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Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

amending Directive 2010/31/EU on the energy performance of buildings

(Text with EEA relevance)

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

• **Reasons for and objectives of the proposal**

In 2014 the European Council agreed on an increase in energy efficiency by 2030 of at least 27%, to be reviewed by 2020 having in mind 30% and in 2015 the European Parliament called for a binding 40% target. However, the EU energy system projections indicate that the current national and European energy efficiency framework would lead to only approximately 23.9% of primary energy reduction in 2030. One of the ways to improve energy efficiency is to tap the huge potential for efficiency gains in the building sector.

This is at the heart of Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings ('the EPBD'¹). This Directive provides for a review process. The following proposal takes into account the results of this review process, thus contributing, via energy efficiency improvements, to the broader objectives of the Energy Union.

The proposed amendments address the problem that if no changes are made large amounts of cost-effective investments in energy efficiency in buildings would not take place. This is damaging in its own right, given the benefits for security of supply, the environment, reduced energy costs for households and businesses and potential for increased jobs, economy-wide economic activity and mitigation of energy poverty. It is all the more problematic given that the achievement of a significantly higher rate of energy savings is a key part of the EU 2030 energy and climate targets.

The EPBD review is based on a broad public consultation, studies, and meetings with stakeholders and is supported by an evaluation and an impact assessment.

Only those articles of the Directive which need to be updated to reflect the 2030 timeframe are included in this proposal.

• **Consistency with existing policy provisions in the policy area**

The evaluation carried out in advance of this review concluded that the EPBD is consistent with other pieces of EU legislation. The EPBD contributes to the Energy Efficiency Directive's target of a 20% increase in energy efficiency by 2020. It complements measures that Member States are required to take under the Energy Efficiency Directive² ('the EED') as well as EU legislation on energy efficiency of products. Ecodesign and energy labelling legislation set requirements for the energy efficiency of *building-related products* such as boilers, while Member States set minimum requirements for the energy performance of installed retrofitted or replaced *building elements* under their national building codes. Building elements usually consist of several products, e.g. a heating system is made up of a boiler, piping and controls. Consistency is ensured on a case-by-case basis during the process of developing specific ecodesign and/or energy labelling implementing measures, bearing in mind the requirements of the EPBD. For instance, it was decided not to set ecodesign

¹ OJ L 153, 18.6.2010, p. 13.

² These include not only Article 7 as mentioned, but also Articles 4, 5, and 6 of the EED, which are meant to drive investments into the renovation of national building stocks, and stimulate the renovation rate and the demand for highly energy efficient buildings in public bodies.

requirements for thermal insulation as they are already well covered by the national implementation of the EPBD.

2. LEGAL BASIS, SUBSIDIARITY AND PROPORTIONALITY

• Legal basis

The EPBD is based on Article 194(2) of the Treaty on the Functioning of the European Union, which provides a legal basis for a Union policy to promote energy efficiency and energy saving. As the Treaty contains a specific energy-related legal basis, it is considered appropriate to use it for this proposal.

• Subsidiarity (for non-exclusive competence)

There are several reasons why a collective EU approach is beneficial.

First, the added value of addressing building energy performance at EU level resides mainly in the creation of an internal market, supporting the EU's competitiveness and taking advantage of synergies with climate policy and the modernisation of national regulations in the building sector across the EU.

Second, the finance sector needs more comparability of energy performance measurements across the EU. Financial institutions have clearly indicated that work is needed at both national/local and EU levels to increase public and private investments' effectiveness and to contribute to the development of attractive financing products on the market.

Third, although countries have different building code requirements, building typologies and local and climatic conditions, there are multinational users too. Owners of service-providing chains (such as supermarkets or hotels) have requested more unified and comparable methods of certification of the energy performance of buildings.

Finally, EU action leads to a modernisation of national regulations in the building sector, opening wider markets for innovative products and enabling cost reduction. Before the adoption of the 2002 EPBD, many Member States did not have energy efficiency requirements or promotional instruments in their regulation and building codes. As a result of the 2002 and 2010 Directives, all Member States have now energy efficiency requirements for existing and new buildings in their building codes. The 2010 EPBD has resulted in significant modernisation of national building codes through the introduction of the concept of cost optimality, followed by the adoption of nearly zero energy requirements.

The proposed modifications respect the principle of subsidiarity, and Member States will retain the same flexibility as today, allowing adaptation to national circumstances and local conditions (e.g. building type, climate, costs for comparable renewable technologies and accessibility, optimal combination with demand side measures, building density, etc.).

• Proportionality

In accordance with the principle of proportionality, the proposed modifications do not go beyond what is necessary to achieve the objectives set.

As explained above, EU policies on energy efficiency have expanded prudently, limiting their intervention to areas where they are necessary to achieve the Energy efficiency objectives. This is covered in Section 3 of the impact assessment. The scope of the amendments is limited to the aspects that require EU action.

- **Choice of the instrument**

A Directive is the appropriate instrument to ensure Member States comply while leaving them the margin of manoeuvre to adapt to the different national and regional specificities. A regulation would not allow for this element of flexibility. Several Member States and stakeholders made it very clear during the consultation that this combination of enforcement and flexibility is the best combination and the right instrument for policies in this field.

Furthermore, as this proposal amends an existing Directive, an amending Directive is the only appropriate instrument.

3. RESULTS OF EX-POST EVALUATIONS, STAKEHOLDER CONSULTATIONS AND IMPACT ASSESSMENTS

- **Ex-post evaluations of existing legislation**

The evaluation³ shows that the Directive is effective and is delivering on its general and specific objectives. Implementation to date shows broadly good performance on the other four analysed criteria: efficiency, relevance, coherence, and EU added value.

The evaluation identified the following key findings and lessons regarding implementation and the scope to improve the functioning of certain provisions and take advantage of technological progress to accelerate the decarbonisation of buildings.

Key findings

There is evidence of around 48.9Mtoe additional final energy savings in 2014 compared to the 2007 baseline of the EPBD. These savings occurred mainly within the scope of the EPBD – space heating, cooling and domestic hot water – and a significant part can be attributed to factors influenced by policy interventions.

The figure of 48.9Mtoe in 2014 seems therefore in line with the 2008 Impact Assessment supporting the EPBD which estimated that the EPBD would deliver 60 to 80Mtoe of final energy savings by 2020.

The evaluation shows that the overall architecture of the Directive, combining minimum requirements and certification, is working, in particular for new buildings. The choice of the cost-optimal methodology to steer existing national energy performance requirements towards cost-efficient levels has proved to be an effective approach. Targets for all new buildings to be of nearly zero-energy consumption by 2020 have set a 'future-proof' vision for the sector and stakeholders have mobilised accordingly.

A considerable cost effective energy saving potential subsists in the building sector. Increasing the rate, quality and effectiveness of building renovation is the biggest challenge for the coming decades. The long-term renovation strategies developed by Member States under Article 4 of the EED should result in increased renovation rates through mobilising finance and investments in buildings' renovation. These strategies should include a clear forward looking vision with 2030 and 2050 perspectives, creating sufficient market signals for households, building owners/managers, businesses and investors.

The reference to cost-optimality for setting of minimum requirements has been a successful exercise, ensuring reasonably ambitious levels of requirements⁴.

³ Evaluation EPBD SWD [...] (2016) draft

The certification of the energy performance of buildings is delivering a demand-driven market signal for energy efficient buildings and is achieving its aim of encouraging consumers to buy or rent more energy efficient buildings. However, the evaluation shows that national certification schemes and independent control systems are still at early stages in several Member States and their usefulness could be improved.

Due to the diversity and disaggregation of the building sector, it remains challenging to acquire reliable data on building characteristics, energy use, and financial implications of renovation in terms of cost savings or asset values. This generalised lack of data has negative consequences on the market perception of the cost-effective energy saving potential of the EU building stock, enforcement, monitoring and evaluation. Energy performance certificate ('EPC') registers/databases can be a key instrument for reinforced compliance, improving knowledge of the building stock and better informing policy makers and supporting the decisions of market players.

Scope for improvements

The evaluation also identified aspects of the national transposition and implementation that could be further developed through better enforcement, compliance monitoring and evaluation. Opportunities for simplification or modernisation of outdated provisions and streamlining existing provisions in the light of technological progress were also detected, in particular:

- The technical, environmental and economic feasibility of high-efficiency alternative systems under Article 6(1) of the EPBD. With the obligation for all new buildings to be nearly zero-energy buildings, the use of locally available high-efficiency alternative systems becomes an implicit obligation and this provision becomes an unnecessary burden;
- The regular inspection of heating and air conditioning systems under Articles 14 and 15 of the EPBD in respect of which many Member States have opted out for alternative measures as allowed by the Directive.

Technological progress towards 'smarter' building systems offers opportunities to support a more efficient implementation of the EPBD and also creates enabling conditions: to provide information to consumers and investors on operational energy consumption; to adjust to the needs of the user; to run the efficient and comfortable operation of the buildings; its ability to connect to electric vehicle charging; to host energy storage, and to support demand response in an modernised electricity market.

In conclusion, the evaluation reveals relatively limited regulatory failures. There is, however, scope for simplifying and streamlining outdated requirements, and for enhancing compliance through fine tuning of existing provisions and better linking them with financial support. Additionally there is a need to modernise the Directive in the light of technological developments and to increase building renovation rates while supporting the decarbonisation of buildings in the long-term.

- **Stakeholder consultations**

⁴ Report from the Commission to the European Parliament and the Council – Progress by Member States in reaching cost-optimal levels of minimum energy performance requirements; COM(2016) 464 final of 29 July 2016.

The evaluation began in June 2015. It looked at past and current performance and was based on the assessment of outcomes, results and impacts of the EPBD with a view to its effectiveness, efficiency, relevance, coherence and the added value of action at EU level. A literature review, information on the implementation of current policies, analyses of previous monitoring and evaluation activities, input from stakeholders and specific studies and projects were the main sources of information.

Stakeholders were consulted through:

- an open internet-based public consultation that ran from 30 June 2015 to 31 October 2015,
- more specific consultation of Member States, according to the terms of Article 19 of the Directive, was organised in particular through the EPBD Concerted Action meeting on 26 and 27 November 2015, and a meeting of the Energy Performance of Buildings Committee on 1 February 2016,
- thematic technical workshops on specific topics that were held from June 2015 to January 2016,
- stakeholder event on 14 March 2016.

The internet consultation closed on 31 October 2015 and summarised results of the 308 response are available on line⁵. More than half (58 %) of respondents were organisations, mainly representing the construction sector industry, followed by companies (20 %) operating in Member States. Individuals, public authorities and others represent 7-8 % of the respondents.

12 responses from national authorities were received within or after the timeline and were analysed separately, together with Member States' inputs in the context of the EPBD Concerted Action.

Overall, most respondents consider that the EPBD has set a good framework for improving energy performance in buildings and that it has raised awareness on energy consumption in buildings, giving it a more prominent role in energy policy. Its contribution to 2030 and 2050 energy and climate targets was recognised. A majority of respondents think that the EPBD has been successful while a third believes it has not. Several respondents said that it is too early to say how successful the EPBD has been as it is difficult to isolate its effect. Others consider that the EPBD is not as effective as it could be, considering the huge potential for improving energy consumption that remains in the building sector.

The negative responses mentioned as reasons for limited effectiveness the delayed and inconsistent implementation in the Member States, poor quality of EPCs, slow uptake of measures and a low renovation rate, as well as the missing definition of nearly zero-energy buildings and the need for an improved use of financing instruments. Several respondents also highlight poor compliance and enforcement of measures while others recognise that the economic crisis in the construction sector has slowed improvements. Several respondents stated that while the EPBD has been successful in improving energy performance for new buildings it does not sufficiently incentivise energy efficiency renovations.

- **Collection and use of expertise**

⁵ Public Consultation on the Evaluation of the EPBD – Final summary report, 2015, European Commission (written by Ecofys) <https://ec.europa.eu/energy/sites/ener/files/documents/MJ-02-15-954-EN-N.pdf>

Information on the implementation of the EPBD is also available from the work of the EPBD Concerted Actions⁶, the regular dialogue with Member States and the work of the Energy Performance of Buildings Committee.

The outcomes of projects funded under the 'Energy efficiency' chapter of 'Secure, clean and efficient energy' under H2020 and its predecessor the Intelligent Energy for Europe programme were analysed and referenced where relevant.

In addition to the consultation activities undertaken by the European Commission, the evaluation made use of other sources of information, e.g. research papers identified through literature review.

- **Impact assessment**

The Impact assessment was submitted twice to the Regulatory Scrutiny Board of the European Commission. The draft dated 1 July 2016 received a positive opinion on 26 July 2016. The executive summary of the impact assessment and the positive opinion of the Regulatory Scrutiny Board can be found on the website of the Commission.

The following options were considered by the impact assessment:

No-change option

The no-change of the EPBD option means no additional measures beyond the existing ones. It implies that the current EPBD and related regulatory and non-regulatory instruments continue to be implemented as now. This approach could be complimented by measures to maximise the EPBD's impact. Sharing of good practices, stimulated by exchange platforms (e.g. Concerted Action), could help to improve compliance. It is assumed that under the no-change option, this work would continue.

Policy options

Most of the proposed measures can be implemented via soft law (Option I) and/or targeted amendments (Option II). Some measures go beyond the current legal framework and would require fundamental revision of the current Directive (Option III).

Option I: Enhanced implementation and further guidance

This option considers a set of proposals that enhance the implementation of the existing regulatory framework without amending the Directive. It builds on the work being done at EU, national and regional levels to actively implement the Directive. It goes one step further than the no-change option, proposing soft law and guidance that could improve the implementation and enforcement of the legislation and could encourage the use of voluntary measures which have not yet been explored by Member States.

Option II: Enhanced implementation, including targeted amendments for strengthening current provisions

This option includes the Option I proposals, but goes beyond and requires targeted amendments of the current EPBD to address the problem drivers more extensively. However, contrary to Option III, this option stays in line with the framework of the current EPBD, with better information provided to the end-users and adequate minimum performance requirements that avoid sub-optimal intervention on buildings.

⁶ Implementing the Energy Performance of Buildings Directives, 2016, Concerted Action EPBD

Option III: Enhanced implementation with further harmonization and higher ambition

This policy option is the most ambitious one, and goes beyond the current approach of the EPBD, with obligation for building owners to renovate their buildings.

The comparison of the three options led to the following conclusions:

Option I focusses on continuous enforcement of the current EPBD, while supporting Member States by providing guidance and support. The ability to address possibilities for improvement identified in the evaluation report and public consultation to further enhance the removal of barriers to energy efficiency in buildings will not be fulfilled.

Option III includes ambitious measures for increasing the renovation rate and therefore the resulting impact is very high. It introduces a significant change in the building sector, in particular by making mandatory the renovation of thousands of buildings. However, this measure raises some issues such as obligatory investment, which might not be considered cost-effective in a financial perspective. It also raises practical concerns (e.g. further harmonisation of energy performance calculation methodologies, or EPCs) and may be thought to not fully respect the principle of subsidiarity (e.g. obligations to renovate buildings when changing ownership or tenancy, public financial support for mandatory thermal building renovation and mandatory training for builders and installers).

Option II is the preferred option because it is best aligned with the outcome and findings of the evaluation of the EPBD and the existing framework:

- It allows keeping the existing prudent scope underpinning EU action on building efficiency whilst ensuring subsidiarity, proportionality and cost-effectiveness and leaving significant flexibility with Member States.
- It preserves the main objectives, principles and overall architecture of the Directive which is working well and is supported by stakeholders, including Member States.
- It includes only targeted amendments, allowing the continued implementation of key provisions in the current Directive that are already delivering and are cost-effective.
- It strikes a balance between guidance and limited legal revisions to introduce new focussed provisions to address in particular existing building and the link to finance.

This option introduces significant improvements and simplifications to the EPBD and the overall regulatory framework and will improve the energy performance of buildings via targeted amendments whilst allowing a high level of flexibility for the implementation at national level.

Following up on the European Strategy for Low-Emission Mobility⁷ and building upon the leading example of some Member States, the preferred option also proposes a measure to support the development of electro-mobility and contribute further to the decarbonisation of the economy.

The estimated impacts are the following:

- Economic impact: a slightly positive impact on growth, driven by the extra energy efficiency investment and reduction in energy imports, a boost to construction and engineering which are highly related to additional investment, positive impacts on

⁷ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a European Strategy for Low-Emission Mobility, COM(2016)501 final of 20 July 2016.

the insulation and flat glass sector and investment in building renovation benefiting especially SMEs.

- Social impact: the employment impact will follow a similar pattern to GDP, albeit smaller in scale. Improvements to the indoor climate will significantly reduce mortality, morbidity, and health care costs. A moderate positive impact is expected on energy poverty.
- Environmental impact: greenhouse gas emissions decrease slightly in all Member States.

- **Regulatory fitness and simplification**

Taken together, the measures of the preferred policy option would reduce the administrative burden of the EPBD by €98.1 million per year. The calculation of the impact on administrative burden for the preferred option can be found in annex 9 to the Impact assessment.

4. BUDGETARY IMPLICATIONS

Additional energy related activity (roof insulation, windows replacement, building system upgrade, etc.) for the construction sector across the EU is estimated at approximately €47.6bn for this option.

The majority of the estimated additional activity would result from investment decisions by individuals based on better information regarding energy performance of buildings. €1bn to €4bn investments would be directly imposed by the measures of the preferred option. These investments are linked to the infrastructure required for electro-mobility and to building automation systems and technical building system monitoring.

The economic policy impacts mean this is clearly a cost-effective policy option. The assessment is even more positive when taking into account additional social and environmental benefits. Detailed macroeconomic impacts are presented in Annex 8 to the impact assessment.

5. OTHER ELEMENTS

- **Implementation plans and monitoring, evaluation and reporting arrangements**

This proposal makes no change to the Member States' current reporting obligations but the future legislative proposal on Energy Union governance will ensure that a transparent and reliable planning, reporting and monitoring system will be put in place, based on integrated national energy and climate plans and streamlined progress reports by Member States, regularly assessing the implementation of national plans in terms of the five dimensions of the Energy Union. This will ease the administrative burden on Member States but still allow the Commission to monitor Member States' progress towards their energy efficiency targets and the overall EU target.

The proposal introduces new obligations that will be monitored under decarbonisation of buildings, Building renovation, technical building systems, financial incentives and market barriers, while it will simplify and delete obligations for new buildings, on inspections and reports for heating and air-conditioning systems.

- **Detailed explanation of the specific provisions of the proposal**

The future proposal on the governance of the Energy Union is expected to reduce and streamline Member States' reporting and planning obligations. The reports required under that future proposal should enable the Commission to assess and monitor the progress of Member States in reaching the objectives of the Directive. This proposal therefore leaves the current obligations unchanged.

The following amendments set long-term objectives of the Directive.

The definition of technical building systems under Article 2(3) is expanded to on-site electricity generation and on-site infrastructure for electro-mobility.

The current Article 4 of the EED on building renovation is moved, unchanged, to this Directive for greater consistency. It fits better in the EPBD which contains provisions on the smart financing for buildings initiative, long term plans for nearly zero energy buildings and the decarbonisation of buildings.

Article 6 on new building is simplified by limiting it to the provision that the impact assessment identified as the most useful, which is the general obligation for new buildings to meet the minimum energy performance requirements. Other provisions that were more cumbersome are deleted.

Article 8 is updated in order to take into account the revised definition of technical building systems. It is completed with a paragraph introducing requirements: (a) on infrastructure for electro-mobility; (b) regarding building automation and energy monitoring systems; (c) with the introduction of a smartness indicator rating the readiness of the building to adapt its operation to the needs of the occupant and of the grid, and to improve its performance. This provision is linked with Annex IA. Further amendments pursue the objective to allow efficient compliance with the energy performance requirements of building systems, and to maintain the operational performance of technical building systems above a certain threshold.

Financial incentives under Article 10 are complimented with two new provisions: the savings from renovations achieved with public financial support must be assessed by comparing the EPCs before and after renovation and public buildings above a defined surface threshold must disclose their energy performance.

Articles 14 to 16 of the current Directive on inspections and reports are deleted. This simplifies the Directive and takes into account the experience and findings of the evaluation that these inspections of the energy efficiency of heating and cooling systems are burdensome, difficult to implement and partially duplicate the recommendations of EPCs. Such inspections are no longer in tune with progress in building systems and more effective approaches to regular inspections, implemented with the updated Article 8, could be used instead to ensure that building performance is maintained and/or improved.

Annex I is updated to improve transparency and consistency in the way energy performance is determined at national or regional level and to take into account the importance of the indoor environment.

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

amending Directive 2010/31/EU on the energy performance of buildings

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings – thereafter the EPBD⁸, and in particular Article 19 thereof,

Having regard to the proposal from the European Commission,

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

Having regard to the opinion of the European Economic and Social Committee⁹,

Having regard to the opinion of the Committee of the Regions¹⁰,

Acting in accordance with the ordinary legislative procedure,

Whereas:

- (1) The European Union is committed to a sustainable, competitive, secure, and decarbonised energy system. The Energy Union and the Energy and Climate Policy Framework for 2030 establish ambitious EU commitments to further reduce greenhouse gas emissions (a reduction of at least 40% by 2030 compared to 1990), to increase the share of renewable energy consumed (by at least 27%), and to save at least 27% energy, reviewing this level “having in mind an EU level of 30%”¹¹, to increase Europe's energy security, competitiveness and sustainability.
- (2) To reach these objectives, the Energy Efficiency Package 2016 combines: (i) reassessment of the EU's energy efficiency target for 2030 as requested by the European Council in 2014; (ii) review of the core articles of the Energy Efficiency Directive and the Energy Performance of Buildings Directive; (iii) measures under the Smart Finance for Smart Buildings initiative to bring down the cost of financing the investments needed.
- (3) Article 19 of the EPBD requires the Commission to carry out a review 'by the 1 January 2017 at the latest, in the light of the experience gained and progress made during its application, and if necessary, make proposals'.
- (4) To prepare for this review, a series of measures –an open public consultation in 2015, an evaluation, impact assessment, stakeholder event and technical workshops - were

⁸ OJ L 153, 18.6.2010, p. 13.

⁹ OJ C [...], [...], p. [...].

¹⁰ OJ C [...], [...], p. [...].

¹¹ EUCO 169/14, CO EUR 13, CONCL 5, Brussels 24 October 2014.

undertaken to gather evidence on how the Directive has been implemented in the Member States, focussing on what works and what could be improved.

- (5) The outcome of evaluation and impact assessment indicated that a series of amendments need to be made to the EPBD to strengthen the current provisions and to simplify certain aspects.
- (6) The European Union is committed to developing a secure, competitive and decarbonised energy system by 2050¹². To meet this goal, Member States and investors need milestones to ensure that buildings are decarbonised up to a nearly zero-energy standard by 2050. In order to ensure a decarbonised building stock by 2050, Member States must identify the intermediary steps for these long-term 2050 and mid-term 2030 objectives.
- (7) It therefore makes sense to combine this provision with the provisions on long-term strategies in article 4 of Directive 2012/27/EU on energy efficiency ('the EED'¹³) moved here, as the first paragraph of Article 2A, where it fits more coherently due to the 'Smart Financing for Smart Buildings' Initiative, long term plans for nearly zero energy buildings and the decarbonisation of buildings.
- (8) The agendas of the Digital Single Market and the Energy Union must be aligned and serve common goals. The digitalisation of the energy system is an area where developments are quickly changing the energy landscape, from the integration of renewables to smart grids up to smart ready buildings. In order to digitize the building sector, smart ready systems and digital solutions within the built environment need to be promoted by providing targeted incentives.
- (9) Innovation and new technology also make it possible for buildings to support the global decarbonisation of the economy. For example, buildings can leverage the development of the infrastructure necessary for the smart charging of electric vehicles and also provide a basis for Member States, if they choose to, to use car batteries as a source of power.
- (10) To better serve this aim, the definition of technical building systems needs to be expanded to be more complete and cover all systems, from space cooling to built-in lighting to on-site electricity generation and on-site infrastructure for electro-mobility, as well as energy from renewable sources.
- (11) In a spirit of simplification, provisions related to buildings are limited to the most effective ones, with the provisions that the impact assessment revealed to be more burdensome and less efficient being deleted. Provisions relating to new buildings are therefore limited to the first subparagraph of Article 6 and the other provisions are deleted. The existing provisions on inspecting and reporting on heating systems, air-conditioning systems which the impact assessment showed were burdensome and inefficient are deleted.
- (12) Existing regular safety inspections and programmed maintenance work will remain an opportunity to provide advice on energy efficiency improvements. For large installations, building automation and electronic monitoring of technical building systems have proven to be an effective substitution for the regular physical inspections and provides warnings of falls in performance levels in some technical building

¹² Communication COM(2011)885 final Energy Roadmap 2050

¹³ OJ L 315, 14.11.2012, p. 1.

systems. In addition, hydraulic balancing of the heating system and installation/replacement of thermostatic control valves are cheap technical solutions with very short payback period and therefore should be considered.

- (13) The smartness indicator will raise awareness amongst consumers of the value behind smartness and will give confidence to the occupant about the actual savings of these new enhanced-functionalities. Based on the most reliable way to collect data on the actual performance of the buildings, the smartness indicator will give occupants greater understanding of the potential savings options linked to an optimal operation of the building.
- (14) To promote the concept of smart readiness, the Commission shall be empowered to develop a definition of a smartness indicator and provide for its implementation.
- (15) To ensure the best use of financial incentives in renovation, these should be linked to the depth of the renovation, the extent of which should be assessed by comparing EPCs before and after the renovation.
- (16) Access to financing is easier when information is accessible and of good quality. To facilitate this, public buildings with a total useful floor area over 250 m² must disclose their actual energy consumption.
- (17) Article 18 and Annex II are amended to strengthen the current independent control systems for energy performance certifications, setting out (i) a minimum list of information to be collected and registered in regional or national EPC databases at the time of issuing EPCs; and (ii) minimum requirements that those databases need to meet, including the ability to disclose, on request, information on actual energy consumptions. High quality data on the building stock is needed, and this data could be partially generated by EPC registers/databases that almost all Member States currently are developing and managing.
- (18) To meet the objectives of the energy efficiency policy for buildings, the transparency and comparability of energy performance calculations must be improved by ensuring that that all necessary parameters for calculations are set out and identically applied, for both certification and minimum energy performance requirements. Member States must ensure, for example, that the performance of installed, replaced, or updated technical building systems is documented in view of building certification and compliance checking.
- (19) The smartness indicator should be used to measure a building's capacity to use ICT and electronic systems to optimise operation and interact with the grid. The Commission should be empowered to adopt delegated acts in accordance with Article 290 TFEU to update the cost-optimal Delegated Regulation N° 244/2012, defining the smartness indicator, enabling its implementation and adapting it in the light of technical progress. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level.
- (20) The objectives of this Directive cannot be sufficiently achieved by the Member States alone because acting solely at national level leads to a lack of impact and of consistency. They can be better met at Unions level as a result of shared objectives, understanding and political drive, better internal consistency and self-reinforcing measures As a result, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on the European Union. In accordance with the principle of proportionality, as also set out in that Article, this Directive does not go beyond what is necessary to achieve these objectives.

- (21) In accordance with the Joint Political Declaration of 28 September 2011 of Member States and the Commission on explanatory documents¹⁴, Member States have undertaken to accompany, in justified cases, the notification of their transposition measures with one or more documents explaining the relationship between the components of a directive and the corresponding parts of national transposition instruments. With regard to this Directive, the legislator considers the transmission of such documents to be justified.

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Directive 2010/31/EU is amended as follows:

1. Article 2(3) is replaced by the following:

‘technical building system’ means: technical equipment for space heating, space cooling, ventilation, domestic hot water, built-in lighting, building automation and control, on-site electricity generation, on-site infrastructure for electro-mobility, or a combination of such systems, including those using energy from renewable sources, of a building or building unit;’;
2. after Article 2, an Article 2 A 'Long-term strategy' is inserted:
 - (a) the first paragraph consists of Article 4 of the EED, other than its last paragraph, and those provisions are consequently deleted from the EED;
 - (b) the following paragraphs 2 and 3 are inserted:
 - (1) In their long-term strategies due by 30 April 2020 under paragraph 1, Member States shall set a roadmap with clear milestones and measures to deliver on the long-term 2050 goal to decarbonise their national building stock with specific milestones for 2030.
 - (2) In addition, the long term strategies shall contribute to the alleviation of energy poverty.
 - (3) To guide investment decisions under paragraph 1 (d) above, Member States shall introduce mechanisms for:
 - (a) the aggregation of projects to make it easier for investors to fund these renovations;
 - (b) de-risking energy efficiency operations for investors and the private sector; and
 - (c) the use of public money to leverage private sector investment.';
3. Article 6 is amended as follows:
 - (a) In 6(1), the second paragraph with points (a) to (d) is deleted;
 - (b) Articles 6(2) and (3) are deleted;
4. Article 7, fifth subparagraph is deleted;
5. Article 8 is amended as follows:

¹⁴ OJ C 369, 17.12.2011, p. 14.

- (a) in Article 8(1), the third subparagraph is deleted;
- (b) Article 8(2) is replaced by the following:
 - (2) Member States shall ensure that all new buildings and buildings undergoing major renovations include infrastructure for recharging points for electric vehicles for every parking space without re-intervention on the building structure.
 - (3) Member States shall ensure that by 1 January 2023 for every ten parking spaces that a building has, at least one is equipped with a recharging point in the sense of Directive 2014/94/EU¹⁵ that is capable of starting and stopping charging in reaction to price signals.
 - (4) Member States shall ensure that, when a technical building system is installed, replaced or upgraded, the overall energy performance of the complete altered system is assessed by the installer, documented and handed over to the building owner so that it remains available for the verification of compliance with the minimum requirements set according to Article 8(1) and serves as inputs for the later issue of building energy performance certificate. Member States shall enable this information to be included in the national energy performance certificate database referred to in Article 18(3).
 - (5) Member States shall ensure that non-residential buildings whose total primary energy use is more than 250 MWh per year are equipped with building automation and control systems by 1 January 2023. These systems shall:
 - (a) continuously monitor, analyse and adjust energy usage;
 - (b) benchmark the building's energy efficiency, detect, and inform the person responsible for the facilities or technical building management about opportunities for energy improvement; and
 - (c) allow communication with connected technical building systems and other appliances inside the building and be interoperable with the technical building systems across different types of proprietary technologies, devices, and manufacturers.
 - (6) Member States shall ensure that residential buildings with centralised technical building systems of a cumulated effective rated output of more than 100 kW are equipped with electronic monitoring and effective control functionalities by 1 January 2023. These functionalities shall:
 - (a) continuously monitor and meter the system efficiency and inform building owners or managers when this efficiency has significantly decreased or when system servicing is necessary, and
 - (b) ensure optimum generation, distribution, and emission of energy including automatic balancing of fluid distribution.
 - (7) By means of a delegated act in accordance with Articles 23 to 25 and in the framework of Annex IA, the Commission shall be empowered to

¹⁵ Directive 2014/94/EU of October 2014 on the deployment of alternative fuels infrastructure, JO L 307, p. 1.

adopt a definition of a smartness indicator and provisions on its use and ways to convey this information in the most effective manner to prospective new tenants or buyers.

This indicator shall cover flexibility features, enhanced functionalities and capabilities of a building resulting from more interconnected and built-in intelligent devices being integrated into the conventional technical building systems. These features shall enable the occupant and the building itself to be more active in reacting to comfort or operational requirements, taking part in demand response, and contributing to the optimum, smooth and safe operation of the different energy systems and district infrastructures in which the building is embedded.';

6. Article 10 is amended as follows:

(a) Paragraph 6 is amended as follows:

'Member States shall link the financial incentives provided for renovation of buildings to the energy efficiency savings achieved due to this renovation. These savings shall be identified by issuing and comparing the energy performance certificate delivered before renovation with the energy performance certificate delivered after renovation.';

(b) a paragraph 6 a is inserted:

'Member States shall make compulsory the inclusion in the national database information on the actual energy consumption of public buildings where the total useful floor area is over 250 m², in accordance with Annex II .';

7. Articles 14, 15 and 16 are deleted;

8. in Article 17, the words 'and the inspection of heating systems and air conditioning systems are' are replaced by 'is';

9. Article 18 is amended as follows:

(a) in the first paragraph, the words 'and reports of the inspection of heating and air conditioning systems' and the second sentence are deleted;

(b) the third paragraph is replaced as follows:

'Member States shall require the energy performance certificates to be registered in the national database in compliance with the framework of Annex II.';

10. in Article 19, '2017' is replaced by '2028';

11. in Article 20, second paragraph, the words 'and inspection reports' are deleted;

12. Article 23 is amended as follows:

(a) 'Article 22' is replaced by 'Articles 5, 8 and 22';

(b) '8 July 2010' is replaced by **XX**

(c) **xx XXXX**';

13. Annexes I and II are amended in accordance with the Annex to this Directive;

14. A new Annex Ia is inserted in accordance with the Annex to this Directive.

Article 2

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

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

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

Article 3

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

Article 4

This Directive is addressed to the Member States.

Done at Brussels,

For the European Parliament
The President

For the Council
The President