

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on the promotion of the use of renewable energy sources

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(clean)

Text with EEA relevance

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on the promotion of the use of renewable energy sources

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 and Article 95 thereof in relation to Articles 7, 8, 16 and 17 of this Directive,

Having regard to the proposal from the Commission¹,

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:

- (1) In response to the challenges of climate change, increasing dependence on oil and other fossil fuels and rising energy costs, the Community recognises the importance to further promote renewable energy as a priority measure. Climate change is already occurring and is caused by greenhouse gas emissions stemming largely from energy. Average global temperatures will increase with more than 2° Celsius above the pre industrial level by the end of this century if no additional policies are undertaken that reduce greenhouse gas emissions. With this level of temperature increases, negative impacts in all regions globally become substantial and the risk for large scale irreversible impacts becomes real. The European Environmental Council endorsed already in June 1996 the objective to limit global average temperatures increases to not more than 2°C above the pre-industrial level. This level has been confirmed repeatedly by the European Council as the EU's climate change policy objective. Attaining the 2°C objective will thereby foremost require a dramatic shift downwards in the GHG emissions of our energy system through more efficient use of energy sources, energy conservation and using energy sources.
- (2) The increased use of energy produced from renewable sources constitutes an important part of the package of measures needed to comply with the Kyoto Protocol to the

¹ OJ C [...], [...], p. [...].

² OJ C [...], [...], p. [...].

³ OJ C [...], [...], p. [...].

⁴ OJ C [...], [...], p. [...].

United Nations Framework Convention on Climate Change, and of the foreseen further European and international greenhouse gas emission reduction commitments.

- (3) In order to encourage the deployment of renewable energy sources, barriers to cross border trade in the internal market of appliances using renewable energy sources, of renewable energy raw material and guarantees of origin of renewable electricity, shall be removed. Harmonised certification schemes, such as a sustainability scheme for biofuels, shall introduce common requirements in these markets.
- (4) The exploitation of renewable sources contributes not only to sustainable development, but also to security of supply, to the development of a knowledge based industry creating jobs, economic growth, competitiveness, and rural development as well as regional and local development opportunities, export prospects, social cohesion and employment opportunities. Beneficial development opportunities are especially high concerning small and medium-sized undertakings as well as independent energy producers.
- (5) The increased use of energy produced from renewable energy sources contributes also to the diversification of energy sources and improves energy security. In particular, increased use of biofuels for transport is one of the most effective tools by which the Community can reduce its dependence on imported oil – where the security of supply problem is most acute - and influence the fuel market for transport and hence the security of energy supply in the medium and long term.
- (6) The purpose of this directive is to promote greater use of renewable energy in each Member State, with a view to reducing emissions of greenhouse gases, promoting environmentally friendly security of supply, and providing new economic opportunities for the European Union; and to facilitate the integration of renewable energy in the internal market and the operation of the internal market in renewable energy sources, systems and equipment.
- (7) Directive 2001/77/EC on the promotion of renewable energy sources in the internal electricity market⁵ and Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport⁶ have already contributed to an increased share of renewable energy sources in electricity production and in transport fuel use. In order to assure a continuing deployment of renewable energy sources, targets beyond 2010 have to be set.
- (8) At national and regional level, rules and obligations for minimum requirements of renewable heating and cooling and electricity concerning new buildings and refurbishments have led to considerable increase in the uptake of renewable energy in buildings. Therefore these measures should be encouraged in a wider European context.
- (9) The promotion of renewable energy aimed at by this Directive will cause an increased market penetration of renewable energy sources, which by reducing their costs will allow for economies of scale.

⁵ OJ L 283, 27.10.2001

⁶ OJ L 123, 17.05.2003

- (10) The European Parliament, in its resolution on the Roadmap for Renewable Energy in Europe⁷, calls on the Commission to present by the end of 2007 a proposal for a renewable energy legislative framework. In its resolution on heating and cooling from renewable energy⁸, the European Parliament has invited the Commission to submit a concrete legislative proposal for a Community framework on increasing the share of renewable energy in this sector. Furthermore, in its resolution on climate change⁹, the European Parliament noted that energy policy is a crucial element of the EU strategy on climate change, in which renewable energy and energy efficient technologies play an important role.
- (11) In accordance of the Renewable Energy Roadmap¹⁰, the Brussels European Council of March 2007 conclusions¹¹ and the European Parliament Resolution, the Community target for the share of renewable energy sources shall be a 20% share of final energy consumption in 2020.
- (12) The Brussels European Council of March 2007 reaffirmed the Community's long-term commitment to the EU-wide development of renewable energies beyond 2010. It endorsed a binding target of a 20% share of renewable energies in overall EU energy consumption by 2020 and a 10% binding minimum target to be achieved by all Member States for the share of biofuels in overall EU transport petrol and diesel consumption by 2020. The Council stated in its Conclusions that the binding character of the biofuels target is appropriate subject to production being sustainable, second-generation biofuels becoming commercially available and the Fuel Quality Directive being amended accordingly to allow for adequate levels of blending.
- (13) These targets imply a significant raising of the level of ambition that should be matched by new approaches to ensure that investment in renewable energy is made where it is most cost effective to do so, and in a manner that leaves Member States the freedom to use support mechanisms of their choice where these are effective.
- (14) A comprehensive legislative framework for the promotion and the use of renewable energy sources in the European Union, including binding targets, should provide the business community with the long term stability it needs to make rational investment decisions in the renewable energy sector so as to enable the European Union to assure a cleaner, more secure and more competitive energy future.
- (15) To ensure increased penetration of renewable energy sources in the consumption of electricity, heating and cooling and biofuels, all Member States should establish a national action plan on how to reach the overall national target and defining the measures to reach those targets.
- (16) The Energy Council of 23rd November 2006¹² underlined the importance of ensuring that the most energy efficient technology available is used for the construction of new capacity and the need for an integrated approach to biomass policy which takes into

⁷ P6_TA-PROV(2007)0406, 25 September 2007

⁸ 2005/2122(INI)

⁹ P6_TA-PROV(2007)0038, 14 February 2007

¹⁰ COM(2006) 848 final

¹¹ Council Document 7224/07.

¹² [ref.]

account sustainability. It is therefore crucial that Member States ensure that the rational use of energy and of natural resources is taken into account in all measures designed to stimulate and promote the production and use of renewable energy sources.

- (17) Thermal energy transferred to a useful temperature level using heat pumps is renewable, electricity is needed to drive the appliance; therefore only useful thermal energy which comes from heat pumps meeting the minimum requirements of the coefficient of performance established in Commission Decision C(2007)XXX, is covered by this Directive.
- (18) Passive energy systems achieve the harnessing of renewable thermal energy through building design, such as angled windows to allow more solar energy to be harnessed. Passive energy technologies are considered to be energy saving technologies and therefore any thermal energy harnessed in this way is not covered by this Directive.
- (19) To increase the flexibility of the regime for the promotion of renewable energy sources and to create opportunities for reducing the cost of achieving the targets, it is appropriate to facilitate the consumption in Member States of energy produced from renewable sources in other Member States, and also to enable Member States to count electricity and heat from installations commissioned after the entry into force of this Directive and consumed in other Member States towards their own national targets. For this reason, European standardised criteria for the design and trading of guarantees of origin in these sectors should be adopted.
- (20) Minimum levels of development of renewable energy in the period before 2020 will facilitate the early creation of a European market for tradable guarantees of origin relating to new investments in renewable energy and also allow for a greater flexibility and cost-effectiveness in meeting targets.
- (21) The criteria for issuing guarantees of origin should be objective, transparent and non-discriminatory.
- (22) The specific structure of the renewable energy sector should be taken into account when national, regional and local authorities review their administrative procedures for giving permission to construct and operate plants producing electricity, heating and cooling or transport fuels from renewable energy sources. Streamlined administrative approval procedures with clear deadlines are needed for applications for installations using renewable energy sources.
- (23) Planning rules and guidelines need to be adapted to take into consideration cost effective and environmentally beneficial renewable heating and cooling equipment.
- (24) A range of barriers to the growth of the use of renewable energy sources such as information and training gaps, especially in the heating and cooling sector, and unnecessary administrative burdens at national, regional and local level need to be removed in order to promote the internal market and to encourage the deployment of renewables.
- (25) A harmonised approach is needed to develop training and qualification and appropriate accreditation for renewable energy professionals in order to avoid market distortions.

Member States should therefore adopt compatible accreditation schemes, taking into account European technology standards, and training and qualification regimes for renewable energy equipment installers, builders and maintenance personnel to ensure high quality products and service provision.

- (26) National technical specifications and other requirements falling within the scope of Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations¹³, relating for example to levels of quality, testing methods or conditions of use, should not create barriers for trade in renewable energy equipment and systems.
- (27) The costs of connecting new producers of electricity from renewable energy sources to the electricity grid should be objective, transparent and non-discriminatory and due account should be taken of the benefit embedded generators bring to the grid.
- (28) 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 therefore financial compensation might be given to those producers.
- (29) In order to permit the achievement of a 10% share of biofuels, it is necessary to ensure the placing on the market of higher blends of biodiesel in diesel than those envisaged by standard EN590.
- (30) Biofuels should deliver a minimum level of greenhouse gas savings; should not be produced from raw material cultivated on land converted from high-carbon-stock or high-biodiversity uses; and should comply with EU environmental requirements for agriculture where applicable.
- (31) It is necessary to encourage the diversification of the raw materials used for biofuel production. For this reason, it is appropriate to provide extra incentives for biofuels made from wastes, residues, grasses, straw and ligno-cellulosic material.
- (32) The need for public support in favour of renewable energy sources is recognised in the Community guidelines on State aid for environmental protection¹⁴. These guidelines should be taken into account at the design of national support measures constituting state aid.
- (33) Member States operate different mechanisms of support for renewable energy sources at the national level. Support schemes vary among Member States and renewable energy sectors. It remains premature to decide on a harmonised Community-wide framework regarding support schemes in any of the renewable energy sectors.
- (34) Support measures taken pursuant to this Directive might constitute state aid and in those cases have to be notified to and approved by the Commission before their implementation pursuant to Article 88(3) of the Treaty. Information provided to the Commission on the basis of this Directive does not substitute for the obligation of

¹³ OJ L 204, 21.07.98

¹⁴ OJ C 37, 3.2.2001, p. 3.

Member States under the notification obligation pursuant to Article 88(3) of the Treaty. Such support measures shall be assessed under Articles 86, 87 and 88 EC Treaty and, in particular, the Community guidelines for State aid for environmental protection and, if they constitute public service obligations, the Community framework for State aid in the form of public service compensation.

- (35) Those provisions of Directives 2001/77/CE and 2003/30/CE that overlap with the provisions of this Directive should be deleted from the moment of its transposition; those that deal with targets and reporting for 2010 should remain in force until the end of 2011.
- (36) Since the general objectives of achieving a 20% share of renewable energies in overall EU energy consumption and a 10% share of biofuels in each Member State's transport petrol and diesel consumption by 2020 cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale of the action, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. Their detailed implementation should, however, be left to the Member States, thus allowing each Member State to choose the regime which corresponds best to its particular situation. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives.
- (37) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission¹⁵.
- (38) In particular, power should be conferred on the Commission to adapt the methodological principles and values necessary for assessing whether environmental sustainability criteria have been fulfilled in relation to biofuels. Since those measures are of general scope and are designed to amend non-essential elements of this Directive by the adaptation of the methodological principles and values, they must be adopted in line with the regulatory procedure with scrutiny provided for in Article 5a of Council Decision 1999/468/EC.

HAVE ADOPTED THIS DIRECTIVE:

Article 1 - Scope

This Directive establishes a common framework for the promotion of renewable energy sources. It sets overall binding targets for the share of renewable energy sources in energy consumption. It lays down rules relating to administrative procedures, electricity grid connections, guarantees of origin and support schemes for the use of renewable energy sources. The Directive also sets a binding target for the consumption of renewable energy in transport and establishes the environmental sustainability criteria for biofuels.

¹⁵ OJ L 184, 17.7.1999, p.23 Decision as amended by Decision 2006/512/EC (OJ L 200, 22.7.2006, p.11)

Article 2 – Definitions

1. For the purposes of this Directive, the definitions in Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market of electricity and repealing Directive 96/92/EC shall apply.
2. For the purpose of this Directive, the following definitions shall also apply:
 - (a) *"renewable energy sources"* shall mean renewable non-fossil energy sources: wind, solar, geothermal, wave, tidal, hydropower, biomass, landfill gas, sewage treatment plant gas and biogases;
 - (b) *"biomass"* shall mean the biodegradable fraction of products, waste and residues from agriculture (including vegetal and animal substances), forestry and related industries, as well as the biodegradable fraction of industrial and municipal waste;
 - (c) *"final energy consumption"* shall mean the energy commodities delivered to final consumers (manufacturing industry, transport, households, services, agriculture, forestry and fisheries) for energy purposes;
 - (d) *"district heating or cooling"* shall mean the distribution of thermal energy either in the form of steam, hot water or chilled liquids, from a central source of production through a network to multiple buildings, for the use of space or process heating or cooling;
 - (e) *"biofuels"* shall mean liquid or gaseous fuel for transport produced from biomass;
 - (f) *"new entrant"* shall mean an installation, or new capacity in an existing installation, producing electricity from renewable energy sources, or producing heat from renewable energy sources in an installation with a capacity of at least 10 MW_{th}, that was commissioned after 31st March 2010;
 - (g) *"non-new entrant"* shall mean an installation producing electricity from renewable energy sources, that was commissioned on or before 31st March 2010;
 - (h) *"physical trade"* shall mean trade between Member States of electricity produced from renewable energy sources and of heat produced from renewable energy sources in plants with a capacity of at least 10 MW_{th};
 - (i) *"virtual trade"* shall mean trade between Member States of the renewable value of the electricity produced from renewable energy sources, or the renewable value of heat produced from renewable energy sources in plants with a capacity of at least 10 MW_{th}, separated from the actual flow of electricity or heat;
 - (j) *"biodiesel"* shall mean a methyl-ester produced from vegetable or animal oil, of diesel quality, to be used as biofuel;
 - (k) *"bioethanol"* shall mean ethanol produced from biomass.

Article 3 – Competent authorities

Member States shall designate the competent authorities responsible for fulfilling the obligations laid down by this Directive and shall ensure that these authorities undertake their tasks in a coordinated fashion.

Article 4 – National targets for the use of renewable energy sources

1. The overall target for the share of renewable energy sources in each Member State in 2020 shall be as set out in Annex I.
2. Member States shall ensure that:
 - a) their share of renewable energy sources in final energy consumption in 2014 is at least their share of renewable energy sources in final energy consumption in 2005 plus 51% of the difference between this share and the overall target for the share of renewable energy sources in that Member State in 2020;
 - b) their share of renewable energy sources in final energy consumption in 2016 is at least their share of renewable energy sources in final energy consumption in 2005 plus 66% of the difference between this share and the overall target for the share of renewable energy sources in that Member State in 2020;
 - c) their share of renewable energy sources in final energy consumption in 2018 is at least their share of renewable energy sources in final energy consumption in 2005 plus 83% of the difference between this share and the overall target for the share of renewable energy sources in that Member State in 2020;
 - d) their share of renewable energy sources in final energy consumption in 2020 is at least the overall target for the share of renewable energy sources in that Member State in 2020.
3. Member States shall adopt a target for the share of renewable energy sources in transport. This target shall be at least 10% of final energy consumption in transport in that Member State.
4. Member States shall ensure that their share of renewable energy sources in transport in 2012 is at least 6.5%.
5. For the purposes of the calculations referred to in paragraphs 3 and 4, petroleum products other than petrol and diesel shall not be taken into account. Gas, electricity and hydrogen shall only be taken into account if produced from renewable energy sources.
6. Member States shall adopt binding national targets for the shares of renewable energy sources in electricity and in heating and cooling in 2020. These targets shall be consistent with their overall target and their target for the share of renewable energy sources in transport.

Article 5 – National action plans

1. Member states shall adopt a national action plan.

National action plans shall set out Member States' targets for the shares of renewable energy sources in transport, electricity and heating and cooling, and the measures to be taken to achieve these, including national policies to develop biomass resources and bring them into use.

2. The measures set out in the national action plan shall be adequate to ensure that the targets are achieved.
3. Member States shall notify their national action plans to the Commission by 31st March 2010 at the latest.

Article 6 – Calculation of the share of renewable energy sources

1. The final energy consumption of renewable energy sources shall be calculated as the sum of:
 - a) final electricity consumption from renewable energy sources;
 - b) the final consumption of energy from renewable sources for heating and cooling; and
 - c) energy from renewable sources consumed in transport.
2. The share of renewable energy sources shall be calculated as the final energy consumption of renewable energy sources divided by the final energy consumption of all energy sources.
3. Electricity consumption from renewable energy sources shall be calculated as the quantity of electricity produced in a Member State from renewable energy sources, excluding the production of pumped storage units which generate electricity from water that has previously been pumped uphill, plus net physical trade in electricity produced from renewable energy sources, plus net virtual trade in electricity produced from renewable energy sources.

In multi-fuel plants using renewable and conventional sources, only the part of electricity produced from renewable energy sources shall be taken into account.

The electricity generated by hydropower shall be accounted for in accordance with the normalisation rule in Annex II.

In exception to the first subparagraph, electricity generated outside the European Union from renewable energy sources shall not be taken into account for the purpose of measuring compliance with the requirements of this Directive concerning national targets.

4. The final consumption of energy from renewable energy sources for heating and cooling shall be calculated as the final consumption of a renewable energy source

that is converted or transferred into useful thermal energy, including district heating or cooling for use by the end users or for a follow-up conversion process, plus net physical trade in heat produced from renewable energy sources, plus net virtual trade in heat produced from renewable energy sources.

In exception to the first sub-paragraph, renewable thermal energy generated by heat pumps shall only be considered for the purposes of measuring compliance with the requirements of this Directive concerning national targets, if the energy efficiency of the heat pumps meet the minimum requirements of the coefficient of performance established in Commission Decision C(2007) XXX.

In exception to the first subparagraph, heat generated outside the European Union from renewable energy sources shall not be taken into account for the purpose of measuring compliance with the requirements of this Directive concerning national targets.

Thermal energy generated by passive energy systems, under which lower energy consumption is achieved passively through building design, shall not be considered for the purposes of this Directive.

5. For the purpose of calculating the consumption of energy in transport, the energy content of the fuels listed in Annex III shall be taken to be as set out in that Annex.

In exception to paragraph 1, biofuels that do not fulfil the environmental sustainability criteria in Article 17 shall not be taken into account for the purpose of measuring compliance with the requirements of this Directive concerning national targets for the overall share of renewable energy and the share of renewable energy in transport.

6. The methodology and definitions used in these calculations shall be those of Regulation XXXX/XX.¹⁶

Article 7 - Guarantees of origin of electricity and heat produced from renewable energy sources

1. Member States shall ensure that the origin of electricity produced from renewable energy sources, and heat produced from renewable energy sources in plants with a capacity of at least 10 MW_{th}, can be guaranteed as such within the meaning of this Directive by the issuance of a guarantee of origin. The issuance of a guarantee of origin shall be pursuant to the criteria and modalities laid down in this Directive. Member States shall ensure that a guarantee of origin is issued in response to a request from the producer of electricity and heat.
2. Guarantees of origin shall be accurate, reliable and fraud-resistant. They shall fulfil the requirements in Annex IV. No more than one guarantee of origin shall be issued in relation to any unit of renewable energy produced.

¹⁶ Regulation (EC) No. ...

3. Where guarantees of origin regarding renewable energy from new entrants can be transferred under or pursuant to this Directive, such transfer shall be possible without physical trade of such energy
4. [Member States shall ensure that guarantees of origin can be cancelled on request of their holder.]
5. Each Member State shall designate one or more competent bodies, independent of generation and distribution activities, to issue, identify and cancel guarantees of origin and to track their transfer.

~~ALTERNATIVE 1: discretionary outsourcing and bounded transfer of GOs:~~

Article 8 – Guarantees of origin issued to new entrants

1. Member States may allow transfer to another Member State and transfer from another Member State of guarantees of origin issued to new entrants, and they may determine the extent and terms thereof, including any support put in place by one Member State for access by new entrants in another Member State. Member States shall, upon request by the operator, issue guarantees of origin to the operator of a new entrant if and to the extent they have agreed to allow transfer to another Member State.
2. If a Member State does not meet its targets for the share of energy from renewable energy sources in 2014, 2016 or 2018, as specified in Article 4, the Commission may decide:
 - a) that such Member State must allow transfer from another Member State of guarantees of origin issued to new entrants in other Member States, and
 - b) that such Member State must give the right to new entrants in other Member States to benefit from its renewables support schemes in the same way as domestic producers of renewable energy.
4. For the purpose of measuring compliance with the requirements of this Directive concerning national targets, guarantees of origin issued to new entrants shall be taken into account in relation to the national targets of the Member State specified by the holder of the guarantee of origin at the time of its cancellation.
5. Member States shall ensure that guarantees of origin are surrendered to them when:
 - a) a producer of renewable energy has benefited from financial support, such as feed-in tariff, or premium tariffs or through a tender system, under its national support system for the production of electricity, or heat produced in plants with a capacity of at least 10 MW_{th}, generated from renewable energy sources, or
 - b) a guarantee of origin has been used for the purpose of meeting a renewable energy obligation imposed on an electricity or heating supplier.
6. Member States may buy guarantees of origin. Member States may sell guarantees of origin, including those surrendered to them in accordance with paragraph 5, to other Member States or other purchasers.

~~ALTERNATIVE 2 – discretionary inbound transfer and mandatory outbound transfer of GOs~~

Article 8 – Guarantees of origin issued to new entrants

1. Member States shall allow holders of guarantees of origin issued to new entrants to transfer them to another Member State, subject to any limitations put in place pursuant to and in accordance with paragraph 3 below. Member States shall, upon request by the operator, issue guarantees of origin to the operator of a new entrant. Member States may allow transfer from another Member State of such guarantees of origin, and determine the extent and terms thereof.
2. If a Member State does not meet its targets for the share of energy from renewable energy sources in 2014, 2016 or 2018, as specified in Article 4, the Commission may decide:
 - a) that such Member State must allow transfer from another Member State of guarantees of origin issued to new entrants in other Member States, and
 - b) that such Member State must give the right to new entrants in other Member States to benefit from its renewables support schemes in the same way as domestic producers of renewable energy.
3. A Member State may refuse to issue or allow issuance of guarantees of origin for new entrants, or restrict the transfer thereof to another Member State:
 - a) if the new entrant currently benefits, or has previously benefited, from a financial support system such as feed-in tariffs, feed-in premiums, tender system or trading/certificate system for which the Member State is responsible;
 - b) [if and to the extent that renewable energy production in that Member State exceeds its target and the Member State demonstrates that further renewable energy deployment would lead to serious capacity margin problems], or
 - c) [if this is justified by reasons of public interest.]
4. For the purpose of measuring compliance with the requirements of this Directive concerning national targets, guarantees of origin issued to new entrants shall be taken into account in relation to the national targets of the Member State specified by the holder of the guarantee of origin at the time of its cancellation.
5. Member States shall ensure that guarantees of origin are surrendered to them when:
 - a) a producer of renewable energy has benefited from financial support, such as feed-in tariff, or premium tariffs or through a tender system, under its national support system for the production of electricity, or heat produced in plants with a capacity of at least 10 MW_{th}, generated from renewable energy sources, or
 - b) a guarantee of origin has been used for the purpose of meeting a renewable energy obligation imposed on an electricity or heating supplier.

6. Member States may buy guarantees of origin. Member States may sell guarantees of origin, including those surrendered to them in accordance with paragraph 5, to other Member States or other purchasers.

Article 9 – Guarantees of origin issued to non-new entrants

1. Guarantees of origin of electricity from renewable energy sources produced by non-new entrants shall be mutually recognised by the Member States as a proof of the electricity having been produced from renewable energy sources. Any refusal by a Member State to recognise a guarantee of origin as such proof, in particular for reasons relating to the prevention of fraud, must be based on objective, transparent and non-discriminatory criteria. In the event of refusal to recognise a guarantee of origin, the Commission may compel the refusing party to recognise it, particularly with regard to objective, transparent and non-discriminatory criteria on which such recognition is based.
2. Guarantees of origin issued to non-new entrants shall not confer a right to benefit from national support mechanisms unless the Member State responsible for the support mechanism so decides.
3. A guarantee of origin issued to a non-new entrant in respect of electricity produced in one Member State shall not be taken into account for the purpose of measuring compliance with the requirements of this Directive concerning the national targets of another Member State if the guarantee of origin has been virtually traded.
4. A guarantee of origin issued to a non-new entrant in respect of electricity produced in one Member State shall not be taken into account for the purpose of measuring compliance with the requirements of this Directive concerning the national targets of another Member State if the guarantee of origin has been physically traded, unless both Member States so agree and the guarantee of origin has been cancelled on request of a holder in the latter Member State.

Article 10 – Registries of guarantees of origin

1. Member States shall provide for the establishment and maintenance of a registry in order to ensure the accurate accounting of the issuing, holding, transfer, surrender and cancellation of guarantees of origin. Member States may maintain their registries in a consolidated system, together with one or more other Member States.
2. Any legal person may hold guarantees of origin. The registry shall contain separate accounts to record the guarantees of origin held by each person to whom they are issued or transferred.
3. Any transfers of guarantees of origin shall be notified to the competent authorities in the Member States concerned and be accounted for in the national registries.
4. The registry shall be accessible to the public.

Article 11 – Central administrator for guarantees of origin

1. The Commission shall designate a Central Administrator to maintain an independent transaction log recording the issue, transfer and cancellation of guarantees of origin.

2. The Central Administrator shall conduct an automated check on each transaction in registries through the independent transaction log to ensure that there are no irregularities in the issue, transfer and cancellation of guarantees of origin.
3. If irregularities are identified through the automated check, the Central Administrator shall inform the Member State or Member States concerned, who shall not register the transactions in question or any further transactions relating to the guarantees of origin concerned until the irregularities have been resolved.

Article 12 – Administrative procedures

1. Member States, or competent authorities they appoint, shall modify existing legislative and regulatory frameworks with regard to the authorisation, certification and licensing of production plants and processes using renewable energy in electricity, including the procedures laid down in Directive 2003/54/EC; in heating and cooling; and for the production of biofuels, so as to eliminate regulatory and non-regulatory barriers to the increase in the use of renewable energy sources.
2. Member States shall in particular ensure that:
 - a) the respective responsibilities of national, regional and local authorities for authorisation procedures are clearly defined, with precise deadlines for approving planning and building applications; and ensuring that procedures are streamlined and expedited at the appropriate administrative level;
 - b) the rules governing authorisation, certification and licensing are objective, transparent and non-discriminatory, and take fully into account the particularities of the different renewable energy technologies;
 - c) clear guidelines are established for better coordination between administrative bodies, concerning time limits and the reception and handling of planning and permit applications;
 - d) administrative charges paid by consumers, planners, architects, builders and equipment and system installers and suppliers are transparent and cost-related;
 - e) lighter authorisation procedures for smaller projects are established; and
 - f) mediators are designated to act in disputes between authorities responsible for issuing authorisations and applicants for authorisations.
3. Member States shall, with reference to the actions referred to in paragraph 2, decide by 31st March 2011, whether to:
 - a) establish one-stop authorisation authorities to take charge of processing authorisation applications and providing assistance to applicants;
 - b) provide for automatic approval of planning and permit applications where the authorising body has not responded within the set time limits; and

- c) develop spatial planning mechanisms linked with land use planning, so as to assign geographical locations to best exploit local renewable energy sources and to establish district heating and cooling.

Article 13 – Planning and construction

Member States shall lay down requirements for local authorities to consider the installation of renewable heating, cooling and electricity equipment and systems and district heating and cooling when planning, designing, building and refurbishing industrial or residential areas.

National building regulations and codes shall require the inclusion of minimum levels of the use of renewable energy sources in all new or refurbished buildings. Any exemption from this rule shall be justified in accordance with transparent and limited criteria, in relation to:

- the use of passive, low or zero energy buildings, or
- local limitations in the availability of renewable energy resources.

Article 14 – 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 high biofuel blends or pure biofuels.
2. Information on the net benefits, cost and energy efficiency of renewable heating, cooling and electricity equipment and systems shall be made available either by the supplier of the heating and cooling equipment or system or by the national competent authorities.
3. Transport fuel suppliers shall make information to the public on the availability of biofuels and other renewable transport fuels. For percentages of biofuels, blended in mineral oil derivatives, exceeding the limit value of 10% of biodiesel or of 10% of bioethanol by volume, a specific labelling at the sales points shall be imposed.
4. Without prejudice to the provisions of Title III of Directive 2005/36/EC of the European Parliament and of the Council¹⁷, Member States shall develop accreditation for training and qualification regimes for renewable energy equipment installers in order to ensure high quality products and service provision. These accreditation schemes shall be designed for installers of small-scale biomass boilers and stoves, solar heating systems and ground source heat pumps. In the case of biomass boiler and stove installers, they shall be based on the criteria outlined in Annex VII.
5. Without prejudice to the provisions of Articles 46 to 49 of Directive 2005/36/EC, Member States shall develop appropriate guidance for planners and architects so that they are able properly to consider the use of renewable heating, cooling and electricity

¹⁷ OJ L255, 30.09.2005, p.22

equipment and systems and district heating and cooling when planning, designing, building and renovating tertiary, industrial or residential areas.

Article 15 – Grid system issues in electricity

1. Without prejudice to the maintenance of the reliability and safety of the grid, Member States shall take the necessary measures to ensure that transmission system operators and distribution system operators in their territory guarantee the transmission and distribution of electricity produced from renewable energy sources. They may also provide for priority access to the grid system of electricity produced from renewable energy sources. 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.
2. Member States shall put into place a legal framework or require transmission system operators and distribution system operators to set up and publish 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. The rules may provide for different types of connection.
3. 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 2.
4. Transmission system operators and distribution system operators shall be required to provide any new producer wishing to be connected 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.
5. The sharing of costs referred in paragraph 2 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.
6. Member States shall ensure that the charging of transmission and distribution fees 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 regions of low population density.
7. Member States shall put in place a legal framework or require transmission system operators and distribution system operators to ensure that fees charged 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 16 – The use of biofuels in diesel blends

Member States shall ensure that diesel fuel complying with the specifications set out in Annex VI is made available by 31 December 2010 at the latest in all filling stations that sell diesel fuel.

Article 17 – Ensuring increased environmental sustainability in the production of biofuels

1. The environmental sustainability criteria for biofuels shall be as follows:
 - a) The estimated greenhouse gas saving from biofuel use, calculated on a lifecycle basis and compared to the conventional fuels that the biofuels replace, shall be at least [X]%. .
 - b) Biofuels shall not be made from raw material obtained from land that had one of the following statuses in May 2003 and no longer has that status:
 - i) Wetlands: land that is covered with or saturated by water for all or part of the year, including peatland;
 - ii) Forest: land spanning more than 0.5 hectare with trees higher than 5 metres and a canopy cover of more than 20%, or trees able to reach these thresholds *in situ*. Land predominantly under agricultural or urban land use is not included.
 - c) Biofuels shall not be made from raw material obtained from land that had the one of the following statuses in May 2003:
 - i) Forest undisturbed by human activity: forest which shows natural forest dynamics, such as natural tree composition, occurrence of deadwood, natural age structure and natural regeneration processes, the area of which is large enough to maintain its natural characteristics and where there has been no known significant human intervention or where the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established.
 - ii) Areas designated for nature protection purposes, unless the raw material was produced according to good management practice in relation to land use intensity and scale.
 - d) Biofuels produced from agricultural raw materials cultivated in the European Union shall only be made from raw material obtained according to the provisions listed in point A of Annex III of Council Regulation 1782/2003/EC and with the good agricultural and environmental condition on soil laid down in Annex IV of that Regulation.
2. For the purposes of paragraph 6, Article 6(3) and Article 18(3), Member States shall assess whether the environmental sustainability criteria have been fulfilled in relation to individual consignments of biofuel.

In assessing the fulfilment of the environmental sustainability criteria, Member States shall comply with the rules in Annex V.

3. The Commission shall make available the details of the calculation of the values in Annex V, section B.
4. The values in Annex V, section B and the methodological principles in Annex V, section C may be adapted to technical and scientific progress in accordance with the procedure with scrutiny referred to in Article 20(3).
5. The Commission may accredit voluntary international schemes setting standards for the production of agricultural or forest products, and national, multinational or international schemes to measure greenhouse gas savings, for the purpose of demonstrating compliance with some or all of the environmental sustainability criteria. This accreditation shall be subject to the schemes meeting adequate standards of reliability, transparency and independent auditing. In the case of schemes to measure greenhouse gas savings, accreditation shall also be subject to compliance with the methodological requirements in Annex V, section C. Accreditation shall be conducted in accordance with the procedure referred to in Article 20(2).
6. Member States shall ensure that, where fuel suppliers use biofuels to fulfil the requirements of Community law, these biofuels fulfil the environmental sustainability criteria.
7. Member States shall not prohibit, restrict or impede the placing on the market, within their territories, on grounds of sustainability criteria, of biofuel obtained in compliance with the provisions of this Article.

Article 18 – Support schemes

1. In designing and managing support schemes for renewable energy sources, Member States shall aim to provide long term market stability.
2. Without prejudice to Articles 87 and 88 of the Treaty and Community tax legislation, Member States shall, in their support schemes for renewable energy sources in heating and cooling, differentiate in favour of heating and cooling systems and equipment that achieve a significant reduction of primary energy consumption, using energy or eco-labels or other appropriate certificates or standards developed at national or European level, where they exist, as the basis for differentiation of support.
3. Without prejudice to Articles 87 and 88 of the Treaty and Community tax legislation, high-efficiency cogeneration plants as defined under Directive 2004/08/EC of the European Parliament and of the Council using energy from renewable sources shall be eligible for support schemes for renewable energy sources in electricity generation, renewable heating and high-efficiency cogeneration.
4. Without prejudice to Articles 87 and 88 of the Treaty and Community tax legislation, in their support schemes for renewable energy sources in transport, Member States may give more support for biofuels made using wastes, residues, grasses, straw and ligno-cellulosic material than for others. For the purposes of national measures

requiring suppliers to incorporate a given proportion of renewable transport fuel in the fuel they sell, these biofuels shall count double.

5. Member States shall not take biofuels that do not fulfil the environmental sustainability criteria in Article 17 into account in measuring compliance with national measures requiring suppliers to incorporate a given proportion of renewable transport fuel in the fuel they sell and shall not give financial support for the consumption of these biofuels.
6. Any technical specifications required to be met by renewable energy equipment and systems in order to benefit from support schemes, shall be clearly defined by Member States. Where European standards exist, including eco-labels, energy labels and other technical reference systems established by the European standardisation bodies, these shall be clearly indicated in the technical specifications. Technical specifications shall not prescribe where the equipment and systems are to be certified.

Article 19 – Reporting

1. Member States shall submit a report to the Commission on progress in the promotion and use of renewable energy sources by 30th June 2011 at the latest, and every 2 years thereafter.
2. The report shall detail in particular:
 - a) the sectoral and overall shares of renewable energy sources in the preceding two calendar years;
 - b) the introduction and functioning of support schemes and other measures to promote renewable energy sources, and any developments in the measures used with respect to those set out in the Member State's national action plan;
 - c) the functioning of the system of guarantees of origin for electricity and heat from renewable energy sources and the measures taken to ensure the system's reliability;
 - d) progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy sources;
 - e) the availability of biomass resources for energy and the measures to be taken to use biomass in electricity, heating and transport;
 - f) the development and share of biofuels made from wastes, residues, grasses, straw and ligno-cellulosic material;
 - g) land use and commodity price changes associated with increased use of biomass for energy in the EU, and the associated positive and negative effects on food security; and

- h) the estimated greenhouse gas savings due to the use of renewable energy sources.
3. In estimating the greenhouse gas savings from the use of biofuels, Member States may use the average values given in Annex V, section B.
 4. The Commission shall monitor the origin of biofuels consumed in the EU and analyse the impacts of their production on land use in the EU and the main third countries of supply and exchange information with these countries as appropriate. Monitoring shall be based on Member State's reports and those of relevant third countries, international organisations, scientific studies and any other relevant pieces of information.
 5. On the basis of the reports submitted by Member States pursuant to paragraph 1 and the analysis referred to in paragraph 4, the Commission shall report every two years to the European Parliament and the Council. The first report shall be submitted in 2012.
 6. The Commission's first report shall be accompanied, if appropriate, by proposals to the European Parliament and to the Council on sustainability requirements for energy uses of biomass outside the transport sector. The Commission will in particular analyse the impact of increased demand for biofuel on sustainability in the EU and in third countries and propose, if appropriate, corrective action.
 7. In 2012 the Commission shall, with a view to achieving the targets set out in this Directive, consider the need for proposing a harmonised European renewable energy deployment support scheme.

Article 20 – Committee

1. The Commission shall be assisted by a Committee.
2. Where reference is made to this paragraph, Articles 5 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.
4. The Committee shall adopt its Rules of Procedure.

Article 21 - Repeal

1. Articles 2, 3(2), 4, 5, 6, 7 and 8 of Directive 2001/77/EC are deleted with effect from 31st March 2010.
2. Articles 2, 3(2), 3(3), 3(5), 5 and 6 of Directive 2003/30/EC are deleted with effect from 31st March 2010.

3. Directives 2001/77/EC and 2003/30/EC are repealed with effect from 31st December 2011.

Article 22 - Transposition

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive no later than [31st March 2010]. They shall forthwith communicate to the Commission the text of those provisions and a correlation table between those provisions and this Directive.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

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 23

This Directive shall enter into force twenty days after its publication in the *Official Journal of the European Union*.

Article 24

This Directive is addressed to the Member States.

Done at Brussels, [...]

For the European Parliament
The President
[...]

For the Council
The President
[...]

Annex I – National overall targets for the share of renewable energy sources in final energy consumption in 2020

Belgium	%
Bulgaria	%
The Czech Republic	%
Denmark	%
Germany	%
Estonia	%
Ireland	%
Greece	%
Spain	%
France	%
Italy	%
Cyprus	%
Latvia	%
Lithuania	%
Luxembourg	%
Hungary	%
Malta	%
The Netherlands	%
Austria	%
Poland	%
Portugal	%
Romania	%
Slovenia	%
The Slovak Republic	%
Finland	%
Sweden	%
United Kingdom	%

Annex II – Normalisation rule for accounting for electricity generated from hydropower

The following rule shall be applied:

$$Q_{Y(N)} = C_Y (Q_{Y-15}/C_{Y-15} + Q_{Y-14}/C_{Y-14} \dots + Q_{Y-1}/C_{Y-1})/15,$$

where

Q_N = the quantity of electricity actually generated in year N by a hydropower plant, denominated in GWh, and

C_N = the installed capacity of the plant in year N , measured in MW;

$Q_{Y(N)}$ = the quantity of electricity considered to have been generated by the plant in year Y for accounting purposes.

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)
Ethanol	26.4	21.2
ETBE	36.0 (biofuel: X)	26.7 (biofuel: X)
Methanol	19.8	15.6
MTBE	35.2 (biofuel: X)	26.0 (biofuel: X)
DME	28.4	18.8
Biodiesel	37.3	32.8
Fischer-Tropsch diesel	44.0	34.3
Petrol	41.3	31.0
Diesel	42.7	35.7

Annex IV – Requirements for guarantees of origin

1. A guarantee of origin shall specify, at least:
 - a) the energy source from which the electricity or heat was produced, the dates and places of production, and, in the case of hydroelectric installations, the capacity;
 - b) whether the guarantee of origin relates to electricity or to heat;
 - c) the name, location, type, capacity and date of construction of the installation where the energy was produced;
 - d) the quantity of electricity or heat from renewable energy sources produced, denominated in MWh;
 - e) the date and country of issue and a unique identification number;
 - f) whether the production has received financial support, such as from a feed-in tariff, feed-in premium or tender system;
 - g) whether the guarantee of origin is issued to a new entrant or a non-new entrant.
2. Guarantees of origin shall be issued electronically.
3. If a guarantee of origin is issued for electricity or heat produced through high efficiency cogeneration using renewable energy sources, the guarantee of origin shall also comply with the requirements of Article 5 of Directive 2004/8/EC.

Annex V – Rules for assessing the fulfilment of the environmental sustainability criteria in Article 17

A. General rules

In assessing the fulfilment of the environmental sustainability criteria in Article 17(1), Member States shall comply with the following rules:

1. Member States shall oblige fuel suppliers to give evidence that the environmental sustainability criteria have been fulfilled. For this purpose they shall require fuel suppliers to use:
 - a) an identity preservation system, under which information concerning sustainability characteristics remains assigned to a specific consignment of raw materials or biofuel from point of origin to final destination; or
 - b) a mass balance system, under which consignments of raw material or biofuel with different sustainability characteristics can be mixed; information about their sustainability characteristics and proportions remains assigned to the mixture; and it is assumed that all consignments withdrawn from the mixture contain the same proportion of inputs.
2. Member States shall require that fuel suppliers arrange for an adequate standard of independent auditing of the information they submit, and that they provide evidence of this.
3. Member States shall accept bilateral and multilateral agreements between the Community and third countries as proof that the land use changes referred to in Article 17(1) have not occurred, provided that these agreements acknowledge the enforcement of provisions of national law that rule out these types of land use change.
4. Member States shall accept evidence of compliance with voluntary international schemes setting standards for the production of agricultural or forest products as proof that the land use changes referred to in Article 17(1) have not occurred, provided that these schemes rule out these types of land use change and that they have been accredited by the Commission.
5. Member States shall accept that the greenhouse gas savings from each type of biofuel listed in section B are at least as high as these default values in section B. Member States shall permit operators to give evidence of higher levels of saving than the default values. This evidence may take the form either of actual values (except in the case of grid-borne electricity) or of averages calculated for smaller geographical areas than those used in the calculation of the default values.
6. Member States shall accept that national, multinational or international schemes to measure greenhouse gas savings give an accurate result, providing that these schemes have been accredited by the Commission.

B. Average and default values for estimating greenhouse gas savings from biofuels

(i) *Raw material grown on land that was in arable, tropical grassland or plantation use¹⁸ in May 2003*

Biofuel	Average	Default
ethanol from farmed wood		
ethanol from sugar beet		
ethanol from wheat		
ethanol from maize		
ethanol from rye		
ethanol from barley		
ethanol from marc		
ethanol from sugar cane		
ETBE from bioethanol		
biodiesel from rape		
biodiesel from sunflower		
biodiesel from palm		
biodiesel from soya		
biodiesel from used cooking oil		
biodiesel from animal fats		
pure plant oil from rape		

(ii) *Raw material grown on land that was temperate grassland in May 2003*

Biofuel	Average	Default
ethanol from farmed wood		
ethanol from sugar beet		
ethanol from wheat		
ethanol from maize		
ethanol from rye		
ethanol from barley		
ethanol from marc		
ethanol from sugar cane	n.a.	
ETBE from bioethanol		
biodiesel from rape		
biodiesel from sunflower		
biodiesel from palm	n.a.	
biodiesel from soya		
biodiesel from used cooking oil	n.a.	
biodiesel from animal fats	n.a.	
pure plant oil from rape		

¹⁸ Including [set-aside land]

C. Methodological principles for use in measuring the greenhouse gas impact of biofuels

The greenhouse gas impact of biofuels shall be assessed in accordance with the principles laid down in [Annex VII of Directive 98/70/EC]. In applying these principles, the following rules shall be followed:

1. Emissions from biofuel production shall be compared with actual average emissions from petrol and diesel consumed in the EU as reported under [Directive 98/70/EC]. Until these data are available, an average of typical values for petrol and diesel produced from oil from an established onshore production facility in the Middle East and from Canadian tar sands shall be used.
2. Emissions from the refining of diesel or petrol are defined as the marginal increase in total refinery emissions for a marginal increase in the production of that product, with no change in the production of other products.
3. Biofuel by-products shall be accounted for using the energy allocation method, using the digestible energy content of by-products and weighting the biofuel and by-products by a long-term approximation of the relative average economic values of the types of fossil fuel that they can replace.
4. The EU average generation mix (for third countries, the national average) is used to estimate the primary energy sources used for the production of grid-borne electricity.
5. In valuing the excess electricity or heat produced by biofuel production systems that use cogeneration, the size of the production unit is assumed to be the minimum necessary to supply the electricity or heat (whichever demand is fulfilled first) needed to produce the biofuel.
6. For the calculation of N₂O emissions from land used to cultivate a crop for biofuel production and of carbon stock effects of land use change, the reference land use shall be the use of the land in May 2003.
7. For the purpose of comparing the global warming impact of different greenhouse gases, the time horizon is taken as 100 years, without discounting of the future relative to the present. The global warming potential of CH₄ is 23. The global warming potential of N₂O is 296.
8. The manufacture of machinery and equipment is not taken into account.
9. Greenhouse gases other than CO₂, CH₄ and N₂O are not taken into account.

Annex VI – Specifications for a 10% blend of biodiesel in diesel

Parameter	Units	Limits	
		Minimum	Maximum
Measured cetene		51	-
Calculated cetane		46	-
Density at 15°C	kg/m ³	820	845
Polycyclic aromatic hydrocarbons	%wt	-	10
Sulphur content	mg/kg	-	10
Flash point	°C	>55	-
Carbon residue in 10% distillation residue	%	-	0.3
Ash content	mg/kg	-	0.01
Water content	mg/kg	-	200
Total contamination	mg/kg	-	24
Copper strip corrosion (3h-50°C)	notation	class 1a	
Lubricity EN ISO 12156-1	µm	-	460
Kinematic viscosity at 40°C	mm ² /s	2	4.5
Distillation	% recovery at 250°C	%	<65
	% recovery at 350°C	%	85
	Temperature for 95% recovery	°C	360
FAME content EN14078	%	5	10
Cloud point	°C	Ref. national standard	
Cold filter plugging point	°C	Ref. national standard	
Phosphorus content	mg/kg	-	0.2
Acid index	mgKOH/g	-	0.05
Peroxides EN ISO 3960			20
Oxidation stability - EN14214	h	20	-
Oxidation stability by ASTM D2274 at 115°C	g/m ³		25
Acid index variation	mgKOH/g		0.12
Injector fouling	Detergent additive package		
Additivation for stability	Anti-oxidant type BHT 1000ppm		

Annex VII - Accreditation of biomass boiler/ stove installers

Member States shall develop accreditation schemes for biomass installers according to the following criteria:

1. Biomass installation accreditation programmes should be offered to installers with working experience. Biomass installers should be required to have undergone training as a plumber, pipe fitter, heating engineer or technician of sanitary and heating equipment as a prerequisite, or a vocational training scheme to provide an installer with adequate skills corresponding to a 3 years education in these skills including both classroom and workplace learning.
2. The prerequisite training should also provide knowledge about energy production with alternative renewable energies, including heat pumps and geothermal energy production, solar thermal collectors, including:
 - knowledge about solar radiation, heat transfers, optical properties of materials (absorption, emission, reflexion);
 - knowledge about heat stores (design, mode of operation);
 - knowledge about application areas of solar thermal collectors, biomass, heat pumps and geothermal systems;
 - search and recovery of errors in systems using renewable energy sources;
 - knowledge about the integration of eco-energy facilities in the household technologies and regulation systems.
3. The training leading to biomass installer accreditation should include both theoretical and practical parts and should be in its length not more than two weeks. Practical training besides "class-room" teaching should be included.
4. The theoretical part should cover the market situation of biomass, ecological aspects, biomass fuels, logistics, building laws, fire protection, 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.
5. The training should also provide good knowledge of any European standards for technology and biomass fuels, such as pellets, and biomass related legislation.
6. The course should end with an examination leading to a certificate. The examination should include a practical assessment of successfully installing biomass boilers or stoves.
7. The certificate should be issued by an accredited training programme or training provider. The accreditation of the training programme or provider should be done by Member States or authorities they appoint. The accrediting body should ensure that the training programme offered by the training provider has continuity and regional or national coverage. The training provider should have adequate technical facilities to

provide practical training, including some laboratory equipment or corresponding facilities to provide practical training. The training provider should also offer in addition to the basic training, shorter "refresher" courses on topical issues, e.g. new biomass technologies, enabling life-long learning platform in biomass installations. The training provider may be the manufacturer of the biomass boiler/ stove, institutes or associations.

8. The certificate shall be time restricted, so that a "refresher" seminar or event would be necessary to keep the certificate.
9. The official accreditation process should be transparent and clearly defined by the Member State or the authority they appoint.