

SUBSIDIARY LEGISLATION 423.19**PROMOTION OF ENERGY FROM RENEWABLE
SOURCES REGULATIONS**

5th December, 2010*

LEGAL NOTICE 538 of 2010, as amended by Legal Notice 210 of 2012.

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

Citation and scope.
Amended by:
L.N. 210 of 2012.

(2) These regulations transpose Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC; and Articles 3(2), 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 21(2) of Directive 2009/28/EC on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

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

Interpretation.
Amended by:
L.N. 210 of 2012.
Cap. 423.

"the Act" means the Malta Resources Authority Act;

"aerothermal energy" means energy stored in the form of heat in the ambient air;

"the Authority" means the Malta Resources Authority established by article 3 of the Act;

"biofuels" means liquid or gaseous fuel for transport 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), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste;

"Building Regulation Board" means the Board established under article 3 of the Building Regulation Act;

Cap. 513.

"Building Regulation Office" means the Building Regulation Office established under the Building Regulation Act;

Cap. 513.

"the Community" means the European Community;

"energy from renewable sources" means energy from renewable non-fossil sources, namely wind, solar, aerothermal, geothermal, hydrothermal and ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;

*see regulation 1(2) as originally promulgated.

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

"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, including the consumption of electricity and heat by the energy branch for electricity and heat production and including losses of electricity and heat in distribution and transmission;

"hydrothermal energy" means energy stored in the form of heat in surface water;

Cap. 504. "Malta Environment and Planning Authority" means the Authority established by article 6 of the Environment and Development Planning Act;

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

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

"the Minister" means the Minister responsible for energy or any person delegated by him to act on his behalf;

"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 published in the Official Journal L 304, 14.11.2008, p. 1;

"renewable energy obligation" means a national support scheme requiring energy producers to include a given proportion of energy from renewable sources in their production, requiring energy suppliers to include a given proportion of energy from renewable sources in their supply, or requiring energy consumers to include a given proportion of energy from renewable sources in their consumption. This includes schemes under which such requirements may be fulfilled by using green certificates;

"support scheme" means any instrument, scheme or mechanism that promotes the use of energy from renewable sources by reducing the cost of that 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. This includes, but is 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 premium payments;

"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.

3. The share of energy from renewable sources in gross final consumption of energy in 2020 shall be at least the national overall target for the share of energy from renewable sources of 10%.
4. The share of energy from renewable sources in all forms of transport in 2020 shall be at least 10% of the final consumption of energy in transport. For the purpose of this requirement, the following shall apply:
- (a) for the calculation of the denominator, that is the total amount of energy consumed in transport for the purposes of calculating the share of energy from renewable sources in all forms of transport in 2020, only petrol, diesel, biofuels consumed in road and rail transport, and electricity shall be taken into account;
 - (b) for the calculation of the numerator, that is the amount of energy from renewable sources consumed in transport for the purposes of calculating the share of energy from renewable sources in all forms of transport in 2020, all types of energy from renewable sources consumed in all forms of transport shall be taken into account;
 - (c) for the calculation of the contribution from electricity produced from renewable sources and consumed in all types of electric vehicles for the purpose of paragraphs (a) and (b), there shall be used either the average share of electricity from renewable energy sources in the Community or the share of electricity from renewable energy sources in Malta as measured two years before the year in question. Furthermore, for the calculation of the electricity from renewable energy sources consumed by electric road vehicles, that consumption shall be considered to be 2.5 times the energy content of the input of electricity from renewable energy sources.
5. (1) The gross final consumption of energy from renewable sources shall be calculated as the sum of:
- (a) gross final consumption of electricity from renewable energy sources;
 - (b) gross final consumption of energy from renewable sources for heating and cooling; and
 - (c) final consumption of energy from renewable sources in transport.
- (2) Gas, electricity and hydrogen from renewable energy sources shall be considered only once for the purposes of subregulation (1)(a), (b) or (c), for calculating the share of gross final consumption of energy from renewable sources.
- (3) Without prejudice to the provisions of the Biofuels (Sustainability Criteria) Regulations, biofuels and bioliquids that do not fulfill the sustainability criteria set out in those regulations shall not be taken into account for the purposes of the calculation of the gross final consumption of energy from renewable sources.

National overall target.

Share of energy from renewable sources in transport sector.

Calculation of the share of energy from renewable sources.
Amended by:
L.N. 210 of 2012.

S.L. 423.47

(4) For the purposes of subregulation (1)(a), gross final consumption of electricity from renewable energy sources shall be calculated as the quantity of electricity produced in Malta from renewable energy sources, excluding the production of electricity in pumped storage units from water that has previously been pumped uphill. In multi-fuel plants using renewable and conventional sources, only the part of electricity produced from renewable energy sources shall be taken into account. For the purposes of this calculation, the contribution of each energy source shall be calculated on the basis of its energy content. The electricity generated by hydropower and wind power shall be accounted for in accordance with the normalisation rules set out in the First Schedule.

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

(6) The quantity of heat to be considered as energy from renewable sources for the purposes of these regulations shall be calculated in accordance with the methodology laid down in the Third Schedule.

(7) 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 subregulation (1)(b).

(8) The energy content of the transport fuels listed in the Second Schedule shall be taken to be as set out in that Schedule.

(9) 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. For the purposes of subregulation (1), the sum referred to in subregulation (1) shall be adjusted to take into account, whenever applicable:

- (a) statistical transfers with other Member States;
- (b) the effects of joint projects with other Member States and the effects of joint projects with other Member States and third countries;
- (c) joint support schemes, when carried out in accordance with Malta's international obligations.

(10) For the purposes of demonstrating compliance with renewable energy obligations placed on operators and the target for the use of energy from renewable sources in all forms of transport referred to in regulation 4, the contribution made by biofuels produced from wastes, residues, non-food cellulosic material, and ligno-cellulosic material shall be considered to be twice that made by other biofuels.

- 6.** In calculating the gross final energy consumption for the purpose of measuring Malta's compliance with the targets and indicative trajectory laid down in Directive 2009/28/EC, the amount of energy consumed in aviation shall, as a proportion of the gross final consumption of energy, be considered to be no more than 4.12%. Amount of energy consumed in aviation.
- 7.** The methodology and definitions used in the calculation of the share of energy from renewable sources shall be those of Regulation (EC) No 1099/2008 of the European Parliament and of the Council of 22 October, 2008 on energy statistics. Regulation (EC) No 1099/2008.
- 8.** The Minister shall submit an amended national renewable energy action plan to the Commission by the 30th June of the following year from when the share of energy from renewable sources falls below the indicative trajectory in the immediately preceding two-year period set out in the Fourth Schedule. The amended national renewable energy action plan shall set out adequate and proportionate measures to rejoin, within a reasonable timetable, the indicative trajectory in the Fourth Schedule. Amended National Renewable Energy Action Plan.
- 9.** The Minister shall introduce measures effectively designed to ensure that the share of energy from renewable sources equals or exceeds that shown in the indicative trajectory set out in the Fourth Schedule. Introduction of measures.
Added by:
L.N. 210 of 2012.
- 10.** (1) The Authority may recommend to the Minister to make arrangements for the statistical transfer of a specified amount of energy from renewable sources from Malta to another Member State. The transferred quantity shall be: Statistical transfers between Member States.
Added by:
L.N. 210 of 2012.
- (a) deducted from the amount of energy from renewable sources that is taken into account in measuring compliance with the requirements of regulations 3 and 9; and
- (b) added to the amount of energy from renewable sources that is taken into account in measuring compliance by the Member State accepting the transfer with the requirements of regulations 3 and 9.
- (2) A statistical transfer shall not affect the achievement of the national target of Malta. The arrangements referred to in sub-regulation (1) may have a duration of one or more years. They shall be notified to the Commission no later than three months after the end of each year in which they have effect. The information sent to the Commission shall include the quantity and price of the energy involved.
- (3) Transfers shall become effective only after all Member States involved in the transfer have notified the transfer to the Commission.
- 11.** (1) The Minister may designate an authority or entity to cooperate with one or more authorities from other Member States on all types of joint projects relating to the production of electricity, heating or cooling from renewable energy sources. That cooperation may involve private operators. Joint projects between Member States.
Added by:
L.N. 210 of 2012.
- (2) The Authority shall notify the Commission of the

proportion or amount of electricity, heating or cooling from renewable energy sources produced by any joint project, that became 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 national overall target of another Member State for the purposes of measuring compliance with the requirements of these regulations.

(3) The notification referred to in sub-regulation (2) shall:

- (a) describe the proposed installation or identify the refurbished installation;
- (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 national overall target of another 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 energy sources is to be regarded as counting towards the national overall target of the other Member State.

(4) The period specified under sub-regulation (3)(d) shall not extend beyond 2020. The duration of a joint project may extend beyond 2020.

(5) A notification made under this regulation shall not be varied or withdrawn without the joint agreement between Malta and the Member State in whose favour the notification is being made.

Effects of joint projects between Member States.
Added by:
L.N. 210 of 2012.

12. (1) Within three months of the end of each year falling within the period specified under regulation 11(3)(d), the Authority shall issue a letter of notification stating:

- (a) the total amount of electricity or heating or cooling produced during the year from renewable energy sources by the installation which was the subject of the notification under regulation 11; and
- (b) the amount of electricity or heating or cooling produced during the year from renewable energy sources by that installation which is to count towards the national overall target of another Member State in accordance with the terms of the notification.

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

(3) For the purposes of measuring target compliance with the requirements of these regulations concerning national overall targets mentioned in regulation 3, the amount of electricity or heating or cooling from renewable energy sources notified in accordance with sub-regulation (1)(b) shall be:

- (a) deducted from the amount of electricity or heating or cooling from renewable energy sources, that is taken into account in measuring compliance by the Authority under sub-regulation (1); and
- (b) added to the amount of electricity or heating or cooling from renewable energy sources, that is taken into account in measuring compliance by the Member State receiving the letter of notification in accordance with sub-regulation (2).

13. (1) The Minister may designate an authority or entity to cooperate with one or more third countries, in collaboration with other authorities from other Member States on all types of joint projects regarding the production of electricity from renewable energy sources. Such cooperation may involve private operators.

Joint projects
between Member
States and third
countries.
Added by:
L.N. 210 of 2012.

(2) Electricity from renewable energy sources produced in a third country shall be taken into account only for the purposes of measuring compliance with the requirements of these regulations concerning national overall targets mentioned in regulation 3 if the following conditions are met:

- (a) the electricity is consumed in Member States, a requirement that is deemed to be met 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;
 - (ii) an equivalent amount of electricity to the electricity accounted for has been firmly registered in the schedule of balance of an interconnector by the responsible transmission system operator on the part of the Member States; and
 - (iii) the nominated capacity and the production of electricity from renewable energy sources by the installation referred to in sub-regulation (2)(b) refer to the same period of time;
- (b) the electricity is produced by a newly constructed installation that became operational after 25 June 2009, or by the increased capacity of an installation that was refurbished after that date, under a joint project as referred to in sub-regulation (1); and
- (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.

(3) The Authority may apply to the Commission, for the purposes of regulation 5, for account to be taken of electricity from renewable energy 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

if the following conditions are met:

- (a) construction of the interconnector started by 31 December 2016;
- (b) it is not possible for the interconnector to become operational by 31 December 2020;
- (c) it is possible for the interconnector to become operational by 31 December 2022;
- (d) after it becomes operational, the interconnector will be used for the export to other Member States, in accordance with sub-regulation (2), of electricity generated from renewable energy sources;
- (e) the application relates to a joint project that fulfils the criteria in sub-regulation (2)(b) and (c) and that will use the interconnector after it becomes operational, and to a quantity of electricity that is no greater than the quantity that will be exported to other Member States 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 the national overall target of one or more Member States for the purposes of measuring compliance with regulations 3 and 9 shall be notified to the Commission. When more than one Member State is concerned, the distribution between Member States of this proportion or amount shall be notified to the Commission.

(5) The proportion or amount mentioned in sub-regulation (4) shall not exceed the proportion or amount actually exported to, and consumed in other Member States, corresponding to the amount referred to in sub-regulation (2)(a)(i) and (ii), and meeting the conditions as set out in sub-regulation (2)(a). The notification shall be made by the Authority when the proportion or amount of electricity is to count towards Malta's overall national target.

(6) 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 the national target 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 the national overall target of Malta; and
- (d) include a written acknowledgement of paragraphs (b) and (c) by the third country in whose territory the installation is to become operational and the proportion or amount of electricity produced by the installation which will be used domestically by that third country.

(7) The period specified under sub-regulation (6)(c) shall not extend beyond 2020. The duration of a joint project may extend beyond 2020.

(8) A notification made under this regulation may not be varied or withdrawn without the joint agreement between Malta and the third country that has acknowledged the joint project in accordance with sub-regulation (6)(d).

14. (1) Within three months of the end of each year falling within the period specified under regulation 13(6)(c), the Authority shall issue a letter of notification stating:

- (a) the total amount of electricity produced during that year from renewable energy sources by the installation which was the subject of the notification under regulation 13;
- (b) the amount of electricity produced during the year from renewable energy sources by that installation which is to count towards the national overall target in accordance with the terms of the notification under regulation 13; and
- (c) proof of compliance with the conditions set out in regulation 13(2).

(2) The Authority shall send the letter of notification to the third country which has acknowledged the project in accordance with regulation 13(6)(d) and to the Commission.

(3) For the purposes of measuring target compliance with the requirements of these regulations concerning national overall targets mentioned in regulation 3, the amount of electricity produced from renewable energy sources notified in accordance with sub-regulation (1)(b) shall be added to the amount of energy from renewable sources, that is taken into account in measuring compliance with these regulations.

15. (1) Without prejudice to the obligations under regulations 3 and 9, the Minister may designate an authority or entity to join or partly coordinate national support schemes on a voluntary basis with other authorities from other Member States. In such cases, a certain amount of energy from renewable sources produced in the territory of one participating Member State may count towards the national overall target of another participating Member State if the Member States concerned:

- (a) make a statistical transfer of specified amounts of energy from renewable sources from one Member State to another Member State in accordance with regulation 10; or
- (b) set up a distribution rule agreed by participating Member States that allocates amounts of energy from renewable sources between the participating Member States. Such a rule shall be notified by the Authority to the Commission no later than three months after the end of the first year in which it takes effect.

Effects of joint projects between Member States and third countries.

*Added by:
L.N. 210 of 2012.*

Joint support schemes.

*Added by:
L.N. 210 of 2012.*

(2) Within three months of the end of each year, the Authority having made a notification under sub-regulation (1)(b) shall issue a letter of notification stating the total amount of electricity or heating or cooling from renewable energy sources produced during the year which is to be the subject of the distribution rule.

(3) For the purposes of measuring compliance with the requirements of these regulations concerning national overall targets mentioned in regulation 3, the amount of electricity or heating or cooling from renewable energy sources notified in accordance with sub-regulation (2) shall be reallocated between the concerned Member States in accordance with the notified distribution rule.

Capacity increases.
Added by:
L.N. 210 of 2012.

16. For the purpose of regulations 11(2) and 13(2)(b), 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.

Administrative
procedures,
regulations and
codes.
Added by:
L.N. 210 of 2012.

17. (1) The Authority shall ensure that the authorisation, certification and licensing procedures that are applied to plants and associated transmission and distribution network infrastructures for the production of electricity, heating or cooling from renewable energy sources, and to the process of transformation of biomass into biofuels or other energy products, are proportionate and necessary.

(2) The Authority and the Malta Environment and Planning Authority shall, in particular, take the appropriate steps to ensure that:

- (a) the authorisation, certification and licensing procedures including spatial planning are clearly coordinated and defined, with transparent timetables for determining planning and building applications;
- (b) comprehensive information on the processing of authorisation, certification and licensing applications for renewable energy installations and on available assistance to applicants are made available at the appropriate level;
- (c) administrative procedures are streamlined and expedited at the appropriate administrative level;
- (d) rules governing authorisation, certification and licensing are objective, transparent, proportionate, do not discriminate between applicants and take fully into account the particularities of individual renewable energy technologies;
- (e) administrative charges paid by consumers, planners, *periti*, warranted engineers, builders and equipment and system installers and suppliers are transparent and cost-related; and
- (f) simplified and less burdensome authorisation procedures, including through simple notification if allowed by the applicable regulatory framework, are

established for smaller projects and for decentralised devices for producing energy from renewable sources, where appropriate.

(3) The Authority shall clearly define any technical specifications which must be met by renewable energy equipment and systems in order to benefit from support schemes. Where European standards exist, including eco-labels, energy labels and other technical reference systems established by the European standardisation bodies, such technical specifications shall be expressed in terms of those standards. Such technical specifications shall not prescribe where the equipment and systems are to be certified and should not impede the operation of the internal market.

(4) The Authority shall recommend to all actors, in particular local and regional administrative bodies to ensure that equipment and systems are installed for the use of electricity, heating and cooling from renewable energy sources and for district heating and cooling when planning, designing, building and renovating industrial or residential areas. Local and regional administrative bodies shall in particular include heating and cooling from renewable energy sources in the planning of city infrastructure, where appropriate.

(5) The Authority shall, in collaboration with the Building Regulation Board, ensure that there shall be introduced in building regulations and building codes appropriate measures in order to increase the share of all kinds of energy from renewable sources in the building sector. In establishing such measures or in regional support schemes, the Building Regulation Board may take into account national measures relating to substantial increases in energy efficiency and relating to cogeneration and to passive, low or zero-energy buildings:

Provided that, by the 31st December 2014, provisions for the use of minimum levels of energy from renewable sources are introduced in new building regulations or building codes for the construction of new buildings and in existing buildings that undergo major renovation. The regulations or building codes of practice shall permit those minimum levels to be fulfilled, *inter alia*, through district heating and cooling produced using a significant proportion of renewable energy sources:

Provided also that, the requirement of appropriate measures in order to increase the share of all kinds of energy from renewable sources in the building sector shall apply to the armed forces, only to the extent that its application does not cause any conflict with the nature and primary aim of the activities of the armed forces and with the exception of material used exclusively for military purposes.

(6) The Authority shall, in collaboration with the Building Regulation Board, ensure that new public buildings, and existing public buildings that are subject to major renovation at national, regional and local level fulfil an exemplary role in the context of these regulations from the 1st January 2012 onwards:

Provided that, the obligation may be fulfilled by complying with standards for zero energy housing, or by providing that the roofs or other appropriate open spaces of public or mixed private-public buildings are used by third parties for installations that produce energy from renewable sources.

(7) With respect to building regulations and building codes, the Building Regulation Board shall promote the use of renewable energy for heating and cooling systems and equipment that achieve a significant reduction of energy consumption. New Building Regulations shall ensure that energy or eco-labels or other appropriate certificates or standards developed at national or Community level, where these exist, are used as the basis for encouraging such systems and equipment.

(8) In the case of biomass, the Authority shall promote conversion technologies that achieve a conversion efficiency of at least 85% for residential and commercial applications and at least 70% for industrial applications. In the case of heat pumps, the Authority shall promote those that fulfil the minimum requirements of eco-labelling established in Commission Decision 2007/742/EC of 9 November 2007 establishing the ecological criteria for the award of the Community eco-label to electrically driven, gas driven or gas absorption heat pumps.

(9) In the case of solar thermal energy, the Authority shall promote certified equipment and systems based on European standards where these exist, including eco-labels, energy labels and other technical reference systems established by the European standardisation bodies:

Provided that, in assessing the conversion efficiency and input or output ratio of systems and equipment for the purposes of this sub-regulation, the Authority shall use Community or, in their absence, international procedures if such procedures exist.

Information and
training.
Added by:
L.N. 210 of 2012.

18. (1) The Authority, the Building Regulation Office or the Building Regulation Board as appropriate, shall make available information on support measures to all relevant actors, such as consumers, builders, installers, *periti*, engineers and suppliers of heating, cooling and electricity equipment and systems and of vehicles compatible with the use of energy from renewable sources.

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

(3) The Authority shall ensure that certification schemes or equivalent qualification schemes become or are available by the 31st December 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps. Those schemes may take into account existing schemes and structures as appropriate, and shall be based on the criteria laid down in the Fifth Schedule. The Authority shall recognise certification awarded by other Member States in accordance with those criteria.

(4) The Authority shall make available to the public information on certification schemes or equivalent qualification schemes as referred to in sub-regulation (3). The Authority may also make available the list of installers who are qualified or certified in accordance with the provisions referred to in sub-regulation (3).

(5) The Authority shall, in collaboration with the Building Regulation Office, develop and make available suitable guidance to all relevant actors, notably planners, *periti* and engineers so that they are able to properly consider the optimal combination of renewable energy sources, of high-efficiency technologies and of district heating and cooling when planning, designing, building and renovating industrial or residential areas.

(6) The Authority, with the participation of local and regional authorities, shall develop suitable information, awareness-raising, guidance or training programmes in order to inform citizens of the benefits and practicalities of developing and using energy from renewable sources.

FIRST SCHEDULE

Regulation 5(4)

Normalisation rule for accounting for electricity generated from hydropower and wind power

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

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

where:

N = reference year;

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

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

C_j = the total installed capacity of all the 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.

SECOND SCHEDULE

Regulation 5(8)

Energy content of transport fuels

Fuel	Energy content by weight (lower calorific value, MJ/kg)	Energy content by volume (lower calorific value, MJ/l)
Bioethanol (ethanol produced from biomass)	27	21
Bio-ETBE (ethyl-tertio-butyl-ether produced on the basis of bioethanol)	36 (of which 37% from renewable sources)	27 (of which 37% from renewable sources)
Biomethanol (methanol produced from biomass, to be used as biofuel)	20	16
Bio-MTBE (methyl-tertio-butyl-ether produced on the basis of bio-methanol)	35 (of which 22% from renewable sources)	26 (of which 22% from renewable sources)
Bio-DME (dimethylether produced from biomass, to be used as biofuel)	28	19
Bio-TAEE (tertiary-amyl-ethyl-ether produced on the basis of bioethanol)	38 (of which 29% from renewable sources)	29 (of which 29% from renewable sources)
Biobutanol (butanol produced from biomass, to be used as biofuel)	33	27
Biodiesel (methyl-ester produced from vegetable or animal oil, of diesel quality, to be used as biofuel)	37	33
Fischer-Tropsch diesel (a synthetic hydrocarbon or mixture of synthetic hydrocarbons produced from biomass)	44	34
Hydrotreated vegetable oil (vegetable oil thermochemically treated with hydrogen)	44	34
Pure vegetable oil (oil produced from oil plants through pressing, extraction or comparable procedures, crude or refined but chemically unmodified, when compatible with the type of engines involved and the corresponding emission requirements)	37	34
Biogas (a fuel gas produced from biomass and/or from the biodegradable fraction of waste, that can be purified to natural gas quality, to be used as biofuel, or wood gas)	50	-
Petrol	43	32
Diesel	43	36

THIRD SCHEDULE

Regulation 5(6)

Accounting of energy from heat pumps

The amount of aerothermal, geothermal or hydrothermal energy captured by heat pumps to be considered energy from renewable sources for the purposes of these regulations, 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 5(5), 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,
- η is the ratio between total gross production of electricity and the primary energy consumption for electricity production and shall be calculated as an EU average based on Eurostat data.

FOURTH SCHEDULE

Regulation 8

Indicative trajectory

The indicative trajectory shall consist of the following shares of energy from renewable sources:

$S_{2005} + 0.20(S_{2020} - S_{2005})$, as an average for the two-year period 2011 to 2012;

$S_{2005} + 0.30(S_{2020} - S_{2005})$, as an average for the two-year period 2013 to 2014;

$S_{2005} + 0.45(S_{2020} - S_{2005})$, as an average for the two-year period 2015 to 2016;
and

$S_{2005} + 0.65(S_{2020} - S_{2005})$, as an average for the two-year period 2017 to 2018,

where

$S_{2005} = 0,0\%$,

and

$S_{2020} = 10\%$

FIFTH SCHEDULE

Regulation 18

Certification of installers

The certification schemes or equivalent qualification schemes referred to in regulation 18(3) of these regulations shall be based on the following criteria:

1. The certification or qualification process shall be transparent and clearly defined by the Authority.
2. Biomass, heat pump, shallow geothermal and solar photovoltaic and solar thermal installers shall be certified by an accredited training programme or training provider.

3. The accreditation of the training programme or provider shall be effected by the Minister or by an administrative body appointed for this purpose. The Authority shall ensure that the training programme offered by the training provider has continuity and regional or national coverage. The training provider shall have adequate technical facilities to provide practical training, including some laboratory equipment or corresponding facilities to provide practical training. The training provider shall also offer in addition to the basic training, shorter refresher courses on topical issues, including on new technologies, to enable life-long learning in installations. The training provider may be the manufacturer of the equipment or system, institutes or associations.

4. The training leading to installer certification or qualification shall include both theoretical and practical parts. At the end of the training, the installer must 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.

6. The certification schemes or equivalent qualification schemes referred to in regulation 18(3) of these regulations 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 years education in the skills referred to in paragraphs (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 Community 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 resources and ground source temperatures of different regions, soil and rock identification for thermal conductivity, regulations on using geothermal resources, 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. The training should also provide good knowledge of any European standards for heat pumps, and of relevant national and Community 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, determination of the coefficient of performance (COP) 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, superheating 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 for hot water production based on energy consumption, determining the capacity of the heat pump on the heat load for hot water production, on the storage mass of the building and on interruptible current supply; determine buffer tank component and its volume and integration of a second heating system.
- (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 heat demand, fire protection, related subsidies, as well as the design, installation, and maintenance of solar photovoltaic and solar thermal installations. The training should also provide good knowledge of any European standards for technology, and certification such as Solar Keymark, and related national and Community law. The installer should demonstrate the following key competences:
- (i) the ability to work safely using the required tools and equipment and implementing safety codes and standards and 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 determine the components' location and system layout and configuration;
 - (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 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) The installer certification should be time restricted, so that a refresher seminar or event would be necessary for continued certification.
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