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Subject: Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF
THE COUNCIL amending Directive 2012/31/EU on the energy
performance of buildings
- Analysis of the final compromise text with a view to agreement

1. On 15 December 2017, the Permanent Representatives Committee granted its revised mandate for the third informal trilogue on the Commission's proposal on the energy performance of buildings, with a view to negotiating a first reading agreement with the European Parliament.

2. On 19 December 2017, the third informal trilogue was held and sealed a provisional agreement, while addressing the following political issues:
 - the content, development and implementation of the long-term renovation strategy, roadmap and self-regulating devices;
 - electro-mobility;

- a mixed approach of delegated/implementing acts for the Smart Readiness

Indicator;

- energy performance databases;
- the inspections and their alternatives;
- primary energy and weighting factors; and
- revised review and transposition deadlines.

3. As mandated by the third trilogue, the technical level worked on recital and drafting adaptations and a technical meeting was held on 19 January 2018, in view of finalizing the compromise text in Annex.¹
4. In the context of the technical meeting, no substantial changes have been made to the political agreement, as provisionally sealed on 19 December 2017. The final compromise text also reflects the Coreper's mandate granted on 15 December 2017, in view of the third trilogue.
5. Therefore, the final compromise text in Annex constitutes a compromise package that should now be agreed to by Permanent Representatives Committee.

6. CONCLUSION

Taking into account the above, the Permanent Representatives Committee is invited to agree to the final compromise text in Annex.

¹ Please note that, according to the usual procedure, this text will be reviewed by lawyer-linguists at a later stage; therefore the numbering and order of the recitals as well as linguistic changes and adaptations will be carried out in this context.

2016/0381 (COD)

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, and in particular Article 194(2) 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 Committee¹,

Having regard to the opinion of the Committee of the Regions²,

Acting in accordance with the ordinary legislative procedure,

Whereas:

¹ OJ C 246, 28.7.2017.

² OJ C 342, 12.10.2017.

- (1) The Union is committed to developing a sustainable, competitive, secure and decarbonised energy system. The Energy Union and the Energy and Climate Policy Framework for 2030 establish ambitious Union commitments to reduce greenhouse gas emissions further (by at least 40% by 2030, as compared with 1990), to increase the proportion of renewable energy consumed and to make energy savings in accordance with EU level ambitions³, and to improve Europe's energy security, competitiveness and sustainability.
- (2) To reach those objectives, the 2016 review of the Energy Efficiency legislation combines the reassessment of the EU's energy efficiency target for 2030 as requested by the European Council in 2014, the review of the core Articles of the Energy Efficiency Directive and the Energy Performance of Buildings Directive and the reinforcement of the enabling financing environment including the European Structural and Investment Funds (ESIF) and the European Fund for Strategic Investments (EFSI), which will ultimately improve the financial conditions of energy efficiency investments on the market.
- (3) Article 19 of Directive 2010/31/EU of the European Parliament and of the Council⁴ requires the Commission to carry out a review by 1 January 2017 at the latest, in the light of the experience gained and progress made during the application of that Directive, and if necessary, to make proposals.
- (4) To prepare for that review, the Commission took a series of steps to gather evidence on how Directive 2010/31/EU has been implemented in the Member States, focusing on what works and what could be improved.
- (5) The outcome of the review and impact assessment indicated that a series of amendments are required to strengthen the current provisions of Directive 2010/31/EU and to simplify certain aspects.

³ EUCO 169/14, CO EUR 13, CONCL 5, Brussels 24 October 2014.

⁴ Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (OJ L 153, 18.6.2010, p. 13).

- (6) The Union is committed to developing a secure, sustainable, competitive and decarbonised energy system by 2050. To meet this goal, Member States and investors need measures that aim to reach the long-term greenhouse gas emission goal and decarbonise the building stock, which is responsible for about 36% of all CO₂ emissions in the Union, by 2050. Member States should seek a cost-efficient equilibrium between decarbonising energy supplies and reducing final energy consumption. To that end, Member States and investors need a clear vision to guide their policies and investment decisions, which includes indicative national milestones and actions for energy efficiency to achieve the short-term (2030), mid-term (2040) and long-term (2050) objectives. With these objectives in mind and considering the Union's overall energy efficiency ambitions, it is essential that Member States specify the expected output of the national long-term renovation strategies and monitor their advancements by setting national progress indicators, subject to national conditions and developments.
- (6a) In their long-term strategies and in planning actions and measures, Member States might make use of concepts such as trigger points, meaning an opportune moment, for example from a cost-effectiveness or disruption perspective, in the life cycle of a building for carrying out energy efficiency renovations.
- (6b) The 2015 Paris Agreement on climate change following the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (COP 21) should boost the Union's efforts to decarbonise its building stock. Taking into account that almost 50% of Union's final energy is used for heating and cooling, of which 80% is used in buildings, achievement of Union's energy and climate goals are linked to the Union's efforts to refurbish its building stock by giving priority to energy efficiency, making use of the 'energy efficiency first' principle as well as considering deployment of renewables.

- (7) The provisions on long-term renovation strategies provided for in Directive 2012/27/EU of the European Parliament and of the Council⁶ should be moved to Directive 2010/31/EU, where they fit more coherently. Member States may use their long-term renovation strategies to address risks related to fire hazards and intense seismic activity affecting energy efficiency renovations and the lifetime of buildings.
- (7a) The need to alleviate energy poverty should be taken into account, in accordance with the criteria defined by the Member States. While outlining national actions that contribute to the alleviation of energy poverty in their renovation strategy, the Member States hold the right to define what they consider relevant actions.
- (7b) To achieve a highly energy efficient and decarbonised building stock and to ensure that the long-term renovation strategies should deliver the necessary progress to the transformation of existing buildings into nearly-zero energy buildings, in particular by an increase in deep renovations, Member States should offer clear guidelines and outline measurable, targeted actions and equal access to financing, including for the worst performing segments of the national building stock, for energy-poor consumers, for social housing and for households subject to split-incentive dilemmas, while taking into consideration affordability. To further support the necessary improvements in the national rental stock, Member States should consider the introduction or continued application of requirements for a certain level of energy performance, according to the energy performance certificates, for rental properties.

⁶ Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC (OJ L 315, 14.11.2012, p. 1).

- (7c) According to the Commission's impact assessment, renovation would be needed at an average rate of 3% annually to cost-effectively accomplish the Union's ambitions for energy efficiency. Considering that every 1% increase in energy savings reduces gas imports by 2,6%, clear ambitions for renovation of the existing building stock is of great importance. Thus, efforts to increase the energy performance of buildings would contribute actively to the Union's energy independence and furthermore hold great potential to create jobs in the Union, in particular in small and medium-sized enterprises. In that context, Member States should take into account the need for a clear link between their national long-term renovation strategies and pertinent initiatives to promote skills development and education in the construction and energy efficiency sectors.
- (8) The agendas of the Digital Single Market and the Energy Union should be aligned and should serve common goals. The digitalisation of the energy system is quickly changing the energy landscape, from the integration of renewables to smart grids and smart-ready buildings. In order to digitise the building sector, the Union's connectivity targets and ambitions for deployment of high-capacity communication networks are important for smart homes and well-connected communities. Targeted incentives should be provided to promote smart-ready systems and digital solutions in the built environment. This offers new opportunities for energy savings, by providing consumers with more accurate information about their consumption patterns, and by enabling the system operator to better manage the grid.
- (9) In order to adapt this Directive to the technical progress, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union (TFEU) should be delegated to the Commission to supplement it by defining the smart readiness indicator and by establishing a methodology to calculate it.

- (9a) In order to ensure consistency with the Interinstitutional Agreement on Better Law-Making of 13 April 2016, the provisions relating to the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be amended. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level, and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016. In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.
- (9b) In order to ensure uniform conditions for the implementation of this Directive, implementing powers on the modalities for an optional common European Union scheme for rating the smart readiness of buildings should be conferred on the Commission. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council.
- (9bb) The smart readiness indicator should be used to measure buildings' capacity to use ICT and electronic systems to adapt the operation of the building to the needs of the occupant and the grid and to improve its energy efficiency and overall performance. The smart readiness indicator should raise awareness amongst building owners and occupants of the value behind building automation and electronic monitoring of technical building systems and should give confidence to occupants about the actual savings of these new enhanced-functionalities. The use of the scheme for rating the smart readiness of buildings should be optional for Member States.
- (9c) The installation of self-regulating devices in existing buildings to individually regulate the room temperature should be considered when economically feasible, for example when their cost is less than 10% of the total costs of the replaced heat generators.

- (10) Innovation and new technology also make it possible for buildings to support the overall decarbonisation of the economy, including the transport sector. For example, buildings can be leveraged for 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.
- (10a) Combined with an increased share of renewable electricity production, electric vehicles produce less carbon emissions and result in better air quality. Electric vehicles constitute an important component of a clean energy transition based on energy efficiency measures, alternative fuels, renewable energies and innovative energy flexibility management solutions. Building codes can be effectively leveraged through the introduction of targeted requirements to support the deployment of the recharging infrastructure in car parks of residential and non-residential buildings. Member States should also provide for measures to simplify the deployment of recharging infrastructure with a view to addressing barriers such as split incentives and administrative complications which individual owners encounter when trying to install a recharging point on their parking space.
- (10aa) Ducting infrastructure provides the right conditions for the rapid deployment of recharging points if and where needed. Member States should therefore ensure the development of electro-mobility in a balanced and cost-effective way. In particular, where a major renovation touching upon electric infrastructure takes place, pertinent roll out of ducting infrastructure should follow. In the implementation of the requirements for electro-mobility in national legislation, Member States should duly consider potential diverse conditions such as ownership of buildings and their adjacent parking lot, public parking lots operated by private entities and buildings that function as both residential and non-residential.

- (10b) Readily available infrastructure will decrease the costs of installation of recharging points for individual owners and ensure electric vehicle users have access to recharging points. Establishing requirements for electro-mobility at Union level concerning the pre-equipment of parking spaces and the installation of charging points is an effective way to promote electric vehicles in the near future while enabling further developments at reduced costs in the medium to long-term.
- (10bb) When Member States develop the national minimum requirements for installation of recharging points for non-residential buildings with more than 20 parking spaces, to apply from 2025, they should take into account relevant national, regional and local conditions, as well as possible diversified needs and circumstances based on area, building typology, public transport coverage and other relevant criteria, to ensure proportionate and appropriate deployment of recharging points.
- (10c) However, some geographical areas with specific vulnerabilities may face specific difficulties in fulfilling the requirements on electro-mobility. This could be the case for the outermost regions within the meaning of Article 349 TFEU, due to their remoteness, insularity, small size, difficult topography and climate, as well as micro isolated systems, whose electricity grid might need to evolve to cope with a further electrification of local transport. In such cases, Member States should be allowed not to apply the requirements of electro-mobility. Notwithstanding this derogation, the electrification of transport may be a powerful tool to address air quality or security of supply problems which these regions and systems often face.
- (10cc) Research into, and the testing of, new solutions for improving the energy performance of historical buildings and sites should be encouraged, while also safeguarding and preserving cultural heritage.

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- (10f) Nature-based solutions, such as well-designed street vegetation, green roofs and walls providing insulation and shade to buildings contribute to reducing energy demand by limiting the need for heating and cooling and improving a building's energy performance.
- (10g) When applying the requirements for electro-mobility infrastructure set out in this Directive, Member States should consider the need for holistic and coherent urban planning as well as promotion of alternative, safe and sustainable modes of transport and their supporting infrastructure, for example through dedicated parking infrastructure for electrical bicycles and for people of reduced mobility.
- (11) According to the impact assessment, provisions concerning the inspections of heating systems and air-conditioning systems were found to be inefficient in that they did not sufficiently ensure the initial and continued performance of these technical systems. Even cheap energy efficiency technical solutions with very short payback periods, such as hydraulic balancing of the heating system and installation/replacement of thermostatic control valves, are insufficiently considered today. The provisions on inspections should be amended to ensure a better result from inspections. Those amendments should place the focus of inspections on central heating and air conditioning systems as well as these systems when they are combined with ventilation systems, and should exclude small heating systems such as electric heaters and wood stoves when they fall below the thresholds for inspection according to this Directive.
- (11a) For new buildings and buildings undergoing major renovations, Member States should encourage high-efficiency alternative systems, if technically, functionally and economically feasible, while also addressing healthy indoor climate conditions as well as fire and seismic safety, in accordance with domestic safety regulations.

- (11b) The 2009 WHO guidelines provide that, concerning indoor air quality, better performing buildings provide higher comfort levels and wellbeing for their occupants and improve health. Thermal bridges, inadequate insulation and unplanned air pathways can result in surface temperatures below the dew point of the air and in dampness. It is therefore essential to ensure a complete and homogeneous insulation of the building including balconies, fenestrations, roofs, walls, doors and floor, and particular attention should be paid to avoiding the temperature on any inner surface of the building dropping below the dew-point temperature.
- (12) Building automation and electronic monitoring of technical building systems have proven to be an effective replacement for inspections, in particular for large systems, and holds great potential to provide cost-effective and significant energy savings for both consumers and businesses. The installation of such equipment should be considered as the most cost-effective alternative to inspections in large non-residential and multi-apartment buildings of a sufficient size that allow a payback of less than three years as it enables acting on the information provided, thereby securing energy savings over time. For small scale installations, the documentation of the system performance by installers will support the verification of compliance with the minimum requirements set for all technical building systems. The current possibility to opt for alternative measures is retained provided that the effect has been documented, by submitting a report to the Commission, as equivalent to the effect of inspection prior to application of those measures.
- (12a) Member States should support energy performance upgrades of existing buildings that contribute to achieving a healthy indoor environment, including through the removal of asbestos and other harmful substances, preventing the illegal removal of harmful substances, and facilitating compliance with existing legislative acts such as Directive 2009/148/EC¹ and Directive (EU) 2016/2284².

¹ OJ L 330, 16.12.2009.

² OJ L 344, 17.12.2016.

- (12b) The implementation of regular inspection schemes of heating and air conditioning systems under Directive 2010/31/EU involved a significant administrative and financial investment by Member States and the private sector, including training and accreditation of experts, quality assurance and control, and the costs of inspections. Member States that have adopted the necessary measures to establish regular inspections, and that have implemented effective inspection schemes, may find appropriate to continue to operate those schemes, including for smaller heating and air conditioning systems. In such cases, there should be no obligation for Member States to notify those more stringent requirements to the Commission.
- (12c) It is important to ensure that measures to improve the energy performance of buildings do not focus only on the building envelope, but include all relevant elements and technical systems in a building, such as passive elements that participate to passive techniques aiming to reduce the energy needs for heating or cooling, the energy use for lighting, ventilation and hence improve thermal and visual comfort;
- (13) To ensure that financial measures related to energy efficiency are applied in the best way in building renovation, they should be linked to the quality of the renovation works in light of the targeted or achieved energy savings. Those measures should therefore be linked to the performance of the equipment or material used for the renovation, and to the level of certification or qualification of the installer, to an energy audit, or to the improvement achieved due to the renovation, which should be assessed by comparing energy performance certificates (EPCs) issued before and after the renovation, by using standard values or by another transparent and proportionate method.

(13a) Financial mechanisms, incentives and the mobilisation of financial institutions for energy efficiency renovations in buildings should have a central role in the national long-term renovation strategies and be actively promoted by Member States. This should include encouraging energy efficient mortgages for certified energy efficient building renovations, promoting investments for public authorities in an energy efficient building stock, for example by public-private partnerships or optional energy performance contracts, reducing the perceived risk of the investments, providing accessible and transparent advisory tools and assistance instruments such as one-stop-shops that provide integrated energy renovation services, as well as implementing other measures and initiatives such as those referred to in the Smart Finance for Smart Buildings Initiative by the European Commission.

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(15) The current independent control systems for EPCs can be used for compliance checking and should be strengthened to ensure certificates are of good quality. Where the independent control systems for EPCs is complemented by an optional database going beyond the requirements of this Directive, it can be used for compliance checking and for producing statistics on the regional/national building stocks. High-quality data on the building stock is needed and this could be partially generated by the databases that almost all Member States are currently developing and managing for EPCs.

(16) To meet the objectives of energy efficiency policy for buildings, the transparency of EPCs should be improved by ensuring that all necessary parameters for calculations, for both certification and minimum energy performance requirements, are set out and applied consistently. Member States should adopt adequate measures to ensure, for example, that the performance of installed, replaced or updated upgraded technical building systems for space heating, air conditioning or water heating is documented in view of building certification and compliance checking.

- (16a) When carrying out inspections and in order to achieve the intended building energy performance improvements in practice, the aim should be to improve the actual energy performance of heating, cooling and ventilation systems under real-life use conditions. The actual performance of such systems is governed by the energy used under dynamically varying typical or average operating conditions. Such conditions require at most times only a part of the nominal output capacity, and therefore inspections of heating, cooling and ventilation systems should include an assessment of the relevant capabilities of the equipment to improve system performance under varying conditions, such as part load operating conditions.
- (16aa) Without prejudice to the Member States' choice to apply the set of CEN EPBD standards, their recognition and promotion across the Member States would have a positive impact on the revision of this Directive.
- (17) Commission Recommendation (EU) 2016/1318 of 29 July 2016 on nearly zero-energy buildings described how the implementation of this Directive could simultaneously ensure the transformation of the building stock and the shift to a more sustainable energy supply, which also supports the heating and cooling strategy⁷. To make sure appropriate implementation takes place, the general framework for the calculation of the energy performance of buildings should be updated and the improved performance of the building envelope encouraged with the support of the work elaborated by the European Committee for Standardisation (CEN), under Mandate M/480 from the European Commission. Member States could choose to further supplement this by providing additional numerical indicators, for example for the entire building's overall energy use or greenhouse gas emissions.

⁷ COM(2016) 51 final

- (18) The provisions of this Directive should not prevent Member States from setting more ambitious energy performance requirements for buildings and for building elements as long as such requirements are compatible with Union law. It is consistent with the objectives of this Directive and of Directive 2012/27/EC that these requirements may, in certain circumstances, limit the installation or use of products subject to other applicable Union harmonisation legislation, provided that such requirements should not constitute an unjustifiable market barrier.
- (19) Since the objectives of this Directive, namely to reduce the energy needed to meet the energy demand associated with the typical use of buildings, cannot be sufficiently achieved by the Member States but can rather, by reason of the guaranteed consistency of shared objectives, understanding and political drive, 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 the European Union. In accordance with the principle of proportionality as set out in that Article, this Directive does not go beyond what is necessary to achieve those objectives. This Directive fully respects the Member States' national specificities and differences and their competences in accordance with Article 194(2) TFEU. Further, the objective of this Directive is to allow the sharing of best practices in order to facilitate the transition to a highly energy efficient building stock in the Union,
- (20) In accordance with the Joint Political Declaration of 28 September 2011 of Member States and the Commission on explanatory documents⁸, 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.

⁸ OJ C 369, 17.12.2011, p. 14.

(21) Directive 2010/31/EU should therefore be amended accordingly,

HAVE ADOPTED THIS DIRECTIVE:

Directive 2010/31/EU is amended as follows:

(1) in Article 2, point 3 is replaced by the following:

‘3. ‘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, or a combination of such systems, including those systems using energy from renewable sources, of a building or building unit’;

(1a) in Article 2, the following points are inserted:

"(3c) ‘building automation and control system’ means a system comprising all products, software and engineering services that can support energy-efficient, economical and safe operation of technical building system through automatic controls and by facilitating their manual management";

"15a. ‘heating system’ means a combination of the components required to provide a form of indoor air treatment, by which temperature is increased“;

‘15b. ‘heat generator’ means the part of a heating system that generates useful heat using one or more of the following processes:

- (a) the combustion of fuels in, for example, a boiler;
- (b) the Joule effect, taking place in the heating elements of an electric resistance heating system;
- (c) capturing heat from ambient air, ventilation exhaust air, water or ground heat source(s) using a heat pump";

‘(20) ‘micro isolated system’ means any system within the meaning of Article 2(27) of Directive 2009/72/EC¹;

(2) The following Article is inserted:

(2) after Article 2, an Article 2a ‘Long-term renovation strategy’ is inserted:

1. Member States shall establish a long-term strategy to support the renovation of the national stock of residential and non-residential buildings, both public and private, into a highly energy efficient and decarbonised building stock by 2050, facilitating the cost-effective transformation of existing buildings into nearly-zero energy buildings. This strategy shall be submitted in accordance with the applicable reporting obligations and shall encompass:
 - (a) an overview of the national building stock, based, as appropriate, on statistical sampling and expected share of refurbished buildings in 2020;
 - (b) identification of cost-effective approaches to renovations relevant to the building type and climatic zone, considering, potential relevant trigger points, where applicable, in the life-cycle of the building;
 - (c) policies and actions to stimulate cost-effective deep renovations of buildings, including staged deep renovations and to support targeted cost-efficient measures and renovations for example by introducing an optional scheme for building renovation passports;
 - (d) an overview of policies and actions to target the worst performing segments of the national building stock, split-incentive dilemmas, market failures, and an outline of relevant national actions that contribute to the alleviation of energy poverty;
 - (e) policies and actions to target all public buildings;

¹ Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity.

- (f) an overview of national initiatives to promote smart technologies and well-connected buildings and communities, as well as skills and education in the construction and energy efficiency sectors; and
 - (g) an evidence-based estimate of expected energy savings and wider benefits, such as those related to health, safety and air quality.
2. In their long-term renovation strategy, Member States shall set out a roadmap with measures and domestically defined measurable progress indicators, with a view to the long-term 2050 goal of reducing greenhouse gas emissions in the Union by 80-95% compared to 1990, to ensure a highly energy efficient and decarbonised national building stock and to facilitate the cost-effective transformation of existing buildings into nearly zero-energy buildings. The roadmap shall include indicative milestones for 2030, 2040 and 2050, and specify how they contribute to achieving the Union's energy efficiency targets in accordance with Directive 2012/27/EU.
3. To support the mobilisation of investments into the renovation needed to achieve the goals referred to in paragraph 1, Member States shall facilitate access to appropriate mechanisms for:
- (a) the aggregation of projects, including by investment platforms or groups, and consortia of small and medium sized enterprises, to enable investor access as well as packaged solutions for potential clients;
 - (b) reducing the perceived risk of energy efficiency operations for investors and the private sector;
 - (c) the use of public funding to leverage additional private-sector investment or address specific market failures;
 - (d) guidance of investments into an energy efficient public building stock, in line with current Eurostat guidance; and
 - (e) accessible and transparent advisory tools, such as one-stop-shops for consumers and energy advisory services, on relevant energy efficiency renovations and financing instruments.

- 3a. The Commission shall collect and disseminate, at least to public authorities, best practices on successful public and private financing schemes for energy efficiency renovations as well as information on schemes for the aggregation of small-scale energy efficiency renovation projects. The Commission shall identify and disseminate best practices on financial incentives to renovate from a consumer perspective taking into account cost-efficiency differences between Member States.
- 3b. To support the development of their long-term renovation strategy, Member States shall carry out a public consultation on the long-term renovation strategy prior to the submission of its long-term renovation strategy to the Commission. Each Member State shall publish a summary of the results of its public consultation as an annex to its long-term renovation strategy.

Member States shall define the modalities for consulting in an inclusive way during the implementation of their long-term renovation strategy.

- 3c. Member States shall include details of the implementation of their long-term renovation strategy as an annex to the national long-term renovation strategy, including on the planned policies and actions.
4. Member States may use their long-term renovation strategies to address risks related to intense seismic activities or fire affecting energy efficiency renovations and the lifetime of buildings.’

(3) Article 6 is amended as follows:

(a) paragraph 1 is replaced by the following:

Member States shall take the necessary measures to ensure that new buildings meet the minimum energy performance requirements set in accordance with Article 4.

For new buildings, Member States shall ensure that, before construction starts, the technical, environmental and economic feasibility of high-efficiency alternative systems, if available, is taken into account.

(b) paragraphs 2 and 3 are deleted;

(4) in Article 7, the fifth paragraph is replaced by the following:

"Member States shall encourage, in relation to buildings undergoing major renovations, high-efficiency alternative systems, in so far as this is technically, functionally and economically feasible, and address healthy indoor climate conditions, fire safety and risks related to intense seismic activity".

(5) Article 8 is amended as follows:

(a) in paragraph 1, the third subparagraph is deleted and replaced by the following:

Member States shall require new buildings, where technically and economically feasible, to be equipped with self-regulating devices that regulate room temperature levels in each individual room or where justified, in a designated heated zone of the building unit. In existing buildings, the installation of self-regulating devices to individually regulate the room temperature shall be required when heat generators are replaced, where technically and economically feasible.

(b) paragraph 2 is replaced by the following:

2. With regard to new non-residential buildings and non-residential buildings undergoing major renovation, provided that the building has more than ten parking spaces, Member States shall ensure the installation of at least one recharging point¹, and ducting infrastructure, that is, conduits for electric cables, for at least one in every five parking spaces, to enable the installation at a later stage of recharging points for electric vehicles, in the following situations:
 - a) the car park is located inside the building, and, for major renovations, the renovation measures include the car park or the electric infrastructure of the building; or
 - b) the car park is physically adjacent to the building and, for major renovations, the renovation measures include the car park or the electrical infrastructure of the car park.

The Commission shall report to the European Parliament and the Council by 1 January 2023 on the scope for a European building policy in contributing to the promotion of electromobility and propose measures, if appropriate.

- 2a. Member States shall set up the requirements for the installation of a minimum number of recharging points to all non-residential buildings, with more than twenty parking spaces, by 1 January 2025.

□

¹ Within the meaning of Directive 2014/94/EU on the deployment of alternative fuels infrastructure.

- 2c. Member States may decide not to set or apply the requirements referred to in this paragraph to buildings owned and occupied by small and medium-sized enterprises as defined in Title I of the Annex to Commission Recommendation 2003/361/EC of 6 May 2003.
3. With regard to new residential buildings and residential buildings undergoing major renovations, provided that the building has more than ten parking spaces, Member States shall ensure that ducting infrastructure, that is, conduits for electric cables, is installed, in order to enable at a later stage the installation of recharging points for electric vehicles for every parking space in the following situations:
- a) the car park is located inside the building, and, for major renovations, the renovation measures include the car park or the electric infrastructure of the building; or
 - b) the car park is physically adjacent to the building and, for major renovations, the renovation measures include the car park or the electrical infrastructure of the car park.
- 3a. Member States may decide not to apply paragraphs 2, 2a and 3 to specific categories of buildings in the following circumstances:
- a) where building permit applications or equivalent applications have been submitted before or within one year after the date referred to in Article 3(1) of this Directive;
 - b) where the ducting infrastructure required would rely on micro isolated systems or in outermost regions¹ if this would lead to substantial problems for the operation of the local energy system and would endanger the stability of the local grid;

¹ Within the meaning of Article 349 TFEU.

- c) where the cost of the recharging and ducting installations exceeds 7% of the total cost of the major renovation of the building;
 - d) where a public building is already covered by comparable requirements according to the transposition of Directive 2014/94/EU;
4. Member States shall provide for measures in order to simplify the deployment of recharging points in new and existing residential and non-residential buildings and address possible regulatory barriers, including with permitting and approval procedures, without prejudice to the property and tenancy law of the Member States.
- 4b. Member States shall consider the need for coherent policies for buildings, soft and green mobility and urban planning.
5. Member States shall ensure that, when a technical building system is installed, replaced or upgraded, the overall energy performance of the altered part, and where relevant, of the complete altered system is assessed. The results shall be documented and passed on to the building owner, so that they remain available and can be used for the verification of compliance with the minimum requirements set pursuant to paragraph 1 and the issue of energy performance certificates. Without prejudice to Article 12, Member States shall decide whether to require the issue of a new energy performance certificate.
6. The Commission shall, by 31 December 2019, adopt a delegated act in accordance with Article 23, supplementing this Directive by establishing an optional common European Union scheme for rating the smart readiness of buildings. The rating shall be based on an assessment of the capabilities of a building or building unit to adapt its operation to the needs of the occupant and the grid and to improve its energy efficiency and overall performance.

In accordance with Annex Ia, the scheme shall:

- (a) define the smart readiness indicator; and
- (b) establish a methodology to calculate it.

- 6a. The Commission shall, by 31 December 2019 and after having consulted the relevant stakeholders, adopt an implementing act detailing the technical modalities for the effective implementation of the optional common European Union scheme for rating the smart readiness of buildings, including a timeline for a non-committal test-phase at national level, and clarifying the complementary relation of the scheme to the energy performance certificates referred to in Article 11.

That act shall be adopted in accordance with the examination procedure referred to in Article 26.

- (6) Article 10 is amended as follows:

- (a) paragraph 6 is replaced by the following:

6. Member States shall link their financial measures for energy efficiency improvements in the renovation of buildings to the targeted or achieved energy savings, as determined by one or several criteria below:
- (a) the energy performance of the equipment or material used for the renovation. In this case, the equipment or material used for the renovation shall be installed by an installer with the relevant level of certification or qualification;
 - (b) standard values for calculation of energy savings in buildings;
 - (c) the improvement achieved due to such renovation by comparing energy performance certificates issued before and after renovation;
 - (d) the results of an energy audit; or
 - (e) the results of another relevant, transparent and proportionate method that shows the improvement in energy performance.’

(b) the following paragraphs are inserted:

- 6a. Databases for EPCs shall allow gathering of data on the measured or calculated energy consumption of the buildings covered, including at least public buildings for which an EPC has been issued according to Article 13 of this Directive.
- 6b. At least aggregated anonymised data compliant with Union and national data protection requirements shall be made available on request for statistical and research purposes and to the building owner;

(7) Article 14 is replaced by the following:

- 1. Member States shall lay down the necessary measures to establish regular inspection of the accessible parts of systems with an effective rated output for space heating or for combined space heating and ventilation purposes of over 70 kW, such as the heat generator, control system and circulation pump(s) used for heating buildings. The inspection shall include an assessment of the heat generator efficiency and the heat generator sizing compared with the heating requirements of the building and considering, where relevant, the capabilities of the heating system to optimize its performance at typical or average operating conditions.

Where no changes have been made to the heating system or as regards the heating requirements of the building since an inspection pursuant to this paragraph was carried out, Member States may choose not to require the assessment of the heat generator sizing to be repeated.

1a. As an alternative to paragraph 1, Member States may opt to take measures to ensure the provision of advice to users concerning the replacement of heat generators, other modifications to the heating system and alternative solutions to assess the efficiency and appropriate size of the heating system or combined heating and ventilation system. The overall impact of such an approach shall be equivalent to that arising from the provisions set out in paragraph 1.

Before Member States apply the measures referred to in the first subparagraph, they shall, by submitting a report to the Commission, document the equivalence of the effect of those measures to the measures referred to in paragraph 1.

Such report shall furthermore be included in the national climate and energy plans according to applicable reporting obligations [i.e. Governance Regulation].

2. Member States shall set the requirements to ensure that non-residential buildings with an effective rated heating or combined heating and ventilation system output of over 290kW, where technically and economically feasible, are equipped with building automation and control systems by 2025.

The building automation and control systems shall be capable of:

- (a) continuously monitoring, logging, analysing and allowing for adjusting energy usage;
 - (b) benchmarking the building's energy efficiency, detecting losses in efficiency of technical building systems, and informing the person responsible for the facilities or technical building management about opportunities for energy efficiency improvement; and
 - (c) allowing communication with connected technical building systems and other appliances inside the building, and being interoperable with technical building systems across different types of proprietary technologies, devices and manufacturers.
3. Member States may set requirements to ensure that residential buildings are equipped with:
 - (a) the functionality of continuous electronic monitoring that measures systems' efficiency and inform building owners or managers when it has fallen significantly and when system servicing is necessary, and

(b) effective control functionalities to ensure optimum generation, distribution, storage and use of energy.

3a. Buildings that comply with paragraphs 2 or 3 shall be exempt from the requirements laid down in paragraph 1.

3b. Technical building systems explicitly covered by an agreed energy performance criterion or a contractual arrangement specifying an agreed level of energy efficiency improvement, such as energy performance contracting as defined in point (27) of Article 2 of Directive 2012/27/EU or that are operated by a utility or network operator and therefore subject to performance monitoring measures on the system side, shall be exempt from the requirements laid down in paragraph 1, provided that the overall impact of such an approach is equivalent to that arising from the provisions set out in paragraph 1.

(8) Article 15 is replaced by the following:

1. Member States shall lay down the necessary measures to establish a regular inspection of the accessible parts of air-conditioning systems or of combined air-conditioning and ventilation systems, with an effective rated output of over 70 kW. The inspection shall include an assessment of the air-conditioning efficiency and the sizing compared to the cooling requirements of the building and considering, where relevant, the capabilities of the air-conditioning or of the combined air-conditioning and ventilation system to optimize its performance at typical or average operating conditions.

Where no changes have been made to the air-conditioning system or to the combined air-conditioning and ventilation system or to the requirements for cooling of the building since an inspection pursuant to this paragraph was carried out, Member States may choose not to require the assessment of the sizing to be repeated.

Member States that maintain more stringent requirements pursuant to Article 1(3) shall be exempted from the obligation to notify them to the Commission.

- 1a. As an alternative to paragraph 1, Member States may opt to take measures to ensure the provision of advice to users concerning the replacement of air-conditioning systems or combined air-conditioning and ventilation systems, other modifications to the air-conditioning system or combined air-conditioning and ventilation system and alternative solutions to assess the efficiency and appropriate size of these systems. The overall impact of such an approach shall be equivalent to that arising from the provisions set out in paragraph 1.

Before Member States apply the measures referred to in the first subparagraph, they shall, by submitting a report to the Commission, document the equivalence of the effect of those measures to the measures referred to in paragraph 1.

Such report shall furthermore be included in the national climate and energy plans according to applicable reporting obligations [i.e. Governance Regulation].

2. Member States shall set the requirements to ensure that non-residential buildings with an effective rated output for systems for air-conditioning or systems for combined air-conditioning and ventilation of over 290kW, where technically and economically feasible, are equipped with building automation and control systems by 2025.

The building automation and control systems shall be capable of:

- (a) continuously monitoring, logging, analysing and allowing for adjusting energy usage;
- (b) benchmarking the building's energy efficiency, detecting losses in efficiency of technical building systems, and informing the person responsible for the facilities or technical building management about opportunities for energy efficiency improvement; and

- (c) allowing communication with connected technical building systems and other appliances inside the building, and being interoperable with technical building systems across different types of proprietary technologies, devices and manufacturers.
3. Member States may set requirements to ensure that residential buildings are equipped with:
- (a) the functionality of continuous electronic monitoring that measures systems' efficiency and inform building owners or managers when it has fallen significantly and when system servicing is necessary, and
 - (b) effective control functionalities to ensure optimum generation, distribution, storage and use of energy.
- 3a. Buildings that comply with paragraph 2 or 3 shall be exempt from the requirements laid down in paragraph 1.
- 3b. Technical building systems explicitly covered by an agreed energy performance criterion or a contractual arrangement specifying an agreed level of energy efficiency improvement, such as energy performance contracting as defined in point (27) of Article 2 of Directive 2012/27/EU or that are operated by a utility or network operator and therefore subject to performance monitoring measures on the system side, shall be exempt from the requirements laid down in paragraph 1, provided that the overall impact of such an approach is equivalent to that arising from the provisions set out in paragraph 1.

- (9) in Article 19, ‘2017’ is replaced by ‘2026’ and the following sentence is added:

As part of this review, the Commission shall examine how Member States could apply integrated district or neighbourhood approaches in European building and energy efficiency policy, while respecting that each building shall meet the minimum energy performance requirements, for example through overall refurbishment schemes applying to a number of buildings in a spatial context instead of a single building.

The Commission shall, in particular, assess the need for further improvement of energy performance certificates in accordance with Article 11.

- (9a) the following Article is added:

“Article 19a

The Commission shall, before 2020, conclude a feasibility study, clarifying the possibilities and timeline to introduce the inspection of stand-alone ventilation systems and an optional building renovation passport that is complementary to the energy performance certificates, in order to provide a long-term, step-by-step renovation roadmap for a specific building based on quality criteria, following an energy audit, and outlining relevant measures and renovations that could improve the energy performance;”

- (10) in Article 20(2), the first subparagraph is replaced by the following:

(a) Member States shall in particular provide information to the owners or tenants of buildings on energy performance certificates, their purpose and objectives, on cost-effective measures and, where appropriate, financial instruments, to improve the energy performance of the building and on replacing fossil fuel boilers with more sustainable alternatives. Member States shall provide the information through accessible and transparent advisory tools such as renovation advice and one-stop-shops;

(11) Article 23 is replaced by the following:

‘Article 23
Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to in Articles 5, 8 and 22 shall be conferred on the Commission for a period of 5 years from XXX [date of entry into force of the Directive]. The Commission shall draw up a report in respect of the delegation of power not later than nine months before the end of the 5-year period. The delegation of power shall be tacitly extended for periods of an identical duration, unless the European Parliament or the Council opposes such extension not later than three months before the end of each period.
3. The delegation of power referred to in Articles 5, 8 and 22 may be revoked at any time by the European Parliament or by the Council. A decision to revoke 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. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Inter-institutional Agreement on Better Law-Making of 13 April 2016¹².
5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.

¹² OJ L 123, 12.5.2016, p. 1

6. A delegated act adopted pursuant to Articles 5, 8 and 22 shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of two 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 two months at the initiative of the European Parliament or of the Council.’;

(12) Articles 24 and 25 are deleted;

(12a) Article 26 is replaced by the following:

'Article 26
Committee procedure

1. The Commission shall be assisted by a committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.
2. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.'

(13) The Annexes are amended in accordance with the Annex to this Directive.

Article 2

With the exception of its last subparagraph, the provisions of Article 4 of the Directive 2012/27/EU on energy efficiency¹³ are deleted.

¹³ OJ L 315, 14.11.2012, p. 13

Article 3¹

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by XXXX [20 months following the date of entry into force] at the latest. They shall immediately communicate the text of those measures to the Commission.

When Member State adopt those measures, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. They shall also include a statement that references in existing laws, regulations and administrative provisions to the Directive(s) repealed by this Directive shall be construed as references to this Directive. Member States shall determine how such reference is to be made and how that statement is to be formulated.

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 4

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

Article 5

This Directive is addressed to the Member States.

Done at Brussels,

For the European Parliament

For the Council

The President

The President

¹ Adaptations to this Article reflect the standard wording agreed between the legal services of the Commission, European Parliament and the Council.

ANNEX

1. Annex I is amended as follows:

(a) point 1 is replaced by the following:

1. The energy performance of a building shall be determined on the basis of the calculated or actual energy use and shall reflect its typical energy use for heating, cooling, domestic hot water, ventilation and built-in lighting and other technical building systems;

The energy performance of a building shall be expressed by a numeric indicator of primary energy use in kWh/(m².y), for the purpose of both energy performance certification and compliance with minimum energy performance requirements.

The methodology applied for its determination shall be transparent and open to innovation.

Member States shall describe their national calculation methodology following the national annexes of the overarching standards¹⁵ developed under mandate M/480 given to the European Committee for Standardisation (CEN). This provision shall not constitute a legal codification of those standards.

(b) point 2 is replaced by the following:

2. The energy needs for space heating, space cooling, domestic hot water, lighting, ventilation and other technical building systems shall be calculated in order to optimise health, indoor air quality and comfort levels defined by Member States at national or regional level.

¹⁵ ISO/EN 52000-1, 52003-1, 52010-1, 52016-1, and 52018-1.

The calculation of primary energy shall be based on primary energy factors or weighting factors per energy carrier, which may be based on national, regional or local annual, and possibly also seasonal or monthly, weighted averages or on more specific information made available for individual district system.

Primary energy factors or weighting factors shall be defined by Member States. In the application of these factors to the calculation of energy performance, Member States shall ensure that the optimal energy performance of the building envelope is pursued.

In the calculations of the primary energy factors for the purpose of calculating energy performance of buildings, Member States may take into account renewable energy sources supplied through the energy carrier and renewable energy sources that are generated and used on-site, provided it applies on a non-discriminatory basis.

3. To express the energy performance of a building, Member States may [] define additional numeric indicators of total, non-renewable and renewable primary energy use, and greenhouse gas emission produced in kg of CO₂ equivalent per m² per year.’;

(c) in point 4, the introductory phrase is replaced by the following:

‘4. The positive influence of the following aspects shall be taken into account.’;

2. Annex II is amended as follows:

(a) first paragraph of point 1 is replaced by the following:

‘1. The competent authorities or bodies to which the competent authorities have delegated the responsibility for implementing the independent control system shall make a random selection of all the energy performance certificates issued annually and subject them to verification. The sample shall be of a sufficient size to ensure statistically significant compliance results.’;

(b) point 3 is added:

‘3. When information is added to a database it shall be possible for national authorities to identify the originator of the addition, for monitoring and verification purposes.’;

3. The following Annex Ia is added:

Common general framework for rating the smart readiness of buildings

1. The Commission shall define a smart readiness indicator and establish a methodology to assess the capabilities of a building or building unit to adapt its operation to the needs of the occupant and the grid and to improve its energy efficiency and overall performance.

The indicator shall cover features for enhanced energy savings, benchmarking and flexibility, enhanced functionalities and capabilities resulting from more interconnected and intelligent devices.

The methodology shall take into account features such as smart meters, building automation and control systems, self-regulating devices for indoor temperature, built-in home appliances, recharging points for electric vehicles, energy storage and detailed functionalities and the interoperability of these features, as well as benefits for the indoor climate condition, energy efficiency, performance levels and enabled flexibility.

2. The methodology shall rely on three key functionalities relating to the building and its technical building systems:
 - (a) the ability to maintain energy efficiency performance and operation of the building through the adaptation of energy consumption for example through use of energy from renewable sources;
 - (b) the ability to adapt its operation mode in response to the needs of the occupant paying due attention to the availability of user-friendliness, maintaining healthy indoor climate conditions and ability to report on energy use; and
 - (c) the flexibility of a building's overall electricity demand, including its ability to enable participation in active and passive as well as implicit and explicit demand-response, in relation to the grid, for example through flexibility and load shifting capacities.

3. The methodology may further take into account:
 - the interoperability between systems (smart meters, building automation and control systems, built-in home appliances, self-regulating devices for indoor temperature within the building and indoor air quality sensors and ventilations) and
 - the positive influence of existing communication networks, in particular the existence of high-speed-ready in-building physical infrastructure, such as the voluntary 'broadband ready' label, and the existence of an access point for multi-dwelling buildings, in accordance with Article 8 of Directive 2014/61/EU of the European Parliament and of the Council.

4. The methodology shall not negatively affect existing national energy performance certification schemes and shall build on related initiatives at national level, while taking into account the principle of occupant ownership, data protection, privacy and security, in compliance with relevant Union data protection and privacy law as well as best available techniques for cyber security.

 5. The methodology shall set out the most appropriate format of the smart readiness indicator parameter and shall be simple, transparent, and easily understandable for consumers, owners, investors, and demand response market participants.
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