Member States shall notify the Commission of the date of transmission and the contact name of the competent authority responsible for verifying and reporting the data to the Commission.

Article 6

Penalties

Member States shall lay down the rules on penalties applicable to infringements of national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate and dissuasive. Member States shall notify those provisions to the Commission by 21 April 2017 and shall notify it without delay of any subsequent amendment affecting them.

Article 7

Transposition

1 Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 21 April 2017 at the latest. They shall immediately inform the Commission thereof.

2 When Member States adopt those measures, they shall contain a reference to this Directive or shall be accompanied by such a reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

3 Member States shall communicate to the Commission the text of the main measures of national law which they adopt in the field covered by this Directive.

Article 8

Entry into force

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

Article 9

Addressees

This Directive is addressed to the Member States.

Done at Luxembourg, 20 April 2015.

For the Council

The President

J. DŪKLAVS

ANNEX I

METHOD FOR THE CALCULATION AND REPORTING OF THE LIFE CYCLE GREENHOUSE GAS INTENSITY OF FUELS AND ENERGY BY SUPPLIERS

Part 1

Calculation of a supplier's greenhouse gas intensity of fuels and energy

The greenhouse gas intensity for fuels and energy is expressed in terms of grams of carbon dioxide equivalent per mega joule of fuel (gCO_{2eq}/MJ).

1. The greenhouse gases taken into account for the purposes of calculating the greenhouse gas intensity of fuel is carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4). For the purpose of calculating CO_2 equivalence, emissions of those gases are valued in terms of CO_2 equivalent emissions, as follows:

CO_2: 1;	CH_4: 25;	N_2O: 298

2. Emissions from the manufacture of machinery and equipment utilised in extraction, production, refining and consumption of fossil fuels are not taken into account in the greenhouse gas calculation.

3. A supplier's greenhouse gas intensity from the life cycle greenhouse gas emissions of all fuels and energy supplied shall be calculated in accordance with the formula below:

$$\text{A supplier's greenhouse gas intensity}_{(\#)} = \frac{\sum_x (GHH_x \times AF \times MJ_x) - UER}{\sum_x MJ_x}$$

where:

(a) '#' means the supplier's identification (i.e. the identification of the entity liable to pay excise duty) defined in Commission Regulation (EC) No 684/2009[10] as the Trader Excise Number (System for Exchange of Excise Data (SEED) registration number or value added tax (VAT) identification number in point 5(a) of Table 1 of Annex I to that Regulation for Destination Type codes 1 to 5 and 8), which is also the entity liable to pay the excise duty in accordance with Article 8 of Council Directive 2008/118/EC[11] at the time that excise duty became chargeable in accordance with Article 7(2) of Directive 2008/118/EC. If this identification is not available, Member States shall ensure that an equivalent means of identification is established in accordance with a national excise duty reporting scheme;

(b) 'x' means the fuel and energy types falling within the scope of this Directive as expressed in point17(c) of Table 1 of Annex I to Regulation (EC) No 684/2009. If these data are not available, Member States shall collect equivalent data in accordance with a nationally established excise duty reporting scheme;

(c) 'MJ_x' means the total energy supplied and converted from reported volumes of fuel 'x' expressed in mega joules. This is calculated as follows:

(i) The quantity of each fuel per fuel type

It is derived from data reported pursuant to points 17(d), (f) and (o) of Table 1 of Annex I to Regulation (EC) No 684/2009. Biofuel quantities are converted to their lower-heat-value energy content pursuant to the energy densities set out in Annex III to Directive 2009/28/EC. Quantities of fuels from non-biological origin are converted to their lower-heat-value energy content pursuant to energy densities set out in Appendix 1 to the Joint Research Centre-EUCAR-CONCAWE (JEC)[(12)] Well-to-Tank report (version 4) of July 2013[(13)];

(ii) Simultaneous co-processing of fossil fuels and biofuels

Processing includes any modification during the life cycle of a fuel or energy supplied causing a change to the molecular structure of the product. The addition of denaturant does not fall under this processing. The quantity of biofuels co-processed with fuels from non-biological origin reflects the post-processing state of the biofuel. The quantity of the co-processed biofuel is determined according to the energy balance and efficiency of the co-processing process as set out in point 17 of Part C of Annex IV to Directive 98/70/EC.

Where multiple biofuels are blended with fossil fuels, the quantity and type of each biofuel is taken into account in the calculation and reported by suppliers to the Member States.

The quantity of biofuel supplied that does not meet the sustainability criteria referred to in Article 7b(1) of Directive 98/70/EC is counted as fossil fuel.

E85 petrol-ethanol blend shall be calculated as a separate fuel for the purpose of Article 6 of Regulation (EC) No 443/2009 of the European Parliament and of the Council[(14)].

If quantities are not collected pursuant to Regulation (EC) No 684/2009, Member States shall collect equivalent data in accordance with a nationally established excise duty reporting scheme;

(iii) Quantity of electricity consumed

This is the amount of electricity consumed in road vehicles or motorcycles where a supplier reports this amount of energy to the relevant authority in each Member State in accordance with the following formula:

Electricity consumed = distance travelled (km) × electricity consumption efficiency (MJ/km);

(d) Upstream emission reduction (UER)

'UER' is the upstream emission reduction of greenhouse gases claimed by a supplier, measured in gCO_{2eq} if quantified and reported in accordance with the following requirements:

(i) Eligibility

UERs shall only be applied to the upstream emission's part of the average default values for petrol, diesel, CNG or LPG.

UERs originating from any country may be counted as a reduction in greenhouse gas emissions against fuels from any feedstock source supplied by any supplier.

UERs shall only be counted if they are associated with projects that have started after 1 January 2011.

It is not necessary to prove that UERs would not have taken place without the reporting requirement set out in Article 7a of Directive 98/70/EC;

(ii) Calculation

UERs shall be estimated and validated in accordance with principles and standards identified in International Standards, and in particular ISO 14064, ISO 14065 and ISO 14066.

The UERs and baseline emissions are to be monitored, reported and verified in accordance with ISO 14064 and providing results of equivalent confidence of Commission Regulation (EU) No 600/2012[15] and Commission Regulation (EU) No 601/2012[16]. The verification of methods for estimating UERs must be done in accordance with ISO 14064-3 and the organisation verifying this must be accredited in accordance with ISO 14065;

(e) '$GHGi_x$' is the greenhouse gas intensity of fuel or energy 'x' expressed in gCO_{2eq}/MJ. Suppliers shall calculate the greenhouse gas intensity of each fuel or energy as follows:

(i) Greenhouse gas intensity of fuels from a non-biological origin is the 'weighted life cycle greenhouse gas intensity' per fuel type listed in the last column of the table under point 5 of Part 2 of this Annex;

(ii) Electricity is calculated as described in point 6 of Part 2;

(iii) Greenhouse gas intensity of biofuels

The greenhouse gas intensity of biofuels meeting the sustainability criteria referred to in Article 7b(1) of Directive 98/70/EC is calculated in accordance with Article 7d of that Directive. In case data on the life cycle greenhouse gas emissions of biofuels was obtained in accordance with an agreement or scheme that has been the subject of a decision pursuant to Article 7c(4) of Directive 98/70/EC covering Article 7b(2) of that Directive, this data is also to be used to establish the greenhouse gas intensity of biofuels under Article 7b(1) of that Directive. The greenhouse gas intensity for biofuels not meeting the sustainability criteria referred to in Article 7b(1) of Directive 98/70/EC is equal to the greenhouse intensity of the respective fossil fuel derived from conventional crude oil or gas;

(iv) Simultaneous co-processing of fuels from non-biological origin and biofuels

The greenhouse gas intensity of biofuels co-processed with fossil fuels shall reflect the post-processing state of the biofuel;

(f) 'AF' represents the adjustment factors for powertrain efficiencies:

Predominant conversion technology	**Efficiency factor**
Internal combustion engine	1
Battery electric powertrain	0,4
Hydrogen fuel cell electric powertrain	0,4

Part 2

Reporting by suppliers for fuels other than biofuels

1. UERs of fossil fuels

In order for UERs to be eligible for the purposes of the reporting and calculation method, suppliers shall report the following to the authority designated by the Member States:

(a) the starting date of the project, which must be after 1 January 2011;

(b) the annual emission reductions in gCO_{2eq};

(c) the duration for which the claimed reductions occurred;

(d) the project location closest to the source of the emissions in latitude and longitude coordinates in degrees to the fourth decimal place;

(e) the baseline annual emissions prior to installation of reduction measures and annual emissions after the reduction measures have been implemented in gCO_{2eq}/MJ of feedstock produced;

(f) the non-reusable certificate number uniquely identifying the scheme and the claimed greenhouse gas reductions;

(g) the non-reusable number uniquely identifying the calculation method and the associated scheme;

(h) where the project relates to oil extraction, the average annual historical and reporting year gas-to-oil ratio (GOR) in solution, reservoir pressure, depth and well production rate of the crude oil.

2. Origin

'Origin' means the feedstock trade name listed in point 7 of Part 2 of this Annex, but only where suppliers hold the necessary information by virtue of:

(a) being a person or undertaking importing crude oil from third countries or receiving a crude oil delivery from another Member State pursuant to Article 1 of Council Regulation (EC) No 2964/95[17]; or

(b) arrangements to share information agreed with other suppliers.

In all other cases, origin shall refer to whether the fuel is of EU or non-EU origin.

The information collected and reported by suppliers to the Member States concerning the origin of fuels shall be confidential, but this shall not prevent the publication by the Commission of general information or information in summary form which does not contain details relating to individual undertakings;

For biofuels, origin means the biofuel production pathway set out in Annex IV to Directive 98/70/EC.

Where multiple feedstocks are used, suppliers shall report on the quantity in metric tonnes of finished product of each feedstock produced in the respective processing facility during the reporting year.

3. Place of purchase

'Place of purchase' means the country and name of the processing facility where the fuel or energy underwent the last substantial transformation used to confer the origin of the fuel or energy in accordance with Commission Regulation (EEC) No 2454/93[18].

4. SMEs

By way of derogation for suppliers that are SMEs, 'origin' and 'place of purchase' is either EU or non-EU, as appropriate, irrespective of whether they import crude oil or they supply petroleum oils and oils obtained from bituminous materials.

5. Average life cycle greenhouse gas intensity default values for fuels other than biofuels and electricity

Raw material source and process	**Fuel placed on the market**	**Life cycle GHG intensity (gCO_{2eq}/ MJ)**	**Weighted life cycle GHG intensity (gCO_{2eq}/MJ)**
Conventional crude	Petrol	93,2	93,3
Natural Gas-to-Liquid		94,3	
Coal-to-Liquid		172	
Natural bitumen		107	
Oil shale		131,3	
Conventional crude	Diesel or gasoil	95	95,1
Natural Gas-to-Liquid		94,3	
Coal-to-Liquid		172	
Natural bitumen		108,5	
Oil shale		133,7	

Any fossil sources	Liquefied Petroleum Gas in a spark ignition engine	73,6	73,6
Natural Gas, EU mix	Compressed Natural Gas in a spark ignition engine	69,3	69,3
Natural Gas, EU mix	Liquefied Natural Gas in a spark ignition engine	74,5	74,5
Sabatier reaction of hydrogen from non-biological renewable energy electrolysis	Compressed synthetic methane in a spark ignition engine	3,3	3,3
Natural gas using steam reforming	Compressed Hydrogen in a fuel cell	104,3	104,3
Electrolysis fully powered by non-biological renewable energy	Compressed Hydrogen in a fuel cell	9,1	9,1
Coal	Compressed Hydrogen in a fuel cell	234,4	234,4
Coal with Carbon Capture and Storage of process emissions	Compressed Hydrogen in a fuel cell	52,7	52,7
Waste plastic derived from fossil feedstocks	Petrol, diesel or gasoil	86	86

6. Electricity

For the reporting by energy suppliers of electricity consumed by electric vehicles and motorcycles, Member States should calculate national average life cycle default values in accordance with appropriate International Standards.

Alternatively, Member States may permit their suppliers to establish greenhouse gas intensity values (gCO_{2eq}/MJ) for electricity from data reported by Member States on the basis of:

(a) Regulation (EC) No 1099/2008 of the European Parliament and of the Council[19];

(b) Regulation (EU) No 525/2013 of the European Parliament and of the Council[20]; or

(c) Commission Delegated Regulation (EU) No 666/2014[21].

7. Feedstock trade name

Country	**Feedstock trade name**	**API**	**Sulphur (wt %)**

Abu Dhabi	Al Bunduq	38,5	1,1
Abu Dhabi	Mubarraz	38,1	0,9
Abu Dhabi	Murban	40,5	0,8
Abu Dhabi	Zakum (Lower Zakum/Abu Dhabi Marine)	40,6	1
Abu Dhabi	Umm Shaif (Abu Dhabi Marine)	37,4	1,5
Abu Dhabi	Arzanah	44	0
Abu Dhabi	Abu Al Bu Khoosh	31,6	2
Abu Dhabi	Murban Bottoms	21,4	Not available (NA)
Abu Dhabi	Top Murban	21	NA
Abu Dhabi	Upper Zakum	34,4	1,7
Algeria	Arzew	44,3	0,1
Algeria	Hassi Messaoud	42,8	0,2
Algeria	Zarzaitine	43	0,1
Algeria	Algerian	44	0,1
Algeria	Skikda	44,3	0,1
Algeria	Saharan Blend	45,5	0,1
Algeria	Hassi Ramal	60	0,1
Algeria	Algerian Condensate	64,5	NA
Algeria	Algerian Mix	45,6	0,2
Algeria	Algerian Condensate (Arzew)	65,8	0
Algeria	Algerian Condensate (Bejaia)	65,0	0
Algeria	Top Algerian	24,6	NA
Angola	Cabinda	31,7	0,2
Angola	Takula	33,7	0,1
Angola	Soyo Blend	33,7	0,2
Angola	Mandji	29,5	1,3
Angola	Malongo (West)	26	NA
Angola	Cavala-1	42,3	NA
Angola	Sulele (South-1)	38,7	NA
Angola	Palanca	40	0,14
Angola	Malongo (North)	30	NA

Angola	Malongo (South)	25	NA
Angola	Nemba	38,5	0
Angola	Girassol	31,3	NA
Angola	Kuito	20	NA
Angola	Hungo	28,8	NA
Angola	Kissinje	30,5	0,37
Angola	Dalia	23,6	1,48
Angola	Gimboa	23,7	0,65
Angola	Mondo	28,8	0,44
Angola	Plutonio	33,2	0,036
Angola	Saxi Batuque Blend	33,2	0,36
Angola	Xikomba	34,4	0,41
Argentina	Tierra del Fuego	42,4	NA
Argentina	Santa Cruz	26,9	NA
Argentina	Escalante	24	0,2
Argentina	Canadon Seco	27	0,2
Argentina	Hidra	51,7	0,05
Argentina	Medanito	34,93	0,48
Armenia	Armenian Miscellaneous	NA	NA
Australia	Jabiru	42,3	0,03
Australia	Kooroopa (Jurassic)	42	NA
Australia	Talgeberry (Jurassic)	43	NA
Australia	Talgeberry (Up Cretaceous)	51	NA
Australia	Woodside Condensate	51,8	NA
Australia	Saladin-3 (Top Barrow)	49	NA
Australia	Harriet	38	NA
Australia	Skua-3 (Challis Field)	43	NA
Australia	Barrow Island	36,8	0,1
Australia	Northwest Shelf Condensate	53,1	0
Australia	Jackson Blend	41,9	0

Australia	Cooper Basin	45,2	0,02
Australia	Griffin	55	0,03
Australia	Buffalo Crude	53	NA
Australia	Cossack	48,2	0,04
Australia	Elang	56,2	NA
Australia	Enfield	21,7	0,13
Australia	Gippsland (Bass Strait)	45,4	0,1
Azerbaijan	Azeri Light	34,8	0,15
Bahrain	Bahrain Miscellaneous	NA	NA
Belarus	Belarus Miscellaneous	NA	NA
Benin	Seme	22,6	0,5
Benin	Benin Miscellaneous	NA	NA
Belize	Belize Light Crude	40	NA
Belize	Belize Miscellaneous	NA	NA
Bolivia	Bolivian Condensate	58,8	0,1
Brazil	Garoupa	30,5	0,1
Brazil	Sergipano	25,1	0,4
Brazil	Campos Basin	20	NA
Brazil	Urucu (Upper Amazon)	42	NA
Brazil	Marlim	20	NA
Brazil	Brazil Polvo	19,6	1,14
Brazil	Roncador	28,3	0,58
Brazil	Roncador Heavy	18	NA
Brazil	Albacora East	19,8	0,52
Brunei	Seria Light	36,2	0,1
Brunei	Champion	24,4	0,1
Brunei	Champion Condensate	65	0,1
Brunei	Brunei LS Blend	32	0,1
Brunei	Brunei Condensate	65	NA
Brunei	Champion Export	23,9	0,12
Cameroon	Kole Marine Blend	34,9	0,3

Cameroon	Lokele	21,5	0,5
Cameroon	Moudi Light	40	NA
Cameroon	Moudi Heavy	21,3	NA
Cameroon	Ebome	32,1	0,35
Cameroon	Cameroon Miscellaneous	NA	NA
Canada	Peace River Light	41	NA
Canada	Peace River Medium	33	NA
Canada	Peace River Heavy	23	NA
Canada	Manyberries	36,5	NA
Canada	Rainbow Light and Medium	40,7	NA
Canada	Pembina	33	NA
Canada	Bells Hill Lake	32	NA
Canada	Fosterton Condensate	63	NA
Canada	Rangeland Condensate	67,3	NA
Canada	Redwater	35	NA
Canada	Lloydminster	20,7	2,8
Canada	Wainwright-Kinsella	23,1	2,3
Canada	Bow River Heavy	26,7	2,4
Canada	Fosterton	21,4	3
Canada	Smiley-Coleville	22,5	2,2
Canada	Midale	29	2,4
Canada	Milk River Pipeline	36	1,4
Canada	Ipl-Mix Sweet	40	0,2
Canada	Ipl-Mix Sour	38	0,5
Canada	Ipl Condensate	55	0,3
Canada	Aurora Light	39,5	0,4
Canada	Aurora Condensate	65	0,3
Canada	Reagan Field	35	0,2
Canada	Synthetic Canada	30,3	1,7
Canada	Cold Lake	13,2	4,1
Canada	Cold Lake Blend	26,9	3
Canada	Canadian Federated	39,4	0,3

Canada	Chauvin	22	2,7
Canada	Gcos	23	NA
Canada	Gulf Alberta L & M	35,1	1
Canada	Light Sour Blend	35	1,2
Canada	Lloyd Blend	22	2,8
Canada	Peace River Condensate	54,9	NA
Canada	Sarnium Condensate	57,7	NA
Canada	Saskatchewan Light	32,9	NA
Canada	Sweet Mixed Blend	38	0,5
Canada	Syncrude	32	0,1
Canada	Rangeland — South L & M	39,5	0,5
Canada	Northblend Nevis	34	NA
Canada	Canadian Common Condensate	55	NA
Canada	Canadian Common	39	0,3
Canada	Waterton Condensate	65,1	NA
Canada	Panuke Condensate	56	NA
Canada	Federated Light and Medium	39,7	2
Canada	Wabasca	23	NA
Canada	Hibernia	37,3	0,37
Canada	BC Light	40	NA
Canada	Boundary	39	NA
Canada	Albian Heavy	21	NA
Canada	Koch Alberta	34	NA
Canada	Terra Nova	32,3	NA
Canada	Echo Blend	20,6	3,15
Canada	Western Canadian Blend	19,8	3
Canada	Western Canadian Select	20,5	3,33
Canada	White Rose	31,0	0,31
Canada	Access	22	NA
Canada	Premium Albian Synthetic Heavy	20,9	NA

Canada	Albian Residuum Blend (ARB)	20,03	2,62
Canada	Christina Lake	20,5	3
Canada	CNRL	34	NA
Canada	Husky Synthetic Blend	31,91	0,11
Canada	Premium Albian Synthetic (PAS)	35,5	0,04
Canada	Seal Heavy (SH)	19,89	4,54
Canada	Suncor Synthetic A (OSA)	33,61	0,178
Canada	Suncor Synthetic H (OSH)	19,53	3,079
Canada	Peace Sour	33	NA
Canada	Western Canadian Resid	20,7	NA
Canada	Christina Dilbit Blend	21,0	NA
Canada	Christina Lake Dilbit	38,08	3,80
Chad	Doba Blend (Early Production)	24,8	0,14
Chad	Doba Blend (Later Production)	20,8	0,17
Chile	Chile Miscellaneous	NA	NA
China	Taching (Daqing)	33	0,1
China	Shengli	24,2	1
China	Beibu	NA	NA
China	Chengbei	17	NA
China	Lufeng	34,4	NA
China	Xijiang	28	NA
China	Wei Zhou	39,9	NA
China	Liu Hua	21	NA
China	Boz Hong	17	0,282
China	Peng Lai	21,8	0,29
China	Xi Xiang	32,18	0,09
Colombia	Onto	35,3	0,5
Colombia	Putamayo	35	0,5

Colombia	Rio Zulia	40,4	0,3
Colombia	Orito	34,9	0,5
Colombia	Cano-Limon	30,8	0,5
Colombia	Lasmo	30	NA
Colombia	Cano Duya-1	28	NA
Colombia	Corocora-1	31,6	NA
Colombia	Suria Sur-1	32	NA
Colombia	Tunane-1	29	NA
Colombia	Casanare	23	NA
Colombia	Cusiana	44,4	0,2
Colombia	Vasconia	27,3	0,6
Colombia	Castilla Blend	20,8	1,72
Colombia	Cupiaga	43,11	0,082
Colombia	South Blend	28,6	0,72
Congo (Brazzaville)	Emeraude	23,6	0,5
Congo (Brazzaville)	Djeno Blend	26,9	0,3
Congo (Brazzaville)	Viodo Marina-1	26,5	NA
Congo (Brazzaville)	Nkossa	47	0,03
Congo (Kinshasa)	Muanda	34	0,1
Congo (Kinshasa)	Congo/Zaire	31,7	0,1
Congo (Kinshasa)	Coco	30,4	0,15
Côte d'Ivoire	Espoir	31,4	0,3
Côte d'Ivoire	Lion Cote	41,1	0,101
Denmark	Dan	30,4	0,3
Denmark	Gorm	33,9	0,2
Denmark	Danish North Sea	34,5	0,26
Dubai	Dubai (Fateh)	31,1	2
Dubai	Margham Light	50,3	0
Ecuador	Oriente	29,2	1
Ecuador	Quito	29,5	0,7
Ecuador	Santa Elena	35	0,1
Ecuador	Limoncoha-1	28	NA
Ecuador	Frontera-1	30,7	NA
Ecuador	Bogi-1	21,2	NA

Ecuador	Napo	19	2
Ecuador	Napo Light	19,3	NA
Egypt	Belayim	27,5	2,2
Egypt	El Morgan	29,4	1,7
Egypt	Rhas Gharib	24,3	3,3
Egypt	Gulf of Suez Mix	31,9	1,5
Egypt	Geysum	19,5	NA
Egypt	East Gharib (J-1)	37,9	NA
Egypt	Mango-1	35,1	NA
Egypt	Rhas Budran	25	NA
Egypt	Zeit Bay	34,1	0,1
Egypt	East Zeit Mix	39	0,87
Equatorial Guinea	Zafiro	30,3	NA
Equatorial Guinea	Alba Condensate	55	NA
Equatorial Guinea	Ceiba	30,1	0,42
Gabon	Gamba	31,8	0,1
Gabon	Mandji	30,5	1,1
Gabon	Lucina Marine	39,5	0,1
Gabon	Oguendjo	35	NA
Gabon	Rabi-Kouanga	34	0,6
Gabon	T'Catamba	44,3	0,21
Gabon	Rabi	33,4	0,06
Gabon	Rabi Blend	34	NA
Gabon	Rabi Light	37,7	0,15
Gabon	Etame Marin	36	NA
Gabon	Olende	17,6	1,54
Gabon	Gabonian Miscellaneous	NA	NA
Georgia	Georgian Miscellaneous	NA	NA
Ghana	Bonsu	32	0,1
Ghana	Salt Pond	37,4	0,1
Guatemala	Coban	27,7	NA
Guatemala	Rubelsanto	27	NA
India	Bombay High	39,4	0,2

Indonesia	Minas (Sumatron Light)	34,5	0,1
Indonesia	Ardjuna	35,2	0,1
Indonesia	Attaka	42,3	0,1
Indonesia	Suri	18,4	0,2
Indonesia	Sanga Sanga	25,7	0,2
Indonesia	Sepinggan	37,9	0,9
Indonesia	Walio	34,1	0,7
Indonesia	Arimbi	31,8	0,2
Indonesia	Poleng	43,2	0,2
Indonesia	Handil	32,8	0,1
Indonesia	Jatibarang	29	0,1
Indonesia	Cinta	33,4	0,1
Indonesia	Bekapai	40	0,1
Indonesia	Katapa	52	0,1
Indonesia	Salawati	38	0,5
Indonesia	Duri (Sumatran Heavy)	21,1	0,2
Indonesia	Sembakung	37,5	0,1
Indonesia	Badak	41,3	0,1
Indonesia	Arun Condensate	54,5	NA
Indonesia	Udang	38	0,1
Indonesia	Klamono	18,7	1
Indonesia	Bunya	31,7	0,1
Indonesia	Pamusian	18,1	0,2
Indonesia	Kerindigan	21,6	0,3
Indonesia	Melahin	24,7	0,3
Indonesia	Bunyu	31,7	0,1
Indonesia	Camar	36,3	NA
Indonesia	Cinta Heavy	27	NA
Indonesia	Lalang	40,4	NA
Indonesia	Kakap	46,6	NA
Indonesia	Sisi-1	40	NA
Indonesia	Giti-1	33,6	NA
Indonesia	Ayu-1	34,3	NA

Indonesia	Bima	22,5	NA
Indonesia	Padang Isle	34,7	NA
Indonesia	Intan	32,8	NA
Indonesia	Sepinggan — Yakin Mixed	31,7	0,1
Indonesia	Widuri	32	0,1
Indonesia	Belida	45,9	0
Indonesia	Senipah	51,9	0,03
Iran	Iranian Light	33,8	1,4
Iran	Iranian Heavy	31	1,7
Iran	Soroosh (Cyrus)	18,1	3,3
Iran	Dorrood (Darius)	33,6	2,4
Iran	Rostam	35,9	1,55
Iran	Salmon (Sassan)	33,9	1,9
Iran	Foroozan (Fereidoon)	31,3	2,5
Iran	Aboozar (Ardeshir)	26,9	2,5
Iran	Sirri	30,9	2,3
Iran	Bahrgansar/Nowruz (SIRIP Blend)	27,1	2,5
Iran	Bahr/Nowruz	25,0	2,5
Iran	Iranian Miscellaneous	NA	NA
Iraq	Basrah Light (Pers. Gulf)	33,7	2
Iraq	Kirkuk (Pers. Gulf)	35,1	1,9
Iraq	Mishrif (Pers. Gulf)	28	NA
Iraq	Bai Hasson (Pers. Gulf)	34,1	2,4
Iraq	Basrah Medium (Pers. Gulf)	31,1	2,6
Iraq	Basrah Heavy (Pers. Gulf)	24,7	3,5
Iraq	Kirkuk Blend (Pers. Gulf)	35,1	2
Iraq	N. Rumalia (Pers. Gulf)	34,3	2
Iraq	Ras el Behar	33	NA

Iraq	Basrah Light (Red Sea)	33,7	2
Iraq	Kirkuk (Red Sea)	36,1	1,9
Iraq	Mishrif (Red Sea)	28	NA
Iraq	Bai Hasson (Red Sea)	34,1	2,4
Iraq	Basrah Medium (Red Sea)	31,1	2,6
Iraq	Basrah Heavy (Red Sea)	24,7	3,5
Iraq	Kirkuk Blend (Red Sea)	34	1,9
Iraq	N. Rumalia (Red Sea)	34,3	2
Iraq	Ratawi	23,5	4,1
Iraq	Basrah Light (Turkey)	33,7	2
Iraq	Kirkuk (Turkey)	36,1	1,9
Iraq	Mishrif (Turkey)	28	NA
Iraq	Bai Hasson (Turkey)	34,1	2,4
Iraq	Basrah Medium (Turkey)	31,1	2,6
Iraq	Basrah Heavy (Turkey)	24,7	3,5
Iraq	Kirkuk Blend (Turkey)	34	1,9
Iraq	N. Rumalia (Turkey)	34,3	2
Iraq	FAO Blend	27,7	3,6
Kazakhstan	Kumkol	42,5	0,07
Kazakhstan	CPC Blend	44,2	0,54
Kuwait	Mina al Ahmadi (Kuwait Export)	31,4	2,5
Kuwait	Magwa (Lower Jurassic)	38	NA
Kuwait	Burgan (Wafra)	23,3	3,4
Libya	Bu Attifel	43,6	0
Libya	Amna (high pour)	36,1	0,2
Libya	Brega	40,4	0,2
Libya	Sirtica	43,3	0,43
Libya	Zueitina	41,3	0,3

Libya	Bunker Hunt	37,6	0,2
Libya	El Hofra	42,3	0,3
Libya	Dahra	41	0,4
Libya	Sarir	38,3	0,2
Libya	Zueitina Condensate	65	0,1
Libya	El Sharara	42,1	0,07
Malaysia	Miri Light	36,3	0,1
Malaysia	Tembungo	37,5	NA
Malaysia	Labuan Blend	33,2	0,1
Malaysia	Tapis	44,3	0,1
Malaysia	Tembungo	37,4	0
Malaysia	Bintulu	26,5	0,1
Malaysia	Bekok	49	NA
Malaysia	Pulai	42,6	NA
Malaysia	Dulang	39	0,037
Mauritania	Chinguetti	28,2	0,51
Mexico	Isthmus	32,8	1,5
Mexico	Maya	22	3,3
Mexico	Olmeca	39	NA
Mexico	Altamira	16	NA
Mexico	Topped Isthmus	26,1	1,72
Netherlands	Alba	19,59	NA
Neutral Zone	Eocene (Wafra)	18,6	4,6
Neutral Zone	Hout	32,8	1,9
Neutral Zone	Khafji	28,5	2,9
Neutral Zone	Burgan (Wafra)	23,3	3,4
Neutral Zone	Ratawi	23,5	4,1
Neutral Zone	Neutral Zone Mix	23,1	NA
Neutral Zone	Khafji Blend	23,4	3,8
Nigeria	Forcados Blend	29,7	0,3
Nigeria	Escravos	36,2	0,1
Nigeria	Brass River	40,9	0,1
Nigeria	Qua Iboe	35,8	0,1
Nigeria	Bonny Medium	25,2	0,2

Nigeria	Pennington	36,6	0,1
Nigeria	Bomu	33	0,2
Nigeria	Bonny Light	36,7	0,1
Nigeria	Brass Blend	40,9	0,1
Nigeria	Gilli Gilli	47,3	NA
Nigeria	Adanga	35,1	NA
Nigeria	Iyak-3	36	NA
Nigeria	Antan	35,2	NA
Nigeria	OSO	47	0,06
Nigeria	Ukpokiti	42,3	0,01
Nigeria	Yoho	39,6	NA
Nigeria	Okwori	36,9	NA
Nigeria	Bonga	28,1	NA
Nigeria	ERHA	31,7	0,21
Nigeria	Amenam Blend	39	0,09
Nigeria	Akpo	45,17	0,06
Nigeria	EA	38	NA
Nigeria	Agbami	47,2	0,044
Norway	Ekofisk	43,4	0,2
Norway	Tor	42	0,1
Norway	Statfjord	38,4	0,3
Norway	Heidrun	29	NA
Norway	Norwegian Forties	37,1	NA
Norway	Gullfaks	28,6	0,4
Norway	Oseberg	32,5	0,2
Norway	Norne	33,1	0,19
Norway	Troll	28,3	0,31
Norway	Draugen	39,6	NA
Norway	Sleipner Condensate	62	0,02
Oman	Oman Export	36,3	0,8
Papua New Guinea	Kutubu	44	0,04
Peru	Loreto	34	0,3
Peru	Talara	32,7	0,1
Peru	High Cold Test	37,5	NA

Peru	Bayovar	22,6	NA
Peru	Low Cold Test	34,3	NA
Peru	Carmen Central-5	20,7	NA
Peru	Shiviyacu-23	20,8	NA
Peru	Mayna	25,7	NA
Philippines	Nido	26,5	NA
Philippines	Philippines Miscellaneous	NA	NA
Qatar	Dukhan	41,7	1,3
Qatar	Qatar Marine	35,3	1,6
Qatar	Qatar Land	41,4	NA
Ras Al Khaimah	Rak Condensate	54,1	NA
Ras Al Khaimah	Ras Al Khaimah Miscellaneous	NA	NA
Russia	Urals	31	2
Russia	Russian Export Blend	32,5	1,4
Russia	M100	17,6	2,02
Russia	M100 Heavy	16,67	2,09
Russia	Siberian Light	37,8	0,4
Russia	E4 (Gravenshon)	19,84	1,95
Russia	E4 Heavy	18	2,35
Russia	Purovsky Condensate	64,1	0,01
Russia	Sokol	39,7	0,18
Saudi Arabia	Light (Pers. Gulf)	33,4	1,8
Saudi Arabia	Heavy (Pers. Gulf) (Safaniya)	27,9	2,8
Saudi Arabia	Medium (Pers. Gulf) (Khursaniyah)	30,8	2,4
Saudi Arabia	Extra Light (Pers. Gulf) (Berri)	37,8	1,1
Saudi Arabia	Light (Yanbu)	33,4	1,2
Saudi Arabia	Heavy (Yanbu)	27,9	2,8
Saudi Arabia	Medium (Yanbu)	30,8	2,4
Saudi Arabia	Berri (Yanbu)	37,8	1,1
Saudi Arabia	Medium (Zuluf/ Marjan)	31,1	2,5

Sharjah	Mubarek Sharjah	37	0,6
Sharjah	Sharjah Condensate	49,7	0,1
Singapore	Rantau	50,5	0,1
Spain	Amposta Marina North	37	NA
Spain	Casablanca	34	NA
Spain	El Dorado	26,6	NA
Syria	Syrian Straight	15	NA
Syria	Thayyem	35	NA
Syria	Omar Blend	38	NA
Syria	Omar	36,5	0,1
Syria	Syrian Light	36	0,6
Syria	Souedie	24,9	3,8
Thailand	Erawan Condensate	54,1	NA
Thailand	Sirikit	41	NA
Thailand	Nang Nuan	30	NA
Thailand	Bualuang	27	NA
Thailand	Benchamas	42,4	0,12
Trinidad and Tobago	Galeota Mix	32,8	0,3
Trinidad and Tobago	Trintopec	24,8	NA
Trinidad and Tobago	Land/Trinmar	23,4	1,2
Trinidad and Tobago	Calypso Miscellaneous	30,84	0,59
Tunisia	Zarzaitine	41,9	0,1
Tunisia	Ashtart	29	1
Tunisia	El Borma	43,3	0,1
Tunisia	Ezzaouia-2	41,5	NA
Turkey	Turkish Miscellaneous	NA	NA
Ukraine	Ukraine Miscellaneous	NA	NA
United Kingdom	Auk	37,2	0,5
United Kingdom	Beatrice	38,7	0,05
United Kingdom	Brae	33,6	0,7
United Kingdom	Buchan	33,7	0,8

United Kingdom	Claymore	30,5	1,6
United Kingdom	S.V. (Brent)	36,7	0,3
United Kingdom	Tartan	41,7	0,6
United Kingdom	Tern	35	0,7
United Kingdom	Magnus	39,3	0,3
United Kingdom	Dunlin	34,9	0,4
United Kingdom	Fulmar	40	0,3
United Kingdom	Hutton	30,5	0,7
United Kingdom	N.W. Hutton	36,2	0,3
United Kingdom	Maureen	35,5	0,6
United Kingdom	Murchison	38,8	0,3
United Kingdom	Ninian Blend	35,6	0,4
United Kingdom	Montrose	40,1	0,2
United Kingdom	Beryl	36,5	0,4
United Kingdom	Piper	35,6	0,9
United Kingdom	Forties	36,6	0,3
United Kingdom	Brent Blend	38	0,4
United Kingdom	Flotta	35,7	1,1
United Kingdom	Thistle	37	0,3
United Kingdom	S.V. (Ninian)	38	0,3
United Kingdom	Argyle	38,6	0,2
United Kingdom	Heather	33,8	0,7
United Kingdom	South Birch	38,6	NA
United Kingdom	Wytch Farm	41,5	NA
United Kingdom	Cormorant North	34,9	0,7
United Kingdom	Cormorant South (Cormorant ‘A’)	35,7	0,6
United Kingdom	Alba	19,2	NA
United Kingdom	Foinhaven	26,3	0,38
United Kingdom	Schiehallion	25,8	NA
United Kingdom	Captain	19,1	0,7
United Kingdom	Harding	20,7	0,59
US Alaska	ANS	NA	NA
US Colorado	Niobrara	NA	NA

US New Mexico	Four Corners	NA	NA
US North Dakota	Bakken	NA	NA
US North Dakota	North Dakota Sweet	NA	NA
US Texas	WTI	NA	NA
US Texas	Eagle Ford	NA	NA
US Utah	Covenant	NA	NA
US Federal OCS	Beta	NA	NA
US Federal OCS	Carpinteria	NA	NA
US Federal OCS	Dos Cuadras	NA	NA
US Federal OCS	Hondo	NA	NA
US Federal OCS	Hueneme	NA	NA
US Federal OCS	Pescado	NA	NA
US Federal OCS	Point Arguello	NA	NA
US Federal OCS	Point Pedernales	NA	NA
US Federal OCS	Sacate	NA	NA
US Federal OCS	Santa Clara	NA	NA
US Federal OCS	Sockeye	NA	NA
Uzbekistan	Uzbekistan Miscellaneous	NA	NA
Venezuela	Jobo (Monagas)	12,6	2
Venezuela	Lama Lamar	36,7	1
Venezuela	Mariago	27	1,5
Venezuela	Ruiz	32,4	1,3
Venezuela	Tucipido	36	0,3
Venezuela	Venez Lot 17	36,3	0,9
Venezuela	Mara 16/18	16,5	3,5
Venezuela	Tia Juana Light	32,1	1,1
Venezuela	Tia Juana Med 26	24,8	1,6
Venezuela	Officina	35,1	0,7
Venezuela	Bachaquero	16,8	2,4
Venezuela	Cento Lago	36,9	1,1
Venezuela	Lagunillas	17,8	2,2
Venezuela	La Rosa Medium	25,3	1,7
Venezuela	San Joaquin	42	0,2

Venezuela	Lagotreco	29,5	1,3
Venezuela	Lagocinco	36	1,1
Venezuela	Boscan	10,1	5,5
Venezuela	Leona	24,1	1,5
Venezuela	Barinas	26,2	1,8
Venezuela	Sylvestre	28,4	1
Venezuela	Mesa	29,2	1,2
Venezuela	Ceuta	31,8	1,2
Venezuela	Lago Medio	31,5	1,2
Venezuela	Tigre	24,5	NA
Venezuela	Anaco Wax	41,5	0,2
Venezuela	Santa Rosa	49	0,1
Venezuela	Bombai	19,6	1,6
Venezuela	Aguasay	41,1	0,3
Venezuela	Anaco	43,4	0,1
Venezuela	BCF-Bach/Lag17	16,8	2,4
Venezuela	BCF-Bach/Lag21	20,4	2,1
Venezuela	BCF-21,9	21,9	NA
Venezuela	BCF-24	23,5	1,9
Venezuela	BCF-31	31	1,2
Venezuela	BCF Blend	34	1
Venezuela	Bolival Coast	23,5	1,8
Venezuela	Ceuta/Bach 18	18,5	2,3
Venezuela	Corridor Block	26,9	1,6
Venezuela	Cretaceous	42	0,4
Venezuela	Guanipa	30	0,7
Venezuela	Lago Mix Med.	23,4	1,9
Venezuela	Larosa/Lagun	23,8	1,8
Venezuela	Menemoto	19,3	2,2
Venezuela	Cabimas	20,8	1,8
Venezuela	BCF-23	23	1,9
Venezuela	Oficina/Mesa	32,2	0,9
Venezuela	Pilon	13,8	2
Venezuela	Recon (Venez)	34	NA

Venezuela	102 Tj (25)	25	1,6
Venezuela	Tjl Cretaceous	39	0,6
Venezuela	Tia Juana Pesado (Heavy)	12,1	2,7
Venezuela	Mesa-Recon	28,4	1,3
Venezuela	Oritupano	19	2
Venezuela	Hombre Pintado	29,7	0,3
Venezuela	Merey	17,4	2,2
Venezuela	Lago Light	41,2	0,4
Venezuela	Laguna	11,2	0,3
Venezuela	Bach/Cueta Mix	24	1,2
Venezuela	Bachaquero 13	13	2,7
Venezuela	Ceuta — 28	28	1,6
Venezuela	Temblador	23,1	0,8
Venezuela	Lagomar	32	1,2
Venezuela	Taparito	17	NA
Venezuela	BCF-Heavy	16,7	NA
Venezuela	BCF-Medium	22	NA
Venezuela	Caripito Blend	17,8	NA
Venezuela	Laguna/Ceuta Mix	18,1	NA
Venezuela	Morichal	10,6	NA
Venezuela	Pedenales	20,1	NA
Venezuela	Quiriquire	16,3	NA
Venezuela	Tucupita	17	NA
Venezuela	Furrial-2 (E. Venezuela)	27	NA
Venezuela	Curazao Blend	18	NA
Venezuela	Santa Barbara	36,5	NA
Venezuela	Cerro Negro	15	NA
Venezuela	BCF22	21,1	2,11
Venezuela	Hamaca	26	1,55
Venezuela	Zuata 10	15	NA
Venezuela	Zuata 20	25	NA
Venezuela	Zuata 30	35	NA
Venezuela	Monogas	15,9	3,3

Venezuela	Corocoro	24	NA
Venezuela	Petrozuata	19,5	2,69
Venezuela	Morichal 16	16	NA
Venezuela	Guafita	28,6	0,73
Vietnam	Bach Ho (White Tiger)	38,6	0
Vietnam	Dai Hung (Big Bear)	36,9	0,1
Vietnam	Rang Dong	37,7	0,5
Vietnam	Ruby	35,6	0,08
Vietnam	Su Tu Den (Black Lion)	36,8	0,05
Yemen	North Yemeni Blend	40,5	NA
Yemen	Alif	40,4	0,1
Yemen	Maarib Lt.	49	0,2
Yemen	Masila Blend	30-31	0,6
Yemen	Shabwa Blend	34,6	0,6
Any	Oil shale	NA	NA
Any	Shale oil	NA	NA
Any	Natural Gas: piped from source	NA	NA
Any	Natural Gas: from LNG	NA	NA
Any	Shale gas: piped from source	NA	NA
Any	Coal	NA	NA

ANNEX II

CALCULATION OF THE FUEL BASELINE STANDARD OF FOSSIL FUELS

Calculation method

(a) The fuel baseline standard is calculated based on Union average fossil fuel consumption of petrol, diesel, gasoil, LPG and CNG, as follows:

$$\text{Fuel baseline standard} = \frac{\sum_x (GHGi_x \times MJ_x)}{\sum_x MJ_x}$$

where:

‘x’ represents the different fuels and energy falling within the scope of this Directive and as defined in the table below;

‘$GHGi_x$’ is the greenhouse gas intensity of the annual supply sold on the market of fuel ‘x’ or energy falling within the scope of this Directive

expressed in gCO_{2eq}/MJ. The values for fossil fuels presented in point 5 of Part 2 of Annex I are used;
'MJ_x' is the total energy supplied and converted from reported volumes of fuel 'x' expressed in mega joules.

(b) Consumption data

The consumption data used for calculation of the value is as follows:

Fuel	**Energy Consumption (MJ)**	**Source**
diesel	$7\ 894\ 969 \times 10^6$	2010 Member States reporting to the UNFCCC
non-road gasoil	$240\ 763 \times 10^6$	
petrol	$3\ 844\ 356 \times 10^6$	
LPG	$217\ 563 \times 10^6$	
CNG	$51\ 037 \times 10^6$	

Greenhouse gas intensity

The fuel baseline standard for 2010 shall be: 94,1 gCO_{2eq}/MJ

ANNEX III

MEMBER STATE REPORTING TO THE COMMISSION

1. By 31 December each year, Member States are to report the data listed in point 3. These data must be reported for all fuel and energy placed on the market in each Member State. Where multiple biofuels are blended with fossil fuels, the data for each biofuel must be provided.

2. The data listed in point 3 are to be reported separately for fuel or energy placed on the market by suppliers within a given Member State (including joint suppliers operating in a single Member State).

3. For each fuel and energy, Member States are to report the following data to the Commission, as aggregated according to point 2 and as defined in Annex I:

   (a) fuel or energy type;

   (b) volume or quantity of fuel or electricity;

   (c) greenhouse gas intensity;

   (d) UERs;

   (e) origin;

   (f) place of purchase.

ANNEX IV

TEMPLATE FOR REPORTING INFORMATION FOR CONSISTENCY OF THE REPORTED DATA

FUEL — SINGLE SUPPLIERS

Entry	Joint Reporting (YES/NO)	Country	Supplier	Fuel type[7]	Fuel CN code[7]	Quantity[2]		Average GHG intensity	Upstream Emission Reduction	Reduction in 2010 average
						by litres	by energy			
1										
		CN code	GHG intensity[4]	Feedstock	CN code	GHG intensity	sustainable (YES/NO)			
	Component F.1 (Fossil Fuel Component)			Component B.1 (Biofuel Component)						
	Component F.n (Fossil Fuel Component)			Component B.m (Biofuel Component)						
k										
		CN code[2]	GHG intensity[4]	Feedstock	CN code[2]	GHG intensity	sustainable (YES/NO)			
	Component F.1 (Fossil Fuel Component)			Component B.1 (Biofuel Component)						
	Component F.n (Fossil Fuel Component)			Component B.m (Biofuel Component)						

FUEL — JOINT SUPPLIERS

Entry	Joint Reporting (YES/NO)	Country	Supplier	Fuel type[7]	Fuel CN code[7]	Quantity[2]		Average GHG intensity	Upstream Emission Reduction	Reduction in 2010 average
						by litres	by energy			
I	YES									
	YES									
	Subtotal									

		CN code	GHG intensity[4]	Feedstock	CN code	GHG intensity[4]	sustainable (YES/ NO)			
	Component F.1 (Fossil Fuel Component)			Component B.1 (Biofuel Component)						
	Component F.n (Fossil Fuel Component)			Component B.m (Biofuel Component)						
x	YES									
	YES									
	Subtotal									
		CN code[2]	GHG intensity[4]	Feedstock	CN code[2]	GHG intensity[4]	sustainable (YES/ NO)			
	Component F.1 (Fossil Fuel Component)			Component B.1 (Biofuel Component)						
	Component F.n (Fossil Fuel Component)			Component B.m (Biofuel Component)						

ELECTRICITY

Joint Reporting	**Country**	**Supplier[1]**	**Energy type[7]**	**Quantity[6] by energy**	**GHG intensity**	**Reduction on 2010 average**
NO						

Joint Supplier Information						
	Country	**Supplier[1]**	**Energy type[7]**	**Quantity[6] by energy**	**GHG intensity**	**Reduction on 2010 average**
YES						
YES						
	Subtotal					

ORIGIN — SINGLE SUPPLIERS[8]

Entry 1	**component F.1**		**Entry 1**	**component F.n**		**Entry k**	**component F.1**		**Entry k**	**component F.n**	
Feedstock Trade Name	**API gravity**[3]	**Tonnes**	**Feedstock Trade Name**	**API gravity**[3]	**Tonnes**	**Feedstock Trade Name**	**API gravity**[3]	**Tonnes**	**Feedstock Trade Name**	**API gravity**[3]	**Tonnes**

Entry 1	**component B.1**		**Entry 1**	**component B.m**		**Entry k**	**component B.1**		**Entry k**	**component B.m**	
Bio Pathway	**API gravity**[3]	**Tonnes**	**Bio Pathway**	**API gravity**[3]	**Tonnes**	**Bio Pathway**	**API gravity**[3]	**Tonnes**	**Bio Pathway**	**API gravity**[3]	**Tonnes**

ORIGIN — JOINT SUPPLIERS[8]

Entry 1	**component F.1**			**Entry 1**	**component F.n**		**Entry X**	**component F.1**		**Entry X**	**component F.n**	
Feedstock Trade Name	**API gravity[3]**		**Tonnes**	**Feedstock Trade Name**	**API gravity[3]**	**Tonnes**	**Feedstock Trade Name**	**API gravity[3]**	**Tonnes**	**Feedstock Trade Name**	**API gravity[3]**	**Tonnes**

Entry l	**component B.1**		**Entry l**	**component B.m**		**Entry X**	**component B.1**		**Entry X**	**component B.m**	
Bio Pathway	**API gravity**	**Tonnes ^{3}**	**Bio Pathway**	**API gravity**	**Tonnes ^{3}**	**Bio Pathway**	**API gravity**	**Tonnes ^{3}**	**Bio Pathway**	**API gravity**	**Tonnes ^{3}**

PLACE OF PURCHASE[9]

Entry	Compartment	Refinery/Processing Facility Names	Country	Refinery/Processing Facility Names	Country	Refinery/Processing Facility Names	Country	Refinery/Processing Facility Names	Country	Refinery/Processing Facility Names	Country	Refinery/Processing Facility Names	Country
l	F.1												
l	F.n												
l	B.1												
l	B.m												
k	F.1												
k	F.n												
k	B.1												
k	B.m												
l	F.1												
l	F.n												
l	B.1												
l	B.m												
X	F.1												
X	F.n												
X	B.1												
X	B.m												

TOTAL ENERGY REPORTED AND REDUCTION ACHIEVED PER MEMBER STATE

Volume (by energy)[10]	**GHG intensity**	**Reduction on 2010 average**

Format Notes

The template for supplier reporting is identical to the template for Member State reporting.

Shaded cells do not have to be filled in.

1. Supplier identification is defined in point 3(a) of Part 1 of Annex I;
2. Quantity of fuel is defined in point 3(c) of Part 1 of Annex I;
3. American Petroleum Institute (API) gravity is defined pursuant to testing method ASTM D287;
4. Greenhouse gas intensity is defined in point 3(e) of Part 1 of Annex I;
5. UER is defined in point 3(d) of Part 1 of Annex I; reporting specifications are defined in point 1 of Part 2 of Annex I;
6. Quantity of electricity is defined in point 6 of Part 2 of Annex I;
7. Fuel types and corresponding CN codes are defined in point 3(b) of Part 1 of Annex I;
8. Origin is defined in points 2 and 4 of Part 2 of Annex I;
9. Place of Purchase is defined in points 3 and 4 of Part 2 of Annex I;
10. Total quantity of energy (fuel and electricity) consumed.

(**1**) OJ L 350, 28.12.1998, p. 58.

(**2**) Commission Recommendation 2003/361/EC of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (OJ L 124, 20.5.2003, p. 36).

(**3**) Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJ L 140, 5.6.2009, p. 16).

(**4**) Commission Decision 2002/159/EC of 18 February 2002 on a common format for the submission of summaries of national fuel quality data (OJ L 53, 23.2.2002, p. 30).

(**5**) Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 98/70/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions and amending Council Directive 1999/32/EC as regards the specification of fuel used by inland waterway vessels and repealing Directive 93/12/EEC (OJ L 140, 5.6.2009, p. 88).

(**6**) Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission (OJ L 184, 17.7.1999, p. 23).

(**7**) American Society for Testing and Materials: http://www.astm.org/index.shtml

(**8**) Council Regulation (EEC) No 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff (OJ L 256, 7.9.1987, p. 1).

(**9**) Regulation (EC) No 401/2009 of the European Parliament and of the Council of 23 April 2009 on the European Environment Agency and the European Environment Information and Observation Network (OJ L 126, 21.5.2009, p. 13).

(**10**) Commission Regulation (EC) No 684/2009 of 24 July 2009 implementing Council Directive 2008/118/EC as regards the computerised procedures for the movement of excise goods under suspension of excise duty (OJ L 197, 29.7.2009, p. 24).

(**11**) Council Directive 2008/118/EC of 16 December 2008 concerning the general arrangements for excise duty and repealing Directive 92/12/EEC (OJ L 9, 14.1.2009, p. 12).

(**12**) The JEC consortium brings together the European Commission Joint Research Centre (JRC), EUCAR (European Council for Automotive R&D) and CONCAWE (the oil companies' European association for environment, health and safety in refining and distribution).

(**13**) http://iet.jrc.ec.europa.eu/about-jec/sites/about-jec/files/documents/report_2013/wtt_report_v4_july_2013_final.pdf

(**14**) Regulation (EC) No 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO_2 emissions from light-duty vehicles (OJ L 140, 5.6.2009, p. 1).

(**15**) Commission Regulation (EU) No 600/2012 of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council (OJ L 181, 12.7.2012, p. 1).

(**16**) Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council (OJ L 181, 12.7.2012, p. 30).

(**17**) Council Regulation (EC) No 2964/95 of 20 December 1995 introducing registration for crude oil imports and deliveries in the Community (OJ L 310, 22.12.1995, p. 5).

(**18**) Commission Regulation (EEC) No 2454/93 of 2 July 1993 laying down provisions for the implementation of Council Regulation (EEC) No 2913/92 establishing the Community Customs Code (OJ L 253, 11.10.1993, p. 1).

(**19**) Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics (OJ L 304, 14.11.2008, p. 1).

(**20**) Regulation (EU) No 525/2013 of the European Parliament and of the Council of 21 May 2013 on a mechanism for monitoring and reporting greenhouse gas emissions and for reporting other information at national and Union level relevant to climate change and repealing Decision No 280/2004/EC (OJ L 165, 18.6.2013, p. 13).

(**21**) Commission Delegated Regulation (EU) No 666/2014 of 12 March 2014 establishing substantive requirements for a Union inventory system and taking into account changes in the global warming potentials and internationally agreed inventory guidelines pursuant to Regulation (EU) No 525/2013 of the European Parliament and of the Council (OJ L 179, 19.6.2014, p. 26).