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NOTE

from:	General Secretariat of the Council
to:	Delegations
No. Cion prop.:	12046/11 ENER 256 ENV 582 TRANS 201 ECOFIN 454 RECH 252 CODEC 1102 - COM(2011) 370 final
Subject:	Proposal for a Directive of the European Parliament and of the Council on energy efficiency and repealing Directives 2004/8/EC and 2006/32/EC

The annex to this note contains the text of the above-mentioned proposal with new Presidency suggestions, based on positions expressed and comments received from delegations, as well as some editorial changes. **Underlining in bold** indicates new changes to the Commission's proposal and "**[…]**" deletion, compared to 14980/1/11 REV 1. Elements of the proposed provisions set in "**[]**" are marked for further discussion. Earlier proposed changes are marked in **bold**.

At this stage, new changes relate essentially to refining the concepts laid down in Articles 4, 6, 8 and 10 and related Annexes. Recitals have been added for reference and will need to be adapted to the text as it evolves. There may in any case be a need to subsequently fine tune overall consistency and cross-references within the text.

It is understood that delegations have general scrutiny reservations on the present text.

ANNEX

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on energy efficiency and repealing Directives 2004/8/EC and 2006/32/EC

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 194(2) thereof,

Having regard to the proposal from the European Commission[1],

After transmission of the draft legislative act to the national parliaments,

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 ordinary legislative procedure,

Whereas:

(1) The Union is facing unprecedented challenges resulting from increased dependence on energy imports and scarce energy resources, and the need to limit climate change and to overcome the economic crisis. Energy efficiency is a valuable means to address these challenges. It improves the Union's security of supply by reducing primary energy consumption and decreasing energy imports. It helps to reduce greenhouse gas emissions in a cost-effective way and thereby to mitigate climate change. Shifting to a more energy-efficient economy should also accelerate the spread of innovative technological solutions and improve the competitiveness of industry in the Union, boosting economic growth and creating high quality jobs in several sectors related to energy efficiency.

(2) The Presidency Conclusions of the European Council of 8 and 9 March 2007 emphasized the need to increase energy efficiency in the Union to achieve the objective of saving 20% of the Union's primary energy consumption by 2020 compared to projections. This amounts to a reduction of the Union's primary energy consumption of 368 Mtoe in 2020[4].

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1 OJ C , , p.

2 OJ C , , p.

3 OJ C , , p.

4 Projections made in 2007 showed a primary energy consumption in 2020 of 1842 Mtoe. A 20% reduction results in 1474 Mtoe in 2020, i.e. a reduction of 368 Mtoe as compared to projections.

(3) The Presidency Conclusions of the European Council of 17 June 2010 confirmed the energy efficiency target as one of the headline targets of the Union's new strategy for jobs and smart, sustainable and inclusive growth (Europe 2020 Strategy). Under this process and in order to implement this objective at national level, Member States are required to set national targets in close dialogue with the Commission and to indicate, in their National Reform Programmes, how they intend to achieve them.

(4) The Commission Communication on Energy 2020[5] places energy efficiency at the core of the EU energy strategy for 2020 and outlines the need for a new energy efficiency strategy that will enable all Member States to decouple energy use from economic growth.

(5) In its Resolution of 15 December 2010 on the Revision of the Energy Efficiency Action Plan[6], the European Parliament called on the Commission to include in its revised Energy Efficiency Action Plan measures to close the gap to reach the overall EU energy efficiency objective in 2020.

(6) One of the flagship initiatives of the Europe 2020 Strategy is the resource-efficient Europe flagship adopted by the Commission on 26 January 2011[7]. This identifies energy efficiency as a major element in ensuring the sustainability of the use of energy resources.

(7) The Presidency Conclusions of the European Council of 4 February 2011 acknowledged that the EU energy efficiency target is not on track and that determined action is required to tap the considerable potential for higher energy savings in buildings, transport, products and processes.

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5 COM/2010/0639 final.
6 2010/2107(INI).
7 COM(2011)21.

(8) On 8 March 2011, the Commission adopted the Energy Efficiency Plan 2011[8]. This confirmed that the Union is not on track to achieve its energy efficiency target. To remedy this, it spelled out a series of energy efficiency policies and measures covering the full energy chain, including energy generation, transmission and distribution; the leading role of the public sector in energy efficiency; buildings and appliances; industry; and the need to empower final customers to manage their energy consumption. Energy efficiency in the transport sector was considered in parallel in the White Paper on Transport, adopted on 28 March 2011[9]. In particular, Initiative 26 of the White Paper calls for appropriate standards for CO_2 emissions of vehicles in all modes, where necessary supplemented by requirements on energy efficiency to address all types of propulsion systems.

(9) On 8 March 2011, the Commission also adopted a Roadmap for moving to a competitive low carbon economy in 2050[10], identifying the need from this perspective for more focus on energy efficiency.

(10) In this context it is necessary to update the Union's legal framework for energy efficiency with a Directive pursuing the overall objective of the energy efficiency target of saving 20% of the Union's primary energy consumption by 2020, and of making further energy efficiency improvements after 2020. To this end, it should establish a common framework to promote energy efficiency within the Union and lay down specific actions to implement some of the proposals included in the Energy Efficiency Plan 2011 and achieve the significant unrealised energy saving potentials it identifies.

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8 COM(2011) 109 final.
9 COM(2011) 144 final.
10 COM(2011) 112 final

(11) The Effort Sharing Decision (No 406/2009/EC)[11] requires the Commission to assess and report by 2012 on the progress of the Community and its Member States towards the objective of reducing energy consumption by 20% by 2020 compared to projections. It also states that, to help Member States meet the Community's greenhouse gas emission reduction commitments, the Commission should propose, by 31 December 2012, strengthened or new measures to accelerate energy efficiency improvements. This Directive responds to this requirement. It also contributes to meeting the goals set out in the Roadmap for moving to a competitive low carbon economy in 2050, notably by reducing greenhouse gas emissions from the energy sector, and to achieving zero emission electricity production by 2050.

(12) An integrated approach must be taken to tap all the existing energy saving potential, encompassing savings in the energy supply and the end-use sectors. At the same time, the provisions of Directive 2004/8/EC on promotion of cogeneration based on a useful heat demand in the internal energy market[12] and Directive 2006/32/EC on energy end-use efficiency and energy services[13] should be strengthened.

(13) It would be preferable for the 20% energy efficiency target to be achieved as a result of the cumulative implementation of specific national and European measures promoting energy efficiency in different fields. If that approach does not succeed, it would however be necessary to reinforce the policy framework by adding a system of binding targets. In a first stage, therefore, Member States should be required to set national energy efficiency targets, schemes and programmes. It should be for them to decide whether these targets should be binding or indicative in their territory. In a second stage, these targets and the individual efforts of each Member State should be evaluated by the Commission, alongside data on the progress made, to assess the likelihood of achieving the overall Union target and the extent to which the individual efforts are sufficient to meet the common goal. The Commission should therefore closely monitor the implementation of national energy efficiency programmes through its revised legislative framework and within the Europe 2020 process. If this assessment shows that the overall Union target is unlikely to be achieved, then the Commission should propose mandatory national targets for 2020, taking into account the individual starting points of Member States, their economic performance and early action taken.

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11 OJ L 140, 5.6.2009, p.136.
12 OJ L 52, 21.2.2004, p. 50.
13 OJ L 144, 27.4.2008, p. 64.

(14) The total volume of public spending is equivalent to 19% of the Union's gross domestic product. For this reason the public sector constitutes an important driver to stimulate market transformation towards more efficient products, buildings and services, as well as to trigger behavioural changes in energy consumption by citizens and enterprises. Furthermore, decreasing energy consumption through energy efficiency improvement measures can free up public resources for other purposes. Public bodies at national, regional and local level should fulfil an exemplary role as regards energy efficiency.

(15) The rate of building renovation needs to be increased, as the existing building stock represents the single biggest potential sector for energy savings. Moreover, buildings are crucial to achieving the EU objective of reducing greenhouse gas emissions by 80-95% by 2050 compared to 1990. Buildings owned by public bodies account for a considerable share of the building stock and have high visibility in public life. It is therefore appropriate to set an annual rate of renovation of all buildings owned by public bodies to upgrade their energy performance. This renovation rate should be without prejudice to the obligations with regard to nearly-zero energy buildings set in Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings[14]. The obligation to renovate public buildings complements the provisions of that Directive, which requires Member States to ensure that when existing buildings undergo major renovation their energy performance is upgraded so that they meet minimum energy performance requirements.

(16) A number of municipalities and other public bodies in the Member States have already put into place integrated approaches to energy saving and energy supply, for example via sustainable energy action plans, such as those developed under the Covenant of Mayors initiative, and integrated urban approaches which go beyond individual interventions in buildings or transport modes. Member States should encourage municipalities and other public bodies to adopt integrated and sustainable energy efficiency plans with clear objectives, to involve citizens in their development and implementation and to adequately inform them about their content and progress in achieving objectives. Such plans can yield considerable energy savings, especially if they are implemented by energy management systems that allow the concerned public bodies to better manage their energy consumption. Exchange of experience between cities, towns and other public bodies should be encouraged with respect to the more innovative experiences.

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14 OJ L 153, 18.6.2010, p. 13.

(17) With regards to the purchase of certain products and services and the purchase and rent of buildings, public bodies which conclude public works, supply or service contracts should lead by example and make energy efficient purchasing decisions. The provisions of the EU public procurement directives should not however be affected.

(18) An assessment of the possibility of establishing a "white certificate" scheme at Union level has shown that, in the current situation, such a system would create excessive administrative costs and that there is a risk that energy savings would be concentrated in a number of Member States and not introduced across the Union. The latter objective can better be achieved, at least at this stage, by means of national energy efficiency obligation schemes or other alternative measures that achieve the same amount of energy savings. The Commission should however define, by a delegated act, the conditions under which a Member State could in future recognise the energy savings achieved in another Member State. It is appropriate for the level of ambition of such schemes to be established in a common framework at Union level while providing significant flexibility to Member States to take full account of the national organisation of market actors, the specific context of the energy sector and final customers' habits. The common framework should give energy utilities the option of offering energy services to all final customers, not only to those to whom they sell energy. This increases competition in the energy market because energy utilities can differentiate their product by providing complementary energy services. The common framework should allow Member States to include requirements in their national scheme that pursue a social aim, notably in order to ensure that vulnerable customers have access to the benefits of higher energy efficiency. It should also allow Member States to exempt small companies from the energy efficiency obligation. The Commission Communication “Small Business Act”[15] sets out principles that should be taken into account by Member States that decide to abstain from applying this possibility.

(19) To tap the energy savings potential in certain market segments where energy audits are generally not offered commercially (such as households or small and medium-sized enterprises), Member States should ensure that energy audits are available. Energy audits should be mandatory and regular for large enterprises, as energy savings can be significant.

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[15] COM(2008)394 Final.

(20) These audits should be carried out in an independent and cost-effective manner. The requirement for independence allows the audits to be carried out by in-house experts, provided that these are qualified or accredited, that they are not directly engaged in the activity audited, and that the Member State has put in place a scheme to assure and check their quality and to impose sanctions if needed.

(21) When designing energy efficiency improvement measures, account should be taken of efficiency gains and savings obtained through the widespread application of cost-effective technological innovations such as smart meters. To maximise the saving benefits of these innovations, final customers should be able to visualise indicators of cost and consumption and have regular individual billing based on actual consumption.

(22) When designing energy efficiency improvement measures, Member States should take due account of the need to ensure the correct functioning of the internal market and the coherent implementation of the acquis, in accordance with the provisions of the Treaty on the Functioning of the European Union.

(23) High-efficiency cogeneration (CHP) and district heating and cooling has significant potential for saving primary energy which is largely untapped in the Union. Member States should draw up national plans to develop high-efficiency CHP and district heating and cooling. These plans should cover a sufficiently long period to provide investors with information concerning national development plans and contribute to a stable and supportive investment environment. New electricity generation installations and existing installations which are substantially refurbished or whose permit or licence is updated should be equipped with high-efficient CHP units to recover waste heat stemming from the production of electricity. This waste heat could then be transported where it is needed through district heating networks. To this end, Member States should adopt authorisation criteria to ensure the location of installations in sites close to heat demand points. Member States should however be able to lay down conditions for exemption from these obligations where certain conditions are met.

(24) High-efficiency cogeneration should be defined by the energy savings obtained by combined production instead of separate production of heat and electricity. The definitions of cogeneration and high-efficiency cogeneration used in Union legislation should not prejudge the use of different definitions in national legislation for purposes other than those of the Union legislation. To maximise energy savings and avoid energy saving opportunities being missed, the greatest attention should be paid to the operating conditions of cogeneration units.

(25) To increase transparency for the final customer to be able to choose between electricity from cogeneration and electricity produced by other techniques, the origin of high-efficiency cogeneration should be guaranteed on the basis of harmonised efficiency reference values. Guarantee of origin schemes do not by themselves imply a right to benefit from national support mechanisms. It is important that all forms of electricity produced from high-efficiency cogeneration can be covered by guarantees of origin. Guarantees of origin should be distinguished from exchangeable certificates.

(26) The specific structure of the cogeneration and district heating and cooling sectors, which include many small and medium-sized producers, should be taken into account, especially when reviewing the administrative procedures for obtaining permission to construct cogeneration capacity or associated networks, in application of the "Think Small First" principle.

(27) Most EU businesses are small and medium-sized enterprises (SMEs). They represent an enormous energy saving potential for the EU. To help them adopt energy efficiency measures, Member States should establish a favourable framework aimed at providing SMEs with technical assistance and targeted information.

(28) Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions[16] includes energy efficiency among the criteria for determining the Best Available Techniques that should serve as a reference for setting the permit conditions for installations within its scope, including combustion installations with a total rated thermal input of 50 MW or more. However, that Directive gives Member States the option not to impose requirements relating to energy efficiency on combustion units or other units emitting carbon dioxide on the site, for the activities listed in Annex I to 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[17]. To ensure that significant energy efficiency improvements are achieved in electricity and heat generation installations and mineral oil and gas refineries, actual energy efficiency levels should be monitored and compared with the relevant energy efficiency levels associated with the application of the Best Available Techniques. The Commission should compare energy efficiency levels and consider proposing additional measures if significant discrepancies exist between the actual energy efficiency levels and the levels associated with the application of the Best Available Techniques. The information collected on the actual energy efficiency values should also be used in reviewing the harmonised efficiency reference values for separate production of heat and electricity set out in Commission Decision 2007/74/EC of 21 December 2006[18].

[16] OJ L 334, 17.12.2010, p.17.
[17] OJ L 275, 25.10.2003, p. 32.
[18] OJ L 32, 6.2.2007, p. 183.

(29) Member States should establish, on the basis of objective, transparent and non-discriminatory criteria, rules governing the bearing and sharing of costs of grid connections and grid reinforcements and for technical adaptations needed to integrate new producers of electricity produced from high efficiency cogeneration, taking into account guidelines and codes developed in accordance with Regulation (EC) No 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity and repealing Regulation (EC) No 1228/2003[19] and Regulation (EC) 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005[20]. Producers of electricity generated from high-efficiency cogeneration should be allowed to issue a call for tender for the connection work. Access to the the grid system for electricity produced from high-efficiency cogeneration, especially for small scale and micro-cogeneration units, should be facilitated.

(30) A sufficient number of reliable professionals competent in the field of energy efficiency should be available to ensure the effective and timely implementation of this Directive, for instance as regards compliance with the requirements on energy audits and implementation of energy efficiency obligation schemes. Member States should therefore put in place certification schemes for the providers of energy services, energy audits and other energy efficiency improvement measures.

(31) It is necessary to continue developing the market for energy services to ensure the availability of both the demand and the supply of energy services. Transparency, for example by means of lists of energy services providers, can contribute to this. Model contracts and guidelines, in particular for energy performance contracting, can also help stimulate demand. As in other forms of third-party financing arrangements, in an energy performance contract the beneficiary of the energy service avoids investment costs by using part of the financial value of energy savings to repay the investment fully or partially carried out by a third party.

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[19] OJ L 211, 14.8.2009, p. 15.
[20] OJ L 309, 24.11.2009, p. 87.

(32) There is a need to identify and remove regulatory and non-regulatory barriers to the use of energy performance contracting and other third-party financing arrangements for energy savings. These include accounting rules and practices that prevent capital investments and annual financial savings resulting from energy efficiency improvement measures from being adequately reflected in the accounts for the whole life of the investment. Obstacles to the renovating of the existing building stock based on a split of incentives between the different concerned actors should also be tackled at national level.

(33) Member States and regions should be encouraged to make full use of the Structural Funds and the Cohesion Fund to trigger investments in energy efficiency improvement measures. Investment in energy efficiency has the potential to contribute to economic growth, employment, innovation and reduction of fuel poverty in households, and therefore has a positive contribution to economic, social and territorial cohesion. Potential areas for funding include energy efficiency measures in public buildings and housing, and providing new skills to promote employment in the energy efficiency sector.

(34) In the implementation of the 20% energy efficiency target, the Commission will have to monitor the impact of new measures on Directive 2003/87/EC establishing the EU's emissions trading directive (ETS) in order to maintain the incentives in the emissions trading system rewarding low carbon investments and preparing the ETS sectors for the innovations needed in the future.

(35) Directive 2006/32/EC requires Member States to adopt and aim to achieve an overall national indicative energy savings target of 9% by 2016, to be reached by deploying energy services and other energy efficiency improvement measures. That Directive states that the second Energy Efficiency Plan adopted by the Member States shall be followed, as appropriate and where necessary, by Commission proposals for additional measures, including extending the period of application of targets. If a report concludes that insufficient progress has been made towards achieving the indicative national targets laid down by that Directive, these proposals are to address the level and nature of the targets. The impact assessment accompanying this Directive finds that the Member States are on track to achieve the 9% target, which is substantially less ambitious than the subsequently adopted 20% energy saving target for 2020, and therefore there is no need to address the level of the targets.

(36) Although this Directive repeals Directive 2006/32/EC, Article 4 of Directive 2006/32/EC should continue to apply until the deadline for the achievement of the 9% target.

(37) Since the objective of this Directive, which is to achieve the Union's energy efficiency target of 20% primary energy savings by 2020 and pave the way towards further energy efficiency improvements beyond 2020, is not on track to be achieved by the Member States without taking additional energy efficiency measures, and can be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. 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 that objective.

(38) In order to permit adaptation to technical progress and changes in the distribution of energy sources, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission in respect of certain matters. It will be of particular importance that the Commission carry out **appropriate** consultations during its preparatory work, including at expert level. **The Commission, when preparing and drawing up delegated acts, should ensure a simultaneous, timely and appropriate transmission of relevant documents to the European Parliament and Council.**

(39) All substantive provisions of Directive 2004/8/EC and Directive 2006/32/EC, except as regards Articles 4(1) to (4) and Annexes I, III and IV of the latter, should be immediately repealed. Articles 9(1) and (2) of Directive 2010/30/EU of 19 May 2010 on the indication by labelling and standard product information of the consumption of energy and other resources by energy-related products[21], which foresees an obligation for Member States only to endeavour to procure products having the highest energy efficiency class, should also be repealed.

(40) The obligation to transpose this Directive into national law should be limited to those provisions that represent a substantive change as compared with Directives 2004/8/EC and 2006/32/EC. The obligation to transpose the provisions which are unchanged arises under those Directives.

(41) This Directive should be without prejudice to the obligations of the Member States relating to the time limits for transposition into national law and application of Directives 2004/8/EC and 2006/32/EC.

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[21] OJ L 153, 18.6.2010, p. 1.

HAVE ADOPTED THIS DIRECTIVE:

CHAPTER I

Subject matter, scope, definitions and energy efficiency targets

Article 1

Subject matter and scope

1. This Directive establishes a common framework **of measures** for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's **2020 20% headline** target **on** energy **efficiency** and to pave the way for further energy efficiency improvements beyond that date.

   It lays down rules designed to remove barriers in the energy market and overcome market failures that impede efficiency in the supply and use of energy, and provides for the establishment of **indicative** national energy efficiency targets for 2020.

2. The requirements laid down in this Directive are minimum requirements and shall not prevent any Member State from maintaining or introducing more stringent measures. Such measures shall be compatible with the Union's legislation. National legislation foreseeing more stringent measures shall be notified to the Commission.

Article 2

Definitions

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

1. 'energy' means all forms of energy products**, combustible fuels, heat, renewable energy, electricity, or any other form of energy**, as defined in Regulation (EC) No 1099/2008;[22]

[22] OJ L 304, 14.11.2008, p. 1.

2. 'primary energy consumption' means gross inland consumption, excluding non-energy uses; [23]

2a. 'energy efficiency' means a ratio between an output of performance, service, goods or energy, and an input of energy;

2b. 'energy savings' means an amount of saved energy determined by measuring and/or estimating consumption before and after implementation of one or more energy efficiency improvement measures, whilst ensuring normalization for external conditions that affect energy consumption;

2a. 'energy efficiency improvement' means an increase in energy efficiency as a result of technological, behavioral and/or economic changes;

3. 'energy service' means the physical benefit, utility or good derived from a combination of energy with energy efficient technology or with action, which may include the operations, maintenance and control necessary to deliver the service, which is delivered on the basis of a contract and in normal circumstances has proven to result in verifiable and measurable or estimable energy efficiency improvement or primary energy savings;

4. 'public bodies' means 'contracting authorities' as defined in Directive 2004/18/EC;

4a. 'central government authorities' means central government authorities as listed in Annex IV of Directive 2004/18/EC;

4b. 'total useful floor area' means the floor area of a building or part of a building, where energy is used to condition the indoor climate;

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[23] The Presidency suggests to add the following recital:
"**Directive 2009/28/EC on renewable energy sources states that Cyprus and Malta, due to their insular and peripheral character, rely on aviation as a mode of transport, which is essential for their citizens and their economy. As a result, Cyprus and Malta have a gross final consumption of energy in national air transport which is disproportionally high, i.e. more than three times the Community average in 2005, and are thus disproportionately affected by the current technological and regulatory constraints.**"

5. 'energy management system' means a set of interrelated or interacting elements of a plan which sets an energy efficiency objective and a strategy to achieve that objective;

5a. 'European standard' means a standard adopted by the European Committee for Standardisation, the European Committee for Electrotechnical Standardisation or the European Telecommunications Standards Institute and made available for public use;

5b. 'International standard' means a standard adopted by the International Standardisation Organisation and made available to the public:

6. 'obligated parties' means the energy distributors or retail energy sales companies that are bound by the national energy efficiency obligation schemes referred to in Article 6;

7. 'energy distributor' means a natural or legal person, including a distribution system operator, responsible for transporting energy with a view to its delivery to final customers or to distribution stations that sell energy to final customers;

8. 'distribution system operator' means 'distribution system operator' as defined in Directive 2009/72/EC[24] and Directive 2009/73/EC [25] **respectively**;

9. 'retail energy sales company' means a natural or legal person who sells energy to final customers;

10. 'final customer' means a natural or legal person who purchases energy for his or her own end use;

11. 'energy service provider' means a natural or legal person who delivers energy services or other energy efficiency improvement measures in a final customer's facility or premises;

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24 OJ L 211, 14.8.2009, p. 55.
25 OJ L 211, 14.8.2009, p. 94.

12. 'energy audit' means a systematic procedure to obtain adequate knowledge of the existing energy consumption profile of a building or group of buildings, an industrial or commercial operation or installation or a private or public service, identify and quantify cost-effective energy savings opportunities, and report the findings;

12a. 'small and medium-sized enterprises' means enterprises as defined in Title I of the Annex to Commission Recommendation 2003/361;[26]

13. 'energy performance contracting' means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, **verified and monitored during the whole term of the contract, where** investment**s (work, supply or service) in that measure are paid for** in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings;

14. 'transmission system operator' means 'transmission system operator' as defined in Directive 2009/72/EC**[…]**and Directive 2009/73/EC**[…] respectively**;

15. 'cogeneration' means the simultaneous generation in one process of thermal energy and electrical or mechanical energy;

16. 'economically justifiable demand' means demand that does not exceed the needs for heat**ing** or cooling and which would otherwise be satisfied at market conditions by energy generation processes other than cogeneration;

17. 'useful heat' means heat produced in a cogeneration process to satisfy economically justifiable demand for heating or cooling;

18. 'electricity from cogeneration' means electricity generated in a process linked to the production of useful heat and calculated in accordance with the methodology laid down in Annex I;

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[26] OJ L 124, 20.5.2003, p. 36.

19. 'high-efficiency cogeneration' means cogeneration meeting the criteria laid down in Annex II;

20. 'overall efficiency' means 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;

21. 'power to heat ratio' means the ratio between electricity from cogeneration and useful heat when operating in full cogeneration mode using operational data of the specific unit;

22. 'cogeneration unit' means a unit that can operate in cogeneration mode;

23. 'small scale cogeneration unit' means a cogeneration unit with installed capacity below 1MWe;

24. 'micro-cogeneration unit' means a cogeneration unit with a maximum capacity below 50 kWe;

25. 'plot ratio' means the ratio between the land area and the building floor area in a given territory;

26. 'efficient district heating and cooling' means a district heating or cooling system using at least **75**% renewable **energy**, **75%** waste **heat, 75%** cogenerated heat or **75% of** a combination thereof **[…][…]**;

27. 'substantial refurbishment' means a refurbishment whose cost exceeds 50% of the investment cost for a new comparable unit in accordance with Decision 2007/74/EC or which requires the update of the permit granted under Directive 2010/75/EU**;**

28. 'efficient heating and cooling' means a heating and cooling option that compared to a baseline scenario reflecting a business as usual situation measurably reduces the input of primary energy needed to supply one unit of delivered energy within a relevant system boundary taking into account the energy required for extraction, conversion, transport and distribution;

29. 'efficient individual heating and cooling' means an individual heating and cooling supply option that compared to efficient district heating and cooling measurably reduces the input of non-renewable primary energy or requires the same input of non-renewable primary energy but at a lower cost, taking into account the energy required for extraction, conversion, transport and distribution.

Article 3

Energy efficiency targets

1. Member States shall set a**n indicative** national energy efficiency target**. It shall be** expressed as an absolute level of primary energy consumption in 2020. When setting these targets, they shall take into account the Union's **2020 20% headline** target **on** energy **efficiency**, the measures provided for in this Directive, the measures adopted to reach the national energy saving targets adopted pursuant to Article 4(1) of Directive 2006/32/EC and other measures to promote energy efficiency within Member States and at Union level. **When setting the national energy efficiency targets, Member States may take account of national circumstances affecting primary energy consumption such as remaining cost-effective energy-saving potential, changes of energy imports and exports, development of all sources of renewable energies, nuclear energy, carbon capture and storage (CCS), and early action.**[27]

1a. Member States may set additional targets relating to the statistical indicators listed in Annex XIV, Part 1a or combinations thereof, such as primary or final energy intensity or sectoral energy intensities.

[27] As an alternative, it is suggested to end the sentence with "… consumption" and move the other elements into a recital.

2. By 30 June **2013**, the Commission shall assess whether the Union is **on track** to achieve its **2020 20% headline** target **on** energy **efficiency […][28],** taking into account the sum of the national targets referred to in paragraph 1**. The assessment shall also be based on the evaluation of the first annual report referred to in Article 19(1).**

2a. **By 30 June 2015, the Commission shall assess progress achieved and whether the Union is likely to achieve its 2020 energy efficiency target, based on the reports and National Energy Efficiency Action Plans referred to in Article 19(1) and (2), as well as on the methodology adopted pursuant to Article 3(3).**

3. [By 31 December 2014, the Commission shall establish a common and cost-effective methodology for monitoring overall energy efficiency progress, which will permit to quantify efforts of Member States on an equivalent basis by drawing on energy model results and available statistical indicators. That implementing act shall be adopted in accordance with the examination procedure referred to in Article 20(3).][29]

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28 The Presidency suggests to amend recital (2) as follows:
"The **[…]** Conclusions of the European Council of **4 February 2011** emphasized **that the 2020 20% energy efficiency target as agreed by the June 2010 European Council, which is presently not on track, must be delivered. […] Projections made in 2007 showed a primary energy consumption in 2020 of 1842 Mtoe. A 20% reduction results in 1474 Mtoe in 2020, i.e. a reduction of 368 Mtoe as compared to projections.** "

In addition, the Presidency suggests to add the following subparagraph to paragraph 2a:
"**If the implementing act referred to in paragraph 3 is not adopted, when performing the assessment referred to in the first subparagraph, the Commission may compare the energy efficiency achieved and expected as stated in the reports and National Energy Efficiency Action Plans with the projection figure of 368 Mtoe.**"

29 It is recalled that technical work will commence on a methodology for monitoring overall energy efficiency progress.

CHAPTER II

Efficiency in energy use

Article 4

Exemplary role of public bodies' buildings

1. Without prejudice to Article 7 of Directive 2010/31/EU, Member States shall ensure that as from 1 January 2014, 3% of the total floor area owned by their **central government authorities** is renovated each year to meet at least the minimum energy performance requirements set by the Member State concerned in application of Article 4 of **that** Directive **[…]**. The 3% rate shall be calculated on the total floor area of buildings with a total useful floor area over **500 m^2 and as of 9 July 2015 over** 250 m^2 owned by the **central government authorities** of the Member State concerned that, on 1 January of each year, does not meet the national minimum energy performance requirements set in application of Article 4 of Directive 2010/31/EU. [30]

1a. Member States may decide not to set or apply the requirements referred to in paragraph 1 to the following categories of buildings:

(i) buildings officially protected as part of a designated environment, or because of their special architectural or historical merit, in so far as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance;

(ii) buildings owned by the national armed forces and serving national defence purposes, but excluding barracks or office buildings for the armed forces and other staff employed by national defence authorities;

(iii) buildings used as places of worship and for religious activities.

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[30] The Presidency suggests adding the following sentence to recital 15: "**European Union institutions should lead by example in relation to their buildings."**

2. Member States may allow **[…]** to count towards **the** annual renovation rate **of central government authorities' buildings** the excess of renovated building floor area in a given year as if it has instead been renovated in any of the **three** previous or following years.

2a. Member States may allow to count towards the annual renovation rate of central government authorities' buildings new buildings occupied and owned as replacements of specific buildings demolished in any of the two previous years.

3. For the purposes of paragraph 1, by 1 January 2014, Member States shall establish and make publicly available an inventory **of central government authorities' buildings with a total useful floor area over 500 m^2 and by 9 July 2015 over 250 m^2, excluding buildings exempted on the basis of paragraph 1a, containing the following data**:

(a) the floor area in m^2; and
(b) the energy performance of each building.

3a. As an alternative approach to paragraphs 1, 1a, 2, 2a and 3, Member States may take other cost-effective measures, including deep renovations and incentives for behavioural change of occupants, to achieve by 2020 an equivalent improvement of the energy performance of the buildings within their central government estate as required in paragraph 1. For the purpose of this alternative approach, they may estimate the energy savings that paragraphs 1, 1a 2 and 2a would result in by using appropriate standard values for the energy consumption of reference central government authorities' buildings before and after renovation and according to estimates of the surface of their stock. The categories of reference central government authorities' buildings shall be representative of the stock of central government authorities' buildings.

Member States opting for an alternative approach shall notify to the Commission, by 1 January 2014 at the latest, the alternative measures that they plan to adopt and showing how they would achieve an equivalent improvement of the energy performance of the buildings within the central government estate.

3b. Member States shall incentivise public bodies and social-housing bodies, with due regard for their respective competences and administrative set-up, to […]

3c. […]

4. **[…]**

(a) adopt an energy efficiency plan, freestanding or as part of a broader climate or environmental plan, containing specific energy saving objectives, with a view to **achieving the obligations laid down in paragraphs 1, 3 and 3a**;

(b) put in place an energy management system**, including energy audits,** as part of the implementation of their plan.

31

Article 5

Purchasing by public bodies

Member States shall ensure that public bodies purchase only products, services and buildings with high energy efficiency performance**, taking into account cost-effectiveness, economical feasibility and [other sustainability issues,] technical suitability, as well as sufficient competition,** as referred to in Annex III. **[This obligation shall apply to contracts for the purchase of products, services and buildings by public bodies in so far as these contracts have a value equal to or greater than the thresholds laid down in Article 7 of Directive 2004/18/EC.]**

31 The Presidency suggests adding a new recital 15(a): "**Available Union financial instruments and innovative financing mechanisms should be used to give practical effect to the objective of improving the energy performance of public bodies' buildings. Innovative financing mechanisms should be encouraged by involving financial institutions as market intermediaries.**"

Article 6

Energy efficiency obligation schemes

1. Each Member State shall set up an energy efficiency obligation scheme. **This scheme shall ensure that obligated energy distributors and/or retail energy sales companies operating in each Member State's territory achieve a cumulative end-use energy savings target by 31 December 2020. This target shall be equivalent to achieving new savings each year from 1 January [year after implementation] to 31 December 2020 of 1.5%[32] of the annual energy sales to final customers of** all energy distributors or all retail energy sales companies **by volume, averaged over the most recent three-year period prior to [implementation date]. […] The sales of energy, by volume,** used in transport **may be excluded from this calculation**. **Member States shall set at least two interim targets for obligated parties within the period to 31 December 2020.**

1a. Without prejudice to paragraph 1, each Member State shall designate, on the basis of objective and non-discriminatory criteria, obligated parties amongst energy distributors and/or retail energy sales companies operating in its territory and may include transport fuel distributors or transport fuel retailers operating in its territory. Member States shall decide on the eligible measures.[33] The amount of energy savings **to fulfil the obligation** shall be achieved by the obligated parties among final customers **or, if Member States so decide, through certified savings stemming from other parties as described in paragraph 5b. […]**

1b. Member States may opt to fulfil up to [20%] of the obligation set out in the first paragraph through energy savings achieved in the energy transformation sector as well as in distribution and transmission sectors as referred to in Article[…] 11(2) […].

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32 The Presidency suggests adding a new recital 18(a): "**The requirement to achieve savings of 1.5% of the annual energy sales to final customers relative to what energy sales would have been does not constitute a cap on sales or energy consumption.**"

33 Given the new framework proposed in Annex V, it is suggested that this sentence may be redundant.

2. Member States shall express the amount of energy savings required from each obligated party in terms of either final or primary energy consumption. The method chosen for expressing the required amount of energy savings shall also be used for calculating the savings claimed by obligated parties. The conversion factors in Annex IV shall apply.

3. **[…]**

4. Member States shall ensure that the savings claimed by obligated parties are calculated in accordance with Annex V(2) **including savings resulting from measures implemented since [2011] that continue to have impact and can be measured and verified**. They shall put in place control systems under which at least a statistically significant proportion of the energy efficiency improvement measures put in place by the obligated parties is **[…]** verified**. This verification shall be conducted independently of the obligated parties**.

5. Within the energy efficiency obligation scheme, Member States may:

   (a) include requirements with a social aim in the saving obligations they impose, including by requiring measures to be implemented in households affected by energy poverty or in social housing;
   (b) permit obligated parties to count towards their obligation certified energy savings achieved by energy service providers or other third parties**, including where obligated parties promote measures through other state-accreditated bodies or through public authorities that may or may not involve formal partnerships and may be in combination with other sources of finance**; in this case **Member States** shall **ensure that** an accreditation process **is in place** that is clear, transparent and open to all market actors, and that aims at minimising the costs of certification;
   (c) allow obligated parties to count savings obtained in a given year as if they had instead been obtained in any of the two previous or two following years**;**
   (d) allow obligated parties to count savings obtained from measures implemented since [2011] and that continue to have impact and can be measured and verified.

6. Member States shall publish **annually** the energy savings achieved by each obligated party **and in total** under the scheme. **[…]** Member States shall **ensure that obligated parties provide on request, but not more than once a year:**:

a) **[…]**

b) aggregated statistical information on their final customers (identifying significant changes to previously submitted information); and

c) current information on final customers' consumption, including, where applicable, load profiles, customer segmentation and geographical location of customers, while preserving the integrity and confidentiality of private or commercially sensitive information in compliance with applicable **[…]** Union legislation.

7. **[…]**

8. **[…]**[34]

9. As an alternative to paragraph 1, Member States may opt to take other **policy** measures to achieve energy savings among final customers. The annual amount of energy savings achieved through this approach shall be equivalent to the amount of energy savings required in paragraph 1. **Provided that equivalence is maintained, Member States may combine obligation schemes with alternative policy measures.**

Member States opting for this option shall notify to the Commission, by **[transposition date]**, the alternative **policy** measures that they plan to adopt, including the rules on penalties referred to in Article 9, and **showing** how they would achieve the required amount of savings. The Commission may **[…]** make suggestions for modifications in the 3 months following notification. **[…]**

The policy measures taken referred to in the first subparagraph may include, but are not restricted to, the following policy measures or combinations thereof:

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[34] It is suggested to replace the provision on small companies with the following new recital: "**It is appropriate for Member States to determine, on the basis of objective and non-discriminatory criteria, which energy distributors or retail energy sales companies should be obliged to achieve the end-use energy savings target set by this Directive. Member States may in particular choose not to impose this obligation on small energy distributors and small retail energy sales companies to avoid disproportionate administrative burden.**"

(a) energy and CO_2 taxes and other market based instruments that have the effect of reducing energy end-use consumption;

(b) financing instruments that lead to application of energy efficient technology and/or techniques and have the effect of reducing energy end-use consumption;

(c) regulations or voluntary agreements that lead to application of energy efficient technology and/or techniques and have the effect of reducing energy end-use consumption;

(d) standards and norms that aim at improving the energy efficiency of products and services, including buildings and vehicles, except where these are mandatory;

(e) energy labelling schemes, with the exception of those stemming from the implementation of Directives 2010/30/EU, 2010/31/EU and 2002/91/EC;

(f) training and education, including energy advisory programmes, that lead to application of energy-efficient technology and/or techniques and have the effect of reducing energy end-use consumption.

[9a. Member States shall ensure that any policy measure taken pursuant to the first subparagraph of paragraph 9 complies with the following conditions:

(a) the policy measure foresees at least two intermediate periods until 31 December 2020 and leads to the achievement of the level of ambition as set in paragraph 1;

(b) the responsibility of each obliged party is defined and the savings that are to be achieved are determined in a transparent manner;

(c) the amount of savings required by the policy measure are expressed in either final or primary energy consumption, using the conversion factors in Annex IV;

(d) energy savings are calculated in accordance with Annex V(2);

(e) an annual report of the energy savings achieved is provided by obliged parties and made publicly available;

(f) monitoring of the results is ensured and appropriate measures are envisaged if the progress is not satisfactory;

(g) a control system is put in place that also includes independent verification of a statistically significant proportion of the energy efficiency improvement measures;

(h) data on annual trend of energy savings are published annually;

(i) appropriate measures are taken by Member States to ensure that market actors refrain from any activities that may impede the demand for and delivery of energy services or other energy efficiency improvement measures, or hinder the development of markets for energy services or other energy efficiency improvement measures, including foreclosing the market for competitors or abusing dominant positions.][35]

10. **[Member States may agree on and may make arrangements for the statistical transfer of a specified amount of energy savings achieved under the provisions of paragraphs 1 to 6 from one Member State to another Member State. The transferred quantity shall be:**

(a) deducted from the amount of energy savings that is taken into account in measuring compliance by the Member State making the transfer,

(b) added to the amount of energy savings that is taken into account in measuring compliance by another Member State accepting the transfer.

A statistical transfer shall not affect the achievement of the target defined in paragraph 1 of the Member State making the transfer. The arrangements referred to in the first subparagraph shall be notified to the Commission no later than three months after the end of each year in which they have effect. Transfers shall become effective only after all Member States involved in the transfer have notified the transfer to the Commission.]

[35] It is suggested to replace this paragraph with a new suggested Part B of Annex V (to be completed), modulating criteria to fit with the specific types of alternative policy measures in paragraph 9 and to ensure an equivalent level of ambition.

Article 7

Energy audits and energy management systems

1. Member States shall promote the availability to all final customers of energy audits which are affordable and carried out in an independent manner by **accredited** or **qualified** experts **according to qualification criteria defined by the Member State, including in-house experts or energy auditors […], and for which the Member State has put in place a scheme to assure and check their quality […].**[36]

   Member States shall develop programmes to encourage **[…]** small and medium-sized enterprises to undergo energy audits **and to raise awareness among private households on the benefits of such audits through appropriate advice services**.

   Member States shall support training programmes for the qualification of energy auditors in order to promote sufficient availability of experts.
   Member States shall bring to the attention of small and medium-sized enterprises concrete examples of how energy management systems could help their business.

2. Member States shall ensure that enterprises not included in the second subparagraph of paragraph 1 are subject to an energy audit carried out in an independent and cost-effective manner by qualified or accredited experts at the latest **[two years after entry into force of this Directive]** and **at least** every **five** years from the date of the previous energy audit.

3. Energy audits carried out in an independent manner **[…]** implemented under voluntary agreements concluded between organisations of stakeholders and an appointed body and supervised by the Member State concerned or by the Commission, shall be considered as fulfilling the requirements of paragraph 2.

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36 The Presidency suggests that, if a CEN/CENELEC standard for energy audits becomes available in time, it will be referred to in this Article. Otherwise, it is proposed to add a new recital referring to ongoing work on such standard.

3a. Enterprises falling within the scope of paragraph 2 and implementing an energy management system certified by an independent body according to the relevant European or International standards and ensuring appropriate implementation of and follow-up to recommendations for improving their energy performance shall be exempted from the requirements of paragraph 2.

4. Energy audits may stand alone or be part of a broader environmental audit. **Member States may require that an assessment of the technical and economic feasibility of connection to an existing or planned district heating or cooling network shall be part of the energy audit.**

Article 8

Metering and informative billing

Metering

1. **[…]**[37]

Where, and to the extent that, Member States put in place the roll-out of smart meters **in accordance with** Directives 2009/72/EC and 2009/73/EC concerning electricity and gas markets**:**

(a) they shall ensure that the **meters provide information on actual time of use to the consumers and that the** objectives of energy efficiency and final customer benefits are fully taken into account when establishing the minimum functionalities of the meters and obligations imposed on market participants.

[37] It is suggested not to repeal Article 13(1) of Directive 2006/32/EC and to add the following recital: "**In relation to electricity, and in accordance with Directive 2009/72/EC, where the roll-out of smart meters is assessed positively, at least 80% of consumers should be equipped with intelligent metering systems by 2020. In relation to gas, and in accordance with Directive 2009/73/EC, where the roll-out of intelligent metering systems is assessed positively, Member States or any competent authority they designate, should prepare a timetable for the implementation of intelligent metering systems.**"

(b) **they shall ensure the security of smart meters and the data communication, and the privacy of final customers.**

(c) In the case of electricity **[…],** meter operators shall ensure that the meter can account for electricity **[…]** exported to the grid **from the consumer's premises**.

(d) Member States shall ensure that if final customers request it, metering data on their **export or import of electricity** is made available to a third party acting on behalf of the final customer.

[…] Where heating and cooling **to** a building is supplied from a district heating network **or from a central source servicing multiple buildings […]**, a heat meter shall be installed at the **heating exchanger […]**. In multi-apartment **and multi-purpose** buildings **with a central heating/cooling source or supplied from a district heating network or from a central source serving multiple buildings**, individual heat consumption meters shall also be installed **by 1 January 2015** to measure the consumption of heat or cooling for each **unit**. Where the use of individual heat consumption meters is not technically feasible **or not cost-efficient**, individual heat cost allocators **[…]** shall be used for measuring heat consumption at each radiator**, unless it is shown that the installation of such heat cost allocators would not be cost-efficient. In these cases, alternative cost-efficient methods of heat consumption measurement may be considered.** [38]

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[38] It is suggested to add the following two new recitals:
"Use of individual meters or heat cost allocators for measuring individual consumption of heating in multi-apartment buildings supplied by district heating or common central heating is beneficial when final customers have means to control their own individual consumption. Therefore, their application makes sense only in buildings where radiators are equipped with thermostatic radiator valves."
"In some multi-apartment buildings supplied by district heating or common central heating, the use of accurate individual heat meters would be technically complicated and costly due to the fact that the hot water used for heating enters and leaves the apartments at several points. It can be assumed that individual metering of heat consumption in multi-apartment buildings is, nevertheless, technically possible when the installation of individual meters would not require changing the existing in-house piping for hot water heating in the building. In such buildings, measurements of individual heat consumption can then be carried out by means of individual heat cost allocators installed on each radiator."

Where Member States **[…]** introduce rules on cost allocation of heat consumption in multi-apartment buildings supplied with centralised heat or cooling**, s**uch rules shall include guidelines on correction factors to reflect building characteristics such as heat transfers between apartments.

Billing

2. **With respect to** the obligations resulting from Directive 2009/72/EC and Directive 2009/73/EC with regard to billing, Member States shall ensure, not later than 1 January 2015, that billing is accurate and based on actual consumption, for all the sectors covered by the present Directive, including energy distributors, distribution system operators and retail energy sales companies, **where it is technically possible and economically justified […]**.[39] **[…] This obligation may be fulfilled by a system of self-reading by the final customers whereby they communicate readings from their meter to the energy supplier. Only when the final customer has not provided a meter reading for a given billing interval shall billing be based on estimated consumption or a flat rate.** Appropriate information shall be made available with the bill to provide final customers with a comprehensive account of current energy costs, in accordance with Annex VI(2.2). **[…]**

Member States shall ensure that final customers are offered **the option** of **[…]** electronic **[…]** billing and the possibility of easy access to complementary information allowing detailed self-checks on historical consumption **[…]**.
Member States shall require that**, to the extent that** information on their energy billing and historical consumption **of final customers is available, it** is made available to an energy service provider designated by the final customer **on the request of the final customer**.

Member States may lay down that, on request of the final customer, the information contained in these bills shall not be considered to constitute a request for payment. In such cases, Member States shall ensure that suppliers of energy sources offer flexible arrangements for actual payments.

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[39] The Presidency suggests that the elements on frequency of billing based on actual consumption contained in the Commission's proposal in Annex VI under point 2.1 may constitute future Commission recommendations.

3. **Member States shall ensure that customers receive their bills for energy** consumption **for free. Customers shall also have access to their consumption data for** free **[…]**. **Where bills are not based on consumption, customers shall have the right to a clear explanation of how their bill was derived.**

Article 9

Penalties

Member States shall lay down rules on penalties applicable in case of non-compliance with the national provisions adopted pursuant to Articles 6 to 8 and shall take the necessary measures to ensure that they are implemented. The penalties provided must be effective, proportionate and dissuasive. Member States shall communicate those provisions to the Commission by [*12 months after entry into force of this Directive*] at the latest and shall notify it without delay of any subsequent amendment affecting them.

CHAPTER III

Efficiency in energy supply

Article 10

Promotion of efficiency in heating and cooling[40]

1. By **31 December 2015**, Member States shall **carry out** and notify to the Commission a **comprehensive assessment of** the potential for the application of high-efficiency cogeneration and efficient district heating and cooling, containing the information set out in Annex VII. **If they have already carried out an equivalent assessment, they shall notify it to the Commission.** The **assessment** shall be updated and notified to the Commission every five years. Member States shall **adopt policies which encourage that the potential of using […] efficient heating and cooling systems, in particular those using high efficiency cogeneration, is duly taken into account at** local and regional **levels. […] Account shall be taken of the potential for developing local and regional heat markets**.

[40] The Presidency suggests adding the following sentence at the end of recital (23): "**The events that trigger a requirement for these authorisation criteria to be applied will generally be events that also trigger requirements for permits under the Industrial Emissions Directive 2010/75/EU and for authorisation under the Electricity Directive 2009/72/EC.**"

1a. For the purpose of the assessment referred to in paragraph 1, Member States shall carry out a cost-benefit analysis covering their territory in accordance with Annex VIIIbis, based on climate conditions, economic feasibility and technical suitability, which is capable of facilitating the identification and implementation of the most resource and cost-efficient solutions to meet heating and cooling requirements.

2. **Where the assessments referred to in paragraphs 1 and 1a […] identify a potential,** Member States shall take **adequate** measures **for** efficient district heating and cooling infrastructure **to be developed […]or** to accommodate the development of high-efficiency cogeneration and the use of heating and cooling from waste heat and renewable energy sources in accordance with paragraphs 1, 3, 6 and **8**. When developing district heating and cooling, they shall to the extent possible opt for high-efficiency cogeneration rather than heat-only generation **when heat is produced in combustion installations**.

3. Member States shall ensure that **when** new thermal electricity generation installations with a total thermal input exceeding 20 MW **are planned, a cost-benefit analysis in accordance with Annex VIIIbis Part 2 for providing an installation** with equipment allowing for the recovery of waste heat by means of a high-efficiency cogeneration unit **is carried out. Member States shall ensure that in accordance with Annex VIIIbis alternative scenarios other than recovering waste heat by means of a high-efficiency cogeneration unit are analysed.**

Member States shall ensure that one of the analysed scenarios is selected which in accordance with Annex VIIIbis has shown a cost-benefit surplus and that appropriate steps are taken to implement the selected scenario. If the installation with equipment allowing for the recovery of waste heat is selected, Member States shall ensure that this equipment is provided.

[…]

Member States shall adopt authorisation criteria as referred to in Article 7 of Directive 2009/72/EC, or equivalent permit criteria, to ensure that the **provisions** of the first **and second** subparagraph **are** met. **[…][…]**

Member States may exempt[41] from the provision in the first subparagraph:

a) those peak load and back-up installations which are planned to operate under 1 500 operating hours per year as a rolling average over a period of five years;

b) nuclear power installations;

c) installations that need to be located close to a geological storage site permitted under Directive 2009/31/EC.

[…]

Member States shall notify such **[…]** exemption**s** to the Commission by 1 January 2014 **and any subsequent changes to them thereafter**. **[…]**

[…]

6. Member States shall ensure that, whenever an existing electricity generation installation with a total rated thermal input exceeding 20 MW is substantially refurbished or when, in accordance with Article 21 of Directive 2010/75/EC, its permit is updated, **a cost-benefit analysis in accordance with Annex VIIIbis Part 2 for a** conversion to allow its operation as a high-efficiency cogeneration installation is **carried out. […] Member States shall ensure that in accordance with Annex VIIIbis alternative scenarios other than conversion to high-efficiency cogeneration are analysed.**

Member States shall ensure that one of the analysed scenarios is selected which in accordance with Annex VIIIbis has shown a cost-benefit surplus and that appropriate steps are taken to implement the selected scenario. If the scenario implying a conversion of the electricity generation installation to operate as a high-efficiency cogeneration installation is selected, Member States shall ensure that this operation is set as a condition in the new or updated permit or licence.

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[41] It is suggested to add the following new recital: "**It may be appropriate for nuclear power installations, or electricity generation installations that are intended to make use of geological storage permitted under Directive 2009/31/EC, to be located in places where the recovery of waste heat through high-efficiency cogeneration or by supplying a district heating or cooling network is not cost-effective. Member States should therefore be able to exempt those installations from the obligation to carry out a cost-benefit analysis for providing the installation with equipment allowing the recovery of waste heat by means of a high-efficiency cogeneration unit. Likewise peak-load and back-up electricity generation installations which are planned to operate under 1 500 operating hours per year as a rolling average over a period of five years may need to be exempted from the requirement to also provide heat.**"

The **fitting of** equipment **to capture carbon dioxide produced by a combustion installation with a view to its being geologically stored as provided for in Directive 2009/31/EC** shall not be considered as refurbishment for the purpose of these provisions.

[…] Member States may **exempt from the provision in the first subparagraph**

a) those peak load and back-up installations which are planned to operate under 1 500 operating hours per year as a rolling average over a period of five years;

b) nuclear power installations.

[…]

Member States shall notify such **[…]** exemption**s** to the Commission by 1 January 2014 **and any subsequent changes to them thereafter**.**[…]**

8. Member States shall adopt authorisation or equivalent permitting criteria to ensure that**:**

a) when industrial installations with a total thermal input exceeding 20 MW generating waste heat **at a useful temperature level** are **planned** or substantially refurbished after [the entry into force of this Directive] **a cost-benefit analysis in accordance with Annex VIIIbis to connect** these installations to district heating and cooling networks **is carried out**. **Member States shall ensure that in accordance with Annex VIIIbis alternative scenarios other than delivering heating and cooling services to district heating and cooling networks are analysed. Member States may require this cost-benefit analysis to be carried out in co-operation with the companies responsible for the operation of the district heating and cooling networks.**

Member States shall ensure that one of the analysed scenarios is selected which in accordance with Annex VIIIbis has shown a cost-benefit surplus and that appropriate steps are taken to implement the selected scenario.

b) when a new district heating and cooling network is planned or in an existing network a new energy production installation with a total thermal input exceeding 20 MW is planned or an existing installation exceeding 20 MW is to be substantially refurbished, a cost-benefit analysis to utilise the waste heat from nearby industrial installations is carried out. The cost-benefit analysis may be based on the comprehensive assessment referred to in paragraphs 1 and 1a. Member States may require the industrial companies and the operator of the district heating and cooling network to co-operate in carrying out this analysis.

Member States may exempt from the provision in b) those peak load and back-up installations which are planned to operate under 1 500 operating hours per year as a rolling average over a period of five years.

Member States may **include in their authorisation criteria or permit criteria conditions for exempting individual** installations from the provisions in the first **and second** sub-paragraph**s. These criteria shall include threshold conditions related to the amounts of available useful waste heat, the demand for heat and the distances between industrial installations and the district heating networks. […]**

[…]

Member States shall notify such conditions for exemption to the Commission by 1 January 2014 **and any subsequent changes to them thereafter**. **[…]**

9. **[…]**

10. On the basis of the harmonised efficiency reference values referred to in Annex II (f), Member States shall 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 complies with the requirements and contains at least the information specified in Annex IX. Member States shall mutually recognise their guarantees of origin, exclusively as proof of the information referred to in this paragraph. 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. Member States shall notify the Commission of such refusal and its justification. In the event of refusal to recognise a guarantee of origin, the Commission may adopt a decision to compel the refusing party to recognise it, particularly with regard to objective, transparent and non-discriminatory criteria on which such recognition is based.

    The Commission shall be empowered to review, by means of delegated acts in accordance with Article 18, the harmonised efficiency reference values laid down in Commission Decision [the number of the Decision] on the basis of Directive 2004/8/EC for the first time by 1 January 2015, and every ten years thereafter.

11. Member States shall ensure that any available support for cogeneration is subject to the electricity produced originating from high-efficiency cogeneration and the waste heat being effectively used to achieve primary energy savings. They shall not differentiate between electricity consumed on site and electricity exported to the grid. Public support to cogeneration and district heating generation and networks is subject to State aid rules, where applicable.

Article 11[42]

Energy transformation

1. Member States shall draw up an inventory of data in accordance with Annex X for all installations undertaking the combustion of fuels with total rated thermal input of 50 MW or more **[…]** within their territory. This shall be updated every three years. The annual **[…]** data contained in these inventories shall be made available to the Commission upon request. Member States shall include a non-confidential summary containing aggregated information of the inventories in the reports referred to in Article 19(2) **for the purpose of Article 19(5)**.

2. Member States may encourage operators of installations listed in the inventory to improve their annual average net operational rates.

Article 12

Energy transmission and distribution

1. Member States shall ensure that national energy regulatory authorities pay due regard to energy efficiency in their decisions on the operation of the gas and electricity infrastructure. They shall in particular ensure that network tariffs and regulations provide incentives for grid operators to offer system services to network users permitting them to implement energy efficiency improvement measures in the context of the continuing deployment of smart grids. Member States shall ensure that network regulation, and network tariffs **[…]**, fulfil the criteria in Annex XI, taking into account guidelines and codes developed pursuant to Regulation 714/2009 and Regulation 715/2009.

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42 The Presidency is verifying the extent to which elements of this provision and Annex X are already provided for *i.a.* in Directive 2003/87/EC and Directive 2010/75/EU.
At this stage, the Presidency suggests to add the following recital: **"As regards Article 11, Member States could profit from the databases that are already established under the European Pollutant Release and Transfer Register and those established to monitor greenhouse gases as set under Commission decision of 18 July 2007, C(2007) 3416. These include basic data regarding the companies, emissions levels as well as the fuels used, which may ease the setting of the inventories that would also cover the required data as specified in Annex X."**

2. Member States shall, by **[**30 June 2013**] […]**:

   a) assess**[…]** the energy efficiency potentials of their gas **and** electricity **[…]** infrastructure, notably regarding transmission, distribution, load management and interoperability, and connection to energy generating installations;

   b) identify**[…]** concrete measures and investments for the introduction of cost-effective energy efficiency improvements in the network infrastructure, with a detailed timetable for their introduction.

3. Member States may permit components of schemes and tariff structures with a social aim for net-bound energy transmission and distribution, provided that **the tariff structures contribute to the overall efficiency (including energy efficiency) of the generation,** transmission**,** distribution **and supply of electricity**.

4. Member States shall ensure the removal of those incentives in transmission and distribution tariffs that **are detrimental to the overall efficiency (including energy efficiency) of the generation, transmission, distribution and supply of electricity**. **[…]**[43]

5. Member States shall ensure that, subject to requirements relating to the maintenance of the reliability and safety of the grid, based on transparent and non-discriminatory criteria defined by the competent national authorities, transmission system operators and distribution system operators in their territory:

   a) guarantee the transmission and distribution of electricity from high-efficiency cogeneration;

   b) provide priority or guaranteed access to the grid of electricity from high efficiency cogeneration;

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[43] It is suggested to move the reference to public service obligations stemming from Directive 2009/72/EC and Directive 2009/73/EC into a new recital: "**In accordance with Article 3(2) of Directive 2009/72/EC and Article 3(2) of Directive 2009/73/EC, Member States may impose public service obligations, including relating to energy efficiency, on undertakings operating in the electricity and gas sectors.**"

c) when dispatching electricity generating installations, provide priority dispatch of electricity from high efficiency cogeneration **in so far as the operation of the national electricity system permits**.

Member State shall ensure that rules relating to the ranking of the different access and dispatch priorities granted in their electricity systems are clearly spelled-out and published. Member States may set rankings as between, and within different types of, renewable energy and CHP.

In addition to the obligations laid down by the first subparagraph, transmission system operators and distribution system operators shall comply with the requirements set out in Annex XII.

Member States may particularly facilitate the connection to the grid system of electricity produced from high-efficiency cogeneration from small scale and micro cogeneration units.

6. Member States shall take the appropriate steps to ensure that high-efficiency cogeneration operators can offer balancing services and other operational services at the level of transmission system operators or distribution system operators where this is consistent with the mode of operation of the high-efficiency cogeneration installation. Transmission system operators and distribution system operators shall ensure that such services are part of a services bidding process which is transparent and open to scrutiny.

Where appropriate, Member States may require transmission system operators and distribution operators to encourage high-efficiency cogeneration to be sited close to areas of demand by reducing the connection and use-of-system charges.

7. Member States may allow producers of electricity from high-efficiency cogeneration wishing to be connected to the grid to issue a call for tender for the connection work.

CHAPTER IV

Horizontal provisions

Article 13

Availability of qualification and certification schemes

1. With a view to achieving a high level of technical competence, objectivity and reliability, Member States shall ensure that, by 1 January 2014, certification schemes or equivalent qualification schemes are available for providers of energy services, energy audits and energy efficiency improvement measures, including for installers of building elements as defined in Article 2(9) of Directive 2010/31/EU.

2. Member States shall make publicly available the certification schemes or equivalent qualification schemes referred to in paragraph 1 and shall cooperate among themselves and with the Commission on comparisons between and recognition of the schemes.

Article 14

Energy services

Member States shall promote the energy services market and access for small and medium-sized enterprises to this market by:

a) making publicly available **[…]** and regularly updating a list of available energy service providers and the energy services they offer;
b) providing model contracts for energy performance contracting in the public sector; these shall at least include the items listed in Annex XIII;
c) disseminating information on available energy service contracts and clauses that should be included in such contracts to guarantee energy savings and final customers' rights;
d) encouraging the development of voluntary quality labels;
e) disseminating information on financial instruments, incentives, grants and loans to support energy service projects.

Member States shall ensure that market actors refrain from any activities that may impede the demand for and delivery of energy services or other energy efficiency improvement measures, or hinder the development of markets for energy services or other energy efficiency improvement measures, including foreclosing the market for competitors or abusing dominant positions.

Article 15

Other measures to promote energy efficiency

1. Member States shall evaluate and **report to the Commission on** appropriate measures **taken** to remove regulatory and non-regulatory barriers to energy efficiency, notably as regards:

   a) the split of incentives between the owner and the tenant of a building or among owners, with a view to ensuring that these parties are not deterred from making efficiency-improving investments that they would otherwise have made by the fact that they will not individually obtain the full benefits or by the absence of rules for dividing the costs and benefits between them;
   b) legal and regulatory provisions, and administrative practices, regarding public purchasing and annual budgeting and accounting, with a view to ensuring that individual public bodies are not deterred from making efficiency-improving investments.

   These measures to remove barriers may include providing incentives, repealing or amending legal or regulatory provisions, or adopting guidelines and interpretative communications. These measures may be combined with the provision of education, training and specific information and technical assistance on energy efficiency.

2. The evaluation of barriers and measures referred to in paragraph 1 shall be notified to the Commission in the first **National Energy Efficiency Action Plan** referred to in Article 19(2).

Article 16

Conversion factors

For the purpose of comparison of energy savings and conversion to a comparable unit, the conversion factors in Annex IV shall apply unless the use of other conversion factors can be justified.

CHAPTER V

Final provisions

Article 17

***Delegated acts* […]**[44]

1. **[…]**

[…]

[…]

[44] It is proposed to amend recital (38) as follows:
"In order to permit adaptation to technical progress and changes in the distribution of energy sources, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission in respect of certain matters. It **is** of particular importance that the Commission carry out **appropriate** consultations during its preparatory work, including at expert level. **The Commission, when preparing and drawing up delegated acts, should ensure a simultaneous, timely and appropriate transmission of relevant documents to the European Parliament and Council."**

The Commission shall be empowered to adopt delegated act in accordance with Article 18 to review the harmonised efficiency reference values referred to in Article 10(10) **second paragraph**.

2. The Commission shall be empowered to adopt delegated acts in accordance with Article 18 to adapt to technical progress the values, calculation methods, default primary energy coefficient and requirements in Annexes I to XV **[…]**.

Article 18

Exercise of the delegation

1. The power**[…]** to adopt delegated acts **is** conferred on the Commission subject to the conditions laid down in this Article.

2. The **[…]** power **to adopt delegated acts** referred to in Article 17 shall be conferred on the Commission for **a […]** period of **five years** from [the date of entry into force of this Directive].

3. The delegation of power referred to in Article 17 may be revoked at any time by the European Parliament or by the Council. A decision of revocation shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the *Official Journal of the European Union* or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.

4. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.

5. A delegated act adopted pursuant to Article 17 shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of 2 months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by 2 months at the initiative of the European Parliament or the Council.

Article 19

Review and monitoring of implementation

1. By 30 April each year, Member States shall report on the progress achieved towards national energy efficiency targets, in accordance with Annex XIV(1). **The report may form part of the National Reform Programmes referred to in Council Recommendation 2010/410/EU on broad guidelines for the economic policies of the Member States and of the Union.**[45]

2. By 30 April 2014, and every three years thereafter, Member State shall submit **National Energy Efficiency Action Plans. The Plans shall cover significant energy efficiency improvement measures and expected/achieved energy savings, including those in the supply, transmission and distribution of energy as well as energy end-use** in view of achieving the national energy efficiency targets referred to in Article 3(1). The **Plans** shall be complemented with updated estimates of expected overall primary energy consumption in 2020, as well as estimated levels of primary energy consumption in the sectors indicated in Annex XIV(1).

   The Commission shall, not later than 1 January **2013**, provide a template as guidance for the **Plans**. This template shall be adopted in accordance with the advisory procedure referred to in Article 20(2). The **National Energy Efficiency Action Plans** shall in any case include the information specified in Annex XIV.

3. **[…]**

4. The Commission shall evaluate the annual reports and **National Energy Efficiency Action Plans** and assess the extent to which Member States have made progress towards the achievement of the national energy efficiency targets required by Article 3(1) and towards the implementation of this Directive. The Commission shall send its assessment to the European Parliament and the Council. Based on its assessment of the reports **and the National Energy Efficiency Action Plans** the Commission may issue recommendations to Member States.

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45 **OJ L 191, 23.7.2010, p. 28.**

5. The Commission's assessment of the first **National Energy Efficiency Action Plan** shall include an assessment of the energy efficiency levels of existing and new installations undertaking the combustion of fuels with a total rated thermal input of 50 MW or more **[…]**, in the light of the relevant best available techniques as developed in accordance with Directive 2010/75/EU and Directive 2008/1/EC. Where this assessment identifies significant discrepancies between the actual energy efficiency levels of such installations and energy efficiency levels associated with the application of the relevant best available techniques, the Commission shall propose, if appropriate, **amending Directive 2010/75/EU to include** requirements to improve the energy efficiency levels achieved by such installations or that the use of such techniques shall in future be a condition for the permitting of new installations and for the periodic review of the permits for existing installations **with a view to amending aforementioned Directive**.

The Commission shall also monitor the impact of implementing this Directive on Directive 2003/87/EC, Directive 2009/28/EC as well as Directive 2010/31/**EU**.

5a. The Commission shall review the continued need for the possibility of exemptions from Article 10(3), (6) and (8) for the first time in the assessment of the first National Energy Efficiency Action Plan and every [three] years thereafter. Where the review identifies that any of the criteria for these exemptions can no longer be justified taking into account the availability of heat load and the real operating conditions of the exempted installations, the Commission shall propose appropriate measures.

6. Member States shall submit to the Commission before 30 November each year statistics on national electricity and heat production from high and low efficiency cogeneration, in accordance with the methodology shown in Annex I, in relation to total heat and electricity capacities. They shall also submit annual statistics on cogeneration heat and electricity capacities and fuels for cogeneration, and on district heating and cooling production and capacities, in relation to total heat and electricity capacities. Member States shall submit statistics on primary energy savings achieved by application of cogeneration in accordance with the methodology shown in Annex II.

7. By 30 June **2013** the Commission shall submit the assessment referred to in Article 3(2) to the European Parliament and to the Council, followed, if **necessary**, by **[…]** proposal**s for further measures. […]**

7a. By 30 June 2015, the Commission shall submit the assessment referred to in Article 3(2a) to the European Parliament and to the Council.

8. By 30 June 2018, the Commission shall report to the European Parliament and the Council on the implementation of Article 6. That report shall be followed, if appropriate, by a legislative proposal for one or more of the following purposes:

a) to change the **final date** laid down in Article 6(1);
b) to establish additional common requirements, in particular as regards the matters referred to in Article 6(5).

9. By 30 June 2018, the Commission shall assess the progress made by Member States in removing the regulatory and non-regulatory barriers referred to in Article 15(1); this assessment shall be followed, if appropriate, by **recommendations**.

10. The Commission shall make the reports referred to in paragraphs 1 and 2 publicly available.

Article 20

Committee procedure

1. The Commission shall be assisted by a **c**ommittee. **That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.**

2. Where reference is made to this paragraph, **Article[…]** 4 **[…]** of **[…]** Regulation **(EU) No** 182/2011**[…]** shall apply **[…]**.

3. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply. Where the committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third subparagraph of Article 5(4) of that Regulation shall apply.

Article 21

Repeal

Directive 2006/32/EC is repealed from [the date of time-limit for transposition of this Directive], except its Article 4 (1) to (4)**, Article 13(1)** and Annexes I, III and IV, without prejudice to the obligations of the Member States relating to the time limit for its transposition into national law. Articles 4 (1) to (4) and Annexes I, III and IV of Directive 2006/32/EC shall be repealed with effect from 1 January 2017.

Directive 2004/8/EC is repealed from [the date of time-limit for transposition of this Directive], without prejudice to the obligations of the Member States relating to the time limit for its transposition into national law.

Article 9(1) and (2) of Directive 2010/30/EU is repealed from [the date of time-limit for transposition of this Directive].

Article 6 of Regulation (EU) No XX/2012 amending Regulation (EC) No 106/2008 is deleted and replaced by the following from [the date of time-limit for transposition of this Directive]: "For the duration of the Agreement, the Commission and the other Union institutions shall, without prejudice to Union law and economic criteria, specify energy-efficiency requirements not less demanding than those set out in the Common Specifications for public supply contracts having a value equal to or greater than the thresholds laid down in Article 7 of Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts."

References to Directive 2006/32/EC and Directive 2004/8/EC shall be construed as references to this Directive and shall be read in accordance with the correlation table set out in Annex XV.

Article 22

Transposition[46]

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by [12 months after the entry into force of this Directive] at the latest. They shall forthwith communicate to the Commission the text of those provisions **[…]**.

   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

Entry into force

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

Article 24

Addressees

This Directive is addressed to the Member States.

Done at Brussels,

For the European Parliament	*For the Council*
The President	*The President*

[46] It is suggested to add the following recital (see 14603/11): "**In accordance with the Joint Political Declaration of Member States and the Commission on explanatory documents of [date], Member States have undertaken to accompany, in justified cases, the notification of their transposition measures with one or more documents explaining the relationship between the components of a directive and the corresponding parts of national transposition instruments. With regard to this Directive, the legislator considers the transmission of such documents to be justified.**"

ANNEX I

General principles for the calculation of electricity from cogeneration

PART I. General principles

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 Part II 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 Part II 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 Part II) 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 Part II) cogeneration is calculated according to the following formula:

$E_{CHP}=H_{CHP}*C$

where:

E_{CHP} is the amount of electricity from cogeneration

C is the power to heat ratio

H_{CHP} 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 Part II 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 back pressure 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 Part II, such default values shall be published and shall be notified to the Commission.

(d) 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).

(e) 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.

(f) Member States may use other reporting periods than one year for the purpose of the calculations according to paragraphs (a) and (b).

PART II. 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 2 (19).

PART III. Detailed principles

When implementing and applying the general principles for the calculation of electricity from cogeneration, Member States shall use the detailed Guidelines established by Decision 2008/952/EC[47].

[47] OJ L 338, 17.12.2008, p. 55.

ANNEX II

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 I 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 10(10).

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

(c) Calculations of energy savings using alternative calculation

Member States may calculate primary energy savings from a production of heat and electricity and mechanical energy as below without using Annex I 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 point (a) of this Annex 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 I.

If primary energy savings for a process are calculated using alternative calculation as above the primary energy savings shall be calculated using the formula in point (b) of this Annex replacing:'CHP Hη' with'Hη' and'CHP Eη' with 'Eη',where:

Hη shall 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.

Eη shall 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 maybe 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 10(10).

(d) Member States may use other reporting periods than one year for the purpose of the calculations according to points (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 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, fuel mix and climate conditions as well as applied cogeneration technologies.

The efficiency reference values for separate production of heat and electricity in accordance with the formula set out in paragraph (b) 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 2(24) 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 III

Energy efficiency requirements for purchasing products, services and buildings by public bodies

Public bodies that purchase products, services or buildings shall, **taking into account cost-effectiveness, economical feasibility [and other sustainability issues], technical suitability, as well as sufficient competition and at the appropriate stage of the procurement process:**

a) where a product is covered by a delegated act adopted under Directive 2010/30/EU or Commission Directive implementing Directive 92/75/EEC, purchase only the products that comply with the criterion of belonging to the highest energy efficiency class **possible in the light of the need to ensure sufficient competition**;

b) where a product not covered under point a) is covered by an implementing measure under Directive 2009/125/EC adopted after the entry into force of this Directive, purchase only products that comply with energy efficiency benchmarks specified in that implementing measure;

c) purchase office equipment products covered by Council Decision [2006/1005/EC[48]] that comply with energy efficiency requirements not less demanding than those listed in Annex C of the Agreement attached to that Decision;

d) purchase only tyres that comply with the criterion of having the highest fuel energy efficiency class, as defined by Regulation (EC) No 1222/2009[49]. This requirement shall not prevent public bodies from purchasing tyres with the highest wet grip class or external rolling noise class where justified by safety or public health reasons;

e) require in their tenders for service contracts that service providers use, for the purposes of providing the services in question, only products that comply with the requirements referred to in points (a) to (d), when providing the services in question**. This requirement shall apply only to new products purchased by service providers partially or wholly for the purpose of providing the service in question**;

f) purchase**,** or **make** new rental **agreements for,** only buildings that comply at least with the minimum energy performance requirements referred to in Article 4(1) **unless the purpose of the purchase is deep renovation or demolition**. Compliance with these requirements shall be verified by means of the energy performance certificates referred to in Article 11 of Directive 2010/31/EU.

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48 OJ L 381, 28.12.2006, p. 24.

49 OJ L 342, 22.12.2009, p. 46.

ANNEX IV

Energy content of selected fuels for end use –conversion table[50]

Energy commodity	kJ (NCV)	kgoe (NCV)	kWh (NCV)
1 kg coke	28500	0,676	7,917
1 kg hard coal	17200 — 30700	0,411 — 0,733	4,778 — 8,528
1 kg brown coal briquettes	20000	0,478	5,556
1 kg black lignite	10500 — 21000	0,251 — 0,502	2,917 — 5,833
1 kg brown coal	5600 — 10500	0,134 — 0,251	1,556 — 2,917
1 kg oil shale	8000 — 9000	0,191 — 0,215	2,222 — 2,500
1 kg peat	7800 — 13800	0,186 — 0,330	2,167 — 3,833
1 kg peat briquettes	16000 — 16800	0,382 — 0,401	4,444 — 4,667
1 kg residual fuel oil (heavy oil)	40000	0,955	11,111
1 kg light fuel oil	42300	1,010	11,750
1 kg motor spirit (petrol)	44000	1,051	12,222
1 kg paraffin	40000	0,955	11,111
1 kg liquefied petroleum gas	46000	1,099	12,778
1 kg natural gas [1]	47200	1,126	13,10
1 kg liquefied natural gas	45190	1,079	12,553
1 kg wood (25 % humidity) [2]	13800	0,330	3,833
1 kg pellets/wood bricks	16800	0,401	4,667
1 kg waste	7400 — 10700	0,177 — 0,256	2,056 — 2,972
1 MJ derived heat	1000	0,024	0,278
1 kWh electrical energy	3600	0,086	1 [3]

Source: Eurostat.

[1] 93 % methane.

[2] Member States may apply other values depending on the type of wood most used in the respective Member State.

[3] Applicable when energy savings are calculated in primary energy terms using a bottom-up approach based on final energy consumption. For savings in kWh electricity Member States may apply a default coefficient of 2,5. Member States may apply a different coefficient provided they can justify it.

50 Member States may apply different conversion factors if these can be justified.

ANNEX V

Common methods and principles for calculating the impact of energy efficiency obligations schemes or other policy measures under Article 6, paragraphs 1 and 9

Part A: Energy efficiency obligation schemes

1. […]

2. Methods for calculating energy savings

[…]

Obligated parties may use one or more of the following methods for calculating energy savings for the purposes of Article 6 paragraph 4:

a) Deemed savings, by reference to the results of previous independently monitored energy improvements in similar installations. The generic approach is termed "ex-ante";

b) Metered savings, whereby the savings from the installation of a measure, or package of measures, is determined by recording the actual reduction in energy use, taking due account of factors such as additionality, occupancy, production levels and the weather which may affect consumption. The generic approach is termed "ex-post".

c) Scaled savings, whereby it may be appropriate to use engineering estimates of savings where establishing robust measured data for a specific installation is difficult or disproportionately expensive e.g. replacing a compressor or electric motor with a different kWh rating than that for which independent information on savings has been measured.

d) Surveyed savings, where consumers' response to advice, information campaigns, or smart metering is determined. This approach may only be used for savings resulting from changes in consumer behaviour. It may not be used for savings resulting from the installation of physical measures.

3. Principles to apply in the calculation of energy savings

[…]

In determining the energy saving for an energy efficiency measure, the following principles shall apply:

a) Only savings that are additional to those that might otherwise have reasonably been expected to have been achieved can be counted. Therefore, credit shall only be given for savings exceeding the following levels:

i. national regulations relating to minimum energy performance requirements of new buildings following the implementation of Article 9 of Directive 2010/31/EU;

ii. EU emission performance standards for new passenger cars and new light commercial vehicles following the implementation of Regulation (EC) No 443/2009 and Regulation (EU) No 510/2011, respectively, which make more efficient replacements the norm;

iii. EU requirements relating to the removal from the market of certain energy related products following the implementation of delegated acts under Directive 2009/125/EC which make certain more efficient replacements the norm;

iv. EU requirements for mandatory energy audits for companies under Article 7 paragraph 2 of this Directive;

v. existing EU or national legal requirements relating to energy efficiency of industrial installations following the implementation of Directive 2010/75/EU;

vi. the prevailing energy performance of fabric (walls, roofs, floors, windows and doors) in the existing building stock and the average energy performance certificate level, as required by Article 12 of Directive 2010/31/EU, for the existing building stock;

vii. prevailing market sales, and sales trends, of energy-related products covered by a delegated act adopted under Directive 2010/30/EU or implementing measure under Directive 2009/125/EC in the Member State;

viii. prevailing energy efficiency levels of existing industrial installations of the same type nationally;

b) due allowance shall be taken of the increased amenity, or rebound effect, resulting from the installation of measures, for example increased comfort arising from insulation measures;

c) to account for climatic variations between regions, Member States may choose to adjust the savings to a standard value or to accord different energy savings in accordance with the temperature variations between regions;

d) the activities of the obligated party must be demonstrably material to the achievement of the claimed savings;

e) savings may not be claimed by more than one obligated party;

f) calculation of energy savings shall take into account the lifetime of savings. The method shall take into account the need to fulfil the requirement in the third sentence of Article 6, paragraph 1;

g) where measures result in the accelerated replacement of equipment, products or building components, due account shall be taken of the duration of the energy savings compared to the energy consumption of the original equipment but only for the remaining lifetime of the original equipment;

h) actions by obligated parties, either individually or together, which aim to result in lasting transformation of products, equipment, or markets to a higher level of energy efficiency are permitted;

i) in promoting the uptake of energy efficiency measures, Member States shall ensure that quality standards for products, services and installation of measures are maintained. Where such standards do not exist, Member States shall work with obligated parties to introduce them.

The calculation of energy savings shall be revised at least each three years to take account of regulatory and technological developments.

4. Notification of methodology

Member States shall notify the Commission of their proposed detailed methodology for operation of the energy efficiency obligation schemes. Such notification shall include details of:

a) obligated parties;

b) target sectors;

c) the level of the energy saving target;

d) the duration of the obligation period;

e) eligible measure categories;

f) calculation methodology, including how additionality and materiality are to be determined;

g) measure lifetimes;

h) approach taken to address climatic variations within the Member State;

j) quality standards;

k) monitoring and verification protocols and how the independence of these from the obligated parties is ensured;

l) audit protocols.

These schemes shall not be such as to distort competition.

3.1. […]

[…]

4. **[…]**

Part B: Other policy measures under Article 6, paragraph 9:

[to be elaborated)

ANNEX VI

Minimum requirements for […] billing based on actual consumption

1. […]

1.1. […]

1.2. […]

2. Minimum requirements for billing

2.1 […] Billing based on actual consumption

In order to enable final customers to regulate their own energy consumption**, billing should take place on the basis of actual consumption at least once a year. […] […] […]**

2.2. Minimum information contained in the bill

Member States shall ensure that**, where appropriate,** the following information is made available to final customers in clear and understandable terms in or with their bills, contracts, transactions, and receipts at distribution stations:

(a) current actual prices and actual consumption of energy;

(b) comparisons of the final customer's current energy consumption with consumption for the same period in the previous year, preferably in graphic form;

(c) **[…]**

(d) contact information for final customers' organisations, energy agencies or similar bodies, including website addresses, from which information may be obtained on available energy efficiency improvement measures, comparative end-user profiles and objective technical specifications for energy-using equipment.

In addition, wherever possible and useful, Member States shall ensure that the following information is made available to final customers in clear and understandable terms, in, with or signposted to within, their bills, contracts, transactions, and receipts at distribution stations:

(e) comparisons with an average normalised or benchmarked final customer in the same user category.

2.3 Advice on energy efficiency accompanying bills and other feedback to final customers

When sending contracts and contract changes, and in the bills customers receive or through websites addressing individual customers, energy distributors, distribution system operators and retail energy sales companies shall inform their customers in a clear and understandable manner of contact information for independent consumer advice centres, energy agencies or similar institutions, including their internet addresses, where they can obtain advice on available energy efficiency measures, benchmark profiles for their energy consumption and technical specifications of energy using appliances that can serve to reduce the consumption of these appliances.

ANNEX VII

Potential for efficiency in heating and cooling

1. The **assessment of** national heating and cooling **potentials** referred to in Article 10(1) shall include:

   (a) a description of heating and cooling demand;

   (b) a forecast of how this demand will change in the next 10 years, taking into account in particular the evolution of demand in buildings and the different sectors of industry;

   (c) a map of the national territory, identifying:

      (i) heating and cooling demand points, including:

         - municipalities and conurbations with a plot ratio of at least 0.3; and
         - industrial zones with a total annual heating and cooling consumption of more than 20 GWh;

      (ii) existing and planned district heating and cooling infrastructure;

      (iii) potential heating and cooling supply points, including:

         - electricity generation installations with a total annual electricity production of more than 20 GWh; and
         - waste incineration plants;
         - existing and planned cogeneration installations, classified according to Annex VII, and district heating installations.

   (d) identification of the heating and cooling demand that could be satisfied by high-efficiency cogeneration, including residential micro-cogeneration, and by district heating and cooling;

   (e) identification of the potential for additional high-efficiency cogeneration, including from the refurbishment of existing and the construction of new generation and industrial installations or other facilities generating waste heat;

   (f) identification of energy efficiency potentials of district heating and cooling infrastructure;

(**g**) **a strategic assessment of the technical and economic potential for appropriate** measures **that may** be adopted up to 2020 and up to 2030 to realise the potential in (e) in order to meet the demand in (d), including**, where appropriate, proposals to**:

(i) **[…]** increase the share of cogeneration in heating and cooling production and in electricity production; **[…]**

(ii) **[…]** develop efficient district heating and cooling infrastructure to accommodate the development of high-efficiency cogeneration and the use of heating and cooling from waste heat and renewable energy sources;

(iii) […] encourage […] new thermal electricity generation installations and industrial plants producing waste heat to be located in sites where a maximum amount of the available waste heat will be recovered to meet existing or forecasted heat and cooling demand;

(iv) […] encourage […] new residential zones or new industrial plants which consume heat in their production processes to be located […] where […] available waste heat, as identified in the comprehensive assessment, can contribute to meeting their heat and cooling demands. This could include proposals that support the clustering of a number of individual installations in the same location with a view to ensuring an optimal matching between demand and supply for heat and cooling […];

(v) […] encourage […] thermal electricity generating installations, industrial plants producing waste heat, waste incineration plants and other waste-to-energy plants to be connected to the local district heating or cooling network;

(vi) […] encourage […] residential zones and industrial plants which consume heat in their production processes to be connected to the local district heating or cooling network.

(**h**) the share of high efficiency cogeneration and the potential established and progress achieved under Directive 2004/8/EC.

(**i**) an estimate of the primary energy to be saved;

(**i**) an estimate of public support measures to heating and cooling, if any, with the annual budget and identification of the potential aid element. This does not prejudge a separate notification of the public support schemes for a State aid assessment.

2. To the extent appropriate, the plan may be made up of an assembly of regional or local plans.

[…]

ANNEX VIII

[…]

ANNEX VIIIbis

Cost-benefit analysis

The purpose of preparing cost benefit analyses - related to measures for promoting efficiency in heating and cooling as referred to in Article 10, paragraph 1a, 3, 6 and 8 – is to provide a decision base for qualified prioritizations of limited resources at society level.

The cost-benefit analysis may either cover a project assessment of an […] individual installation or a broader local, regional or national assessment in order to establish the most cost-effective and beneficial heating or cooling option for a given geographical area for the purpose of heat planning per se. This annex shall apply in both cases.

The cost-benefit analyses in Article 10 shall include economic analyses covering socio-economic and environmental factors and […] financial analyses. The economic analyses shall be used in decision making for all analyses referred to in Article 10.

Part 1: General principles of the cost-benefit analysis

The cost-benefit analyses shall include the following features and considerations:

a) System boundary and geographical boundary
The scope of the cost-benefit analyses in question determines the relevant energy system, geographical boundary and choice of energy technologies in the considered energy system.

The economic and financial cost-benefit analyses shall cover a suitable well-defined geographical area, e.g. a given region or metropolitan area, to avoid selecting sub-optimized solutions on a project by project basis.

[…]

[…]

b) Integrated approach to demand and supply options

The cost-benefit analysis should take into account all relevant supply resources available within the system and geographical boundary, including waste heat from electricity generation and industrial installations and renewable energy, and the characteristics of and trends in heat and cooling demand.

c) Constructing a baseline […]

The purpose of the baseline scenario is to serve as a reference point, to which the alternative scenarios are evaluated.

(i) The baseline scenario shall (depending on the scope of the cost-benefit analyses) account for foreseen developments in the economy, demographic development, forecast of the heated/cooled area and heat demand, detailed on different purposes as relevant, price of energy input, and technologies applied over the relevant time horizon of the project.

(ii) The description of the baseline scenario shall account for conditions that are uncertain and assumptions that have been made within the baseline scenario.

d) Identifying alternative scenarios

All relevant alternatives to the baseline scenario shall be considered. Scenarios that are not feasible due to technical reasons, financial reasons, national regulation or time constraints may be excluded at an early stage of the cost benefit analysis if justified based on careful, explicit and well-documented considerations.

Only high-efficiency cogeneration, efficient district heating and cooling or efficient individual heating/cooling supply options as defined in Article 2 should be taken into account in the cost-benefit analysis as alternative scenarios compared to the baseline.

e) Involvement of relevant parties

The cost-benefit analysis shall include a consultation process with relevant parties on constructing the baseline and the alternative scenarios. Only parties, who may be influenced by the same heating/cooling market as the preferred solution, e.g. by being current or potential heating/cooling suppliers, shall be involved.

f) Calculation of cost-benefit surplus

(i) **The total long-term costs and benefits of heat or cooling supply options shall be assessed and compared.**

(ii) **The appropriate criterion for evaluation shall be the net present value (NPV) criterion. Project shall be accepted if the sum of discounted benefits in the economic analysis exceeds the sum of discounted costs (cost-benefit surplus).**

(iii) **The economic analysis shall be used in decision making for all analyses referred to in Article 10, paragraph 1a, 3, 6 and 8.**

(iv) **If the NPV-criterion is stimulatingly positive for the economic analyses and negative for the financial analyses - for ensuring the establishment of the installations referred to in Article 10, paragraph 3, 6 and 8 - the relevant authorities shall, in conjunction with the investors in the specific installations, investigate, which initiatives can be taken in order to bring the results of the financial analysis in-line with the economic analysis.**

(v) **[…]**

(vi) **The discount rate used in the economic analysis for the calculation of net present value shall be chosen according to European or national guidelines[51] after having performed a sensitivity analysis on at least two different rates, one of which shall be 3% expressed in real terms.**

(vii) **The time horizon shall be chosen such that all relevant costs and benefits of the scenarios are included. As a rule of thumb project planning period should encompass at least 25 years. When choosing the time horizons of more projects with different life horizons, they shall be made comparable. To do this choice, the lowest common denominator between the projects shall be selected and roll over the shorter projects.**

g) Calculation and forecast of prices and other assumptions

(i) The prices used in the economic analysis shall reflect the true socio economic costs and benefits and should include external costs, such as the cost resulting from greenhouse gas emissions. The use of market prices in economic analysis shall be applied when available. Market prices are best at reflecting the social value of a good or a service, because they ideally express both the preferences of individual citizens and production cost of firms.

(ii) If a market price is not available or if the market price systematically deviates from the social value a method for correcting the market price or determining the true social value of the good or service shall be used. Correction is e.g. relevant when it comes to

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[51] The national discount rate chosen for the purpose of economic analysis should take into account data provided by the European Central Bank.

a. Adjusting the market price for sunk costs which are not part of the social cost.

b. Adjusting the market price for social cost/value of non-market effect, e.g. environmental and health effects not captured by the market price[52]unless such costs are already internalised by public policy. e.g. tax or quota system.

c. Translating existing factor input prices into consumer prices by taking account of consumer taxes.

(iii) The prices used in the financial analysis should reflect the actual cash flows transaction related to the project.

(iv) Assumptions shall be provided for the purpose of the cost-benefit analyses. Member States shall establish national energy price development forecasts for oil, gas, coal, electricity and other fuels and energy sources, such as bio-energy in all its aggregations, LPG, district heating and cooling and peak load tariffs - if appropriate in their national and or regional/local context. Future fuel and energy prices should follow official national or European projections. […]

a) Inventory of effects

The economic analyses shall take into account all relevant economic[…] effects such as investment[…] costs, fuel costs and operational costs as well as environmental and health effects stemming either directly or indirectly from the proposed measure.

Member States may assess and take into account in decision making increased flexibility in energy supply and electricity networks in the analysed scenarios.

(i) Benefits

a. Value of output to the consumer (heat and electricity)

b. Environmental and health benefits

(ii) Costs

[…]

[52] Care shall be exercised when taking into account environmental and health costs to ensure methodological consistency and avoid double counting of costs as well as benefits.

a. **Capital costs of plants and equipments covering, as applicable, the costs of engines, turbines and boilers, including peaking and back-up boilers, accumulators and energy storage equipment designed for optimising the system, absorption units and heat pumps and the costs of appliances, including, if electricity-only generation installation or not heat recovering industrial installation is planned, individual heating and cooling appliances needed in the absence of the alternative cogeneration installation or heat-recovering industrial installation and the associated heating and cooling infrastructure.**

b. **Capital costs of the associated energy networks including the costs of building and upgrading or reinforcing the energy (electricity, gas, district heating and cooling, etc.) networks, the cost of land, and the costs of network connection and access.**

c. **Variable and fixed operating costs of the installation, including maintenance cost, energy cost and the cost of water, the cost of waste elimination and land use and the cost of periodic replacement of components, taking into account, if electricity-only generation installation or not heat recovering industrial installation is planned, the operation costs of the individual heating and cooling appliances fed by other energy sources, such as gas or electricity, in the absence of the alternative cogeneration installation or heat-recovering industrial installation and the associated heating and cooling infrastructure.**

d. **Energy costs taking into account annual variable costs for energy and annual fixed charges for energy reflecting the cost of needed production and network capacity.**

e. **Environmental and health cost (e.g. cost of waste elimination and pollution, impact on air, water, soil quality and ecosystems, land and property prices, cost of health damage and work loss days)**

f. **External costs, including internalised external environmental costs, such as the cost of CO_2 allowances or the cost of avoided greenhouse gas emissions.**

(iii) **Financial analyses**

The effects are those that affect the actual cash flow streams of the specific installation, covering at least the impact of different energy price developments and discount rates.

Part 2: Additional principles for the purpose of Article 10(3), (6) and (8)

In addition to Part 1, the cost-benefit analyses assessing the feasibility of an individual installation under Article 10(3) or (6) or (8) shall include the following features and considerations:

A comparison shall be made between the planned installations and an equivalent installation meeting the requirements of Article 10(3) or (6) or (8), as applicable.

The system boundary for all costs should in all compared options be set at the level which includes the planned installation and the heat loads, such as buildings and processes, that could be supplied from the planned installations, if constructed as an equivalent installations meeting the requirements of Article 10(3) or (6) or (8), as applicable.

Options compared with the planned case shall take into account the results of the assessment under Article 10(1) and (1a) based on Part 1 of this Annex.

Description shall be provided of the planned installation and the comparison plant, covering electrical and thermal capacity, as applicable, fuel type, planned usage, i.e. peak load or back-up or base-load installation, the number of planned operation hours annually, site and location and electricity and thermal demand, as applicable. For the purpose of the comparison, the thermal energy demand and the types of heating and cooling used by the nearby heat demand points, as assessed under Article 10(1) and (1a) shall be taken into account.

Planned peak load and back-up installations shall include an analysis whether their planned usage is compatible with the requirements under Article 10(3) and Article 12(1).

A sensitivity analysis shall be included to assess the feasibility based on different energy prices, discount rates and other variable factors having a significant impact on the outcome of the calculations.

ANNEX IX

Guarantee of origin for electricity produced from high efficiency cogeneration

a) Member States shall take measures to ensure that:

i) the guarantee of origin of the electricity produced from high-efficiency cogeneration:

- 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;
- is accurate, reliable and fraud-resistant;
- is issued, transferred and cancelled electronically;

ii) the same unit of energy from high-efficiency cogeneration is taken into account only once.

b) The guarantee of origin referred to in Article 10(**10**) shall contain at least the following information:

- the identity, location, type and capacity (thermal and electrical) of the installation where the energy was produced;
- the dates and places of production;
- the lower calorific value of the fuel source from which the electricity was produced;
- the quantity and the use of the heat generated together with the electricity;
- the quantity of electricity from high efficiency cogeneration in accordance with Annex II that the guarantee represents;
- the primary energy savings calculated in accordance with Annex II based on the harmonised efficiency reference values indicated in Annex II paragraph (f);
- the nominal electric and thermal efficiency of the plant;
- whether and to what extent the installation has benefited from investment support;
- whether and to what extent the unit of energy has benefited in any other way from a national support scheme, and the type of support scheme;
- the date on which the installation became operational; and
- the date and country of issue and a unique identification number.

The guarantee of origin shall be of the standard size of 1 MWh. It shall relate to the net electricity output measured at the station boundary and exported to the grid.

ANNEX X

Inventory of energy efficiency data of energy transformation installations

The inventories referred to in Article 11 shall include:

a) a non-nominative list of electricity only generation installations with a rated thermal input of 50 MW or more, indicating for each:

- annual average installation electrical output (MW_e) and total rated thermal input (MW_{th});
- annual average primary fuel and fuel mix (if applicable);
- plant type and technology employed at the installation;
- design efficiency and its conditions;
- operation start date;
- date of last substantial refurbishment;
- the number of annual average operating hours;
- annual average net operational efficiency.

b) a non-nominative list of heat only installations with a rated thermal input of 50 MW or more, indicating for each:

- annual average installation thermal output and total rated thermal input (MW_{th});
- annual average primary fuel and fuel mix (if applicable);
- plant type and technology employed at the installation;
- design efficiency and its conditions;
- heat load configuration;
- operation start date;
- date of last substantial refurbishment;
- the number of annual average operating hours;
- annual average net operational efficiency;

c) a non-nominative list of cogeneration installations with a rated thermal input of 50 MW or more, indicating for each:

- annual average installations electrical and thermal output (MW_e and MW_{th}) and total rated thermal input (MW_{th});
- annual average primary fuel and fuel mix in accordance with Decision 2007/74/EC on harmonised reference values, if applicable;
- plant type and technology employed at the installation in accordance with Annex VII;
- design efficiency and its conditions;
- the designed electricity-only and heat-only efficiencies;
- annual average power to heat ratio;
- operation start date;
- date of last substantial refurbishment;
- the number of annual average operating hours;
- annual average net operational efficiency.

d) **[…]**

ANNEX XI

Energy efficiency criteria for energy network regulation and for network tariffs [...]

1. Network tariffs shall accurately reflect electricity and cost savings in networks achieved from demand side and demand response measures and distributed generation, including savings from lowering the cost of delivery or of network investment and a more optimal operation of the network.
2. Network regulation and tariffs shall allow network operators to offer system services and system tariffs for demand response measures, demand management and distributed generation on organised electricity markets, in particular:
   a) the shifting of the load from peak to off-peak times by final customers taking into account the availability of renewable energy, energy from cogeneration and distributed generation;
   b) energy savings from demand response of distributed consumers by energy aggregators ;
   c) demand reduction from energy efficiency measures undertaken by energy service providers, including energy service companies ;
   d) the connection and dispatch of generation sources at lower voltage levels;
   e) the connection of generation sources from closer location to the consumption; and
   f) the storage of energy.

   For the purposes of this provision the term "organised electricity markets" shall include over-the-counter markets and electricity exchanges for trading energy, capacity, balancing and ancillary services in all timeframes, including forward, day-ahead and intra-day markets.
3. Network tariffs shall be available that support dynamic pricing for demand response measures by final customers, including:
   a) time-of-use tariffs;
   b) critical peak pricing;
   c) real time pricing; and
   d) peak time rebates.

ANNEX XII

Energy efficiency requirements for transmission system operators and distribution system operators

Transmission and distribution system operators shall:

a) set up and make public their standard rules relating to the bearing and sharing of costs of technical adaptations, such as grid connections and grid reinforcements, improved operation of the grid and rules on the non-discriminatory implementation of the grid codes, which are necessary in order to integrate new producers feeding electricity produced from high efficiency cogeneration into the interconnected grid;

b) provide any new producer of electricity produced from high-efficiency cogeneration wishing to be connected to the system with the comprehensive and necessary information required, including:

   (i) a comprehensive and detailed estimate of the costs associated with the connection;

   (ii) a reasonable and precise timetable for receiving and processing the request for grid connection;

   (iii) a reasonable indicative timetable for any proposed grid connection. The overall process to become connected to the grid should be no longer than 12 months**, bearing in mind what is reasonably practicable and non-discriminatory**.

(c) provide standardised and simplified procedures for the connection of distributed high efficiency cogeneration producers to facilitate their connection to the grid.

The standard rules referred to in a) shall be based on objective, transparent and non-discriminatory criteria taking particular account of all the costs and benefits associated with the connection of those producers to the grid. They may provide for different types of connection.

ANNEX XIII

Minimum items to be included in energy performance contracts with the public sector

- Clear and transparent list of the efficiency measures to be implemented
- Guaranteed savings to be achieved by implementing the measures of the contract.
- Duration and milestones of the contract, terms and period of notice.
- Clear and transparent list of the obligations of each contracting party.
- Reference date(s) to establish achieved savings.
- Clear and transparent list of steps to be performed to implement a measure and associated costs.
- Obligation to fully implement the measures in the contract and documentation of all changes made during the project.
- Regulations specifying the inclusion of third parties (subcontracting).
- Clear and transparent display of financial implications of the project and distribution of the share of both parties in the monetary savings achieved (i.e. remuneration of the service provider).
- Clear and transparent provisions on measurement and verification of the guaranteed savings achieved, quality checks and guarantees.
- Provisions clarifying the procedure to deal with changing framework conditions that affect the content and the outcome of the contract (i.e. changing energy prices, use intensity of an installation).
- Detailed information on the obligations of each of the contracting party.

ANNEX XIV

General framework for reporting

PART 1. General framework for annual reports

The annual reports referred to in Article 19(1) provide a basis for the monitoring of the progress towards national 2020 targets. Member States shall ensure that the reports include the following minimum information:

a) an estimate of following indicators in the **[…]** year **before last (year X[1]-2)**:

(i) primary energy consumption as defined in Article 2(2)

(ii) total final energy consumption

(iii) final energy consumption by sector

- industry
- transport (split between passenger and freight transport)
- households
- services

(iv) gross value added by sector

- industry
- services

(v) disposable income of households

(vi) gross domestic product (GDP)

(vii) electricity generation from thermal power generation

(vii bis) electricity generation from combined heat and power

(viii) heat generation from thermal power generation

(viii bis) heat generation from combined heat and power plants, including industrial waste heat

(ix) fuel input for thermal power generation

(x) passenger kilometers (pkm)

[1] **To be understood as X=current year.**

(xi) tonne kilometers (tkm)

(xii) population

In sectors where energy consumption remains stable or is growing, Member States shall analyse the reasons for it and attach their appraisal to the estimates.

b) updates on major legislative and non-legislative measures implemented in the previous year which contribute towards the overall national energy efficiency targets for 2020.

c) the total building floor area of the buildings with a total useful floor area over **500 m^2 and as of 9 July 2015 over** 250 m^2 owned by its public bodies that, on 1 January of the year in which the report is due, did not meet the energy performance requirements referred to in Article 4(1);

d) the total building floor area owned by the Member States' public bodies that was renovated in the previous year.

e) energy savings achieved through the national energy efficiency obligation schemes referred to in Article 6(1) or the alternative measures adopted in application of Article 6(9).

The first report shall also include the national target referred to in Article 3(1).

In the annual reports referred to in Article 19(1) Member States may also include additional national targets. These may be related in particular to the statistical indicators enumerated in Annex XIV, Part 1a or combinations thereof, such as primary or final energy intensity or sectoral energy intensities.

PART 2. General framework for National Energy Efficiency Action Plans

The **Plans** referred to in Article 19(2) shall provide a framework for the development of national energy efficiency strategies.

The **Plans** shall cover significant energy efficiency improvement measures and expected/achieved energy savings, including those in the supply, transmission and distribution of energy as well as energy end-use. Member States shall ensure that the **Plans** include the following minimum information:

1. Targets and strategies

- The national energy efficiency target for 2020 as required by Article 3(1);
- The national indicative energy savings target set in Article 4(1) of Directive 2006/32/EC;
- Other existing energy efficiency targets addressing the whole economy or specific sectors.

2. Measures and energy savings

The **Plans** shall provide information on measures adopted or planned to be adopted in view of implementing the main elements of this Directive and on their related savings.

a) Primary energy savings

The **Plans** shall list significant measures and actions taken towards primary energy saving in all sectors of the economy. For every measure or package of measures/actions estimations of expected savings for 2020 and savings achieved by the time of the reporting shall be provided.

Where available, information on other impacts/benefits of the measures (greenhouse gas emissions reduction, improved air quality, job creation, etc.) and the budget for the implementation should be provided.

b) Final energy savings

The first and second **National Energy Efficiency Action Plans** shall include the results with regard to the fulfilment of the final energy savings target set out in Article 4(1) and (2) of the Directive 2006/32/EC. If calculation/estimation of savings per measure is not available, sector level energy reduction shall be shown due to (the combination) of measures.

The first and second **National Energy Efficiency Action Plans** shall also include the measurement and/or calculation methodology used for calculating the energy savings. If the "recommended methodology[1]" is applied, the **Plan** should provide references to this.

3. Specific information related to provisions of this Directive

3.1. Public bodies (Article 4)

National Energy Efficiency Action Plans shall include the list of public bodies having developed an energy efficiency plan in accordance with Article 4(**4**).

3.2. Energy efficiency obligations (Article 6)

National Energy Efficiency Action Plans shall include the national coefficients chosen in accordance with Annex IV.

The first **National Energy Efficiency Action Plan** shall include a short description of the national scheme referred to in Article 6(1) or the alternative measures adopted in application of Article 6(9).

[1] Recommendations on Measurement and Verification Methods in the framework of the Directive 2006/32/EC on Energy End-Use Efficiency and Energy Services.

3.3. Energy audits and management systems (Article 7)

National Energy Efficiency Action Plans shall include:

a) the number of energy audits carried out in the previous **[…]** period;

b) the number of energy audits carried out in large enterprises in the previous **[…]** period;

c) the number of large companies in their territory, with an indication of the number of those to which Article 7(3) is applicable.

3.4. Promotion of efficient heating and cooling (Article 10)

National Energy Efficiency Action Plans shall include an assessment of the progress achieved in implementing the **comprehensive assessment** referred to in Article 10(1).

3.5. Energy transformation (Article 11)

National Energy Efficiency Action Plans shall include a non-confidential summary of the inventories of data referred to in Article 11, in accordance with the requirements set in Annex X.

3.6. Energy transmission and distribution (Article 12)

The first **National Energy Efficiency Action Plan** and the subsequent reports due every 10 years thereafter shall include the **assessment made, the measures and investments identified to utilise the** energy efficiency potentials of gas and electricity infrastructure referred to in Article 12(2).

3.7. Availability of certification schemes (Article 13)

National Energy Efficiency Action Plans shall include information on the available national certification schemes or equivalent qualification schemes for the providers of energy services, energy audits and energy efficiency improvement measures.

3.8. Energy Services (Article 14)

National Energy Efficiency Action Plans shall include an internet link to the website where the national lists and registers of energy services providers referred to in Article 14 can be accessible.

3.9. Other measures to promote energy efficiency (Article 15)

The first **National Energy Efficiency Action Plan** shall include a list of the measures referred to in Article 15(2).

ANNEX XV

Correlation table

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Article 8	Article 12(5)
--	Article 12(6)
--	Article 12(7)
Article 9	--

Article 10(1) and (2)	--
Article 10(3)	Article 19(6)
Article 11	--
Article 12	--
Article 13	Article 17(2)
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Annex I	Annex I, Part II
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