



STATUTORY INSTRUMENTS.

S.I. No. 483 of 2014



EUROPEAN UNION (RENEWABLE ENERGY) REGULATIONS 2014

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EUROPEAN UNION (RENEWABLE ENERGY) REGULATIONS 2014

I, ALEX WHITE, Minister for Communications, Energy and Natural Resources, in exercise of the powers conferred on me by section 3 of the European Communities Act 1972 (No. 27 of 1972), and for the purpose of giving effect to Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009¹, hereby make the following regulations:

Citation

1. These Regulations may be cited as the European Union (Renewable Energy) Regulations 2014.

Interpretation

2. (1) In these Regulations—

“Act of 1999” means Electricity Regulation Act 1999 (No. 23 of 1999);

“actual value method” means the calculation method for greenhouse gas emissions from the production and use of biofuels or bioliquids provided for in Part C of Schedule 4;

“Agency” means National Oil Reserve Agency;

“Biofuels Obligation Act” means National Oil Reserves Agency Act 2007 (No. 7 of 2007) (as amended by the Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010 (No. 11 of 2010));

“biomass” has the meaning assigned to it by section 44A(1) (inserted by section 3 of the Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010 (No. 11 of 2010)) of the National Oil Reserves Agency Act 2007 (No. 7 of 2007);

“CER” means Commission for Energy Regulation;

“combined method” means the calculation method for greenhouse gas emissions from the production and use of bioliquids or biofuels provided for in Part C of Schedule 4, but using one or more disaggregated default values for the bioliquids or biofuel when carrying out the calculation set out in paragraph 1 of Schedule 4;

“competent authority” other than in Regulation 15, means a body established by or under statute or a Department of State with responsibility for the administration of a support scheme or renewable energy obligation;

¹OJ No. L140, 5.6.2009, p.16

*Notice of the making of this Statutory Instrument was published in
“Iris Oifigiúil” of 28th October, 2014.*

“continuously forested area” means land spanning more than one hectare with trees higher than five metres and a canopy cover of more than 30 per cent, or trees able to reach those thresholds in situ;

“default percentage” means—

- (a) in relation to a biofuel or bioliquids described in the first column of Part A or B of Schedule 4—
 - (i) the corresponding percentage (if any) in the third column of Part A or B of Schedule 4, or
 - (ii) where there is no corresponding percentage set out in the third column of Part A or Part B of Schedule 4, the corresponding percentage set out in the second column of Part A or B of that Schedule, and
- (b) in all other cases, 0 per cent;

“Directive” means Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009¹;

“Directive of 1998” means Directive 98/70/EC of the European Parliament and of the Council of 13 October 1998²;

“disaggregated default value” means, in relation to bioliquids or biofuel described in the first column of a table in Part D or E of Schedule 4, the value which corresponds to that description in the third column of that table in Part D or E of that Schedule;

“disaggregated default values for cultivation” means the figures in the third column of the table entitled “Disaggregated default values for cultivation: ‘ece’ as defined in Part C of this Schedule” in Part D of Schedule 4;

“distribution” has the meaning assigned to it by section 2(1) of the Act of 1999;

“distribution system operator” means the holder of a licence under section 14(1)(g) of the Act of 1999;

“generator” means the holder of a licence under section 14(1)(a) of the Act of 1999;

“generating station” has the meaning assigned to it by section 2(1) of the Act of 1999;

“generating unit” means a unit of a generating station;

“greenhouse gas emissions from the use of fossil fuel” means the value given in paragraph 19 of Part C of Schedule 4 as the fossil fuel comparator for bioliquids or biofuels;

²OJ No. L350, 28.12.1998, p.58

“guarantee of origin for high efficiency CHP” means a guarantee that electricity is produced from high efficiency cogeneration (within the meaning of section 7 of the Act of 1999);

“highly biodiverse grassland” means—

- (a) in the case of natural grassland, grassland that would remain grassland in the absence of human intervention and which maintains the natural species composition and ecological characteristics and processes, or
- (b) in the case of non-natural grassland, grassland that would cease to be grassland in the absence of human intervention and which is species-rich and not degraded, unless evidence is provided that the harvesting of the raw material is necessary to preserve its grassland status;

“Internal Market Regulations” means European Communities (Internal Market in Electricity) Regulations 2005 (S.I. No. 60 of 2005);

“less forested area” means land spanning more than one hectare with trees higher than 5 metres and a canopy cover of between 10 and 30 percent, or trees able to reach those thresholds in situ, unless evidence is provided that the carbon stock of the area before and after conversion is such that, when the methodology laid down in Part C of Schedule 4 is applied, the greenhouse gas emission savings stated in paragraph 1 of Schedule 3 would be achieved;

“market” means to distribute to or sell by wholesale or retail;

“Minister” means Minister for Communications, Energy and Natural Resources;

“nature protection area” means an area designated—

- (a) by law or by the relevant competent authority for nature protection purposes, or
- (b) for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature, subject to their recognition in accordance with the second subparagraph of Article 18(4) of the Directive;

“PSO generator” means a generator that is party to a REFIT or AER Power Purchase Agreement listed in the Schedules to the Electricity Regulation Act 1999 (Public Service Obligations) Order 2002 (S.I. No. 217 of 2002);

“public body” has the meaning assigned to it by Regulation 10 of the European Communities (Energy End-Use Efficiency and Energy Services) Regulations 2009 (S.I. No. 542 of 2009);

“public building” means a building, or that part of a building, to which members of the public generally have access and which is occupied, managed or controlled by a public body;

“primary forest” means forest and other wooded land of native species, where there is no clearly visible indication of human activity and the ecological processes are not significantly disturbed;

“Regulations of 2012” means European Union (Biofuel Sustainability Criteria) Regulations 2012 (S.I. No. 33 of 2012);

“SEAI” means Sustainable Energy Authority of Ireland;

“SEMO” has the meaning assigned to the Single Electricity Market Operator by section 2(1) of the Act of 1999;

“Single Electricity Market Trading and Settlement Code” means the code of that name established pursuant to section 9BA(1) of the Act of 1999 and so designated pursuant to Regulation 4 of the Electricity Regulation Act 1999 (Single Electricity Market) Regulations 2007 (S.I. No. 406 of 2007);

“supplier” means a person licensed under section 14(1)(b), (c) or (d) of the Act of 1999;

“support scheme” means a support scheme from renewable energy;

“transmission” has the meaning assigned to it by section 2(1) of the Act of 1999;

“transmission system operator” means the holder of a licence under section 14(1)(e) of the Act of 1999;

“wetland” means land that is covered with or saturated by water permanently or for a significant part of the year.

(2) A word or expression that is used in these Regulations and is also used in the Directive has, unless the contrary intention appears, the same meaning in these Regulations as it has in the Directive.

Exemplary role of public bodies regarding public buildings

3. (1) A public body shall take such steps as it consider appropriate to ensure that a public building—

(a) constructed after 31 December 2011, or

(b) subject to major renovation after that date,

fulfils an exemplary role in the context of the Directive.

(2) A public body may consult with SEAI for the purposes of ensuring public buildings fulfil an exemplary role in the context of the Directive.

Access to and operation of grid

4. (1) In order to achieve the target assigned to the State and based on transparent and non discriminatory criteria defined and published by CER—

- (a) the transmission system operator and distribution system operator shall ensure that electricity generated from renewable sources may be transmitted and distributed,
- (b) when dispatching generating units, the transmission system operator shall give priority to generating units using energy from renewable sources in so far as the secure operation of the electricity system permits, and
- (c) subject to Part V of the Act of 1999 or the Single Electricity Market Trading and Settlement Code or both, as the case may be, a generator of electricity from renewable sources that is connected to the electricity system shall be able to sell and transmit such electricity at all times, whenever the source becomes available.

(2) The implementation of paragraph (1) shall be at all times subject to the maintenance of the reliability and safety of the grid.

(3) CER shall ensure that the transmission system operator or the distribution system operator, as appropriate, takes appropriate grid and market related operational measures in order to minimise the curtailment of electricity from renewable sources on the electricity system.

(4) If significant measures are taken to curtail the renewable energy sources in order to guarantee the security of the electricity system and security of energy supply, the transmission system operator shall report to CER on those measures and indicate which corrective measures it is intended to take in order to prevent inappropriate curtailments.

(5) CER shall take the appropriate steps required by Article 16 of the Directive.

Supervision and issuance of guarantees of origin

5. (1) Guarantees of origin shall be issued by SEMO in accordance with the supervisory framework established by CER and these Regulations.

(2) CER shall, after consultation with SEMO and other relevant persons, design, establish and publish a supervisory framework for the issuance, registration, transfer and cancellation by electronic means, of guarantees of origin to generators of electricity from renewable energy sources.

(3) CER and SEMO shall ensure that guarantees of origin are accurate, reliable and fraud-resistant.

(4) SEMO shall report annually to CER on the operation of system for the issuance, registration, transfer and cancellation of guarantees of origin.

(5) The framework referred to in paragraph (2) shall provide for, but shall not be limited to, the management of the system for the issuance, registration, transfer and cancellation of guarantees of origin.

(6) CER may amend the framework referred to in paragraph (2) from time to time.

Functions of the guarantee of origin

6. (1) A guarantee of origin shall have no function in terms of the state's compliance with the targets in Article 3 of the Directive.

(2) CER may introduce objective, transparent and non discriminatory criteria for the use of guarantees of origin in complying with the obligations laid down in the Internal Market Regulations.

(3) A supplier may use a guarantee of origin as proof of the share or quantity of energy from renewable sources in its energy mix for the purposes of compliance with the requirements of Regulation 25 of the Internal Market Regulations.

(4) The amount of energy from renewable sources corresponding to guarantees of origin transferred by a supplier to a third party shall be deducted from the share of energy from renewable sources in the energy mix of the supplier furnished under Regulation 25 of the Internal Market Regulations.

(5) Where suppliers market energy from renewable sources to consumers with a reference to environmental or other benefits of energy from renewable sources, CER may require those suppliers to make available, in summary form, information of the amount of share energy from renewable sources that some from installations or increased capacity that have become operational from 25 June 1999.

Eligibility and characteristics of a guarantee of origin

7. (1) A guarantee of origin applies to the standard size of one megawatt hour (hereinafter referred to as a "renewable energy unit").

(2) No more than one guarantee of origin shall be issued in respect of each renewable energy unit.

(3) The same renewable energy unit shall be taken into account only once.

(4) Where a PSO generator receives a guarantee of origin for a renewable energy unit, no support scheme payment for the same unit of electricity shall be made.

(5) Any use of the guarantee of origin shall take place within 12 months of the generation of the corresponding renewable energy unit.

(6) A guarantee of origin shall be of no effect once it has been used.

(7) A guarantee of origin shall specify at least:

- (a) that the guarantee of origin relates to electricity from renewable sources,
- (b) the energy source from which the electricity was produced and the start and end dates of production,
- (c) the identity, location, type and capacity of the generating station where the electricity was produced,
- (d) whether and to what extent the generating station has benefitted from investment support and whether and to what extent the unit of energy has benefited in any other way from a national support scheme and the type of support scheme,
- (e) the date and country of issue and a unique identification number, and
- (f) the date on which the installation became operational.

Request for issue of guarantee of origin and information required

8. (1) A guarantee of origin shall be issued by SEMO in response to a request from a generator of electricity from renewable energy sources.

(2) A guarantee of origin may not be requested for electricity generated outside the State.

(3) A request for the issuance of a guarantee of origin shall not be considered properly made until SEMO has been provided with at least the following information from the applicant—

- (a) the energy source from which the electricity was generated,
- (b) the start and end dates of generation covered by the request,
- (c) the name, address, location, type and capacity of the generating station where the energy was generated,
- (d) whether and to what extent the generating station has benefited from investment support,
- (e) whether and to what extent the unit of energy has benefited in any other way from a support scheme, and the type of support scheme, and
- (f) the date on which the generating station became operational.

(4) SEMO may request further information from a requester for the purpose of determining eligibility for the guarantee of origin and ascertaining the accuracy of the information submitted in accordance with paragraph (3).

(5) SEMO shall, in accordance with the supervisory framework, establish an electronic register of issued guarantees of origin which shall include, at a minimum, the following information:

- (a) the date of issue of the guarantee of origin;
 - (b) the name and address (if a body corporate, its registered place of business) of the person to whom the guarantee has been, or was originally, issued;
 - (c) a unique identification number for each guarantee of origin;
 - (d) the energy source or sources from which the electricity to which the guarantee of origin relates was generated;
 - (e) the start and end dates of generation to which the guarantee of origin relates;
 - (f) the type and capacity of the generating station where the energy was generated to which the guarantee of origin relates;
 - (g) where the guarantee of origin has been transferred, the name and address (if a body corporate, its registered place of business) of the last person to whom it has been transferred;
 - (h) where a guarantee of origin has been issued to a PSO generator, a statement to this effect;
 - (i) a list of any guarantees of origin revoked pursuant to Regulation 9.
- (6) SEMO may refuse a request for a guarantee of origin where—
- (a) it is not satisfied that the requester is a generator of electricity from renewable sources, and
 - (b) the application is incomplete or ineligible.

Revocation of a guarantee of origin

9. (1) SEMO, after consulting with CER, may revoke a guarantee of origin where:

- (a) it is satisfied that the information provided in accordance with paragraphs (3) and (4) of Regulation 8 and on the basis on which that guarantee of origin was issued is substantively incorrect,
- (b) it is satisfied that the guarantee of origin was issued on the basis of any fraudulent behaviour, statement or undertaking, or
- (c) it is satisfied for another stated reason that the guarantee of origin should not have been issued, is inaccurate or was issued to the wrong person.

(2) SEMO shall give notice in writing as soon as is practicable to a holder of guarantee of origin that it has been revoked.

Recognition of guarantees of origin

10. (1) The supervisory framework established by CER under Regulation 5(2) shall provide for the recognition of guarantees of origin issued by other Member States in accordance with Article 15(9) of the Directive.

(2) SEMO, acting in accordance with the supervisory framework, may refuse to recognise a guarantee of origin issued by another Member State only where it has well-founded doubts about the accuracy, reliability or veracity of the guarantee of origin and in such a case shall notify the Minister and the European Commission of such a refusal and its justification.

Recoupment of costs

11. (1) The issuance, transfer, or cancellation of a guarantee of origin under these Regulations may be accompanied by the imposition of such reasonable and proportionate fee, if any, as is determined appropriate by SEMO and approved by CER to cover administrative costs.

(2) SEMO shall make information on fees publicly available.

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12. The holder of a licence under paragraph (c) or (d) of section 14(1) of the Act of 1999 which is in force immediately before the making of these Regulations is deemed to be a holder of a licence granted by CER under paragraph (b) of section 14(1) of the Act of 1999.

Guarantee of origin for high efficiency CHP

13. These Regulations are not applicable in respect of guarantees of origin for high efficiency CHP.

Calculation of share of energy from renewable sources

14. (1) SEAI shall calculate the share of energy from renewable sources by applying the methodology in Schedule 1, where applicable.

(2) If, due to force majeure, the Minister considers it impossible to meet the share of energy from renewable sources in gross final consumption of energy in 2020 set out in Article 3 of the Directive, he shall inform the European Commission accordingly as soon as possible.

Competent authority for appropriate measures

15. (1) The Minister is the competent authority for the introduction of the measures for the purposes of Article 3(2) of the Directive and for the purposes of those measures he or she shall have regard to the indicative trajectory referred to in Schedule 2 and the targets assigned to the State in Article 3(4) of, and Annex I to, the Directive.

Introduction of support schemes and renewable energy obligations

16. (1) (a) Where a support scheme requires technical specifications which must be met by renewable energy equipment and systems in order for an applicant to benefit from the scheme, such specifications shall be clearly defined.

- (b) Where European standards exist, including eco-labels, energy labels and other technical reference systems established by the European standardisation bodies, the technical specifications referred to in paragraph (a) shall be expressed in terms of those standards. Such technical specifications shall not prescribe where the equipment and systems are to be certified and should not impede the operation of the internal market of the European Union.

(2) It shall be a requirement of a support scheme or a renewable energy obligation that where biofuels or bioliquids are to benefit from a support scheme or contribute to compliance with a renewable energy obligation, they must comply with the sustainability criteria set out in Schedule 3. The terms and conditions of a support scheme or renewable energy obligation shall not prohibit a participant, on other sustainability grounds, to use biofuels and bioliquids obtained in compliance with the requirements of Schedule 3.

(3) It is for the participant in a support scheme or renewable energy obligation to demonstrate to the competent authority's satisfaction that the biofuel or bioliquid used meets the sustainability criteria in Schedule 3.

Biofuels and bioliquids meeting sustainability criteria

17. (1) Subject to paragraph (2), biofuels and bioliquids are deemed to meet the sustainability criteria if they comply with paragraphs (1) to (7) of Schedule 3.

(2) Biofuels or bioliquids which are produced from wastes or residues other than residues from agriculture, aquaculture, fisheries or forestry, need only meet the greenhouse gas emission criteria referred to in paragraph (1)(a) of Schedule 3 to be deemed to meet the sustainability criteria.

Bioliquids — verification

18. (1) The competent authority for a support scheme or renewable energy obligation shall establish a procedure to verify that participants have demonstrated that the bioliquids comply with the requirements of Schedule 3.

(2) The competent authority for a support scheme or renewable energy obligation may, with the consent of the Minister, arrange for a national scheme for demonstrating that the bioliquids comply with the requirements of Schedule 3.

Bioliquids — information from participants

19. (1) A participant in a support scheme or renewable energy obligation shall comply with any request from a competent authority, to provide the following information for each consignment of bioliquids it used in a support scheme:

- (a) whether the greenhouse gas emissions savings required under paragraphs (1) to (5) of Schedule 3 are being achieved through—
 - (i) the use of default values,
 - (ii) a combination of disaggregated default values and actual calculations, or

- (iii) solely through the use of actual calculations;
- (b) the type of raw material from which the product is made;
- (c) the place of origin of the raw material;
- (d) details of measures taken for—
 - (i) soil, water and air protection,
 - (ii) the restoration of degraded land, and
 - (iii) the avoidance of excessive water consumption in areas where water is scarce;
- (e) whether the bonus referred to in Part C, paragraphs 7 and 8 of Schedule 4 and Annex IV, Part C, points 7 and 8 of the Directive of 1998 has been used in the greenhouse gas calculation referred to in Part C, paragraph 1 of Schedule 4 and Annex IV, Part C, point 1 of the Directive of 1998 for the consignment;
- (f) whether the factor for emissions savings from soil carbon accumulation via improved agricultural management referred to in Part C, paragraph 1 of Schedule 4 and Annex IV, Part C, point 1 of the Directive of 1998 has been used in the greenhouse gas calculation referred to in the same paragraph for the consignment, and at least one of the following—
 - (i) a statement, and evidence in support thereof, that the consignment has been certified or accepted as fulfilling the requirements of any procedure referred to in Regulation 18(2),
 - (ii) a statement, and evidence in support thereof, that the consignment has been certified or accepted as fulfilling the requirements of a bilateral or multilateral agreement that has been concluded by the European Union, in accordance with the first subparagraph of Article 18(4) of the Directive and the first subparagraph of Article 7c(4) of the Directive of 1998, to contain accurate data for the purposes of information on measures taken for soil, water and air protection, the restoration of degraded land and the avoidance of excessive water consumption in areas where water is scarce, or
 - (iii) a statement, and evidence in support thereof, that the consignment has been duly certified as fulfilling the requirements of a voluntary scheme (including the name of the voluntary scheme) that has been recognised by the European Commission, in accordance with the second subparagraph of Article 18(4) of the Directive and the second subparagraph of Article 7c(4) of the Directive of 1998, to contain accurate data for the purposes of information on measures taken for soil, water and air protection,

the restoration of degraded land and the avoidance of excessive water consumption in areas where water is scarce.

(2) Paragraphs (1)(e) and 1(f) shall not apply where bioliquids have been produced from waste or residues.

(3) The information submitted to a competent authority under this Regulation shall be accompanied by a report verifying the information. The verification shall be completed by an independent person in accordance with requirements for assurance engagements, as may be approved by the competent authority from time to time.

(4) Where calculation of emissions savings is involved, a participant in a support scheme or renewable energy obligation shall hold the details of these calculations on file for 3 years and these details shall be available for audit as required by Regulation 20.

(5) The Minister shall submit to the European Commission, in aggregated form, the information required to be submitted to a competent authority under this Regulation.

Bioliquids — independent audit of records

20. (1) In order for bioliquids to be deemed to meet the sustainability criteria, a participant in a support scheme or renewable energy obligation using bioliquids shall maintain records of sustainability criteria related data for each consignment of bioliquid used.

(2) A participant in a support scheme or renewable energy obligation using bioliquids shall arrange for an independent audit of the data referred to in paragraph (1) and the information submitted to the competent authority under these Regulations on an annual basis.

(3) The audit shall—

- (a) evaluate the frequency and methodology of sampling and the robustness of the data,
- (b) verify that the systems used by the person wishing to participate in a support scheme or renewable energy obligation are accurate, reliable and protected against fraud,
- (c) meet the requirements specified for assurance engagements as may be approved by the competent authority from time to time, and
- (d) be in such form as the competent authority may require.

(4) A participant in a support scheme or renewable energy obligation using bioliquids shall deliver the auditors' report to the competent authority no later than 3 months after the end of the reporting period for the support scheme or renewable energy obligation or within a period determined by the competent authority.

Statement of compliance with sustainability criteria

21. (1) A participant in a support scheme or renewable energy obligation who uses bioliquids shall furnish to the competent authority a statement of compliance with Schedule 3 specifying which of the following methods has been utilised with respect to each consignment of bioliquids:

- (a) through compliance with any national scheme developed by a competent authority under Regulation 18(2);
- (b) through a bilateral or multilateral agreement concluded by the European Commission with a third country, referred to in the first subparagraph of Article 18(4) of the Directive, and adopted under the advisory procedure in Article 25(3) of the Directive;
- (c) through a voluntary national or international scheme recognised by the European Commission referred to in the second subparagraph of Article 18(4) of the Directive, and adopted under the advisory procedure in Article 25(3) of the Directive.

(2) A participant in a support scheme or renewable energy obligation shall report compliance with Schedule 3 in accordance with a mass balance system that—

- (a) allows consignments of raw material or bioliquids or biofuel with differing sustainability characteristics to be mixed,
- (b) requires information about the sustainability characteristics and sizes of the consignments referred to in subparagraph (a) to remain assigned to the mixture, and
- (c) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture.

(3) Where a participant in a support scheme or renewable energy obligation has demonstrated compliance of a consignment of biofuels or bioliquid with the sustainability criteria in Schedule 3 using an agreement referred to in paragraph (1)(b) or (c), to the extent the agreement demonstrates compliance with the sustainability criteria, they shall not be required to provide—

- (a) further proof of compliance, or
- (b) information as specified under Regulation 19(1)(d) of these Regulations or Regulation 6(1)(d) of the Regulations of 2012.

Provision of information by competent authority to SEAI

22. (1) A competent authority shall, on the request of SEAI, provide the SEAI with such information, that the competent authority has collected in the performance of its functions regarding a support scheme or renewable energy obligation pursuant to these Regulations, the Biofuels Obligation Act or the

Regulations of 2012 to the extent that that information is necessary for SEAI to perform its functions pursuant to these Regulations.

Provision of information on biofuel blends greater than 10 per cent

23. When the percentages of biofuels, blended in mineral oil derivatives, exceed 10 per cent by volume, persons seeking to market the mineral oil derivatives shall indicate this at the sales points.

Amendment of S.I. No. 217 of 2002

24. (1) The Electricity Regulation Act 1999 (Public Service Obligations) Order 2002 (S.I. No. 217 of 2002) is amended:

(a) in Article 2 by inserting the following definition:

“‘bioliquids’ means liquid fuel for energy purposes other than for transport, including electricity and heating and cooling, produced from biomass;”, and

(b) in Article 6D(2)(inserted by the Electricity Regulation Act 1999 (Public Service Obligations) (Amendment) Order 2012 (S.I. No. 438 of 2012))—

(i) in subparagraph (a), by substituting “15 years,” for “15 years, or”,

(ii) in subparagraph (b)(ii), by substituting “31 December 2030,” for “31 December 2030, or”,

(iii) in subparagraph (c), by substituting “Notification, or” for “Notification.”, and

(iv) by inserting after subparagraph (c) the following:

“(d) where a generator has generated electricity from bioliquids and where the generator has not satisfied the Commission that the bioliquids have complied with the sustainability criteria in Schedule 3 to the European Communities (Renewable Energy) Regulations 2014 (S.I. No. 483 of 2014).”.

Amendment of Regulations of 2012

25. (1) The Regulations of 2012 are amended—

(a) in Regulation 2(1) by inserting after the definition of “disposal of biofuel” the following:

“‘Regulations of 2014’ means European Union (Renewable Energy) Regulations 2014 (S.I. No. 483 of 2014).”,

(b) in Regulation 4, by substituting for paragraph (1) the following:

“(1) The Agency shall establish a procedure (as referred to in the second subparagraph of Article 18(4) of the Directive) by which

biofuel obligation account holders may demonstrate compliance with Schedule 3 to the Regulations of 2014 for biofuel in respect of which biofuel obligation certificates are being applied for.

(1A) The Agency may, with the consent of the Minister, arrange for a national scheme for demonstrating that biofuels in respect of which biofuel obligation certificates are being applied for comply with the requirements of Schedule 3 to the Regulations of 2014.”,

(c) in Regulation 5(1)—

(i) by substituting for paragraph (a) the following:

“(a) through compliance with any national scheme arranged by the Agency under Regulation 4(1A);”,

(ii) by deleting subparagraph (d),

(d) in Regulation 5, by inserting after paragraph (1) the following:

“(1A) When a biofuel obligation account holder provides proof or data obtained in accordance with an agreement or scheme as described in subparagraph (b) or (c) of paragraph (1), to the extent covered by that scheme, he or she shall not be required to provide further evidence of compliance with the sustainability criteria set out in Schedule 3 to the Regulations of 2014 or information on measures referred to Regulation 6(1)(d).”,

(e) in Regulation 6(1)—

(i) by substituting for subparagraph (a) the following:

“(a) whether the greenhouse gas emissions savings required under paragraphs (1) to (5) of Schedule 3 to the Regulations of 2014 are being achieved through—

(i) the use of default values,

(ii) a combination of disaggregated default values and actual calculations, or

(iii) solely through the use of actual calculations;”,

(ii) by substituting for subparagraphs (e) and (f) the following:

“(e) whether the bonus referred to in Part C, paragraphs 7 and 8 of Schedule 4 to the Regulations of 2014 and Annex IV, part C, points 7 and 8 to the Directive of 1998 has been used in the greenhouse gas calculation referred to in Part C, paragraph 1 of Schedule 4 to the Regulations of 2014 and Annex IV, Part C, point 1 to the Directive of 1998 for the consignment;

(f) whether the factor for emissions savings from soil carbon accumulation via improved agricultural management referred to in Part C, paragraph 1 of Schedule 4 to the Regulations of 2014 and Annex IV, part C, point 1 to the Directive of 1998 has been used in the greenhouse gas calculation referred to in the same paragraph for the consignment,” and

(iii) in subparagraph (iii) by substituting “Directive of 1998.” for “Directive of 1998;” and by deleting subparagraph (iv).

and

(f) in Regulation 6(2) by substituting “Paragraphs (1)(e) and (f)” for “Paragraphs (1)(d)(i) and 1(f)”.

Amendment of Biofuels Obligation Act — Section 44G(4)

26. Section 44G(4) (inserted by section 3 of the Energy (Biofuel Obligation and Miscellaneous Provisions) Act 2010 (No. 11 of 2010)) of the Biofuel Obligation Act is amended by substituting for paragraphs (a) and (b) the following:

“(a) the sustainability criteria for biofuels and bioliquids set out in Schedule 3 to the European Union (Renewable Energy) Regulations 2014 (S.I. No. 483 of 2014), and

(b) any requirements for verification of compliance with those sustainability criteria in accordance with those Regulations.”.

Revocation of S.I. No. 147 of 2011

27. The European Communities (Renewable Energy) Regulations 2011 (S.I. No. 147 of 2011) are revoked.

SCHEDULE 1

Regulation 14

(A) Calculation of the share of energy from renewable sources

1. The gross final consumption of energy from renewable sources shall be calculated as the sum of—

- (a) gross final consumption of electricity from renewable energy sources;
- (b) gross final consumption of energy from renewable sources for heating and cooling, and
- (c) final consumption of energy from renewable sources in transport.

Gas, electricity and hydrogen from renewable energy sources shall be considered only once in subparagraph 1(a),(b), or (c) for calculating the share of gross final consumption of energy from renewable sources.

Only biofuels and bioliquids that fulfil the sustainability criteria set out in Schedule 3 shall be taken into account when calculating for the calculations in subparagraph 1(a), (b) or (c). For the purposes referred to in subparagraph 1(a), (b), or (c), biofuels and bioliquids obtained in compliance with Schedule 3 shall not be refused on other sustainability grounds.

2. For the purposes of paragraph 1(a), gross final consumption of electricity from renewable energy sources shall be calculated as the quantity of electricity produced from renewable energy sources, excluding the production of electricity in pumped storage units from water that has previously been pumped uphill.

In multi-fuel plants using renewable and conventional sources, only the part of electricity produced from renewable energy sources shall be taken into account. For the purposes of this calculation, the contribution of each energy source shall be calculated on the basis of its energy content.

The electricity generated by hydropower shall be accounted for in accordance with the following normalisation rules.

$$Q_{N(norm)} = C_N * \left[\sum_{i=N-14}^N \frac{Q_i}{C_i} \right] / 15$$

where:

N = reference year;

$Q_{N(norm)}$ = normalised electricity generated by all hydropower plants in the State in year N, for accounting purposes;

Q_i = the quantity of electricity actually generated in year i by all hydropower plants in the State measured in GWh, excluding production from pumped storage units using water that has previously been pumped uphill;

C_i = the total installed capacity, net of pumped storage, of all hydropower plants in the State at the end of year i , measured in MW.

The electricity generated by wind power shall be accounted for in accordance with the following normalisation rules.

$$Q_{N(\text{norm})} = \frac{C_N + C_{N-1}}{2} * \frac{\sum_{i=N-n}^N Q_i}{\sum_{j=N-n}^N \left(\frac{C_j + C_{j-1}}{2} \right)}$$

Where:

N = reference year;

$Q_{N(\text{norm})}$ = normalised electricity generated by all wind power plants in the State in year N , for accounting purposes;

Q_i = the quantity of electricity actually generated in year i by all wind power plants in the State measured in GWh;

C_i = the total installed capacity of all the wind power plants in the State at the end of year i , measured in MW;

$n = 4$ or the number of years preceding year N for which capacity and production data are available in the State, whichever is lower.

3. For the purposes of paragraph 1(b), the gross final consumption of energy from renewable sources for heating and cooling shall be calculated as the quantity of district heating and cooling produced from renewable sources, plus the consumption of other energy from renewable sources in industry, households, services, agriculture, forestry and fisheries, for heating, cooling and processing purposes.

In multi-fuel plants using renewable and conventional sources, only the part of heating and cooling produced from renewable energy sources shall be taken into account. For the purposes of this calculation, the contribution of each energy source shall be calculated on the basis of its energy content.

Aerothermal, geothermal and hydrothermal heat energy captured by heat pumps shall be taken into account for the purposes of paragraph 1(b), provided that the final energy output significantly exceeds the primary energy input required to drive the heat pumps.

The amount of aerothermal, geothermal or hydrothermal energy captured by heat pumps to be considered energy from renewable sources for the purposes of these Regulations, ERES, shall be calculated in accordance with the following formula:

$$E_{RES} = Q_{usable} * (1 - 1/SPF)$$

where:

- Q_{usable} = the estimated total usable heat delivered by heat pumps fulfilling the criteria referred to the 2nd paragraph above implemented as follows: Only heat pumps for which $SPF > 1,15 * 1/\eta$ shall be taken into account;
- SPF = the estimated average seasonal performance factor for these heat pumps;
- η is the ratio between total gross production of electricity and the primary energy consumption for electricity production and shall be calculated as an EU average based on Eurostat data.

Thermal energy generated by passive energy systems, under which lower energy consumption is achieved passively through building design or from heat generated by energy from non-renewable sources, shall not be taken into account for the purposes of paragraph 1(b).

4. The energy content of the transport fuels shall be taken to be as set out in the table below:

Fuel	Energy content by weight (lower calorific value, MJ/kg)	Energy content by volume (lower calorific value, MJ/l)
Bioethanol (ethanol produced from biomass)	27	21
Bio-ETBE (ethyl-tertio-butyl-ether produced on the basis of bioethanol)	36 (of which 37% from renewable sources)	27 (of which 37% from renewable sources)
Biomethanol (methanol produced from biomass, to be used as biofuel)	20	16
Bio-MTBE (methyl-tertio-butyl-ether produced on the basis of bio-methanol)	35 (of which 22% from renewable sources)	26 (of which 22% from renewable sources)
Bio-DME (dimethylether produced from biomass, to be used as biofuel)	28	19
Bio-TAEE (tertiary-amyl-ethyl-ether produced on the basis of bioethanol)	38 (of which 29% from renewable sources)	29 (of which 29% from renewable sources)
Biobutanol (butanol produced from biomass, to be used as biofuel)	33	27
Biodiesel (methyl-ester produced from vegetable or animal oil, of diesel quality, to be used as biofuel)	37	33
Fischer-Tropsch diesel (a synthetic hydrocarbon or mixture of synthetic hydrocarbons produced from biomass)	44	34
Hydrotreated vegetable oil (vegetable oil thermochemically treated with hydrogen)	44	34

Fuel	Energy content by weight (lower calorific value, MJ/kg)	Energy content by volume (lower calorific value, MJ/l)
Pure vegetable oil (oil produced from oil plants through pressing, extraction or comparable procedures, crude or refined but chemically unmodified, when compatible with the type of engines involved and the corresponding emission requirements)	37	34
Biogas (a fuel gas produced from biomass and/or from the biodegradable fraction of waste, that can be purified to natural gas quality, to be used as biofuel, or woodgas)	50	-
Petrol	43	32
Diesel	43	36

5. The share of energy from renewable sources shall be calculated as the gross final consumption of energy from renewable sources divided by the gross final consumption of energy from all energy sources, expressed as a percentage.

The amount of energy consumed in aviation shall, as a proportion of gross final consumption of energy, be considered to be no more than 6.18 per cent.

6. The methodology and definitions used in the calculation of the share of energy from renewable sources shall be those of Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008³ on energy statistics.

SEAI shall ensure coherence of statistical information used in calculating those sectoral and overall shares and statistical information reported to the Commission under Regulation (EC) No 1099/2008.

(B) Methodology for calculating the renewable energy share in transport

- (a) For the calculation of the denominator, that is the total amount of energy consumed in transport, only petrol, diesel, biofuels consumed in road and rail transport, and electricity shall be taken into account;
- (b) for the calculation of the numerator, that is the amount of energy from renewable sources consumed in transport, all types of energy from renewable sources consumed in all forms of transport shall be taken into account;
- (c) for the calculation of the contribution from electricity produced from renewable sources and consumed in all types of electric vehicles for the purpose of subparagraphs (a) and (b), SEAI may choose to use either the average share of electricity from renewable energy sources in the European Union or the share of electricity from renewable energy sources in the State as measured two years before the year in question. Furthermore, for the calculation of the electricity from renewable energy sources consumed by electric road vehicles, that

³OJ No. L304, 14.11.2008, p.1

consumption shall be considered to be two and a half times the energy content of the input of electricity from renewable energy sources;

- (d) SEAI, when calculating the share of energy from renewable sources in transport, shall ensure the contribution made by biofuels determined by the SEAI, under section 44G of the Biofuel Obligation Act, as having been produced from wastes, residues, non-food cellulosic material, and ligno-cellulosic material, is considered to be twice that made by other biofuels.

SCHEDULE 2

Regulation 15

Indicative Trajectory

1 January 2011 - 31 December 2012	5.69%
1 January 2013 - 31 December 2014	6.98%
1 January 2015 - 31 December 2016	8.92%
1 January 2017 - 31 December 2018	11.51%

SCHEDULE 3

Regulations 2, 16, 17 and 18

Sustainability Criteria for Biofuels and Bioliquids

1. The greenhouse gas emission saving from the use of biofuels and bioliquids, compared to the greenhouse gas emissions from the use of fossil fuel, is at least:

- (a) in relation to bioliquid or biofuel used before 1st January 2017, 35 per cent;
- (b) in relation to bioliquid or biofuel used during 2017, 50 per cent;
- (c) in relation to bioliquid or biofuel produced by an installation that started producing bioliquid before 1st January 2017 and used on or after 1st January 2018, 50 per cent;
- (d) in all other cases, 60 per cent.

2. For the purposes of paragraph 1, the greenhouse gas emission saving between the greenhouse gas emissions from the use of the biofuels and bioliquids and the greenhouse gas emissions from the use of fossil fuel is to be calculated using one of the following methods—

- (a) the default percentage,
- (b) the actual value method, or
- (c) the combined method.

3. The combined may only be used for the purposes of paragraph 1 if the bioliquid or biofuel is described in the first column of a table in Part D or Part E of Schedule 4.

4. Where the combined method is used for the purposes of paragraph 1 of this Schedule, the disaggregated default values for cultivation may only be used in carrying out the calculation in paragraph 1 of Part C of Schedule 4 to these regulations if the feedstock from which the bioliquids or biofuel is made—

- (a) was cultivated outside the European Union;
- (b) was cultivated in an area included in a list submitted under Article 19(2) of the Directive;
- (c) is waste or a residue (other than residue from agriculture, aquaculture or fisheries).

5. The default percentage may only be used for the purposes of paragraph 1 if—

- (a) in relation to the bioliquids or biofuel, the result of the calculation in paragraph 7 of Part C of Schedule 4 is equal to, or less than, zero, and
- (b) in the case of bioliquids or biofuel described in the first column of Part A of Schedule 4, the feedstock from which the bioliquids or biofuel is made—
 - (i) was cultivated outside the European Union,
 - (ii) was cultivated in an area included in a list submitted under Article 19(2) of the Directive, or
 - (iii) is waste or residue (other than residue from agriculture, aquaculture or fisheries).

6. The feedstock from which it was made was not obtained from land that was—

- (a) primary forest in or after January 2008, whether or not the land continues to be primary forest;
- (b) a nature protection area in or after January 2008, (whether or not the land continues to be a nature protection area) other than where evidence is provided that the production of the feedstock concerned did not interfere with the nature protection purposes for which it was designated;
- (c) highly biodiverse grassland in or after January 2008, whether or not the land continues to be highly biodiverse grassland;
- (d) wetland in January 2008, but was not a wetland at the time the feedstock was obtained;
- (e) a continuously forested area in January 2008, but was not a continuously forested area at the time the feedstock was obtained;
- (f) a less forested area in January 2008, but was not in that category at the time the feedstock was obtained;
- (g) peat land in January 2008, other than where evidence is provided that the cultivation and harvesting of that raw material does not involve drainage of previously undrained soil.

7. Agricultural raw materials cultivated in a Member State (including the State) and used for the production of biofuels or bioliquids shall be obtained in accordance with the requirements and standards under the provisions referred to in Article 6(1) of Council Regulation (EC) No. 73/2009 of 19 January 2009⁴ and:

- (a) under the heading “Environment” in Point A, and

⁴OJ No. L30, 31.1.2009, p.16

(b) in Point 9,
of Annex II to Council Regulation (EC) No. 73/2009 of 19 January 2009⁴.

SCHEDULE 4

Regulations 2, 19 and 24

Rules for calculating the greenhouse gas impact of biofuels, bioliquids and their fossil fuel comparators

PART A

Typical and default values for biofuels if produced with no net carbon emissions from land-use change

Biofuel production pathway	typical greenhouse gas emission saving	default greenhouse gas emission saving
sugar beet ethanol	61%	52%
wheat ethanol (process fuel not specified)	32%	16%
wheat ethanol (lignite as process fuel in CHP plant)	32%	16%
wheat ethanol (natural gas as process fuel in conventional boiler)	45%	34%
wheat ethanol (natural gas as process fuel in CHP plant)	53%	47%
wheat ethanol (straw as process fuel in CHP plant)	69%	69%
corn (maize) ethanol, Community produced (natural gas as process fuel in CHP plant)	56%	49%
sugar cane ethanol	71%	71%
the part from renewable sources of ethyl-tertio-butyl-ether (ETBE)	Equal to that of the ethanol production pathway used	
the part from renewable sources of tertiary-amyl-ethyl-ether (TAEE)	Equal to that of the ethanol production pathway used	
rape seed biodiesel	45%	38%
sunflower biodiesel	58%	51%
soybean biodiesel	40%	31%
palm oil biodiesel (process not specified)	36%	19%
palm oil biodiesel (process with methane capture at oil mill)	62%	56%
waste vegetable or animal ⁵ oil biodiesel	88%	83%
hydrotreated vegetable oil from rape seed	51%	47%
hydrotreated vegetable oil from sunflower	65%	62%
hydrotreated vegetable oil from palm oil (process not specified)	40%	26%
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	68%	65%
pure vegetable oil from rape seed	58%	57%
biogas from municipal organic waste as compressed natural gas	80%	73%

⁵Not including animal oil produced from animal by products classified as category 3 material in accordance with Regulation (EC) No1774/2002 of the European Parliament and of the Council of 3 October 2002 laying down health rules on animal by-products not intended for human consumption.

Biofuel production pathway	typical greenhouse gas emission saving	default greenhouse gas emission saving
biogas from wet manure as compressed natural gas	84%	81%
biogas from dry manure as compressed natural gas	86%	82%

PART B

Estimated typical and default values for future biofuels that were not on the market or were on the market only in negligible quantities in January 2008, if produced with no net carbon emissions from land-use change

Biofuel production pathway	typical greenhouse gas emission saving	default greenhouse gas emission saving
wheat straw ethanol	87%	85%
waste wood ethanol	80%	74%
farmed wood ethanol	76%	70%
waste wood Fischer-Tropsch diesel	95%	95%
farmed wood Fischer-Tropsch diesel	93%	93%
waste wood dimethylether (DME)	95%	95%
farmed wood DME	92%	92%
waste wood methanol	94%	94%
farmed wood methanol	91%	91%
the part from renewable sources of methyl-tertio-butyl-ether (MTBE)	Equal to that of the methanol production pathway used	

PART C

Methodology

1. Greenhouse gas emissions from the production and use of transport fuels, biofuels and bioliquids shall be calculated as:

$$E = e_{cc} + e_l + e_p + e_{td} + e_u - e_{sca} - e_{ccs} - e_{ccr} - e_{ce},$$

where

E = total emissions from the use of the fuel;

e_{cc} = emissions from the extraction or cultivation of raw materials;

e_l = annualised emissions from carbon stock changes caused by land-use change;

e_p = emissions from processing;

e_{td} = emissions from transport and distribution;

e_u = emissions from the fuel in use;

e_{sca} = emission savings from soil carbon accumulation via improved agricultural management;

e_{ccs} = emission savings from carbon capture and geological storage;

e_{ccr} = emission savings from carbon capture and replacement; and

e_{ee} = emission savings from excess electricity from cogeneration.

Emissions from the manufacture of machinery and equipment shall not be taken into account.

2. Greenhouse gas emissions from fuels, E , shall be expressed in terms of grams of CO₂ equivalent per MJ of fuel, gCO_{2ecq}/MJ.

3. By derogation from paragraph 2, for transport fuels, values calculated in terms of gCO_{2ecq}/MJ may be adjusted to take into account differences between fuels in useful work done, expressed in terms of km/MJ. Such adjustments shall be made only where evidence of the differences in useful work done is provided.

4. Greenhouse gas emission savings from biofuels and bioliquids shall be calculated as:

$$\text{SAVING} = (E_F - E_B)/E_F,$$

where

E_B = total emissions from the biofuel or bioliquid, and

E_F = total emissions from the fossil fuel comparator.

5. The greenhouse gases taken into account for the purposes of paragraph 1 shall be CO₂, N₂O and CH₄. For the purpose of calculating CO₂ equivalence, those gases shall be valued as follows:

CO₂: 1

N₂O: 296

CH₄: 23

6. Emissions from the extraction or cultivation of raw materials, e_{ec} , shall include emissions from the extraction or cultivation process itself; from the collection of raw materials; from waste and leakages; and from the production of chemicals or products used in extraction or cultivation. Capture of CO₂ in the cultivation of raw materials shall be excluded. Certified reductions of greenhouse gas emissions from flaring at oil production sites anywhere in the world shall be deducted. Estimates of emissions from cultivation may be derived from the use of averages calculated for smaller geographical areas than those used in the calculation of the default values, as an alternative to using actual values.

7. Annualised emissions from carbon stock changes caused by land use change, e_1 , shall be calculated by dividing total emissions equally over 20 years. For the calculation of those emissions the following rule shall be applied:

$$e_1 = (CS_R - CS_A) \times 3,664 \times 1/20 \times 1/P - e_B,^6$$

where

e_1 = annualised greenhouse gas emissions from carbon stock change due to land-use change (measured as mass of CO₂-equivalent per unit biofuel energy);

CS_R = the carbon stock per unit area associated with the reference land use (measured as mass of carbon per unit area, including both soil and vegetation). The reference land-use shall be the land-use in January 2008 or 20 years before the raw material was obtained, whichever was the later;

CS_A = the carbon stock per unit area associated with the actual land use (measured as mass of carbon per unit area, including both soil and vegetation). In cases where the carbon stock accumulates over more than one year, the value attributed to CS_A shall be the estimated stock per unit area after twenty years or when the crop reaches maturity, whichever the earlier;

P = the productivity of the crop (measured as biofuel or bioliquid energy per unit area per year); and

e_B = bonus of 29 gCO_{2eq}/MJ biofuel or bioliquid if biomass is obtained from restored degraded land under the conditions provided for in paragraph 8.

8. The bonus of 29 gCO_{2eq}/MJ shall be attributed if evidence is provided that the land—

- (a) was not in use for agriculture or any other activity in January 2008, and
- (b) falls into one of the following categories—
 - (i) severely degraded land, including such land that was formerly in agricultural use, or
 - (ii) heavily contaminated land.

The bonus of 29 gCO_{2eq}/MJ shall apply for a period of up to 10 years from the date of conversion of the land to agricultural use, provided that a steady increase in carbon stocks as well as a sizable reduction in erosion phenomena for land falling under (i) are ensured and that soil contamination for land falling under (ii) is reduced.

⁶The quotient obtained by dividing the molecular weight of CO₂ (44,010 g/mol) by the molecular weight of carbon (12,011 g/mol) is equal to 3,664

9. In paragraph 8(b):

“severely degraded land” means land that, for a significant period of time, has either been significantly salinated or presented significantly low organic matter content and has been severely eroded;

“heavily contaminated land” means land that is unfit for the cultivation of food and feed due to soil contamination.

Such land shall include land that has been the subject of a European Commission decision in accordance with the fourth subparagraph of Article 18(4).

10. The Annex to the European Commission’s decision 2010/335/EU shall serve as the basis for the calculation of land carbon stocks for the purposes of these Regulations.

11. Emissions from processing, e_p , shall include emissions from the processing itself; from waste and leakages; and from the production of chemicals or products used in processing.

In accounting for the consumption of electricity not produced within the fuel production plant, the greenhouse gas emission intensity of the production and distribution of that electricity shall be assumed to be equal to the average emission intensity of the production and distribution of electricity in a defined region. By derogation from this rule, producers may use an average value for an individual electricity production plant for electricity produced by that plant, if that plant is not connected to the electricity grid.

12. Emissions from transport and distribution, e_{td} , shall include emissions from the transport and storage of raw and semi-finished materials and from the storage and distribution of finished materials. Emissions from transport and distribution to be taken into account under paragraph 6 shall not be covered by this paragraph.

13. Emissions from the fuel in use, e_u , shall be taken to be zero for biofuels and bioliquids.

14. Emission savings from carbon capture and geological storage e_{ccs} , that have not already been accounted for in e_p , shall be limited to emissions avoided through the capture and sequestration of emitted CO_2 directly related to the extraction, transport, processing and distribution of fuel.

15. Emission savings from carbon capture and replacement, e_{ccr} , shall be limited to emissions avoided through the capture of CO_2 of which the carbon originates from biomass and which is used to replace fossil-derived CO_2 used in commercial products and services.

16. Emission savings from excess electricity from cogeneration, e_{ec} , shall be taken into account in relation to the excess electricity produced by fuel production systems that use cogeneration except where the fuel used for the cogeneration is a co-product other than an agricultural crop residue. In accounting for

that excess electricity, the size of the cogeneration unit shall be assumed to be the minimum necessary for the cogeneration unit to supply the heat that is needed to produce the fuel. The greenhouse gas emission savings associated with that excess electricity shall be taken to be equal to the amount of greenhouse gas that would be emitted when an equal amount of electricity was generated in a power plant using the same fuel as the cogeneration unit.

17. Where a fuel production process produces, in combination, the fuel for which emissions are being calculated and one or more other products (co-products), greenhouse gas emissions shall be divided between the fuel or its intermediate product and the co-products in proportion to their energy content (determined by lower heating value in the case of co-products other than electricity).

18. For the purposes of the calculation referred to in paragraph 17, the emissions to be divided shall be $e_{cc} + e_1$ + those fractions of e_p , e_{td} and e_{ec} that take place up to and including the process step at which a co-product is produced. If any allocation to co-products has taken place at an earlier process step in the life-cycle, the fraction of those emissions assigned in the last such process step to the intermediate fuel product shall be used for this purpose instead of the total of those emissions.

In the case of biofuels and bioliquids, all co-products, including electricity that does not fall under the scope of paragraph 16, shall be taken into account for the purposes of that calculation, except for agricultural crop residues, including straw, bagasse, husks, cobs and nut shells. Co-products that have a negative energy content shall be considered to have an energy content of zero for the purpose of the calculation.

Wastes, agricultural crop residues, including straw, bagasse, husks, cobs and nut shells, and residues from processing, including crude glycerine (glycerine that is not refined), shall be considered to have zero life-cycle greenhouse gas emissions up to the process of collection of those materials.

In the case of fuels produced in refineries, the unit of analysis for the purposes of the calculation referred to in paragraph 17 shall be the refinery.

19. For biofuels, for the purposes of the calculation referred to in paragraph 4, the fossil fuel comparator E_F shall be the latest available actual average emissions from the fossil part of petrol and diesel consumed in the European Union as reported under Directive 98/70/EC. If no such data are available, the value used shall be 83,8 gCO_{2eq}/MJ.

For bioliquids used for electricity production, for the purposes of the calculation referred to in paragraph 4, the fossil fuel comparator E_F shall be 91 gCO_{2eq}/MJ.

For bioliquids used for heat production, for the purposes of the calculation referred to in paragraph 4, the fossil fuel comparator E_F shall be 77 gCO_{2eq}/MJ.

For bioliquids used for cogeneration, for the purposes of the calculation referred to in paragraph 4, the fossil fuel comparator E_F shall be 85 gCO_{2eq}/MJ.

PART D

Disaggregated default values for biofuels and bioliquids

Disaggregated default values for cultivation: 'e_{cc}' as defined in Part C

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
sugar beet ethanol	12	12
wheat ethanol	23	23
corn (maize) ethanol, Community produced	20	20
sugar cane ethanol	14	14
the part from renewable sources of ETBE	Equal to that of the ethanol production pathway used	
the part from renewable sources of TAEE	Equal to that of the ethanol production pathway used	
rape seed biodiesel	29	29
sunflower biodiesel	18	18
soybean biodiesel	19	19
palm oil biodiesel	14	14
waste vegetable or animal ⁷ oil biodiesel	0	0
hydrotreated vegetable oil from rape seed	30	30
hydrotreated vegetable oil from sunflower	18	18
hydrotreated vegetable oil from palm oil	15	15
pure vegetable oil from rape seed	30	30
biogas from municipal organic waste as compressed natural gas	0	0
biogas from wet manure as compressed natural gas	0	0
biogas from dry manure as compressed natural gas	0	0

Disaggregated default values for processing (including excess electricity): 'e_p-e_{cc}' as defined in Part C

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
sugar beet ethanol	19	26
wheat ethanol (process fuel not specified)	32	45
wheat ethanol (lignite as process fuel in CHP plant)	32	45
wheat ethanol (natural gas as process fuel in conventional boiler)	21	30
wheat ethanol (natural gas as process fuel in CHP plant)	14	19
wheat ethanol (straw as process fuel in CHP plant)	1	1

⁷Not including animal oil produced from animal by products classified as category 3 material in accordance with Regulation (EC) No 1774/2002.

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
corn (maize) ethanol, Community produced (natural gas as process fuel in CHP plant)	15	21
sugar cane ethanol	1	1
the part from renewable sources of ETBE	Equal to that of the ethanol production pathway used	
the part from renewable sources of TAEE	Equal to that of the ethanol production pathway used	
rape seed biodiesel	16	22
sunflower biodiesel	16	22
soybean biodiesel	18	26
palm oil biodiesel (process not specified)	35	49
palm oil biodiesel (process with methane capture at oil mill)	13	18
waste vegetable or animal oil biodiesel	9	13
hydrotreated vegetable oil from rape seed	10	13
hydrotreated vegetable oil from sunflower	10	13
hydrotreated vegetable oil from palm oil (process not specified)	30	42
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	7	9
pure vegetable oil from rape seed	4	5
biogas from municipal organic waste as compressed natural gas	14	20
biogas from wet manure as compressed natural gas	8	11
biogas from dry manure as compressed natural gas	8	11

Disaggregated default values for transport and distribution: 'e_{td}' as defined in Part C

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
sugar beet ethanol	2	2
wheat ethanol	2	2
corn (maize) ethanol, Community produced	2	2
sugar cane ethanol	9	9
the part from renewable sources of ETBE	Equal to that of the ethanol production pathway used	
the part from renewable sources of TAEE	Equal to that of the ethanol production pathway used	
rape seed biodiesel	1	1
sunflower biodiesel	1	1
soybean biodiesel	13	13
palm oil biodiesel	5	5

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
waste vegetable or animal oil biodiesel	1	1
hydrotreated vegetable oil from rape seed	1	1
hydrotreated vegetable oil from sunflower	1	1
hydrotreated vegetable oil from palm oil	5	5
pure vegetable oil from rape seed	1	1
biogas from municipal organic waste as compressed natural gas	3	3
biogas from wet manure as compressed natural gas	5	5
biogas from dry manure as compressed natural gas	4	4

Total for cultivation, processing, transport and distribution

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
sugar beet ethanol	33	40
wheat ethanol (process fuel not specified)	57	70
wheat ethanol (lignite as process fuel in CHP plant)	57	70
wheat ethanol (natural gas as process fuel in conventional boiler)	46	55
wheat ethanol (natural gas as process fuel in CHP plant)	39	44
wheat ethanol (straw as process fuel in CHP plant)	26	26
corn (maize) ethanol, Community produced (natural gas as process fuel in CHP plant)	37	43
sugar cane ethanol	24	24
the part from renewable sources of ETBE	Equal to that of the ethanol production pathway used	
the part from renewable sources of TAAE	Equal to that of the ethanol production pathway used	
rape seed biodiesel	46	52
sunflower biodiesel	35	41
soybean biodiesel	50	58
palm oil biodiesel (process not specified)	54	68
palm oil biodiesel (process with methane capture at oil mill)	32	37
waste vegetable or animal oil biodiesel	10	14
hydrotreated vegetable oil from rape seed	41	44
hydrotreated vegetable oil from sunflower	29	32
hydrotreated vegetable oil from palm oil (process not specified)	50	62
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	27	29
pure vegetable oil from rape seed	35	36

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
biogas from municipal organic waste as compressed natural gas	17	23
biogas from wet manure as compressed natural gas	13	16
biogas from dry manure as compressed natural gas	12	15

PART E

Estimated disaggregated default values for future biofuels and bioliquids that were not on the market or were only on the market in negligible quantities in January 2008

Disaggregated default values for cultivation: 'e_{cc}' as defined in Part C

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
wheat straw ethanol	3	3
waste wood ethanol	1	1
farmed wood ethanol	6	6
waste wood Fischer-Tropsch diesel	1	1
farmed wood Fischer-Tropsch diesel	4	4
waste wood DME	1	1
farmed wood DME	5	5
waste wood methanol	1	1
farmed wood methanol	5	5
the part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Disaggregated default values for processing (including excess electricity): 'e_{p-e_{cc}}' as defined in Part C

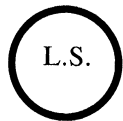
Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
wheat straw ethanol	5	7
wood ethanol	12	17
wood Fischer-Tropsch diesel	0	0
wood DME	0	0
wood methanol	0	0
the part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Disaggregated default values for transport and distribution: 'e_{td}' as defined in Part C

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
wheat straw ethanol	2	2
waste wood ethanol	4	4
farmed wood ethanol	2	2
waste wood Fischer-Tropsch diesel	3	3
farmed wood Fischer-Tropsch diesel	2	2
waste wood DME	4	4
farmed wood DME	2	2
waste wood methanol	4	4
farmed wood methanol	2	2
the part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Total for cultivation, processing, transport and distribution

Biofuel and bioliquid production pathway	Typical greenhouse gas emissions (gCO _{2eq} /MJ)	Default greenhouse gas emissions (gCO _{2eq} /MJ)
wheat straw ethanol	11	13
waste wood ethanol	17	22
farmed wood ethanol	20	25
waste wood Fischer-Tropsch diesel	4	4
farmed wood Fischer-Tropsch diesel	6	6
waste wood DME	5	5
farmed wood DME	7	7
waste wood methanol	5	5
farmed wood methanol	7	7
the part from renewable sources of MTBE	Equal to that of the methanol production pathway used	



GIVEN under my Official Seal,
23 October 2014.

ALEX WHITE,
Minister for Communications, Energy and Natural Resources.

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation.)

This S.I. pertains to the implementation of Directive 2009/28/EC on the promotion of the use of energy from renewable sources. Elements of the Directive are transposed including the provisions relating to access to and operation of the grid; guarantees of origin and the exemplary role of public bodies regarding public buildings.

BAILE ÁTHA CLIATH
ARNA FHOILSIÚ AG OIFIG AN tSOLÁTHAIR
Le ceannach díreach ó
FOILSEACHÁIN RIALTAIS,
52 FAICHE STIABHNA, BAILE ÁTHA CLIATH 2
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