

EPBD RECAST PROPOSAL

EU.BAC FEEDBACK

eu.bac welcomes the Commission's proposal for the recast of the Energy Performance of Buildings Directive with a view to achieving a zero-emission building stock by 2050. We however believe the use of existing, smart and cost-effective technologies could be incentivised further in order to foster the twin green and digital transitions. This document outlines suggestions to achieve this. We are committed to continuing to support the institutions by providing our expertise in the next steps to improve and successfully adopt the review.

ARTICLE 2 – DEFINITIONS

- **Par. 6 - “Technical building system”:** include solar shading in the definition.

The inclusion of solar shading in the definition of technical building systems would ensure its proper use and maintenance as well as stimulate its use more broadly. Applied on windows solar shading keeps out 90% of the solar radiation's heat. Solar shading is therefore a perfect use of the energy efficiency first principle as the best way to cool a building preventing heat from entering at all. This makes buildings climate-resilient. This inclusion will enable a stronger energy consumption decrease when buildings undergo major renovations or when the heating system is updated. Find out more in our dedicated [paper](#).

- **Par. 6 – “electrical installations”:** include electrical installations in the definition.

Electrical installations play a critical role in the energy performance of buildings, enabling the efficient consumption of electricity and production of renewable energy as well as facilitating system integration. While it aims to foster energy savings and achieve fully energy performant buildings, the current EPBD proposal does not effectively consider electrical installations.

Electrical installations will be essential to achieve EU Renovation Wave ambition, such as reducing buildings emissions by 60% in the next decade. Efficient electrical installations systems are a prerequisite to integrate the energy performant devices already available today, such as solar PV, battery storage, heat pumps, EV charging points and Building Automation and Control Systems (BACS).

ARTICLE 8 – EXISTING BUILDINGS

- **Par. 1 – Major renovations must be reported as a step in the staged deep renovation passport scheme in accordance with Article 10.**

To avoid carbon lock-in and ensure a decarbonised building stock by 2050, all major renovations must be considered as a step on a way to a zero-carbon building and are reported accordingly in the renovation passport scheme.

ARTICLE 9 – MINIMUM ENERGY PERFORMANCE STANDARDS

While the Minimum Energy Performance Standards are a step in the right direction, they risk carbon lock-in. A clear road map should be set out to achieve carbon neutrality in all building types by 2050 with steps beyond energy performance class “E” for all building types. As the building stock will need to achieve carbon neutrality by 2050, a complete roadmap would help investors, financial institutions, building owners, manufacturers and construction companies to prepare.

The proposed Art. 5. EED review requires 3% of the total floor area of buildings owned by public bodies to be renovated into nearly zero-energy buildings. The ambition for public buildings in this article should match EED and go beyond the proposed “F” and “E” classes.

ARTICLE 11 – TECHNICAL BUILDING SYSTEMS

- **Move BACS requirements for non-residential and residential buildings (currently Art. 20, par.7 and par. 8) under this Article.**

The existing requirements for non-residential buildings to be equipped with BACS capabilities are currently placed in Article 20 on “inspections”. This “framing” leads to misunderstandings. The requirement is self-standing and not directly related to the inspections, it should therefore be moved to the section on “Technical Building Systems”, as building automation and control systems are one of the technical building systems, per definition under Art.2, par.6.

- **Par. 2 - remove “where technically and economically feasible”, cover cooled zones and cold generators and introduce a deadline by 31 December 2026.**

As confirmed by the suggestions provided by the European Commission in its guidelines to the current EPBD in force, in new buildings the installation of self-regulating devices is always considered feasible, both from a technical and economical perspective. Self-regulating devices are fast payback investments (1-3 years) with a low upfront cost (1.5 EUR/m²) which can considerably improve the health and comfort of the occupants and tackle energy poverty. The same benefits can be delivered through self-regulating devices for cold generators.

In line with the improved ambition of this revision and because of the benefits that these devices can deliver at such a low cost, it is worth requiring them to be installed in all existing buildings when heat and cold generators are replaced and at the latest by 2027.

- **Installation of dynamic balancing for Technical Building Systems should be mandatory in new buildings and existing buildings by 2027.**

Despite it being a capital-light investment with a short pay-back time, system balancing is often neglected in renovations. The total potential savings from optimizing hydronic distribution in domestic EU heating systems would amount to 22.6 Mtoe. Hydronic imbalances and the lack of individual room temperature controls in buildings are the main causes for energy waste, unnecessary heating/cooling costs, occupant complaints, and the performance gap between expected and actual energy consumption after renovation. Ensuring optimal energy performance at all heat load conditions is essential to provide comfort for occupants with the least energy use and operating costs. Find out more in our dedicated [paper](#).

- **Par. 3 – extend the scope of buildings covered by Indoor Air Quality requirement beyond zero-emission buildings from 2027 and specify the minimum indicators to be monitored.**

The World Health Organisation estimates that we spend approximately 90% of our time indoors, in residential and non-residential buildings. The level of CO₂, humidity and other pollutants have a considerable impact on the health, well-being and productivity of the occupants. We must ensure that future energy renovations do not sacrifice indoor air and environmental quality. Parameter monitoring would open the door for possible parameter value requirements at the national or EU level in the future. Furthermore, making the parameter values visible to occupants would incentivise intervention and optimisation of IEQ. To align with the proposed Building Automation and Control capability thresholds under Article 20, we propose to include in scope:

- medium and large non-residential buildings, irrespective of their use (>70kW);
- large residential buildings (>70kW);
- all public buildings;
- all buildings that serve a specific function, such as schools and hospitals.

To ensure market harmonisation across the EU, the minimum monitored parameters should include: carbon dioxide, temperature, Relative Humidity, Particulate Matter (PM₁ and PM_{2.5}), Daylight Illuminance Level and Volatile Organic Compounds (VOC).

- **The Article should set a roadmap with delegated acts to develop an EU Indoor Environmental Quality (IEQ) framework and calculation methodologies.**

In combination with the above measure on monitoring, the work must begin in parallel to develop an EU indoor Environmental Quality framework that could serve as a basis for future harmonisation of national approaches and parameter setting.

- **Par. 4 – require that when TBS is installed, replaced or upgraded, its efficiency is optimized in order to improve the energy performance of the building.**

Reducing building’s energy consumption sufficiently will be “Mission: Impossible” without effectively promoting the use of active energy efficiency solutions such as BACs and optimised technical buildings systems. Hence, it requires efficient and optimised technical building systems (art. 8). However, the current EPBD provisions are inadequate as they only lay down that when a technical building system is installed, replaced or upgraded, its performance is assessed. The EPBD should go a step further by requiring that when TBS is installed, replaced or upgraded, its efficiency is optimized in order to improve the energy performance of the building. This improvement should be supported by real life performance data after the alteration is complete.

ARTICLE 13 – SMART READINESS OF BUILDINGS

- **Par. 2 - supplement with the context for the mandatory nature and the starting date (by 31 December 2024) of the requirement for non-res buildings > 290kW linked to the deadline for the implementation of the BACS requirements under Article 20.**

The Smart Readiness Indicator (SRI) application should be linked to the deadline and scope for the implementation of the Building Automation and Control System requirements (31 December 2024) under Art. 20. SRI is a key tool to measure performance and 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 those new enhanced functionalities. Since the current framework is proving to be insufficient to ensure an adoption able to deliver the expected benefits, it is important to close the existing gaps and loopholes and be crystal clear about the mandatory nature of this tool at least in large buildings with high energy demand where this tool can be particularly beneficial, as written in the Commission’s proposal (recital 43).

- **Extend the mandatory requirement to non-res buildings > 70 kW starting from 31 Dec 2029.**
 Since this review is already setting requirements for 2030, it is important to set ambitious milestones by extending this requirement to medium-size non-residential buildings. This extension could go hand in hand with the extension of BACS requirements in non-residential buildings (new Art.20, par.7), we, therefore, suggest using the same scope and deadline.
- **Par. 2 and 4 - add “space cooling” and “combined cooling and ventilation” to the scope of the effective rated output to match current requirements.**

The Smart Readiness Indicator (SRI) application should be linked to the scope for the implementation of the Building Automation and Control System requirements under Art. 20.

ARTICLE 14 – DATA EXCHANGE

- **Par. 1 – clarify who has access to what data, while ensuring additional costs are not borne by energy service providers and protecting their intellectual property.**

Energy service providers usually have contractual obligations to one party (i.e. owner, tenant or manager), with which there exists a contractual relationship. The use of “customer” instead of owner, tenant or manager would clarify the party who is entitled to freely access their data allows this person to request sharing of their data. Data sharing with third parties can incur additional costs to energy performance service providers in the form of multiple data access level management, security considerations and others. These costs can be stipulated through existing contractual agreements between the energy service providers and the customers and should be left up to the market.

To ensure the protection of the intellectual property of the service providers, only unprocessed metered data should be addressed by this article. Additionally, a provision for the protection of the intellectual property of service providers should be included. As the data to be shared is not strictly defined, the requirements risk infringing on intellectual property rights in buildings where data aggregation and analysis services are provided.

- **Par. 2 – require Member States to follow the harmonised Union rules set out in the implementing acts specified in paragraph 5.**

There should be a common EU building data management framework in line with the applicable EU legal framework. This would facilitate the delivery of products and services across borders in the Single Market. Given the variety of stakeholders in the building sector with their mainly temporary involvement in a building’s lifecycle and their diverse needs, we recommend that the roles and rules for data sharing should be clearly defined according to the EU strategy for data. The Commission should orchestrate the efforts to create a data framework that is acceptable to all players at the EU level and foster quality, trust and cooperation between market roles.

- **Par. 3 - ensure costs outside of contractual agreements are not borne by energy service providers and the prices are set by the market rather than the state.**

As explained under paragraph 1, the sharing of data with third parties can incur additional costs to energy performance service providers in the form of multiple data access level management and other administrative expenses. These costs can be stipulated through existing contractual agreements between the energy performance service providers and clients and should be left up to the market. Member States should not interfere with the free market and disrupt competition risking to damage the energy performance service business model.

- **Par. 5 – set a deadline for implementing acts and ensure stakeholder involvement.**

To ensure the preparedness of national authorities, building owners, service providers and Technical Building System manufacturers and installers, the work on implementing acts should begin as soon as possible involving the broadest possible array of stakeholders to ensure wide acceptance and ease of implementation. There should also be an indicative timeline for the adoption of these implementing acts.

ARTICLE 15 – FINANCIAL INCENTIVES AND MARKET BARRIERS

- **Par. 9 – Require Member States to consider both targeted AND achieved energy savings when allocating financial assistance**

Design performance often does not match the actual performance. It must be ensured that investments are conditioned on achieved energy savings once the renovation is complete.

ARTICLE 16 – ENERGY PERFORMANCE CERTIFICATES

- **Par. 10 - Set the validity to 5 years even for energy performance classes A, B and C.**
High-performance buildings can also deteriorate over time should prove they maintain a high level of performance. A simplified procedure for EPC update can be used by data import of building performance parameters and a Digital Building Twin.
- **Par. 11 - Simplified procedure for EPC update should be used in cases where data of building performance parameters can be exported or Building Digital Twins can be used.**

Using digital tools such as integrated building monitoring systems should allow for an easier inspection.

ARTICLE 19 – DATABASES FOR ENERGY PERFORMANCE OF BUILDINGS

- **The Article should include a timeline for the introduction of the Digital Building Logbook (DBL) by 2025.**
To harmonise the collection of digital building data, the Commission must develop a common union template for Digital Building Logbooks. This should contain a standardised approach for data collection, data management and data exchange and its legal framework. Additionally it should provide a platform to link existing databases.

ARTICLE 20 - INSPECTIONS

- **Par. 4 – in the scope of inspections include all air and water distribution systems and the inspections should consider the capabilities of the system to optimize its performance under typical or average operating conditions as well as changing conditions due to use variation.**

Fluid distribution imbalances and the lack of individual room temperature and air quality controls in buildings are the main causes for energy waste, unnecessary heating/cooling costs, occupant complaints, and the performance gap between expected and actual energy consumption after renovation. Ensuring optimal energy performance at all heat load conditions is essential to provide comfort for occupants with the least energy use and operating costs. Find out more in our dedicated [paper](#).

- **Par. 7 and 8 to be moved to Art. 11 as described above (in the dedicated section).**
The existing requirements for non-residential buildings to be equipped with BACS capabilities are currently placed in Article 20 on “inspections”. This framing is leading this provision to misunderstandings: the requirement is self-standing and not directly related to the inspections, it should therefore be moved to the section on “Technical Building Systems”, as building automation and control systems are one of the technical building systems, per definition in the existing EPBD.
- **Par. 7 - Keep consistency with existing EPBD: add space cooling in addition to space heating**
In the existing EPBD, the scope (290kW) in the current EPBD is calculated referring to space heating and ventilation (Art. 14, par.4) but it also covers space cooling (Art.15, par.4). The proposed revision does not match the current BACS provisions, which the Member States are already implementing.
- **Define “technically and economically feasible” for the purpose of this article or remove it.**

To avoid loopholes, the member states should clearly identify, frame and justify the parameters defining economic feasibility as suggested in the Commission’s guidelines on EPBD implementation. There are different examples of existing transpositions already in place: the Dutch legislation says that the installation of these devices is always considered feasible and there are therefore no exceptions. The French legislation established a 6-years payback threshold: if the payback time is less than 6 years, the installation is considered to be feasible.

Par. 8 – residential buildings should be split into groups below and above 70 kW reflecting the differing incentives and complexities of technical building systems in these. The wording on capabilities should therefore also be modified to reflect the needs of residential buildings.

Due to the often different incentives in small, residential buildings (the tenant pays for consumption), and the reduced complexity of the system, we believe there should be a differentiation of small residential (<70kW) and larger, multi-family residential buildings(>70kW). Requirements for smaller buildings can still provide useful information on performance, and if the system needs to be serviced, which will result in overall savings. Additionally appropriately balanced systems can generate substantial savings with a fast payback time. You can find out more in our paper on [system balancing](#). Finally, the requirement to have demand-side flexibility would ensure Member States consider futureproofing, particularly in buildings that are being renovated. Meanwhile, large residential buildings (>70kW) should mirror the capabilities of non-residential buildings covered under paragraph 7.

- Par. 10 - Member States should put in place inspection schemes including industry developed digital tools and checklists, to verify compliance with capabilities in Par. 7 and 8 as proposed by the [ITRE EPBD implementation report](#), recommendation 46.

View the industry developed [checklist to ensure BACS capability verification](#).

ARTICLE 21 - REPORTS ON THE INSPECTION OF HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

- Par 1. - Include building automation and control system” under inspections.
Building automation and control systems are one of the technical building systems, per definition in the existing EPBD and must be treated equally.

NEW RECITAL

- With Member States still struggling to implement provisions included in the latest EPBD revision, the use of Recovery and Resilience Facility funds must be linked to the full implementation of EPBD articles (e.g. Art. 20 par. 7 for digital and green goals). Member States shall use the Recovery and Resilience Facility to support the increased ambition in energy renovations delivering on the digital and green goals.

ANNEX I - COMMON GENERAL FRAMEWORK FOR THE CALCULATION OF ENERGY PERFORMANCE OF BUILDINGS

- Par 1. - Include a reference to EN ISO 52120.
EN ISO 52120-1 is an EPB standard within the M480 mandate and provides important inputs in the calculation of energy performance in buildings.
- Par 4. - Include building automation and technical building management capabilities to monitor, control and optimize energy performance and demand-side flexibility capabilities as aspects to consider.
Building automation and control system and demand-side flexibility impacts are essential for the energy performance of buildings.

ANNEX II - TEMPLATE FOR THE NATIONAL BUILDING RENOVATION PLANS

- (c) Overview of implemented and planned policies and measures – include:
 - Building Automation and Control capability requirements as set out in Article 20. Par. 7 and 8.
 - inspection schemes including industry developed digital tools and checklists, to verify compliance with Building Automation and Control capabilities in Article 20. Par. 7 and 8.

We have seen issues implementing these requirements following the last revision of the EPBD in 2018. As proposed by the [ITRE EPBD implementation report](#), recommendation 46, the industry has developed a useful [checklist to help Member States ensure BACS capability verification](#).

ANNEX V - TEMPLATE FOR ENERGY PERFORMANCE CERTIFICATES

- **Par. 1 - include actual metered final energy use and final energy consumption in addition to the listed calculated mandatory elements**

Calculated design consumption often does not match the actual consumption. The difference would be useful to target improvements and should be reported.

- **Par. 2 – Extend with the below indicators.**

- A yes/no indication whether the building is equipped with fixed controls that monitor and optimise the operation of the technical building systems.
- A yes/no indication whether the building complies with Building Automation and Control System requirements set out under EPBD Art. 20.
- A yes/no indication whether the building is equipped with self-regulating devices as set out under EPBD Art. 11. Par. 2.
- The Level of with Building Automation and Control System in the building in accordance with EN ISO 52120.
- A yes/no indication whether the building has Demand Side Flexibility capabilities.

As Member States are implementing BACS verification checks in buildings falling under Art 20., it would be valuable to aggregate these under the EPC scheme. Furthermore, this would promote the uptake of these efficiency-increasing technologies.

ANNEX VI INDEPENDENT CONTROL SYSTEMS FOR ENERGY PERFORMANCE CERTIFICATES

- **The Annex has to be complemented to also address BRP, SRI and inspections.**

Annex VI relates to Art. 24 and addresses only the EPC, however, it needs to also address Building Renovation Passports (BRP), Smart Readiness Indicator (SRI) and inspections. Inspection reports are covered under the existing EPBD and need to be maintained in the Annex.