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DIRECTIVE 2004/8/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 11 February 2004
on the promotion of cogeneration based on a useful heat demand in the internal energy market and amending Directive 92/42/EEC

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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,
Having regard to the proposal from the Commission (1),
Having regard to the opinion of the European Economic and Social Committee (2),
Having regard to the opinion of the Committee of the Regions (3),
Acting in accordance with the procedure laid down in Article 251 of the Treaty (4),
Whereas:

(1) The potential for use of cogeneration as a measure to save energy is underused in the Community at present. Promotion of high-efficiency cogeneration based on a useful heat demand is a Community priority given the potential benefits of cogeneration with regard to saving primary energy, avoiding network losses and reducing emissions, in particular of greenhouse gases. In addition, efficient use of energy by cogeneration can also contribute positively to the security of energy supply and to the competitive situation of the European Union and its Member States. It is therefore necessary to take measures to ensure that the potential is better exploited within the framework of the internal energy market.

(2) Directive 2003/54/EC of the European Parliament and of the Council of 26 June 2003 (5) establishes common rules for the generation, transmission, distribution and supply of electricity within the internal market in electricity. In this context, the development of cogeneration contributes to enhancing competition, also with regard to new market actors.

(3) The Green Paper entitled 'Towards a European strategy for the security of energy supply' points out that the European Union is extremely dependent on its external energy supplies currently accounting for 50 % of requirements and projected to rise to 70 % by 2030 if current trends

persists. Import dependency and rising import ratios heighten the risk of interruption to or difficulties in supply. However, security of supply should not be conceived as merely a question of reducing import dependency and boosting domestic production. Security of supply calls for a wide range of policy initiatives aimed at, inter alia, diversification of sources and technologies and improved international relations. The Green Paper emphasised furthermore that security of energy supply is essential for a future sustainable development. The Green Paper concludes that the adoption of new measures to reduce energy demand is essential both in terms of reducing the import dependence and in order to limit greenhouse gas emissions. In its Resolution of 15 November 2001 on the Green Paper (6), the European Parliament called for incentives to encourage a shift towards efficient energy production plants, including combined heat and power.

(4) The Commission's Communication 'A Sustainable Europe for a better world — A European Union Strategy for Sustainable Development' presented at the Gothenburg European Council on 15 and 16 June 2001 identified climate change as one of the principal barriers to sustainable development and emphasised the need for increased use of clean energy and clear action to reduce energy demand.

(5) The increased use of cogeneration geared towards making primary energy savings could constitute an important part of the package of measures needed to comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change, and of any policy package to meet further commitments. The Commission in its Communication on the implementation of the first phase of the European Climate Change Programme identified promotion of cogeneration as one of the measures needed to reduce the greenhouse gas emissions from the energy sector and announced its intention to present a proposal for a Directive on the promotion of cogeneration in 2002.

(6) In its Resolution of 25 September 2002 on the Commission communication on the implementation of the first phase of the European Climate Change Programme (7), the European Parliament welcomes the idea of submitting a proposal to strengthen Community measures to promote the use of combined heat and power (CHP) and calls for prompt adoption of a Directive on the promotion of CHP.

(7) The importance of cogeneration was also recognised by the Council Resolution of 18 December 1997 (8) and by the European Parliament Resolution of 15 May 1998 (9) on a Community strategy to promote combined heat and power.

(8) The Council in its Conclusions of 30 May 2000 and of 5 December 2000 endorsed the Commission's Action Plan on energy efficiency and identified promotion of cogeneration as one of the short-term priority areas. The European Parliament in its Resolution of 14 March 2001 on the Action Plan on energy efficiency (10) called on the Commission to submit proposals establishing common rules for the promotion of cogeneration, where this makes environmental sense.

(9) Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control (11), Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants (12) and Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste (13) highlight the need to evaluate the potential for cogeneration in new installations.

(10) Directive 2002/91/EC of the European Parliament and of the Council of 16 December 2002 on the energy performance of buildings (14) requires the Member States to ensure that for new buildings with a total useful floor area of over 1 000 m2, the technical, environmental and economic feasibility of alternative systems, such as cogeneration of heat and power, is considered and taken into account before construction starts.

(11) High efficiency cogeneration is in this Directive defined by the energy savings obtained by combined production instead of separate production of heat and electricity. Energy savings of more than 10 % qualify for the term 'high-efficiency cogeneration'. To maximise the energy savings and to avoid energy savings being lost, the greatest attention must be paid to the functioning conditions of cogeneration units.

(12) In the context of the evaluation of primary energy savings, it is important to take into account the situation of Member States in which the most of electricity consumption is covered by imports.

(13) It is important for transparency to adopt a harmonised basic definition of cogeneration. Where cogeneration installations are equipped to generate separate electricity or heat production, such production should not be specified as cogeneration for issuing a guarantee of origin and for statistical purposes.

(14) To ensure that support for cogeneration in the context of this Directive is based on the useful heat demand and primary energy savings, it is necessary to set up criteria to determine and assess the energy efficiency of the cogeneration production identified under the basic definition.

(15) The general objective of this Directive should be to establish a harmonised method for calculation of electricity from cogeneration and necessary guidelines for its implementation, taking into account methodologies such as those currently under development by European standardisation organisations. This method should be adjustable to take account of technical progress. Application of the calculations in Annexes II and III to micro-cogeneration units could, in accordance with the principle of proportionality, be based on values resulting from a type testing process certified by a competent, independent body.

(16) The definitions of cogeneration and of high-efficiency cogeneration used in this Directive do not prejudge the use of different definitions in national legislation, for purposes other than those set out in this Directive. It is appropriate to borrow in addition the relevant definitions contained in Directive 2003/54/EC and in Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market (15).

(17) Measuring the useful heat output at the point of production of the cogeneration plant underlines the need to ensure that advantages of the cogenerated useful heat are not lost in high heat losses from distribution networks.

(18) The power to heat ratio is a technical characteristic that needs to be defined in order to calculate the amount of electricity from cogeneration.

(19) For the purpose of this Directive, the definition of 'cogeneration units' may also include equipment in which only electrical energy or only thermal energy can be generated, such as

auxiliary firing and after burning units. The output from such equipment should not be considered as cogeneration for issuing a guarantee of origin and for statistical purposes.

(20) The definition of 'small scale cogeneration' comprises, inter alia, micro-cogeneration and distributed cogeneration units such as cogeneration units supplying isolated areas or limited residential, commercial or industrial demands.

(21) To increase transparency for the consumer's choice between electricity from cogeneration and electricity produced on the basis of other techniques, it is necessary to ensure that, on the basis of harmonised efficiency reference values, the origin of high-efficiency cogeneration can be guaranteed. Schemes for the guarantee of origin do not by themselves imply a right to benefit from national support mechanisms.

(22) It is important that all forms of electricity produced from high-efficiency cogeneration can be covered by guarantees of origin. It is important to distinguish guarantees of origin clearly from exchangeable certificates.

(23) To ensure increased market penetration of cogeneration in the medium term, it is appropriate to require all Member States to adopt and publish a report analysing the national potential for high-efficiency cogeneration and to include a separate analysis of barriers to cogeneration in the report, and of measures taken to ensure the reliability of the guarantee system.

(24) Public support should be consistent with the provisions of the Community guidelines on State aid for environmental protection (16), including as regards the non-cumulation of aid. These guidelines currently allow certain types of public support if it can be shown that the support measures are beneficial in terms of protection of the environment because the conversion efficiency is particularly high, because the measures will allow energy consumption to be reduced or because the production process will be less damaging to the environment. Such support will in some cases be necessary to further exploit the potential for cogeneration, in particular to take account of the need to internalise external costs.

(25) Public support schemes for promoting cogeneration should focus mainly on support for cogeneration based on economically justifiable demand for heat and cooling.

(26) Member States operate different mechanisms of support for cogeneration at the national level, including investment aid, tax exemptions or reductions, green certificates and direct price support schemes. One important means to achieve the aim of this Directive is to guarantee the proper functioning of these mechanisms, until a harmonised Community framework is put into operation, in order to maintain investor confidence. The Commission intends to monitor the situation and report on experiences gained with the application of national support schemes.

(27) For the transmission and distribution of electricity from high-efficiency cogeneration, the provisions of Article 7(1), (2) and (5) of Directive 2001/77/EC as well as relevant provisions of Directive 2003/54/EC should apply. Until the cogeneration producer is an eligible customer under national legislation within the meaning of Article 21(1) of Directive 2003/54/EC, tariffs related to the purchase of additional electricity sometimes needed by cogeneration producers should be set according to objective, transparent and non-discriminatory criteria. Especially for small scale and micro-cogeneration units access to the grid system of electricity produced from high-efficiency cogeneration may be facilitated subject to notification to the Commission.

(28) In general, cogeneration units up to 400 kW falling within the definitions of Council Directive 92/42/EEC of 21 May 1992 on efficiency requirements for new hot-water boilers fired with liquid or gaseous fuels (17) are unlikely to meet the minimum efficiency requirements therein and should therefore be excluded from that Directive.

(29) The specific structure of the cogeneration sector, which includes many small and medium-sized producers, should be taken into account, especially when reviewing the administrative procedures for obtaining permission to construct cogeneration capacity.

(30) Within the purpose of this Directive to create a framework for promoting cogeneration it is important to emphasise the need for a stabile economical and administrative environment for investments in new cogeneration installations. Member States should be encouraged to address this need by designing support schemes with a duration period of at least four years and by avoiding frequent changes in administrative procedures etc. Member States should furthermore be encouraged to ensure that public support schemes respect the phase-out principle.

(31) The overall efficiency and sustainability of cogeneration is dependent on many factors, such as technology used, fuel types, load curves, the size of the unit, and also on the properties of the heat. For practical reasons and based on the fact, that the use of the heat output for different purposes requires different temperature levels of the heat, and that these and other differences influence efficiencies of the cogeneration, cogeneration could be divided into classes such as: 'industrial cogeneration', 'heating cogeneration' and 'agricultural cogeneration'.

(32) In accordance with the principles of subsidiarity and proportionality as set out in Article 5 of the Treaty, general principles providing a framework for the promotion of cogeneration in the internal energy market should be set at Community level, but the detailed implementation should be left to Member States, thus allowing each Member State to choose the regime, which corresponds best to its particular situation. This Directive confines itself to the minimum required in order to achieve those objectives and does not go beyond what is necessary for that purpose.

(33) The measures necessary for the implementation of this Directive should be adopted in accordance with Council Decision 1999/468/EC of 28 June laying down the procedures for the exercise of implementing powers conferred on the Commission (18),

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Purpose

The purpose of this Directive is to increase energy efficiency and improve security of supply by creating a framework for promotion and development of high efficiency cogeneration of heat and power based on useful heat demand and primary energy savings in the internal energy market, taking into account the specific national circumstances especially concerning climatic and economic conditions.

Article 2

Scope

This Directive shall apply to cogeneration as defined in Article 3 and cogeneration technologies listed in Annex I.

Article 3

Definitions

For the purpose of this Directive, the following definitions shall apply:

(a) ‘cogeneration’ shall mean the simultaneous generation in one process of thermal energy and electrical and/or mechanical energy;
(b) ‘useful heat’ shall mean heat produced in a cogeneration process to satisfy an economically justifiable demand for heat or cooling;
(c) ‘economically justifiable demand’ shall mean the demand that does not exceed the needs for heat or cooling and which would otherwise be satisfied at market conditions by energy generation processes other than cogeneration;
(d) ‘electricity from cogeneration’ shall mean electricity generated in a process linked to the production of useful heat and calculated in accordance with the methodology laid down in Annex II;
(e) ‘back-up electricity’ shall mean the electricity supplied through the electricity grid whenever the cogeneration process is disrupted, including maintenance periods, or out of order;
(f) ‘top-up electricity’ shall mean the electricity supplied through the electricity grid in cases where the electricity demand is greater than the electrical output of the cogeneration process;
(g) ‘overall efficiency’ shall mean the annual sum of electricity and mechanical energy production and useful heat output divided by the fuel input used for heat produced in a cogeneration process and gross electricity and mechanical energy production;
(h) ‘efficiency’ shall mean efficiency calculated on the basis of ‘net calorific values’ of fuels (also referred to as ‘lower calorific values’);
(i) ‘high efficiency cogeneration’ shall mean cogeneration meeting the criteria of Annex III;
(j) ‘efficiency reference value for separate production’ shall mean efficiency of the alternative separate productions of heat and electricity that the cogeneration process is intended to substitute;
(k) ‘power to heat ratio’ shall mean the ratio between electricity from cogeneration and useful heat when operating in full cogeneration mode using operational data of the specific unit;
(l) ‘cogeneration unit’ shall mean a unit that can operate in cogeneration mode;
(m) ‘micro-cogeneration unit’ shall mean a cogeneration unit with a maximum capacity below 50 kWe;
(n) ‘small scale cogeneration’ shall mean cogeneration units with an installed capacity below 1 MWe;
(o) ‘cogeneration production’ shall mean the sum of electricity and mechanical energy and useful heat from cogeneration.
In addition, the relevant definitions in Directive 2003/54/EC, and in Directive 2001/77/EC shall apply.

Article 4

Efficiency criteria of cogeneration

1. For the purpose of determining the efficiency of cogeneration in accordance with Annex III, the Commission shall, in accordance with the procedure referred to in Article 14(2), not later than 21 February 2006, establish harmonised efficiency reference values for separate production of electricity and heat. These harmonised efficiency reference values shall consist of a matrix of values differentiated by relevant factors, including year of construction and types of fuel, and must be based on a well-documented analysis taking, inter alia, into account data from operational use under realistic conditions, cross-border exchange of electricity, fuel mix and climate conditions as well as applied cogeneration technologies in accordance with the principles in Annex III.

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2. The Commission shall examine the harmonised efficiency reference values for separate production of electricity and heat referred to in paragraph 1, for the first time on 21 February 2011, and every four years thereafter, to take account of technological developments and changes in the distribution of energy sources. Any measures resulting from this examination, designed to amend the non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 14(2).

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3. Member States implementing this Directive before the establishment by the Commission of harmonised efficiency reference values for separate production of electricity and heat referred to in paragraph 1, should, until the date referred to in paragraph 1, adopt their national efficiency reference values for separate production of heat and electricity to be used for the calculation of primary energy savings from cogeneration in accordance with the methodology set out in Annex III.

Article 5

Guarantee of origin of electricity from high-efficiency cogeneration

1. On the basis of the harmonised efficiency reference values referred to in Article 4(1), Member States shall, not later than six months after adoption of these values, ensure that the origin of electricity produced from high-efficiency cogeneration can be guaranteed according to objective, transparent and non-discriminatory criteria laid down by each Member State. They shall ensure that this guarantee of origin of the electricity enable producers to demonstrate that the electricity they sell is produced from high efficiency cogeneration and is issued to this effect in response to a request from the producer.

2. Member States may designate one or more competent bodies, independent of generation and distribution activities, to supervise the issue of the guarantee of origin referred to in paragraph 1.

3. Member States or the competent bodies shall put in place appropriate mechanisms to ensure that the guarantee of origin are both accurate and reliable and they shall outline in the report referred to in Article 10(1) the measures taken to ensure the reliability of the guarantee system.

4. Schemes for the guarantee of origin do not by themselves imply a right to benefit from national support mechanisms.

5. A guarantee of origin shall:

— specify the lower calorific value of the fuel source from which the electricity was produced, specify the use of the heat generated together with the electricity and finally specify the dates and places of production,

— specify the quantity of electricity from high efficiency cogeneration in accordance with Annex II that the guarantee represents,

— specify the primary energy savings calculated in accordance with Annex III based on harmonised efficiency reference values established by the Commission as referred to in Article 4(1).

Member States may include additional information on the guarantee of origin.

6. Such guarantees of origin, issued according to paragraph 1, should be mutually recognised by the Member States, exclusively as proof of the elements referred in paragraph 5. Any refusal 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.

Article 6

National potentials for high-efficiency cogeneration

1. Member States shall establish an analysis of the national potential for the application of high-efficiency cogeneration, including high-efficiency micro-cogeneration.

2. The analysis shall:

— be based on well-documented scientific data and comply with the criteria listed in Annex IV,

— identify all potential for useful heating and cooling demands, suitable for application of high-efficiency cogeneration, as well as the availability of fuels and other energy resources to be utilised in cogeneration,

— include a separate analysis of barriers, which may prevent the realisation of the national potential for high-efficiency cogeneration. In particular, this analysis shall consider barriers relating to the prices and costs of and access to fuels, barriers in relation to grid system issues, barriers in relation to

administrative procedures, and barriers relating to the lack of internalisation of the external costs in energy prices.

3. Member States shall for the first time not later than 21 February 2007 and thereafter every four years, following a request by the Commission at least six months before the due date, evaluate progress towards increasing the share of high-efficiency cogeneration.

Article 7

Support schemes

1. Member States shall ensure that support for cogeneration — existing and future units — is based on the useful heat demand and primary energy savings, in the light of opportunities available for reducing energy demand through other economically feasible or environmental advantageous measures like other energy efficiency measures.

2. Without prejudice to Articles 87 and 88 of the Treaty, the Commission shall evaluate the application of support mechanisms used in Member States according to which a producer of cogeneration receives, on the basis of regulations issued by public authorities, direct or indirect support, which could have the effect of restricting trade.

The Commission shall consider whether those mechanisms contribute to the pursuit of the objectives set out in Articles 6 and 174(1) of the Treaty.

3. The Commission shall in the report referred to in Article 11 present a well-documented analysis on experience gained with the application and coexistence of the different support mechanisms referred to in paragraph 2 of this Article. The report shall assess the success, including cost-effectiveness, of the support systems in promoting the use of high-efficiency cogeneration in conformity with the national potentials referred to in Article 6. The report shall further review to what extent the support schemes have contributed to the creation of stable conditions for investments in cogeneration.

Article 8

Electricity grid system and tariff issues

1. For the purpose of ensuring the transmission and distribution of electricity produced from high-efficiency cogeneration the provisions of Article 7(1), (2) and (5) of Directive 2001/77/EC as well as the relevant provisions of Directive 2003/54/EC shall apply.

2. Until the cogeneration producer is an eligible customer under national legislation within the meaning of Article 21(1) of Directive 2003/54/EC, Member States should take the necessary measures to ensure that the tariffs for the purchase of electricity to back-up or top-up electricity generation are set on the basis of published tariffs and terms and conditions.

3. Subject to notification to the Commission, Member States may particularly facilitate access to the grid system of electricity produced from high-efficiency cogeneration from small scale and micro cogeneration units.

Article 9

Administrative procedures

1. Member States or the competent bodies appointed by the Member States shall evaluate the existing legislative and regulatory framework with regard to authorisation procedures or the other procedures laid down in Article 6 of Directive 2003/54/EC, which are applicable to high-efficiency cogeneration units.

Such evaluation shall be made with a view to:

(a) encouraging the design of cogeneration units to match economically justifiable demands for useful heat output and avoiding production of more heat than useful heat;

(b) reducing the regulatory and non-regulatory barriers to an increase in cogeneration;

(c) streamlining and expediting procedures at the appropriate administrative level; and

(d) ensuring that the rules are objective, transparent and non-discriminatory, and take fully into account the particularities of the various cogeneration technologies.

2. Member States shall — where this is appropriate in the context of national legislation — provide an indication of the stage reached specifically in:
(a) coordination between the different administrative bodies as regards deadlines, reception and treatment of applications for authorisations;
(b) the drawing up of possible guidelines for the activities referred to in paragraph 1, and the feasibility of a fast-track planning procedure for cogeneration producers; and
(c) the designation of authorities to act as mediators in disputes between authorities responsible for issuing authorisations and applicants for authorisations.

Article 10

Member States' reporting

1. Member States shall, not later than 21 February 2006, publish a report with the results of the analysis and evaluations carried out in accordance with Articles 5(3), 6(1), 9(1) and 9(2).
2. Member States shall not later than 21 February 2007 and thereafter every four years, following a request by the Commission at least six months before the due date, publish a report with the result of the evaluation referred to in Article 6(3).
3. Member States shall submit to the Commission, for the first time before the end of December 2004 covering data for the year 2003, and thereafter on an annual basis, statistics on national electricity and heat production from cogeneration, in accordance with the methodology shown in Annex II. They shall also submit annual statistics on cogeneration capacities and fuels used for cogeneration. Member States may also submit statistics on primary energy savings achieved by application of cogeneration, in accordance with the methodology shown in Annex III.

Article 11

Commission reporting

1. On the basis of the reports submitted pursuant to Article 10, the Commission shall review the application of this Directive and submit to the European Parliament and to the Council not later than 21 February 2008 and thereafter every four years, a progress report on the implementation of this Directive.
In particular, the report shall:
(a) consider progress towards realising national potentials for high-efficiency cogeneration referred to in Article 6;
(b) assess the extent to which rules and procedures defining the framework conditions for cogeneration in the internal energy market are set on the basis of objective, transparent and non-discriminatory criteria taking due account of the benefits of cogeneration;
(c) examine the experiences gained with the application and coexistence of different support mechanisms for cogeneration;
(d) review efficiency reference values for separate production on the basis of the current technologies.
If appropriate, the Commission shall submit with the report further proposals to the European Parliament and the Council.
2. When evaluating the progress referred to in paragraph 1(a), the Commission shall consider to what extent the national potentials for high-efficiency cogeneration, referred to in Article 6, have been or are foreseen to be realised taking into account Member State measures, conditions, including climate conditions, and impacts of the internal energy market and implications of other Community initiatives such as Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (19).
If appropriate, the Commission shall submit further proposals to the European Parliament and Council, notably aiming at the establishment of an action plan for the development of high efficiency cogeneration in the Community.

3. When evaluating the scope for further harmonisation of calculation methods as referred to in Article 4(1), the Commission shall consider the impact of the coexistence of calculations as referred to in Article 12, Annex II and Annex III, on the internal energy market also taking into account the experiences gained from national support mechanisms.
If appropriate, the Commission shall submit further proposals to the European Parliament and Council aiming at further harmonisation of the calculation methods.

Article 12

Alternative calculations

1. Until the end of 2010 and subject to prior approval by the Commission, Member States may use other methods than the one provided for in Annex II(b) to subtract possible electricity production not produced in a cogeneration process from the reported figures. However, for the purposes referred to in Article 5(1) and in Article 10(3), the quantity of electricity from cogeneration shall be determined in accordance with Annex II.
2. Member States may calculate primary energy savings from a production of heat and electricity and mechanical energy according to Annex III(c), without using Annex II to exclude the non-cogenerated heat and electricity parts of the same process. Such a production can be regarded as high-efficiency cogeneration provided it fulfils the efficiency criteria in Annex III(a) and, for cogeneration units with an electrical capacity larger than 25 MW, the overall efficiency is above 70 %. However, specification of the quantity of electricity from cogeneration produced in such a production, for issuing a guarantee of origin and for statistical purposes, shall be determined in accordance with Annex II.
3. Until the end of 2010, Member States may, using an alternative methodology, define a cogeneration as high-efficiency cogeneration without verifying that the cogeneration production fulfils the criteria in Annex III(a), if it is proved on national level that the cogeneration production identified by such an alternative calculation methodology on average fulfils the criteria in Annex III(a). If a guarantee of origin is issued for such production then the efficiency of the cogeneration production specified on the guarantee shall not exceed the threshold values of the criteria in Annex III(a) unless calculations in accordance with Annex III prove otherwise. However, specification of the quantity of electricity from cogeneration produced in such a production, for issuing a guarantee of origin and for statistical purposes, shall be determined in accordance with Annex II.

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Article 13

Adaptation to technical progress

1. The Commission shall adapt the threshold values used for the calculation of electricity from cogeneration referred to in Annex II(a) to technical progress. Those measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 14(2).
2. The Commission shall adapt the threshold values used for the calculation of efficiency of cogeneration production and primary energy savings referred to in Annex III(a) to technical progress. Those measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 14(2).
3. The Commission shall adapt the guidelines for determining the power to heat ratio referred to in Annex II(d) to technical progress. Those measures, designed to amend non-essential elements of this Directive, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 14(2).

Article 14

Committee procedure

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

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Article 15

Transposition

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive not later than 21 February 2006. They shall forthwith inform the Commission thereof.

When Member States adopt these 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 Member States shall lay down the methods of making such reference.

Article 16

Amendment to Directive 92/42/EEC

The following indent shall be added to Article 3(1) of Directive 92/42/EEC:

'— cogeneration units as defined in Directive 2004/8/EC of the European Parliament and of the Council of 11 February 2004 on the promotion of cogeneration based on useful heat demand in the internal energy market (20).'

Article 17

Entry into force

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

Article 18

Addressees

This Directive is addressed to the Member States.

ANNEX I

Cogeneration technologies covered by this Directive

(a) Combined cycle gas turbine with heat recovery

(b) Steam backpressure turbine

(c) Steam condensing extraction turbine

(d) Gas turbine with heat recovery

(e) Internal combustion engine

(f) Microturbines

(g) Stirling engines

(h) Fuel cells

(i) Steam engines

(j) Organic Rankine cycles

(k) Any other type of technology or combination thereof falling under the definition laid down in Article 3(a)

ANNEX II

Calculation of electricity from cogeneration

Values used for calculation of electricity from cogeneration shall be determined on the basis of the expected or actual operation of the unit under normal conditions of use. For micro-cogeneration units the calculation may be based on certified values.

(a) Electricity production from cogeneration shall be considered equal to total annual electricity production of the unit measured at the outlet of the main generators;

(i) in cogeneration units of type (b), (d), (e), (f), (g) and (h) referred to in Annex I, with an annual overall efficiency set by Member States at a level of at least 75 %, and
(ii) in cogeneration units of type (a) and (c) referred to in Annex I with an annual overall efficiency set by Member States at a level of at least 80 %.
(b) In cogeneration units with an annual overall efficiency below the value referred to in paragraph (a)(i) (cogeneration units of type (b), (d), (e), (f), (g), and (h) referred to in Annex I) or with an annual overall efficiency below the value referred to in paragraph (a)(ii) (cogeneration units of type (a) and (c) referred to in Annex I) cogeneration is calculated according to the following formula:
E CHP = HCHP. C
where:

E CHP is the amount of electricity from cogeneration

C is the power to heat ratio

HCHP is the amount of useful heat from cogeneration (calculated for this purpose as total heat production minus any heat produced in separate boilers or by live steam extraction from the steam generator before the turbine).

The calculation of electricity from cogeneration must be based on the actual power to heat ratio. If the actual power to heat ratio of a cogeneration unit is not known, the following default values may be used, notably for statistical purposes, for units of type (a), (b), (c), (d), and (e) referred to in Annex I provided that the calculated cogeneration electricity is less or equal to total electricity production of the unit:

Type of the unit	Default power to heat ratio, C
Combined cycle gas turbine with heat recovery	0,95
Steam backpressure turbine	0,45
Steam condensing extraction turbine	0,45
Gas turbine with heat recovery	0,55
Internal combustion engine	0,75

If Member States introduce default values for power to heat ratios for units of type (f), (g), (h), (i), (j) and (k) referred to in Annex I, such default values shall be published and shall be notified to the Commission.
(c) If a share of the energy content of the fuel input to the cogeneration process is recovered in chemicals and recycled this share can be subtracted from the fuel input before calculating the overall efficiency used in paragraphs (a) and (b).
(d) Member States may determine the power to heat ratio as the ratio between electricity and useful heat when operating in cogeneration mode at a lower capacity using operational data of the specific unit.

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(e) The Commission shall establish detailed guidelines for the implementation and application of Annex II, including the determination of the power to heat ratio. Those measures, designed to amend non-essential elements of this Directive by supplementing it, shall be adopted in accordance with the regulatory procedure with scrutiny referred to in Article 14(2).
▼B
(f) Member States may use other reporting periods than one year for the purpose of the calculations according to paragraphs (a) and (b).

ANNEX III
Methodology for determining the efficiency of the cogeneration process
Values used for calculation of efficiency of cogeneration and primary energy savings shall be determined on the basis of the expected or actual operation of the unit under normal conditions of use.
(a) High-efficiency cogeneration
For the purpose of this Directive high-efficiency cogeneration shall fulfil the following criteria:
— cogeneration production from cogeneration units shall provide primary energy savings calculated according to point (b) of at least 10 % compared with the references for separate production of heat and electricity,
— production from small scale and micro cogeneration units providing primary energy savings may qualify as high-efficiency cogeneration.
(b) Calculation of primary energy savings
The amount of primary energy savings provided by cogeneration production defined in accordance with Annex II shall be calculated on the basis of the following formula:

$$PES = \left(1 - \frac{1}{\frac{CHP\ H\eta}{Ref\ H\eta} + \frac{CHP\ E\eta}{Ref\ E\eta}} \right) \times 100\ \%$$

Where:
PES is primary energy savings.

CHP Hη is the heat efficiency of the cogeneration production defined as annual useful heat output divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration.

Ref Hη is the efficiency reference value for separate heat production.

CHP Eη is the electrical efficiency of the cogeneration production defined as annual electricity from cogeneration divided by the fuel input used to produce the sum of useful heat output and electricity from cogeneration. Where a cogeneration unit generates mechanical energy, the annual electricity from cogeneration may be increased by an additional element representing the amount of electricity which is equivalent to that of mechanical energy. This additional element will not create a right to issue guarantees of origin in accordance with Article 5.

Ref Eη is the efficiency reference value for separate electricity production.

(c) Calculations of energy savings using alternative calculation according to Article 12(2)

If primary energy savings for a process are calculated in accordance with Article 12(2) the primary energy savings shall be calculated using the formula in paragraph (b) of this Annex replacing:

'CHP Hη' with 'Hη' and

'CHP Eη' with 'Eη',

where:

Hηshall mean the heat efficiency of the process, defined as the annual heat output divided by the fuel input used to produce the sum of heat output and electricity output.

Eηshall mean the electricity efficiency of the process, defined as the annual electricity output divided by the fuel input used to produce the sum of heat output and electricity output. Where a cogeneration unit generates mechanical energy, the annual electricity from cogeneration may be increased by an additional element representing the amount of electricity which is equivalent to that of mechanical energy. This additional element will not create a right to issue guarantees of origin in accordance with Article 5.

(d) Member States may use other reporting periods than one year for the purpose of the calculations according to paragraphs (b) and (c) of this Annex.

(e) For micro-cogeneration units the calculation of primary energy savings may be based on certified data.

(f) Efficiency reference values for separate production of heat and electricity

The principles for defining the efficiency reference values for separate production of heat and electricity referred to in Article 4(1) and in the formula set out in paragraph (b) of this Annex shall establish the operating efficiency of the separate heat and electricity production that cogeneration is intended to substitute.

The efficiency reference values shall be calculated according to the following principles:

1. For cogeneration units as defined in Article 3, the comparison with separate electricity production shall be based on the principle that the same fuel categories are compared.

2. Each cogeneration unit shall be compared with the best available and economically justifiable technology for separate production of heat and electricity on the market in the year of construction of the cogeneration unit.

3. The efficiency reference values for cogeneration units older than 10 years of age shall be fixed on the reference values of units of 10 years of age.

4. The efficiency reference values for separate electricity production and heat production shall reflect the climatic differences between Member States.

ANNEX IV

Criteria for analysis of national potentials for high-efficiency cogeneration

(a) The analysis of national potentials referred to in Article 6 shall consider:

— the type of fuels that are likely to be used to realise the cogeneration potentials, including specific considerations on the potential for increasing the use of renewable energy sources in the national heat markets via cogeneration,

— the type of cogeneration technologies as listed in Annex I that are likely to be used to realise the national potential,

— the type of separate production of heat and electricity or, where feasible, mechanical energy that high-efficiency cogeneration is likely to substitute,

— a division of the potential into modernisation of existing capacity and construction of new capacity.
(b) The analysis shall include appropriate mechanisms to assess the cost effectiveness — in terms of primary energy savings — of increasing the share of high-efficiency cogeneration in the national energy mix. The analysis of cost effectiveness shall also take into account national commitments accepted in the context of the climate change commitments accepted by the Community pursuant to the Kyoto Protocol to the United Nations Framework Convention on Climate Change.
(c) The analysis of the national cogeneration potential shall specify the potentials in relation to the timeframes 2010, 2015 and 2020 and include, where feasible, appropriate cost estimates for each of the timeframes.

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(1) OJ C 291 E, 26.11.2002, p. 182.
(2) OJ C 95, 23.4.2003, p. 12.
(3) OJ C 244, 10.10.2003, p. 1.
(4) Opinion of the European Parliament of 13 May 2003 (not yet published in the Official Journal), Council Common Position of 8 September 2003 (not yet published in the Official Journal) and Position of the European Parliament of 18 December 2003 (not yet published in the Official Journal).
(5) OJ L 176, 15.7.2003, p. 37.
(6) OJ C 140 E, 13.6.2002, p. 543.
(7) OJ C 273 E, 14.11.2003, p. 172.
(8) OJ C 4, 8.1.1998, p. 1.
(9) OJ C 167, 1.6.1998, p. 308.
(10) OJ C 343, 5.12.2001, p. 190.
(11) OJ C 257, 10.10.1996, p. 26.
(12) OJ L 309, 27.11.2001, p. 1.
(13) OJ L 332, 28.12.2000, p. 91.
(14) OJ L 1, 4.1.2003, p. 65.
(15) OJ L 283, 27.10.2001, p. 33.
(16) OJ C 37, 3.2.2001, p. 3.
(17) OJ L 167, 22.6.1992, p. 17. Directive as last amended by Directive 93/68/EEC (OJ L 220, 30.8.1993, p. 1).
(18) OJ L 184, 17.7.1999, p. 23.
(19) OJ L 275, 25.10.2003, p. 32.
(20) OJ L 52, 21.2.2004, p. 50.