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THE EUROPEAN UNION**

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MEETING DOCUMENT

from : General Secretariat of the Council

to : Delegations

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Subject : Proposal for a Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources

The text of the draft Directive is reflected in the Annex. New text compared to the Commission's proposal is reflected in **bold**, deleted text by []. New text compared to previous versions (DS 431/4/08 REV 4, 12883/08, DS 867/08 and 13610/08) is reflected in **bold underlined**.

Texts relating to certain areas which are being examined by COREPER (sustainability criteria for biofuels, overall review clause) are not yet included; this will be done in the next version.

Please note that this REV 5 incorporates many improvements, corrections and alignments proposed by the Council Legal Service and by its quality of legislation unit; these do not affect the substance of the provisions.

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the promotion of the use of energy from renewable sources

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,
Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof []¹

Having regard to the proposal from the Commission [],

Having regard to the opinion of the European Economic and Social Committee²,

Having regard to the opinion of the Committee of the Regions³,

Acting in accordance with the procedure laid down in Article 251 of the Treaty⁴,

Whereas:

[...]

New recital 11 bis:

Whilst having due regard to the provisions of this Directive, Member States should be encouraged to pursue all appropriate forms of cooperation in relation to the objectives set by this Directive. Such cooperation can take place at all levels, bilaterally or multilaterally; [] it can, apart from the mechanisms expressly foreseen by this Directive such as statistical transfers between Member States, joint renewable energy projects and the transparency platform, also [] take the form of, for example, the exchange of information and best practices, [] harmonisation of support schemes including joint support schemes, [] joint green certificate schemes, and [] joint targets.

¹ Note: reference to Article 95 deleted at the request of the Council Legal Service

² OJ C , , p. .

³ OJ C , , p. .

⁴ OJ C , , p. .

New recital 51:

Member States have different renewable potentials and operate different schemes of support for energy from renewable [] sources at the national level. The majority of Member States apply support schemes that grant benefits solely to energy from renewable sources that is produced on their territory. For the proper functioning of [] national support schemes it is vital that Member States can control the effect and costs of their national support schemes according to their different potentials.

One important means to achieve the aim of this Directive is to guarantee the proper functioning of national support schemes as under the Directive 2001/77/EC in order to maintain investor confidence and in order to allow Member States to design effective national measures for target compliance.

The Directive aims at facilitating cross-border support of renewable energies without affecting national support schemes. It introduces optional measures of co-operation between Member States which allow Member States to agree on the extent to which one Member State supports the energy production in another Member State and on the extent to which the energy production from renewable sources should count towards [] the national overall targets of either of them.

In order to ensure the effectiveness of both measures of target compliance, i.e. national support schemes and co-operation mechanisms, it is essential that Member States are able to determine if and to what extent their national support schemes apply to energy from renewable sources produced in other Member States and to agree on this by applying the measures of co-operation foreseen in this Directive.

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Scope

This Directive establishes a common framework for the promotion of energy from renewable sources. It sets mandatory **national** targets for the overall share of energy from renewable sources in **gross final** consumption **of energy** and for the share of energy from renewable sources in transport. It lays down rules relating to **statistical transfers between Member States, joint projects between Member States and with third countries**, guarantees of origin, administrative procedures, **information and training** and electricity grid connections in relation to energy from renewable sources. It establishes [] sustainability criteria for biofuels and other bioliquids.

Article 2

Definitions

For the purposes of this Directive, the definitions in Directive 2003/54/EC shall apply.

The following definitions shall also apply:

- (a) *"energy from renewable sources"* means **energy from** renewable non-fossil [] sources: wind, solar, geothermal, [**ocean**]⁵, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;
- (b) *"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;

⁵ **Note: "ocean" appears more appropriate since it covers a wider range: wave, tidal, saline osmosis and ocean thermal energy. A recital could explain this.**

- (c) "**gross final consumption of energy**" means the energy commodities delivered for energy purposes to [] industry, transport ⁶, 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**;
- (d) "*district heating or cooling*" means the distribution of thermal energy in the form of steam, hot water or chilled liquids, from a central source of production through a network to multiple buildings **or sites**, for the use of space or process heating or cooling;
- (e) "*bioliquids*" means liquid fuel for energy purposes, **including electricity and heating and cooling**, produced from biomass;
- (ee) "biogas" means gaseous fuel for energy purposes, including electricity, heating and cooling produced from biomass;**
- (f) "*biofuels*" means liquid or gaseous fuel for transport produced from biomass;
- (g) "*guarantee of origin*" means an electronic document which has the function of providing proof that a given quantity of energy was produced from renewable sources;

⁶ **Note: the following text (which will form part of the overall review clause to be included in Article 20) resulted from the discussions in Coreper:**

"At the latest in 2014, the Commission shall submit a report relating to the contribution to the achievement of the national overall targets in 2020 referred to in Article 3(1) that can be expected to come from the use of renewable energy in commercial aviation, taking into account actual and estimated future technological progress in related domains and the actual and estimated future use of renewable energy in commercial aviation.

If this report concludes that the share of renewable energy in the gross final consumption of energy of commercial aviation is not likely to make a substantial contribution in 2020, the Commission shall submit a proposal to the European Parliament and the Council to exclude commercial aviation from the definition of gross final consumption of energy referred to in point (c) of Article 2."

- (h) “*support scheme*” means any **instrument, scheme or mechanism** [] **applied** by a Member State or a group of Member States, that **promotes the use of** energy from renewable sources [] by reducing the cost of [] this 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, green certificates, investment aid, tax exemptions or reductions, tax refunds, renewable energy obligation support schemes, and direct price support schemes including feed-in tariffs and premium payments;**
- (i) “*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. **Schemes under which such requirements may be fulfilled by using green certificates are included.**

Article 3

National overall targets and measures for the use of energy from renewable sources

1. Each Member State shall ensure that the share of energy from renewable sources, [] **calculated in accordance with Articles 5 to 10**, in **gross** final consumption of energy in 2020 is at least [] **its national** overall target for the share of energy from renewable sources in that year, as set out in the third column of the table in Part A of Annex I.
2. Member States shall introduce appropriate measures **designed** to ensure that the share of energy from renewable sources equals or exceeds that shown in the indicative trajectory set out in Part B of Annex I.⁷

⁷ **A new recital 21bis will be added: “Member States should not be obliged to acquire an amount of renewable energy through statistical transfers or joint projects [] if they risk falling short of their indicative trajectory, unless the corresponding amount of such purchases is foreseen in their national action plan as referred to in Article 4, or in their biennial reports as referred to in Article 19.”**

[]

- 2a. In order to reach the targets set in paragraphs 1 and 2 of this Article Member States may inter alia apply the following measures:
- (a) support schemes;
 - (b) measures of co-operation between different Member States and with third countries for achieving their national overall targets in accordance with Articles 5 to 10 of this Directive [].

Without prejudice to Articles 87 and 88 of the Treaty, Member States shall have the right to decide in accordance with Articles 7 to 10 to which extent they support energies from renewable sources which are produced in a different Member State.

[]

3. Each Member State shall ensure that the share of energy from renewable sources in **all forms of** transport in 2020 is at least 10% of final consumption of energy in transport in that Member State.

For the purposes of this paragraph only, the following provisions shall apply:

- (a) the contribution from electricity produced from renewable sources and consumed in all types of electric vehicles shall be considered to be 2,5 times the energy content of the renewable electricity input. The average share of renewable electricity for the EU [two years before the year in question] shall be used for the calculation of the renewable electricity input for electric vehicles. By way of derogation from the previous sentence, the Commission may lay down rules permitting, subject to certain conditions, the whole amount of the electricity originating from renewable sources used to power electric vehicles to be considered. Such a measure designed to amend non-essential elements of this Directive shall be adopted in accordance with the procedure referred to in Article 21(2);**
- (b) For the calculation of the denominator, that is the total amount of energy consumed in transport for the purposes of the first subparagraph, [] only petrol, [] diesel, biofuels used in land transport and electricity shall [] be taken into account;**

- (c) **For the calculation of the nominator, that is the share of energy from renewable sources consumed in transport for the purposes of the first subparagraph, all types of renewable fuels used in all forms of transport shall be taken into account.**

Article 4

National action plans

1. Each Member State shall adopt a national action plan.

The national action plans shall set out Member States' **national overall** targets for the shares of energy from renewable sources in transport, electricity and heating and cooling in 2020, and adequate measures to be taken to achieve these **national overall** targets, **including planned statistical transfers or joint projects**[], [] national policies to develop existing biomass resources and mobilise new biomass resources for different uses, and the measures to be taken to fulfil the requirements of Articles 12 to 17.

The Commission shall adopt by [30 June 2009] [] a [] format for the national action plans. Member States shall comply with this format in the presentation of the national action plans [].⁸

2. Member States shall notify their national action plans to the Commission by [31 March 2010] at the latest. []

⁸ At the end of recital 50 will be added: "It is appropriate to require the use of a **harmonised format for national action plans which Member States should submit. These plans could include estimated costs and benefits of the measures envisaged, measures relating to the necessary extension and/or reinforcement of the existing grid infrastructure, estimated costs to develop renewable energies in excess of the level required by the indicative trajectory, information on national support schemes and information on their use of renewable energy in new or refurbished buildings.**"

- 2a. Each Member State shall publish and notify to the Commission, six months before its national action plan is due, a forecast document indicating:
- a) its estimated excess production of renewable energy compared to the indicative trajectory which could be exported or statistically transferred to other Member States as defined in Article 7 to 10 of this Directive, as well as the estimated potential for [] joint projects, until 2020;
 - b) its estimated demand for renewable energy to be satisfied by means other than domestic production until 2020.

This information may include elements relating to cost and financing.

The forecast shall be updated in the reports of the Member States as set out in Article 19(1)(l) and (m).

3. A Member State whose share of energy from renewable sources has fallen below the indicative trajectory [] in the immediately preceding two-year period set out in Part B of Annex I shall submit an **amended** [] action plan to the Commission by 30 June of the following year [], setting out adequate measures **designed** to ensure that in the future the share of energy from renewable sources equals or exceeds the indicative trajectory in Part B of Annex I. **The Commission may however, taking into account the margin by which the Member State has missed its national overall target, the current and future measures taken by the Member State and factors beyond Member States' control, adopt a decision to release the Member State of this obligation.**
4. **The Commission shall evaluate, by [31 December 2010] [], the national action plans, notably the adequacy of the appropriate measures envisaged by the Member State in accordance with Article 3(2). [] In response to a national action plan or to an amended national action plan, the Commission may issue a recommendation.**

Article 5

Calculation of the share of energy from renewable sources

1. The **gross** final consumption of energy from renewable sources in each Member State shall be calculated as the sum of:
 - (a) final consumption of electricity from renewable energy sources;
 - (b) final consumption of energy from renewable sources for heating and cooling;
and
 - (c) final energy from renewable sources consumed in transport.

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

Subject to the last subparagraph of Article 15(1), biofuels and other bioliquids that do not fulfil the [] sustainability criteria **set out** in Article 15**(2) to (5)** shall not be taken into account.

Member States shall ensure coherence of statistical information used in calculating these sectoral and overall shares and statistical information reported to the Commission under the Energy Statistics Regulation EC No.xx/xx.

The share of energy from renewable sources in a Member State shall include the net statistical transfer in accordance with Article 7 and the amount of energy produced on the territory of another Member State and counting towards its national overall target in accordance with Articles 8 and 8a.

2. Member States may apply to the Commission for account to be taken, for the purposes of paragraph 1, of the construction of renewable energy plants with very long lead-times [] under the following conditions:

- (a) construction of the renewable energy plant must have started by 2016;
- (b) the renewable energy plant must have a production capacity equal to or in excess of [5000] MW;
- (c) it must not be possible for the plant to become operational by 2020;
- (d) it must be possible for the plant to become operational by 2022.

The Commission shall decide, for each Member State involved in [] **these renewable energy plants in accordance with the provisions relating to joint projects referred to in Articles 8, 8a, 9 and 9a**, what adjustment **is to** be made to the [] share of energy from renewable sources for the year 2020, **whilst respecting the distribution, for target accounting purposes, of the renewable energy produced agreed between the participants in the framework of a joint project.** The Commission shall take into account the state of advancement of construction, the amount of financial support being provided to the plant, [] the quantity of renewable energy to be produced by the plant in an average year when completed and the [] share of each Member State involved in the plant in relation to its national **gross final** consumption of energy, thus ensuring that each Member State involved, irrespective of its size, is able to make use of these provisions on an equal footing.

Acting in accordance with the procedure referred to in Article 21(2), the Commission shall develop rules for the implementation of this **paragraph** by 31 December 2012 [].

3. Where a Member State considers that, due to *force majeure*, it is [] **impossible for it** to meet [] **its** share of energy from renewable sources in **gross** final consumption of energy in 2020 set out in the third column of the table in Annex I, it shall inform the Commission as soon as possible. The Commission shall adopt a decision on whether *force majeure* has been demonstrated, in which case it shall decide what adjustment shall be made to the Member State's **gross** final consumption of energy from renewable sources for the year 2020.

4. For the purposes of paragraph 1(a) **of this Article, gross** final consumption of electricity from renewable sources shall be calculated as the quantity of electricity produced in a Member State from renewable energy sources, excluding the production of electricity by pumped storage units using water that has previously been pumped uphill, adjusted in accordance with Article **8 and 8a. Electricity produced from renewable energy sources in third countries shall be taken into account in accordance with Articles 9 and 9a.**

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 Annex II.

5. For the purposes of paragraph 1(b) **of this Article**, the **gross** final consumption of energy from renewable sources for heating and cooling shall be calculated as the **quantity of district heating and cooling produced in a Member State** [] from renewable sources, **plus the consumption of other energy from renewable sources in** [] industry, [] households, services, agriculture, forestry and fisheries for heating, [] cooling **and process** purposes, [].

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

Thermal energy generated by heat pumps using geothermal energy from the ground or water shall be taken into account for the purposes of paragraph 1(b) **of this Article**. Thermal energy generated by heat pumps using ambient heat from the air shall be taken into account for the purposes of paragraph 1(b) **of this Article**, provided that the energy efficiency of such heat pumps meets the minimum requirements of eco-labelling laid down pursuant to Regulation (EC) No 1980/2000, where applicable, in particular the minimum coefficient of performance established in Decision 2007/742/EC, and reviewed in accordance with that Regulation. **The energy used to drive heat pumps shall be deducted from the total usable heat.**

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

6. The energy content of the transport fuels listed in Annex III shall be taken to be as set out in that Annex. Annex III may be adapted to technical and scientific progress. Such a measure designed to amend non-essential elements of this Directive shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 21(3).
7. 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.

8. The methodology and definitions used in the calculation of the share of energy from renewable sources shall be those of Regulation (EC) No xx/xx on energy statistics⁹
¹⁰.

[]

Article 7

Statistical transfers between Member States

1. **Member States may make arrangements for the statistical transfer of a specified amount of energy from renewable sources to be transferred from one Member State to another Member State. The transferred quantity is to be:**
- (a) **deducted from the amount of energy from renewable sources that is taken into account in measuring compliance by the Member State making the transfer with the requirements of Article 3(1) and 3(2) []; and**
- (b) **added to the amount of energy from renewable sources that is taken into account in measuring compliance by another Member State accepting the transfer with the requirements of Article 3(1) and 3(2) [].**
2. **Arrangements under paragraph 1 of this Article may have effect for one or more years. [] They must be notified to the Commission no later than 3 months after the end of the first year in which they take effect. The information sent to the Commission shall include the quantity and price of the energy involved.**

⁹ [Energy Statistics Regulation].

¹⁰ Note: a package of compromise amendments has been adopted by the EP on 12 March 2008, with a view to reaching an agreement on this Regulation in first reading; see 7410/08.

Article 8

Joint projects between Member States []

1. Two or more Member States may cooperate on all types of joint projects relating to the production of energy from renewable electricity, heating or cooling. This cooperation may involve private operators.

2. Member States shall notify the Commission of the proportion or amount of energy from renewable electricity, heating or cooling produced by any joint project [] in their territory, that became operational after the date of entry into force of this Directive, or that was refurbished as regards the increase of the capacity, [] which is to be regarded as counting towards the national overall target of another Member State for the purposes of measuring target compliance with the requirements of this Directive.

3. The notification 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;

(d) specify the period, in whole calendar years, during which the electricity or heating or cooling from renewable sources produced by the installation is to be regarded as counting towards the national overall target of the other Member State.

4. The period specified under point (d) of paragraph 3 [] shall be expressed in whole calendar years and shall not extend beyond 2020. The duration of a joint project may extend beyond 2020.

5. A notification made under this Article may not be varied or withdrawn without the joint agreement of the Member State making the notification and the Member State identified in accordance with point (c) of paragraph 3.

Article 8a

Effects of joint projects between Member States []

1. Within 3 months of the end of each year falling within the period specified under Article 8(3)(d), the Member State having made the notification under Article 8 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 Article 8; 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 Member State 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 this Directive concerning national overall targets, the amount of electricity or heating or cooling from renewable energy sources notified in accordance with point (b) of paragraph 1 [] shall:

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

□

Article 9

*Joint projects between Member States and third countries*¹¹

1. One or more Member States may cooperate with one or more third countries on all types of joint projects regarding the generation of electricity from renewable sources. This cooperation may involve private operators.
2. Electricity from renewable energy sources produced in a third country shall only be taken into account for the purposes of measuring compliance with the requirements of this Directive concerning national overall targets if the following conditions are met:
 - (a) the electricity is consumed in the Community. This condition is deemed to be met if:
 - (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 Community side of an interconnector; and
 - (iii) the nominated capacity and the production of electricity from renewable energy sources by the installation referred to in point (b) of paragraph 2 refer to the same period of time;

¹¹ A recital will be added: "If, by virtue of a decision taken under the Energy Community Treaty to that effect, the contracting parties to that treaty become bound by the relevant provisions of this Directive, the measures of co-operation between Member States foreseen in this Directive will be applicable to them."

- (b) the electricity is produced by a newly constructed installation that became operational after the entry into force of this Directive or by an installation that was refurbished as regards the increase of the capacity after the entry into force of this Directive, under a joint project [] as referred to in paragraph 1; and
 - (c) the amount of electricity produced and exported has not received support from a support scheme of a third country other than all types of investment aid granted to the installation.
- 3. 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 a Member State for the purposes of measuring compliance with Article 3, shall be notified to the Commission. The notification shall be made by the Member State towards whose overall national target the proportion or amount of electricity is to count.
- 4. The notification 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 targets of a Member State;
 - (c) specify the period during which the installation is to be regarded as counting towards the national overall target of the Member State;
 - (d) include a written acknowledgement of points (b) and (c) by the third country in whose territory the installation is to become operational.
- 5. The period specified under point (c) of paragraph 4 shall be expressed in whole calendar years and may extend beyond 2020.
- 6. A notification made under this Article may not be varied or withdrawn without the joint agreement of the Member State making the notification and the third country which has acknowledged the joint project in accordance with point (d) of paragraph 3.

Article 9b

Effects of joint projects between Member States and third countries

1. Within 3 months of the end of each year falling within the period specified under Article 9(4)(c), the Member State having made the notification under Article 9 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 Article 9; and

(b) the amount of electricity produced during the year from renewable energy sources by that installation which is to count towards its national overall target in accordance with the terms of the notification.

2. The Member State shall send the letter of notification to the third country which has acknowledged the project in accordance with Article 9(3)(d) and to the Commission.

3. For the purposes of measuring target compliance with the requirements of this Directive concerning national overall targets, the amount of electricity from renewable energy sources notified in accordance with point (b) of paragraph 1 shall be added to the amount of energy from renewable sources that is taken into account, in measuring compliance by the Member State issuing the letter of notification.

□

Article 10
Joint support schemes

- 1. Without prejudice to the obligations of Member States under Article 3, two or more Member States may decide, on a voluntary basis, to join or partly coordinate their national support schemes. 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 Article 7, or**
 - (b) set up a joint system that allocates amounts of energy from renewable sources according to a mechanism or distribution rule agreed by participating Member States. Such a joint system shall be notified to the Commission no later than [three months after the end of the first year in which it takes effect].**
- 2. Within 3 months of the end of each year each Member State having made the notification 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 this Directive concerning national overall targets, the amount of electricity or heating or cooling from renewable energy sources notified in accordance with paragraph 2 shall be reallocated between the concerned Member States in accordance with the notified distribution rule.**

Article 11
Capacity increases

For the purpose of Article [] Article 8(2) [] **and 9(2)(b)**, units of renewable energy 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.

Article 12
Administrative procedures, regulations and codes

1. Member States shall ensure that any national rules concerning the authorisation, certification and licensing procedures that are applied to plants for the production of electricity, heating or cooling from renewable sources, and to the process of transformation of biomass into biofuels or other energy products, are proportionate and necessary.

Member States shall, in particular, **take appropriate steps to** ensure that:

- (a) **subject to differences between Member States in their administrative structures and organisation**, the respective responsibilities of national, regional and local administrative bodies for authorisation, certification and licensing procedures are clearly **coordinated and** defined, with [] **transparent timetables** for **determining** planning and building applications;
- (b) administrative procedures are streamlined and expedited at the appropriate administrative level;
- (c) rules governing authorisation, certification and licensing are objective, transparent, [] **do not discriminate between applicants** [], and take fully into account the particularities of individual renewable energy technologies;
- (d) administrative charges paid by consumers, planners, architects, builders and equipment and system installers and suppliers are transparent and cost-related;
and

- (e) less burdensome authorisation procedures are established for smaller projects, **where appropriate** [].

[]

2. Member States 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.
3. Member States **shall encourage all actors, in particular** [] local and regional administrative bodies to [] **install** equipment and systems for the use of heating, cooling and electricity from renewable sources and for district heating and cooling when planning, designing, building and refurbishing industrial or residential areas.
4. **Member States shall introduce in their building regulations and codes appropriate measures in order to increase gradually the share of all kinds of energy from renewable sources in the building sector.**

In establishing these building regulations and codes, Member States may take into account *inter alia* national measures relating to energy efficiency and cogeneration, to passive, low or zero energy buildings, as well as local limitations in the availability of renewable energy resources.

In these building regulations and codes, Member States may furthermore require the use of minimum levels of energy from renewable sources in new buildings and, where appropriate, in existing buildings that are subject to major renovation.

The requirements of the first subparagraph 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.

5. With respect to their building regulations and codes, Member States shall promote the use of renewable energy heating and cooling systems and equipment that achieve a significant reduction of energy consumption. Member States shall use energy or eco-labels or other appropriate certificates or standards developed at national or European level, where these exist, as the basis for encouraging such systems and equipment.

In the case of biomass, Member States 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, Member States shall promote heat pumps which achieve the minimum requirements of eco-labelling established in Decision 2007/742/EC.

In the case of solar **thermal** energy, Member States 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.**

In assessing the conversion efficiency and input/output ratio of systems and equipment for the purposes of this paragraph, Member States shall use Community or, failing these, international procedures if such procedures exist.

Article 13

Information and training

1. Member States shall ensure that information on support measures is made available to consumers, builders, installers, architects and suppliers of heating, cooling and electricity equipment and systems and of vehicles compatible with the use of [] **renewable energies.**

2. Member States shall ensure that information on the net benefits, cost and energy efficiency of equipment and systems for the use of heating, cooling and electricity from renewable sources is made available either by the supplier of the equipment or system or by the national competent authorities.
3. Member States shall **ensure that** [] certification schemes **or equivalent qualification systems become or are available by 31 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 **or equivalent qualification systems may take into account existing schemes and structures as appropriate, and shall** be based on the criteria laid down in Annex IV. Each Member State shall recognise certification awarded by other Member States in accordance with these criteria. ¹²
- 3a **Member States shall make available to the public information on certification schemes or equivalent qualification systems as referred to in paragraph 3. Member States may also make available the list of installers who are qualified or certified in accordance with the provisions referred to in paragraph 3.**
4. Member States shall **ensure that** [] guidance for planners and architects **is made available** so that they are able properly to consider the use of energy from renewable sources and of district heating and cooling when planning, designing, building and renovating industrial or residential areas.

¹² **Note: a new recital 28 will be added: "[] As far as the access or pursuit of the profession of installer is a regulated profession, the preconditions for the recognition of professional qualifications are laid down in Directive 2005/36/EC on the recognition of professional qualifications. Therefore, this Directive applies without prejudice to Directive 2005/36/EC."**

Article 13a

Guarantees of origin of electricity, heating and cooling produced from renewable energy sources

1. [] For the purposes of [] proving **to final customers** the share or quantity of renewable energy in an energy supplier's energy mix, **including as required by Article 3(6) of Directive 2003/54/EC**, Member States shall ensure that the origin of electricity produced from renewable energy sources [] can be guaranteed as such within the meaning of this Directive, **according to objective, transparent and non-discriminatory criteria.** []

1a. To that end, Member States shall ensure that a guarantee of origin¹³ is issued in response to a request from a producer of **electricity from renewable energy sources**[], **Member States may arrange for guarantees for origin to be issued in response to a request from producers of heating and cooling from renewable energy sources. Such an arrangement may be made subject to a minimum capacity limit.** A guarantee of origin shall be of the standard size of 1 MWh. No more than one guarantee of origin shall be issued in respect of each **unit** of energy produced.

¹³ The Presidency proposes to introduce an amendment to the definition of a guarantee of origin in Article 2 (g) :

(g) “guarantee of origin” means an electronic document which has [] the **sole** function of providing proof **to a final customer** that a given **share or** quantity of energy was produced from renewable sources **as required by Article 3 (6) of Directive 2003/54.**

Furthermore, the Presidency proposes the following recital:

"Guarantees of origin have the sole function of proving to a final customer that a given share or quantity of energy was produced from renewable sources. A guarantee of origin may be transferred, independently of the energy to which it relates, from one holder to another. However, double counting and double disclosure must be avoided: renewable energy of which the accompanying guarantee of origin was sold separately by the producer may not be disclosed or sold to the final customer as energy produced from renewable sources.

The guarantee of origin has no function in terms of a Member State's compliance with Article 3 of this Directive. Therefore, the trade in guarantees of origin has no effect on national statistics relating to the production of energy produced from renewable sources."

1b. Member States may provide that guarantees of origin are only issued as far as the corresponding unit of renewable energy production has not benefited from a support scheme.

1c. A guarantee of origin may only be issued in respect of the calendar year of production of the corresponding energy unit. It shall be cancelled upon its use, no later than [nine] months after the end of the calendar year of production.

1d. Member States or designated competent bodies shall supervise the issuance, transfer and cancellation of such guarantees of origin. The designated competent bodies shall have non-overlapping geographical responsibilities, and be independent of generation, trade[] and supply [] activities [].

2. [] Member States or the competent bodies shall put in place appropriate mechanisms to ensure that guarantees of origin shall be issued, transferred and cancelled electronically and are accurate, reliable and fraud-resistant.

2a. A guarantee of origin shall specify, at least:

(a) the energy source from which the energy was produced and the starting and ending dates of its production;

(b) whether the guarantee of origin relates to:

(i) electricity; or

(ii) heating and/or cooling;

(c) the identity, location, type and capacity of the installation where the energy was produced;

(d) whether [] and to what extent the installation has benefited from investment support, and whether and to what extent the unit of energy has benefited in any other way from a national support scheme;

(e) the date of the installation's becoming operational;

(f) the date and country of issue and a unique identification number.

2b. Where an electricity supplier is required to prove the share or quantity of renewable energy in its energy mix for the purposes of Article 3(6) of Directive 2003/54/EC, it may do so by using its guarantees of origin.

2c. The amount of renewable energy transferred by an energy supplier through guarantees of origin to a third party shall be deducted from the share of energy from renewable sources in the supplier's energy mix for the purposes of Article 3(6) of Directive 2003/54/EC¹⁴.

3. Member States shall recognise guarantees of origin issued by other Member States in accordance with this Directive, **exclusively as proof of the elements referred to in paragraph 1 and 2a, (a)-(f).** A Member State may only refuse to recognise a guarantee of origin when it has **well-founded doubts about its accuracy, reliability or veracity.** The Member State shall notify the Commission of such a refusal and its justification [].

3a. If the Commission finds that a refusal to recognise a guarantee of origin is unfounded, the Commission may adopt a Decision requiring the Member State in question to recognise it. []

Article 14

Access to the electricity grid

1. Member States shall take [] **appropriate** steps to develop grid infrastructure to accommodate the further development of electricity production from renewable energy sources, including **interconnection** [] between Member States.

¹⁴ **Note: consequential changes to Article 3(6) of Directive 2003/54/EC must be made, notably to specify the consequences of the sale of the GOs for that article (such as: how should the supplier denominate the renewable energy for which he has sold the GOs and which consequently can no longer be called 'renewable'? Is the requirement in Art. 3(6) point (b) annulled?).**

2. **[] Subject to requirements relating to the maintenance of the reliability and safety of the grid, which shall be based on transparent and non-discriminatory criteria defined by the competent national authorities** ¹⁵:
- (a) Member States shall ensure [] that transmission system operators and distribution system operators in their territory guarantee the transmission and distribution of electricity produced from renewable energy sources;
- (b) **Member States** shall also provide for **either priority access or guaranteed access** to the grid-system of electricity produced from renewable energy sources;

¹⁵ **A new recital will be added; the Presidency proposes to shorten this text by deleting the text between []: " Priority access and guaranteed access for electricity from renewable energy sources are important for integrating renewable energy sources into the internal market in electricity, in line with the Article 11(2) and developing further Article 11(3) of Directive 2003/54/EC. Requirements relating to the maintenance of the reliability and safety of the grid and to the dispatching may differ according to the characteristics of the national grid and its operation. Priority access to the grid provides an assurance given to [] connected generators of electricity from renewable energy sources that they will be able to sell and transmit the electricity from renewable energy sources in accordance with connection rules [at all times,] whenever the source is available. [] [In case the electricity from renewable energy sources is integrated into the spot market,] [] guaranteed access ensures that all electricity sold and supported [] gets access to the grid, allowing the use of a maximum of electricity from renewable energy sources from installations already connected to the grid. [However, this does not imply any obligation of Member States to support or to introduce purchase obligations for renewable energy. In other systems, a fixed price is defined for electricity from renewable energy sources, usually in combination with a purchase obligation for the system operator. In this case priority access is already given.]**

Recital 31 will be complemented as follows:

- (31) In certain circumstances it is not possible to fully ensure transmission and distribution of electricity produced from renewable energy sources without affecting the reliability and safety of the grid system. In these circumstances it may be appropriate for financial compensation to be given to those producers. **Nevertheless, the objectives of this Directive require a sustained increase in the transmission and distribution of electricity produced from renewable energy sources without affecting the reliability and safety of the grid system. To this effect, Member States should take appropriate measures in order to allow a higher penetration of electricity from renewable sources, *inter alia* by**

(c) when dispatching electricity generating installations, transmission system operators shall give priority to generating installations using renewable energy sources **insofar as the operation of the national electricity system permits and based on transparent and non-discriminatory criteria.**

3. Member States shall require transmission system operators and distribution system operators to set up and **make public** [] their standard rules relating to the bearing and sharing of costs of technical adaptations, such as grid connections and grid reinforcements, which are necessary in order to integrate new producers feeding electricity produced from renewable energy sources into the interconnected grid.

These rules shall be based on objective, transparent and non-discriminatory criteria taking particular account of all the costs and benefits associated with the connection of these producers to the grid and of the particular circumstances of producers located in peripheral regions and in regions of low population density. The rules may provide for different types of connection.

4. Where appropriate, Member States may require transmission system operators and distribution system operators to bear, in full or in part, the costs referred to in paragraph 3. Member States shall review and take the necessary measures to improve the frameworks and rules for bearing and sharing of costs referred to in paragraph 3 by 30 June 2011 [] and every two years thereafter to ensure the integration of new producers as referred to in that paragraph.

5. Member States shall require transmission system operators and distribution system operators to provide any new producer wishing to be connected to the system with a comprehensive and detailed estimate of the costs associated with the connection. Member States may allow producers of electricity from renewable energy sources wishing to be connected to the grid to issue a call for tender for the connection work.

taking into account the specificities of variable resources and resources which are not yet storable.

6. The sharing of costs referred in paragraph 3 shall be enforced by a mechanism based on objective, transparent and non-discriminatory criteria taking into account the benefits which initially and subsequently connected producers as well as transmission system operators and distribution system operators derive from the connections.
7. Member States shall ensure that the charging of transmission and distribution **tariffs** does not discriminate against electricity from renewable energy sources, including in particular electricity from renewable energy sources produced in peripheral regions, such as island regions, and in regions of low population density.
8. Member States shall ensure that **tariffs** charged by transmission system operators and distribution system operators for the transmission and distribution of electricity from plants using renewable energy sources reflect realisable cost benefits resulting from the plant's connection to the network. Such cost benefits could arise from the direct use of the low-voltage grid.

Article 15

Sustainability criteria for biofuels and other bioliquids

[p.m. handled by Ad Hoc Group Biofuels]

7. The Commission shall report on requirements for a sustainability scheme for energy uses of biomass, other than biofuels and other bioliquids, by 31 December 2010 at the latest. The report shall be accompanied, where appropriate, by proposals for a sustainability scheme for other energy uses of biomass, to the European Parliament and the Council.

Article 16

Verification of compliance with the sustainability criteria for biofuels and other bioliquids

[p.m. handled by Ad Hoc Group Biofuels]

Article 17

Calculation of the greenhouse gas impact of biofuels and other bioliquids

[p.m. handled by Ad Hoc Group Biofuels]

Article 18

Specific provisions related to biofuels

1. Member States shall ensure that information is given to the public on the availability of biofuels and other renewable transport fuels. []
[]
- 2.** Member States shall ensure that diesel fuel [] with at least 5% biofuel content by volume is made available by 31 December 2014 [] in filling stations **that sell diesel fuel** with more than **one** [] diesel fuel **storage tank**.
- 3.** For the purposes of demonstrating compliance with national renewable energy obligations placed on operators, 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.

Article 19

Reporting by the Member States

1. **Each** Member State shall submit a report to the Commission on progress in the promotion and use of energy from renewable sources by **[31 December 2011]** at the latest, and every 2 years thereafter. **The sixth report, to be submitted by 31 December 2021 at the latest, shall be the last report required.**

The report shall detail in particular:

- (a) the sectoral (**electricity, heating and cooling, and transport**) and overall shares of energy from renewable sources in the preceding two calendar years and the measures taken or planned at national level to promote the growth of renewable energy taking into account the indicative trajectory in Part B of Annex I, **in accordance with Article 5**;
- (b) the introduction and functioning of support schemes and other measures to promote energy from renewable sources, and any developments in the measures used with respect to those set out in the Member State's national action plan;
- (c) how, where applicable, **the** Member State **has** structured **its** support schemes to take into account renewable energy applications that give additional benefits in relation to other, comparable applications, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material;
- (d) the functioning of the system of guarantees of origin for electricity and heating and cooling from renewable energy sources and the measures taken to ensure the reliability and protection against fraud of the system;
- (e) progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of energy from renewable sources;
- (f) measures taken to ensure the transmission and distribution of electricity produced from renewable energy sources, and to improve the framework or rules for bearing and sharing of costs referred to in Article 14(3);

- (g) developments in the availability and use of biomass resources for energy purposes;
 - (h) commodity price and land use changes within the Member State associated with its increased use of biomass and other forms of energy from renewable sources;
 - (i) the development and share of biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material;
 - (j) **[p.m. handled by Ad Hoc Group Biofuels]**
 - (k) the estimated net greenhouse gas savings due to the use of energy from renewable sources.
 - (l) **its estimated excess production of renewable energy compared to the indicative trajectory which could be exported or statistically transferred to other Member States, as well as the estimated potential for joint projects, until 2020;**
 - (m) **its estimated demand for renewable energy to be satisfied by means of [] imports or statistical transfers from other Member States or imports from third countries, until 2020;**
2. In estimating net greenhouse gas savings from the use of biofuels, **the** Member State may, for the purpose of the reports referred to in paragraph 1, use the typical values given in [] part A and part B **of Annex VII**.
3. In **its** first report, **the** Member State shall outline whether **it** intends to:
- (a) establish a single administrative body responsible for processing authorisation, certification and licensing applications for renewable energy installations and providing assistance to applicants;

- (b) provide for automatic approval of planning and permit applications for renewable energy installations where the authorising body has not responded within the set time limits; and
 - (c) indicate geographical locations suitable for exploitation of energy from renewable sources in land-use planning and for the establishment of district heating and cooling.
4. **In each report the Member State shall have the possibility to correct the data of the previous reports.**

Article 20

Monitoring and reporting by the Commission

[p.m. handled by Ad Hoc Group Biofuels]

3. On the basis of the reports submitted by Member States pursuant to Article 19(1) and the monitoring and analysis referred to in paragraph 1 of this Article, the Commission shall report every two years to the European Parliament and the Council. The first report shall be submitted in 2012.

Article 20a

Transparency platform

1. **The Commission shall establish an online public transparency platform. This platform shall serve to increase transparency, and to facilitate and promote cooperation between Member States, in particular concerning statistical transfers referred to in Article 7 and joint projects referred to in Articles 8 and 9. In addition, the platform may be used to make public relevant information which the Commission or a Member State deems to be of key importance to this Directive and to the achievement of its objectives.**

2. The Commission shall make public on the transparency platform the following information, where appropriate in aggregated format preserving the confidentiality of commercially sensitive information:
- (a) Member States' national action plans;
 - (b) Member States' forecast documents referred to in Article 4(2bis), complemented as soon as possible with the Commission's summary of excess production and estimated import demand;
 - (c) Member States' offers to cooperate on statistical transfers or joint projects, upon request of the Member State concerned;
 - (d) the information referred to in Article 7(2) on the statistical transfers between Member States;
 - (e) the information referred to in Articles 8(2), 8(3), 9(3) and 9(4) on joint projects;
 - (f) Member States' national reports as referred to in Article 19;
 - (g) the Commission's reports as referred to in Article 20(3).

However, upon request of the Member State that submitted the information, the Commission shall not make public Member States' forecast documents referred to in Article 4(2a), and the information in Member States' national reports referred to in Article 19(1) (l) and (m).

Article 21

Committee

1. The Commission shall be assisted by a Committee.
2. Where reference is made to this paragraph, Articles 3 and 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.
3. Where reference is made to this paragraph, Articles 5a(1) to (4) and Article 7 of Decision 1999/468/EC shall apply, having regard to the provisions of Article 8 thereof.

Article 22

Amendments and repeal

1. In Directive 2001/77/EC, Article 2, Article 3(2), and Articles 4 to 8 [] **shall be** deleted with effect from 1 April 2010.
2. In Directive 2003/30/EC, Article 2, Article 3(2), (3) and (5), and Articles 5 and 6 [] **shall be** deleted with effect from 1 April 2010.
3. Directives 2001/77/EC and 2003/30/EC [] **shall be** repealed with effect from 1 January 2012.

Article 23

Transposition

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by [31 March 2010] at the latest.
[]¹⁶

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

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

Article 24

Entry into force

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

Article 25

Addressees

This Directive is addressed to the Member States.

Done at ... [],

For the European Parliament

The President

For the Council

The President

¹⁶ **Note: the following recital will be added: "In accordance with paragraph 34 of the Interinstitutional agreement on better law-making *, Member States are encouraged to draw up, for themselves and in the interest of the Community, their own tables illustrating, as far as possible, the correlation between this Directive and the transposition measures and to make them public."**

The Commission maintains a reservation on this addition.

Annex I – National overall targets for the share of energy from renewable sources in gross final consumption of energy in 2020 (*)

A. National overall targets

	Share of energy from renewable sources in <u>gross</u> final consumption of energy, 2005 (S₂₀₀₅)	<u>National overall target</u> for the share of energy from renewable sources in <u>gross</u> final consumption of energy, 2020 (S₂₀₂₀)
Belgium	2.2%	13%
Bulgaria	9.4%	16%
The Czech Republic	6.1%	13%
Denmark	17.0%	30%
Germany	5.8%	18%
Estonia	18.0%	25%
Ireland	3.1%	16%
Greece	6.9%	18%
Spain	8.7%	20%
France	10.3%	23%
Italy	5.2%	17%
Cyprus	2.9%	13%
Latvia	34.9%	42%
Lithuania	15.0%	23%
Luxembourg	0.9%	11%
Hungary	4.3%	13%
Malta	0.0%	10%
The Netherlands	2.4%	14%
Austria	23.3%	34%
Poland	7.2%	15%
Portugal	20.5%	31%
Romania	17.8%	24%
Slovenia	16.0%	25%
The Slovak Republic	6.7%	14%
Finland	28.5%	38%
Sweden	39.8%	49%
United Kingdom	1.3%	15%

(*) In order to be able to achieve the national objectives set out in this Annex, it is underlined that the State aid guidelines for environmental protection recognise the continued need for national mechanisms of support for the promotion of energy from renewable sources.

B. Indicative trajectory

The indicative trajectory referred to in Article 3(2) [] **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} = the share for that Member State in 2005 as indicated in the table in Part A,

and

S_{2020} = the share for that Member State in 2020 as indicated in the table in Part A.

Annex II – 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 in a given Member State:

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

where

N = reference year;

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

Q_i = the quantity of electricity actually generated in year i by all **hydropower** plants of the Member State measured in GWh;

C_i = the total installed capacity of all **hydropower** plants of the Member State **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 in a given Member State:

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

where

N = reference year;

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

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

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

$n = 9$ or the number of years preceding year N for which capacity and production data are available for the Member State in question, whichever is lower.

Annex III – 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 woodgas)	50	-
Petrol	43	32
Diesel	43	36

Annex IV - Certification and qualification of installers

The **certification schemes or equivalent qualification systems** referred to in Article 13(3) shall be based on the following criteria:

1. The certification **or qualification** process shall be transparent and clearly defined by the Member State or the administrative body they appoint.
2. Biomass, heat pump 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 done by Member States or administrative bodies they appoint. The accrediting body 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 equipments 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, solar photovoltaic or solar thermal installations.

The **certification schemes or equivalent qualification systems** referred to in Article 13(3) shall take due account of the following guidelines:

6. Accredited training programmes [] **should** be offered to installers with working experience, who have undergone, or are undergoing, the following types of training:
 - a) 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;

- b) 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;
 - c) in the case of a solar photovoltaic or solar thermal installer: training as a plumber, 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
 - d) a vocational training scheme to provide an installer with adequate skills corresponding to a three years education in the skills referred to in points (a), (b) or (c) including both classroom and workplace learning.
7. 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 European legislation.
8. 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, national and of relevant national and European legislation. The installer [] **should** demonstrate the following key competences:
- 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);
 - b) 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**

- c) 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.
9. 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 European legislation. The installer [] **should** demonstrate the following key competences:
- a) 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;
 - b) 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;
 - c) 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**
 - d) for solar photovoltaic systems in particular, 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.
10. The installer certification [] **should** be time restricted, so that a refresher seminar or event would be necessary for continued certification.

[] p.m. ANNEX V AND VI DELETED + CONSEQUENTIAL CHANGES IN FQD

**Annex VII – Rules for calculating the greenhouse gas impact of biofuels, other bioliquids
and their fossil fuel comparators**

[p.m. handled by Ad Hoc Group Biofuels]
