

Amendment 1

Proposal for a directive Recital 7 a (new)

Text proposed by the Commission

(7 a) To facilitate the cost effective achievement of the Union's climate and energy goals as well as cost-efficient renovations in buildings, national long-term renovation strategies should integrate considerations for improvements to health and indoor climate, including by combining renovation with 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/EC.

Amendment

(7 a) To facilitate the cost effective achievement of the Union's climate and energy goals as well as cost-efficient renovations in buildings, national long-term renovation strategies should integrate considerations for reducing air pollution and improvements to health and indoor climate, including by combining renovation with the removal of asbestos and other harmful substances, thus preventing the illegal removal of harmful substances, and facilitating compliance with existing legislative acts such as Directive 2009/148/EC.

Justification

Air pollution is a major issue affecting many regions in the EU and in those regions the combustion of fuels to heat inefficient buildings is a significant contributor to air pollution. Making this reference at this point in the directive will ensure that it is considered during implementation of the provisions of the directive.

Amendment 2

Proposal for a directive

Recital 12

Text proposed by the Commission

(12) ***Notably for large installations, building automation and electronic monitoring of technical building systems have proven to be an effective replacement for inspections. The installation of such equipment should be considered as the most cost-effective alternative to*** inspections in large non-residential and multifamily buildings of a sufficient size that allow a payback of less than three years. The current possibility to opt for alternative measures is therefore deleted. For small scale installations, the documentation of the system performance by installers and the registration of this information in the databases on energy performance certification will support the verification of compliance with the minimum requirements set for all technical building systems and reinforce energy performance certificates role. In addition, existing regular safety inspections and programmed maintenance work will remain an opportunity to provide direct advice on energy efficiency improvements.

Amendment

12) Building automation and electronic monitoring of technical building systems holds great potential to provide cost-effective and significant energy savings both for consumers and businesses. Notably for large installations, building automation and electronic monitoring of technical building systems have proven to be effective and ~~can, in some cases, replace inspections~~ should be required to be installed in large non-residential and multifamily buildings of a sufficient size that allow a payback of less than three years as it enables acting building owners and managers to act on the information provided, thereby securing energy savings over time. The current possibility to opt for alternative measures is therefore deleted, however it should be possible to exempt technical systems explicitly covered by an ESCO programme from the inspection requirement. For small scale installations, the current inspection regime is reinforced with a timeframe and with a requirement that documentation of the system performance is prepared by installers and the is registered registration of this information in the databases on energy performance certification will to support the verification of compliance with the minimum requirements set for all technical building systems and reinforce the role of energy performance certificates (EPC) ~~role~~. In addition, existing regular safety inspections and programmed maintenance work will remain an opportunity to provide direct advice on energy efficiency improvements.

Justification

The first change proposed is needed to clarify who benefits from the proposal described. The second change is needed in order to make the overall report coherent with the suggested changes to Article 14 and 15, which are set out further below in this paper.

Amendment 3

Proposal for a directive Recital 18

Text proposed by the Commission

The provisions of this Directive should not prevent Member States from setting more ambitious energy performance requirements and indoor climate at building level and for building elements as long as such measures 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.

Amendment

Article 18(a) new

Many existing European buildings suffer from poor indoor climate with adverse effect on health, learning and productivity. Requirements to the energy performance of existing buildings should aim to improve the indoor climate and reduce adverse effects. Therefore, specific calculations of the indoor climate and daylight conditions are a necessary part of the performance evaluation. The actual comfort level of indoor climate has a large impact on the actual energy use of the building. Therefore, the calculation of energy performance of buildings should be based on an accurate prediction of daylight and indoor climate, which can include daylight conditions (minimum daylight factor), thermal conditions (maximum temperature, minimum temperature), ventilation (maximum CO₂-level, minimum ventilation rate, maximum humidity level).

Amendment 4

Proposal for a directive Article 1 – point f

Amendment

Article 1 – Subject matter

(f) regular inspection of heating, **ventilation** and air-conditioning systems in buildings;

Amendment 5

Proposal for a directive

Article 2 – point 16 a (new)

Amendment

Amendment 16a (new)

Proposal for a directive

Article 1 – paragraph 1 – point 1 b (new)

Directive 2010/31/EU

Article 2 – point 16 b (new)

(1 b) in Article 2, the following point is inserted:

20. ‘decarbonised building stock’ consists of highly energy efficient (currently identified as nearly zero energy standard (nZEB)), comfortable buildings at EU level. These buildings will be the cornerstone for the decarbonisation of the building stock and an essential enabler for the transformation of our energy system. It means that on average, the overall energy demand of the building stock in the EU will improve by 80% by 2050 as compared to 2005 levels of energy demand;

Justification

The objective of the directive (as stated in Recital 19 to the proposal) is to *reduce the energy needed to meet the energy demand associated with the typical use of a building*. Achieving high energy efficiency is pivotal to decarbonisation in the building stock. Consequently, it is essential to define the

concept of a *decarbonised building stock* as Member States understanding of the concept will be the basis for the vision to 2050 against which long-term renovation strategies are drawn up. It is also necessary to give an indication of the level of reduction in energy demand that will be needed to achieve decarbonisation and to guide Member States' plans. Note that Amendment 1 of the Draft Bendtsen Report refers to nearly zero energy standard, making this suggestion coherent with the approach set out in the report.

Amendment 16b (new)

Proposal for a directive

Article 1 – paragraph 1 – point 1 c (new)

Directive 2010/31/EU

Article 2 – point 16 b (new)

Amendment

(1 c) in Article 2, the following point is inserted:

21. ‘building renovation passport’ means a document – in electronic or paper format – that outlines a long-term (up to 20 years) step-by-step renovation roadmap for a specific building based on an on-site audit fulfilling specific quality criteria and indicators, in consultation with the building owner;

Justification

Necessary definition in order to underpin suggested amendments to Article 20 of the Directive (see below)

Amendment 16c(new)

Proposal for a directive

Article 1 – paragraph 1 – point 1 d (new)

Directive 2010/31/EU

Article 2 – point 16 b (new)

Amendment

(1 d) in Article 2, the following point is inserted:

22. ‘trigger point’ means a moment in the life a building when it is easier and more economical to take an investment

decision to undertake holistic, ambitious energy renovation works, whether in one go or as a series of planned stages over time.

Justification

Necessary definition in order to underpin suggested amendments to Article 20 of the Directive (see below)

Amendment 6

Proposal for a directive

Article 2a – paragraph 1

Text proposed by the Commission

Amendment

(a) *the first paragraph consists of Article 4 of the Directive 2012/27/EU on energy efficiency¹⁶, other than its last subparagraph;*

(a) the following paragraph 1 is inserted:

'1. Member States shall establish a long-term strategy for the transformation mobilising investment in the renovation of the national stock of residential and commercial buildings, both public and private to a highly energy efficient, decarbonised building stock by 2050. This strategy shall encompass:

(a) ~~a~~ pragmatically structured overview of the national building stock based, as appropriate, on statistical sampling and/or selected criteria and/or relevant building-related databases that will help to identify

the priority order in which segments of the building stock are addressed;

(b) identification of cost-effective approaches and actions to stimulate technology neutral renovations relevant to the building type and climatic zone, considering relevant trigger points in the life-cycle of the building;

(c) policies and actions, including the introduction of building renovation passports, to stimulate cost-effective deep renovations of buildings, including staged deep renovations;

(d) policies and actions to target the worst performing segments of the national building stock, households subject to energy poverty and households subject to split-incentive dilemmas for renovations;
(e) policies and actions to target all public buildings, including social housing;

(f) an overview of national initiatives to promote skills and education in the construction and energy efficiency sectors;

(g) a forward-looking perspective to guide investment decisions of individuals, the construction industry, public institutions including municipalities, and financial institutions;

(h) an evidence-based estimate of expected energy savings and wider benefits, including non-economic benefits such as health and reduced air pollution.

[The amendment of the rapporteur is based on Article 4(1) of Directive 2012/27/EU, with additional text in points (b), (g) (formerly (d)) and (h) (formerly (e)). Three additional points (d), (e) and (f) have been inserted.]

Justification

The framing of the requirements placed on the Member States for the preparation and implementation of their national renovation strategies lies at the heart of this directive.

Imprecise requirements that do not give clear indications of the means to draw up effective strategies could lead to Member States preparing ineffective strategies. Whilst the Bendtsen amendment addresses many issues, it is important to ensure that the contents of this Article are complete.

The suggested amendment above shows additions to Bendtsen amendment in **bold underline** and deletions to the Bendtsen amendment in ~~strikethrough~~.

Amendment 7

Proposal for a directive

Article 2 a – paragraph 2 –subparagraph 1

Text proposed by the Commission

2. In their long-term renovation strategy referred to in paragraph 1, Member States shall set out 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.

Amendment

2. In their long-term renovation strategy referred to in paragraph 1, Member States shall set out a roadmap with clear milestones and actions to deliver on the long-term 2050 goal to ensure a highly energy efficient and decarbonised ~~national~~ building stock **up to near zero energy standard**, with specific milestones for 2030 and 2040.

Justification

Recalling the phrasing of Amendment 1 on bringing the building stock up to near zero energy standard is important and this is the right place to introduce the phrase in an Article.

Amendment 8

Proposal for a directive

Article 2a – paragraph 2 – subparagraph 1 a (new)

Text proposed by the Commission

Amendment

Member States shall specify how their

milestones contribute to achieving the Union's energy efficiency target of 340 % in 2030. **When setting those milestones, Member States shall take into account that their combined national contributions to the Union 2030 target must ensure that final energy demand remains below 169 Mtoe and 108 Mtoe for the residential and tertiary building sectors respectively,** in accordance with Directive 2012/27/EU and with the Union's ~~target~~ **goal** to reduce greenhouse gas emissions by **88-91% by 2050 for the residential and tertiary sectors** ~~at least 80 % by 2050.~~

Justification

It is widely accepted that energy renovation in the buildings sector will be the sector that will provide the lion's share of energy savings in the EU in the period to 2030. It is therefore important that the link is drawn between this contribution and the target level in the Energy Efficiency Directive (EED), in order for the policy measures and actions to deliver the expected savings under the EED and thus align renovation activity (rate and depth) between the two directives.

The position of the European Parliament to date has been to support a 40% target for energy savings for 2030 and this is reflected in the suggested change to the Bendtsen amendment shown above. The figures for the savings from the different segments of the buildings sector (residential and tertiary) are taken from the Impact Assessment of the European Commission (page 42, Table 7 of document COM (2016) 761 Final) and relate to the EUCO+40 scenario. For consistency it is then necessary to change the percentages for GHG emissions reduction at the end of the amendment and to ensure alignment with the content of the EU Commission Roadmap to a low-carbon and competitive union by 2050 (COM (2011) 112).

Amendment 9

Proposal for a directive

Article 2a – paragraph 3 a (new)

Text proposed by the Commission

Amendment

(ba) the following paragraph is inserted:

3 a. Each Member State shall carry out a public consultation on the draft long-term renovation strategy at least three months prior to the submission of its long-term renovation strategy to the Commission, on the basis of a proper engagement with structured, permanent stakeholder platforms, whose expertise, opinions and expectations will be taken into account. The result of the public consultation shall be published in summarised form as an annex to the strategy.

Justification

In order to significantly increase the chances of a good and robust implementation of the national renovation strategies, it is accepted that the structured input of concerned stakeholders, at every stage of planning, roll-out and enforcement of the strategy is needed. The suggested amendment seeks to make this clear and builds on the good proposal from the Draft Bendtsen Report to hold a public consultation on the strategies before they are adopted at national level. The means to engage a broad range of stakeholders in the preparation of national strategies has been proven through the EU Funded project, Build Upon. The approach and success stories of the Build Upon project can be accessed on its website at:

<http://buildupon.eu/>

Or. en

Amendment 10

Article 2.4a (new)

Energy Balance approach' means taking both energy losses (related to heat loss) as well as energy gains from passive solar irradiance into account when calculating the energy performance of a building and transparent or translucent building element of the building envelope, tailored to local needs and environment.

Amendment 11

Proposal for a directive

Article 2a – paragraph 3b (new)

Text proposed by the Commission

Amendment

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(bb) the following paragraph 3b is inserted:

3b. Each Member State shall report, taking into account the feedback received from the structured, permanent stakeholder platforms, on the implementation of its long-term renovation strategy in accordance with Article 19(a) of the Governance Regulation (XXX), as a part of their integrated national energy and climate progress report.

Justification

Necessary addition in order to be coherent with the proposed changes to Amendment 26 (see above).

Amendment 12

Article 3

Adoption of a methodology for calculating the energy performance of buildings
Member States shall apply a methodology for calculating the energy, indoor climate and daylight performance of buildings in accordance with the common general framework and based on an energy balance approach set out in Annex I. This methodology shall be adopted at national or regional level

Article 3

Energy from renewable sources produced on-site or nearby can only be taken into consideration if it is used directly (at the same time) in the building, like solar energy for hot

water storage in the building, PV for heat pumps water storage in the building, PV for cooling and air-conditioning, etc

Amendment 13

Article 4

Setting of minimum energy performance requirements

1. Member States shall take the necessary measures to ensure that minimum energy performance, daylight and indoor climate requirements for buildings or building units are set with a view to achieving cost-optimal levels. The energy, daylight and indoor climate performance shall be calculated in accordance with the methodology referred to in Article 3. Cost-optimal levels shall be calculated in accordance with the comparative methodology framework referred to in Article 5 once the framework is in place.

2. Member States shall take the necessary measures to ensure that minimum energy performance requirements based on an energy balance approach are set for building elements that form part of the building envelope and that have a significant impact on the energy performance of the building envelope when they are replaced or retrofitted, with a view to achieving cost-optimal levels.

When setting requirements, Member States may differentiate between new and existing buildings and between different categories of buildings.

These requirements shall take account of general indoor climate conditions, in order to avoid possible negative effects such as inadequate ventilation, inadequate daylight conditions, as well as local conditions and the designated function and the age of the building.

A Member State shall not be required to set minimum energy performance requirements which are not cost-effective over the estimated economic lifecycle.

Minimum energy performance requirements shall be reviewed at regular intervals which shall not be longer than five years and, if necessary, shall be updated in order to reflect technical progress in the building sector.

Amendment 14

Article 4

Setting of minimum energy performance requirements

1. Member States shall take the necessary measures to ensure that minimum indoor air quality requirements for buildings or building units are set. They shall require minimum ventilation airflow, independently from any user action. These requirements shall take into account the intended use of the building.

2. Member States shall establish a methodology to calculate ventilation performance. The ventilation performance will be mentioned in the energy performance certificate.

(...)

Amendment 15

Article 6 – New buildings

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 is considered and taken into account in order to deliver on the long-term 2050 goal to decarbonize their national building stock. High efficiency alternative systems are evaluated under the EU Ecodesign and Energy Labelling Regulations.

Amendment 16

Proposal for a directive

Directive 2010/31/EU

Article 7

Article 7

Existing buildings

1. Member States shall take the necessary measures to ensure that when buildings undergo major renovation, the energy performance of the building or the renovated part thereof is upgraded in order to meet minimum energy performance and indoor climate requirements. The minimum requirement for major renovation shall be set in accordance with Article 4(1) in so far as this is technically, functionally and economically feasible.

Those requirements shall be applied to the renovated building as a whole. Additionally or alternatively, requirements may be applied to the renovated building elements.

2. Member States shall in addition take the necessary measures to ensure that when a building element that forms part of the building envelope and has a significant impact on the energy performance of the building envelope, is retrofitted or replaced, the energy performance of the building element meets minimum energy performance requirements in so far as this is technically, functionally and economically feasible.

Member States shall determine these minimum energy performance requirements in accordance with Article 4(2), based on an energy balance approach.

Amendment 17

Proposal for a directive

Article 8 – Technical building systems - paragraph 1

Text proposed by the Commission

1. Member States shall, for the purpose of optimising the energy use of technical building systems, set system requirements in respect of the overall energy performance, the proper installation, and the appropriate dimensioning, adjustment and control of the technical building systems which are installed in existing buildings. Member States may also apply these system requirements to new buildings.

System requirements shall be set for new, replacement and upgrading of technical building systems and shall be applied in so far as they are technically, economically

Amendment

1. Member States shall, for the purpose of optimising the energy use of technical building systems, set system requirements in respect of the overall energy performance, **an adequate indoor air quality level when relevant**, the proper installation, and the appropriate dimensioning, adjustment and control of the technical building systems which are installed in existing buildings. Member States may also apply these system requirements to new buildings.

System requirements shall be set for new, replacement and upgrading of technical building systems and shall be applied in so

and functionally feasible.

far as they are technically, economically and functionally feasible.

Amendment 18

Proposal for a directive

Article 8 – Technical building systems - paragraph 2, point 3

~~3. Member States shall ensure that newly built residential buildings and those undergoing major renovations, with more than ten parking spaces, include the pre-cabling to enable the installation of recharging points for electric vehicles for every parking space.~~

Amendment 19

Proposal for a directive

Article 8 – Technical building systems - paragraph 5

Text proposed by the Commission

Amendment

5. 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, documented and passed on to the building owner, so that it remains available for the verification of compliance with the minimum requirements set pursuant to paragraph 1 and the issue of energy performance certificates. Member States shall ensure that this information is included in the national energy performance certificate database referred to in Article 18(3).

5. Member States shall ensure that, when a technical building system is installed, replaced or upgraded, the overall energy **and, when relevant, indoor air quality** performance of the complete altered system is assessed, documented and passed on to the building owner, so that it remains available for the verification of compliance with the minimum requirements set pursuant to paragraph 1 and the issue of energy performance certificates. Member States shall ensure that this information is included in the national energy performance certificate database referred to in Article 18(3).

Amendment 20

Article 8 – Technical building systems - paragraph 6

Text proposed by the Commission

Amendment

6. The Commission is empowered to adopt delegated acts in accordance with Article

6. The Commission is empowered to adopt delegated acts in accordance with

23 supplementing this Directive with a definition of ‘smartness indicator’ and with the conditions under which the ‘smartness indicator’ would be provided as additional information to prospective new tenants or buyers. The smartness indicator shall cover flexibility features, enhanced functionalities and capabilities resulting from more interconnected and built-in intelligent devices being integrated into the conventional technical building systems. The features shall enhance the ability of occupants and the building itself to react to comfort or operational requirements, take part in demand response and contribute to the optimum, smooth and safe operation of the various energy systems and district infrastructures to which the building is connected.

Article 23 supplementing this Directive with a definition of ‘smartness indicator’ and with the conditions under which the ‘smartness indicator’ would be provided as additional information to prospective new tenants or buyers. The smartness indicator shall cover flexibility features, enhanced functionalities and capabilities resulting from more interconnected and built-in intelligent devices being integrated into the conventional technical building systems. The features shall enhance the ability of occupants and the building itself to react to **indoor air quality and thermal** comfort **and** operational requirements, take part in demand response and contribute to the optimum, smooth, **healthy** and safe operation of the various energy systems and district infrastructures to which the building is connected

Amendment 21

Proposal for a directive

Article 8 – paragraph 5

Text proposed by the Commission

Amendment

5. 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 under typical usage conditions, documented ~~it~~ and passed on to the building owner, so that ~~it~~ the resulting information remains available for the verification of compliance with the minimum requirements set pursuant to paragraph 1 and the issue of energy performance certificates and/or building renovation passports. ~~Member States shall ensure that this information is included in the national energy performance certificate database referred to in Article 18(3).~~

Justification

Making the indicated changes to this paragraph is necessary in order to ensure that

the requirements placed on Member States by Article 8(1) are implemented. This suggestion is linked and complementary to the suggestion further below for modification to Article 18(1).

Amendment 22

Proposal for a directive

Article 10 – paragraph 6

Text proposed by the Commission

6. Member States shall link their financial measures for energy efficiency improvements in the renovation of buildings to the energy savings achieved due to such renovation. These savings shall be determined by comparing energy performance certificates issued before and after renovation.

Amendment

6. Member States shall link their financial measures for energy efficiency improvements in the renovation of buildings to the energy savings achieved due to such renovation. These savings shall be determined by comparing energy performance certificates issued before and after renovation, where appropriate to the volume of the renovation, or by using standard values for calculation of energy savings in buildings or similar relevant, transparent methodology for documentation, such as building renovation passports.

Justification

It is right to ensure that the level of financial support provided by a Member State for energy renovation works is linked to the actual improvement in the energy performance of the affected building(s). However, it is preferable that the Member States have the flexibility to choose which documentary proof this link can be based on and the permitted choices should explicitly include a Building Renovation Passport, which will help leverage the savings and benefits achieved via each measure through a proper coordination of the works. Such building renovation passports are already being introduced in several Member States.

Or. en

Amendment 23

Proposal for a directive

Article 11

Amendment

Article 11 – Energy performance certificates

1. Member States shall lay down the necessary measures to establish a system of certification of the energy performance of buildings. The energy performance certificate shall include the energy performance of a building and reference values such as minimum energy performance requirements in order to make it possible for owners or tenants of the building or building unit to compare and assess its energy performance. The energy performance certificate may include additional information such as the annual energy consumption for non-residential buildings and the percentage of energy from renewable **and waste energy sources** in the total energy consumption. **The energy performance certificate shall include information about ventilation performance and the indoor thermal environment (summer and winter).**

Or. en

Amendment 24

Article 14 – Inspection of heating systems

Text proposed by the Commission

Article 14 – Inspection of heating systems

1. Member States shall lay down the necessary measures to establish a regular inspection of the accessible parts of systems used for heating buildings, such as the heat generator, control system and circulation pump(s) for non-residential buildings with total primary energy use of over 250MWh and for residential buildings with a centralised technical building system of a cumulated effective rated output of over 100 kW. That inspection shall include an assessment of the boiler efficiency and the boiler sizing compared with the heating requirements of the building. The assessment of the boiler sizing does not have to be repeated as long as no changes were made to the heating system or as regards the heating requirements of the building in the meantime.

2. As an alternative to paragraph 1 Member States may set requirements to ensure that non-residential buildings with total primary energy use of over 250 MWh per year are equipped with building automation and control systems. These systems shall be capable of:

- (a) continuously monitoring, analysing and 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

Amendment

Article 14 – Inspection of heating and ventilation systems

1. Member States shall lay down the necessary measures to establish a regular inspection of the accessible parts of systems used for heating **and ventilating** buildings, such as the heat generator, **ventilation systems**, control system and circulation ~~systems pump(s)~~, for non-residential buildings with ~~with a total primary energy use~~ **surface area** of over ~~250MWh~~ **1000 m²** and for residential buildings with a centralised technical building system of a cumulated effective rated output of over 100 kW **or of a cumulated effective rated air flow of over 1000 m³/hour for ventilation systems.**

That inspection shall include an assessment of the ~~boiler heat generator-unit~~ efficiency and the ~~boiler heat generator~~ sizing compared with the ~~heating~~ requirements of the building. The assessment of the ~~boiler heat generator~~ sizing does not have to be repeated as long as no changes were made to the ~~heating~~ system or as regards the heating and **ventilating** requirements of the building in the meantime.

2. As an alternative to paragraph 1 Member States may set requirements to ensure that non-residential buildings with ~~a total primary energy use~~ **surface area** of over ~~250 MWh per year~~ **1000 m²** are equipped with building automation and control systems. These systems shall be capable of:

- (a) continuously monitoring, analysing and adjusting energy usage, **taking into account the requirements of the building, including the one related to indoor air quality level;**
- (b) benchmarking the building's energy efficiency, detecting losses in efficiency of

technical building management about opportunities for energy efficiency improvement;

(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. As an alternative to paragraph 1 Member States may set requirements to ensure that residential buildings with centralised technical building systems of a cumulated effective rated output of over 100 kW are equipped:

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

technical building systems, and informing the person responsible for the facilities or technical building management about opportunities for energy efficiency improvement;

(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. As an alternative to paragraph 1 Member States may set requirements to ensure that residential buildings with centralised technical building systems of a cumulated effective rated output of over 100 kW **or of a cumulated effective rated air flow of over 1000 m³/hour for ventilation systems** are equipped:

(a) with 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) with effective control functionalities to ensure optimum generation, distribution and use of energy **and adequate indoor air quality level.**

Amendment 34

Proposal for a directive

Article 14

Text proposed by the Commission

1. Member States shall lay down the necessary measures to establish a regular inspection of the accessible parts of systems used for heating buildings, such as the heat generator, control system and circulation pump(s) for non-residential

Amendment

1. Member States shall lay down the necessary measures to establish a regular inspections every two years of the accessible parts of systems used for heating buildings, such as the heat generator, control and ventilation systems and

buildings with total primary energy use of over 250MWh and for residential buildings with a centralised technical building system of a cumulated effective rated output of over **100** kW. That inspection shall include an assessment of the **boiler** efficiency and the **boiler** sizing compared with the heating requirements of the building. The assessment of the **boiler** sizing does not have to be repeated as long as no changes were made to the heating system or as regards the heating requirements of the building in the meantime.;

~~circulation pump(s) for non-residential buildings with total primary energy use of over 250MWh and for residential buildings with a centralised technical building system of a cumulated effective rated output of over 100 kW with an effective rated output for space heating purposes of more than 20kW.~~ That inspection shall include an assessment of the boiler heat generator efficiency and the boiler sizing compared with the heating requirements of the building and with the need to ensure that all parts of the building are heated in a way that provides all users and occupants with good comfort conditions at all times. The assessment of the boiler sizing does not have to be repeated as long as no changes were made to the heating system or as regards the heating requirements of the building in the meantime. Member States shall introduce measures that will ensure that recommendations on servicing and maintenance arising from inspections are included in building renovation passports and that they are implemented within three months of the inspection’;

Justification

It is very important to retain the existing inspection regime as set out in the EPBD for smaller heating installations, so that a high number of buildings undergo regular inspections that permit the high performance of installed heating systems to be verified and maintained. The proposal of the European Commission and of the Bendtsen report would take a high number of buildings out of the net and this is not conducive to achieving the overall long-term vision for the building stock in the EU.

It is also necessary to introduce a requirement that recommendations arising from inspections are carried out in a short space of time to minimise energy waste.

Amendment 26

Proposal for a directive

Article 14 – paragraph 2 – introductory part

Text proposed by the Commission

2. *As an alternative to paragraph 1* Member States may set requirements to ensure that non-residential buildings with total primary energy use of over 250 MWh per year are equipped with building automation and control systems. These systems shall be capable of:

Amendment

2. Member States shall lay down the necessary requirements to ensure that by 31st December 2023, all non-residential buildings with total primary energy use of over 250 MWh per year are equipped with building automation and control systems. These systems shall be capable of:

Justification

In addition to the inspections noted further above, the introduction and use of building automation and control systems (BACS) in all buildings with a high annual energy consumption is necessary so as to minimise energy waste and to keep technical building systems in optimum operating condition. Progress in this field is robust and rapid, a situation that is set to continue in the years ahead. As a result it is fair and equitable to introduce a requirement that all buildings above a certain threshold of energy consumption are fitted with BACS by a fixed date, ensuring at the same time that further savings can be made in a cost-effective manner.

Amendment 27

Proposal for a directive

Article 14 – paragraph 2 – point a

Text proposed by the Commission

(a) continuously monitoring, analysing and adjusting energy usage;

Amendment

(a) continuously monitoring, **logging,** analyzing, adjusting and reporting energy generation, distribution and usage;

Justification

It is not enough that a BACS simply monitors and logs information about the performance of technical building systems. They must be capable of reporting the data collected in a

manner that is useable by the building owner or manager.

Amendment 28

Proposal for a directive

Article 14 – paragraph 3 – introductory part

Text proposed by the Commission

3. *As an alternative to paragraph 1* Member States may set requirements to ensure that residential buildings with centralised technical building systems of a cumulated effective rated output of over **100** kW are equipped:

Amendment

3. Member States shall set requirements to ensure that by 31st December 2023, all residential buildings with centralised technical building systems of a cumulated effective rated output of over 100 kW are equipped:

Justification

In addition to the inspections noted further above, the introduction and use of building automation and control systems (BACS) in all buildings with a high annual energy consumption is necessary so as to minimise energy waste and to keep technical building systems in optimum operating condition. Progress in this field is robust and rapid, a situation that is set to continue in the years ahead. As a result it is fair and equitable to introduce a requirement that all buildings above a certain threshold of energy consumption are fitted with BACS by a fixed date, ensuring at the same time that further savings can be made in a cost-effective manner.

Amendment 29

Proposal for a directive

Article 15 – paragraph 1

Text proposed by the Commission

1. Member States shall lay down the necessary measures to establish a regular inspection of the accessible parts of air-

Amendment

1. Member States shall lay down the necessary measures to establish ~~a regular~~ inspections every two years of the

conditioning systems for non-residential buildings with total primary energy use of over 250MWh and for residential buildings with a centralised technical building system of a cumulated effective rated output of over **100 kW**. The inspection shall include an assessment of the air-conditioning efficiency and the sizing compared to the cooling requirements of the building. The assessment of the sizing does not have to be repeated as long as no changes were made to this air-conditioning system or as regards the cooling requirements of the building in the meantime.

~~accessible parts of air-conditioning systems **of an effective rated output of over 12kW** for non-residential buildings with total primary energy use of over 250MWh and for residential buildings with a centralised technical building system of a cumulated effective rated output of over 100 kW. The inspection shall include an assessment of the air-conditioning efficiency and the sizing compared to the cooling requirements of the building. The assessment of the sizing does not have to be repeated as long as no changes were made to this air-conditioning system or as regards the cooling requirements of the building in the meantime.~~

Member States shall introduce measures that will ensure that recommendations on servicing and maintenance arising from inspections are included in building renovation passports and that they are implemented within three months of the inspection’;

Justification

It is very important to retain the existing inspection regime as set out in the EPBD for smaller cooling and air-conditioning installations, so that a high number of buildings undergo regular inspections that permit the high performance of installed cooling and air-conditioning systems to be verified and maintained. The proposal of the European Commission and of the Draft Bendtsen report would take a high number of buildings out of the net and this is not conducive to achieving the overall long-term vision for the building stock in the EU.

It is also necessary to introduce a requirement that recommendations arising from inspections are carried out in a short space of time to minimise energy waste.

Amendment 30

Proposal for a directive

Article 15 – paragraph 2 – introductory part

Text proposed by the Commission

2. *As an alternative to paragraph 1* Member States may set requirements to ensure that non-residential buildings with total primary energy use of over 250 MWh per year are equipped with building automation and control systems. These systems shall be capable of:

Amendment

2. Member States shall lay down the necessary requirements to ensure that by 31st December 2023, all non-residential buildings with total primary energy use of over 250 MWh per year are equipped with building automation and control systems. These systems shall be capable of:

Justification

In addition to the inspections noted further above, the introduction and use of building automation and control systems (BACS) in all buildings with a high annual energy consumption is necessary so as to minimise energy waste and to keep technical building systems in optimum operating condition. Progress in this field is robust and rapid, a situation that is set to continue in the years ahead. As a result it is fair and equitable to introduce a requirement that all buildings above a certain threshold of energy consumption are fitted with BACS by a fixed date, ensuring at the same time that further savings can be made in a cost-effective manner.

Amendment 31

Proposal for a directive

Article 15 – paragraph 2 – point a

Text proposed by the Commission

(a) continuously monitoring, analysing and adjusting energy usage;

Amendment

(a) continuously monitoring, ***logging,*** analyzing, adjusting **and reporting** energy **generation, distribution and** usage;

Justification

It is not enough that a BACS simply monitors and logs information about the performance of technical building systems. They must be capable of reporting the data collected in a manner that is useable by the building owner.

Amendment 32

Proposal for a directive

Article 15 – paragraph 3

Text proposed by the Commission

3. *As an alternative to paragraph 1* Member States may set requirements to ensure that residential buildings with centralised technical building systems of a cumulated effective rated output of over **100 kW**

Amendment

3. Member States **shall** set requirements to ensure that **by 31st December 2023, all** residential buildings with centralised technical building systems of a cumulated effective rated output of over **100 kW** are equipped:

Justification

In addition to the inspections noted further above, the introduction and use of building automation and control systems (BACS) in all buildings with a high annual energy consumption is necessary so as to minimise energy waste and to keep technical building systems in optimum operating condition. Progress in this field is robust and rapid, a situation that is set to continue in the years ahead. As a result it is fair and equitable to introduce a requirement that all buildings above a certain threshold of energy consumption are fitted with BACS by a fixed date, ensuring at the same time that further savings can be made in a cost-effective manner.

Amendment 33

Proposal for a directive

Article 20 – paragraph 2 –subparagraph 1

Text proposed by the Commission

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 ways to improve the energy performance of the building and, **where appropriate**, on financial instruments available to improve the energy performance of the building.

Amendment

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 ways to improve the energy performance of the building and on financial instruments available to improve the energy performance of the building.

**Amendment 52a(new)
Proposal for a directive**

Article 1 – paragraph 1 – point 10

Directive 2010/31/EU

Article 20 – paragraph 2a (new)

2a. Member States can fulfil the requirements of the first paragraph (1) above, through the introduction of individual Building Renovation Passports in their jurisdictions. These Passports shall contain comprehensive information on the current condition, energy performance and indoor comfort factors of the buildings to which they relate and shall contain tailored advice on the cost-effective series of actions that can be undertaken so as to bring the building to its full, targetted energy performance potential within a defined timeframe and before 2050 in every case.

These Building Renovation Passports will be tied to the property to which they relate and may contain information on other aspects of the building that need attention in order to render the building healthy, accessible and free from known hazards.

Justification

The introduction, by several Member States (DE, FR and BE) of building renovation passports shows that the concept is already seen as being a viable and important approach to the empowerment of owners and occupiers of buildings. In addition, the existence of independently prepared, detailed information of the energy and other performance criteria of a building builds confidence in the financing and investor communities as to the viability of investing in this sector. Therefore, the widespread introduction of building renovation passports holds the promise of accelerating the rate and depth of holistic energy renovation works across the EU and, if tied to the vision set out in the national strategies, can ensure that all investments are bringing the building stock on the right path towards the realisation of our collective vision for the building stock in the EU.

Amendment 34

Proposal for a directive Annex I

Text proposed by the Commission

Amendment

Annex I

1. The energy performance of a building shall reflect its typical energy use for heating, cooling, domestic hot water, ventilation and lighting.

The energy performance of a building shall be expressed by a numeric indicator of primary **or final** energy use in kWh/(m².y) harmonised for the purpose of both energy performance certification and compliance with minimum energy performance requirements. The energy performance and the methodology applied for its determination shall be transparent and open to innovation.

Member States shall describe their national calculation methodology following the national annex framework of related European standards developed under mandate

M/480 given by the European Commission to the European Committee for Standardisation (CEN).

2. The energy needs for space heating, space cooling, domestic hot water and adequate ventilation shall be calculated in order to ensure minimum health, **indoor air quality** and comfort levels defined by Member States.

The calculation of primary **or final** energy shall be based on primary energy factors per energy carrier, which may be based on national or regional annual weighted averages or on more specific information made available for individual district system.

Primary **or final** energy factors shall discount the share of renewable energy in energy carriers so that calculations equally treat: (a) the energy from renewable source

that is generated on-site (behind the individual meter, i.e. not accounted as supplied), and (b) the energy from renewable energy sources supplied through the energy carrier.

3. The methodology shall be laid down taking into consideration at least the following aspects:

(a) the following actual thermal characteristics of the building including its internal partitions:

(i) thermal capacity;

(ii) insulation;

(iii) passive heating;

(iv) cooling elements; and

(v) thermal bridges;

(b) heating installation and hot water supply, including their insulation characteristics;

(c) air-conditioning installations; **(new) ventilation systems;**

(d) natural ~~and mechanical~~ ventilation which may include air-tightness;

(e) built-in lighting installation (mainly in the non-residential sector);

(f) the design, positioning and orientation of the building, including outdoor climate;

(g) passive solar systems and solar protection;

(h) indoor climatic conditions **and indoor air quality**, including the designed indoor climate;

(i) internal loads

Amendment 35

Proposal for a directive

Annex I

Amendment

ANNEX I

Common general framework for the calculation of energy performance of buildings (referred to in Article 3)

-
3. The methodology shall be laid down taking an energy balance approach and taking into consideration at least the following aspects:
- (a) the following actual thermal characteristics of the building including its internal partitions:
 - (i) thermal capacity;
 - (ii) insulation;
 - (iii) passive heating;
 - (iv) Active and passive cooling elements; and
 - (v) thermal bridges;
 - (b) heating installation and hot water supply, including their insulation characteristics;
 - (c) air-conditioning installations;
 - (d) natural and mechanical ventilation which may include air-tightness as well as cooling by natural ventilation (ventilative cooling);
 - (e) built-in lighting installation (mainly in the non in both the residential and non residential sector);
 - (e) a (new) daylight conditions of the building
 - (f) the design, geometry, positioning and orientation of the building, including outdoor climate;
 - (g) passive solar systems and solar protection solutions
 - (h) indoor climatic conditions, including the designed indoor climate-regarding temperature, indoor air quality and light;
 - (i) internal loads.

4. The positive influence of the following aspects shall be taken into account:

- (a) local solar exposure conditions, i.e. energy gains from solar irradiance, active solar systems and other heating and electricity systems based on energy from renewable sources;
- (b) electricity produced by cogeneration;
- (c) district or block heating and cooling systems;
- (d) natural lighting.
- (d) a (new) ventilative cooling

Amendment 36

Proposal for a directive

Annex I – point 2 – subparagraph 2

Text proposed by the Commission

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

Amendment

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

Justification

The Commission proposal is the better option for converting measured final energy use to primary energy use and so it is necessary to reverse the Bendtsen amendment. This is

because, for example, allowing the primary energy factor to be calculated on a seasonal or a monthly basis for the varying proportion of wind in the electricity system has been shown by the Danish Research Institute (SBI) to lead to a wrong result for space heating when compared to using a simple annual average for the proportion of wind. This applies in general and regardless of the primary energy factor. The report can be accessed here (DK only): <http://sbi.dk/Assets/Energifaktorer-ved-energiberegning/SBi-2017-04n.pdf>