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AMENDMENTS *

to the proposal of the Commission

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DIRECTIVE 2012/.../EU

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 Commission¹,

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

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

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

Acting in accordance with the 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 without hampering economic activity. It improves the Union's security of

* This provisional consolidated version of the amendments adopted by the ITRE Committee on 28 February 2012 has been prepared by Parliament's Directorate for Legislative Acts for information purposes only.

¹ OJ C , p.
² OJ C , p.
³ OJ C , p.
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. **It is a crucial instrument for keeping energy affordable for all consumers and in the fight against energy poverty.** 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 **that will be able to be safeguarded in the medium and long term in terms of global competition.** [Am. 1]

(1a) In this context, a specific emphasis should be placed on local European producers and SMEs fulfilling high quality standards for their products and services. To this end, the Union should effectively control related imports from third countries to guarantee that such products and services fulfil the same high quality standards as local producers and service providers in the Union. [Am. 2]

(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 \(^1\) and to a total primary energy consumption in the Union of 1474 Mtoe in 2020. [Am. 3]

(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.

(3a) The energy efficiency targets can best be reached by involving as many parties as possible, public as well as private. This will induce a high leverage effect, create jobs and contribute to greener growth on the path to the creation of a competitive and sustainable Europe. [Am. 4]

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\(^1\) 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.
The Commission Communication on Energy 2020 places energy efficiency is one of the priorities 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. [Am. 5]

In its Resolution of 15 December 2010 on the Revision of the Energy Efficiency Action Plan, 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.

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

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 by using resources more efficiently in these sectors on the basis of low-energy products and technological processes, including efficient conversion processes in the energy sector. [Am. 7]

On 8 March 2011, the Commission adopted the Energy Efficiency Plan 2011. 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. In particular, Initiative 26 of the White Paper calls for appropriate standards for CO₂ emissions of vehicles in all modes, where necessary supplemented by requirements on energy efficiency to address all types of propulsion systems.

2 2010/2107(INI).
3 COM(2011)0021.
4 COM(2011)0109.
5 COM(2011)0144.
On 8 March 2011, the Commission also adopted a Roadmap for moving to a competitive low carbon economy in 2050\(^1\), identifying the need from this perspective for more focus on \textit{real} energy efficiency \textit{as a means of reducing primary energy consumption}. [Am. 8]

The Commission impact assessment of 22 June 2011 accompanying the proposal for this Directive\(^2\) demonstrated that national binding energy efficiency targets for primary energy consumption would be more appropriate than indicative national energy efficiency targets in order to ensure the fulfilment of the overall 20% energy savings target. Furthermore the impact assessment indicated that binding targets would allow more flexibility for Member States in designing energy savings measures appropriated to the diverse conditions of Member States. [Am. 9]

The Commission has moreover frequently stressed that a change in consumer behaviour while quality of life remains unchanged must also make a significant contribution to energy saving if the 20% objective is to be attained\(^3\). [Am. 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 establishing additional energy efficiency improvements after 2020 savings targets for 2030. 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. [Am. 11]

The Effort Sharing Decision (No 406/2009/EC)\(^4\) 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

\(^1\) COM(2011)0112
\(^2\) SEC(2011)0779.
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 and heating and cooling production by 2050. [Am. 12]

(12) An integrated approach, taking due account of local circumstances, must be taken to tap all the existing energy saving efficiency 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 market1 and Directive 2006/32/EC on energy end-use efficiency and energy services2 should be strengthened. [Am. 13]

(12a) The Commission Communication of 17 November 2010 on "Energy infrastructure priorities for 2020 and beyond - A Blueprint for an integrated European energy network" underlines the need to adapt the power capacity of the Union to the multitude of applications and technologies relying on electricity as an energy source as well as to maintain the network system's security. Demand side resources, applications and technologies have the potential to lead to massive carbon reductions and address the integration of renewable energy into energy networks. Member States should therefore encourage participation of demand side resources, applications and technologies, such as demand response, in energy markets. [Am. 14]

(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

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2 OJ L 144, 27.4.2008, p. 64.
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. By establishing mandatory national energy savings targets, based on an effort sharing mechanism between Member States, the Union should be able to ensure the fulfilment of the Union-wide energy savings target which is essential to climate policy, competitiveness, the move towards a sustainable economy and job creation. Meanwhile such an approach would have the benefit of allowing Member States to tailor energy efficiency measures to their national circumstances and priorities. [Am. 15]

(13a) Price signals are crucial in order to increase energy efficiency and the use of economic instruments is the most cost-effective way of promoting energy savings. [Am. 16]

(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 energy 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. To enable those bodies to fulfil this role, they should be allowed a broad margin of discretion with regard to specific measures. [Am. 17]

(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. To ensure this, it is essential that this Directive maintains a long-term view and establishes roadmaps for drastically reducing the energy use of both private and public buildings by 2050. Member States should focus their efforts, as a matter of priority, on measures with the most cost-effective impact on energy savings, in particular measures to promote the refurbishment of existing buildings and the modernisation of heating and cooling systems. Account should be taken of the affordability of such measures for citizens. 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 a long-term target and an annual rate of renovation of all energy performance improvement for buildings owned by public bodies to upgrade their
energy performance without compromising the fire safety of the buildings during renovation and occupancy. This measure would require an increased renovation rate and deep renovation, while it 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 buildings1 it will in fact serve to facilitate meeting these obligations. Renovations should be carried out while taking into account climatic and local conditions, as well as respecting indoor climate, accessibility, and other health and safety requirements, and the intended use of the building. 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. [Am. 18]

(15a) Bearing in mind that buildings account for 40% of final energy use in the Union and 36% of CO₂ emissions, and that a target of a 90% drop in emissions in the construction sector has been set in the road map for moving to a low carbon economy in 2050, this target will only be achieved if the Union applies ambitious measures to the building stock as a whole, this being a crucial part of its energy infrastructure. For this reason, following the public sector’s exemplary conduct in renovation of buildings, Member States should also take a long-term view and, while upholding the principle of subsidiarity and cost-effectiveness, draw up road maps for the renovation of commercial and private buildings. [Am. 19]

(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, in order to design "low energy cities and regions". The concept of “low energy cities and regions” considers energy issues as an essential component of urban and regional development embedded in local democratic and governance processes. As a precondition of local integrated and sustainable energy efficiency plans, Member States should encourage local authorities to define such local development strategies based on a dialogue with local public, commercial and social stakeholders. Member States should then encourage municipalities and other public bodies

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to adopt integrated and sustainable energy efficiency plans with clear objectives, to involve *local stakeholders and* 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 and *if genuinely holistic approaches are adopted*. Exchange of experience between cities, towns and other public bodies should be encouraged with respect to the more innovative experiences. [Am. 20]

(16a) *The problems encountered in implementing consumption audits need to be borne in mind, as the municipalities signatory to the Covenant of Mayors are coming up against significant barriers in accessing energy use data disaggregated according to the categories proposed by the Commission in the Covenant of Mayors.* [Am. 21]

(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 scheme 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 be established at Union level in which energy utilities are given* 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, who should be defined as such in the relevant national legislation, 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"\(^1\) sets out principles that should be taken into account by Member States that decide to abstain from applying this possibility. [Am. 22]

(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 create conditions for the availability of energy audits and ensure certification of energy auditors. Energy audits should be mandatory and regular for large enterprises, as energy savings can be significant. [Am. 23]

(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 professional energy services providers, as well as by in-house experts, provided that these-the latter are also qualified and/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. [Am. 24]

(20a) The cost of energy efficiency improvement measures, including energy efficiency obligation schemes and smart meter roll-outs, is likely to be transferred to final consumers through their energy bills. To ensure that retail energy sales companies and energy service providers deliver these measures to consumers in a fair and cost-effective manner Member States should establish requirements for cost reporting to the national regulatory authorities. [Am. 25]

(21) When designing energy efficiency improvement measures, account should be taken of efficiency gains and savings that might be obtained through the widespread application of cost-effective technological innovations such as smart meters. To maximise the saving benefits of these innovations, The roll-out of these technological innovations may only be supported when a full cost-benefit analysis is positive, especially for consumers, including low income users, and when privacy is guaranteed. The final customers should consumers have to be able to visualise indicators of cost and consumption. and have

\(^1\) COM(2008)0394.
regular individual billing based on actual consumption. In particular, Member States should require electricity and gas distributors to adopt a common system of display to facilitate decisions by consumers. In addition to that, Member States should develop demand response programmes that will promote and reward decentralized and flexible energy generators in combination with demand response providers. [Am. 26]

(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 which assesses the socio-economic costs. 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. [Am. 27]

(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 preclude 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, provided that the highest efficiency standards are complied with so as to meet the objective of this Directive. Notably, the installation of micro-cogeneration units in individual premises should be facilitated. [Am. 28]

(27) Most EU businesses are small and medium-sized enterprises (SMEs). They represent an enormous energy saving potential for the Union. To help them adopt energy efficiency measures while recalling that the best incentive for SMEs must be the financial savings to be achieved through energy efficiency measures, Member States should establish a favourable framework aimed at providing SMEs with technical and financial assistance and targeted information and simplified procedures and application forms for applying for funds and/or inclusion in the national energy grid. Ideally, SMEs would then also be made responsible for implementing energy efficiency and savings measures, so that new jobs would be created there, or at least existing ones retained. [Am. 29]

(28) Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions\(^1\) 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

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Community\(^1\). 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 in the framework of Directive 2010/75/EC 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\(^2\). [Am. 30]

(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\(^3\) 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\(^4\). Producers of electricity generated from high-efficiency cogeneration should be allowed to issue a call for tender for the connection work. Access to 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 qualified 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. [Am. 31]

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\(^1\) OJ L 275, 25.10.2003, p. 32.
\(^2\) OJ L 32, 6.2.2007, p. 183.
\(^3\) OJ L 211, 14.8.2009, p. 15.
The necessary increase in energy efficiency will only be achieved through a comprehensive change in society’s thinking. Today’s children are tomorrow’s workers, engineers, architects, entrepreneurs and energy users. The decisions they take will influence the way in which society produces and uses energy in the future. Energy education is therefore important so that future generations can be instructed in how to contribute to efficient energy consumption through their lifestyle and personal behaviour. The Member States should therefore take targeted action to promote energy education in schools, with particular emphasis on how each individual can contribute to more efficient, sustainable energy use through their personal behaviour. [Am. 32]

Energy performance contracting comprises a wide variety of mechanisms which open up opportunities to deploy more energy-efficient technologies and solutions. It is necessary to continue developing the market for energy services to ensure the availability of both the demand for and the supply of energy services in an open and transparent manner. 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. At the same time, however, it should be ensured that not only measures with a rapid return are offered but a mix of differing measures to ensure that more effort-intensive and thus more expensive measures are also taken swiftly. The market of energy performance contracting should not discriminate against any energy services providers. [Am. 33]

There is a need to identify and remove regulatory, administrative 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 both on a split of incentives between the different concerned actors and on access to different means of funding should also be tackled at national level. [Am. 34]

Member States and regions should be encouraged to make full use of the diverse available European funds such as the Structural Funds and the Cohesion Fund, as well as the new
and innovative funds such as the ELENA facility and the European Energy Efficiency 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, promotion of the construction of nearly zero-energy buildings up to the end of 2020 at the latest, and providing new skills to promote employment in the energy efficiency sector as well as the funding of energy efficient new buildings. [Am. 35]

(33a) Under the Commission’s legislative proposals of 6 October 2011 concerning the future of the European Union’s cohesion policy, it is likely that there will be a significant increase in the financial support for energy efficiency provided by the Structural Funds and the Cohesion Fund in the 2014-2020 period compared to the 2007-2013 period. Such funding would make a decisive contribution to achieving the objectives of this Directive. [Am. 36]

(33b) The Commission and the Member States should seek to establish research schemes to come up with technology for use in historic buildings, covering all aspects connected with the use of renewable energy, the installation of smart meters and other technologies that would need to be installed in such buildings. The Commission and the Member States should also undertake to disseminate the findings of research that has already been carried out. [Am. 37]

(33c) Given the special characteristics of historic buildings, research would need to be carried out into the different energy consumption profiles involved, taking into account the insulation qualities of traditional architecture, the way in which it is adapted to its environment and the good practices employed in the past with regard to the use and function of such buildings. [Am. 38]

(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.
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.

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% EU average target. [Am. 39]

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.

Common action at Union level in the field of energy efficiency will reduce the costs of energy efficient products and services and increase business opportunities for industries involved in energy efficiency. It is worthwhile to create a common market for energy efficient products and services. The authors of the treaties have explicitly included energy efficiency in the treaties, which creates a duty to act in this field. [Am. 40]

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 consultations during its preparatory work, including at expert level.

(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\(^1\), 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.

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 target of at least 20% primary energy savings compared to projections for by 2020 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 the energy service markets and overcome market failures that impede efficiency in the supply and use of

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energy, and provides for the establishment of binding 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. [Am. 41]

Article 2
Definitions

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

(1) "energy" means all forms of energy products, as defined in Regulation (EC) No 1099/2008;

(1a) "energy efficiency" means a ratio between an output of performance, service, goods or energy, and an input of energy; [Am. 42]

(2) "primary energy consumption" means gross inland consumption, excluding non-energy uses;

(2a) "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 normalisation for external conditions that affect energy consumption; [Am. 43]

(3) "energy service" means the physical benefit, utility or good derived from a combination of energy with energy management system and/or 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; [Am. 44]

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(4) "public bodies" means "contracting authorities" as defined in Article 1(9) of Directive 2004/18/EC\(^1\);

(4a) "public authorities" means the State, regional or local authorities, or associations formed by one or several of such authorities;

(4b) "bodies governed by public law" means any body:

(a) established for the specific purpose of meeting needs in the general interest, not having an industrial or commercial character,

(b) having legal personality, and

(c) financed, for the most part, by the State, regional or local authorities, or other bodies governed by public law, or subject to management supervision by those bodies, or having an administrative, managerial or supervisory board, more than half of whose members are appointed by the State, regional or local authorities, or by other bodies governed by public law; [Am. 45]

(4c) "public buildings" means buildings owned by public bodies which are in use and which are heated or cooled; [Am. 46]

(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;

(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 and Directive 2009/73/EC;

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"retail energy sales company" means a natural or legal person who sells, the main aim of whose activity is to sell energy to final customers, regardless of whether the energy is connected or not to the grid; [Am. 47]

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

"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;

"energy service company" (ESCO) means a legal person that delivers energy services and/or other energy efficiency improvement measures in a user's facility or premises, and accepts some degree of financial risk in doing so. The payment for the services delivered is based (either wholly or in part) on the achievement of energy efficiency improvements and on the meeting of the other agreed performance criteria; [Am. 48]

"demand response" means changes in electricity usage by end-use customers/micro generators to their current/normal consumption/injection patterns in response to changes in electricity prices and/or incentive payments designed to adjust electricity usage, or in response to acceptance of the consumer’s bid, alone or through aggregation, to sell demand reduction at a price in organised electricity markets or to a retail provider. Demand response programmes are designed to increase the efficiency of the energy value chain and/or increase the consumption and integration of intermittent renewables; [Am. 49]

"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, taking into account health impacts, and report the findings; [Am. 50]

"highly cost effective recommendations" means measures identified by an energy audit that have pay-back periods of five years; [Am. 51]

"energy performance contracting" means a contractual arrangement between the beneficiary and the provider (normally an ESCO) of an energy efficiency improvement measure, according to which verified and monitored during the payment whole term of
the contract, where investments (work, supply or service) in that measure are paid for the investment made by the provider is in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion; such as financial savings; [Am. 52]

(13a) "smart meter" means an electronic device which is connected to an interface as described in point 1.1 of Annex VI that measures the consumption of energy, adding more information than a conventional meter, transmits data using a form of electronic communication and is able to provide bi-directional communication between the consumer and supplier/operator. It should also promote services that facilitate energy savings within the home. In addition to bi-directional communication, a smart meter may have any or all of the other additional functionalities identified by Mandate M/441 on smart metering; [Am. 53]

(13b) "billing information" means a statement of account which shall not be considered to constitute a request for payment; [Am. 54]

(13c) "bill" means an invoice requesting payment; [Am. 55]

(14) "transmission system operator" means "transmission system operator" as defined in Directive 2009/72/EC¹ and Directive 2009/73/EC²;

(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 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;

(17a) "waste heat" means heat unavoidably produced as a by-product of industrial and power-generation processes and which cannot be used within the industrial production or power production unit; [Am. 56]

"industrial waste heat" means hot streams from industry that is a by-product, impossible to avoid at production of the industrial product and could not be used inside the industrial production; [Am. 57]

"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;

"high-efficiency cogeneration" means cogeneration meeting the criteria laid down in Annex II;

"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;

"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;

"cogeneration unit" means a unit that can operate in cogeneration mode;

"small scale cogeneration unit" means a cogeneration unit with installed capacity below 1MW_e;

"micro-cogeneration unit" means a cogeneration unit with a maximum capacity below 50 kW_e;

"micro technologies to generate energy" or "micro energy generators" means a variety of small-scale electrical and heat generation technologies that can be installed and used in individual households; [Am. 58]

"plot ratio" means the ratio between the land area and the building floor area in a given territory;

"efficient district heating and cooling" means a district heating or cooling system using at least 50% renewable, waste or cogenerated heat or a combination thereof and— or— having a primary energy factor, as referred to in Directive 2010/31/EU, calculated in accordance with the EN 15603 standard, of at least no more than 0.8; [Am. 59]
"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.

"deep renovation" means a refurbishment that reduces both the delivered and the final energy consumption of a building by at least 75% compared with the pre-renovation levels; [Am. 60]

"staged deep renovation" means a refurbishment that reduces in stages the delivered and final energy consumption of a building by a total of at least 75% during a normal renovation cycle, while ensuring that any stage does not preclude, or increase the costs of, subsequent stages; [Am. 61]

"third party financing" means a contractual arrangement involving a third party - in addition to the energy supplier and the beneficiary of the energy efficiency improvement measure - that provides the capital for that measure and charges the beneficiary a fee equivalent to a part of the energy efficiency achieved as a result of that measure. A third party may be an ESCO. [Am. 62]

Article 2a
Financing and Technical Support

1. Without prejudice to Articles 107 and 108 of the Treaty, Member States shall ensure that financing facilities for energy efficiency improvement measures are in place to maximise the benefits of multiple streams of financing. These facilities may include cross-industry funds and financial mechanisms used for investment in energy saving measures.

2. The financing facilities shall include:

   (a) financial contributions and fines from non-fulfilment of the provisions set out in Articles 6 to 8 as referred to in Article 9;
   
   (b) resources allocated to energy efficiency under Article 10(3) of Directive 2003/87/EC;
(c) resources allocated to energy efficiency in the multiannual financial framework, in particular cohesion, structural and rural development funds, and dedicated European financial instruments, such as the European Energy Efficiency Fund.

3. The financing facilities may also include:

(a) resources allocated to energy efficiency from EU projects bonds;

(b) resources allocated to energy efficiency from the European Investment Bank and other European financial institutions, in particular the European Bank for Reconstruction and Development and the Council of Europe Development Bank;

(c) resources leveraged in financial institutions;

(d) national resources, including through the creation of regulatory and fiscal frameworks encouraging the implementation of energy efficiency initiatives and programmes.

4. Taking into account the principles of flexibility and subsidiarity, the financing facilities shall:

(a) use this money to enable and encourage private capital investment, in particular drawing on institutional investors, while using criteria ensuring the achievement of both environmental and social objectives for the granting of funds;

(b) provide financial tools (e.g. loan guarantees for private capital, loan guarantees to foster energy performance contracting, grants, subsidised loans and dedicated credit lines, third party financing systems) that reduce both the perceived and the actual risks of energy efficiency projects, and allow for cost effective renovations even among low and medium revenue households;

(c) be linked to programmes or agencies which will aggregate and assess the quality of energy saving projects, provide technical assistance, promote the energy services market and help to generate consumer demand for energy services, in accordance with Article 14.

5. The financing facilities may also:
(a) provide appropriate resources to support training and certification programmes which improve and accredit skills for energy efficiency;

(b) provide resources for research on and demonstration and acceleration of uptake of small scale and micro technologies to generate energy and the optimisation of the connections of these generators to the grid;

(c) be linked to programmes undertaking action to promote energy efficiency in all houses to prevent energy poverty and stimulate landlords letting houses to render their property as energy efficient as possible;

(d) provide appropriate resources to support social dialogue and standard-setting aiming at improving energy efficiency and ensuring good working conditions and health and safety at work.

6. The Commission shall, where appropriate, directly or via the European financial institutions, assist Member States upon request in setting up financing facilities and technical support schemes with the aim of increasing energy efficiency in different sectors.

7. The Commission shall facilitate the exchange of best practice between the responsible national or regional authorities or bodies e.g. through annual meetings of the regulatory bodies, public databases with information on the implementation of measures by Member States and country comparison.

8. The Commission shall regularly review the operation and impact of the European Energy Efficiency Fund (EEEF), established by Regulation (EU) No 1233/2010, in order to gauge its effectiveness and determine whether further resources should be allocated to this financial instrument, the purpose of which is to support initiatives to promote energy efficiency. [AM 1475]

9. Member States providing funding for energy efficiency measures shall ensure that all providers of such measures are given equal access to the funding provided. [AM 1476] [Am. 63]
Article 3
Energy efficiency targets

1. Member States shall set a binding national energy saving efficiency target expressed as an absolute level of primary energy consumption in 2020, which shall be notified to the Commission by the date of entry into force of this Directive.

When setting these targets, each Member State shall take into account the 2020 national energy saving reference values as set out in the left column of Part A of Annex -I. The Commission shall ensure that the national targets amount to the overall Union's target of at least 20% primary energy savings in 2020 compared to projections.

Member States shall adopt and implement 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 so as to ensure that their primary energy consumption is equivalent to or below that shown in the indicative trajectory set out in Part B of Annex -I and their 2020 target as referred to in the first and second subparagraphs of this paragraph.

1a. If, by the date of entry into force of this Directive, Member States collectively set and notify binding national energy saving targets in accordance with the first and second subparagraphs of paragraph 1 and the Commission has verified that the national targets amount to the overall Union target of a maximum primary energy consumption of 1474 Mtoe in 2020, Member States may deviate from the required minimum values provided for in Articles 4 and 6. If the achievement of the 2020 binding national and Union energy efficiency targets as set out in this Article cannot be demonstrated in accordance with Article 19, any deviation from these required minimum values provided for in Articles 4 and 6 shall not be allowed.

If, by the date of entry into force of this Directive, Member States do not collectively set and notify binding national energy saving targets in accordance with the first and second subparagraphs of paragraph 1 and the Commission cannot ensure that the national targets amount to the overall Union target of a maximum primary energy consumption of 1474 Mtoe in 2020, no deviation from the required minimum values provided for in Articles 4 and 6 shall be allowed.
2. By 30 June 2013, the Commission shall assess whether **Member States are on track to achieving the national targets, referred to in paragraph 1, that are required to the Union** is likely to achieve its **Union’s** target of 20% primary energy savings by 2020, requiring a reduction of EU primary energy consumption of 368 Mtoe in 2020, **which amounts to a maximum primary energy consumption of 1474 Mtoe in 2020**, taking into account **This assessment shall include** the sum of the national targets referred to in paragraph 1 and **take into account** the evaluation referred to in Article 19(4).

*If the results of this assessment are negative, the Commission shall introduce a combination of measures, including advice, incentives, warnings and financial repercussions to ensure that each Member State delivers the appropriate contribution to reach the overall Union target in 2020.*

2a. **By 30 June 2014, the Commission shall submit a proposal for energy savings targets for 2030. [Am. 64]**

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**Article 3a**  
**Building renovation**

1. **Members States shall aim to reduce, by 31 December 2050, the energy consumption of the existing building stock by 80% compared to 2010 levels**

2. **As part of the national plans referred to in Article 9 of Directive 2010/31/EU, Member States shall include policies and measures in accordance with the objective set in paragraph 1, in particular by stimulating deep renovations of buildings, including staged deep renovations.**

3. **By 1 January 2014, Member States shall draw up and make publicly available the national plans referred to in paragraph 2. The policies and measures referred to in paragraph 2 shall include at least:**

   (a) **indicative interim targets, in accordance with the objective set in paragraph 1, for the reduction of the delivered or final energy consumption as defined in Annex I to Directive 2010/31/EU of their existing building stock by at least 15%, 30% and 60% compared to 2010 levels for 2020, 2030 and 2040 respectively, including deep renovation targets;**
(b) energy efficiency measures to address social challenges in the housing sector, in particular energy poverty.

The national plans referred to in paragraph 2 may also include:

(a) measures that are differentiated according to the category of building;
(b) measures to address health and safety, technical, and financial challenges in the buildings sector;
(c) measures for financing and training to support the achievement of the targets referred to in this Article.

4. In accordance with Article 4(2) of Directive 2010/31/EU, Member States may decide not to set or apply the requirements referred to in this Directive to the following categories of buildings:

(a) 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;

(b) buildings used as places of worship and for religious activities;

(c) temporary buildings with a time of use of two years or less, industrial sites, workshops and non-residential agricultural buildings with low energy demand and non-residential agricultural buildings which are in use by a sector covered by a national sectoral agreement on energy performance;

(d) residential buildings which are used or intended to be used for either less than four months of the year or, alternatively, for a limited annual time of use and with an expected energy consumption of less than 25 % of what would be the result of all-year use;

(e) stand-alone buildings with a total useful floor area of less than 50 m².

5. Member States shall ensure that the reduction of the energy consumption of the building stock, in particular through deep and staged deep renovations is carried out first in the buildings with the worst energy performance. [Am. 65]
CHAPTER II
Efficiency in energy use

Article 4
Public bodies

1. Without prejudice to Article 7 and 9 of Directive 2010/31/EU, Member States shall ensure that as from 1 January 2014, 3% 2.5% of the total floor area of heated and/or cooled buildings owned by their public bodies 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 Directive 2010/31/EU, subject annually to deep or staged deep renovation. The 3% 2.5% rate shall apply as a national average and need not be applied equally to each individual public body. The rate shall be calculated on the total floor area of heated and/or cooled buildings with a total useful floor area over 250 m² owned by the public bodies 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.

Member States shall ensure that, when implementing measures to renovate their public buildings in accordance with the first subparagraph, they consider the building envelope as a whole, including building equipment, operation and maintenance, and the behaviour of occupants.

Member States shall ensure that public bodies with the lowest energy efficiency property portfolios are a priority for energy efficiency measures. Public bodies shall endeavour to prioritise buildings with the worst energy performance.

2. Member States may allow their public bodies to count towards their annual renovation rate the excess of renovated building floor area in a given year as if it has instead been renovated in any of the two four previous or following years.

2a. Member States may decide not to include in their calculation of total floor area the categories of buildings referred to in Article 3a(4).

2b. The Union institutions, bodies and agencies shall ensure that, when their buildings undergo deep or major renovation, their energy performance is upgraded to that of
nearly zero-energy buildings as defined in Article 2(2) of Directive 2010/31/EU or into buildings with the highest energy efficiency classes as defined in the country or the region where the building is located.

3. For the purposes of paragraph 1, by 1 January 2014, Member States shall establish and make publicly available an inventory of heated and cooled buildings owned by their public bodies with a total useful floor area over 250 m², excluding buildings exempted on the basis of paragraph 2a indicating:

(a) the floor area in m²; and

(b) the energy performance of each building.

3a. As an alternative to the requirements in paragraph 1 and without prejudice to paragraph 2a of this Article and to Article 7 of Directive 2010/31/EU, Member States may, as from 1 January 2014, take other measures, in particular by prioritising deep or staged deep renovations of buildings, to achieve annually an amount of energy consumption savings in eligible buildings owned by their public bodies that is at least equivalent to that required in paragraph 1.

3b. Member States opting for an alternative approach in accordance with paragraph 3a shall notify to the Commission, by 1 January 2013 at the latest or at least one year in advance if they opt for such an alternative approach at a later stage, the measures that they plan to adopt and shall show how they would achieve an equivalent improvement of the energy performance of the building stock.

3c. Member States opting for an alternative approach as referred to in paragraph 3a shall assess every three years whether the approach is on track to achieving the equivalent annual energy performance improvement of public buildings as required by paragraph 1 and notify these assessments to the Commission. Should the alternative approach be insufficient to meet the target, the Commission may recommend that the Member State concerned take the measures outlined in paragraph 1.

3d. Member states may use the alternative approach referred to in paragraph 3a to value the specific architectural or historical merit of buildings or ensembles officially protected, to assess and promote their traditional features which respond to energy performance
requirements, and to consider measures to improve specific cases without altering their authenticity. [ENVI 39]

4. The Commission and the Member States shall encourage and support regional, local and other public bodies, including bodies governed by public law to:

(a) adopt and implement an integrated energy efficiency plan, freestanding or as part of a broader climate or environmental plan on climate, low energy cities or regions, or an environmental plan, containing specific energy saving and efficiency objectives and actions, with a view to continuously improving the body's energy savings and efficiency of those bodies;

(b) put in place an energy management system as part of the implementation of their plan;

(ba) use, where appropriate, ESCOs, and energy performance contracting to finance renovations and implement plans to maintain or improve energy efficiency in the long term. [Am. 66]

Article 5
Purchasing by public bodies

When public bodies purchase products, systems, services and buildings, Member States shall ensure that public bodies purchase only products, systems, services and buildings and equipment particularly in the IT field, with high energy efficiency performance, as referred to in Annex III taking into account cost effectiveness based on a whole life-cycle analysis. For products not covered by Annex III, public bodies shall endeavour to take into account the energy efficiency of purchases.

Member States shall lay down rules for the application of paragraph 1 and Annex III by public bodies leasing or renting products, systems and services, except for short-term non-rolling contracts.

Member States shall ensure that when tendering service contracts, public bodies shall assess the possibility of concluding long term energy performance contracts as referred to in point (b) of Article 14.
Without prejudice to the first paragraph, when purchasing or renting a collection or group of products, systems, services or buildings, the aggregate energy efficiency shall take priority over the energy efficiency of an individual purchase, taking into account technical suitability and intended use. [Am. 67]

Article 6
Energy efficiency obligation end use saving schemes

1. Each Member State shall set up ensure that an energy efficiency saving obligation scheme is in place. This scheme shall ensure that either all energy distributors and/or all retail energy sales companies operating on the Member State's territory achieve cumulative annual end-use energy savings equal to at least 1.5% of their annual energy sales, by volume, in the previous year in averaged over the most recent three-year period for that Member State excluding energy used in transport. This amount of energy savings shall be achieved by the obligated parties among final customers.

2. Member States shall express the amount of the achieved end-use energy savings required from each obligated party in terms of final energy consumption and then calculate in 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.

2a. Each Member State shall ensure that the 1.5% savings achieved each year are new and additional to the savings achieved in each previous year.

3. For the purposes of paragraph 1, measures that target short-term savings, as defined in Annex V(1), shall not account for more than 10% of the amount of energy savings required from each obligated party and shall only be eligible to count towards the obligation laid down in paragraph 1 if combined with measures to which longer-term savings are attributed.

3a. For the purposes of paragraph 1, Member States shall ensure that building renovations, in particular deep and staged deep renovations, account for a significant share of longer-term energy savings.
4. Member States shall ensure that the achieved energy savings claimed by obligated parties are calculated in accordance with Annex V(2). They shall put in place independent measurement, control and verification systems under which at least a statistically significant proportion and representative sample of the energy efficiency improvement measures put in place by the obligated parties is independently verified. The verification shall take place every second year. If independent measurement and verification find unverifiable savings or savings that are not documented those savings may not count towards the saving target referred to in paragraph 1.

Member States shall ensure that the costs of energy savings can be recovered among final customers. When implementing a saving obligation scheme in accordance with paragraph 1 Member States shall avoid discrimination, cross-subsidisation and distortion of competition. [AM 739]

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

(a) include requirements with a social aim in the saving obligations they impose, including by requiring a share of energy efficiency measures to be implemented as a priority in households affected by energy poverty, by landlords or groups of investors that let their property or in social housing;

(b) permit obligated parties to count towards their obligation certified energy savings achieved by accredited energy service providers or other accredited third parties, in this case they provided they are additional to the business as usual scenarios; Member States shall establish 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 either the two previous or two following years.

6. Once a year, Member States shall publish the achieved energy savings achieved by each obligated party and data on the annual trend of energy savings under the scheme. For the purposes of publishing and verifying the achieved energy savings achieved, Member States shall require obligated parties to submit to them at least the following data:

(a) the required energy savings and the energy savings achieved;
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(b) aggregated statistical information on their final customers (identifying significant changes to previously submitted information); and

current information on final customers' consumption, including, where applicable, load profiles, appropriate customer segmentation and broad geographical location of customers, while preserving the integrity and confidentiality of private or commercially sensitive information in compliance with applicable European Union legislation;

(c) the costs passed on to their customers, while preserving the integrity and confidentiality of private or commercially sensitive information in compliance with applicable Union legislation.

6a. Using all the information in paragraph 6, national regulatory authorities shall publish annual reports on whether energy efficiency obligation schemes are meeting their objectives at the lowest possible cost to consumers. The national regulatory authorities shall also regularly commission independent reviews on the impacts that the scheme has on energy bills and fuel poverty as well as the energy savings from the scheme to ensure maximum cost-effectiveness. Member States shall be required to take these impacts into account by adjusting schemes.

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

This shall be achieved by implementing clear, transparent and open partnerships between energy distributors and energy service providers in order to optimise the energy saving obligations towards the end-customer.

8. Member States may exempt small energy distributors and small retail energy sales companies namely those that distribute or sell less than the equivalent of 75 GWh of energy per year, employ fewer than 10 persons or have an annual turnover or annual balance sheet total that does not exceed EUR 2 000 000, in accordance with their specific national energy market circumstances from the application of this Article, provided that
such exemptions do not result in a distortion of competition. Energy produced for self use shall not count towards these thresholds fall within this Article.

9. As an alternative to paragraph 1, Member States may opt to take other alternative and/or complementary measures to achieve the equivalent energy savings among final customers. The annual amount of energy savings achieved through this approach shall be strictly equivalent to the amount of energy savings required in paragraph 1.

Provided that the energy savings are additional to the ones obtained through the other obligations under this Directive, the alternative and/or complementary measures may include, but are not limited to:

(a) without prejudice to Directive 2009/29/EC, individual energy efficiency targets by consumer based on results of energy audits;

(b) establishing, supporting and promoting ESCOs, and, where Member States decide to do so, setting performance targets for ESCOs;

(c) improvements to the energy efficiency of buildings, including public buildings;

(d) energy tariff structures which incentivise energy efficiency;

(e) a system in which obligated parties are to fulfil up to 50% of their obligation set out in paragraph 1 by paying into the financing facilities referred to in Article 2a. This shall be done by contributing to the financing facility an amount equal to the investment costs estimated to achieve the corresponding share of their obligation.

Member States opting for this option shall notify to the Commission, by 1 January 2013 at the latest, the alternative measures that they plan to adopt, including the rules on penalties referred to in Article 9, and demonstrating specifically for each measure how they would achieve the required amount of savings. Member States shall ensure that energy savings for each alternative measure are calculated in accordance with Annex Vb.

Member States shall ensure that the measures under this paragraph have equal planning certainty and guarantee a stable framework of incentives linked to energy services schemes for all market actors.
The Commission may refuse such measures or make suggestions for modifications in the 3 months following notification. In such cases, the alternative approach shall not be applied by the Member State concerned until the Commission expressly accepts the resubmitted or modified draft measures.

**Member States shall ensure appropriate monitoring and reporting in line with requirements set out in Article 19. Where the reporting suggests that alternative measures under this Article are materially failing to meet the required savings, the Commission shall require the Member State to put in place an energy efficiency obligation scheme as described in paragraph 1 or any alternative measures, if appropriate.**

9a. **The Commission shall establish by 1 January 2013 a harmonised methodology in accordance with the minimum requirements as set out in Annex Vb for the calculation model for the purpose of measuring, monitoring and verifying energy savings attained primarily through energy efficiency improvement measures and programmes in all end-use sectors referred to in this Article. The new harmonised bottom-up calculation model shall be used from 1 January 2013.**

10. If appropriate, the Commission shall establish, by means of a delegated act in accordance with Article 18, a system of mutual recognition of energy savings achieved under national energy efficiency obligation schemes. Such a system shall allow obligated parties to count energy savings achieved and certified in a given Member State towards their obligations in another Member State—[Am. 68]

Article 7

**Energy audits and energy management systems**

1. Member States shall promote the availability to all final customers of high quality energy audits which are affordable cost-effective and carried out in an independent manner by qualified and/or accredited experts.

**Member States shall ensure, for the purpose of guaranteeing the high quality of the energy audits and energy management systems and the delivery of the adapted energy**
measures to each industrial facility, process or building, that these audits and systems include and observe the minimum criteria as set out in Annex Va.

Member States shall ensure that training programmes are available for the qualification of energy auditors, in order to ensure that a sufficient number of qualified and/or accredited experts are available.

Member States shall develop programmes to encourage households and small and medium-sized enterprises to undergo energy audits and to subsequently implement the recommendations from these audits. These energy audits shall identify and quantify cost-effective saving opportunities in the short, medium and long term.

Member States shall ensure that small and medium-sized enterprises, as well as organisations that have concluded voluntary agreements, are supported to cover totally or partly the costs of an energy audit and of the implementation of highly cost-effective recommendations from the energy audits, if the proposed measures are implemented.

Member States shall bring to the attention of small and medium-sized enterprises, including through their respective representative intermediary organisations, concrete examples of how energy management systems could help their business. The Commission shall assist Member States by supporting the exchange of best practices in this domain.

2. Member States shall ensure that enterprises not included in the fourth subparagraph of paragraph 1 are subject to an energy audit carried out in an independent and cost-effective manner by qualified and/or accredited experts at the latest by 30 June 2014 and at least every three years from the date of the previous energy audit.

3. Energy audits carried out in an independent manner on the basis of European harmonised standards such as EN 16001 / ISO 50001 resulting from energy management systems or 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. No market participant should be excluded from offering energy services.

3a. Audits may be carried out by in-house experts, provided that these are qualified and/or accredited, that they are not directly engaged in the activity audited, and that the Member State has put in place an independent control system based on an annual
random selection of at least a statistically significant percentage of all the energy audits referred to in paragraph 2 to assure and check their quality and to impose sanctions if needed.

4. Energy audits may stand alone or be part of a broader environmental audit.

4a. Member States shall ensure that the recommendations of the energy audits and energy management systems implemented under this article do not exclude the same or similar measures to be used as a justification for existing or future incentive and support schemes. If necessary, the Commission shall adapt the European state aid guidelines in this field and the Union energy taxation directive accordingly.

4b. Member States shall use investment quality audits in order to assess and ensure the quality of buildings’ energy performance certificates as required by Directive 2010/31/EC. The Commission shall provide guidelines for Member States to ensure the quality of their energy performance certificates and of the energy efficiency improvement measures undertaken as a result of recommendations from these certificates.

4c. Member States shall ensure that consumers have access to independent advice on their energy audit to prevent unnecessary work being carried out or exploitation of funding.

4d. Member States shall ensure that enterprises disclose in their annual report whether they have carried out an energy audit, whether it was undertaken by an in-house or an external auditor, and the name of the external auditor, if applicable.

4e. Where an accredited audit is provided, consumers should be able to transfer the results and recommendations of the audit to any accredited service provider in order to enable competition in the market.

The Commission shall establish guidelines to identify which financial incentives set up by Member States in favour of their enterprises will be compatible with the internal market rules and State aid rules. [Am. 69]
1. When smart meters are installed, Member States shall ensure that final customers for electricity, natural gas, district or other central heating or cooling and district supplied domestic hot water are provided at no additional costs with individual meters that accurately measure and allow to make available their actual energy consumption and provide real time information on actual time of use, free of charge, and in a format that enables customers to better understand their energy use, in accordance with Annex VI.

Member States shall require that appropriate advice and information be given to customers at the time of installation of smart meters, notably about their full potential with regard to tariff structures, meter reading management and the monitoring of energy consumption.

When Member States put in place the roll-out of smart meters foreseen by In accordance with Directives 2009/72/EC and 2009/73/EC concerning electricity and gas markets, where the roll-out of smart meters is assessed positively, and to the extend that Member States put in place this roll-out, they shall ensure that the objectives of energy savings efficiency and final customer benefits are fully taken into account when establishing the minimum functionalities of the meters and obligations imposed on market participants.

Minimum functionalities shall enable communication between smart metering components and devices or gateways used within the home or building in the provision of energy saving and demand-side management services.

Member States shall ensure that enterprises, including from the commercial sector, which have an electricity end-use consumption of more than 6000 kWh per year, have installed smart meters by 1 January 2015 at the latest, where technically feasible.

In the case of electricity and on request of the final customer, meter operators shall ensure that the meter, or meters, can account for electricity produced on the final customer's premises and exported to the grid. Member States shall ensure that if final customers request it, metering data on their real-time production or consumption is made available promptly to them or to a third party acting on behalf of the final customer at no additional cost and in an easily understandable format that they can use to compare deals on a like-for-like basis. The data shall be handled in a secure way and consumer privacy shall be protected in compliance with relevant Union data protection and privacy legislation.
In the case of heating and cooling or hot water, where a building is supplied from a district heating network or from a central source servicing multiple buildings or businesses within a single building, a heat or hot water meter shall be installed at the building entry. In multi-apartment multi unit buildings, individual heat consumption meters metering devices shall also be installed to measure the consumption of heat, or cooling or hot water for each apartment, unit respectively. Where the costs of the use of individual heat consumption meters is not technically feasible, outweigh the benefits, individual heat cost allocators, in accordance with the specifications in Annex VI(1.2), shall be used for measuring heat consumption at each radiator.

Where Member States shall introduce rules on cost allocation of, and billing information for, heat, cooling or hot water consumption in multi-apartment unit buildings supplied with centralised heat, or cooling and/or hot water, such rules shall include guidelines on correction factors to reflect building characteristics such as heat transfers between apartments.

2. In addition 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 information 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, in accordance with the minimum frequency set out in Annex VI(2.1). Where customers do not have smart meters, Member States shall ensure that they are able to carry out regular self-reading and that billing information on the basis of actual consumption is performed. 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 a choice of either electronic or hard copy billing information and bills and, in the case of the installation of smart meters, have the possibility of easy access to complementary information allowing detailed self-checks on historical consumption as laid down in Annex VI(1.1).
Member States shall require that if requested by final customers, information on their energy billing and historical consumption is made available to the customer or to an energy service provider designated by the final customer.

_When a smart meter is installed, Member States shall prohibit back billing._

Member States shall require that information and estimates for energy tariffs are provided to consumers on demand in a timely manner and in an easily understandable format enabling consumers to compare deals on a like-for-like basis, allowing consumers to switch their domestic provider of energy in a cost-effective manner.

_Where appropriate, Member States shall encourage tariff structures that incentivise consumers to save marginal additional units of energy consumption._

3. Information Billing and billing information from metering and billing of individual consumption of energy as well as the other information mentioned in paragraphs 1, 2, 3 and 2 and Annex VI shall be provided to final customers free of charge, within 2 hours or as quickly as is technically feasible.

3a. Member States shall require national regulatory authorities to test the accessibility and usability for consumers of energy bills on an annual basis. The findings shall be made publicly available. [Am. 70]

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Article 8a

Consumer information and empowering programme

1. Member states shall develop a national strategy to promote and enable an efficient use of energy by small energy customers, including domestic customers.

2. For the purposes of paragraph 1, Member States shall include at least:

   (a) the establishment of a single point of contact for advice and accredited providers, in accordance with Articles 13 and 14;

   (b) a range of instruments and policies to promote behaviour change which may include:
Article 9

**Incentives and Penalties**

*Member States shall lay down rules on incentives to give in particular small and medium sized enterprises and households the necessary means to carry out energy efficiency investments.*

Member States shall *also* 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. *[Am. 72]*

CHAPTER III

Efficiency in energy supply

Article 10

Promotion of efficiency in heating and cooling
1. By 1 January 2015, Member States shall establish and notify to the Commission a national heating and cooling plan roadmap for developing the potential for the application of high-efficiency cogeneration, including micro-cogeneration, and efficient district heating and cooling, including the upgrade of existing district heating and cooling networks, containing the information set out in Annex VII, is in place.

The roadmap shall consider different types of cogeneration on the basis of the specificities of different national demand and consumption patterns and shall take into account inter alia likely reductions in heating, cooling and hot water load arising from this Directive, from the implementation of Directive 2010/31/EU and from other measures, and the effect this decrease in energy consumption will have on future infrastructure needs.

The plans shall be updated and notified to the Commission By 1 January 2015 and every five years thereafter, Member States shall notify to the Commission and update their roadmap as referred to in paragraph 1. Member States shall ensure by means that efficient use of their regulatory framework that national energy resources and the development of resource efficient heating and cooling plans are taken into account considered in local and regional development plans, including urban and rural spatial plans, and fulfil the design criteria in Annex VII—energy strategies.

The national heating and cooling roadmaps shall take full account of the analysis of the national potentials for high-efficiency cogeneration carried out under Directive 2004/8/EC.

1a. For the purpose of the roadmap referred to in paragraph 1, Member States shall carry out a cost-benefit analysis covering their territory in accordance with Annex VIIIa, based on climate conditions, economic feasibility and technical suitability, in order to identify and facilitate the implementation of the most cost-efficient solutions to meet heating and cooling requirements.

2. Member States shall take the necessary measures to develop efficient district heating and cooling infrastructure including the upgrade of existing infrastructure and/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 and 6 and 7. Notably, authorisation and permitting decisions referred to in paragraphs 3,
6 and 8, shall be based on the national heating and cooling roadmaps. When developing district heating and cooling, high-efficiency cogeneration shall to the extent possible opt for high-efficiency cogeneration rather than be given preference over heat-only generation. combustion units.

With the exception of possible grants, the costs associated with the development of district heating and cooling infrastructure shall be borne by the users connected to such infrastructure through regulated tariffs.

2a. Member States shall encourage the introduction of measures and procedures to promote cogeneration installations, other than small-scale cogeneration units, with a total rated thermal input of less than 20 MW in remote, disadvantaged and/or electricity-poor areas, in particular where local resources are available, in order to encourage distributed energy generation.

3. Member States shall ensure that, when a cost-benefit analysis in accordance with Annex VIIIa shows that the benefits outweigh the costs, all new thermal electricity generation installations with a total thermal input exceeding 20 MW:

a) are provided with equipment allowing for the recovery of waste heat by means of a high-efficiency cogeneration unit;

b) are sited in a location where waste heat can be used by heat demand points.

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 subparagraph are met. They shall in particular ensure that the location of new installations takes into account the availability of suitable local heat loads for cogeneration in accordance with Annex VIII.

4. Member States may lay down conditions for exemption from the provisions of paragraph 3 when:

(a) the threshold conditions related to the availability of heat load set out in point 1 of Annex VIII are not met;

(b) the requirement in point (b) of paragraph 3 related to the location of the installation cannot be met due to the need to locate an installation close to a geological storage site permitted under Directive 2009/31/EC; or
(c) a cost-benefit analysis shows that the costs outweigh the benefits in comparison with the full life-cycle costs, including infrastructure investment, of providing the same amount of electricity and heat with separate heating or cooling.

Member States shall notify such conditions for exemption to the Commission by 1 January 2014. The Commission may refuse those conditions or make suggestions for modifications in the 6 months following notification. In such cases, the conditions for exemption shall not be applied by the Member State concerned until the Commission expressly accepts the resubmitted or modified conditions.

5. Member States shall ensure that national regulations on urban and rural spatial planning are adapted to the authorisation criteria referred to in paragraph 3 and are in line with take into account the national heating and cooling plans roadmaps referred to in paragraph 1.

6. Member States shall ensure that, when a cost-benefit analysis in accordance with Annex VIIIa shows that the benefits outweigh the costs, 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, conversion to allow its operation as a high-efficiency cogeneration installation is set as a condition in the new or updated permit or licence, provided that the installation is sited in a location where there is sufficient and long-term stable the waste heat can be used by-heat demand. points in accordance with point 1 of Annex VIII.

The equipment of electricity generation installations with carbon capture or storage facilities shall not be considered as refurbishment for the purpose of these provisions.

7. Member States may lay down conditions for exemption from the provisions of paragraph 6 when:

(a) the threshold conditions related to the availability of heat load set out in point 1 of Annex VIII are not met; or

(b) a cost-benefit analysis shows that the costs outweigh the benefits in comparison with the full life-cycle costs, including infrastructure investment, of providing the same amount of electricity and heat with separate heating or cooling.

Member States shall notify such conditions for exemption to the Commission by 1 January 2014. The Commission may refuse those conditions or make suggestions for modifications
in the 6 months following notification. In such cases, the conditions for exemption shall not be applied by the Member State concerned until the Commission expressly accepts the resubmitted or modified conditions.

8. Member States shall adopt authorisation or equivalent permitting criteria to ensure that, when a cost-benefit analysis in accordance with Annex VIIIa shows that the benefits outweigh the costs, industrial installations with a total thermal input exceeding 20 MW generating waste heat that are built or substantially refurbished after [the entry into force of this Directive] capture and make use of their waste heat.

Member States shall establish mechanisms to ensure the connection of these installations to district heating and cooling networks. They may require these installations to bear the connection charges and the cost of developing the district heating and cooling networks necessary to transport their waste heat to consumers.

Member States may lay down conditions for exemption from the provisions in the first sub-paragraph when:

(a) the threshold conditions related to the availability of heat load set out in point 2 of Annex VIII are not met; or

(b) a cost-benefit analysis shows that the costs outweigh the benefits in comparison with the full life-cycle costs, including infrastructure investment, of providing the same amount of heat with separate heating or cooling.

Member States shall notify such conditions for exemption to the Commission by 1 January 2014. The Commission may refuse those conditions or make suggestions for modifications in the 6 months following notification. In such cases, the conditions for exemption shall not be applied by the Member State concerned until the Commission expressly accepts the resubmitted or modified conditions.

9. The Commission shall establish by 1 January 2013 by means of a delegated act in accordance with Article 18 a methodology in accordance with the basic guidelines as set out in Annex VIIIa for the cost-benefit analysis referred to in paragraphs 4 (c), 7 (b) and 8(b) of this Article.

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 Taking into account technical development and innovation, 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. [Am. 73]

**Article 11**

**Energy transformation**

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 to 20 MW or more and installations undertaking the refining of mineral oil and gas within their territory. This shall be updated every three years. The annual installation-specific 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) and shall ensure that the administrative burden is minimised. [Am. 74]

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 and other energy services providers 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. In addition, Member States shall ensure that national energy regulatory authorities take an integrated approach encompassing potential savings in the energy supply and the end-use sectors.

For electricity, Member States shall ensure that network regulation, and network tariffs set or approved by energy regulatory authorities, fulfil the criteria in Annex XI, taking into account guidelines and codes developed pursuant to Regulation 714/2009. For gas, Member States shall ensure that network regulation, and network tariffs set or approved by energy regulatory authorities are developed pursuant to Regulation 715/2009.

2. Member States shall, by 30 June 2013, adopt plans:

(a) assessing the energy efficiency potentials of their gas, electricity and district heating and cooling infrastructure, notably regarding transmission, distribution, load management and interoperability, and connection to energy generating installations, including micro energy generators;

(b) identifying concrete measures and investments for the introduction of cost-effective energy efficiency improvements or measures aiming to facilitate the integration of renewable energy production in the network infrastructure, taking due account of transmission distances, with a detailed timetable for their introduction;

(ba) assessing the opportunity of setting up a forward capacity market for the electricity market. This assessment shall include a cost/benefit analysis of aligning each Member State’s market to target a European market.
3. Member States may permit components of schemes and tariff structures with a social aim for net-bound energy transmission and distribution, provided that any disruptive effects on the transmission and distribution system are kept to the minimum necessary. The tariff structures contribute to the overall efficiency (including energy efficiency) of the generation, transmission, distribution and supply of electricity and are not disproportionate to the social aim.

4. Member States shall ensure the removal of those incentives in transmission and distribution tariffs that unnecessarily increase the volume of distributed or transmitted energy or those that might hamper participation of demand response, in balancing and ancillary services. Member States shall ensure that network operators are incentivised to improve efficiency in infrastructure design and operation, and consumer participation in system efficiency, including demand response depending on national circumstances. In this respect, 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 relating to energy efficiency on undertakings operating in the electricity and gas sectors.

5. Without prejudice to Article 16(2) of Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources, 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, in particular when produced from renewable energy sources;

(c) when dispatching electricity generating installations, provide priority or guaranteed dispatch of electricity from high efficiency cogeneration installations, in particular those using renewable energy sources;

(ca) implement provisions to provide appropriate compensation for avoided network costs.

When providing priority access or dispatch for high efficiency cogeneration, Member States shall establish rules ensuring that priority access or dispatch for energy from renewable energy sources is not hampered.

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 shall particularly facilitate the connection to the grid system of electricity produced from high-efficiency cogeneration from small scale and micro cogeneration units. Member States shall in particular encourage network operators to adopt a simple notification "install and inform" process for the installation of micro cogeneration units to simplify and shorten authorisation procedures for individual citizens and installers.

6. Member States shall take the appropriate steps to ensure that, where this is technologically and economically feasible with the mode of operation of the high-efficiency cogeneration installation, high-efficiency cogeneration operators and demand response aggregators 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, non-discriminatory 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.

7a. Member States shall ensure that transmission system operators and distribution system operators, in procuring resources for balancing and ancillary services, treat demand response providers, including aggregators, in a non-discriminatory manner, on the basis of their technical capabilities.

Transmission system operators and distribution system operators shall validate the
execution of demand response measurement operations and the financial operations of demand response programmes.

7b. Member States shall promote access of demand response and their participation in balancing, reserve and other system services markets, if necessary by requiring national regulatory authorities and transmission system operators to define technical specifications for participation in the energy market, on the basis of the technical requirements of these markets and demand response capabilities, including through aggregators.

The technical tender specification for demand response participation in the energy reserve markets shall include reasonable specifications which may include:

(a) minimum number of kW aggregated capacity needed for participation;

(b) baseline measurement methodology;

(c) minimum number of kW needed for participation per metered location (if any);

(d) duration of demand response activation;

(e) timing of demand response activation;

(f) notice time for activation of demand response;

(g) telemetry requirements;

(h) penalty requirements;

(i) frequency of demand response activation;

(j) intervals between activations;

(k) tender duration timeframe;

(l) option to bid on positive or negative capacity;

(m) availability of payments.

When implementing capacity adequacy schemes, Member States shall ensure that the potential for contribution of demand response is fully taken into consideration.
7c. Member States shall develop, as part of their energy efficiency action plans as referred to in Article 19, a demand response action plan, which shall include detailed information on how demand response resources, including smart grids, will be deployed and integrated, in so far as is appropriate, into the regional electricity markets, especially but not limited to the tertiary reserves markets and the capacity markets.

Member States shall ensure that national energy regulatory authorities encourage demand side resources, such as demand response, to participate alongside supply in local or regional wholesale markets.

The Commission shall assess the demand response action plans referred to in the first subparagraph of this paragraph in accordance with Article 19 (5) and the following success criteria for demand response integration:

(a) market integration and equal market entry opportunities for generation and demand side resources (supply and consumer loads);

(b) demand response shall be permitted to use demand side loads in aggregate, meaning that aggregators may combine multiple short-duration demand-side resources (consumer loads) into one extended load reduction block, and sell or auction these, as appropriate into multiple organised energy markets, especially but not limited to, the tertiary reserves markets and the capacity markets;

(c) local and regional demand response programmes shall be allowed, to relieve local and regional systems from capacity constraints to optimise existing infrastructure use. [Am. 75]

CHAPTER IV
Horizontal provisions

Article 13
Availability of certification and/or qualification and/or accreditation 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 and/or accreditation schemes and/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.

1a. Member States shall ensure that existing national certification and/or accreditation schemes and/or equivalent qualification schemes for providers of energy services, energy audits and energy efficiency improvement measures that guarantee a high level of technical competence, objectivity and reliability are recognised as schemes referred to in paragraph 1.

1b. Member States shall ensure that the schemes referred to in paragraphs 1 and 1a are covered by a single certification / accreditation / qualification framework at the appropriate level, in order to provide transparency to consumers to ensure that these schemes are reliable and will contribute to national energy efficiency objectives.

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

2a. Member States shall ensure that the single point of contact referred to in point (-a) of Article 14 directs consumers to accredited and other qualified energy services providers. [Am. 76]

**Article 13a**

**Information and training**

1. Member States shall ensure that information on available energy efficiency mechanisms and financial and legal frameworks is transparent and widely and actively disseminated to all relevant market actors, including consumers, builders, architects, engineers, environmental auditors and installers of building elements as defined in Directive 2010/31/EU. They shall ensure that banks and other financial institutions are informed of the possibilities of participating, including through the creation of public/private partnerships, in the financing of energy efficiency improvement measures.
2. Member States shall establish appropriate conditions and incentives for market operators to provide adequate and targeted information and advice to energy consumers on energy efficiency.

3. The Commission shall contribute, inter alia through inclusion of a chapter dedicated to energy efficiency in training programmes for social partners and through adequate financing of these programmes, to ensuring that the remit of European social dialogue bodies (European Works’ Councils, European sectoral social dialogue committees, European works’ councils employment-skills) is extended to include energy efficiency. [AM 826]

4. Member States, with the participation of stakeholders, including local and regional authorities, shall develop suitable information, awareness-raising and training programmes to inform citizens of the benefits and practicalities of taking energy efficiency improvement measures.

5. Member States are called upon to take appropriate measures to promote energy education in families, schools and society, with particular emphasis on how each individual can contribute to more efficient, sustainable energy use through their personal behaviour. [FEMM 17]

6. The Commission shall ensure that information on best energy-saving practices in Member States is exchanged and widely disseminated. [Am. 77]

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) ensuring that a single point of contact is in place to provide basic information on energy services and to direct consumers to accredited providers of energy efficiency services and goods;
(a) making publicly available, checking and regularly updating the list of available accredited and/or qualified energy service providers and companies and the energy services they offer;

(aa) ensuring that the providers of energy efficiency services and goods referred to in point (-a) have the required levels of skills and training;

(ab) taking appropriate measures to remove the regulatory and non-regulatory barriers that impede the uptake of energy performance contracting and other third-party financing models for energy saving measures;

(b) encouraging public authorities to use energy performance contracting when carrying out building renovations and providing model contracts for energy performance contracting based on life-cycle cost and benefit analysis, while encouraging long-term contracts that provide greater energy savings in the public sector; these shall at least include the items listed in Annex XIII;

(ba) considering putting in place an independent mechanism, such as an ombudsman, that is capable of acting across industry sectors to ensure the efficient handling of complaints and out-of-court settlement of disputes arising from domestic household energy efficiency programmes involving multiple suppliers;

(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 encouraging the availability of financial instruments, incentives, grants and loans to support foster energy efficiency service projects and long-term investments in energy efficiency and disseminating clear and easily accessible information on these support schemes;

(ea) laying down binding rules so that no distortions of competition arise to the detriment of small enterprises in emerging markets for energy services;

(eb) supporting independent market intermediaries, networks and platforms that run programmes to stimulate market development on the energy efficiency services demand
side as well as on the energy efficiency services supply side, and that link demand and supply of energy efficiency services;

(ec) supporting project facilitators which, in addition to market facilitators, give advice to public authorities on energy efficiency services tendering procedures, contract design, implementation of contracts and their monitoring for specific energy efficiency services projects;

(ed) promoting the role of energy retailers and distributors on the energy services market;

(ef) facilitating exchange of best practices for the promotion of the energy efficiency services market. [Am. 78]

Article 15
Other measures to promote energy efficiency

1. Member States shall evaluate and take appropriate measures 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 and fiscal 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 in improving energy efficiency and minimising expected life-cycle costs and from using energy performance contracting and other third-party financing mechanisms on a long-term contractual basis;

(ba) the ability of energy companies to offer energy efficiency services or the uptake of innovative energy performance contracting and other third-party financing models to deliver energy saving measures;
(bb) the purchase, installation, authorisation and connecting to the grid of small scale energy generators, with a view to ensuring that households or groups of households are not deterred from using micro technologies to generate energy;

(bc) without prejudice to measures targeting energy poverty, requiring energy distributors to review their tariffs to ensure that the cost of marginal additional units of consumption of electricity or gas is greater than the initial block of consumed units so as to encourage consumers to be more efficient and not consume more than they need;

(bd) the possibility to constitute groups of independent SMEs so as to provide more holistic contract structures such as energy performance contracting;

(be) restrictions in public support programmes with crowding-out effects that are a barrier towards implementation of energy efficiency services by market actors with a view to ensuring a level playing field in the market and further developing businesses providing energy efficiency services;

(bf) the encouragement of measures that target long term savings or structured programmes;

(bg) assessing whether variable rates of VAT on a rising scale would encourage greater energy efficiency as well as reduced energy consumption in the household sector without prejudice to energy poverty;

(bh) national policies and measures regulating multi-owner property decision-making processes with the aim of facilitating investment in energy savings and setting up funds for this purpose.

These measures to remove barriers may include providing incentives, establishing public funds for energy efficiency, to which all qualified service providers should have preferential access, repealing or amending legal or regulatory provisions, or adopting guidelines and interpretative communications, or simplifying administrative procedures. 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 supplementary report referred to in Article 19(2). [Am. 79]

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 and adaptation of annexes

1. The Commission shall be empowered to adopt a delegated act in accordance with Article 18 to establish the system of mutual recognition of energy savings achieved under the national energy efficiency obligation schemes referred to in Article 6(9). [Am. 80]

The Commission shall be empowered to adopt a delegated act in accordance with Article 18 to establish the methodology for cost-benefit analysis referred to in Article 10(9).

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) third indent.

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 and to adapt to competitive conditions the performance requirements in Annex III. [Am. 81]
Article 18
Exercise of the delegation

1. The powers to adopt delegated acts are 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 an indeterminate period of time a period of three years from the date of entry into force of this Directive. [Am. 82]

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 Each Member State shall submit a report to the Commission on the progress achieved towards their binding national energy efficiency targets, in accordance with Annex XIV(1) by 30 April 2013, and every year thereafter.

2. By 30 April 2014, and every three years thereafter, Member State shall submit to the Commission supplementary reports with information on national energy action plans. These plans shall include national energy efficiency policies, action plans, programmes
and measures implemented or planned at national, regional and local level to improve energy efficiency in view of achieving the national energy efficiency targets referred to in Article 3(4). The reports shall be complemented with updated estimates of expected overall primary energy consumption in 2014, 2016, 2018 and 2020 and whether the Member State's improvement in energy efficiency is in line with the trajectory set by the Member States under Article 3, as well as estimated levels of primary energy consumption in the sectors indicated in Annex XIV(1).

Without prejudice to Article 3, Member States may, taking into account the industry sectors which are exposed to a significant risk of carbon leakage as determined in Commission Decision 2010/2/EU, encourage voluntary agreements among industrial sectors or set separate targets such as primary or final energy intensity or sectoral energy intensities.

The Commission shall, not later than 1 January 2014, provide a template as guidance for the supplementary reports national energy efficiency action plans as referred to in the first subparagraph. This template shall comprise the minimum requirements set out in Annex XIV. be adopted in accordance with the advisory procedure referred to in Article 20(2). The supplementary reports shall in any case include the information specified in Annex XIV. Member States shall comply with that template in the presentation of their national energy efficiency action plans.

3. The reports referred to in paragraph 1 may form part of the National Reform Programmes referred to in Council Recommendation 2010/410/EU.

4. The Commission shall evaluate the annual reports and supplementary reports 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(4) and towards the implementation of this Directive. The Commission shall send its assessment and report every year to the European Parliament and the Council. Based on its assessment of the reports and action plans the Commission may issue recommendations to Member States.

In particular, if a Member State is not keeping to the indicative trajectory set under Article 3 the Commission shall require that Member State to set out adequate and
proportionate measures to rejoin the trajectory within a reasonable timescale and may in the meantime refuse the action plan.


5. The Commission’s assessment of the first supplementary report 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 and installations undertaking the refining of mineral oil and gas, 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, by 31 December 2015, 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 or updating of the permits for existing installations.


By 30 June 2013 at the latest, the Commission shall come forward with a proposal to adjust Decision No 406/2009/EC.

As soon as possible and no later than the date of entry into force of this Directive, the Commission shall present a report to the European Parliament and to the Council. This report shall examine, amongst others, the impacts on incentives for investments in low carbon technologies and the risk of carbon leakage. Before the start of the third phase, the Commission shall, if appropriate, amend the regulation referred to in article 10 (4) of Directive 2003/87/EC in order to implement appropriate measures which may include withholding of the necessary amount of allowances.

The Commission shall carefully monitor the impact of implementing this Directive on industry sectors, in particular on those that are exposed to a significant risk of carbon leakage. The Commission shall propose, if appropriate, by 31 December 2015, measures
to ensure that the provisions of this Directive do not impede the development of these sectors.

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 2014 the Commission shall submit the assessment referred to in Article 3(2) to the European Parliament and to the Council, followed, and, if appropriate, by a legislative proposal laying down mandatory national targets if these are not in place in accordance with Article 3.

7a. By 30 June 2013, the Commission shall present an analysis and action plan on the financing of energy savings and energy efficient technologies with a view, in particular, to:

(a) better use of cohesion and structural funds and framework programmes;

(b) better and increased use of funds from the European Investment Bank and other public finance institutions;

(c) better access to risk capital, notably by analysing the feasibility of a risk sharing facility for investments in energy savings; and

(d) better coordination of Union, national and regional/local funding and other forms of support.

8. By 30 June 2017, 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 continue or set a new saving rate 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 a legislative proposal.

10. The Commission shall make the reports referred to in paragraphs 1 and 2 publicly available. [Am. 83]

Article 19a

Accompanying programme

To foster the practical implementation of this Directive at national, regional and local levels, the Commission shall develop an accompanying instrument under the "Intelligent Energy - Europe" programme (Decision No 1639/2006/EC of the European Parliament and of the Council). That instrument shall support the exchange of experiences on practices, benchmarking, networking activities, as well as innovative practices. [Am. 84]

Article 20

Committee procedure

1. The Commission shall be assisted by a Committee.

2. Where reference is made to this paragraph, Articles 3, 4 and 9 of the Regulation 182/2011/EU shall apply, having regard to the provisions of Article 11 thereof.

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) and Annexes I, III and IV, without prejudice to the obligations of the

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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].

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**

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 and a correlation table between those provisions and this Directive.

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

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

**Article 23**

**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*. 

63
Article 24
Addressees

This Directive is addressed to the Member States.

Done at

For the European Parliament For the Council
The President The President
# ANNEX -I

## National Energy Savings Targets

### A. 2020 National Energy Saving Reference Values (in primary energy, excluding non-energy uses)

<table>
<thead>
<tr>
<th>Country</th>
<th>Maximum primary energy consumption, excluding non-energy uses in 2020 (Mtoe)</th>
<th>Minimum reduction of primary energy consumption, excluding non-energy uses) in 2020 (Mtoe)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>43.6</td>
<td>9.8</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>18.6</td>
<td>3.2</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>40.1</td>
<td>5.5</td>
</tr>
<tr>
<td>Denmark</td>
<td>19.2</td>
<td>0.8</td>
</tr>
<tr>
<td>Germany</td>
<td>241.2</td>
<td>58.7</td>
</tr>
<tr>
<td>Estonia</td>
<td>5.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Ireland</td>
<td>15.9</td>
<td>2.8</td>
</tr>
<tr>
<td>Greece</td>
<td>33.3</td>
<td>2.7</td>
</tr>
<tr>
<td>Spain</td>
<td>131.7</td>
<td>31.1</td>
</tr>
<tr>
<td>France</td>
<td>207.5</td>
<td>68.9</td>
</tr>
<tr>
<td>Italy</td>
<td>159.8</td>
<td>49.0</td>
</tr>
<tr>
<td>Cyprus</td>
<td>2.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Latvia</td>
<td>7.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Lithuania</td>
<td>8.6</td>
<td>1.1</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>4.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Hungary</td>
<td>26.7</td>
<td>2.9</td>
</tr>
<tr>
<td>Malta</td>
<td>0.8</td>
<td>0.1</td>
</tr>
<tr>
<td>Netherlands</td>
<td>58.0</td>
<td>17.7</td>
</tr>
</tbody>
</table>
### B. Indicative trajectory

*The indicative trajectory referred to in Article 3(2) shall respect the following primary energy saving path towards each Member State’s 2020 target:*

- 25% *(S*₂₀₂₀), in 2014;
- 50% *(S*₂₀₂₀), in 2016;
- 75% *(S*₂₀₂₀), in 2018;

*where*

-S*₂₀₂₀ = the energy saving for that Member State in 2020 as indicated in the right column of the table in Part A.*

---

<table>
<thead>
<tr>
<th></th>
<th>Energy Saving</th>
<th>Energy Saving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>29.2</td>
<td>7.2</td>
</tr>
<tr>
<td>Poland</td>
<td>90.1</td>
<td>19.7</td>
</tr>
<tr>
<td>Portugal</td>
<td>24.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Romania</td>
<td>40.1</td>
<td>10.0</td>
</tr>
<tr>
<td>Slovenia</td>
<td>7.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>18.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Finland</td>
<td>33.2</td>
<td>4.2</td>
</tr>
<tr>
<td>Sweden</td>
<td>41.4</td>
<td>14.4</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>165.4</td>
<td>48.1</td>
</tr>
<tr>
<td>EU</td>
<td>1474</td>
<td>368</td>
</tr>
</tbody>
</table>
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:

\[
E_{\text{CHP}} = H_{\text{CHP}} \times C
\]

where:

\(E_{\text{CHP}}\) is the amount of electricity from cogeneration

\(C\) is the power to heat ratio

\(H_{\text{CHP}}\) 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:

<table>
<thead>
<tr>
<th>Type of the unit</th>
<th>Default power to heat ratio, C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined cycle gas turbine with heat recovery</td>
<td>0,95</td>
</tr>
<tr>
<td>Steam back pressure turbine</td>
<td>0,45</td>
</tr>
<tr>
<td>Steam condensing extraction turbine</td>
<td>0,45</td>
</tr>
<tr>
<td>Gas turbine with heat recovery</td>
<td>0,55</td>
</tr>
<tr>
<td>Internal combustion engine</td>
<td>0,75</td>
</tr>
</tbody>
</table>

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).

**fa)** Member States may use different ratios provided they can justify it. [Am. 86]

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.\(^1\)
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:

\[
PES = \left( 1 - \frac{1}{\frac{1}{\text{CHP } H_\eta} + \frac{1}{\text{CHP } E_\eta}} + \frac{1}{\text{Ref } H_\eta} + \frac{1}{\text{Ref } E_\eta} \right) \times 100\%
\]

Where:

- **PES** is primary energy savings.
- **CHP H_\eta** 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 $\eta_H$ is the efficiency reference value for separate heat production.

CHP $\eta_E$ 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 $\eta_E$ 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 fulfills 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 $\eta_H$’ with ‘$H_\eta$’ and ‘CHP $\eta_E$’ with ‘$E_\eta$’, where:

$H_\eta$ 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.

$E_\eta$ 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.
FOR INFORMATION PURPOSES ONLY

ANNEX III

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

Public bodies that purchase products, systems, services or buildings shall by setting energy efficiency performance requirements as technical specifications and taking into account cost-effectiveness based on a whole life-cycle analysis:

(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. Public bodies may take while taking into account health impact, cost-effectiveness and economical feasibility by using award criteria with weighting for energy performance at least equal to the weighting accorded to price; and technical suitability, as well as 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\(^1\)] 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\(^2\) 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, when available on the market. When purchasing tyres, public bodies shall take into account as well the objectives of Article 10 of Regulation (EC) No 1222/2009;

(e) require, where appropriate, 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;

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(f) purchase or rent only buildings that comply at least with the minimum energy performance requirements referred to in Article 4(1). Compliance with these requirements shall be verified by means of the energy performance certificates referred to in Article 11 of Directive 2010/31/EU.

Point (f) shall not apply to the purchase or rental of buildings officially protected as part of a designated environment or because of their special architectural or historical merit;

Point (f) shall also apply to the Union Institutions. [Am. 87]
## ANNEX IV

Energy content of selected fuels for end use - conversion table

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

Source: Eurostat.

[1] 93 % methane.

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

---

[1] Member States may apply different conversion factors if these can be justified.
Member State.

[3] Applicable when energy savings are calculated in primary energy terms using a bottom-up approach based on final energy consumption. For the calculation of electricity savings in kWh electricity primary energy terms, Member States **shall** apply a default coefficient of 2.5 for 1 kWh (NCV) of electricity, unless a national standard value has been legally fixed. [Am. 88]
ANNEX V
Energy efficiency obligation end-use saving schemes

The following are the guiding principles which shall be used by Member States when determining energy savings above those which would have occurred naturally.

1. Measures that target short-term savings do not count towards the energy saving target

The following measures shall not be considered as targeting short-term savings counted towards the energy savings target referred to in Article 6:

(a) distribution or installation of energy efficient compact fluorescent light bulbs;

(aa) distribution or installation of households appliances that are not classified in the highest class of the energy label or which have reached 30% market penetration;

(b) distribution or installation of energy efficient shower heads.

(c) energy audits;

(d) information campaigns.

1a. Measures that target short-term savings

The following measures shall be considered as targeting short term savings:

(a) energy audits;

(b) distribution or installation of smart meters;

(c) fuel switching;

(d) information campaigns.

2. Calculation of energy savings Energy saving methodology

The calculation of energy savings in national energy efficiency obligation schemes shall take into account the lifetime of measures. Where no national values for lifetimes are fixed the default values in point 4 shall apply.
Obligated parties may use one or more of the following methods for calculating energy savings for the purposes of Article 6(2):

(a) engineering estimates; deemed savings, by reference to the results of previous independently monitored energy improvements in similar installations. The principles set out in point 3 shall apply when determining deemed savings. The generic approach is termed "ex-ante";

(b) metering; 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 occupancy, production levels and the weather which may affect consumption. The generic approach is termed "ex-post";

(c) standard values and lifetimes that Member States have adopted on a clear and sound basis. Such values shall be notified to the Commission. The Commission may request that such values are modified, where they are likely to distort competition or where they show less ambition than the default values and lifetimes in points 3 and 4. 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 too 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) the default values and lifetimes in points 3 and 4 where no national standard values and lifetimes have been established; 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. Savings from installations should either come from the deemed saving catalogue or engineering methods. When deemed savings are chosen, the use of engineering methods are excluded.

2a. Principles to apply in the calculation of energy savings

In determining the energy saving for an energy efficiency measure, the following principles shall be respected:
(a) only savings that are additional to those that would be expected from an average product placed in the market can be counted. Due account of the following shall be taken in determining the additional energy savings:

(i) the prevailing energy performance and energy label of fabric measures (walls, roofs, floors, windows and doors) in the existing building stock;

(ii) prevailing regulations relating to minimum energy performance requirements of new buildings or vehicles or the removal of certain products e.g. the banning of certain incandescent light bulbs meaning that compact fluorescent light bulbs are the norm;

(iii) Union minimum energy performance requirements for energy related products as defined by Directive 2009/125/EC;

(iv) prevailing market sales, and sales trends, of energy consuming products in the Member State where Union energy labelling criteria exist;

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

(c) 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;

(d) the savings achieved in end-use can only if documented be claimed by more than one obligated party;

(e) savings achieved as a result of other local, regional, national or international policies may not be included e.g. prevailing building regulations;

(f) 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 accord with the temperature variations between regions; the adjustment should be clarified and approved by the Commission not later than three month after the implementation of this Directive;
(g) where measures result in changes in consumption of more than one fuel type, due account shall be taken of the primary energy content of that fuel as defined in Annex IV;

(h) calculation of energy savings shall take into account the lifetime of measures;

(i) 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;

(j) 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;

(k) 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 two years to take into account of regulatory and technological developments.

2b. 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;

(i) treatment of fuels with different carbon or primary energy content;

(j) quality standards;

(k) monitoring and verification protocols;

(l) audit protocols.

The Commission may request that methodologies are modified, where they are likely to distort competition or where they are less rigorous than equivalent schemes in other Member States.

3. European default values according to equipment type

3.1. Household appliances

<table>
<thead>
<tr>
<th></th>
<th>Freezer-freezers</th>
<th>Freezers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class A+ Deemed savings</strong> (kWh/year)</td>
<td>64</td>
<td>62</td>
</tr>
<tr>
<td><strong>Class A++ Deemed savings</strong> (kWh/year)</td>
<td>76</td>
<td>73</td>
</tr>
<tr>
<td><strong>Class A+++ Deemed savings</strong> (kWh/year)</td>
<td>129</td>
<td>123</td>
</tr>
<tr>
<td><strong>Class A++++ Deemed savings</strong> (kWh/year)</td>
<td>193</td>
<td>185</td>
</tr>
</tbody>
</table>

b. FREEZERS AND REFRIGERATOR-FREEZERS NOT DISTINGUISHED
<table>
<thead>
<tr>
<th>Refrigerator-freezers and freezers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class A+</strong> Deemed savings (kWh/year)</td>
</tr>
<tr>
<td><strong>Class A</strong> Deemed savings (kWh/year)</td>
</tr>
<tr>
<td><strong>Class A+++</strong> Deemed savings (kWh/year)</td>
</tr>
<tr>
<td><strong>Class A++++</strong> Deemed savings (kWh/year)</td>
</tr>
</tbody>
</table>

**e. DOMESTIC WASHING MACHINES**

**Until 30 November 2013**

<table>
<thead>
<tr>
<th>Class</th>
<th>Deemed savings (kWh/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>26</td>
</tr>
<tr>
<td>A+++</td>
<td>46</td>
</tr>
<tr>
<td>A++++</td>
<td>63</td>
</tr>
</tbody>
</table>

**From 1 December 2013**

<table>
<thead>
<tr>
<th>Class</th>
<th>Deemed savings (kWh/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+++</td>
<td>20</td>
</tr>
<tr>
<td>A++++</td>
<td>37</td>
</tr>
</tbody>
</table>

*From 1 December 2013 for household washing machines with a rated capacity equal to or higher than 4 kg, the Energy Efficiency Index (EEI) shall be less than 59 (See Annex I of Commission Regulation (EU) No 1015/2010).
### d. DOMESTIC DISHWASHERS

<table>
<thead>
<tr>
<th></th>
<th>Until 30 November 2013</th>
<th><strong>From 1 December 2013</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class A+ deemed savings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(kWh/year)</td>
<td>37</td>
<td>32</td>
</tr>
<tr>
<td><strong>Class A++ deemed savings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(kWh/year)</td>
<td>69</td>
<td>60</td>
</tr>
<tr>
<td><strong>Class A+++ deemed savings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(kWh/year)</td>
<td>97</td>
<td></td>
</tr>
</tbody>
</table>

**From 1 December 2013** For household dishwashers with a rated capacity equal to or higher than 11 place settings and household dishwashers with a rated capacity of 10 place settings and a width higher than 45 cm, the Energy Efficiency Index (EEI) shall be less than 63 (see COMMISSION REGULATION (EU) No 1016/2010 Annex I)

### 3.2. Residential Lighting

Unitary energy savings GLS¹ to CFL — 16 kWh/year

Unitary energy savings GLS² to LED — 17 kWh/year

### 4. Default lifetimes

<table>
<thead>
<tr>
<th>Energy efficiency improvement measure through replacement of component</th>
<th>Default lifetime in years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler — condensing</td>
<td>20</td>
</tr>
</tbody>
</table>

¹ General Lighting Service or tungsten filament lamps
² General Lighting Service or tungsten filament lamps
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiler—direct evacuation</td>
<td>20</td>
</tr>
<tr>
<td>Burners, oil and gas</td>
<td>10</td>
</tr>
<tr>
<td>Control equipment</td>
<td>15-20</td>
</tr>
<tr>
<td>Control system—central</td>
<td>15-25</td>
</tr>
<tr>
<td>Control system—room control</td>
<td>15-25</td>
</tr>
<tr>
<td>Heating control: Control valves, automatic</td>
<td>10</td>
</tr>
<tr>
<td>Meters</td>
<td>10</td>
</tr>
</tbody>
</table>
ANNEX Va

Minimum criteria to be included in energy audits and energy management systems

1. The energy audits and energy management systems referred to in Article 7, shall observe the following guiding principles:

   (a) contain a clear energy policy at enterprise and site level, with action plans that include investments, budgets and operations, together with clear lines of responsibility and accountabilities for energy consumption and improved energy performance, reaching into top management levels;

   (b) have clearly defined objectives designed to improve and maintain the energy performance of enterprises as well as households at economically optimal levels while respecting environmental loads and technical feasibility. Energy audits for small and medium-sized enterprises (SMEs) and households are normally less complex than those for larger enterprises and larger buildings. However, the general quality criteria set out in this annex apply equally well to the energy audits for SMEs and households;

   (c) be based on up-to-date measured operational data on energy consumption and load profiles (for electricity), storable for historical analysis and for tracking performance. The audits shall have scopes based on energy flows into and out of the overall system boundaries of the enterprises, sites and buildings in question; they shall thus include total site energy consumption, as well as individual process, service and technical equipment and system consumption, together with classes of energy (steam, fuel, electricity), as well as past, current and projected energy and operational costs; data shall be adjusted for extraneous influences such as weather conditions, industrial throughput, etc.;

   (d) build, whenever possible, on life-cycle cost analysis (LCCA), instead of Simple Payback Periods (SPP), in order to take account inter alia of long-term savings, residual values of long-term investments and discount rates.

2. The selection and dimensioning of all new and replacement energy-using equipment, processes and other energy-saving measures shall include economic, behavioural and technical analysis, as well as proposals and plans for follow-ups and verification of the impacts of measures once they are implemented. Other possible non-energy gains, such
as productivity increases and lower maintenance costs shall also be reported, as well as technical interactions and synergies between combined measures.

3. Energy audits and energy management systems and their recommendations shall build on reviews of enterprise, building, site, system and process status, comparing these to applicable benchmarking and best practice schemes, as well as to continually updated lists of Best Available Techniques (BAT in IPPC briefs, for example) for the sector and sub-sector in question.

4. Measures currently used or proposed to improve energy performance shall in no way compromise existing health and safety regulations such as indoor climate and fire safety during implementation, operation and occupancy, or other regulatory constraints.

5. The use of EN ISO 50001 (Energy Management Systems) or pr EN 16247-1 (energy Audits) may be recognised as a means of fulfilling the requirements set out in Article 7 of this Directive, provided the standard’s application in enterprises and buildings also meets the criteria set out in this Annex.

6. The energy audits shall also:

(a) be representative in order to collect reliable and relevant data and replicable, as well as proportionate, traceable and verifiable. Member States shall put in place a scheme to assure and check their quality and to impose sanctions if needed;

(b) be of sufficient quality and include detailed and validated economic calculations for the proposed measures so as to provide potential investors (internal and external) and fiscal and financial authorities with clear information on potential savings, cash flows and net present values of the measures and packages of measures proposed, and the technical and financial risks involved. [Am. 90]
ANNEX Vb
Minimum requirements for measurement and verification of energy savings under Article 6

1. The energy savings potential is to be calculated per sector.

2. Savings effects are to be calculated per suggested measure under a bottom up approach, distinguishing between existing, new and planned measures.

3. The total savings effects of all measures are to be correlated to the national target, in line with the applied sectoral structure.

4. Annual savings are monitored based on statistical data and compared to the target.

5. When the monitoring shows deviations from the path for target achievement, measures are to be monitored individually and adjusted accordingly. [Am. 91]
ANNEX VI

Minimum requirements for metering of individual energy consumption and the frequency of billing information based on actual consumption

1. Minimum requirements for metering of individual energy consumption

1.1. Individual meters

When an individual smart meter is installed, Member States shall ensure that it is connected to an interface which provides secure communication to the final customer, enabling the meter to export private metrological displays and securely transmits accurate consumption data to the final customer or a third party designated by the final customer. The data shall be handled in a secure way and consumer privacy shall be protected in compliance with the relevant Union data protection and privacy legislation.

The interface shall provide private information enabling final customers to better control and reduce their energy consumption. This information can be used for further potential analysis and advice by a third party designated by the final customer safeguarding the privacy of the latter. Such information shall at least indicate the current rate of consumption (e.g. kWh, kJ, m³) and related costs and be communicated in a format that promotes consumer action in energy efficiency.

The National Regulatory Authority shall ensure that the interface also provides public data that allows the final customer to consult and use the applicable time-of-use tariffs with real-time pricing, peak time pricing and peak time rebates.

The smart metering infrastructure shall support two-way communication interfaces for the provision of energy efficiency and demand side management services, such as home automation and demand response programmes that allow the final consumer to react to price signals and adapt energy consumption. Member States shall require that these interfaces are interoperable.

Member States shall ensure that interfaces are accessible to consumers with disabilities, where appropriate.

The private consumption data exported securely transmitted through the two-way information interface shall offer the final customer a possibility to consult his/her historic consumption levels over a range of time periods (in local currency and in kWh, kJ or m³):
For information purposes only

(a) in the last seven days, day by day;
(b) in the last complete week;
(c) in the last complete month;
(d) in the same complete month the previous year;
(e) in the last complete year.

The historic periods shall match the billing periods for consistency with household bills.

Complementary information on historical consumption (any day, week, month, year from the start-up of intelligent metering) and other useful information allowing for more detailed self-checks by the consumer (e.g. graphic evolutions of individual consumption; benchmarking information; cumulative consumption/savings/spendings from the beginning of each contract; proportion of the individual consumption from renewable sources of energy and related CO₂ savings, etc) shall be made easily accessible either directly through the interface such as an in-home display or via the internet.

1.2. Heat cost allocators

Where heat cost allocators are used, they shall be equipped with clearly legible displays allowing the final customer to consult the current rate of consumption as well as historic consumption levels. The historic periods displayed by the heat cost allocator shall match the billing periods.

2. Minimum requirements for billing

2.1 Frequency of billing information based on actual consumption

In order to enable final customers to regulate their own energy consumption, billing information on the basis of actual consumption shall be performed with the following frequency:

(a) On a monthly basis for electricity consumption.
(b) At least every two months for the consumption of natural gas. Where gas is used for individual heating, billing information shall be provided on a monthly basis.
(c) With centralised heating and cooling where individual meters are installed, billing information based on actual consumption shall be provided on a monthly basis during the heating/cooling season. Where billing is based on heat cost allocation, monthly harmonized bills shall be balanced at least yearly.

(d) At least every two months for hot water billing information or, if provided by the same central system, with the same frequency as under point (c).

Billing information based on the measurement of heat consumption using heat cost allocators shall be accompanied with explanations of the numbers available through displays of heat cost allocators, taking into account the standard characteristics of heat cost allocators (EN 834).  

2.2. Minimum information contained in the bill

Member States shall ensure that 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) comparisons with an average normalised or benchmarked final customer in the same user category;

(d) contact information for final customers’ organisations, energy agencies or similar bodies that are independent and accredited, 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.

Member States shall ensure that a summary box containing the following information is included on the front of each gas and electricity bill:

---

1 EN 834 Standard on heat cost allocators for the determination of the consumption of room heating radiators - appliances with electrical energy supply.
FOR INFORMATION PURPOSES ONLY

(a) the exact tariff name;

(b) the amount of energy used;

(c) the rate of gas and/or electricity per kWh and how this is broken down on a daily basis;

(d) how the cost has been calculated;

(e) any discounts the customer is benefiting from and when the discounts end;

(f) any fees the customer will have to pay if he/she changes supplier. [Am. 92]

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
Planning for efficiency in heating and cooling

1. The national heating and cooling plans 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) significant 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) significant 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 a specific section on residential micro-cogeneration, where appropriate and by district heating and cooling; setting of high-efficiency cogeneration targets for 2020 and corresponding intermediate targets and of district heating and cooling promotion areas which cost-benefit analysis have identified cogeneration potential;
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;

measures to be adopted which may be taken up to 2020 and up to 2030 to realise the potential in (e) in order to meet the demand in (d), including:

(i) measures to increase the share of cogeneration in heating and cooling production and in electricity production; and

(ii) measures to 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;

(iia) measures to ensure that new thermal electricity generation installations and industrial plants producing useful heat are located in sites where a maximum amount of the available useful heat will be recovered to meet existing or forecasted heat and cooling demand;

(iib) measures to ensure that new residential zones or new industrial plants which consume heat in their production processes are located in sites where a maximum amount of their heat demand will be met by the available useful heat, as identified in the assessment, including the clustering of a number of industrial plants in the same location with a view to ensuring an optimal matching between demand and supply for heat and cooling;

(iic) measures to ensure that thermal electricity generating installations, industrial plants producing useful heat, waste incineration plants and other waste-to-energy plants are connected to the local district heating or cooling network;

(iid) measures to ensure that residential zones and industrial plants which consume heat in their production processes are connected to the local district heating or cooling network;

the share of high efficiency cogeneration and the potential established and progress achieved under Directive 2004/8/EC;
(h) 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 roadmap may be made up of an assembly of regional or local heating and cooling plans.

3. Urban spatial plans shall be designed to ensure that:

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

(b) new residential zones or new industrial plants which consume heat in their production processes are located in sites where a maximum amount of their heat demand will be met by the available waste heat, as identified in national heating and cooling plans. To ensure an optimal matching between demand and supply for heat and cooling, spatial plans shall favour the clustering of a number of industrial plants in the same location;

(c) thermal electricity generating installations, industrial plants producing waste heat, waste incineration plants and other waste-to-energy plants are connected to the local district heating or cooling network;

(d) residential zones and industrial plants which consume heat in their production processes are connected to the local district heating or cooling network.

[Am. 93]
ANNEX VIII
Guidelines for siting of thermal electricity installations and industrial installations

1. Siting of thermal electricity generation installations as referred in Article 10(3) and (6)

Where a heat demand point of the capacity given in the column C exists or there is a potential heat demand point, the power plant must be located at less than the corresponding distance in column A. A potential heat demand point is defined as one where it can be shown that one can reasonably be created, for example by constructing a district heating network. For example, using standard estimation techniques, if an aggregate heat load in excess of 15 MW/\text{km}^2 can be shown to exist, this is deemed to be a heat demand point. The total sum of such connectible km square loads shall be deemed to be the demand capacity of such heat demand points.

Distance A is a pipeline route, not a straight line, along which it is considered feasible by engineering experts using standard estimating techniques such as quantity surveying, to construct a water carrying pipeline of the corresponding size at moderate cost. This excludes obstacles such as mountain ranges, city centres, difficult river or sea crossings etc.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum distance between proposed electricity installation and heat demand point</td>
<td>Power station electrical Capacity</td>
<td>Heat demand point estimated annual consumption</td>
</tr>
<tr>
<td>&lt;100 km</td>
<td>&gt;1999* MWe</td>
<td>&gt;7500 TJ/year</td>
</tr>
<tr>
<td>&lt;65 km</td>
<td>&gt;500</td>
<td>&gt;1875 TJ/year</td>
</tr>
<tr>
<td>&lt;15 km</td>
<td>&gt;20 MW</td>
<td>&gt;50 TJ/year</td>
</tr>
</tbody>
</table>

* New plant will operate typically at 90% load factor.
2. Siting of industrial waste heat sources referred to in Article 10(8).

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum distance between proposed industrial installations and heat demand point</td>
<td>Capacity</td>
<td>Heat demand point estimated annual consumption</td>
</tr>
<tr>
<td>≤ 75 km</td>
<td>≥ 75 MW</td>
<td>≥ 1600 TJ/year</td>
</tr>
<tr>
<td></td>
<td>(at 60–70% load)</td>
<td></td>
</tr>
<tr>
<td>≤ 60 km</td>
<td>≥ 50 MW at 60% load factor</td>
<td>≥ 1000 TJ/year</td>
</tr>
<tr>
<td>≤ 25 km</td>
<td>≥ 50 MW</td>
<td>≥ 400 TJ/year</td>
</tr>
<tr>
<td></td>
<td>(&gt;85% load factor)</td>
<td></td>
</tr>
<tr>
<td>≤ 15 km</td>
<td>≥ 20 MW</td>
<td>≥ 100 TJ/year</td>
</tr>
</tbody>
</table>

[Am. 94]
ANNEX VIIIa

Basic guidelines for use of cost-benefit analysis to be used under Article 10

Cost-benefit analysis shall respect a comprehensive set of guiding principles for project evaluation within the energy sector. The guidelines shall cover important aspects of the evaluation process such as the setting up a baseline scenario, identification of alternative scenarios, time horizon, and the use of sensitivity analysis. The guidelines shall also make use of the relevant welfare economic theory when it comes to the correct method for the valuation of both market and non-market goods and services.

The guidelines shall contain a set of projected energy prices. It is recommended that these prices are used when doing cost benefit analysis related to e.g. heat planning. They shall include projected annual prices for different kinds of energy input, output, taxes and the welfare economic price of air pollutants at least until the years 2020 and 2030. They are updated each year based on data from different data sources (among which are the International Energy Agency) and, model simulation while taking into account changes in government policies.

The guidelines shall also ensure that any solution chosen actually contributes to real reductions in primary energy savings terms and shall also be based on socio-economic criteria.

The geographical area covered in the cost-benefit analysis shall be sufficiently broad to avoid distortion in the assessment of any specific project. [Am. 95]
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(7) 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 ($\text{MW}_e$) and total rated thermal input ($\text{MW}_{\text{th}}$);
- 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 ($\text{MW}_{\text{th}}$);
- 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 (MWₑ and MWₑₑ) and total rated thermal input (MWₑₑ);
- 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) a non-nominative list of installations undertaking the refining of mineral oil and gas, indicating for each:

- annual average installation energy input (MWₑₑ);
- annual average installation energy output (energy content of the fuel mix, MWₑₑ);
- annual average feedstock;
- plant type and technology employed at the installation;
- design efficiency (theoretical);
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- operation start date;
- date of last substantial refurbishment;
- the number of annual average operating hours;
- annual average net operational efficiency.
ANNEX XI

Energy efficiency criteria for energy network regulation and for network tariffs set or approved by energy regulatory authorities

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 encourage electricity undertakers to offer system services and system tariffs for demand response measures, demand management and distributed generation on organised electricity markets, in particular subject to a cost-effectiveness impact per types of targeted customers (residential, commercial and industrial). System services include: [Am. 96]

(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.

The potential of demand response shall be taken fully into account when implementing regional network capacity adequacy or other energy security related measures. 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. [Am. 97]
3. Network tariffs should be available that support dynamic pricing for demand response measures by final customers, including: \[\text{Am 98}\]

(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.

(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.
- **Clear and transparent list of penalties applicable if the guaranteed savings are not achieved**
- 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. [Am. 99]
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 previous year:

   (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

   (viii) heat generation from thermal power generation

   (ix) fuel input for thermal power generation
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 250 m² 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).

PART 2.

General framework for supplementary reports

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

The reports 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 reports 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 targets set in Article 3a(3) and Article 4 of this Directive as well as in Article 4(1) of Directive 2006/32/EC;

Other existing energy efficiency targets addressing the whole economy or specific sectors. [Am. 100]

2. Measures and energy savings

The reports 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 reports 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 supplementary report 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 reports shall also include the measurement and/or calculation methodology used for calculating the energy savings. If the "recommended methodology" is applied, the report should provide references to this.

3. Specific information related to provisions of this Directive

3.-1. Financial support (Article 2a)
Supplementary reports shall include information on the establishment of the financing facilities and the availability of funds in accordance with Article 2a(1). [Am. 101]

3.1a. Building renovation (Article 3a)

Supplementary reports shall include an assessment of the progress achieved in implementing the national building renovation plan referred to in Article 3a. [Am. 102]

3.1. Public bodies (Article 4)

Supplementary reports shall include the list of public bodies having developed an energy efficiency plan in accordance with Article 4(3).

3.2. Energy efficiency obligations (Article 6)

Supplementary reports shall include the applied national conversion factors referred to in Article 16 and coefficients chosen in accordance with Annex IV.

The first supplementary report 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). [Am. 103]

3.3. Energy audits and management systems (Article 7)

Supplementary reports shall include:

(a) the number of energy audits carried out in the previous 3-year period;

(b) the number of energy audits carried out in large enterprises in the previous 3-year 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.

3.3a. Consumer information and empowering programme (Article 8a)

Supplementary reports shall include an assessment of the progress achieved in implementing the national strategy to empower small energy customers referred to in Article 8a. [Am. 104]

3.4. Promotion of efficient heating and cooling (Article 10)
Supplementary reports shall include an assessment of the progress achieved in implementing the national heating and cooling plan referred to in Article 10(1).

3.5. Energy transformation (Article 11)

Supplementary reports 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 supplementary report and the subsequent reports due every 10 years thereafter shall include the plans for energy efficiency potentials of gas and electricity infrastructure referred to in Article 12(2).

3.7. Availability of certification schemes (Article 13)

Supplementary reports 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)

Supplementary reports 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 supplementary report shall include a list of the measures referred to in Article 15(2).
### ANNEX XV
Correlation table

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