

SUBSIDIARY LEGISLATION 545.43

PROMOTION OF ENERGY FROM RENEWABLE SOURCES REGULATIONS

17th April, 2026

LEGAL NOTICE 93 of 2026, as amended by Legal Notice 206 of 2026.

Arrangement of the regulations

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PART I

Preliminary

1. (1) The title of these regulations is the Promotion of Energy from Renewable Sources Regulations. Citation and scope.

(2) The scope of these regulations is to:

(a) transpose Articles 2 to 18 and 20 to 28 of Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast);

(b) partially transpose Article 1(1), and transpose

Articles 1(2) to (18), Annex I (2) to (4) and Annex I (7) and (8) of Directive (EU) 2023/2413 of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652;

(c) transpose Article 1 of Directive (EU) 2024/1711 of the European Parliament and of the Council of 13 June 2024 amending Directives (EU) 2018/2001 and (EU) 2019/944 as regards improving the Union's electricity market design; and

(d) transpose Commission Delegated Directive (EU) 2024/1405 of 14 March 2024 amending Annex IX to Directive (EU) 2018/2001 of the European Parliament and of the Council as regards adding feedstock for the production of biofuels and biogas.

Interpretation.
Amended by:
L.N. 206 of 2026.

2. (1) In these regulations, unless the context otherwise requires:

Cap. 545.

"Act" means the Regulator for Energy and Water Services Act;

"advanced biofuels" means biofuels which are produced from the feedstock listed in Part A of the Fourth Schedule;

"ambient energy" means naturally occurring thermal energy and energy accumulated in the environment with constrained boundaries, which can be stored in the ambient air, excluding in exhaust air, or in surface or sewage water;

"bidding zone" means a bidding zone as defined in point (65) of Article 2 of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast);

"bi-directional recharging" means bi-directional recharging as defined in point (11) of Article 2 of Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU;

"biofuels" means liquid fuel for transport produced from biomass;

"biogas" means gaseous fuels produced from biomass;

"bioliquids" means liquid fuel for energy purposes other than for transport, including electricity and heating and cooling,

produced from biomass;

"biomass" means the biodegradable fraction of products, waste and residues from biological origin from agriculture, including vegetal and animal substances, from forestry and related industries, including fisheries and aquaculture, as well as the biodegradable fraction of waste, including industrial and municipal waste of biological origin;

"biomass fuels" means gaseous and solid fuels produced from biomass;

"Building and Construction Authority" means the Authority established by article 5 of the Building and Construction Authority Act; Cap. 623.

"co-located energy storage" means an energy storage facility combined with a facility producing renewable energy and connected to the same grid access point;

"Directive" means Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (recast);

"Directive (EU) 2019/944" means Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast);

"distribution system operator" shall have the same meaning as assigned to it in the Electricity Regulations with respect to electricity and with respect to natural gas it shall have the same meaning as assigned to it in the Natural Gas Market Regulations for natural gas; S.L. 545.34.
S.L. 545.12.

"district heating" or "district cooling" means the distribution of thermal energy in the form of steam, hot water or chilled liquids, from central or decentralised sources of production through a network to multiple buildings or sites, for the use of space or process heating or cooling;

"domestic battery" means a stand-alone rechargeable battery of rated capacity greater than 2 kwh, which is suitable for installation and use in a domestic environment;

"efficient district heating and cooling" shall have the same meaning as assigned to it in the Energy Efficiency Regulations; S.L. 545.33.
S.L. 623.07.

S.L. 545.34.

"electricity markets" shall have the same meaning as assigned to it in the Electricity Regulations;

"electric vehicle battery" means an electric vehicle battery as defined in point (14) of Article 3(1) of Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC;

"energy efficiency first principle" means energy efficiency first as defined in point (18) of Article 2 of Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council;

"energy from renewable sources" or "renewable energy" means energy from renewable non-fossil sources, namely wind, solar (solar thermal and solar photovoltaic) and geothermal energy, osmotic energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas, and biogas;

S.L. 623.01.

"energy performance certificate (EPC)" shall have the same meaning as assigned to it in the Energy Performance of Buildings Regulations;

"European Commission" or "Commission" shall have the same meaning as assigned to it in the Treaty;

"European Union (EU)" or "Union" shall have the same meaning as assigned to it in the Treaty;

"financial instrument" means a financial instrument as defined in point (3) of Article 2 of Regulation (EU, Euratom) 2024/2509 of the European Parliament and of the Council of 23 September 2024 on the financial rules applicable to the general budget of the Union (recast);

"food and feed crops" means starch-rich crops, sugar crops or oil crops produced on agricultural land as a main crop excluding residues, waste or ligno-cellulosic material and intermediate crops, such as catch crops and cover crops,

provided that the use of such intermediate crops does not trigger demand for additional land;

"fuel supplier" means an entity supplying fuel to the market that is responsible for passing fuel through an excise duty point or, in the case of electricity or where no excise is due or where duly justified, any other relevant entity so designated;

"geothermal energy" means energy stored in the form of heat beneath the surface of solid earth;

"green certificate" means a tradeable commodity representing the environmental attributes of a specific quantity of energy produced from renewable energy sources issued upon compliance with environmental quality and sustainability criteria;

"gross final consumption of energy" means the energy commodities delivered for energy purposes to industry, transport, households, services including public services, agriculture, forestry and fisheries, the consumption of electricity and heat by the energy branch for electricity and heat production, and losses of electricity and heat in distribution and transmission;

"guarantee of origin" means an electronic document issued by the Regulator which has the sole function of providing evidence to a final customer that a given share or quantity of electricity was produced from high-efficiency cogeneration or that a given share or quantity of energy was produced from renewable energy source;

"high-efficiency cogeneration" shall have the same meaning as assigned to it in the Energy Efficiency Regulations;

S.L. 545.33.
S.L. 623.07.

"industrial battery" means an industrial battery as defined in point (13) of Article 3(1) of Regulation (EU) 2023/1542;

"industrial grade roundwood" means saw logs, veneer logs, round or split pulpwood, as well as all other roundwood that is suitable for industrial purposes, excluding roundwood the characteristics of which, such as species, dimensions, rectitude and node density, make it unsuitable for industrial use as may be defined and duly justified according to the relevant forest and market conditions;

"industry" means undertakings and products that fall under sections B, C, and F and under division (63) of section J of the statistical classification of economic activities (NACE REV.2), as set out in Regulation (EC) No 1893/2006 of the

European Parliament and of the Council of 20 December 2006 establishing the statistical classification of economic activities NACE Revision 2 and amending Council Regulation (EEC) no 3037/90 as well as certain EC Regulations on specific statistical domains;

"innovative renewable energy technology" means renewable energy generation technology that improves, in at least one way, comparable state-of-the-art renewable energy technology, or that renders exploitable renewable energy technology that is not fully commercialised or that involves a clear degree of risk;

"jointly acting renewables self-consumers" means a group of at least two (2) jointly acting renewables self-consumers who are located in the same building or multi-apartment block;

"ligno-cellulosic material" means material composed of lignin, cellulose and hemicellulose, such as biomass sourced from forests, woody energy crops and forest-based industries' residues and wastes;

"low indirect land-use change-risk biofuels, bioliquids and biomass fuels" means biofuels, bioliquids and biomass fuels, the feedstock of which was produced within schemes which avoid displacement effects of food and feed-crop based biofuels, bioliquids and biomass fuels through improved agricultural practices as well as through the cultivation of crops on areas which were previously not used for cultivation of crops, and which were produced in accordance with the sustainability criteria for biofuels, bioliquids and biomass fuels laid down in regulation 3 of the Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations;

S.L. 545.45.

"market participant" means a market participant as defined in point (25) of Article 2 of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity;

"Member State" means a state which is a member of the European Union;

"Member State of origin" or "country of origin" means a state from which electricity produced from renewable energy sources is transferred or exported to another Member State or a third country;

"Member State of destination" or "country of destination" means a Member State or country which receives

or to which electricity produced from renewable energy sources is transferred or exported from the country of origin;

"Minister" means the Minister responsible for energy, provided that for the purposes of those provisions in these regulations which regulate planning matters, it shall mean the Minister responsible for energy in consultation with the Minister responsible for the Planning Authority;

"National Energy and Climate Plan" means the plan referred to in article 7 of the Climate Action Act; Cap. 643.

"non-energy purpose" means the use of fuels as raw materials in an industrial process, rather than to produce energy;

"non-food cellulosic material" means feedstock mainly composed of cellulose and hemicellulose, and having a lower lignin content than ligno-cellulosic material, including food and feed crop residues, such as straw, stover, husks and shells; grassy energy crops with a low starch content, such as ryegrass, switchgrass, miscanthus, giant cane; cover crops before and after main crops; ley crops; industrial residues, including from food and feed crops after vegetal oils, sugars, starches and protein have been extracted; and material from biowaste, where ley and cover crops are understood to be temporary, short-term sown pastures comprising grass-legume mixture with a low starch content to obtain fodder for livestock and improve soil fertility for obtaining higher yields of arable main crops;

"normal power recharging point" means a normal power recharging point as defined in point (37) of Article 2 of Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU;

"osmotic energy" means energy created from the difference in salt concentration between two fluids, such as fresh water and salt water;

"peer-to-peer trading of renewable energy" means the sale of renewable energy between market participants by means of a contract with pre-determined conditions governing the automated execution and settlement of the transaction, either directly between market participants or indirectly through a certified third-party market participant, such as an aggregator:

Provided that the right to conduct peer-to-peer trading shall be without prejudice to the rights and obligations

of the parties involved as final customers, producers, suppliers or aggregators;

Cap. 552.

"Planning Authority" means the Authority established by the Development Planning Act;

"power set point" means the dynamic information held in a battery's management system prescribing the electric power settings at which the battery should optimally operate during a recharging or discharging operation, so that its state of health and operational use are optimised;

"recharging point" means a recharging point as defined in point (48) of Article 2 of Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU;

S.L. 549.63.

"recycled carbon fuels" means liquid and gaseous fuels that are produced from liquid or solid waste streams of non-renewable origin which are not suitable for material recovery in accordance with regulation 4A of the Waste Regulations, or from waste processing gas and exhaust gas of non-renewable origin which are produced as an unavoidable and unintentional consequence of the production process in industrial installations;

"Regulation (EC) No 1099/2008" means Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October 2008 on energy statistics;

"Regulation (EU) 2018/1999" means Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council;

"Regulation (EU) 2019/943" means Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast);

"Regulation (EU) 2023/1804" means Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU;

"Regulator" means the Regulator for Energy and Water Services established by the Act;

"relevant authority" means any authority or license or permit-issuing or administrative body responsible for the issuing of authorisations, licenses or permits, or responsible for the formulation and publication of general binding rules, insofar as these authorisations, licences, permits or rules may directly impact, or relate to any activity which may impact the achievement of the objectives laid down by these regulations:

Provided that for the purpose of Part V, the responsible relevant permitting authorities shall include but not be limited to:

(a) the Planning Authority established in accordance with article 5 of the Development Planning Act, which shall be responsible to fulfil its obligations under the said Act; and Cap. 552.

(b) the Regulator for Energy and Water Services established in accordance with article 3 of the Regulator for Energy and Water Services Act, which shall be responsible to fulfil its obligations under the said Act; Cap. 545.

"renewable energy community" means a legal entity:

(a) which, in accordance with the applicable law, is based on an open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by the said legal entity;

(b) the shareholders or members of which are natural persons, SME's or local authorities, including municipalities; and

(c) the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits;

"renewable energy obligation" means a national support scheme requiring energy producers to include a given share of energy from renewable sources in their production, requiring energy suppliers to include a given share of energy from renewable sources in their supply, or requiring energy consumers to include a given share of energy from renewable

sources in their consumption, including schemes under which such requirements may be fulfilled by using green certificates;

"renewable energy purchase agreement" means a contract under which a natural or legal person agrees to purchase renewable energy directly from a producer, which encompasses, but is not limited to, renewables power purchase agreements and renewables heating and cooling purchase agreements;

"renewable fuels" means biofuels, bioliquids, biomass fuels and renewable fuels of non-biological origin;

"renewable fuels of non-biological origin" means liquid and gaseous fuels the energy content of which is derived from renewable sources other than biomass;

"renewables acceleration area" means a specific location or area, whether on land, sea or inland waters, which is designated as particularly suitable for the installation of renewable energy plants;

"renewables power purchase agreement" means a contract under which a natural or legal person agrees to purchase renewable electricity directly from an electricity producer;

"renewables self-consumer" means a final customer operating within its premises located within confined boundaries who generates renewable electricity for its own consumption, and who may store or sell self-generated renewable electricity, provided that, for a non-household renewables self-consumer, such activities do not constitute its primary commercial or professional activity;

"repowering" means renewing power plants that produce renewable energy, including the full or partial replacement of installations or operation systems and equipment for the purposes of replacing capacity or increasing the efficiency or capacity of the installation;

"residue" means a substance that is not the end product that a production process directly seeks to produce; it is not a primary aim of the production process and the process has not been deliberately modified to produce it;

"scheduled buildings" shall have the same meaning as assigned to it in the Development Planning Act;

"SME" means a micro, small or medium-sized enterprise

as defined in Article 2 of the Annex to Commission Recommendation 2003/361/EC;

"smart metering system" shall have the same meaning as assigned to it in the Electricity Regulations; S.L. 545.34.

"smart recharging" means a recharging operation in which the intensity of electricity delivered to the battery is adjusted dynamically, on the basis of information received through electronic communication;

"solar-electric vehicle" means a motor vehicle equipped with a powertrain containing only non-peripheral electric machines as energy converter, with an electric rechargeable energy storage system which can be recharged externally, and with vehicle-integrated photovoltaic panels;

"solar energy equipment" means equipment that converts energy from the sun into thermal or electrical energy, in particular solar thermal and solar photovoltaic equipment;

"state of charge" means state of charge as defined in point (27) of Article 3(1) of Regulation (EU) 2023/1542;

"state of health" means state of health as defined in point (28) of Article 3(1) of Regulation (EU) 2023/1542;

"starch-rich crops" means crops comprising mainly cereals, regardless of whether the grains alone or the whole plant, such as in the case of green maize, are used; tubers and root crops, such as potatoes, Jerusalem artichokes, sweet potatoes, cassava and yams; and corm crops, such as taro and cocoyam;

"Strategic Plan for Environment and Development" means the plan referred to in article 51 of the Environment and Development Planning Act; Cap. 504.

"support scheme" means any instrument, scheme or mechanism applied by the Minister or by a group of Member States which includes Malta, that promotes the use of energy from renewable sources by reducing the cost of such energy, increasing the price at which it can be sold, or increasing, by means of a renewable energy obligation or otherwise, the volume of such energy purchased, including but not restricted to, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes including those using green certificates, and direct price support schemes including feed-in tariffs and sliding or fixed premium payments;

"system efficiency" means the selection of energy-efficient solutions where they also enable a cost-effective decarbonisation pathway, additional flexibility and the efficient use of resources;

"third country" means a country which is not a member of the European Union and which receives or to which electricity produced from renewable energy sources is transferred or exported from the country of origin;

Cap. 460.

"Treaty" shall have the same meaning as assigned to it in the European Union Act;

"TFEU" means the Treaty on the Functioning of the European Union;

"Union database" means the database established by the Commission to enable the tracing of liquid and gaseous renewable fuels and recycled carbon fuels;

"waste" means any substance or object which the holder discards or intends or is required to discard, excluding those substances that have been intentionally modified or contaminated in order to meet this definition;

"waste heat and cold" means unavoidable heat or cold generated as a by-product of industrial or power generation installations, or in the tertiary sector, which would be dissipated unused in air or water without access to a district heating or cooling system, where a cogeneration process has been used or will be used or where cogeneration is not feasible.

S.L. 545.34.

(2) For the purposes of these regulations, the relevant definitions in the Electricity Regulations shall apply.

(3) Unless the context otherwise requires, words and phrases used in these regulations which are not defined in these regulations shall have the same meaning as assigned to them in the Act.

PART II

Targets and Calculation of the Share of Energy from Renewable Sources in Specific Sectors

Union and national
targets.

3. (1) Malta's contribution towards the realisation of the Union's target of forty-two point five percent (42.5%) for the share of energy from renewable sources in the Union's gross final consumption of energy in 2030 shall be established in accordance with Articles 3 to 5 and 9 to 14 of Regulation (EU) 2018/1999 and published in the Integrated National Energy and Climate Plan.

(2) The indicative target for the percentage of newly

installed renewable capacity by 2030 which shall be made up of innovative renewable energy technology shall be five percent (5%).

(3) The Minister shall take the necessary measures to ensure that from the 1st January 2021, the share of energy from renewable sources in the gross final consumption of energy shall not be lower than the baseline share of ten per cent (10%).

4. (1) 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.

Calculation of the share of energy from renewable sources.

(2) For the purposes of sub-regulation (1), the sum referred to in regulation 5(1) shall be adjusted to take into account, whenever applicable, the effects on allocation of energy from renewable sources arising out of arrangements entered into for the purpose of:

(a) statistical transfers of energy from renewable sources;

(b) joint projects with other Member States and, or third countries; and

(c) joint support schemes with other Member States.

(3) In calculating the gross final consumption of energy for the purposes of measuring its compliance with the targets and indicative trajectory established in these regulations, the amount of energy consumed in aviation shall, as a proportion of the gross final consumption of energy, be considered to be not more than four point one two percent (4.12%).

(4) The methodology and definitions used in the calculation of the share of energy from renewable sources shall be those provided for in Regulation (EC) No 1099/2008.

5. (1) The gross final consumption of energy from renewable sources shall be calculated as the sum of:

Calculation of the gross final consumption of energy from renewable sources.

(a) gross final consumption of electricity from renewable sources;

(b) gross final consumption of energy from renewable sources in the heating and cooling sector; and

(c) final consumption of energy from renewable sources in the transport sector.

(2) With regard to paragraphs (a), (b), or (c) of sub-regulation (1), gas and electricity from renewable sources shall be

considered only once for the purposes of calculating the share of gross final consumption of energy from renewable sources.

(3) Energy produced from renewable fuels of non-biological origin shall be counted in the sector, being electricity, heating and cooling, or transport, where it is consumed.

(4) Without prejudice to sub-regulation (3), the Minister may reach specific cooperation agreements to count all or part of the renewable fuels of non-biological origin consumed in Malta towards the share of gross final consumption of energy from renewable sources in the Member State where those fuels are produced, or conversely, where renewable fuels of non-biological origin are produced in Malta to count all or part of such fuels consumed in another Member State towards the share of gross final consumption of energy from renewable sources in Malta.

(5) In order to monitor whether the same renewable fuels of non-biological origin are counted in both the Member State where they are produced and in the Member State where they are consumed and in order to record the amount counted, the Minister shall notify the Commission of any cooperation agreement as described in sub-regulation (4) which is entered into by Malta.

(6) Any cooperation agreement as described in sub-regulation (4) which is entered into by Malta shall include the amount of renewable fuels of non-biological origin to be counted in total and for each Member State, and the date on which the cooperation agreement is to become operational.

Calculation of the
gross final
consumption of
electricity from
renewable sources.

6. (1) For the purposes of paragraph (a) of regulation 5(1), gross final consumption of electricity from renewable sources shall be calculated as the quantity of electricity produced in Malta from renewable sources, and shall include the production of electricity from renewables self-consumers and renewable energy communities, as well as electricity from renewable fuels of non-biological origin, but shall exclude the production of electricity in pumped storage units from water that has previously been pumped uphill as well as the electricity used to produce renewable fuels of non-biological origin.

(2) In multi-fuel plants using renewable and non-renewable sources, only the part of electricity produced from renewable sources shall be taken into account, and for the purposes of such calculation, the contribution of each energy source shall be calculated on the basis of its energy content.

(3) The electricity generated by hydropower and wind power shall be accounted for in accordance with the normalisation rules established in the First Schedule.

7. (1) For the purposes of paragraph (b) of regulation 5(1), gross final consumption of energy from renewable sources in the heating and cooling sector shall be calculated as the quantity of district heating and cooling produced in Malta 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.

Calculation of the gross final consumption of energy from renewable sources in the heating and cooling sector.

(2) In multi-fuel plants using renewable and non-renewable sources, only the part of heating and cooling produced from renewable sources shall be taken into account and for the purposes of the calculation referred to in sub-regulation (1), the contribution of each energy source shall be calculated on the basis of its energy content.

(3) Ambient and geothermal energy used for heating and cooling by means of heat pumps and district cooling systems shall be taken into account for the purposes of the calculation referred to in sub-regulation (1), provided that the final energy output significantly exceeds the primary energy input required to drive the heat pumps.

(4) The quantity of heat or cold to be considered to be energy from renewable sources for the purposes of these regulations shall be calculated in accordance with the methodology established in the Second Schedule and shall take into account energy use in all end-use sectors.

(5) 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 the calculation referred to in sub-regulation (1).

8. For the purposes of paragraph (c) of regulation 5(1), the following requirements shall apply:

Calculation of the final consumption of energy from renewable sources in the transport sector.

(a) final consumption of energy from renewable sources in the transport sector shall be calculated as the sum of all biofuels, biogas and renewable fuels of non-biological origin consumed in the transport sector, which shall include renewable fuels supplied to international marine bunkers; and

(b) for the calculation of final consumption of energy in the transport sector, the values regarding the energy content of transport fuels as established in the Third Schedule shall be used:

Provided that in order to determine the calorific values of fuels, the relevant European Standards Organisation (ESO) standards shall be used for the determination of the energy content of transport fuels not included in the Third

Schedule, and where no ESO standard has been adopted for such purpose, the relevant International Organization for Standardisation (ISO) standards shall be used.

Mainstreaming
renewable energy
in buildings.

9. (1) The indicative national share of energy from renewable sources in the final energy consumption in the building sector in 2030 shall refer to:

- (a) renewable energy produced on-site or nearby; and
- (b) renewable energy taken from the grid.

(2) The indicative national share of energy from renewable sources in the building sector for Malta referred to in sub-regulation (1) shall be set in the integrated national energy and climate plans submitted pursuant to Articles 3 and 14 of Regulation (EU) 2018/1999 together with information on how this is to be achieved.

(3) Waste heat and cold may be counted towards the indicative national share referred to in regulation 3(1), up to a limit of twenty percent (20%) of that share, subject to the indicative national share increasing by half of the percentage of waste heat and cold counted towards that share.

(4) Relevant authorities shall, to the extent that this is within the scope of their legally established remit, introduce measures in their regulations and, where applicable, their support schemes, in support of increasing the share of electricity and heating and cooling from renewable sources produced on-site or nearby as well as renewable energy taken from the grid in the building stock, which may include measures relating to substantial increases in renewables self-consumption, renewable energy communities, local energy storage, smart recharging and bi-directional recharging, and other flexibility services such as demand response.

(5) In order to achieve the indicative share of renewable energy, relevant authorities shall, using all appropriate measures, tools and incentives to the extent that this is within the scope of their legally established remit, promote the use of renewable heating and cooling systems and equipment.

Mainstreaming
renewable energy
in industry.

10. (1) The Minister shall, in consultation with the Minister responsible for industry, endeavour to increase the share of renewable sources in the amount of energy sources used for final energy and non-energy purposes in the industry sector by an indicative increase of at least one point six (1.6) percentage points as an annual average calculated for the periods 2021 to 2025 and 2026 to 2030.

(2) The policies and measures planned and taken to achieve the indicative increase referred to in sub-regulation (1) shall be

included in Malta's integrated national energy and climate plans submitted in accordance with Articles 3 and 14 of Regulation (EU) 2018/1999 and the integrated national energy and climate progress reports submitted in accordance with Article 17 of the said Regulation.

(3) When electrification is considered to be a cost-effective option, the policies and measures referred to in sub-regulation (2) shall:

(a) promote the renewable-based electrification of industrial processes; and

(b) endeavour to create conducive market conditions for the availability of economically viable and technically feasible renewable energy alternatives to replace fossil fuels used for industrial heating with the aim of reducing the use of fossil fuels used for heating in which the temperature is below two hundred degrees Celsius (200 °C).

(4) The adoption of the policies and measures referred to in sub-regulation (2) shall take into account the energy efficiency first principle, effectiveness and international competitiveness and the need to tackle regulatory, administrative and economic barriers.

(5) The contribution of renewable fuels of non-biological origin used for final energy and non-energy purposes shall be at least forty-two percent (42%) of the hydrogen used for final energy and non-energy purposes in industry by 2030, and sixty percent (60%) by 2035.

(6) For the calculation of the percentages referred to in sub-regulation (5), the following rules shall apply:

(a) for the calculation of the denominator, the energy content of hydrogen for final energy and non-energy purposes shall be taken into account, excluding:

(i) hydrogen used as an intermediate product for the production of conventional transport fuels and biofuels;

(ii) hydrogen that is produced by decarbonising industrial residual gas and that is used to replace the specific gas from which it is produced;

(iii) hydrogen produced as a by-product or derived from by-products in industrial installations;

(b) for the calculation of the numerator, the energy content of the renewable fuels of non-biological origin

consumed in the industry sector for final energy and non-energy purposes shall be taken into account, excluding renewable fuels of non-biological origin used as intermediate products for the production of conventional transport fuels and biofuels; and

(c) for the calculation of the numerator and the denominator, the values regarding the energy content of fuels established in the Third Schedule shall be used.

(7) For the purposes of paragraph (c) of sub-regulation (6), in order to determine the energy content of fuels not included in the Third Schedule, the relevant European standards for the determination of the calorific values of fuels, or where no European standard has been adopted for such purpose, the relevant ISO standards shall be used.

(8) The Minister shall promote voluntary labelling schemes for industrial products that are claimed to be produced with renewable energy and renewable fuels of non-biological origin.

(9) The voluntary labelling schemes referred to in sub-regulation (8) shall indicate the percentage of renewable energy used or renewable fuels of non-biological origin used in the raw material acquisition and pre-processing, manufacturing and distribution stage, calculated on the basis of the methodologies stipulated either in Commission Recommendation (EU) 2021/2279 or in ISO 14067:2018.

(10) Fuel suppliers and renewable fuel producers shall report every two (2) years to the Regulator the amount of renewable fuels of non-biological origin which they are expecting to import into and export out of Malta, as the case may be:

Provided that the obligation shall not apply to consignments of renewable fuels of non-biological origin which are intended to be introduced into Malta solely for the purposes of temporary storage or transshipment, which are not intended to enter the domestic supply chain, and are therefore not intended for sale, distribution, supply or use within Malta, including for inland consumption or for supply by operators licensed by the Regulator for this purpose, to domestic or international navigation.

(11) The figures referred to in sub-regulation (10) shall be included in the integrated national energy and climate plans submitted in accordance with Articles 3 and 14 of Regulation (EU) 2018/1999 and in the integrated national energy and climate progress reports submitted in accordance with Article 17 of the said Regulation.

(12) Any intended contributions to the Union strategy developed by the Commission for imported and domestic hydrogen with the aim of promoting the European hydrogen market as well as

domestic hydrogen production within the Union shall be indicated in the integrated national energy and climate plans submitted in accordance with Articles 3 and 14 of Regulation (EU) 2018/1999 and in the integrated national energy and climate progress reports submitted in accordance with Article 17 of the said Regulation.

11. (1) The contribution of renewable fuels of non-biological origin used for final energy and non-energy purposes referred to in regulation 10(5), may be reduced by twenty percent (20%) in 2030, provided that:

Conditions for reduction of the target for the use of renewable fuels of non-biological origin in the industry sector.

(a) the attainment of the national contribution to the binding overall Union target referred to in regulation 3(1), which is at least equivalent to its expected national contribution in accordance with the formula referred to in Annex II to Regulation (EU) 2018/1999 is on track; and

(b) the share of hydrogen, or its derivatives, produced from fossil fuels which is consumed in Malta is not more than twenty-three percent (23%) in 2030 and not more than twenty percent (20%) in 2035:

Provided further that where any of these conditions are not fulfilled, the reduction shall cease to apply.

(2) Where the reduction referred to in sub-regulation (1) is applied, the Commission shall be notified thereof, together with Malta's integrated national energy and climate plans submitted in accordance with Articles 3 and 14 of Regulation (EU) 2018/1999 and as part of the integrated national energy and climate progress reports submitted in accordance with Article 17 of the said Regulation.

(3) The notification referred to in sub-regulation (2) shall include information about the updated share of renewable fuels of non-biological origin and all relevant data to demonstrate that conditions established in paragraphs (a) and (b) of sub-regulation (1) are fulfilled.

12. (1) In order to promote the use of renewable energy in the heating and cooling sector, the Minister shall increase the share of renewable energy in that sector by at least zero point eight (0.8) percentage points as an annual average calculated for the period 2021 to 2025 and by at least one point one (1.1) percentage points as an annual average calculated for the period 2026 to 2030, starting from the share of renewable energy in the heating and cooling sector in 2020, expressed in terms of national share of gross final consumption of energy and calculated in accordance with the methodology established in regulation 7.

Mainstreaming renewable energy in heating and cooling.

(2) Waste heat and cold may be counted towards the average annual increases referred to in sub-regulation (1) up to a limit of zero

point four (0.4) percentage points:

Provided that in such case the average annual increase shall increase by half of the waste heat and cold percentage points counted to an upper limit of one point zero (1.0) percentage points for the period 2021 to 2025 and of one point three (1.3) percentage points for the period 2026 to 2030.

(3) The Commission shall be informed of the intention to count waste heat and cold and of the estimated amount in the integrated national energy and climate plans submitted in accordance with Articles 3 and 14 of Regulation (EU) 2018/1999.

(4) In addition to the minimum percentage points annual increases referred to in sub-regulation (1), the Minister shall endeavour to increase the share of renewable energy in the heating and cooling sector by the following indicative percentage points as follows:

(a) by an additional indicative zero point eight (0.8) percentage points for the period 2021 to 2025; and

(b) by an additional indicative zero point five (0.5) percentage points for the period 2026 to 2030:

Provided that if these indicative additional shares are achieved, the resultant share, inclusive of such additional share but excluding waste heat and cold, shall be of one point six (1.6) percentage points.

(5) Renewable electricity used for heating and cooling may be counted towards the annual average increase established in sub-regulation (1), up to a limit of zero point four (0.4) percentage points, provided that the efficiency of the heat and cold generator unit is higher than one hundred percent (100%):

Provided that in such case the average annual increase shall increase by half of that renewable electricity expressed in percentage points to an upper limit of one point zero (1.0) percentage points for the period 2021 to 2025 and of one point three (1.3) percentage points for the period 2026 to 2030.

(6) The Commission shall be informed of the intention to count renewable electricity used in heating and cooling from heat and cold generators the efficiency of which is higher than one hundred percent (100%) towards the annual increase established in sub-regulation (1) through the submission of the plans required by Regulation (EU) 2018/1999 as follows:

(a) the estimated renewable electricity capacities of

heat and cold generator units the efficiency of which is higher than one hundred percent (100%) shall be included in the integrated national energy and climate plans submitted in accordance with Articles 3 and 14 of the said Regulation; and

(b) the amount of renewable electricity used in heating and cooling from heat and cold generator units the efficiency of which is higher than one hundred percent (100%) shall be included in the integrated national energy and climate progress reports submitted in accordance with Article 17 of the said Regulation.

(7) For the calculation of the share of renewable electricity used in heating and cooling for the purposes of sub-regulation (1) the average share of renewable electricity supplied in Malta in the two (2) previous years shall be used.

(8) The Minister shall carry out an assessment of the potential of energy from renewable sources and of the use of waste heat and cold in the heating and cooling sector including, where appropriate, an analysis of areas suitable for their deployment at low ecological risk, and of the potential for small-scale household projects.

(9) The assessment referred to in sub-regulation (8) shall:

(a) consider available and economically feasible technology for industrial and domestic uses in order to set out milestones and measures to increase the use of renewable energy in heating and cooling;

(b) consider, where appropriate, the use of waste heat and cold through district heating and cooling with a view to establishing a long-term national strategy to reduce greenhouse gas emissions and air pollution originating from heating and cooling;

(c) be in accordance with the energy efficiency first principle;

(d) be part of the integrated national energy and climate plans submitted in accordance with Articles 3 and 14 of Regulation (EU) 2018/1999; and

(e) accompany the comprehensive heating and cooling assessment required by regulation 21 of the Energy Efficiency Regulations.

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(10) For the purposes of sub-regulation (1), when calculating the share of renewable energy in the heating and cooling sector and its average annual increase in accordance therewith, including the

additional indicative increase established in sub-regulation (4), the Minister:

(a) where the share of renewable energy in the heating and cooling sector is above sixty per cent (60%), may count any such share as fulfilling the average annual increase; and

(b) where the share of renewable energy in the heating and cooling sector is above fifty per cent (50%) and up to sixty per cent (60%), may count any such share as fulfilling half of the average annual increase.

(11) When deciding which measures to adopt for the purposes of deploying energy from renewable sources in the heating and cooling sector, the Minister may take into account cost-effectiveness reflecting structural barriers arising from the high share of natural gas or cooling, or from a dispersed settlement structure with low population density.

(12) Where measures would result in a lower average annual increase than that referred to in sub-regulation (1), this shall be made public through the inclusion within the integrated national energy and climate progress reports in accordance with Article 20 of Regulation (EU) 2018/1999, and the Commission shall be provided with reasons, including of choice of measures as referred to in sub-regulation (10).

(13) The relevant authorities, within the scope of their legally established remit, shall in particular provide information to the owners or tenants of buildings and SMEs on cost-effective measures, and financial instruments, to improve the use of renewable energy in the heating and cooling systems through accessible and transparent advisory tools.

(14) On the basis of objective and non-discriminatory criteria, the Minister may establish and make public a list of measures and may designate and make public the implementing entities, which are to contribute to the average annual increase referred to in sub-regulation (1).

(15) To achieve the average annual increase referred to in sub-regulation (1), the Minister shall endeavour to implement at least two (2) of the following measures:

(a) physical incorporation of renewable energy or waste heat and cold in the energy sources and fuels supplied for heating and cooling;

(b) the installation of highly efficient renewable heating and cooling systems in buildings, the connection of buildings to efficient district heating and cooling systems or the

use of renewable energy or waste heat and cold in industrial heating and cooling processes;

(c) measures covered by tradable certificates proving compliance with the obligation stipulated in sub-regulation (1), through support to installation measures under paragraph (b), carried out by another economic operator such as an independent renewable energy technology installer or an energy service company providing renewable energy installation services;

(d) capacity building for national, regional and local authorities to map local renewable heating and cooling potential and plan, implement and advise on renewable energy projects and infrastructures;

(e) the creation of risk mitigation frameworks to reduce the cost of capital for renewable heat and cooling and waste heat and cold projects, allowing for, *inter alia*, the bundling of smaller projects as well as linking such projects more holistically with other energy efficiency and building renovation measures;

(f) the promotion of renewables heating and cooling purchase agreements for corporate and collective small consumers;

(g) planned replacement schemes of fossil heating sources, or of heating systems that are not compatible with renewable sources or fossil phase-out schemes with milestones;

(h) requirements at local and regional level concerning renewable heat planning, encompassing cooling;

(i) the promotion of the production of biogas and its injection into the gas grid, instead of its use for electricity production;

(j) measures promoting the integration of thermal energy storage technology in heating and cooling systems;

(k) the promotion of renewable based district heating and cooling networks, in particular by renewable energy communities, including through regulatory measures, financing arrangements and support;

(l) other policy measures, with an equivalent effect, including fiscal measures, support schemes or other financial incentives that contribute to the installation of renewable heating and cooling equipment and the development of energy

networks supplying renewable energy for heating and cooling in buildings and industry.

(16) When adopting and implementing any of the measures described in sub-regulation (14), the Minister shall ensure their accessibility to all consumers, in particular those in low-income or vulnerable households, who would not otherwise possess sufficient up-front capital to benefit.

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(17) The Minister may use the structures established under the national energy savings obligations established in regulation 8 of the Energy Efficiency Regulations to implement and monitor the measures referred to in sub-regulation (14).

(18) Where entities are designated under sub-regulation (14), the Minister shall ensure that the contribution by those designated entities is measurable and verifiable.

(19) Where entities are designated under sub-regulation (14) they shall report annually to the Regulator on:

- (a) the total amount of energy supplied for heating and cooling;
- (b) the total amount of renewable energy supplied for heating and cooling;
- (c) the amount of waste heat and cold supplied for heating and cooling;
- (d) the share of renewable energy and waste heat and cold in the total amount of energy supplied for heating and cooling; and
- (e) the type of renewable energy source.

(20) Where entities are designated under sub-regulation (14) and report to the Regulator in accordance with sub-regulation (19), the Regulator shall verify the reported contributions submitted and shall report these to the Minister in aggregated form.

District heating
and cooling.

13. (1) Suppliers of district heating and cooling shall provide information on the energy performance and the share of renewable energy in their district heating and cooling systems to final consumers in an easily accessible manner in the following ways:

- (a) on bills or on their websites; and
 - (b) on request.
- (2) The information on the share of renewable energy

referred to in sub-regulation (1) shall be expressed at least as a percentage of gross final consumption of energy in heating and cooling assigned to the customers of a given district heating and cooling system, including information on how much energy was used to deliver one (1) unit of heating to the customer or end-user.

14. (1) Fuel suppliers which are obligated parties in terms of the Petroleum for the Inland (Wholesale) Fuel Market, Bottling of LPG and Primary Storage Facilities Regulations and, or the Bunkering (Authorisation) Regulations shall comply with any obligations which are intended to increase the share of renewable energy in energy supplied to the transport sector which are established in the said regulations.

Increase of renewable energy and reduction of greenhouse gas intensity in the transport sector. S.L. 545.17. S.L. 545.25.

(2) The obligations referred to in sub-regulation (1) shall result in:

(a) the amount of renewable fuels and renewable electricity supplied to the transport sector leading to a share of renewable energy within the final consumption of energy in the transport sector of at least twenty-nine percent (29%) by 2030; and

(b) the combined share of advanced biofuels and biogas produced from the feedstock listed in Part A of the Fourth Schedule and of renewable fuels of non-biological origin in the energy supplied to the transport sector being at least one percent (1%) in 2025 and five point five percent (5.5%) in 2030, of which a share of at least one percent (1%) shall be from renewable fuels of non-biological origin in 2030.

(3) The Minister shall endeavour to ensure that as of 2030, the share of renewable fuels of non-biological origin in the total amount of energy supplied to the maritime transport sector is at least one point two percent (1.2%).

(4) The share of renewable energy within the final consumption of energy in the transport sector, including in the maritime transport sector, as well as the greenhouse gas intensity reduction shall be reported in the national energy and climate progress reports submitted pursuant to Article 17 of Regulation (EU) 2018/1999.

(5) In the event of the amendment of the list of feedstock established in Part A of Annex IX to the Directive, the Minister may increase the minimum share of advanced biofuels and biogas produced from that feedstock in the energy supplied to the transport sector accordingly.

(6) For the calculation of the targets referred to in paragraph

(a) of sub-regulation (2) and the shares referred to in paragraph (b) of the same sub-regulation, the Regulator shall take into account renewable fuels of non-biological origin also when they are used as intermediate products for the production of:

(a) conventional transport fuels; or

(b) biofuels, provided that the greenhouse gas emissions reduction achieved by the use of renewable fuels of non- biological origin is not counted in the calculation of the greenhouse gas emissions savings of the biofuels.

(7) For the calculation of the targets referred to in paragraph (a) of sub-regulation (2) the Regulator may take into account recycled carbon fuels.

(8) The design of the obligations on fuel suppliers referred to in sub-articles (1) and (2) may:

(a) exempt fuel suppliers supplying electricity or renewable fuels of non-biological origin from the requirement to comply with the minimum share of advanced biofuels and biogas produced from the feedstock listed in Part A of the Fourth Schedule with respect to those fuels;

(b) set the obligation by means of measures targeting volumes, energy content or greenhouse gas emissions;

(c) distinguish between different energy carriers;

(d) distinguish between the maritime transport sector and other sectors.

(9) The Regulator shall establish a mechanism for fuel suppliers in Malta to exchange credits for supplying renewable energy to the transport sector.

(10) Economic operators that supply renewable electricity to electric vehicles through public recharging points shall receive credits, irrespectively of whether they are subject to the obligations referred to in sub-regulation (1), and may sell those credits to fuel suppliers, which shall be allowed to use the credits to fulfil the obligations referred to in sub-regulation (1):

S.L. 545.34. Provided that supply shall be understood as defined and regulated in the Electricity Regulations.

(11) The Regulator may include private recharging points in the mechanism referred to in sub-regulation (9), provided that it may be demonstrated that renewable electricity supplied to those private recharging points is provided solely to electric vehicles.

15. (1) For the calculation of the gross final consumption of energy from renewable sources referred to in regulation 5 of the minimum share of renewable energy, the share of biofuels and bioliquids, as well as of biomass fuels consumed in transport, where produced from food and feed crops, shall be zero per cent (0%) of the final consumption of energy.

Specific rules for biofuels, bioliquids and biomass fuels produced from food and feed crops.

(2) The Minister may establish an alternative limit to the share established in sub-regulation (1), which share shall not in any case exceed two per cent (2%), and may distinguish, for the purposes of regulation 3 of the Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations between different biofuels, bioliquids and biomass fuels produced from food and feed crops, taking into account best available evidence on indirect land-use change impact, including for example, the option to set a lower limit for the share of biofuels, bioliquids and biomass fuels produced from oil crops.

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(3) Notwithstanding the target established in regulation 14(2)(a), the limitation on the share of biofuels and bioliquids, as well as biomass fuels consumed in transport where produced from food and feed crops, as established in sub-regulation (1), shall have the effect of reducing said target by seven (7) percentage points:

Provided that where the share referred to in sub-regulation (1) is adjusted in accordance with sub-regulation (2), the reduction applied under this sub-regulation shall be revised accordingly in view of the contribution those fuels make in terms of the minimum share of renewable energy.

16. (1) For the calculation of the minimum shares referred to in regulation 14(2), the following rules shall apply:

Calculation rules in the transport sector and with regard to renewable fuels of non-biological origin regardless of their end use.

(a) for the calculation of the denominator, that is the amount of energy consumed in the transport sector, all fuels and electricity supplied to the transport sector shall be taken into account;

(b) for the calculation of the numerator, that is the amount of energy from renewable sources consumed in the transport sector for the purposes of regulation 14(2) the energy content of all types of energy from renewable sources supplied to all transport modes, including to international marine bunkers, shall be taken into account:

Provided that recycled carbon fuels may be taken into account;

(c) the share of biofuels and biogas produced from the feedstock listed in the Fourth Schedule and renewable fuels

of non-biological origin shall be considered to be twice its energy content;

(d) the share of renewable electricity shall be considered to be four (4) times its energy content when supplied to road vehicles;

(e) the share of advanced biofuels and biogas produced from the feedstock listed in Part A of Fourth Schedule supplied in the aviation and maritime transport modes shall be considered to be one point two (1.2) times their energy content and the share of renewable fuels of non-biological origin supplied in the aviation and maritime transport modes shall be considered to be one point five (1.5) times their energy content;

(f) in order to determine the amount of energy supplied to the transport sector, the values regarding the energy content of transport fuels established in the Third Schedule shall be used;

(g) in order to determine the energy content of transport fuels not included in Third Schedule, the relevant European standards for the determination of the calorific values of fuels, or, where no European standard has been adopted for such purpose, the relevant ISO standards shall be used;

(h) the amount of renewable electricity supplied to the transport sector shall be determined by multiplying the amount of electricity supplied to such sector by the average share of renewable electricity supplied in Malta in the two (2) previous years, unless electricity is obtained from a direct connection to an installation generating renewable electricity which is supplied to the transport sector, in which case that electricity shall be fully counted as renewable, and electricity generated by a solar-electric vehicle and used for the consumption of the vehicle itself may be fully counted as renewable.

(2) For the purpose of the calculations referred to in sub-regulation (1), until the 31st December 2030 the amount of energy supplied to the maritime transport sector shall, as a proportion of gross final consumption of energy, be considered to be not more than five percent (5%).

(3) Where electricity is used for the production of renewable fuels of non-biological origin, either directly or for the production of intermediate products, the average share of electricity from renewable sources in the country of production, as measured two (2) years before the year in question shall, without prejudice to sub-regulations (4) and (5) be used to determine the share of renewable energy.

(4) Electricity obtained from a direct connection to an installation generating renewable electricity may be fully counted as renewable where it is used for the production of renewable fuels of non-biological origin, provided that the installation:

(a) comes into operation after, or at the same time as, the installation producing the renewable fuels of non-biological origin; and

(b) is not connected to the grid, or is connected to the grid but evidence can be provided that the electricity concerned has been supplied without taking electricity from the grid.

(5) Electricity that has been taken from the grid may be fully counted as renewable provided that it is produced exclusively from renewable sources and the renewable properties and other appropriate criteria have been demonstrated, ensuring that the renewable properties of that electricity are counted only once and only in one (1) end-use sector.

(6) The greenhouse gas intensity reduction from the use of renewable energy resulting from compliance with the minimum shares referred to in regulation 14(2) shall be determined by dividing the greenhouse gas emissions savings from the use of biofuels, biogas, renewable fuels of non-biological origin and renewable electricity supplied to all transport modes by the baseline:

Provided that recycled carbon fuels may also be taken into consideration.

(7) The greenhouse gas emissions savings referred to in sub-regulation (6) shall be calculated as follows:

(a) for biofuel and biogas, by multiplying the amount of those fuels supplied to all transport modes by their greenhouse gas emissions savings determined in accordance with regulation 6 of the Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations;

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(b) for renewable fuels of non-biological origin and recycled carbon fuels, by multiplying the amount of those fuels that is supplied to all transport modes by their greenhouse gas emissions savings determined in accordance with delegated acts adopted pursuant to Article 29a(3) of the Directive;

(c) for renewable electricity, by multiplying the amount of renewable electricity that is supplied to all transport modes by the fossil fuel comparator ECF(e) established in the Fifth Schedule.

(8) The baseline referred to in sub-regulation (6) shall be calculated as follows:

(a) until the 31st of December 2030, by multiplying the amount of energy supplied to the transport sector by the fossil fuel comparator EF(t) established in the Fifth Schedule;

(b) from the 1st of January 2031, the baseline shall be the sum of:

(i) the amount of fuels supplied to all transport modes multiplied by the fossil fuel comparator EF(t) established in the Fifth Schedule; and

(ii) the amount of electricity supplied to all transport modes multiplied by the fossil fuel comparator ECF(e) established in the Fifth Schedule.

(9) The relevant amounts of energy supplied to the transport sector for the purposes of the calculation referred to in sub-regulation (6) shall be determined in accordance with paragraphs (f), (g) and (h) of sub-regulation (1).

Applicability of
sustainability
criteria.

17. (1) In order to be eligible for counting towards the share of renewable energy in:

(a) the gross final energy consumption of Malta;

(b) the building sector;

(c) industry;

(d) heating and cooling;

(e) district heating and cooling; and

(f) the transport sector,

biofuels, bioliquids and biomass fuels shall be compliant with the sustainability and greenhouse gas emissions saving criteria established in the Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations.

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(2) The relevant economic operators shall submit information on the transactions made and the sustainability characteristics of liquid and gaseous transport renewable fuels that are eligible for being counted, including their life-cycle greenhouse gas emissions, into the Union Database, starting from their point of production to the fuel supplier that places the fuel on the market.

PART III

Generation and Consumption of Renewable Energy.

18. (1) All consumers are entitled to become renewables self-consumers, subject to this regulation. Renewables self-consumers.

(2) Renewables self-consumers, individually or through aggregators shall be entitled:

(a) to generate renewable energy, including for their own consumption, store and sell their excess production of renewable electricity, including through renewables power purchase agreements, electricity suppliers and peer-to-peer trading arrangements, without being subject:

(i) in relation to the electricity that they consume from or feed into the grid, to discriminatory or disproportionate procedures and charges, and to network charges that are not cost-reflective;

(ii) in relation to their self-generated electricity from renewable sources remaining within their premises, to discriminatory or disproportionate procedures, and to any charges or fees;

(b) to install and operate electricity storage systems combined with installations generating renewable electricity for self-consumption without liability for any double charge, including network charges, for stored electricity remaining within their premises;

(c) to maintain their rights and obligations as final consumers; and

(d) to receive remuneration, including where applicable, through support schemes, for the self-generated renewable electricity that they feed into the grid, which reflects the market value of such electricity and which may take into account its long-term value to the grid, the environment and society:

Provided that this shall be without prejudice to Malta's exercise of the derogations from Articles 4 and 6 of Directive (EU) 2019/944:

Provided further that for the continued duration of the exercise of such derogations, regulation 54A of the Electricity Regulations shall continue to apply to the purchase of all renewable electricity produced in Malta and exported to the grid, subject to the conditions therein.

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(3) Non-discriminatory and proportionate charges and fees to renewables self-consumers may apply in relation to their self-generated renewable electricity remaining within their premises in one (1) or more of the following cases:

(a) if the self-generated renewable electricity is effectively supported by means of support schemes, only to the extent that the economic viability of the project and the incentive effect of such support are not undermined;

(b) from 1st December 2026, if the overall share of self-consumption installations exceeds eight per cent (8%) of the total installed electricity capacity in Malta, and if it is demonstrated, by means of a cost-benefit analysis performed by the Regulator, which is conducted by way of an open, transparent and participatory process, that the provision stipulated in subparagraph (ii) of paragraph (a) of sub-regulation (2) either results in a significant disproportionate burden on the long-term financial sustainability of the electric system, or creates an incentive exceeding what is objectively needed to achieve cost-effective deployment of renewable energy, and that such burden or incentive cannot be minimised by taking other reasonable actions; or

(c) if the self-generated renewable electricity is produced in installations with a total installed electrical capacity of more than thirty kilowatts (30kW).

(4) Renewables self-consumers located in the same building, including multi-apartment blocks, are entitled to engage jointly in activities referred to in sub-regulation (2) and are permitted to arrange sharing of renewable energy that is produced on their site or sites between themselves, without prejudice to the network charges and other relevant charges, fees, levies and taxes applicable to each renewables self-consumer and without prejudice to the provisions of sub-regulation (9).

(5) In issuing regulations which govern the activities of consumers described in sub-regulations (1) to (4) the Minister may differentiate between individual renewables self-consumers and jointly acting renewables self-consumers, provided that any such differentiation shall be proportionate and duly justified.

(6) A renewables self-consumer's installation may be

owned by a third party or be managed by a third party for installation, operation, including metering and maintenance, provided that the third party remains subject to the renewables self-consumer's instructions, whereby the third party itself shall not be considered to be a renewables self-consumer.

(7) Based on the outcome of the relative assessment of the existing unjustified barriers to, and of the potential of, renewable energy self-consumption in Malta, where such barriers are independent of Malta's exercise of the derogations from Articles 4 and 6 of Directive (EU) 2019/944, the Minister shall continue to, *inter alia*:

(a) address accessibility of renewables self-consumption to all final customers, including those in low-income or vulnerable households;

(b) address unjustified barriers to the financing of projects in the market and measures to facilitate access to finance;

(c) address other unjustified regulatory barriers to renewables self-consumption, including for tenants;

(d) address incentives to building owners to create opportunities for renewables self-consumption, including for tenants;

(e) grant renewables self-consumers, for self-generated renewable electricity that they feed into the grid, non-discriminatory access to relevant existing support schemes as well as to all electricity market segments; and

(f) ensure that renewables self-consumers contribute in an adequate and balanced way to the overall cost sharing of the system when electricity is fed into the grid.

(8) A summary of the policies and measures enabling renewable energy self-consumption and an assessment of their implementation respectively shall be reported in Malta's integrated national energy and climate plans and progress reports pursuant to Regulation (EU) 2018/1999.

(9) This regulation shall apply without prejudice to Articles 107 and 108 TFEU and shall furthermore apply without prejudice to Malta's right to exercise the derogations granted pursuant to Article 66 of Directive (EU) 2019/944.

Renewable energy
communities.

19. (1) Final customers, in particular household customers, shall be entitled to participate in a renewable energy community while maintaining their rights or obligations as final customers, and without being subject to unjustified or discriminatory conditions or procedures that would prevent their participation in a renewable energy community, provided that for private undertakings, their participation does not constitute their primary commercial or professional activity.

(2) Without prejudice to Malta's exercise of the derogations from Articles 4 and 6 of Directive (EU) 2019/944, renewable energy communities are entitled to:

(a) produce, consume, store and sell renewable energy, including through renewables power purchase agreements;

(b) share within the renewable energy community, renewable energy that is produced by the production units owned by such renewable energy community, subject to the other requirements stipulated in this regulation and to maintaining the rights and obligations of the renewable energy community members as customers;

(c) access all suitable energy markets both directly or through aggregation in a non-discriminatory manner:

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Provided that for the continued duration of the exercise of such derogations, regulation 54A of the Electricity Regulations shall continue to apply to the purchase of all renewable electricity produced in Malta and exported to the grid, subject to the conditions therein.

(3) The Minister shall carry out an assessment of the existing barriers and potential of development of renewable energy communities.

(4) Without prejudice to Malta's exercise of the derogations from Articles 4 and 6 of Directive (EU) 2019/944 the development of renewable energy communities shall be promoted and facilitated ensuring, *inter alia*, that:

(a) unjustified regulatory and administrative barriers to renewable energy communities are removed;

(b) renewable energy communities that supply energy or provide aggregation or other commercial energy services shall be subject to the provisions relevant for such activities;

(c) the relevant distribution system operator

cooperates with renewable energy communities to facilitate energy transfers within renewable energy communities;

(d) renewable energy communities are subject to fair, proportionate and transparent procedures, including registration and licensing procedures, and cost-reflective network charges, as well as relevant charges, levies and taxes, ensuring that they contribute, in an adequate, fair and balanced way, to the overall cost sharing of the system in conformity with a transparent cost-benefit analysis of distributed energy sources developed by the national competent authorities;

(e) renewable energy communities are not subject to discriminatory treatment with regard to their activities, rights and obligations as final customers, producers, suppliers, distribution system operators, or as other market participants;

(f) the participation in the renewable energy communities is accessible to all consumers, including those in low-income or vulnerable households;

(g) tools to facilitate access to finance and information are available;

(h) regulatory and capacity-building support is provided to public authorities in enabling and establishing renewable energy communities, and in helping authorities to participate directly;

(i) rules to secure the equal and non-discriminatory treatment of consumers that participate in the renewable energy community are in place:

Provided that any limitations to the exercise of the above functions arising out of the exercise of said derogations shall not be deemed unjustified.

(5) A summary of the policies and measures supporting renewable energy communities and of their implementation, shall be part of the updates of the integrated national energy and climate plans and progress reports pursuant to Regulation (EU) 2018/1999.

(6) Without prejudice to Articles 107 and 108 TFEU, the Minister shall take into account specificities of renewable energy communities when designing support schemes in order to allow them to compete for support on an equal footing with other market participants.

(7) This regulation shall apply without prejudice to Malta's right to exercise the derogations granted pursuant to Article 66 of

Directive (EU) 2019/944.

Information and
training.

20. (1) All relevant authorities in issuing support measures within the scope of their legally established remit and in line with the same, shall make available information on such support measures falling under their respective remit to all relevant actors, such as consumers including low-income, vulnerable consumers, renewables self-consumers, renewable energy communities, builders, installers, *periti*, suppliers of heating, cooling and electricity equipment and systems, and suppliers of vehicles compatible with the use of renewable energy and of intelligent transport systems.

(2) Suppliers of equipment and systems for the use of heating, cooling and electricity from renewable sources shall make available information on the net benefits, cost and energy efficiency of such equipment and systems.

(3) Information on certification schemes or equivalent qualification schemes for installers and designers of all forms of renewable heating and cooling systems in buildings, industry and agriculture, for installers of solar photovoltaic systems, including energy storage, and for installers of recharging points enabling demand response shall be made available to the public by the Regulator together with a transparent, easily accessible and regularly updated list of individuals who are qualified or certified through such schemes.

(4) The Regulator, where appropriate with the participation of relevant public authorities, shall develop suitable information, awareness-raising, guidance or training programmes in order to inform citizens of how to exercise their rights as active customers, and of the benefits and practicalities, including technical and financial aspects, of developing and using energy from renewable sources, including by renewables self-consumption or in the framework of renewable energy communities.

*Added by:
L.N. 206 of 2026.*

20A. The Regulator shall coordinate with the appropriate persons and entities to ensure that in so far as is reasonable, certification schemes or equivalent qualification schemes are available for installers and designers of all forms of renewable heating and cooling systems in buildings, industry and agriculture, installers of solar photovoltaic systems, including energy storage, and for installers of recharging points enabling demand response:

Provided that the Regulator may take into account existing schemes and structures, as appropriate, which are based on the criteria established in the Eight Schedule.

21. Guarantees of origin for energy from renewable shall be issued by the Regulator subject to the provisions of the Guarantees of Origin of Electricity from High-Efficiency Cogeneration and of Energy from Renewable Energy Sources Regulations.

Guarantees of origin for energy from renewable sources.
S.L. 545.44.

PART IV

Support Schemes, Projects and Cooperation.

22. (1) Support schemes applied to aid the achievement of Malta's contribution referred to in sub-regulation (1) of regulation 3 shall comply with this regulation.

Support schemes for energy from renewable sources.

(2) Support schemes for electricity from renewable sources shall provide incentives for the integration of electricity from renewable sources in the electricity market in a market-based and market-responsive way, and shall avoid unnecessary distortions of electricity markets while taking into account possible system integration costs and grid stability.

(3) Support schemes for electricity from renewable sources shall be designed so as to maximise the integration of electricity from renewable sources in the electricity market and to ensure that renewable energy producers are responding to market price signals and maximise their market revenues.

(4) Where support schemes referred to in sub-regulation (3) are direct price support schemes, support shall be granted in the form of a market premium, which could be, *inter alia*, sliding or fixed.

(5) Sub-regulation (4) shall not apply to support for electricity from the sources listed in Article 19d(4) of Regulation (EU) 2019/943, to which Article 19d(1) of the said Regulation applies.

(6) Small-scale installations and demonstration projects may be exempted from the provisions of sub-regulations (3) to (5), without prejudice to the applicable Union law on the internal market for electricity.

(7) Support for electricity from renewable sources shall be granted in an open, transparent, competitive, non-discriminatory and cost-effective manner.

(8) Small-scale installations and demonstration projects may be exempted from tendering procedures.

(9) The Minister may consider establishing mechanisms to ensure cost-efficient system integration.

(10) Tendering procedures may be limited to specific technologies where opening support schemes to all producers of electricity from renewable sources would lead to a suboptimal result,

in view of:

- (a) the long-term potential of a particular technology;
- (b) the need to achieve diversification;
- (c) grid integration costs;
- (d) network constraints and grid stability; and
- (e) for biomass, the need to avoid distortions of raw materials markets.

(11) Where support for electricity from renewable sources is granted by means of a tendering procedure, in order to ensure a high project realisation rate the following shall apply:

- (a) non-discriminatory and transparent criteria to qualify for the tendering procedure shall be established and published, setting clear dates and rules for delivery of the project; and
- (b) information about previous tendering procedures, including project realisation rates shall be published.

(12) In order to benefit from support schemes and to be eligible under public procurement any renewable energy equipment and systems shall meet the technical specifications established in the relative documentation of the rules applicable to such support scheme, or of the tendering process:

Provided that such technical specifications shall not prescribe where the equipment and systems are to be certified and shall not impede the proper functioning of the internal market

(13) The technical specifications referred to in sub-regulation (12) shall be expressed in terms of harmonised standards or European standards including technical reference systems established by the European standardisation organisations, where such standards exist:

Provided that precedence in the application of harmonised standards shall be given to those harmonised standards, the references of which have been published in the Official Journal of the European Union in support of Union law, including Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU, and the Framework for the Setting of Ecodesign Requirements for Energy-Related Products Regulations, followed by other harmonised standards and European standards.

S.L. 427.64.

(14) Support schemes granting financial support to renewable

energy producers shall either preclude the entitlement to a guarantee of origin in respect of the supported renewable energy produced, or shall appropriately take into account the market value of the guarantee of origin for the same production:

Provided that it shall be presumed that the market value of the guarantee of origin has been appropriately taken into account in any of the following cases:

- (a) where the financial support is granted by way of a tendering procedure or a tradable green certificate system;
- (b) where the market value of the guarantees of origin is administratively taken into account in the level of financial support; or
- (c) where the guarantees of origin are not issued directly to the producer but to a supplier or consumer who buys the energy either in a competitive setting or in a long-term renewables power purchase agreement:

Provided further that in order to take into account the market value of the guarantee of origin, the rules applicable to any specific support schemes may allow for guarantees of origin to be issued to the producer and immediately cancelled.

(15) This regulation shall be applied by all Ministries and entities which issue support schemes for renewable energy and shall furthermore be applied without prejudice to Articles 107 and 108 TFEU.

23. (1) Energy producers producing energy from biomass shall take into account the waste hierarchy established in regulation 4A of the Waste Regulations and shall ensure the application of the principle of the cascading use of biomass, ensuring that energy from biomass is produced in a way that minimises undue distortive effects on the biomass raw material market, and adverse impacts on biodiversity, the environment and the climate.

Rules applicable to production of energy from biomass and to support.
S.L. 549.63.

(2) Renewable energy produced from:

- (a) biomass in respect of which the obligations stipulated in sub-regulation (1) have not been complied with;
- (b) the use of saw logs, veneer logs, industrial grade roundwood, stumps and roots; and
- (c) the incineration of waste in respect of which the separate collection obligations stipulated in the Waste Regulations have not been complied with,

S.L. 549.63.

shall not be eligible for support, including direct financial support, by means of any support scheme or otherwise.

(3) Support schemes for energy from biofuels, bioliquids and biomass fuels shall avoid incentivising unsustainable pathways and distorting competition with the material sectors, with a view to ensuring that woody biomass is used according to its highest economic and environmental added value in the following order of priorities:

- (a) wood-based products;
- (b) extending the service life of wood-based products;
- (c) re-use;
- (d) recycling;
- (e) bioenergy; and
- (f) disposal.

(4) The provisions of sub-regulation (1) shall not apply where:

- (a) this is needed to ensure security of energy supply;

(b) where the local industry is quantitatively or technically unable to use forest biomass for an economic and environmental added value that is higher than energy production, for feedstocks coming from:

(i) necessary forest management activities, aiming to ensure pre-commercial thinning operations or carried out in accordance with national law on wildfire prevention in high-risk areas;

(ii) salvage logging following documented natural disturbances; or

(iii) the harvest of certain woods whose characteristics are not suitable for local processing facilities.

(5) A notification to the Commission shall be made annually by the Minister in respect of any derogations made pursuant to sub-regulation (4) together with the reasons for such derogations and the geographical scale to which they apply.

(6) No support shall be granted for the production of electricity from forest biomass in electricity-only installations, unless such electricity is produced applying biomass carbon dioxide capture and storage and it meets the requirements established in regulation 3(6) of the Biofuels, Bioliquids and Biomass Fuels (Sustainability Criteria) Regulations.

S.L. 545.45.

24. (1) The Minister shall have the right, in accordance with the provisions of these regulations, to decide to which extent electricity from renewable sources which is produced in another Member State is supported. However, the Minister may open participation in support schemes for electricity from renewable sources to producers located in other Member States, subject to the conditions stipulated in this regulation.

Opening of support schemes for electricity from renewable sources.

(2) When opening participation in support schemes for electricity from renewable sources, the Minister may provide that support for an indicative share of the newly-supported capacity, or of the budget allocated thereto, in each year is open to producers located in other Member States.

(3) The indicative share referred to in sub-regulation (2) may, in each year, amount to at least five per cent (5%) from 2023 to 2026 and at least ten per cent (10%) from 2027 to 2030 or, where lower, to the level of interconnectivity of the Member State concerned in any given year.

(4) In order to acquire further implementation experience, the Minister may organise one (1) or more pilot schemes where support is open to producers located in other Member States.

(5) The Minister may require proof of physical import of electricity from renewable sources and, to that end, may limit participation in support schemes to producers located in Member States with which there is a direct connection through interconnectors:

Provided that cross-zonal schedules and capacity allocation due to producers participating in cross-border support schemes shall not be changed or otherwise affected, and cross-border electricity transfers shall be determined only by the outcome of capacity allocation pursuant to Union law on the internal market in electricity.

(6) Where the Minister opens participation in support schemes to producers located in other Member States, agreement on the principles of such participation covering at least the principles of allocation of renewable electricity that is the subject of cross-border support shall be reached with the relevant Member States:

Provided that the Minister may, if so required, request the

Commission to assist with the negotiation process.

Stability of
financial support.

25. (1) Without prejudice to adaptations necessary to comply with Articles 107 and 108 TFEU, the Minister shall ensure that the level of, and the conditions attached to, the support granted to renewable energy projects are not revised in a way that negatively affects the rights conferred thereunder and undermines the economic viability of projects that already benefit from support.

(2) The Minister may adjust the level of support in accordance with objective criteria, provided that such criteria are established in the original design of the support scheme.

(3) The Minister shall publish a long-term schedule anticipating the expected allocation of support, covering as a reference, at least the following five (5) years or, in the case of budgetary planning constraints, the following three (3) years, including the indicative timing, the frequency of tendering procedures where appropriate, the expected capacity and budget or maximum unitary support expected to be allocated, and the expected eligible technologies, if applicable.

(4) The schedule referred to in sub-regulation (3) shall be updated on an annual basis or, where necessary, to reflect recent market developments or expected allocation of support.

(5) The Minister shall, at least every (5) five years, carry out an assessment of:

(a) the effectiveness of support schemes for electricity from renewable sources;

(b) the major distributive effects of support schemes for electricity from renewable sources on different consumer groups, and on investments; and

(c) the effect of possible changes to the support schemes.

(6) The assessments referred to in sub-regulation (5) shall be included in the relevant updates of Malta's integrated national energy and climate plans and progress reports in accordance with Regulation (EU) 2018/1999, and the results thereof shall be taken into account in the indicative long-term planning governing the decisions of the support and design of new support.

Union renewable
development
platform and
statistical transfers
between Member
States.

26. (1) The Minister may make arrangements for the statistical transfer of a specified amount of energy from renewable sources from Malta to another Member State, or from another Member State to Malta, as the case may be.

(2) The transferred amount shall be:

(a) deducted from the amount of energy from renewable sources that is taken into account in calculating the renewable energy share of the Member State making the transfer for the purposes of the Directive; and

(b) added to the amount of energy from renewable sources that is taken into account in calculating the renewable energy share of the Member State accepting the transfer for the purposes of the Directive.

(3) The Minister may, for the purposes of sub-regulation (1), make use of the Union renewable development platform ('URDP') established by the Commission, and may, on a voluntary basis, submit to the URDP annual data on Malta's national contributions to the Union target or any benchmark set for monitoring progress in Regulation (EU) 2018/1999, including the amount by which Malta is expected to fall short of or exceed its contribution, and an indication of the price at which Malta would accept to transfer any excess production of energy from renewable sources from, or to another Member State.

(4) The price of any transfers effected in terms of the provisions in sub-regulation (3) shall be set on a case-by-case basis based on the URDP demand-and-supply matching mechanism.

(5) The arrangements referred to in sub-regulations (1) to (4) may have a duration of one or more calendar years and shall be notified by the Minister to the Commission or finalised on the URDP not later than twelve (12) months after the end of each year in which they have effect.

(6) The information sent to the Commission referred to in sub-regulation (5) shall include the quantity and price of the energy involved, and for transfers finalised on the URDP, the parties involved and the information on the particular transfer shall be disclosed to the public.

(7) Transfers shall become effective after all Member States involved in the transfer have notified the transfer to the Commission or after all clearing conditions are met on the URDP, as applicable.

27. (1) The Minister may make arrangements for cooperation with one (1) or more authorities in one (1) or more other Member States, or designate an authority or entity to make such arrangements for cooperation, on all types of joint projects with regard to the production of electricity, heating or cooling from renewable sources, where cooperation may also involve private operators.

Joint projects with other Member States.

(2) By 31 December 2025, the Minister shall agree to establish a framework for cooperation on joint projects with one (1) or more other Member States for the production of renewable energy:

Provided that by 31 December 2030, the Minister shall endeavour to agree on establishing at least two joint projects.

(3) The identification of joint offshore renewable energy projects shall be consistent with the needs identified in the high-level strategic integrated offshore network development plans for each sea-basin referred to in Article 14(2) of Regulation (EU) 2022/869 of the European Parliament and of the Council of 30 May 2022 on guidelines for trans-European energy infrastructure, amending Regulations (EC) No 715/2009, (EU) 2019/942 and (EU) 2019/943 and Directives 2009/73/EC and (EU) 2019/944, and repealing Regulation (EU) No 347/2013, and the Union-wide ten-year network development plan referred to in Article 30(1)(b) of Regulation (EU) 2019/943, but may go beyond those needs and may involve local and regional authorities and private undertakings.

(4) For joint projects, a fair distribution of the costs and benefits shall be undertaken, with all the relevant costs and benefits of the joint project being taken into account in the relevant cooperation agreements.

(5) Any cooperation agreements entered into, together with the date on which the joint projects are expected to become operational, shall be notified to the Commission.

(6) Projects financed by national contributions under the Union renewable energy financing mechanism established by Commission Implementing Regulation (EU) 2020/1294 of 15 September 2020 on the Union renewable energy financing mechanism shall be deemed to satisfy the obligations referred to in sub-regulation (2) for the Member States involved.

(7) The Minister shall notify the Commission of the proportion or amount of electricity, heating or cooling from renewable sources produced by any joint project located in Malta that became or becomes operational after 25 June 2009, or by the increased capacity of an installation that was refurbished after that date, which is to be regarded as counting towards the renewable energy share of another Member State for the purposes of the Directive:

Provided that units of energy from renewable sources imputable to an increase in the capacity of an installation shall be treated as if they were produced by a separate installation becoming operational at the moment at which the increase of capacity occurred.

(8) The notification referred to in sub-regulation (7) shall:

- (a) describe the proposed installation or identify the refurbished installation located in Malta;
 - (b) specify the proportion or amount of electricity or heating or cooling produced from the installation which is to be regarded as counting towards the renewable energy share of the other Member State;
 - (c) identify the Member State in whose favour the notification is being made; and
 - (d) specify the period, in whole calendar years, during which the electricity or heating or cooling produced by the installation from renewable sources is to be regarded as counting towards the renewable energy share of the other Member State.
- (9) The duration of a joint project as referred to in this regulation may extend beyond 2030.
- (10) A notification made in accordance with this regulation shall not be varied or withdrawn without the joint agreement of the relevant Maltese authorities and the relevant authorities of the Member State identified in accordance with paragraph (c) of sub-regulation (8).
- (11) The Minister may request the Commission to facilitate the establishment of joint projects with other Member States, in particular by means of dedicated technical assistance and project development assistance.
- (12) On the basis of the indicative goals for offshore renewable energy generation to be deployed within each sea basin, identified in accordance with Article 14 of Regulation (EU) 2022/869 of 30 May 2022 of the European Parliament and of the Council on guidelines for trans-European energy infrastructure, amending Regulations (EC) No 715/2009, (EU) 2019/942 and (EU) 2019/943 and Directives 2009/73/EC and (EU) 2019/944, and repealing Regulation (EU) No 347/2013, the Minister shall publish information on the volumes of offshore renewable energy that are planned to be achieved through tenders, taking into account technical and economic feasibility for the grid infrastructure and the activities that already take place.
- (13) The Minister shall endeavour to allocate space for offshore renewable energy projects in maritime spatial plans, taking into account the activities that already take place in the affected areas.
- (14) In order to facilitate permit-granting for joint offshore renewable energy projects, the relevant authorities shall reduce the complexity and increase the efficiency and transparency of the permit-

granting procedure, shall enhance cooperation among themselves and shall, where appropriate, establish a single contact point.

Effects of joint
projects with other
Member States.

28. (1) Within three (3) months of the end of each year falling within the period referred to in regulation 27(3)(d), the Minister shall issue a letter of notification stating:

(a) the total amount of electricity, heating or cooling produced from renewable sources during that year by the installation which was the subject of the notification in terms of regulation 27; and

(b) the amount of electricity, heating or cooling produced from renewable sources during that year by such installation which is to count towards the renewable energy share of another Member State in accordance with the terms of the notification.

(2) The Minister shall submit the letter of notification to the Member State in whose favour the notification was made and to the Commission.

(3) The amount of electricity, heating or cooling from renewable sources notified in accordance with paragraph (b) of sub-regulation (1) shall be:

(a) deducted from the amount of electricity, heating or cooling from renewable sources that is taken into account in calculating Malta's renewable energy share for the purposes of these regulations; and

(b) added to the amount of electricity, heating or cooling from renewable sources that is taken into account in calculating the renewable energy share of the Member State receiving the letter of notification pursuant to sub-regulation (2) for the purposes of the Directive.

Joint projects with
third countries.

29. (1) The Minister may make arrangements, or designate an authority or entity to make such arrangements, for the purpose of cooperation with one (1) or more third countries on all types of joint projects with regard to the production of electricity from renewable sources, where cooperation may also involve private operators and shall take place in full respect of international law:

Provided that such cooperation may also be jointly entered into with one (1) or more other Member States.

(2) Electricity from renewable sources produced in a third country shall be taken into account for the purposes of calculating Malta's renewable energy share and, where other Member States are

involved in the cooperation, for the purposes of calculating their renewable energy shares, only where the following conditions are satisfied:

(a) the electricity is consumed in the Union, which is deemed to be satisfied where:

(i) an equivalent amount of electricity to the electricity accounted for has been firmly nominated to the allocated interconnection capacity by all responsible transmission system operators in the country of origin, the country of destination and, if relevant, each third country of transit;

(ii) an equivalent amount of electricity to the electricity accounted for has been firmly registered in the schedule of balance by the responsible transmission system operator on the Union side of an interconnector; and

(iii) the nominated capacity and the production of electricity from renewable sources by the installation referred to in paragraph (b) refer to the same period of time;

(b) the electricity is produced by an installation that became operational after 25th June 2009 or by the increased capacity of an installation that was refurbished after such date, under a joint project as referred to in sub-regulation (1):

Provided that units of energy from renewable sources imputable to an increase in the capacity of an installation shall be treated as if they were produced by a separate installation becoming operational at the moment at which the increase of capacity occurred;

(c) the amount of electricity produced and exported has not received support from a support scheme of a third country other than investment aid granted to the installation; and

(d) the electricity has been produced in accordance with international law, in a third country that is a signatory to the Council of Europe Convention for the Protection of Human Rights and Fundamental Freedoms, or other international conventions or treaties on human rights.

(3) For the purposes of sub-regulation (4), the Minister may apply to the Commission for account to be taken of electricity from renewable sources produced and consumed in a third country, in the

context of the construction of an interconnector with a very long lead-time between a Member State and a third country where the following conditions are met:

(a) construction of the interconnector started by 31 December 2026;

(b) it is not possible for the interconnector to become operational by 31 December 2030;

(c) it is possible for the interconnector to become operational by 31 December 2032;

(d) after it becomes operational, the interconnector is to be used for the export of electricity from renewable sources to the Union, in accordance with sub-regulation (2); and

(e) the application relates to a joint project that fulfils the criteria established in paragraphs (b) and (c) of sub-regulation (2) and that will use the interconnector after it becomes operational, and refers to a quantity of electricity that is not greater than the quantity that will be exported to the Union after the interconnector becomes operational.

(4) The proportion or amount of electricity produced by any installation in the territory of a third country, which is to be regarded as counting towards Malta's renewable energy share shall be notified to the Commission by the Minister, and when more than one (1) Member State is concerned, the distribution between Member States of such proportion or amount shall be notified to the Commission:

Provided that the proportion or amount shall not exceed the proportion or amount actually exported to, and consumed in the Union, shall correspond to the amount referred to in sub-paragraphs (i) and (ii) of paragraph (a) of sub-regulation (2) and shall satisfy the conditions established in paragraph (a) of the said sub-regulation.

(5) The notification referred to in sub-regulation (4) shall:

(a) describe the proposed installation or identify the refurbished installation;

(b) specify the proportion or amount of electricity produced from the installation which is to be regarded as counting towards Malta's renewable energy share as well as, subject to confidentiality requirements, the corresponding financial arrangements;

(c) specify the period, in whole calendar years, during which the electricity is to be regarded as counting towards

Malta's renewable energy share; and

(d) include an acknowledgement of paragraphs (b) and (c) by the third country in whose territory the installation is to become operational and an indication of the proportion or amount of electricity produced by the installation which will be used domestically by such third country.

(6) The duration of a joint project as referred to in this regulation may extend beyond 2030.

(7) A notification made under this regulation shall be varied or withdrawn only where there is a joint agreement between Malta and the third country that has acknowledged the joint project in accordance with paragraph (d) of sub-regulation (5).

30. (1) Within twelve (12) months of the end of each year falling within the period specified under paragraph (c) of sub-regulation (5) of regulation 29, the Minister shall issue a letter of notification stating:

Effects of joint projects with third countries.

(a) the total amount of electricity produced from renewable sources during that year by the installation which was the subject of the notification in accordance with regulation 29;

(b) the amount of electricity produced from renewable sources during that year by such installation which is to count towards Malta's renewable energy share in accordance with the terms of the notification in accordance with regulation 29; and

(c) proof of compliance with the conditions established in sub-regulation (2) of regulation 29.

(2) The Minister shall submit the letter of notification referred to in sub-regulation (1) to the Commission and to the third country that has acknowledged the project in accordance with paragraph (d) of sub-regulation (5) of regulation 29.

(3) For the purposes of calculating the renewable energy shares under these regulations, the amount of electricity from renewable sources notified in accordance with paragraph (b) of sub-regulation (1) shall be added to the amount of energy from renewable sources that is taken into account in calculating Malta's renewable energy shares.

31. (1) Without prejudice to the obligations of the Minister under regulation 24, the Minister may agree with the relevant authorities of one or more other Member States, on a voluntary basis, to join or partly coordinate their national support schemes.

Joint support schemes.

(2) Where an agreement is reached for the joining or partial coordination of national support schemes, a certain amount of energy from renewable sources produced in Malta may count towards the renewable energy share of another participating Member State, or vice-versa, provided that Malta and any other Member State concerned:

(a) make a statistical transfer of specified amounts of energy from renewable sources in accordance with regulation 26; or

(b) set up a distribution rule agreed by Malta and any participating Member State that allocates amounts of energy from renewable sources between them.

(3) A distribution rule as referred to in paragraph (b) of sub-regulation (2) shall be notified by the Minister to the Commission not later than three (3) months after the end of the first year in which it takes effect.

(4) Within three (3) months of the end of each year, where a notification has been made in accordance with sub-regulation (3), the Minister shall issue a letter of notification stating the total amount of electricity or heating or cooling from renewable sources produced during the year which is to be the subject of the distribution rule.

(5) For the purposes of calculating the renewable energy shares under these regulations, the amount of electricity or heating or cooling from renewable sources notified in accordance with sub-regulation (4), shall be reallocated between Malta and any Member State concerned in accordance with the notified distribution rule.

(6) The Minister may request the Commission to facilitate the establishment of joint support schemes between Malta and any other Member State.

PART V

Administrative and Permitting Procedures for the Deployment of New Renewable Capacity.

Administrative
procedures,
regulations and
codes.

32. (1) Any national rules concerning the authorisation, certification and licensing procedures that are applied to:

(a) plants and associated transmission and distribution networks for the production of electricity, heating or cooling from renewable sources;

(b) the process of transformation of biomass into biofuels, bioliquids, biomass fuels or other energy products; and

(c) renewable transport fuels of non-biological origin;

shall be proportionate and necessary and shall contribute to the implementation of the energy efficiency first principle.

(2) The relevant authorities shall, in particular and to the extent that this is within the scope of each of their legally established remits, take the appropriate steps to ensure that:

(a) administrative procedures are streamlined and expedited at the appropriate administrative level and predictable timeframes are established for the procedures referred to in the sub-regulation (1);

(b) rules concerning authorisation, certification and licensing are objective, transparent and proportionate, do not discriminate between applicants and take fully into account the particularities of individual renewable energy technologies;

(c) administrative charges paid by consumers, planners, permit holders, builders and equipment and system installers and suppliers are transparent and cost-related; and

(d) simplified and less burdensome authorisation procedures, including a simple-notification procedure, are established for decentralised devices and for producing and storing energy from renewable sources.

(3) Pilot projects involving the testing in a real-world environment and for a limited period, of innovative renewable energy technology for producing, sharing and storing of renewable energy shall be promoted and supported in line with Malta's National Strategy for Research and Innovation in Energy and Water 2021-2030.

(4) All relevant authorities shall ensure that provisions are included for the integration and deployment of renewable energy, including for renewables self-consumption and renewable energy communities, and for the use of unavoidable waste heat and cold when planning, including early spatial planning, designing, building and renovating urban infrastructure, industrial, commercial or residential areas and energy and transport infrastructure, including electricity, district heating and cooling, natural gas and alternative fuel networks.

(5) Local and regional administrative bodies are encouraged to include heating and cooling from renewable sources in the planning of city infrastructure where appropriate, and to consult the network operators to reflect the impact of energy efficiency and demand-response programmes as well as specific provisions on renewables self-consumption and renewable energy communities, on the

infrastructure development plans of the network operators.

Mapping of areas necessary for national contributions towards the overall Union renewable energy target for 2030.

33. (1) Existing spatial planning documents and plans shall form the basis for the coordinated mapping for the deployment of renewable energy to identify the domestic potential and the available land surface that is necessary for the installation of renewable energy plants required in order to meet the national contribution towards the overall Union renewable energy target for 2030:

Provided that the relative related infrastructure, such as grid and storage facilities, including thermal storage shall be included in such mapping.

(2) The areas included in the coordinated mapping exercise referred to in sub-regulation (1), including the existing renewable energy plants and cooperation mechanisms shall be:

(a) commensurate with the estimated trajectories and total planned installed capacity of renewable energy technology established in Malta's national energy and climate plans; and

(b) periodically reviewed and, where necessary, updated in parallel with the updates of Malta's national energy and climate plans.

(3) For the purposes of identifying the areas referred to in sub-regulation (1), the following in particular shall be taken into account:

(a) the availability of energy from renewable sources and the potential for renewable energy production of the different types of technology in the land surface areas;

(b) the projected demand for energy, whilst taking into account the potential flexibility of the active demand response, expected efficiency gains and energy system integration; and

(c) the availability of relevant energy infrastructure, including grids, storage and other flexibility tools or the potential to create or upgrade such grid infrastructure and storage.

(4) Renewable energy projects shall be compatible with the pre-existing uses of the areas referred to in sub-regulation (1), with multiple uses being favoured.

(5) All relevant authorities and local authorities, including network operators, shall contribute to the coordinated mapping exercise referred to in sub-regulation (1) and the subsequent updates

thereof referred to in sub-regulation (2)(1)(b) as appropriate, within the extent of their functions as outlined in their legal remits:

Provided that sub-surface and sea or inland water areas may, where relevant, be considered for inclusion within such updates.

34. (1) Areas designated as: Renewables
acceleration areas.
- (a) Principal Urban Areas;
 - (b) Regional Urban Settlements;
 - (c) Small Urban Settlements; and
 - (d) Enterprise Hubs,

as spatially identified in the Sixth Schedule and established in the 2015 Strategic Plan for Environment and Development shall be deemed to constitute renewables acceleration areas.

(2) The designation referred to in sub-regulation (1) shall, without prejudice to the exclusions established in sub-regulation (3), apply exclusively to solar photovoltaic systems installed on artificial and built surfaces, including rooftops of existing buildings or structures.

(3) The designation referred to in sub-regulation (1) shall not apply to any buildings or structures which:

(a) have been listed or designated as scheduled buildings or scheduled property under the Development Planning Act; or Cap. 552.

(b) have been commended for scheduling by the Superintendent of Cultural Heritage on the grounds of being considered to constitute cultural property as defined in the Cultural Heritage Act. Cap. 445.

(4) All renewable installations which are installed within the areas listed in sub-regulation (1), shall comply with the guidelines and standards applicable to such installations as established in the Development Control Design Policy, Guidance and Standards document, as may be amended from time to time, or as defined in the Development Notification Order. S.L. 552.08.

(5) The permit-granting procedures applicable to installations located within the areas listed in sub-regulation (1), shall be subject to the time frames established in regulation 38:

Provided that where any other provision in these

regulations prescribes a shorter time frame, that shorter time frame shall apply.

(6) This regulation shall be without prejudice to the potential designation by the relevant competent authorities of renewable acceleration areas, including areas which may be located offshore, intended to be applicable to solar photovoltaic installations or to other renewable technologies.

Public
participation.
S.L. 549.61.

35. (1) The designating of renewables acceleration areas referred to in regulation 34(1), shall include public participation in accordance with regulation 7 of the Strategic Environmental Assessment Regulations, including identifying the public affected or likely to be affected.

(2) The public acceptance of renewable energy projects shall be promoted by means of direct and indirect participation of local communities in those projects.

Areas for grid and
storage
infrastructure
necessary to
integrate
renewable energy
into the electricity
system.

36. (1) One (1) or more plans may be adopted to designate dedicated infrastructure areas for the development of grid and storage projects that are necessary to integrate renewable energy into the electricity system, in cases where such development is not expected to have a significant environmental impact, such an impact can be duly mitigated or, where such mitigation is not possible, compensated for.

(2) The aim of the areas referred to in sub-regulation (1) shall be to support and complement the renewables acceleration areas.

(3) The plans referred to in sub-regulation (1) shall:

(a) for grid projects, avoid Natura 2000 sites and areas designated under national protection schemes for nature and biodiversity conservation, unless there are no proportionate alternatives for their deployment, taking into account the objectives of the site;

(b) for storage projects, exclude Natura 2000 sites and areas designated under national protection schemes;

(c) ensure synergies with the designation of renewables acceleration areas;

S.L. 549.61.

(d) be subject to a strategic environmental assessment pursuant to the Strategic Environmental Assessment Regulations and, where applicable, to an assessment in accordance with regulation 19 of the Flora, Fauna and Natural Habitats Protection Regulations;

S.L. 549.44.

(e) establish appropriate and proportionate rules,

including on proportionate mitigation measures which shall be adopted for the development of grid and storage projects in order to avoid adverse effects on the environment that may arise or, where it is not possible to avoid such effects, to significantly reduce them; and

(f) be drawn up following consultation with the relevant infrastructure system operators.

(4) Grid and storage projects which are necessary to integrate renewable energy into the electricity system may, under justified circumstances, including where needed to accelerate the deployment of renewable energy in order to achieve the climate and renewable energy targets, be exempted from:

(a) the environmental impact assessment pursuant to regulation 6(1) of the Environmental Impact Assessment Regulations; S.L. 549.46.

(b) an assessment of the implications of the grid and storage projects for Natura 2000 sites in accordance with regulation 19 of the Flora, Fauna and Natural Habitats Protection Regulations; and S.L. 549.44.

(c) the assessment of the implications of the grid and storage projects on species protection in accordance with regulations 24 and 25 of the Flora, Fauna and Natural Habitats Protection Regulations and regulation 4(1) of the Conservation of Wild Birds Regulations; S.L. 549.44.
S.L. 549.42.

Provided that such grid or storage projects are located in a dedicated infrastructure area designated in accordance with sub-regulation (1) and that these shall comply with the rules established, including on proportionate mitigation measures which shall be adopted in accordance with paragraph (e) of sub-regulation (3), by way of derogation from regulations 6(1) and 10(2) of the Environmental Impact Assessment Regulations and from items 3.4.1.1., 3.4.2.1. and 10.0.2.7 of Schedule I to the said regulations, and by way of derogation from regulation 19 of the Flora, Fauna and Natural Habitats Protection Regulations. S.L. 549.46.
S.L. 549.44.

(5) Where grid and storage projects are located in dedicated infrastructure areas and exempt from the assessments referred to in sub-regulation (4), they shall be subject to a screening process which shall be based on existing data from the strategic environmental assessment pursuant to the Strategic Environmental Assessment Regulations, provided that project applicants may be requested to provide additional available information. S.L. 549.61.

S.L. 549.61.

S.L. 549.44.

(6) The screening process referred to in sub-regulation (5) shall be finalised within thirty (30) days from its commencement and shall aim to identify if projects are highly likely to give rise to significant unforeseen adverse effects, in view of the environmental sensitivity of the geographical areas where they are located, which adverse effects were not identified during the environmental assessment of the plans designating dedicated infrastructure areas carried out pursuant to the Strategic Environmental Assessment Regulations and, where relevant, to the Flora, Fauna and Natural Habitats Protection Regulations.

(7) Where the screening process referred to in sub-regulation (5) identifies a project as being highly likely to give rise to significant unforeseen adverse effects as referred to in sub-regulation (6), appropriate and proportionate mitigation measures shall be applied, on the basis of existing data, to address those effects.

(8) Where it is not possible to apply the mitigation measures required in accordance with sub-regulation (7), the operator of the installation shall be required to adopt appropriate compensatory measures to address those effects which, if other proportionate compensatory measures are not available, may take the form of a monetary compensation for species protection programmes, in order to ensure or improve the conservation status of the species affected.

S.L. 549.46.

(9) Where the integration of renewable energy into the electricity system requires a project to reinforce the grid infrastructure, within or outside dedicated infrastructure areas, and such a project is subject to a screening process carried out pursuant to sub-regulation (5), or to a determination whether the project requires an environmental impact assessment, or an environmental impact assessment pursuant to regulation 10 of the Environmental Impact Assessment Regulations, such a screening process, determination or environmental impact assessment shall be limited to the potential impact arising from the change or extension compared to the original grid infrastructure.

Organisation and
main principles of
the permit-granting
procedure.

37. (1) The permit-granting procedure shall cover all relevant administrative permits to build, repower and operate renewable energy plants, including those combining different renewable energy sources, heat pumps and co-located energy storage, including power and thermal facilities, as well as assets necessary for the connection of such plants, heat pumps and storage to the grid and to integrate renewable energy into heating and cooling networks, including grid connection permits and where required, environmental assessments.

(2) The permit-granting procedure shall comprise all administrative stages, from the acknowledgment of the completeness of the permit application in accordance with sub-regulation (3), up to

the notification of the final decision on the outcome of the permit-granting procedure by the relevant competent authority or authorities.

(3) Every relevant authority which is responsible for the issuing of any administrative permit associated with renewable energy plants, shall acknowledge the completeness of the application or, if the applicant has not sent all the information required to process the application, shall request that the applicant submit a complete application without undue delay:

Provided that such acknowledgement or request as the case may be, shall be provided within thirty (30) days, for renewable energy plants located in renewables acceleration areas, and within forty-five (45) days, for renewable energy plants located outside renewables acceleration areas, from receipt of an application for a permit.

(4) The date of acknowledgement of the completeness of the application by the relevant authority shall indicate the commencement of the permit-granting procedure.

(5) An *ad hoc* set-up made up of the relevant permitting authorities of which the Regulator of energy services and the competent authority for development permitting shall be permanent members, shall act as a single contact point for the entire administrative permit application and permit-granting procedure:

Provided that any other relevant permitting authority may be added to the set-up as required.

(6) The contact point designated in line with sub-regulation (5) shall, upon the request of the applicant, guide and facilitate the applicant during the entire administrative permit-application and permit-granting procedure and the applicant shall not be required to contact more than one (1) contact point during the entire procedure.

(7) The contact point designated in line with sub-regulation (5) shall guide the applicant through the administrative permit-application procedure, including the steps relating to the protection of the environment, in a transparent manner until the delivery of one or more decisions by the competent authorities at the end of the permit-granting procedure, provide the applicant with all necessary information and where appropriate, involve other administrative authorities.

(8) The contact point designated in line with sub-regulation (5) shall ensure that the deadlines for the permit-granting procedures established in these regulations are met.

(9) All relevant authorities shall allow applicants to submit

relevant documents digitally, provided that by the 21st November 2025, all permit-granting procedures referred to in sub-regulation (1) shall be carried out in electronic format.

(10) The contact point designated in line with sub-regulation (5) shall make available a manual of procedures for developers of renewable energy plants and shall provide such information online, addressing also distinctly small-scale renewable energy projects, renewables self-consumers projects and renewable energy communities.

(11) Should more than one (1) contact point be designated in line with sub-regulation (5), online information shall indicate the contact point relevant to the application in question.

(12) Every relevant authority shall ensure that applicants and the general public have easy access to simple procedures for the settlement of disputes concerning the permit-granting procedure and the issuance of permits to build and operate renewable energy plants, including where applicable, alternative dispute resolution mechanisms.

(13) Administrative and judicial appeals in the context of a project for the development of a renewable energy plant, the connection of such plant to the grid, and the assets necessary for the development of the energy infrastructure networks required to integrate energy from renewable sources into the energy system, including appeals related to environmental aspects, shall be ensured to be subject to the most expeditious administrative and judicial procedure that is available.

(14) Every relevant authority shall take into account the planned installed renewable energy generation capacity provided for in Malta's integrated national energy and climate plans submitted in accordance with Articles 3 and 14 of Regulation (EU) 2018/1999 to ensure its staff complement is suitably qualified and to make any plans for upskilling and reskilling which may be deemed necessary.

(15) Except when it coincides with other administrative stages of the permit-granting procedure, the duration of the permit-granting procedure shall not include:

(a) the time during which the renewable energy plants, their grid connections and, with a view to ensuring grid stability, grid reliability and safety, the time during which the related necessary grid infrastructure, is being built or repowered;

(b) the time for the administrative stages necessary for significant upgrades to the grid required for ensuring grid stability, grid reliability and grid safety;

(c) the time for any judicial appeals and remedies, other proceedings before a court or tribunal and alternative dispute resolution mechanisms, including complaint procedures and non-judicial appeals and remedies.

(16) All relevant authorities shall make publicly available the decisions resulting from the permit-granting procedures.

38. (1) The permit-granting procedure referred to in regulation 37 shall not exceed twelve (12) months for renewable energy projects in a renewables acceleration area and shall not exceed two (2) years for offshore renewable energy projects in a renewables acceleration area.

Permit-granting
procedure in
renewables
acceleration areas.

(2) The time frames referred to in sub-regulation (1) may, on the ground of extraordinary circumstances, be extended by up to six (6) months.

(3) The permit-granting procedure for the following shall not exceed six (6) months when located in a renewables acceleration area:

- (a) the repowering of renewable energy power plants;
- (b) new installations with an electrical capacity of less than one hundred and fifty kilowatts (150 kW);
- (c) co-located energy storage, including power and thermal facilities;
- (d) the grid connection of all of the above:

Provided that where justified on the grounds of extraordinary circumstances, this period may be extended by up to three (3) months.

(4) The permit-granting procedure for offshore wind energy projects located in a renewables acceleration area shall not exceed twelve (12) months:

Provided that where justified on the grounds of extraordinary circumstances, this period may be extended by up to six (6) months.

(5) For the purposes of sub-regulations (2), (3) and (4) extraordinary circumstances shall include grounds of overriding safety reasons where the repowering project has a substantial impact on the grid or on the original capacity, size or performance of the installation, and where time frames are so extended the relevant authority shall clearly inform the project developer of the extraordinary circumstances that justify such an extension.

- S.L. 549.46. (6) Without prejudice to sub-regulations (9) to (16), by way of derogation from regulation 10(2) of the Environmental Impact Assessment Regulations and from and from items 3.1.2.1, 10.0.2.7, 3.4.1.1, 3.4.2.1, 10.0.2.2, 3.3.2.1, 3.3.2.2, and 10.0.1.2 and 10.0.2.3 alone or in conjunction with item 10.0.1.1 of Schedule I to the said regulations, with regard to renewable energy projects, new applications for renewable energy plants, including plants combining different types of renewable energy technology and the repowering of renewable energy power plants in designated renewables acceleration areas for the relevant technology and co-located energy storage, as well as the connection of such plants and storage to the grid, shall be exempt from the requirement to carry out a dedicated environmental impact assessment pursuant to regulation 6(1) of the said regulations, provided that those projects comply with paragraph (b) of regulation 34(2).
- S.L. 549.46. (7) The derogation referred to in sub-regulation (6) shall not apply to projects which are likely to have significant effects on the environment in another Member State or where a Member State that is likely to be significantly affected so requests, in accordance with regulation 25 of the Environmental Impact Assessment Regulations.
- S.L. 549.44. (8) By way of derogation from to regulation 19 of the Flora, Fauna and Natural Habitats Protection Regulations, the renewable energy plants referred to in sub-regulation (6) shall not be subject to an assessment of their implications for Natura 2000 sites provided that those renewable energy projects comply with the rules and measures established in accordance with paragraph (b) of regulation 34(2).
- S.L. 549.61. (9) The relevant competent authority shall carry out a screening process of the applications referred to in sub-regulation (6) which shall aim to identify if any of the renewable energy projects is highly likely to give rise to significant unforeseen adverse effects in view of the environmental sensitivity of the geographical areas where they are located, which were not identified during the environmental assessment of the plans designating renewables acceleration areas referred to in sub-regulations (1) and (2) of regulation 34, carried out pursuant to the Strategic Environmental Assessment Regulations and, where relevant, to the Flora, Fauna and Natural Habitats Protection Regulations.
- S.L. 549.44. (9) The relevant competent authority shall carry out a screening process of the applications referred to in sub-regulation (6) which shall aim to identify if any of the renewable energy projects is highly likely to give rise to significant unforeseen adverse effects in view of the environmental sensitivity of the geographical areas where they are located, which were not identified during the environmental assessment of the plans designating renewables acceleration areas referred to in sub-regulations (1) and (2) of regulation 34, carried out pursuant to the Strategic Environmental Assessment Regulations and, where relevant, to the Flora, Fauna and Natural Habitats Protection Regulations.
- S.L. 549.46. (10) The screening process referred to in sub-regulation (9) shall also aim to identify if any of such renewable energy projects falls within the scope of regulation 25 of the Environmental Impact Assessment Regulations due to its likelihood of significant effects on the environment in another Member State or due to the request of a Member State which is likely to be significantly affected.
- (11) For the purpose of the screening process referred to in sub-regulation (9), the project developer shall provide information on

the characteristics of the renewable energy project, on its compliance with the rules and measures identified pursuant to paragraph (b) of regulation 34(2), for the specific renewables acceleration area, on any additional measures adopted by the project developer and on how those measures address environmental impact:

Provided that the relevant competent authorities may request the project developer to provide additional available information.

(12) The screening process relating to applications for new renewable energy plants shall be finalised within forty-five (45) days from the date of submission of sufficient information necessary for that purpose:

Provided that this time frame shall be reduced to thirty (30) days in the case of applications for installations with an electrical capacity of less than one hundred and fifty kilowatts (150 kW) and of new applications for the repowering of renewable energy power plants.

(13) Following the screening process referred to in sub-regulation (9), the applications referred to in sub-regulation (6) shall be authorised from an environmental perspective without requiring any express decision from the competent authority, unless the competent authority adopts an administrative decision, setting out due reasons on the basis of clear evidence, to the effect that a specific project is highly likely to give rise to significant unforeseen adverse effects in view of the environmental sensitivity of the geographical area where the project is located that cannot be mitigated by the measures identified in the plans designating acceleration areas or proposed by the project developer.

(14) The renewable energy projects likely to give rise to significant unforeseen adverse effects referred to in sub-regulation (13) shall be subject to an environmental impact assessment pursuant to the Environmental Impact Assessment Regulations and, if applicable, to an assessment pursuant to the Flora, Fauna and Natural Habitats Protection Regulations, which shall be carried out within six (6) months of the administrative decision identifying a high likelihood of significant unforeseen adverse effects:

S.L. 549.46.

S.L. 549.44.

Provided that the six (6) month period may, where duly justified on the grounds of extraordinary circumstances, be extended by up to a maximum of a further six (6) months.

(15) In the event of justified circumstances, including where needed to accelerate the deployment of renewable energy to achieve the climate and renewable energy targets, wind and solar photovoltaic projects may, without prejudice to sub-regulation (16), be exempt from

the assessments referred to in sub-regulation (14).

(16) Where wind and solar photovoltaics projects are exempt from the assessments referred to in sub-regulation (14), the operator shall adopt proportionate mitigation measures or, where such mitigation measures are not available, compensatory measures which, in the absence of the latter, may take the form of monetary compensation, in order to address any adverse effects:

Provided that where those adverse effects have an impact on species protection, the operator shall pay a monetary compensation for species protection programmes for the duration of the operation of the renewable energy plant in order to ensure or improve the conservation status of the species affected.

(17) In the permit-granting procedure referred to in sub-regulations (1) to (5), the absence of a reply by any relevant competent authority within the established deadline shall result in the relevant intermediary administrative steps being deemed approved, but only where administrative tacit approval is provided for by such competent authority for that part of the permit-granting procedure:

Provided that tacit approval shall in no case be applicable where the specific renewable energy project is subject to an environmental impact assessment pursuant to sub-regulations (13) and (14) and shall furthermore not apply to final decisions on the outcome of the permit-granting procedure, which shall be explicit.

(18) The decisions related to the permit-granting procedure referred to in sub-regulations (13) and (17) shall be made publicly available.

Permit-granting
procedure outside
renewables
acceleration areas.

39. (1) The permit-granting procedure referred to in regulation 37(1) shall not exceed two (2) years for renewable energy projects located outside renewables acceleration areas provided that in the case of offshore renewable energy projects, the permit-granting procedure shall not exceed three (3) years.

(2) The time frames referred to in sub-regulation (1) shall be subject to the project developer complying with reasonable time frames established by each relevant authority for the submission of any required documentation, provided that, where duly justified on the grounds of extraordinary circumstances, including the extension of periods required for assessments in accordance with the applicable Union environmental legislation, any of those periods may be extended by up to a maximum of six (6) months, and in such case the project developer shall be clearly informed of the extraordinary circumstances that justify such an extension.

(3) Where an environmental assessment is required pursuant to the Environmental Impact Assessment Regulations or the Flora, Fauna and Natural Habitats Protection Regulations as part of the permit-granting procedure for renewable energy projects located outside renewables acceleration areas, it shall be carried out in a single procedure that combines all relevant assessments for the given renewable energy project, and the relevant authority, taking into account the information provided by the project developer, shall issue an opinion on the scope and level of detail of the information to be included by the project developer in the environmental impact assessment report, of which the scope shall not be subsequently extended.

S.L. 549.46.
S.L. 549.44.

(4) Where a renewable energy project has adopted the necessary mitigation measures, any killing or disturbance of the species protected in accordance with regulations 24 and 25 of the Flora, Fauna and Natural Habitats Protection Regulations and regulation 4(1) of the Conservation of Wild Birds Regulations shall not be considered to be deliberate.

S.L. 549.44. S.L.
549.42.

(5) Where novel mitigation measures to prevent, to the extent possible, the killing or disturbance of species protected under the Flora, Fauna and Natural Habitats Protection Regulations and the Conservation of Wild Birds Regulations, or to prevent any other environmental impact, have not been widely tested as regards their effectiveness, their use may be allowed for one (1) or several pilot projects for a limited time period, provided that the effectiveness of such mitigation measures is closely monitored and appropriate steps are immediately taken if they do not prove to be effective.

S.L. 549.44. S.L.
549.42.

(6) The permit-granting procedure shall not exceed twelve (12) months for land-based, or two (2) years for offshore projects of the following types when located outside renewables acceleration areas:

- (a) the repowering of renewable energy power plants;
- (b) new installations with an electrical capacity of less than one hundred and fifty kilowatts (150 kW);
- (c) co-located energy storage;
- (d) the connection to the grid for the projects described in paragraphs (a) to (c).

(7) The time frames established in sub-regulation (6) shall include any environmental assessments which may be required by the relevant law and either one may, where duly justified on the grounds of extraordinary circumstances, be extended by up to a maximum of (3) three months subject to the project developer being clearly informed of

the extraordinary circumstances that justify such an extension.

Accelerating the
permit-granting
procedure for
repowering.

40. (1) Where the repowering of a renewable energy power plant does not result in an increase of the capacity of said renewable energy power plant beyond fifteen percent (15%), and without prejudice to any assessment of potential environmental impact required pursuant to sub-regulations (2) and (3), the applicable time frame for granting connections to the transmission or distribution grid shall not exceed three (3) months following notification to the relevant authority unless there are justified safety concerns or there is technical incompatibility of the system components.

S.L. 549.46.

(2) Where the repowering of a renewable energy power plant is subject to the screening process provided for in regulation 38(9), to a determination as to whether the project requires an environmental impact assessment, or to an environmental impact assessment pursuant to regulation 10 of the Environmental Impact Assessment Regulations, such a determination or environmental impact assessment shall be limited to the potential impact arising from a change or extension compared to the original project.

S.L. 549.46.

(3) Where the repowering of a solar installation does not entail the use of additional space and complies with the applicable environmental mitigation measures established for the original solar installation, the project shall be exempt from any applicable requirements to carry out a screening process provided for in regulation 38(9), to determine whether the project requires an environmental impact assessment, or the carrying out of an environmental impact assessment pursuant to regulation 10 of the Environmental Impact Assessment Regulations.

Permit-granting
procedure for the
installation of solar
energy equipment.

41. (1) The relevant authorities shall ensure that the permit-granting procedure referred to in regulation 37 for the installation of solar energy equipment and co-located energy storage, including building-integrated solar installations, in existing or future artificial structures, with the exclusion of artificial water surfaces, shall not exceed three (3) months, provided that the primary aim of such artificial structures is not solar energy production or energy storage.

(2) Certain areas or structures may be excluded from the application of the time frame established in sub-regulation (1) for the purpose of protecting cultural or historical heritage, national defence interests, or safety reasons.

S.L. 549.46.

(3) By way of derogation from regulation 10(2) of the Environmental Impact Assessment Regulations, and from items 3.1.2.1, 3.4.2.1 and 10.0.2.7, alone or in conjunction with item 13.0.1.1 of Schedule I to the said regulations, the installation of solar equipment referred to in sub-regulation (1) shall be exempt from the

requirement, if applicable, to carry out a dedicated environmental impact assessment pursuant to regulation 6(1) of the said regulations.

(4) The relevant authorities shall ensure that the permit-granting procedure for the installation of solar energy equipment with a capacity of one hundred kilowatts (100 kW) or less, including for renewables self-consumers and renewable energy communities, shall not exceed one (1) month.

(5) In respect of the permit-granting procedure referred to in sub-regulation (4), the lack of reply by the relevant authorities or entities within the established deadline following the submission of a complete application shall result in the permit being considered as granted, provided that the capacity of the solar energy equipment does not exceed the existing capacity of the connection to the distribution grid.

(6) Where the application of the capacity threshold referred to in sub-regulation (4) leads to a significant administrative burden or to constraints to the operation of the electricity grid, a lower capacity threshold may be applied, which shall in all cases, remain above ten point eight kilowatts (10.8 kW).

42. (1) The relevant authorities shall ensure that any permit-granting procedure which may be applicable to the installation of heat pumps below fifty megawatts (50 MW) shall not exceed one (1) month, provided that in the case of ground source heat pumps, any applicable permit-granting procedure shall not exceed three (3) months.

Permit-granting
procedure for the
installation of heat
pumps.

(2) The relevant authorities shall ensure that connections to the transmission or distribution grid shall be permitted within two (2) weeks of the notification to the relevant entity for:

(a) heat pumps of up to twelve kilowatts (12 kW) electrical capacity; and

(b) heat pumps of up to fifty kilowatts (50 kW) electrical capacity installed by renewables self-consumers, provided that the electrical capacity of a renewables self-consumer's renewable electricity generation installation amounts to at least sixty percent (60%) of the electrical capacity of the heat pump.

(3) The time frame established in sub-regulation (2) shall not be applicable where:

(a) there are justified safety concerns; or

(b) further works are required for grid connections; or

(c) there is technical incompatibility of the system components.

(4) Relevant authorities may exclude certain areas or structures from the application of sub-regulations (1) and (2) for the purpose of protecting cultural or historical heritage, national defence interests or safety reasons.

(5) Relevant authorities shall make all decisions resulting from the permit-granting procedure referred to in this regulation publicly available in accordance with any applicable laws.

Overriding public interest.

43. (1) Until climate neutrality is achieved, the relevant authorities shall ensure that, in the permit-granting procedure, the planning, construction and operation of renewable energy plants, the connection of such plants to the grid, the related grid itself and storage assets are presumed as being in the overriding public interest and serving public health and safety when balancing legal interests in individual cases for the purposes of regulations 19(2), 19(3) and 44(c) of the Flora, Fauna and Natural Habitats Protection Regulations, regulation 5(7) of the Water Policy Framework Regulations, and paragraphs (a) to (d) of regulation 9(1) of the Conservation of Wild Birds Regulations.

S.L. 549.44.
S.L. 549.100.
S.L. 549.42.

(2) In duly justified and specific circumstances, the application of sub-regulation (1) may be restricted to certain parts of the Maltese territory, to certain types of technology or to projects with certain technical characteristics in accordance with the priorities established in Malta's integrated national energy and climate plans submitted pursuant to Articles 3 and 14 of Regulation (EU) 2018/1999, subject to the Commission being informed of such restrictions, together with the reasons therefore.

Simple-notification procedure for grid connections.

44. (1) The Regulator shall establish a simple-notification procedure for grid connections by which installations or aggregated production units of renewables self-consumers and demonstration projects, with an electrical capacity of ten point eight kilowatts (10.8 kW) or less, or of a capacity which is equivalent thereto for connections other than three-phase connections, shall be connected to the grid following a notification to the distribution system operator.

(2) The distribution system operator may, within a limited period following the notification referred to in sub-regulation (1), reject the requested grid connection or propose an alternative grid connection point on justified grounds of safety concerns or technical incompatibility of the system components:

Provided that the installation or aggregated production unit may be connected in the case of a positive decision by the distribution system operator, or in the absence of a decision by the

distribution system operator within one month following the notification.

(3) The Regulator may allow a simple-notification procedure for installations or aggregated production units with an electrical capacity of above ten point eight kilowatts (10.8 kW) and up to fifty kilowatts (50 kW), provided that grid stability, grid reliability and grid safety are maintained.

45. (1) Where relevant, the Regulator shall require transmission system operators and distribution system operators in Malta to publish technical rules in accordance with regulation 10 of the Natural Gas Market Regulations, in particular regarding network connection rules that include gas quality, gas odoration and gas pressure requirements.

Access to the grid
and the operation
thereof.
S.L. 545.12

(2) The Regulator shall require transmission and distribution system operators to publish the connection tariffs to connect gas from renewable sources based on objective, transparent and non-discriminatory criteria.

(3) Subject to the assessment included in the integrated national energy and climate plans submitted pursuant to Articles 3 and 14 of Regulation (EU) 2018/1999 and in accordance with Annex I to the said Regulation on the necessity to build new infrastructure for district heating and cooling from renewable sources in order to achieve the overall Union target referred to in regulation 3(1) the Minister shall, where relevant, take the necessary steps with a view to developing efficient district heating and cooling infrastructure to promote heating and cooling from renewable sources, such as solar thermal energy, solar photovoltaic energy, renewable electricity driven heat pumps using ambient energy and geothermal energy, other geothermal energy technology, biomass, biogas, bioliquids and waste heat and cold, where possible in combination with thermal energy storage, demand-response systems and power to heat installations.

46. (1) The distribution system operator designated in accordance with regulation 27 of the Electricity Regulations shall make available data on the share of renewable electricity and the greenhouse gas emissions content of the electricity supplied, as accurately as possible, at intervals of not more than one (1) hour, including forecasts where available.

Facilitating system
integration of
renewable
electricity.
S.L. 545.34.
Substituted by:
L.N. 206 of 2026.

(2) The Minister shall provide incentives for upgrades of smart grids for better grid balance monitoring and for real time data availability.

(3) Where this is technically available, the distribution system operator shall make available anonymised and aggregated data on the demand response potential and the renewable electricity generated and

injected to the grid by self-consumers and renewable energy communities.

(4) The data referred to in sub-regulation (1) shall be made available digitally in a manner that ensures interoperability, on the basis of harmonised data formats and standardised data sets, so that it can be used in a non-discriminatory manner by electricity market participants, aggregators, consumers and end-users, and may be read by electronic communication devices such as smart metering systems, electric vehicle recharging points, heating and cooling systems and building energy management systems.

Cap. 586. (5) In addition to the requirements established in Regulation (EU) 2023/1542, manufacturers of domestic and industrial batteries shall enable real-time access to basic battery management system information, including battery capacity, state of health, state of charge and power set point, to battery owners and users, as well as to third parties acting, with explicit consent, on the owners' and users' behalf, such as building energy management undertakings and electricity market participants, under non-discriminatory terms, at no cost and in accordance with Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) and the Data Protection Act, and any regulations made thereunder.

Cap. 586. (6) Vehicle manufacturers shall make available, in real-time, in-vehicle data related to the battery state of health, battery state of charge, battery power set point, battery capacity and, where appropriate, the location of electric vehicles, to electric vehicle owners and users, as well as to third parties acting on the owners' and users' behalf, such as electricity market participants and electromobility service providers, under non-discriminatory terms and at no cost, in accordance with Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) and the Data Protection Act, and any regulations made thereunder, in addition to further requirements with regard to type approval and market surveillance established in Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC.

(7) In addition to the requirements stipulated in Regulation (EU) 2023/1804, non-publicly accessible normal power recharging

points which are new or being replaced shall support smart recharging functionalities and, where appropriate, the interface with smart metering systems, and bi-directional recharging functionalities in accordance with the requirements of Article 15(3) and (4) of the said Regulation.

(8) In addition to the requirements stipulated in Regulation (EU) 2019/943 and the Electricity Regulations, small or mobile systems such as domestic batteries and electric vehicles and other small, decentralised energy sources shall be entitled to participate in the electricity markets, including congestion management and the provision of flexibility and balancing services, including through aggregation:

Provided that to this end the Minister in cooperation with all market participants and regulatory authorities, shall establish the technical requirements for participation in the electricity markets, on the basis of the technical characteristics of those systems:

Provided further that this shall be without prejudice to Malta's exercise of the derogations from Articles 4 and 6 of Directive (EU) 2019/944.

(9) A level playing field and non-discriminatory participation in the electricity markets shall be ensured for small, decentralised energy assets or mobile systems.

(10) This regulation shall apply without prejudice to Malta's right to exercise the derogations granted pursuant to Article 66 of Directive (EU) 2019/944.

47. (1) The deployment of renewable electricity to a level that is consistent with Malta's contribution to the Union's targets and at a pace that is consistent with the indicative trajectories referred to in point (a)(2) of Article 4 of Regulation (EU) 2018/1999 shall, without prejudice to Malta's exercise of the derogations from Articles 4 and 6 of Directive (EU) 2019/944, be enabled by the applicability of regulation 54A of the Electricity Regulations which shall, subject to the conditions therein, provide for the purchase of all renewable electricity produced in Malta and exported to the grid.

Assessing and addressing barriers to renewables deployment.

S.L. 545.34.

(2) A summary of the policies and measures addressing barriers to a high level of renewable electricity supply, including those related to permit-granting procedures and to the development of the necessary transmission, distribution and storage infrastructure, including co-located energy storage, where such barriers are not associated with the exercise of the derogations referred to in sub-regulation (1), together with an assessment of their implementation, shall be included in the integrated national energy and climate plans submitted pursuant to Articles 3 and 14 of Regulation (EU) 2018/1999 and in the integrated national energy and climate progress reports

submitted pursuant to Article 17 of the said Regulation.

(3) The policies and measures referred to in sub-regulation (2) shall take into account the additional renewable electricity required to meet demand in the transport, industry, building and heating and cooling sectors and for the production of renewable fuels of non-biological origin.

(4) Based on the outcome of the relative assessments of any existing regulatory and administrative barriers to long-term renewable energy purchase agreements, where such regulatory and administrative barriers are independent of Malta's exercise of the derogations from Articles 4 and 6 of Directive (EU) 2019/944, the Minister shall, without prejudice to the continued exercise of such derogations, remove unjustified barriers to, and promote the uptake of, such agreements, including by exploring how to reduce the financial risks associated with them, in particular by using credit guarantees:

S.L. 545.34.

Provided that during the subsistence of the exercise of such derogations, regulation 54A of the Electricity Regulations shall continue to apply to the purchase of all renewable electricity produced in Malta and exported to the grid, subject to the conditions therein.

(5) The agreements referred to in sub-regulation (4) shall not be subject to disproportionate or discriminatory procedures or charges, and any associated guarantees of origin shall be transferable to the buyer of the renewable energy under the renewable energy purchase agreement.

(6) Any policies and measures promoting the uptake of the renewable energy purchase agreements referred to in sub-regulation (4) shall be described in Malta's integrated national energy and climate plans submitted pursuant to Articles 3 and 14 of Regulation (EU) 2018/1999 and the integrated national energy and climate progress reports submitted pursuant to Article 17 of the said Regulation.

(7) The progress reports referred to in sub-regulation (6) shall also provide an indication of renewable energy generation that is supported by renewable energy purchase agreements.

(8) Sub-regulations (4) and (5) shall be without prejudice to the exercise of the derogations granted under Article 66 of Directive (EU) 2019/944.

PART VI

Miscellaneous

Administrative
penalties.

48. (1) The Regulator may impose an administrative penalty upon any person who infringes any provision of these regulations or who fails to comply with any directive or decision given

by the Regulator in ensuring compliance with these regulations.

(2) An administrative penalty imposed under sub-regulation (1) shall not exceed one hundred thousand euro (€100,000) for each breach.

(3) An administrative penalty imposed under sub-regulation (1) shall follow the procedure applicable thereto in accordance with article 13 of the Act and any appeal therefrom shall be made in accordance with Part VI of the Act.

FIRST SCHEDULE
(regulation 6)

**NORMALISATION RULE FOR ACCOUNTING FOR ELECTRICITY
GENERATED FROM HYDROPOWER AND WIND POWER**

The following rule shall be applied for the purposes of accounting for electricity generated from hydropower:

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

where:

N	=	reference year;
$Q_{N(norm)}$	=	normalised electricity generated by all hydropower plants in year N, for accounting purposes;
Q_i	=	the quantity of electricity actually generated in year i by all hydropower plants 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 at the end of year i, measured in MW.

The following rule shall be applied for the purposes of accounting for electricity generated from onshore wind power:

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

where:

N	=	reference year;
$Q_{N(norm)}$	=	normalised electricity generated by all onshore wind power plants in year N, for accounting purposes;
Q_i	=	the quantity of electricity actually generated in year i by all onshore wind power plants measured in GWh;
C_j	=	the total installed capacity of all the onshore wind power plants at the end of year j, measured in MW;
n	=	4 or the number of years preceding year N for which capacity and production data are available, whichever is lower.

The following rule shall be applied for the purposes of accounting for electricity generated from offshore wind power:

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

where:

N	=	reference year;
$Q_{N(norm)}$	=	normalised electricity generated by all offshore wind power plants in year N, for accounting purposes;
Q_i	=	the quantity of electricity actually generated in year i by all offshore wind power plants measured in GWh;
C_j	=	the total installed capacity of all the offshore wind power plants at the end of year j, measured in MW;
n	=	4 or the number of years preceding year N for which capacity and production data are available for, whichever is lower.

SECOND SCHEDULE (regulation 7)

ACCOUNTING OF RENEWABLE ENERGY USED FOR HEATING AND COOLING

PART A: ACCOUNTING OF RENEWABLE ENERGY FROM HEAT PUMPS USED FOR HEATING

The amount of aerothermal, geothermal or hydrothermal energy captured by heat pumps to be considered to be energy from renewable sources for the purposes of this Directive, E_{RES} , 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 in regulation 7, 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 those heat pumps,
—	H	=	the ratio between total gross production of electricity and the primary energy consumption for the production of electricity and shall be calculated as an EU average based on Eurostat data.

PART B: ACCOUNTING OF RENEWABLE ENERGY USED FOR COOLING

Section 1 DEFINITIONS

When calculating renewable energy used for cooling the following definitions shall apply:

(1) “cooling” means the extraction of heat from an enclosed or indoor space (comfort application) or from a process in order to reduce the space or process temperature to, or maintain it at, a specified temperature (set point); for cooling systems, the extracted heat is rejected into and absorbed by the ambient air, ambient water or the ground, where the environment (air, ground, and water) provides a sink for the heat extracted and thus functions as a cold source;

(2) “cooling system” means an assembly of components consisting of a heat extraction system, one or several cooling devices and a heat rejection system, complemented in the case of active cooling with a cooling medium in the form of fluid that work together to generate a specified heat transfer and, thus, ensures a required temperature;

(a) for space cooling, the cooling system can be either a free cooling system or a cooling system embedding a cooling generator, and for which cooling is one of the primary functions;

(b) for process cooling, the cooling system is embedding a cooling generator, and for which cooling is one of the primary functions;

- (3) “free cooling” means a cooling system using a natural cold source to extract heat from the space or process to be cooled via fluid(s) transportation with pump(s) and/or fan(s) and which does not require the use of a cooling generator;
- (4) “cooling generator” means the part of a cooling system that generates a temperature difference allowing heat extraction from the space or process to be cooled, using a vapour compression cycle, a sorption cycle or driven by another thermodynamic cycle, used when the cold source is unavailable or insufficient;
- (5) “active cooling” means the removal of heat from a space or process, for which an energy input is needed to meet the cooling demand, used when the natural flow of energy is unavailable or insufficient and can occur with or without a cooling generator;
- (6) “passive cooling” means the removal of heat by the natural flow of energy through conduction, convection, radiation or mass transfer without the need for moving a cooling fluid to extract and reject heat or to generate a lower temperature with a cooling generator, including decreasing the need for cooling by building design features such as building insulation, green roof, vegetal wall, shading or increased building mass, by ventilation or by using comfort fans;
- (7) “ventilation” means the natural or forced movement of air to introduce ambient air inside a space with the aim to ensure appropriate indoor air quality, including temperature;
- (8) “comfort fan” means a product that includes a fan and electric motor assembly to move air and provide summer comfort by increasing the air speed around human body giving a thermal feeling of coolness;
- (9) “renewable energy quantity for cooling” means the cooling supply that has been generated with a specified energy efficiency expressed as a Seasonal Performance Factor calculated in primary energy;
- (10) “heat sink” or “cold source” means an external natural sink into which the heat extracted from the space or process is transferred; it can be ambient air, ambient water in the form of natural or artificial water bodies and geothermal formations beneath the surface of solid earth;
- (11) “heat extraction system” means a device that removes heat from the space or process to be cooled, such as an evaporator in a vapour compression cycle;
- (12) “cooling device” means a device designed to perform active cooling;
- (13) “heat rejection system” means the device where the final heat transfer from the cooling medium to the heat sink occurs, such as the air-to-refrigerant condenser in an air-cooled vapour compression cycle;
- (14) “energy input” means the energy needed to transport the fluid (free cooling), or the energy needed to transport the fluid and to drive the cooling generator (active cooling with a cooling generator);
- (15) “district cooling” means the distribution of thermal energy in the form of chilled liquids, from central or decentralised sources of production through a network to multiple buildings or sites, for the use of space or process cooling;
- (16) “primary seasonal performance factor” means a metric of the primary energy conversion efficiency of the cooling system;
- (17) “equivalent full load hours” means the number of hours a cooling system runs with full load to produce the amount of cooling that it actually produces during a year but at varying loads;
- (18) “Cooling Degree Days” means the climate values computed with a base of eighteen degrees Celsius (18 °C) used as input to determine equivalent full load hours.

Section 2

SCOPE

1. When calculating the amount of renewable energy used for cooling, active cooling, including district cooling, regardless of whether it is free cooling or a cooling generator is used shall be counted.

2. The following shall not be counted:

(a) passive cooling, although where ventilation air is used as a heat transport medium for cooling, the corresponding cooling supply, which can be supplied either by a cooling generator or by free cooling is part of renewable cooling calculation.

(b) the following technologies or processes of cooling:

(i) cooling in means of transportation (**Note 1**);

(ii) cooling systems whose primary function is to produce or store perishable materials at specified temperatures (refrigeration and freezing);

(iii) cooling systems with space or process cooling temperature set points lower than two degrees Celsius (2 °C);

(iv) cooling systems with space or process cooling temperature set points above thirty degrees Celsius (30 °C);

(v) cooling of waste heat resulting from energy generation, industrial processes and the tertiary sector (waste heat) (**Note 2**).

(c) energy used for cooling in power generation plants; cement, iron and steel manufacturing; wastewater treatment plants; information technology facilities (such as data centres); power transmission and distribution facilities; and transportation infrastructures.

More categories of cooling systems may be excluded from the calculation of the renewable energy used for cooling in order to preserve natural cold sources in specific geographic areas for environmental protection reasons. Examples are the protection of rivers or lakes from the risk of overheating.

Section 3

METHODOLOGY FOR ACCOUNTING OF RENEWABLE ENERGY FOR INDIVIDUAL AND DISTRICT COOLING

Only cooling systems operating above the minimum efficiency requirement expressed as primary Seasonal Performance Factor (SPF_p) in Section 3.2, second paragraph shall be considered to produce renewable energy.

3.1. Renewable energy quantity for cooling

The renewable energy quantity for cooling (E_{RES-C}) shall be calculated with the following formula:

$$E_{RES-C} = (Q_{C_{Source}} - E_{INPUT}) \times S_{SPF_p} = Q_{C_{Supply}} \times S_{SPF_p}$$

where:

$Q_{C_{Source}}$ is the amount of heat released to the ambient air, ambient water or to the ground by the cooling system (**Note 3**);

E_{INPUT} is the energy consumption of the cooling system, including energy consumption of the auxiliary systems for measured systems, such as district cooling;

$Q_{Csupply}$ is the cooling energy supplied by the cooling system (**Note 4**);

S_{SPFp} is defined at cooling system level as the share of the cooling supply that can be considered as renewable according to the SPF requirements, expressed as a percentage. The SPF is established without accounting for distribution losses. For district cooling, this means that the SPF is established per cooling generator, or at free cooling system level. For cooling systems where standard SPF can apply, the F(1) and F(2) coefficients according to Commission Regulation (EU) 2016/2281 (**Note 5**) and the linked Commission Communication (**Note 6**) are not used as correction factors.

For 100 % renewable heat driven cooling (absorption and adsorption) the cooling delivered should be considered fully renewable.

The calculation steps needed for $Q_{Csupply}$ and S_{SPFp} are explained in Sections 3.2 to 3.4.

3.2. Calculation of the share of Seasonal Performance Factor that qualifies as renewable energy – S_{SPFp}

S_{SPF} is the share of cooling supply that can be counted as renewable. The S_{SPFp} increases with increasing SPF_p values. The SPF_p (**Note 7**) is defined as described in Commission Regulation (EU) 2016/2281 and Commission Regulation (EU) No 206/2012 (**Note 8**), except that the default primary energy factor for electricity has been updated to 2.1 in Directive 2012/27/EU (as amended by Directive (EU) 2018/2002 (**Note 9**)) of the European Parliament and of the Council. Boundary conditions from the EN14511 standard shall be used.

The minimum efficiency requirement of the cooling system expressed in primary seasonal performance factor shall be at least 1.4 ($SPF_{p_{LOW}}$). For S_{SPFp} to be 100 % the minimum efficiency requirement of the cooling system shall be at least 6 ($SPF_{p_{HIGH}}$). For all the other cooling systems the following calculation shall be applied:

$$S_{SPFp} = \frac{SPF_p - SPF_{p_{LOW}}}{SPF_{p_{HIGH}} - SPF_{p_{LOW}}} \%$$

SPF_p is the efficiency of the cooling system expressed as primary seasonal performance factor;

$SPF_{p_{LOW}}$ is the minimum seasonal performance factor expressed in primary energy and based upon the efficiency of standard cooling systems (minimum eco-design requirements);

$SPF_{p_{HIGH}}$ is the upper threshold for seasonal performance factor expressed in primary energy and based on best practices for free cooling used in district cooling (**Note 10**).

3.3. Calculation of renewable energy quantity for cooling using standard and measured SPF_p

Standard and measured SPF

Standardised SPF values are available for electric vapour compression cooling generators and combustion engine vapour compression cooling generator due to the Ecodesign requirements in Regulation (EU) No 206/2012 and (EU) No 2016/2281. Values are available for these cooling generators up to 2 MW for comfort cooling and up to 1.5 MW for process cooling. For other technologies and capacity scales standard values are not available. As regards district

cooling, standard values are not available but measurements are used and available; these allow to compute SPF values at least on a yearly basis.

To calculate the quantity of renewable cooling, standard SPF values may be used where available. Where standard values are not available or measurement is standard practice, measured SPF values shall be used, separated by cooling capacity thresholds. For cooling generators with a cooling capacity below 1.5 MW, standard SPF can be used, while measured SPF shall be used for district cooling, for cooling generators with cooling capacities higher than or equal to 1.5 MW and cooling generators for which standard values are not available.

In addition, for all cooling systems without standard SPF, which includes all free cooling solutions and heat activated cooling generators, a measured SPF shall be established in order to take advantage of the calculation methodology for renewable cooling.

Definition of standard SPF values

SPF values are expressed in terms of primary energy efficiency calculated using primary energy factors following Regulation (EU) 2016/2281 to determine the space cooling efficiency for the different types of cooling generators (**Note 11**). The primary energy factor in Regulation (EU) 2016/2281 shall be calculated as $1/\eta$, where η is the average ratio of total gross production of electricity to the primary energy consumption for electricity production in the whole EU. With the amendment of the default primary energy factor for electricity, called coefficient in point (1) of the Annex to Directive (EU) 2018/2002 amending footnote (3) in Annex IV of Directive 2012/27/EU, the primary energy factor of 2.5 in Regulation (EU) 2016/2281 shall be replaced by 2.1 when calculating the SPF values.

When primary energy carriers, such as heat or gas are used as energy input to drive the cooling generator, the default primary energy factor ($1/\eta$) is 1, reflecting the lack of energy transformation $\eta = 1$.

The standard operating conditions and the other parameters necessary for the determination of the SPF are defined in Regulation (EU) 2016/2281 and Regulation (EU) No 206/2012, depending on the cooling generator category. Boundary conditions are the ones defined in the EN14511 standard.

For reversible cooling generators (reversible heat pumps), which are excluded from the scope of Regulation (EU) 2016/2281 because their heating function is covered by Commission Regulation (EU) No 813/2013 (**Note 12**) with regard to Ecodesign requirements for space heaters and combination heaters, the same SPF calculation that is defined for similar non reversible cooling generators in Regulation (EU) 2016/2281 shall be used.

For instance, for electric vapour compression cooling generators, the SPF_p shall be defined as follows (the index p is used to clarify that the SPF is defined in terms of primary energy):

For space cooling:

$$SPF_p = \frac{SEER}{\frac{1}{\eta}} - F(1) - F(2)$$

For process cooling:

$$SPF_p = \frac{SEPR}{\frac{1}{\eta}} - F(1) - F(2)$$

Where:

- SEER and SEPR are seasonal performance factors (**Note 13**) (SEER stands for ‘Seasonal Energy Efficiency Ratio’, SEPR stands for ‘Seasonal Energy Performance Ratio’) in final energy defined according to Regulation (EU) 2016/2281 and Regulation (EU) No 206/2012;
- η is the average ratio of total gross production of electricity to the primary energy consumption for electricity production in the EU ($\eta = 0.475$ and $1/\eta = 2.1$).
- F(1) and F(2) are correction factors according to Regulation (EU) 2016/2281 and the linked Commission Communication. These coefficients do not apply to process cooling in Regulation (EU) 2016/2281 as the SEPR final energy metrics is directly used. In absence of adapted values, the same values used for SEER conversion shall be used for the SEPR conversion.

SPF boundary conditions

For defining the SPF of the cooling generator, the SPF boundary conditions defined in Regulation (EU) No 2281/2016 and in Regulation (EU) No 206/2012 shall be used. In the case of water-to-air and water-to-water cooling generators, the energy input required to make the cold source available is included via the F(2) correction factor. The SPF boundary conditions are shown in Figure 1. These boundary conditions shall apply for all cooling systems, either free cooling systems or systems containing cooling generators.

These boundary conditions are similar to the ones for heat pumps (used in heating mode) in Commission Decision 2013/114/EU (**Note 14**). The difference is that for heat pumps, the electricity consumption corresponding to auxiliary power consumption (thermostat-off mode, standby mode, off mode, crankcase heater) is not taken into account to evaluate the SPF. However, as in the case of cooling both standard SPF values and measured SPF will be used, and given the fact that in the measured SPF auxiliary consumption is taken into account, it is necessary to include auxiliary power consumption in both situations.

For district cooling, distribution cold losses and distribution pump electric consumption between the cooling plant and the customer substation shall not be included in the estimation of the SPF.

In the case of air based cooling systems ensuring also the ventilation function, the cooling supply due to ventilation air flow shall not be accounted. The fan power needed for the ventilation shall also be discounted in proportion of the ratio of the ventilation air flow to the cooling air flow.

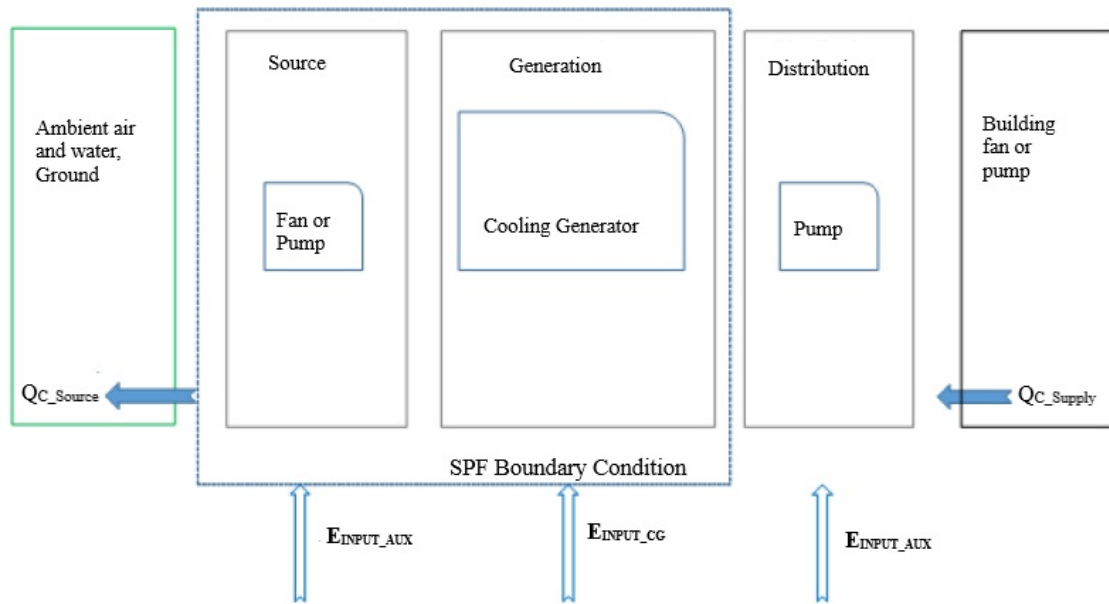


Figure 1 Illustration of SPF boundary conditions for cooling generator using standard SPF and district cooling (and other large cooling systems using measured SPF), where E_{INPUT_AUX} is the energy input to fan and/or pump and E_{INPUT_CG} the energy input to the cooling generator

In the case of air based cooling systems with internal cold recovery, the cooling supply due to the cold recovery shall not be accounted. The fan power needed for the cold recovery performed by the heat exchanger shall be discounted in proportion of the ratio of the pressure losses due to the cold recovery heat exchanger to the total pressure losses of the air based cooling system.

3.4. Calculation using standard values

A simplified method may be used for individual cooling systems of less than 1.5 MW capacity, for which a standard SPF value is available, to estimate the total cooling energy supplied.

Under the simplified method, the cooling energy supplied by the cooling system ($Q_{Csupply}$) is the nominal cooling capacity (P_c) multiplied by the number of equivalent full load hours ($EFLH$). A single Cooling Degree Days (CDD) value may be used for a whole country, or distinct values for different climate zones provided that nominal capacities and SPFs are available for these climate zones.

The following default methods may be used to compute $EFLH$:

- for space cooling in the residential sector: $EFLH = 96 + 0.85 * CDD$
- for space cooling in the tertiary sector: $EFLH = 475 + 0.49 * CDD$
- for process cooling: $EFLH = \tau_s * (7300 + 0.32 * CDD)$

Where:

τ_s is an activity factor to account for the operation time of the specific processes (e.g. all year long $\tau_s = 1$, not on weekends $\tau_s = 5/7$). There is no default value.

3.4.1. *Calculation using measured values*

Systems for which no standard values exist, as well as cooling systems larger than 1.5 MW capacity and district cooling systems, shall calculate their renewable cooling based on the following measurements:

Measured energy input: The measured energy input includes all energy sources for the cooling system, including any cooling generator, i.e. electricity, gas, heat etc. It includes also auxiliary pumps and fans used in the cooling system but not for the distribution of cooling to a building or a process. In case of air-based cooling with ventilation function, only the additional energy input due to cooling shall be included in the energy input of the cooling system.

Measured cooling energy supply: The cooling energy supply shall be measured as the output from the cooling system and subtracted any cold losses in order to estimate the net cooling energy supply to the building or process that is the end-user of the cooling. The cold losses include losses in a district cooling system and in the cooling distribution system in a building or an industrial site. In case of air-based cooling with ventilation function, the cooling energy supply shall be net of the effect of fresh air introduction for ventilation purposes.

The measurements need to be carried out for the specific year to be reported i.e. all energy input and all cooling energy supply for the whole year.

3.4.2. *District cooling: additional requirements*

For district cooling systems the net cooling supply at customer level shall be accounted when defining the net cooling supply, denoted as $Q_{C_Supply_net}$. Thermal losses occurring in the distribution network (Q_{c_LOSS}) shall be deducted from the gross cooling supply ($Q_{c_Supply_gross}$) as follows:

$$Q_{C_Supply_net} = Q_{c_Supply_gross} - Q_{c_LOSS}$$

3.4.2.1. *Division in subsystems*

District cooling systems can be divided in subsystems, which comprise at least one cooling generator or free cooling system. This requires the measurement of the cooling energy supply and of the energy input for each sub-system as well as the allocation of cold losses per sub-system as follows:

$$Q_{C_Supply_net_i} = Q_{C_Supply_gross_i} \times \left(1 - \frac{Q_{C_LOSS}}{\sum_{i=1}^n Q_{C_Supply_gross_i}} \right)$$

3.4.2.2. *Auxiliaries*

When dividing a cooling system into subsystems, the auxiliaries (e.g. controls, pumps and fans) of the cooling generator(s) and/or free cooling system(s) shall be included in the same subsystem(s). Auxiliary energy corresponding to cooling distribution inside the building, e.g. secondary pumps and terminal units (e.g. fan coils, fans of air handling units) are not accounted for.

For auxiliaries which cannot be allocated to a specific subsystem, for instance district cooling network pumps which deliver the cooling energy supplied by all cooling generators, their primary energy consumption shall be allocated to each cooling subsystem in the proportion of the cooling energy supplied by the cooling generators and/or the free cooling systems of each subsystem, in the same way as with cold losses in the network, as follows

$$E_{INPUT_AUX_i} = E_{INPUT_AUX1_i} + E_{INPUT_AUX2} * \frac{Q_{C_Supply_net_i}}{\sum_{i=1}^n Q_{C_Supply_net_i}}$$

where:

$E_{INPUT_AUX1_i}$ is the auxiliary energy consumption of subsystem 'I';

E_{INPUT_AUX12} is the auxiliary energy consumption of the entire cooling system, which cannot be allocated to a specific cooling subsystem.

3.5. **Calculation of renewable energy quantity for cooling for the overall renewable shares and for the heating and cooling renewable energy shares**

For the calculation of the overall renewable energy shares, the renewable energy quantity for cooling shall be added both to the numerator 'gross final consumption of energy from renewable sources' and to the denominator 'gross final consumption of energy'.

For the calculation of the heating and cooling renewable energy shares the renewable energy quantity for cooling shall be added both to the numerator 'gross final consumption of energy from renewable sources for heating and cooling' and to the denominator 'gross final consumption of energy for heating and cooling'.

3.6. **Guidance on the development of more accurate methodologies and calculations**

It is envisaged and encouraged that Member States do their own estimations for both SPF and EFLH. Any such national/regional approaches should be based on accurate assumptions, representative samples of sufficient size, resulting in a significantly improved estimate of renewable energy compared to that obtained using the methodology set out in this Schedule. Such improved methodologies may be based on detailed calculation based on technical data taking into account, among other factors, year of installation, quality of installation, compressor type and machine size, operation mode, distribution system, cascading of generators and the regional climate. If alternative methodologies and/or values are used, these shall be submitted to the Commission together with a report describing the method and data used. The Commission will, if necessary, translate the documents and publish them on its transparency platform.

Notes to this Schedule:

(Note 1) The renewable cooling definition concerns only stationary cooling.

(Note 2) “Waste heat” is defined in regulation 2 and can be accounted for the purposes of regulations 12 and 13.

(Note 3) The quantity of cold source corresponds to the quantity of heat absorbed by ambient air, ambient water and the ground acting as heat sinks. Ambient air and ambient water correspond to “ambient energy”, and the ground corresponds to “geothermal energy” as defined in regulation 2.

(Note 4) From a thermodynamical point of view, cooling supply corresponds to a portion of the heat released by a cooling system to ambient air, ambient water or to the ground, which function as a heat sink or cold source. Ambient air and ambient water correspond to “ambient energy” and the heat sink or cold source function of the ground corresponds to “geothermal energy” as defined regulation 2.

(Note 5) Commission Regulation (EU) 2016/2281 of 30 November 2016 implementing Directive 2009/125/EC of the European Parliament and of the Council establishing a framework for the setting of ecodesign requirements for energy-related products, with regard to ecodesign requirements for air heating products, cooling products, high temperature process chillers and fan coil units (OJ L 346, 20.12.2016, p. 1).

(Note 6) https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2017.229.01.0001.01.ENG&toc=OJ:C:2017:229:TOC

(Note 7) In case the real operating conditions of cooling generators lead to SPF values substantially lower than planned in standard conditions because of different installation provisions, these systems may be excluded from the scope of the renewable cooling definition (e.g. a water cooled cooling generator using a dry cooler instead of a cooling tower to release heat to ambient air).

(Note 8) Commission Regulation (EU) No 206/2012 of 6 March 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for air conditioners and comfort fans (OJ L 72, 10.3.2012, p. 7).

(Note 9) Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency (OJ L 328, 21.12.2018, p. 210).

(Note 10) ENER/C1/2018-493, Renewable cooling under the revised Renewable Energy Directive, TU-Wien, 2021.

(Note 11) SPF p is identical to $\eta_{s,c}$ defined in Regulation (EU) No 2016/2281.

(Note 12) Commission Regulation (EU) No 813/2013 of 2 August 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for space heaters and combination heaters (OJ L 239, 6.9.2013, p. 136).

(Note 13) Part 1 of the study ENER/C1/2018-493 on ‘Cooling Technologies Overview and Market Share’ provides more detailed definitions and equations for these metrics in chapter 1.5 ‘Energy efficiency metrics of state-of-the-art cooling systems’.

(Note 14) Commission Decision of 1 March 2013 establishing the guidelines for Member States on calculating renewable energy from heat pumps from different heat pump technologies pursuant to Article 5 of Directive 2009/28/EC of the European Parliament and of the Council (OJ L 62, 6.3.2013, p. 27).

THIRD SCHEDULE
(regulations 8, 10 and 16)

ENERGY CONTENT OF FUELS

Fuel	Energy content by weight (lower calorific value, MJ/kg)	Energy content by volume (lower calorific value, MJ/l)
FUELS FROM BIOMASS AND/OR BIOMASS PROCESSING OPERATIONS		
Bio-Propane	46	24
Pure vegetable oil (oil produced from oil plants through pressing, extraction or comparable procedures, crude or refined but chemically unmodified)	37	34
Biodiesel – fatty acid methyl ester (methyl-ester produced from oil of biomass origin)	37	33
Biodiesel – fatty acid ethyl ester (ethyl-ester produced from oil of biomass origin)	38	34
Biogas that can be purified to natural gas quality	50	—
Hydrotreated (thermochemically treated with hydrogen) oil of biomass origin, to be used for replacement of diesel	44	34
Hydrotreated (thermochemically treated with hydrogen) oil of biomass origin, to be used for replacement of petrol	45	30
Hydrotreated (thermochemically treated with hydrogen) oil of biomass origin, to be used for replacement of jet fuel	44	34
Hydrotreated oil (thermochemically treated with hydrogen) of biomass origin, to be used for replacement of liquefied petroleum gas	46	24
Co-processed oil (processed in a refinery simultaneously with fossil fuel) of biomass or pyrolysed biomass origin to be used for replacement of diesel	43	36

Co-processed oil (processed in a refinery simultaneously with fossil fuel) of biomass or pyrolysed biomass origin, to be used to replace petrol	44	32
Co-processed oil (processed in a refinery simultaneously with fossil fuel) of biomass or pyrolysed biomass origin, to be used to replace jet fuel	43	33
Co-processed oil (processed in a refinery simultaneously with fossil fuel) of biomass or pyrolysed biomass origin, to be used to replace liquefied petroleum gas	46	23
RENEWABLE FUELS THAT CAN BE PRODUCED FROM VARIOUS RENEWABLE SOURCES, INCLUDING BIOMASS		
Methanol from renewable sources	20	16
Ethanol from renewable sources	27	21
Propanol from renewable sources	31	25
Butanol from renewable sources	33	27
Fischer-Tropsch diesel (a synthetic hydrocarbon or mixture of synthetic hydrocarbons to be used for replacement of diesel)	44	34
Fischer-Tropsch petrol (a synthetic hydrocarbon or mixture of synthetic hydrocarbons produced from biomass, to be used for replacement of petrol)	44	33
Fischer-Tropsch jet fuel (a synthetic hydrocarbon or mixture of synthetic hydrocarbons produced from biomass, to be used for replacement of jet fuel)	44	33
Fischer-Tropsch liquefied petroleum gas (a synthetic hydrocarbon or mixture of synthetic hydrocarbons, to be used for replacement of liquefied petroleum gas)	46	24
DME (dimethylether)	28	19
Hydrogen from renewable sources	120	—
ETBE (ethyl-tertio-butyl-ether produced on the basis of ethanol)	36 (of which 33 % from renewable sources)	27 (of which 33 % from renewable sources)

MTBE (methyl-tertio-butyl-ether produced on the basis of methanol)	35 (of which 22 % from renewable sources)	26 (of which 22 % from renewable sources)
TAE (tertiary-amyl-ethyl-ether produced on the basis of ethanol)	38 (of which 29 % from renewable sources)	29 (of which 29 % from renewable sources)
TAME (tertiary-amyl-methyl-ether produced on the basis of methanol)	36 (of which 18 % from renewable sources)	28 (of which 18 % from renewable sources)
THxEE (tertiary-hexyl-ethyl-ether produced on the basis of ethanol)	38 (of which 25 % from renewable sources)	30 (of which 25 % from renewable sources)
THxME (tertiary-hexyl-methyl-ether produced on the basis of methanol)	38 of which 14 % from renewable sources)	30 (of which 14 % from renewable sources)
NON-RENEWABLE FUELS		
Petrol	43	32
Diesel	43	36
Jet fuel	43	34
Hydrogen from non-renewable sources	120	—

FOURTH SCHEDULE

(regulations 14 and 16)

LIST OF FEEDSTOCKS

Part A.

Feedstocks for the production of biogas for transport and advanced biofuels:

- (a) Algae if cultivated on land in ponds or photobioreactors;
- S.L. 549.63. (b) Biomass fraction of mixed municipal waste, but not separated household waste subject to recycling targets under paragraph (a) of item 12 of Schedule 5 of the Waste Regulations;
- S.L. 549.63. (c) Biowaste as defined in regulation (4) of the Waste Regulations from private households subject to separate collection as defined in regulation 4 of the aforesaid regulations;
- (d) Biomass fraction of industrial waste not fit for use in the food or feed chain, including material from retail and wholesale and the agro-food and fish and aquaculture industry, and excluding feedstocks listed in Part B of this Schedule;
- (e) Straw;
- (f) Animal manure and sewage sludge;
- (g) Palm oil mill effluent and empty palm fruit bunches;
- (h) Tall oil pitch;
- (i) Crude glycerine;
- (j) Bagasse;
- (k) Grape marcs and wine lees;
- (l) Nut shells;
- (m) Husks;
- (n) Cobs cleaned of kernels of corn;
- (o) Biomass fraction of wastes and residues from forestry and forest-based industries, namely, bark, branches, pre-commercial thinning, leaves, needles, tree tops, saw dust, cutter shavings, black liquor, brown liquor, fibre sludge, lignin and tall oil;
- (p) Other non-food cellulosic material;
- (q) Other ligno-cellulosic material except saw logs and veneer logs;
- (r) Fusel oils from alcoholic distillation;
- (s) Raw methanol from kraft pulping stemming from the production of wood pulp;
- (t) Intermediate crops, such as catch crops and cover crops that are grown in areas where due to a short vegetation period the production of food and feed crops is limited to one harvest and provided their use does not trigger demand for additional land, and provided the soil

organic matter content is maintained, where used for the production of biofuel for the aviation sector;

- (u) Crops grown on severely degraded land, except food and feed crops, where used for the production of biofuel for the aviation sector;
- (v) Cyanobacteria.

Part B.

Feedstocks for the production of biofuels and biogas for transport, the contribution of which towards the targets referred to in regulation 14(2)(a), shall be limited:

- (a) Used cooking oil;
- (b) Animal fats classified as categories 1 and 2 in accordance with Regulation (EC) No 1069/2009;
- (c) Damaged crops that are not fit for use in the food or feed chain, excluding substances that have been intentionally modified or contaminated in order to meet this definition;
- (d) Municipal wastewater and derivatives other than sewage sludge;
- (e) Crops grown on severely degraded land excluding food and feed crops and feedstocks listed in Part A of this Schedule, where not used for the production of biofuel for the aviation sector;
- (f) Intermediate crops, such as catch crops and cover crops, and excluding feedstocks listed in Part A of this Schedule, that are grown in areas where due to a short vegetation period the production of food and feed crops is limited to one harvest and provided their use does not trigger demand for additional land and provided the soil organic matter content is maintained, where not used for the production of biofuel for the aviation sector.

FIFTH SCHEDULE

(regulation 16)

RULES FOR CALCULATING THE GREENHOUSE GAS IMPACTS OF BIOFUELS, OTHER 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	Greenhouse gas emissions saving – typical value	Greenhouse gas emissions saving – default value
sugar beet ethanol (no biogas from slop, natural gas as process fuel in conventional boiler)	67 %	59 %
sugar beet ethanol (with biogas from slop, natural gas as process fuel in conventional boiler)	77 %	73 %
sugar beet ethanol (no biogas from slop, natural gas as process fuel in CHP plant (*))	73 %	68 %
sugar beet ethanol (with biogas from slop, natural gas as process fuel in CHP plant (*))	79 %	76 %
sugar beet ethanol (no biogas from slop, lignite as process fuel in CHP plant (*))	58 %	47 %
sugar beet ethanol (with biogas from slop, lignite as process fuel in CHP plant (*))	71 %	64 %
corn (maize) ethanol (natural gas as process fuel in conventional boiler)	48 %	40 %
corn (maize) ethanol, (natural gas as process fuel in CHP plant (*))	55 %	48 %
corn (maize) ethanol (lignite as process fuel in CHP plant (*))	40 %	28 %
corn (maize) ethanol (forest residues as process fuel in CHP plant (*))	69 %	68 %
other cereals excluding maize ethanol (natural gas as process fuel in conventional boiler)	47 %	38 %
other cereals excluding maize ethanol (natural gas as process fuel in CHP plant (*))	53 %	46 %
other cereals excluding maize ethanol (lignite as process fuel in CHP plant (*))	37 %	24 %
other cereals excluding maize ethanol (forest residues as process fuel in CHP plant (*))	67 %	67 %
sugar cane ethanol	70 %	70 %
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	52 %	47 %

sunflower biodiesel	57 %	52 %
soybean biodiesel	55 %	50 %
palm oil biodiesel (open effluent pond)	33 %	20 %
palm oil biodiesel (process with methane capture at oil mill)	51 %	45 %
waste cooking oil biodiesel	88 %	84 %
animal fats from rendering biodiesel (**)	84 %	78 %
hydrotreated vegetable oil from rape seed	51 %	47 %
hydrotreated vegetable oil from sunflower	58 %	54 %
hydrotreated vegetable oil from soybean	55 %	51 %
hydrotreated vegetable oil from palm oil (open effluent pond)	34 %	22 %
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	53 %	49 %
hydrotreated oil from waste cooking oil	87 %	83 %
hydrotreated oil from animal fats from rendering (**)	83 %	77 %
pure vegetable oil from rape seed	59 %	57 %
pure vegetable oil from sunflower	65 %	64 %
pure vegetable oil from soybean	63 %	61 %
pure vegetable oil from palm oil (open effluent pond)	40 %	30 %
pure vegetable oil from palm oil (process with methane capture at oil mill)	59 %	57 %
pure oil from waste cooking oil	98 %	98 %
(*) Default values for processes using CHP are valid only if all the process heat is supplied by CHP.		
(**) Applies only to biofuels produced from animal by-products classified as category 1 and 2 material in accordance with Regulation (EC) No 1069/2009 of the European Parliament and of the Council ⁽¹⁾ , for which emissions related to hygienisation as part of the rendering are not considered.		
⁽¹⁾ Regulation (EC) No 1069/2009 of the European Parliament and of the Council of 21 October 2009 laying down health rules as regards animal by-products and derived products not intended for human consumption and repealing Regulation (EC) No 1774/2002 (Animal by-products Regulation) (OJ L 300, 14.11.2009, p. 1).		

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 2016, IF PRODUCED WITH NO NET CARBON EMISSIONS FROM LAND-USE CHANGE

Biofuel production pathway	Greenhouse gas emissions saving - typical value	Greenhouse gas emissions saving - default value
wheat straw ethanol	85 %	83 %
waste wood Fischer-Tropsch diesel in free-standing plant	83 %	83 %
farmed wood Fischer-Tropsch diesel in free-standing plant	82 %	82 %
waste wood Fischer-Tropsch petrol in free-standing plant	83 %	83 %
farmed wood Fischer-Tropsch petrol in free-standing plant	82 %	82 %
waste wood dimethylether (DME) in free-standing plant	84 %	84 %
farmed wood dimethylether (DME) in free-standing plant	83 %	83 %
waste wood methanol in free-standing plant	84 %	84 %
farmed wood methanol in free-standing plant	83 %	83 %
Fischer-Tropsch diesel from black-liquor gasification integrated with pulp mill	89 %	89 %
Fischer-Tropsch petrol from black-liquor gasification integrated with pulp mill	89 %	89 %
dimethylether (DME) from black-liquor gasification integrated with pulp mill	89 %	89 %
Methanol from black-liquor gasification integrated with pulp mill	89 %	89 %
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 follows:

- (a) greenhouse gas emissions from the production and use of biofuels shall be calculated as:

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

where

E	=	total emissions from the use of the fuel;
e _{ec}	=	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 CO ₂ capture and geological storage; and
e _{ccr}	=	emission savings from CO ₂ capture and replacement.

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

- (b) Greenhouse gas emissions from the production and use of bioliquids shall be calculated as for biofuels (E), but with the extension necessary for including the energy conversion to electricity and/or heat and cooling produced, as follows:

- (i) For energy installations delivering only heat:

$$EC_h = \frac{E}{\eta_h}$$

- (ii) For energy installations delivering only electricity:

$$EC_{el} = \frac{E}{\eta_{el}}$$

Where

EC_{h,el} = Total greenhouse gas emissions from the final energy commodity.

E = Total greenhouse gas emissions of the bioliquid before end-conversion

η_{el} = The electrical efficiency, defined as the annual electricity produced divided by the annual bioliquid input based on its energy content

η_h = The heat efficiency, defined as the annual useful heat output divided by the annual bioliquid input based on its energy content.

- (iii) For the electricity or mechanical energy coming from energy installations delivering useful heat together with electricity and/or mechanical energy:

$$EC_{el} = \frac{E}{\eta_{el}} \left(\frac{C_{el} \cdot \eta_{el}}{C_{el} \cdot \eta_{el} + C_h \cdot \eta_h} \right)$$

- (iv) For the useful heat coming from energy installations delivering heat together with electricity and/or mechanical energy:

$$EC_h = \frac{E}{\eta_h} \left(\frac{C_h \cdot \eta_h}{C_{el} \cdot \eta_{el} + C_h \cdot \eta_h} \right)$$

where:

$EC_{h,el}$ = Total greenhouse gas emissions from the final energy commodity.

E = Total greenhouse gas emissions of the bioliquid before end-conversion.

η_{el} = The electrical efficiency, defined as the annual electricity produced divided by the annual fuel input based on its energy content.

η_h = The heat efficiency, defined as the annual useful heat output divided by the annual fuel input based on its energy content.

C_{el} = Fraction of exergy in the electricity, and/or mechanical energy, set to 100 % ($C_{el} = 1$).

C_h = Carnot efficiency (fraction of exergy in the useful heat).

The Carnot efficiency, C_h , for useful heat at different temperatures is defined as:

$$C_h = \frac{T_h - T_0}{T_h}$$

where

T_h = Temperature, measured in absolute temperature (kelvin) of the useful heat at point of delivery.

T_0 = Temperature of surroundings, set at 273.15 kelvin (equal to 0 °C)

If the excess heat is exported for heating of buildings, at a temperature below 150 °C (423.15 kelvin), C_h can alternatively be defined as follows:

C_h = Carnot efficiency in heat at 150 °C (423.15 kelvin), which is: 0.3546

For the purposes of that calculation, the following definitions apply:

- (a) ‘cogeneration’ means the simultaneous generation in one process of thermal energy and electricity and/or mechanical energy;
- (b) ‘useful heat’ means heat generated to satisfy an economical justifiable demand for heat, for heating and cooling purposes;
- (c) ‘economically justifiable demand’ means the demand that does not exceed the needs for heat or cooling and which would otherwise be satisfied at market conditions.

2. Greenhouse gas emissions from biofuels and bioliquids shall be expressed as follows:

- (a) greenhouse gas emissions from biofuels, E , shall be expressed in terms of grams of CO₂ equivalent per MJ of fuel, g CO₂eq/MJ.

(b) greenhouse gas emissions from bioliquids, EC, in terms of grams of CO₂ equivalent per MJ of final energy commodity (heat or electricity), g CO₂eq/MJ.

When heating and cooling are co-generated with electricity, emissions shall be allocated between heat and electricity (as under 1(b)), irrespective if the heat is used for actual heating purposes or for cooling ^(Note 1).

Where the greenhouse gas emissions from the extraction or cultivation of raw materials e_{ec} are expressed in unit g CO₂eq/dry-ton of feedstock, the conversion to grams of CO₂ equivalent per MJ of fuel, g CO₂eq/MJ, shall be calculated as follows ^(Note 2):

$$e_{ec}fuel_a \left[\frac{gCO_2eq}{MJfuel} \right]_{ec} = \frac{e_{ec}feedstock_a \left[\frac{gCO_2eq}{t_{dry}} \right]}{LHV_a \left[\frac{MJ feedstock}{t_{dry feedstock}} \right]} \times Fuel\ feedstock\ factor_a \times Allocation\ factor\ fuel_a$$

where:

$$Allocation\ factor\ fuel_a = \left[\frac{Energy\ in\ fuel}{Energy\ fuel + Energy\ in\ coproducts} \right]$$

Fuel feedstock factor_a = [Ratio of MJ feedstock required to make 1MJ fuel]

Emissions per dry-ton feedstock shall be calculated as follows:

$$e_{ec}feedstock_a \left[\frac{gCO_2eq}{t_{dry}} \right] = \frac{e_{ec}feedstock_a \left[\frac{gCO_2eq}{t_{moist}} \right]}{(1 - moisture\ content)}$$

3. Greenhouse gas emissions savings from biofuels and bioliquids shall be calculated as follows:

(a) greenhouse gas emissions savings from biofuels:

$$SAVING = (E_{F(t)} - E_B)/E_{F(t)},$$

where:

E_B	=	total emissions from the biofuel; and
$E_{F(t)}$	=	total emissions from the fossil fuel comparator for transport

(b) greenhouse gas emissions savings from heat and cooling, and electricity being generated from bioliquids:

$$SAVING = (EC_{F(h\&c,el)} - EC_{B(h\&c,el)})/EC_{F(h\&c,el)},$$

where:

$EC_{B(h\&c,el)}$ = total emissions from the heat or electricity; and

$EC_{F(h\&c,el)}$ = total emissions from the fossil fuel comparator for useful heat or electricity.

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

CO ₂	:	1
N ₂ O	:	298
CH ₄	:	25

5. Emissions from the extraction or cultivation of raw materials, e_{ec} , shall include emissions from the extraction or cultivation process itself; from the collection, drying and storage 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. Estimates of emissions from agriculture biomass cultivation may be derived from the use of regional averages for cultivation emissions included in the reports referred to in Article 31(4) of the Directive or the information on the disaggregated default values for cultivation emissions included in this Schedule, as an alternative to using actual values. In the absence of relevant information in those reports it is allowed to calculate averages based on local farming practises based for instance on data of a group of farms, as an alternative to using actual values.

6. For the purposes of the calculation referred to in item 1(a), greenhouse gas emissions savings from improved agriculture management, e_{sca} , such as shifting to reduced or zero-tillage, improved crops and crop rotation, the use of cover crops, including crop residue management, and the use of organic soil improver, such as compost and manure fermentation digestate, shall be taken into account only if they do not risk to negatively affect biodiversity. Further, solid and verifiable evidence shall be provided that the soil carbon has increased or that it is reasonable to expect to have increased over the period in which the raw materials concerned were cultivated while taking into account the emissions where such practices lead to increased fertiliser and herbicide use. ^(Note 3).

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

$$e_l = (CS_R - CS_A) \times 3.664 \times 1/20 \times 1/P - e_B, \text{ (Note 4)}$$

where:

e_l	=	annualised greenhouse gas emissions from carbon stock change due to land-use change (measured as mass (grams) of CO ₂ -equivalent per unit of biofuel or bioliquid energy (megajoules)). ‘Cropland’ ⁽¹⁾ and ‘perennial cropland’ ⁽²⁾ shall be regarded as one land use;
CS_R	=	the carbon stock per unit area associated with the reference land-use (measured as mass (tonnes) of carbon per unit area, including both soil and vegetation). The reference land-use shall be the land-use in January 2008 or twenty (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 (tonnes) 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 (20) 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 g CO ₂ eq/MJ biofuel or bioliquid if biomass is obtained from restored degraded land under the conditions laid down in item 8.
⁽¹⁾ Cropland as defined by IPCC.		
⁽²⁾ Perennial crops are defined as multi-annual crops, the stem of which is usually not annually harvested such as short rotation coppice and oil palm.		

8. The bonus of 29 g CO₂eq/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) is severely degraded land, including such land that was formerly in agricultural use.

The bonus of 29 g CO₂eq/MJ shall apply for a period of up to twenty (20) 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 (b) are ensured.

9. ‘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.

10. The Commission shall review, by 31 December 2020, guidelines for the calculation of land carbon stocks (^{Note 5}) drawing on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories – volume 4 and in accordance with Regulation (EU) No 525/2013 and Regulation (EU) 2018/841 of the European Parliament and of the Council (^{Note 6}). The Commission guidelines shall serve as the basis for the calculation of land carbon stocks for the purposes of the Directive.

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 including the CO₂ emissions corresponding to the carbon contents of fossil inputs, whether or not actually combusted in the process.

In accounting for the consumption of electricity not produced within the fuel production plant, the greenhouse gas emissions 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 way of 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.

Emissions from processing shall include emissions from drying of interim products and materials where relevant.

12. Emissions from transport and distribution, e_{td} , shall include emissions from the transport 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 item 5 shall not be covered by this item.

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

Emissions of non-CO₂ greenhouse gases (N₂O and CH₄) of the fuel in use shall be included in the e_u factor for bioliquids.

14. Emission savings from CO₂ 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 storage of emitted CO₂ directly related to the extraction, transport, processing and distribution of fuel if stored in compliance with Directive 2009/31/EC of the European Parliament and of the Council (^{Note 7}).

15. Emissions savings from CO₂ capture and replacement, e_{ccr} , shall be related directly to the production of the biofuels or bioliquids to which they are attributed, and shall be limited to emissions avoided through the capture of CO₂ of which the carbon originates from biomass and which is used to replace fossil-derived CO₂ in the production of commercial products and services before 1 January 2036.

16. Where a cogeneration unit – providing heat and/or electricity to a fuel production process for which emissions are being calculated – produces excess electricity and/or excess useful heat, the greenhouse gas emissions shall be divided between the electricity and the useful heat according to the temperature of the heat (which reflects the usefulness (utility) of the heat). The useful part of the heat is found by multiplying its energy content with the Carnot efficiency, C_h , calculated as follows:

$$C_h = \frac{T_h - T_0}{T_h}$$

where:

T_h = Temperature, measured in absolute temperature (kelvin) of the useful heat at point of delivery.

T_0 = Temperature of surroundings, set at 273.15 kelvin (equal to 0 °C)

If the excess heat is exported for heating of buildings, at a temperature below 150 °C (423.15 kelvin), C_h can alternatively be defined as follows:

C_h = Carnot efficiency in heat at 150 °C (423.15 kelvin), which is: 0.3546

For the purposes of that calculation, the actual efficiencies shall be used, defined as the annual mechanical energy, electricity and heat produced respectively divided by the annual energy input.

For the purposes of that calculation, the following definitions apply:

(a) ‘cogeneration’ shall mean the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;

(b) ‘useful heat’ shall mean heat generated to satisfy an economical justifiable demand for heat, for heating or cooling purposes;

(c) 'economically justifiable demand' shall mean the demand that does not exceed the needs for heat or cooling and which would otherwise be satisfied at market conditions.

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 and heat). The greenhouse gas intensity of excess useful heat or excess electricity is the same as the greenhouse gas intensity of heat or electricity delivered to the fuel production process and is determined from calculating the greenhouse intensity of all inputs and emissions, including the feedstock and CH₄ and N₂O emissions, to and from the cogeneration unit, boiler or other apparatus delivering heat or electricity to the fuel production process. In the case of cogeneration of electricity and heat, the calculation is performed following item 16.

18. For the purposes of the calculations referred to in item 17, the emissions to be divided shall be $e_{cc} + e_1 + e_{sca}$ + those fractions of e_p , e_{td} , e_{ccs} and e_{ccr} 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 those purposes instead of the total of those emissions. In the case of biofuels and bioliquids, all co-products that do not fall under the scope of item 17 shall be taken into account for the purposes of that calculation.

Co-products that have a negative energy content shall be considered to have an energy content of zero for the purposes of the calculation.

As a general rule, wastes and residues including all wastes and residues included in Annex IX of the Directive shall be considered to have zero life-cycle greenhouse gas emissions up to the process of collection of those materials irrespective of whether they are processed to interim products before being transformed into the final product.

In the case of biomass fuels produced in refineries, other than the combination of processing plants with boilers or cogeneration units providing heat and/or electricity to the processing plant, the unit of analysis for the purposes of the calculation referred to in item 17 shall be the refinery.

19. For biofuels, for the purposes of the calculation referred to in item 3, the fossil fuel comparator $E_{F(t)}$ shall be 94 g CO₂eq/MJ.

For bioliquids used for the production of electricity, for the purposes of the calculation referred to in item 3, the fossil fuel comparator $EC_{F(e)}$ shall be 183 g CO₂eq/MJ.

For bioliquids used for the production of useful heat, as well as for the production of heating and/or cooling, for the purposes of the calculation referred to in item 3, the fossil fuel comparator $EC_{F(h\&c)}$ shall be 80 g CO₂eq/MJ.

Notes to Part C of this Schedule

(Note 1) Heat or waste heat is used to generate cooling (chilled air or water) through absorption chillers. Therefore, it is appropriate to calculate only the emissions associated to the heat produced per MJ of heat, irrespective if the end-use of the heat is actual heating or cooling via absorption chillers.

(Note 2) The formula for calculating greenhouse gas emissions from the extraction or cultivation of raw materials e_{cc} describes cases where feedstock is converted into biofuels in one step. For more complex supply chains, adjustments are needed for calculating greenhouse gas emissions from the extraction or cultivation of raw materials e_{cc} for intermediate products.

(Note 3) Measurements of soil carbon can constitute such evidence, e.g. by a first measurement in advance of the cultivation and subsequent ones at regular intervals several years apart. In such a case, before the second measurement is available, increase in soil carbon would be estimated on the basis of representative experiments or soil models. From the second measurement onwards, the measurements would constitute the basis for determining the existence of an increase in soil carbon and its magnitude.

(Note 4) The 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.

(Note 5) Commission Decision 2010/335/EU of 10 June 2010 on guidelines for the calculation of land carbon stocks for the purpose of Annex V to Directive 2009/28/EC (OJ L 151, 17.6.2010, p. 19).

(Note 6) Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU (OJ L 156, 19.6.2018, p. 1).

(Note 7) Directive 2009/31/EC of the European Parliament and of the Council of 23 April 2009 on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 (OJ L 140, 5.6.2009, p. 114).

Part D.**DISAGGREGATED DEFAULT VALUES FOR BIOFUELS AND BIOLIQUIDS**

Disaggregated default values for cultivation: 'e_{cc}' as defined in Part C of this Schedule, including soil N₂O emissions

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
sugar beet ethanol	9.6	9.6
corn (maize) ethanol	25.5	25.5
other cereals excluding corn (maize) ethanol	27.0	27.0
sugar cane ethanol	17.1	17.1
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	32.0	32.0
sunflower biodiesel	26.1	26.1
soybean biodiesel	21.2	21.2
palm oil biodiesel	26.0	26.0
waste cooking oil biodiesel	0	0
animal fats from rendering biodiesel (* ¹)	0	0
hydrotreated vegetable oil from rape seed	33.4	33.4
hydrotreated vegetable oil from sunflower	26.9	26.9
hydrotreated vegetable oil from soybean	22.1	22.1
hydrotreated vegetable oil from palm oil	27.3	27.3
hydrotreated oil from waste cooking oil	0	0
hydrotreated oil from animal fats from rendering (* ¹)	0	0
pure vegetable oil from rape seed	33.4	33.4
pure vegetable oil from sunflower	27.2	27.2
pure vegetable oil from soybean	22.2	22.2
pure vegetable oil from palm oil	27.1	27.1
pure oil from waste cooking oil	0	0
(* ¹) Applies only to biofuels produced from animal by-products classified as category 1 and 2 material in accordance with Regulation (EC) No 1069/2009, for which emissions related to hygienisation as part of the rendering are not considered.		

Disaggregated default values for cultivation: 'e_{cc}' – for soil N₂O emissions only (these are already included in the disaggregated values for cultivation emissions in the 'e_{cc}' table)

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
sugar beet ethanol	4.9	4.9

corn (maize) ethanol	13.7	13.7
other cereals excluding corn (maize) ethanol	14.1	14.1
sugar cane ethanol	2.1	2.1
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	17.6	17.6
sunflower biodiesel	12.2	12.2
soybean biodiesel	13.4	13.4
palm oil biodiesel	16.5	16.5
waste cooking oil biodiesel	0	0
animal fats from rendering biodiesel (* ¹)	0	0
hydrotreated vegetable oil from rape seed	18.0	18.0
hydrotreated vegetable oil from sunflower	12.5	12.5
hydrotreated vegetable oil from soybean	13.7	13.7
hydrotreated vegetable oil from palm oil	16.9	16.9
hydrotreated oil from waste cooking oil	0	0
hydrotreated oil from animal fats from rendering (* ¹)	0	0
pure vegetable oil from rape seed	17.6	17.6
pure vegetable oil from sunflower	12.2	12.2
pure vegetable oil from soybean	13.4	13.4
pure vegetable oil from palm oil	16.5	16.5
pure oil from waste cooking oil	0	0
(* ¹) Note: applies only to biofuels produced from animal by-products classified as category 1 and 2 material in accordance with Regulation (EC) No 1069/2009, for which emissions related to hygienisation as part of the rendering are not considered.		

Disaggregated default values for processing: 'e_p' as defined in Part C of this Schedule

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
sugar beet ethanol (no biogas from slop, natural gas as process fuel in conventional boiler)	18.8	26.3
sugar beet ethanol (with biogas from slop, natural gas as process fuel in conventional boiler)	9.7	13.6
sugar beet ethanol (no biogas from slop, natural gas as process fuel in CHP plant (* ¹))	13.2	18.5
sugar beet ethanol (with biogas from slop, natural gas as process fuel in CHP plant (* ¹))	7.6	10.6
sugar beet ethanol (no biogas from slop, lignite as process fuel in CHP plant (* ¹))	27.4	38.3
sugar beet ethanol (with biogas from slop, lignite as process fuel in CHP plant (* ¹))	15.7	22.0

corn (maize) ethanol (natural gas as process fuel in conventional boiler)	20.8	29.1
corn (maize) ethanol, (natural gas as process fuel in CHP plant (*1))	14.8	20.8
corn (maize) ethanol (lignite as process fuel in CHP plant (*1))	28.6	40.1
corn (maize) ethanol (forest residues as process fuel in CHP plant (*1))	1.8	2.6
other cereals excluding maize ethanol (natural gas as process fuel in conventional boiler)	21.0	29.3
other cereals excluding maize ethanol (natural gas as process fuel in CHP plant (*1))	15.1	21.1
other cereals excluding maize ethanol (lignite as process fuel in CHP plant (*1))	30.3	42.5
other cereals excluding maize ethanol (forest residues as process fuel in CHP plant (*1))	1.5	2.2
sugar cane ethanol	1.3	1.8
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	11.7	16.3
sunflower biodiesel	11.8	16.5
soybean biodiesel	12.1	16.9
palm oil biodiesel (open effluent pond)	30.4	42.6
palm oil biodiesel (process with methane capture at oil mill)	13.2	18.5
waste cooking oil biodiesel	9.3	13.0
animal fats from rendering biodiesel (*2)	13.6	19.1
hydrotreated vegetable oil from rape seed	10.7	15.0
hydrotreated vegetable oil from sunflower	10.5	14.7
hydrotreated vegetable oil from soybean	10.9	15.2
hydrotreated vegetable oil from palm oil (open effluent pond)	27.8	38.9
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	9.7	13.6
hydrotreated oil from waste cooking oil	10.2	14.3
hydrotreated oil from animal fats from rendering (*2)	14.5	20.3
pure vegetable oil from rape seed	3.7	5.2
pure vegetable oil from sunflower	3.8	5.4
pure vegetable oil from soybean	4.2	5.9
pure vegetable oil from palm oil (open effluent pond)	22.6	31.7
pure vegetable oil from palm oil (process with methane capture at oil mill)	4.7	6.5
pure oil from waste cooking oil	0.6	0.8

(*1) Default values for processes using CHP are valid only if all the process heat is supplied by CHP.
 (*2) Note: applies only to biofuels produced from animal by-products classified as category 1 and 2 material in accordance with Regulation (EC) No 1069/2009, for which emissions related to hygienisation as part of the rendering are not considered.

Disaggregated default values for oil extraction only (these are already included in the disaggregated values for processing emissions in the 'e_p' table)

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
rape seed biodiesel	3.0	4.2
sunflower biodiesel	2.9	4.0
soybean biodiesel	3.2	4.4
palm oil biodiesel (open effluent pond)	20.9	29.2
palm oil biodiesel (process with methane capture at oil mill)	3.7	5.1
waste cooking oil biodiesel	0	0
animal fats from rendering biodiesel (*1)	4.3	6.1
hydrotreated vegetable oil from rape seed	3.1	4.4
hydrotreated vegetable oil from sunflower	3.0	4.1
hydrotreated vegetable oil from soybean	3.3	4.6
hydrotreated vegetable oil from palm oil (open effluent pond)	21.9	30.7
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	3.8	5.4
hydrotreated oil from waste cooking oil	0	0
hydrotreated oil from animal fats from rendering (*1)	4.3	6.0
pure vegetable oil from rape seed	3.1	4.4
pure vegetable oil from sunflower	3.0	4.2
pure vegetable oil from soybean	3.4	4.7
pure vegetable oil from palm oil (open effluent pond)	21.8	30.5
pure vegetable oil from palm oil (process with methane capture at oil mill)	3.8	5.3
pure oil from waste cooking oil	0	0
(*1) Note: applies only to biofuels produced from animal by-products classified as category 1 and 2 material in accordance with Regulation (EC) No 1069/2009, for which emissions related to hygienisation as part of the rendering are not considered.		

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

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
sugar beet ethanol (no biogas from slop, natural gas as process fuel in conventional boiler)	2.3	2.3

sugar beet ethanol (with biogas from slop, natural gas as process fuel in conventional boiler)	2.3	2.3
sugar beet ethanol (no biogas from slop, natural gas as process fuel in CHP plant (* ¹))	2.3	2.3
sugar beet ethanol (with biogas from slop, natural gas as process fuel in CHP plant (* ¹))	2.3	2.3
sugar beet ethanol (no biogas from slop, lignite as process fuel in CHP plant (* ¹))	2.3	2.3
sugar beet ethanol (with biogas from slop, lignite as process fuel in CHP plant (* ¹))	2.3	2.3
corn (maize) ethanol (natural gas as process fuel in CHP plant (* ¹))	2.2	2.2
corn (maize) ethanol (natural gas as process fuel in conventional boiler)	2.2	2.2
corn (maize) ethanol (lignite as process fuel in CHP plant (* ¹))	2.2	2.2
corn (maize) ethanol (forest residues as process fuel in CHP plant (* ¹))	2.2	2.2
other cereals excluding maize ethanol (natural gas as process fuel in conventional boiler)	2.2	2.2
other cereals excluding maize ethanol (natural gas as process fuel in CHP plant (* ¹))	2.2	2.2
other cereals excluding maize ethanol (lignite as process fuel in CHP plant (* ¹))	2.2	2.2
other cereals excluding maize ethanol (forest residues as process fuel in CHP plant (* ¹))	2.2	2.2
sugar cane ethanol	9.7	9.7
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	1.8	1.8
sunflower biodiesel	2.1	2.1
soybean biodiesel	8.9	8.9
palm oil biodiesel (open effluent pond)	6.9	6.9
palm oil biodiesel (process with methane capture at oil mill)	6.9	6.9
waste cooking oil biodiesel	1.9	1.9
animal fats from rendering biodiesel (* ¹)	1.6	1.6
hydrotreated vegetable oil from rape seed	1.7	1.7
hydrotreated vegetable oil from sunflower	2.0	2.0
hydrotreated vegetable oil from soybean	9.2	9.2
hydrotreated vegetable oil from palm oil (open effluent pond)	7.0	7.0
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	7.0	7.0
hydrotreated oil from waste cooking oil	1.7	1.7
hydrotreated oil from animal fats from rendering (* ²)	1.5	1.5
pure vegetable oil from rape seed	1.4	1.4

pure vegetable oil from sunflower	1.7	1.7
pure vegetable oil from soybean	8.8	8.8
pure vegetable oil from palm oil (open effluent pond)	6.7	6.7
pure vegetable oil from palm oil (process with methane capture at oil mill)	6.7	6.7
pure oil from waste cooking oil	1.4	1.4
(*¹) Default values for processes using CHP are valid only if all the process heat is supplied by CHP. (*²) Note: applies only to biofuels produced from animal by-products classified as category 1 and 2 material in accordance with Regulation (EC) No 1069/2009, for which emissions related to hygienisation as part of the rendering are not considered.		

Disaggregated default values for transport and distribution of final fuel only. These are already included in the table of 'transport and distribution emissions e_{td} ' as defined in Part C of this Schedule, but the following values are useful if an economic operator wishes to declare actual transport emissions for crops or oil transport only).

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
sugar beet ethanol (no biogas from slop, natural gas as process fuel in conventional boiler)	1.6	1.6
sugar beet ethanol (with biogas from slop, natural gas as process fuel in conventional boiler)	1.6	1.6
sugar beet ethanol (no biogas from slop, natural gas as process fuel in CHP plant (* ¹))	1.6	1.6
sugar beet ethanol (with biogas from slop, natural gas as process fuel in CHP plant (* ¹))	1.6	1.6
sugar beet ethanol (no biogas from slop, lignite as process fuel in CHP plant (* ¹))	1.6	1.6
sugar beet ethanol (with biogas from slop, lignite as process fuel in CHP plant (* ¹))	1.6	1.6
corn (maize) ethanol (natural gas as process fuel in conventional boiler)	1.6	1.6
corn (maize) ethanol (natural gas as process fuel in CHP plant (* ¹))	1.6	1.6
corn (maize) ethanol (lignite as process fuel in CHP plant (* ¹))	1.6	1.6
corn (maize) ethanol (forest residues as process fuel in CHP plant (* ¹))	1.6	1.6
other cereals excluding maize ethanol (natural gas as process fuel in conventional boiler)	1.6	1.6
other cereals excluding maize ethanol (natural gas as process fuel in CHP plant (* ¹))	1.6	1.6
other cereals excluding maize ethanol (lignite as process fuel in CHP plant (* ¹))	1.6	1.6
other cereals excluding maize ethanol (forest residues as process fuel in CHP plant (* ¹))	1.6	1.6
sugar cane ethanol	6.0	6.0

the part of ethyl-tertio-butyl-ether (ETBE) from renewable ethanol	Will be considered to be equal to that of the ethanol production pathway used	
the part of tertiary-amyl-ethyl-ether (TAEE) from renewable ethanol	Will be considered to be equal to that of the ethanol production pathway used	
rape seed biodiesel	1.3	1.3
sunflower biodiesel	1.3	1.3
soybean biodiesel	1.3	1.3
palm oil biodiesel (open effluent pond)	1.3	1.3
palm oil biodiesel (process with methane capture at oil mill)	1.3	1.3
waste cooking oil biodiesel	1.3	1.3
animal fats from rendering biodiesel (* ²)	1.3	1.3
hydrotreated vegetable oil from rape seed	1.2	1.2
hydrotreated vegetable oil from sunflower	1.2	1.2
hydrotreated vegetable oil from soybean	1.2	1.2
hydrotreated vegetable oil from palm oil (open effluent pond)	1.2	1.2
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	1.2	1.2
hydrotreated oil from waste cooking oil	1.2	1.2
hydrotreated oil from animal fats from rendering (* ²)	1.2	1.2
pure vegetable oil from rape seed	0.8	0.8
pure vegetable oil from sunflower	0.8	0.8
pure vegetable oil from soybean	0.8	0.8
pure vegetable oil from palm oil (open effluent pond)	0.8	0.8
pure vegetable oil from palm oil (process with methane capture at oil mill)	0.8	0.8
pure oil from waste cooking oil	0.8	0.8
(* ¹) Default values for processes using CHP are valid only if all the process heat is supplied by CHP. (* ²) Note: applies only to biofuels produced from animal by-products classified as category 1 and 2 material in accordance with Regulation (EC) No 1069/2009, for which emissions related to hygienisation as part of the rendering are not considered.		

Total for cultivation, processing, transport and distribution

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
sugar beet ethanol (no biogas from slop, natural gas as process fuel in conventional boiler)	30.7	38.2
sugar beet ethanol (with biogas from slop, natural gas as process fuel in conventional boiler)	21.6	25.5
sugar beet ethanol (no biogas from slop, natural gas as process fuel in CHP plant (* ¹))	25.1	30.4

sugar beet ethanol (with biogas from slop, natural gas as process fuel in CHP plant (*1))	19.5	22.5
sugar beet ethanol (no biogas from slop, lignite as process fuel in CHP plant (*1))	39.3	50.2
sugar beet ethanol (with biogas from slop, lignite as process fuel in CHP plant (*1))	27.6	33.9
corn (maize) ethanol (natural gas as process fuel in conventional boiler)	48.5	56.8
corn (maize) ethanol, (natural gas as process fuel in CHP plant (*1))	42.5	48.5
corn (maize) ethanol (lignite as process fuel in CHP plant (*1))	56.3	67.8
corn (maize) ethanol (forest residues as process fuel in CHP plant (*1))	29.5	30.3
other cereals excluding maize ethanol (natural gas as process fuel in conventional boiler)	50.2	58.5
other cereals excluding maize ethanol (natural gas as process fuel in CHP plant (*1))	44.3	50.3
other cereals excluding maize ethanol (lignite as process fuel in CHP plant (*1))	59.5	71.7
other cereals excluding maize ethanol (forest residues as process fuel in CHP plant (*1))	30.7	31.4
sugar cane ethanol	28.1	28.6
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	45.5	50.1
sunflower biodiesel	40.0	44.7
soybean biodiesel	42.2	47.0
palm oil biodiesel (open effluent pond)	63.3	75.5
palm oil biodiesel (process with methane capture at oil mill)	46.1	51.4
waste cooking oil biodiesel	11.2	14.9
animals fats from rendering biodiesel (*1)	15.2	20.7
hydrotreated vegetable oil from rape seed	45.8	50.1
hydrotreated vegetable oil from sunflower	39.4	43.6
hydrotreated vegetable oil from soybean	42.2	46.5
hydrotreated vegetable oil from palm oil (open effluent pond)	62.1	73.2
hydrotreated vegetable oil from palm oil (process with methane capture at oil mill)	44.0	47.9
hydrotreated oil from waste cooking oil	11.9	16.0
hydrotreated oil from animal fats from rendering (*2)	16.0	21.8
pure vegetable oil from rape seed	38.5	40.0

pure vegetable oil from sunflower	32.7	34.3
pure vegetable oil from soybean	35.2	36.9
pure vegetable oil from palm oil (open effluent pond)	56.4	65.5
pure vegetable oil from palm oil (process with methane capture at oil mill)	38.5	40.3
pure oil from waste cooking oil	2.0	2.2
(*1) Default values for processes using CHP are valid only if all the process heat is supplied by CHP. (*2) Note: applies only to biofuels produced from animal by-products classified as category 1 and 2 material in accordance with Regulation (EC) No 1069/2009, for which emissions related to hygenisation as part of the rendering are not considered.		

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 2016**

Disaggregated default values for cultivation: 'e_{cc}' as defined in Part C of this Schedule, including N₂O emissions (including chipping of waste or farmed wood)

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
wheat straw ethanol	1.8	1.8
waste wood Fischer-Tropsch diesel in free-standing plant	3.3	3.3
farmed wood Fischer-Tropsch diesel in free-standing plant	8.2	8.2
waste wood Fischer-Tropsch petrol in free-standing plant	3.3	3.3
farmed wood Fischer-Tropsch petrol in free-standing plant	8.2	8.2
waste wood dimethylether (DME) in free-standing plant	3.1	3.1
farmed wood dimethylether (DME) in free-standing plant	7.6	7.6
waste wood methanol in free-standing plant	3.1	3.1
farmed wood methanol in free-standing plant	7.6	7.6
Fischer-Tropsch diesel from black-liquor gasification integrated with pulp mill	2.5	2.5
Fischer-Tropsch petrol from black-liquor gasification integrated with pulp mill	2.5	2.5
dimethylether (DME) from black-liquor gasification integrated with pulp mill	2.5	2.5
Methanol from black-liquor gasification integrated with pulp mill	2.5	2.5
the part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Disaggregated default values for soil N₂O emissions (included in disaggregated default values for cultivation emissions in the 'e_{cc}' table)

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
wheat straw ethanol	0	0
waste wood Fischer-Tropsch diesel in free-standing plant	0	0
farmed wood Fischer-Tropsch diesel in free-standing plant	4.4	4.4
waste wood Fischer-Tropsch petrol in free-standing plant	0	0

farmed wood Fischer-Tropsch petrol in free-standing plant	4.4	4.4
waste wood dimethylether (DME) in free-standing plant	0	0
farmed wood dimethylether (DME) in free-standing plant	4.1	4.1
waste wood methanol in free-standing plant	0	0
farmed wood methanol in free-standing plant	4.1	4.1
Fischer-Tropsch diesel from black-liquor gasification integrated with pulp mill	0	0
Fischer-Tropsch petrol from black-liquor gasification integrated with pulp mill	0	0
dimethylether (DME) from black-liquor gasification integrated with pulp mill	0	0
Methanol from black-liquor gasification integrated with pulp mill	0	0
the part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Disaggregated default values for processing: 'e_p' as defined in Part C of this Schedule

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
wheat straw ethanol	4.8	6.8
waste wood Fischer-Tropsch diesel in free-standing plant	0.1	0.1
farmed wood Fischer-Tropsch diesel in free-standing plant	0.1	0.1
waste wood Fischer-Tropsch petrol in free-standing plant	0.1	0.1
farmed wood Fischer-Tropsch petrol in free-standing plant	0.1	0.1
waste wood dimethylether (DME) in free-standing plant	0	0
farmed wood dimethylether (DME) in free-standing plant	0	0
waste wood methanol in free-standing plant	0	0
farmed wood methanol in free-standing plant	0	0
Fischer-Tropsch diesel from black-liquor gasification integrated with pulp mill	0	0
Fischer-Tropsch petrol from black-liquor gasification integrated with pulp mill	0	0
dimethylether (DME) from black-liquor gasification integrated with pulp mill	0	0
methanol from black-liquor gasification integrated with pulp mill	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 of this Schedule

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
wheat straw ethanol	7.1	7.1
waste wood Fischer-Tropsch diesel in free-standing plant	12.2	12.2
farmed wood Fischer-Tropsch diesel in free-standing plant	8.4	8.4
waste wood Fischer-Tropsch petrol in free-standing plant	12.2	12.2
farmed wood Fischer-Tropsch petrol in free-standing plant	8.4	8.4
waste wood dimethylether (DME) in free-standing plant	12.1	12.1
farmed wood dimethylether (DME) in free-standing plant	8.6	8.6
waste wood methanol in free-standing plant	12.1	12.1
farmed wood methanol in free-standing plant	8.6	8.6
Fischer-Tropsch diesel from black-liquor gasification integrated with pulp mill	7.7	7.7
Fischer-Tropsch petrol from black-liquor gasification integrated with pulp mill	7.9	7.9
dimethylether (DME) from black-liquor gasification integrated with pulp mill	7.7	7.7
methanol from black-liquor gasification integrated with pulp mill	7.9	7.9
the part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

Disaggregated default values for transport and distribution of final fuel only. These are already included in the table of 'transport and distribution emissions e_{td}' as defined in Part C of this Schedule, but the following values are useful if an economic operator wishes to declare actual transport emissions for feedstock transport only).

Biofuel and bioliquid production pathway	Greenhouse gas emissions – typical value (g CO ₂ eq/MJ)	Greenhouse gas emissions – default value (g CO ₂ eq/MJ)
wheat straw ethanol	1.6	1.6
waste wood Fischer-Tropsch diesel in free-standing plant	1.2	1.2
farmed wood Fischer-Tropsch diesel in free-standing plant	1.2	1.2
waste wood Fischer-Tropsch petrol in free-standing plant	1.2	1.2
farmed wood Fischer-Tropsch petrol in free-standing plant	1.2	1.2
waste wood dimethylether (DME) in free-standing plant	2.0	2.0

farmed wood dimethylether (DME) in free-standing plant	2.0	2.0
waste wood methanol in free-standing plant	2.0	2.0
farmed wood methanol in free-standing plant	2.0	2.0
Fischer-Tropsch diesel from black-liquor gasification integrated with pulp mill	2.0	2.0
Fischer-Tropsch petrol from black-liquor gasification integrated with pulp mill	2.0	2.0
dimethylether (DME) from black-liquor gasification integrated with pulp mill	2.0	2.0
methanol from black-liquor gasification integrated with pulp mill	2.0	2.0
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	Greenhouse gas emissions – typical value (g CO₂eq/MJ)	Greenhouse gas emissions – default value (g CO₂eq/MJ)
wheat straw ethanol	13.7	15.7
waste wood Fischer-Tropsch diesel in free-standing plant	15.6	15.6
farmed wood Fischer-Tropsch diesel in free-standing plant	16.7	16.7
waste wood Fischer-Tropsch petrol in free-standing plant	15.6	15.6
farmed wood Fischer-Tropsch petrol in free-standing plant	16.7	16.7
waste wood dimethylether (DME) in free-standing plant	15.2	15.2
farmed wood dimethylether (DME) in free-standing plant	16.2	16.2
waste wood methanol in free-standing plant	15.2	15.2
farmed wood methanol in free-standing plant	16.2	16.2
Fischer-Tropsch diesel from black-liquor gasification integrated with pulp mill	10.2	10.2
Fischer-Tropsch petrol from black-liquor gasification integrated with pulp mill	10.4	10.4
dimethylether (DME) from black-liquor gasification integrated with pulp mill	10.2	10.2
methanol from black-liquor gasification integrated with pulp mill	10.4	10.4
the part from renewable sources of MTBE	Equal to that of the methanol production pathway used	

SIXTH SCHEDULE (regulation 34)

RENEWABLES ACCELERATION AREAS

1. Areas which are identified as Principal Urban Areas, Regional Urban Settlements, Small Urban Settlements and Enterprise Hubs within Map 2A of the 2015 Strategic Plan for Environment and Development¹ as shown in Figure 1 are deemed to constitute renewables acceleration areas for the purposes of regulation 34.
2. The permit-granting procedures applicable to solar photovoltaic installations in such areas shall, without prejudice to the restrictions established in regulation 34, be subject to the timeframes established in regulation 38.

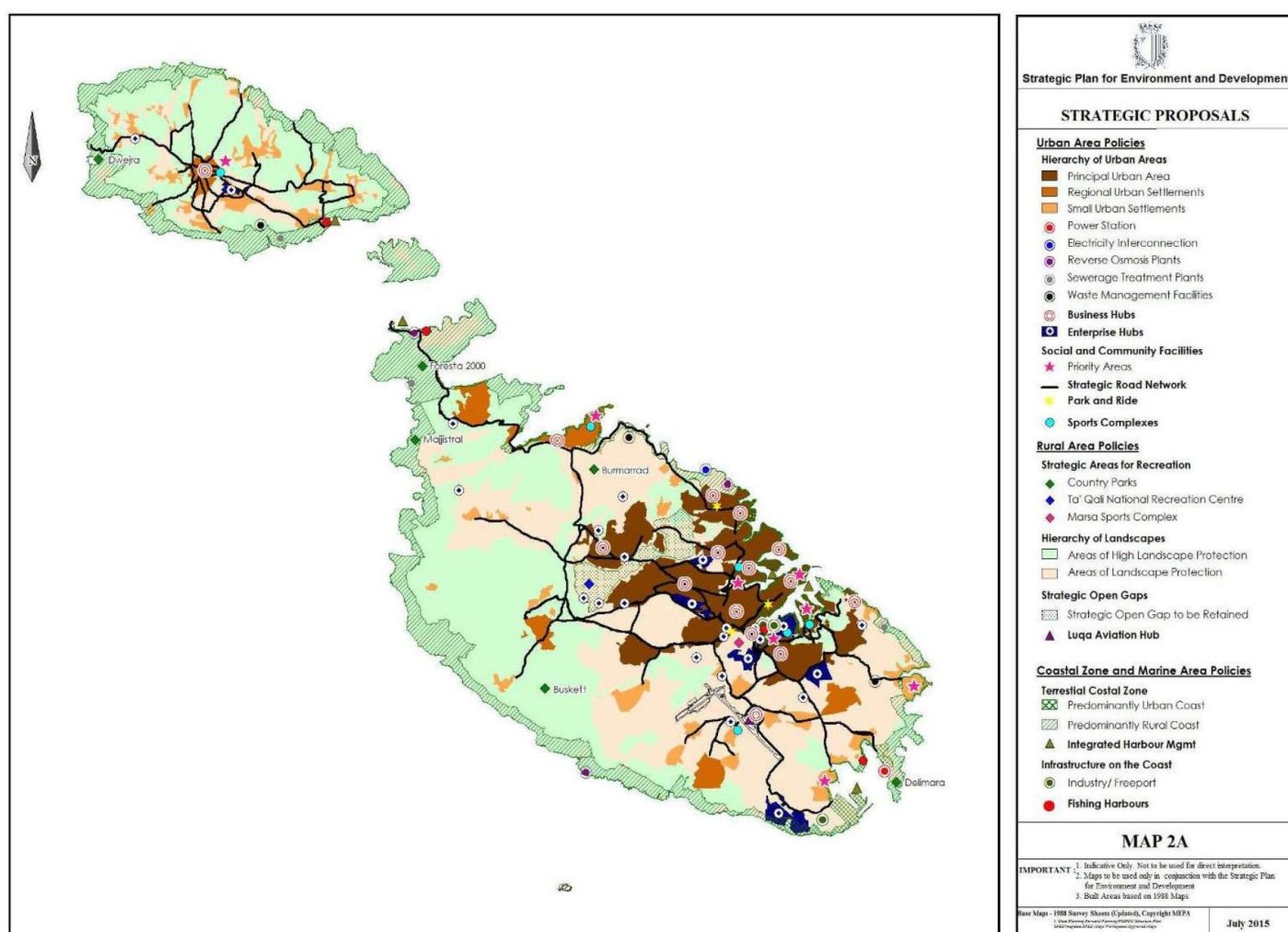


Figure 1

¹ <https://sustainabledevelopment.gov.mt/wp-content/uploads/2021/10/Strategic-Plan-for-the-Environment-and-Development-SPED.pdf>

Added by:
L.N. 206 of 2026.

Eight Schedule
Regulation 20A

Certification of Installers

The certification schemes or equivalent qualification schemes referred to in regulation 20A shall be based on the following criteria:

1. The certification or equivalent qualification process shall be transparent and clearly defined by the Regulator.

(a) The certificates issued by certification bodies shall be clearly defined and easy to identify for workers and professionals seeking certification.

(b) The certification process shall enable installers to acquire the necessary theoretical and practical knowledge and guarantee the existence of skills needed to put in place high quality installations that operate reliably.

2. Installers of systems using biomass, heat pump, shallow geothermal, solar photovoltaic and solar thermal energy, including energy storage, and recharging points shall be certified by an accredited training programme or training provider or equivalent qualification schemes.

3. (1) The accreditation of the training programme or provider shall be effected by an appointed body, following discussions between the Minister and the relevant competent authority. The accrediting body shall ensure that the training, including upskilling and reskilling programmes, offered by the training provider are inclusive and have continuity and regional or national coverage.

(2) The training provider shall have adequate technical facilities to provide practical training, including sufficient laboratory equipment or corresponding facilities to provide practical training.

(3) The training provider shall offer, in addition to the basic training, shorter refresher and upskilling courses organised in training modules allowing installers and designers to add new competences, widen and diversify their skills across several types of technology and their combinations. The training provider shall ensure adaptation of training to new renewable energy technology in the context of buildings, industry and agriculture. Training providers shall recognise acquired relevant skills.

(4) The training programmes and modules shall be designed to enable life-long learning in renewable energy installations and be

compatible with vocational training for first time job seekers and adults seeking reskilling or new employment.

(5) The training programmes shall be designed in order to facilitate acquiring qualifications covering different types of technology and solutions and avoid limited specialisation in a specific brand or technology. The training provider may be the manufacturer of the equipment or system, institutes or associations.

4. The training leading to certification or qualification of an installer shall include theoretical and practical parts. At the end of the training, the installer shall have the skills required to install the relevant equipment and systems to meet the performance and reliability needs of the customer, incorporate quality craftsmanship, and comply with all applicable codes and standards, including energy and eco-labelling.

5. The training course shall end with an examination leading to a certificate or qualification. The examination shall include a practical assessment of successfully installing biomass boilers or stoves, heat pumps, shallow geothermal installations, solar photovoltaic or solar thermal installations, including energy storage or recharging points, enabling demand response.

6. The certification schemes or equivalent qualification schemes referred to in regulation 20A shall take due account of the following guidelines:

(a) accredited training programmes should be offered to installers with work experience, who have undergone, or are undergoing, the following types of training:

(i) in the case of biomass boiler and stove installers: training as a plumber, pipe fitter, heating engineer or technician of sanitary and heating or cooling equipment as a prerequisite;

(ii) in the case of heat pump installers: training as a plumber or refrigeration engineer and have basic electrical and plumbing skills (cutting pipe, soldering pipe joints, gluing pipe joints, lagging, sealing fittings, testing for leaks and installation of heating or cooling systems) as a prerequisite;

(iii) in the case of a solar photovoltaic or solar thermal installer: training as a plumber or electrician and have plumbing, electrical and roofing skills, including knowledge of soldering pipe joints, gluing pipe joints, sealing fittings, testing for plumbing leaks, ability to connect wiring, familiar with basic roof materials,

flashing and sealing methods as a prerequisite; or

(iv) a vocational training scheme to provide an installer with adequate skills corresponding to a three-year education in the skills referred to in points (a), (b) or (c), including both classroom and workplace learning.

(b) The theoretical part of the biomass stove and boiler installer training should give an overview of the market situation of biomass and cover ecological aspects, biomass fuels, logistics, fire protection, related subsidies, combustion techniques, firing systems, optimal hydraulic solutions, cost and profitability comparison as well as the design, installation and maintenance of biomass boilers and stoves. The training should also provide good knowledge of any European standards for technology and biomass fuels, such as pellets, and biomass related national and Union law.

(c) The theoretical part of the heat pump installer training should give an overview of the market situation for heat pumps and cover geothermal energy sources and ground source temperatures of different regions, soil and rock identification for thermal conductivity, regulations on using geothermal energy sources, feasibility of using heat pumps in buildings and determining the most suitable heat pump system, and knowledge about their technical requirements, safety, air filtering, connection with the heat source and system layout, and integration with energy storage solutions, including in combination with solar installations. The training should also provide good knowledge of any European standards for heat pumps, and of any relevant national and Union law. The installer should demonstrate the following key competences:

(i) a basic understanding of the physical and operation principles of a heat pump, including characteristics of the heat pump circle: context between low temperatures of the heat sink, high temperatures of the heat source, and the efficiency of the system, and determination of the coefficient of performance and seasonal performance factor (SPF);

(ii) an understanding of the components and their function within a heat pump circle, including the compressor, expansion valve, evaporator, condenser, fixtures and fittings, lubricating oil, refrigerant, super heating and sub-cooling and cooling possibilities with heat pumps; and

(iii) the ability to choose and size the

components in typical installation situations, including determining the typical values of the heat load of different buildings and of hot water production based on energy consumption; determining the capacity of the heat pump based on the heat load for hot water production, the storage mass of the building and interruptible current supply; and determination of energy storage solutions, including buffer tank components, their volume and integration of a second heating system;

(iv) an understanding of feasibility and design studies;

(v) an understanding of drilling, in the case of geothermal heat pumps.

(d) The theoretical part of the solar photovoltaic and solar thermal installer training should give an overview of the market situation of solar products and cost and profitability comparisons, and cover ecological aspects, components, characteristics and dimensioning of solar systems, selection of accurate systems and dimensioning of components, determination of the demand for heat, options for integrating energy storage solutions, fire protection, related subsidies, as well as the design, installation and maintenance of solar photovoltaic and solar thermal installations. The training should also provide a sound knowledge of European technology standards, certification such as Solar Keymark, and related national law and Union law. Installers shall demonstrate the following key competences:

(i) the ability to work safely using the required tools and equipment and implementing safety codes and standards and to identify plumbing, electrical and other hazards associated with solar installations;

(ii) the ability to identify systems and their components specific to active and passive systems, including the mechanical design, and to determine the location of the components, the system layout and the configuration, and options for the integration of energy storage solutions, including through combination with recharging stations;

(iii) the ability to determine the required installation area, orientation and tilt for the solar photovoltaic and solar water heater, taking account of shading, solar access, structural integrity, the appropriateness of the installation for the building or the climate and to identify different installation methods

suitable for roof types and the balance of system equipment required for the installation; and

(iv) for solar photovoltaic systems in particular, the ability to adapt the electrical design, including determining design currents, selecting appropriate conductor types and ratings for each electrical circuit, determining appropriate size, ratings and locations for all associated equipment and subsystems and selecting an appropriate interconnection point.

(e) Installer certification shall be time limited, such that continued certification requires attendance at a refresher seminar or other refresher training.