

Boosting the investment case in the building sector

AmCham EU's position on the review of the Energy Performance of Buildings Directive (EPBD)

Executive summary

AmCham EU has always called for an ambitious energy efficiency policy in buildings as we believe there is strong potential in this sector to deliver on the EU's ambition. The Commission's proposal is a step in the right direction but more ambition is needed, particularly in terms of renovation strategy and targets. Furthermore, today's smart and connected buildings should be seen as a key part to enable a well-functioning, integrated EU electricity market – as buildings can both store and generate energy, apart from being a major consumer.

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AmCham EU speaks for American companies committed to Europe on trade, investment and competitiveness issues. It aims to ensure a growth-orientated business and investment climate in Europe. AmCham EU facilitates the resolution of transatlantic issues that impact business and plays a role in creating better understanding of EU and US positions on business matters. Aggregate US investment in Europe totalled more than €2 trillion in 2015, directly supports more than 4.3 million jobs in Europe, and generates billions of euros annually in income, trade and research and development.

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13 April 2017

Introduction

Aiming to create a consumer-centred clean energy transition, the Clean energy for All Europeans package put forward by the European Commission in 2016 was the most important deliverable of the Energy Union. Included was a review of the Energy Performance of Buildings Directive (EPBD). AmCham EU supports the particular focus on the building sector as one with a large untapped potential for efficiency and further energy savings.

More ambition is needed

AmCham EU agrees with the European Commission's intention to encourage building renovation. The proposals to reinforce provisions in national long-term building renovation strategies, with a view to decarbonising the building stock by mid-century constitutes a step in the right direction.

However, the EPBD has not been a driver of the renovation market so far. The annual renovation rate still remains at around 1% of the total building stock, far away from the 3% needed to reach the 2050 target. AmCham EU has previously called for an EU-level target for the building sector based on a long-term objective of 80% energy consumption reduction for the whole building-stock by 2050. Considering that over 90% of all buildings that will stand in 2050 are already built, this is the real area of challenge for the EU, and the EPBD could be strengthened when it comes to energy performance requirements and promotion of renovations.

Whereas the EPBD review proposes to move the national Renovation Strategies from the Energy Efficiency Directive (EED) to the EPBD with a set 2050 target and demands interim targets for 2030 and 2040, there is no strengthening of the public sector target (3% annual renovation target of government owned buildings), which is left in the EED. We propose that this target is also brought to the EPBD and strengthened to cover the whole public sector, including regional and local government buildings. Such a target would have a very positive impact on local jobs, public budgets and health, driving demand.

The proposal for comprehensive national energy and climate plans, to be reported to the EU – and the inclusion of buildings policy into these plans is salutary. The Governance proposal should strengthen implementation and enforcement of EU policy – which has been very slow in the buildings sector. The new Governance model as well as planning and reporting should put more emphasis on the implementation of existing EU policy. This is very important for companies investing in building efficiency technologies.

Building automation technology driving 'smartness' of buildings

The EPBD review should take the opportunity to improve the efficiency of technical building systems, which are all the systems that consume energy within the building. System efficiency improvements should be prioritised since energy consumption in buildings is the largest consumer in Europe. Moreover, the EU's Heating and Cooling Strategy was devised to focus on savings potentials in this sector.

AmCham EU agrees with the Commission's stated intention to encourage the use of smart ICT technologies, including building automation. Such technologies allow automated efficiency adjustments and controls to the technical building systems that consume energy in a building. This is important to empower the consumer to control and reduce his energy consumption in buildings. Such systems can be used to control and distribute the energy produced or stored in a building and manage the connection to and from the grid. They can also detect efficiency losses of equipment and allow for quick servicing/repairation, even remotely.

According to studies commissioned by the European Commission, such systems 'project sector energy saving opportunities with highest technical potential' and have a very short pay-back period of the investment. Therefore, AmCham EU believes these systems should be made mandatory for larger commercial and public buildings within a stated timeframe, whereas they are currently optional in the Commission's review proposal.

Inspections of heating and cooling systems can be useful, particularly for simpler systems of heating and cooling. They allow for a system-level energy performance control of installation and sizing that equipment rules like the Eco-Design Directive cannot impact. However, to capture and reduce efficiency losses, inspections should lead to system improvements if low efficiency is detected. Studies show that heating and cooling systems that are serviced and maintained are up to 30% more efficient over the long term.

Finally, AmCham EU supports the amendment of article 8, to include charging points for all new buildings/major renovations as of 2025. This will further boost the take-up of electric vehicles. In the future these charging points will not only help extend the uptake of electric cars but also allow new technologies like vehicle-to-grid to be further developed.

The importance of financing

AmCham EU believes the financing of the required energy renovations is as important as getting the regulation right. The EU has been directing its Structural Funds and the more recent European Fund for Strategic Investments (EFSI) initiative to guarantee larger investment projects toward energy efficiency and the building sector. This is already delivering positive results in its incipient stage. Member States should link their national financing schemes to their Energy and Climate Strategies, and align with public sector accounting rules and financing priorities.

AmCham EU supports the European Commission's efforts to mobilise private funding, and is encouraged by companies' interest in developing the business case for long-term investments into energy efficiency projects for the building sector, as seen in the recommendations of the Energy Efficiency Financial Institution Group (EEFIG) report.

ANNEX - PROPOSED AMENDMENTS

Amendment 1

Proposal for a directive

Article 1 – paragraph 1

Directive 2010/31/EU

Article 2 – point 3

Text proposed by the Commission

Amendment

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, on-site infrastructure for electro-mobility, or a combination of such systems, including those using energy from renewable sources, of a building or building unit;

3. 'technical building system' means technical equipment for space heating, space cooling, ventilation, domestic hot water, built-in lighting, building automation and control, ***elevators and escalators***, on-site electricity generation, on-site infrastructure for electro-mobility, or a combination of such systems, including those using energy from renewable sources, of a building or building unit;

Justification

All energy-using technical systems should be included in this definition (and should be linked to the overall building automation systems). The Commission identified lifts as an equipment group with energy savings potential as it is listed to be regulated through the Eco-Design process in the next product groups (2016-2019 work programme). Additionally, lifts can consume, store and generate energy, and be linked to on-site renewable energy sources.

Amendment 2

Proposal for a directive

Article 1 – paragraph 1a (new)

Directive 2010/31/EU

Article 2 – new point 17a and 17b

Text proposed by the Commission

Amendment

17.a. 'full load' means the maximum design demand of technical building systems for space heating, space cooling, ventilation and domestic hot water

17.b. 'part load' means a fraction of full load.

Justification

The efficiency of heating and cooling systems is often measured in full load conditions, although the systems mostly run only at part load. Therefore, it would be more helpful for building occupants to measure the realistic use and energy consumption, to be able to make savings calculations and to plan usage changes.

Amendment 3

Proposal for a directive

Article 1 – paragraph 1b (new)

Directive 2010/31/EU

Article 2 – new point 19b

Text proposed by the Commission

Amendment

19.b. 'building automation and control system' means a system comprising all products, software and engineering services for automatic controls (including interlocks), monitoring, optimisation, for operation, human intervention, and management to achieve energy-efficient, economical, and safe operation of technical building services.

Justification

Smart ICT technologies, including building automation, allow automated efficiency adjustments and controls to the technical building systems that consume energy in a building. Their installation should be promoted and a clear definition is needed.

Amendment 4

Proposal for a directive

Article 1 – paragraph 2a (new)

Directive 2010/31/EU

Article 2b (new)

Text proposed by the Commission

Amendment

After Article 2(a), an Article 2(b) 'Exemplary role of public bodies' buildings' is inserted

1. Without prejudice to Article 7 of Directive 2010/31/EU, each Member State shall ensure that, as from 1 January 2014, 3 % of the total floor area of all heated and/or cooled public buildings (those owned and occupied by its public bodies, public authorities, official agencies and central government) is renovated each year to meet at least the minimum energy performance requirements that it has set in application of Article 4 of Directive 2010/31/EU.

The 3 % rate shall be calculated on the total floor area of public buildings with a total useful floor area over 250 m² of the Member State concerned that, on 1 January of each year, do not meet the national minimum energy performance requirements set in application of Article 4 of Directive 2010/31/EU.

When implementing measures for the comprehensive renovation of public buildings in accordance with the first subparagraph, Member States should consider the building as a whole, undertaking works to the building envelope and technical building systems and planning operation and maintenance approaches that deliver the full range of benefits for the buildings users. These works could also be carried out in well-designed staged approach.

Member States shall require that public buildings with the poorest energy performance be a priority for energy efficiency measures, where cost-effective and technically feasible.

Justification

As this directive targets the improved energy performance of buildings and the long-term renovation of the building stock in the EU, it makes sense to group all specific requirements related to the energy renovation of buildings in this directive. As Article 5 of the Energy Efficiency Directive relates solely to the renovation of public buildings, it should be moved here after its sister article on long-term renovation strategies.

Amendment 5

Proposal for a directive

Article 1 – paragraph 5 – point c

Directive 2010/31/EU

Article 8, paragraph 5

Text proposed by the Commission

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

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, ***at full and part load conditions***, documented and passed on to the building owner, so that ***the resulting information*** remains available for the verification of compliance with the minimum requirements set pursuant to paragraph 1 and the issue of

ensure that this information is included in the national energy performance certificate database referred to in Article 18(3).

energy performance certificates. Member States shall ensure that this information is included *as a separate entry* in the national energy performance certificate database referred to in Article 18(3).

Justification

See amendment 2.

Amendment 6

Proposal for a directive

Article 1 – paragraph 7 – point a

Directive 2010/31/EU

Article 14 – paragraph 1

Text proposed by the Commission

Amendment

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.

1. Member States shall lay down the necessary measures to establish inspections *every two years* of the accessible parts of systems used for heating buildings, such as the heat generator, control and ventilation systems, and circulation pump(s) for buildings with a technical building system of an effective rated output of over 20 kW at least. That inspection shall include an assessment of the *heat generator* efficiency and the *equipment* sizing compared with the heating requirements of the building, *of the effectiveness of control of individual room temperature, and of the balancing of energy distribution in the heating system including at full and part load conditions*. The assessment of the *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 requirements of the building in the meantime.

The inspection should be followed by servicing and maintenance of the accessible parts of systems used for heating buildings, if assessed by the inspection as being needed.

Justification

The inspection schemes, although included in the current EPBD, have been optional for Member States. As heating and cooling of buildings have been identified by the Commission (see Heating & Cooling Strategy) as the top energy consuming sector, we believe it makes sense to make the inspections both mandatory and improved as to making servicing and maintenance to follow identified efficiency losses. Equally, we have included some basic parameters where efficiencies are often lost,

to highlight their importance. We wish to keep the inspections at their level indicated in the current EPBD, at larger than a residential one-family home level.

Amendment 7

Proposal for a directive

Article 1 – paragraph 7 – point b

Directive 2010/31/EU

Article 14 – paragraph 2

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:

- (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 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.

Amendment

2. Member States *shall lay down the necessary* 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 *by 1 January 2023*. 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 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.

Justification

According to studies commissioned by the European Commission, building automation and control systems 'project sector energy saving opportunities with highest technical potential' and have a very low pay-back period of the investment. Therefore, we believe such systems should be made mandatory for larger commercial and public buildings within a certain timeframe, where they are currently optional in the Commission's review proposal. Industry and real estate owners would be given a five-year period to adapt and get ready for the installation.

Amendment 8

Proposal for a directive

Article 1 – paragraph 7 – point b

Directive 2010/31/EU

Article 14 – paragraph 3

Text proposed by the Commission

Amendment

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.

3. Member States *shall lay down the necessary* requirements to ensure that residential buildings with centralised technical building systems of a cumulated effective rated output of over 100 kW are equipped *by 1 January 2023*:

(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, *including individual room temperature control and dynamic hydraulic balancing functionalities*.

Justification

Central controlling and monitoring makes sense also for larger residential buildings, even through the requirement could be lower than a full building automation and control system. The description is of the function, which leaves the technical choice to building owners.

Amendment 9

Proposal for a directive

Article 1 – paragraph 8 – point a

Directive 2010/31/EU

Article 15 – paragraph 1

Text proposed by the Commission

Amendment

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

1. Member States shall lay down the necessary measures to establish a regular inspection of the accessible parts of air-conditioning systems for buildings with a centralised technical building system of an effective rated output of over *12 kW at least*. The inspection shall include an assessment of the air-conditioning efficiency and the sizing compared to the cooling requirements of the building, *of the effectiveness of control of individual room temperature, and of the balancing of energy distribution in the air-conditioning system including at full and part load conditions*. 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.

The inspection should be followed by servicing and maintenance of the accessible parts of air-conditioning systems, if assessed by the inspection as being needed.

Justification

Same as amendment 6. We keep the inspection level as it is in the current EPBD. The 12 kW limit comes from the Eco-Design efficiency levels, leaving out small residential equipment.