

ACE draft policy position on the Commission's legislative proposal for the revision of the Energy Performance of Buildings Directive

31st March 2022 - Version 2.0

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BACKGROUND

The Commission's aim for the current EPBD revision is to 'accelerate building renovation rates, reduce GHG emissions and energy consumption, and promote the uptake of renewable energy in buildings. It would introduce a new EU definition of a 'zero emissions building', applicable to all new buildings from 2027 and to all renovated buildings from 2030. Zero-emissions buildings would need to factor in their life-cycle global warming potential. The recast EPBD would accelerate energy-efficient renovations in the worst performing 15 % of EU buildings and would set minimum energy performance standards. In due course, every building would need to achieve at least a Class E on a revised A-G scale of energy performance certificates (EPCs). EPCs would be included in linked national databases. Other provisions introduce building renovation passports and a smart readiness indicator, end subsidies for fossil fuel boilers, and make building automation and control systems more widespread'. [\[link\]](#)

The ACE has engaged with the Commission's consultations on the current Revision of the EPBD based on its key messages in relation to building performance and sustainability [\[link\]](#), developed over several years in tandem with the evolution of the EPBD. In 2021 ACE responded to the Commission's request for input including:

- Live expert consultation sessions [March-May 2021]
- EPBD Impact Assessment [March 2021 [link](#)]
- Commission's Consultation on the Scope of the Amendments of the EPBD [June 2021, [link](#)]

ACE's strategic objectives include the following:

1. CREATE SUSTAINABLE VALUE THROUGH ARCHITECTURE
2. INCORPORATE A WHOLE LIFE APPROACH IN BUILT ENVIRONMENT LEGISLATION
3. 'MEASURE TO MANAGE': EMBED FEEDBACK AND VALIDATION
4. ACCELERATE AND SCALE UP RETROFITS
5. FACILITATE SUSTAINABLE FINANCE

ACE ANALYSIS

ACE ESA WG experts have now reviewed the Commission's published Proposal for a Directive of the EU Parliament and of the Council on the Energy Performance of Buildings [December 2021, [link](#)] bearing in mind ACE's objectives as above, communicated in detail previously to the Commission through the above channels.

The group has made extensive recommendations that would increase the likelihood of achieving the Commission's legally binding targets while enabling the design of high-quality, resilient, and healthy environments. By adopting ACE's recommendations, the Commission would gain the multiple benefits of improving the security of investment

through greater clarity and accountability, use its investment to empower the transition to a circular economy and accelerate the uptake of deep retrofits.

These recommendations have taken shape in regular consultation with ESA group members, fellow experts through the WGBC Build for Life / Leaders' Forum and with input from researchers from leading academic institutions. The following documents have provided references to the responses detailed below:

- WGBC Whole Life Carbon Roadmap May 2022
- BAK policy position on the EPBD March 2022
- Danish Chamber response to the EPBD proposal March 2022
- ACE response to the EPBD Impact Assessment March 2021
- ACE response to the Commission's Consultation on the Scope of the Amendments of the EPBD June 2021
- European Environmental Bureau Position Paper on EPBD March 2022

ACE POLICY POSITION

Below is an outline of ACE's key objectives followed by a commentary on relevant sections of the EPBD with **recommendations highlighted in orange**:

1. CREATE SUSTAINABLE VALUE THROUGH ARCHITECTURE by enabling the design of high-quality healthy environments that are resilient to changes in climate and use and give a longer lifespan of the existing and new building stock.

ACE welcomes the inclusion of quality of living, resilience, and New European Bauhaus, in the Proposal and asks for greater integration of these considerations in the Recitals, Articles and Annexes.

Architectural quality

ACE promotes a greater emphasis on architectural quality and the Davos 8 quality system recognised by the Council of the EU to facilitate quality and long-term resilience. A separate Recital should capture the areas of mutual support between the EPBD and the Davos 8 Quality system with the role of architectural quality highlighted as key to scaling up renovation benefits and rates.

The proposal recognises the impact of the EPBD on quality of life and New European Bauhaus, which is mentioned in the document noting that the EPBD will help deliver it as well as climate neutral and smart cities. (Explanatory Memorandum and Recital 3)

Architectural quality 'Quality of living' is referenced in the Explanatory Memorandum under 'affordability'(1.2), 'added value (2.2 alongside New European Bauhaus), under Feedback from the Impact Assessment - Fundamental Rights (3.1) Architecture is mentioned in the context of historical merit as an exemption from MEP standards.

Resilience is mentioned in the context of 'deep renovations' (Recital 33), climate resilience (Article 16 para 7) and 'added value' (Explanatory Memorandum 2.2)

Cost optimality

Calculation of cost-optimality should include relevant Level(s) indicators for environmental quality, long-term adaptability, resilience, and life cycle cost. It should also include the Davos 8 Quality System to get the most sustainable value of existing assets from renovation.

This is a major driver for where a level playing field is set so the definition of 'economic lifecycle' requires greater clarity and accountability. In the context of cost optimality' versus 'value creation' the EPBD should recognise that to the most value at the lowest relative cost during deep renovation is to undertake energy efficiency and climate resilience retrofit measures as part of an architectural/functional retrofit of the building, adding as much

usability and net area/volume as possible. This contributes most to market value, as well as the lifespan of a building and, if undertaken as part of a loan arrangement, can keep loan-to-value ratio constant between before and after the retrofit. (Article 6 & Annex 7)

Role of design professionals (architects, engineers and landscape architects)

Most aspects of deep renovation, in particular retrofit plans and renovation passports require independent design professional expertise, such as provided by architects and engineers. Designers are capable of balancing multiple and often conflicting performance drivers for a given building, which should be recognised and supported by the EPBD, with clear unambiguous definitions and rigour in the Proposals.

2. EMBED A WHOLE LIFE APPROACH IN BUILT ENVIRONMENT LEGISLATION: the comprehensive evaluation of building performance over the life span of a building to include embodied emissions, indoor environmental quality, climate change resilience and life cycle cost as per the EU Level(s) Scheme – in such a way that it is scalable from building to neighbourhood and region.

Definitions

Article 2 should include a definition for Embodied Emissions, Circularity and Sufficiency in line with the European Environmental Bureau's (EEB) recommendations.

ACE welcomes a greater emphasis on Whole Life Cycle Performance and would like to see a strengthening of the Proposals to meet 2030 and 2050 targets.

Definition of Zero Emission Buildings (ZEB) is a welcome introduction. The name should be changed to Zero Operational Emission Building (ZOEB) as that is how it is defined. A ZEB should be zero emissions over its whole life cycle.

Zero Emission building = Surplus Operational Emission + Low Lifecycle Emissions (Recital 7; Article 2.2; Article 7; and Annex III)

A building can be considered Zero Emission Building (ZEB) if they are ZOEB, LLEB and energy positive. This means that when both operational and embodied emissions are counted, the total emissions must be at least zero over a building's life span. A ZEB should be defined as a Low Lifecycle Emissions Building (LLEB) where such emissions are offset by a Positive Energy Building's emissions quota surplus – supplied on-site or through a renewable energy community. Savings generated by positive energy buildings should not be double counted.

This should eliminate the confusion between nearly zero, and net zero, all of which appear to overlook lifecycle emissions while encouraging unaccountable offsetting.

Life-Cycle Global Warming potential

More specific language should be used about reporting global warming potential and considering its life-cycle performance, going beyond calculated performance, to report 'as-built' whole life carbon (WLC accounts for the majority of GWP) by 2024 for all new public and non-residential buildings and major renovations. Use the Level(s) reporting framework for communicating WLC by 2027 for all buildings, via EPCs and Building Renovation Passports (Recital 9 & Article 7) (Articles 16-19)

The Bill of Materials

should become mandatory both as a calculated and as-built record of what materials have been used in a building over its life span and should be incorporated into Article 16-19 and Annex III alongside the reporting and storing of such data in EPCs, Building Renovation Passports in national databases and accessible via Digital Building Log Books and uploaded to the Building Stock Observatory. (Annex V.). The basis for GWP calculations is the Bill of Materials as set out in the Level(s) framework.

WLC Targets and benchmarks

Short term EU benchmarks should be developed using data provided from the Construction Products Regulation (CPR), the DG Environment WLC Roadmap and Bill of Materials data uploaded into the Building Stock Observatory. These should be introduced alongside primary energy targets in Annex III

Decarbonisation of Technical Systems

Article 11 should take into account the life-span, resilience and whole life carbon impact of such systems – i.e. their life cycle performance.

National Retrofit Plans

Annex II should be asking for the development of low WLC retrofit measures for typical building types, alongside the planning for infrastructure for scaling up the recycling, reuse, certification, and online trade of building materials and products. A review of planning policies should be undertaken to ensure the prioritisation of retrofit vs newbuild.

3. MEASURE TO MANAGE': EMBED FEEDBACK AND VALIDATION of the as-built building and its in-use performance to achieve expected performance in use through greater accountability, including making related data accessible in the public domain to create benchmarks and accelerate research and development for continuous improvement

Energy performance certificates (EPCs):

ACE welcomes the proposed harmonisation of energy performance certificates and proposed measures to improve their quality, reliability, and usefulness, as well as their accessibility in national databases. ACE would like the Commission to go further in their ambition with regard to accountability for quality and performance. To this end the current EPCs should include two 'checks' for the validation of as-built and for in-use performance. EPCs must become a robust and reliable indicator of quality and performance, targeting actual achieved performance in use (measured).

EPC - Validation of performance – as built and in-use

The methodology described in Article 4 & Annex 1 should be for both calculating and reconciling the energy performance of buildings with measured performance. The process of reconciling measured performance in use with calculated energy performance should be defined in Article 2 and Annex 1 and form the core of the EPBD and not be left to individual member states. This is to ensure proper harmonisation of EPCs, improve the quality of delivery, eliminate the performance gap by introducing accountability for performance, eliminate fragmentation and accelerate learning and innovation in the sector. In particular the EPBD must set out a clear methodology for validating the as-built building configuration, fabric, systems and controls to ensure that the building has the assets set out in the employers' requirements and that these are correctly enabled. This could be called an 'initial inspection' carried out at handover. There is currently no proper methodology set out in the EPBD for this – instead the EPBD allows member states to determine the energy performance of a building either calculated or metered energy use (Annex 1 para 1). This reconciliation must also ensure that the as-built Bill of Materials represents reality.

EPC recommendations / Renovation Passports

These should be de-coupled from the assessment of energy performance and be joined instead with the creation of a renovation passport as this task requires significantly greater expertise and should be performed by an architect or an engineer (Article 22-23). This is in order to improve the quality of the data gathered and to enable an independent and comprehensive assessment of possible measures – their cost effectiveness and long-term value creation. The renovation passport should allow for the possibility of including energy supply concepts at neighbourhood level that may exist or be in the planning stage when setting out renovation paths.

Inspections

The ACE strongly disagrees with paragraph 5 & 9 of Article 20 that buildings with energy performance contracts or those with automation and control systems should be exempt from inspections. Instead, such buildings should be allowed to be 'inspected' remotely (or by the performance contractor) once an initial inspection ascertained the correct operation of the building fabric, systems, and controls.

Inspections must include a building's control systems, a primary source of the performance gap for both domestic and non-domestic buildings. All new buildings and refurbishments should be subject to an inspection of building fabric (including air-tightness test and thermal imaging), the building's systems and its controls upon practical completion. This inspection must ascertain that systems are correctly sized, sensors and meters are correctly installed, connected, calibrated and profiled. Remote inspections and management should only be permitted once remote readings have been ascertained as correct. This should also be an essential condition of issuing a Smart Readiness Indicator for a building. (Article 13)

Setting minimum energy performance requirements

The requirement to take into account general indoor climate conditions must be more specific and include that... 'Those requirements shall... also take account of the vapour permeability of the building fabric, its thermal mass and floor to ceiling heights to ensure that humidity is balanced across the building fabric and that overheating can be mitigated by stratification and thermal mass where climatically feasible.' (Article 5)

Minimum Energy Performance Standards (MEPS)

ACE welcomes the introduction of MEPS however the current targets set out under Article 9 Para 1 are insufficient to achieve 55% reduction in GHG emissions and must be revised to match that ambition.

In addition, ACE highlights that it is essential that MEPS are based on validated EPCs to avoid causing damaged assets and serious distortions in the retrofit market. Validated EPCs would also help simplify retrofits, create transparency, and accelerate much needed innovation in a complex and fragmented market.

MEPS and deep renovations as well as new buildings should ban fossil fuel systems by 2025.

More specific measures should be prescribed to ensure that households are not locked into energy poverty in stranded assets.

One-stop-shops must facilitate architectural, engineering, landscape, and legal advice. They should support community self-organisation and advise on improving the climate change resilience of buildings as well as improving the green public realm (Article 9)

Smart readiness

The smart readiness rating should be based on the assessment of the capabilities of a building ascertained in-use. (Article 13)

4. ACCELERATE AND SCALE UP RETROFITS - Apply the same performance targets to deep retrofit as newbuild both in terms of operational and embodied emissions as well as indoor environmental quality, climate change resilience;

Deep renovation

Deep renovation should be defined as buildings that reach Class A or reduce 60% of their primary energy demand, ideally in one and maximum three steps. They must include environmental quality, usability and resilience targets as per the Level(s) reporting framework to ensure maximum return on investment short and long-term.

Renovation passports and renovation roadmaps
(see point 1 regarding the role of the architect)

The “renovation passport” should define the improvement measures on energy efficiency and decarbonise buildings, including potential circular measures; “deep renovations” and “staged deep renovations” should report on [whole life-cycle] GHG emissions (EEB position).

(Article 7, 8-10 & 15)

National Building Renovation Plans (NBRP)

ACE welcomes the proposed changes to National retrofit plans. In addition, ACE recommends the requirement to outline more specific measures applicable to typical national building types to reduce whole life-cycle GHG emissions of retrofits.

Setting targets for the implementation of circular measures and minimum requirements for the use of secondary materials in both new buildings and renovations by 2025, 2030 and 2040, including

Further clarity on the requirements for national retrofit targets and the monitoring (!!) of how these are achieved.

National Renovation Plan template should have indicators that ensure that article 22 of the EED recast is fulfilled, establishing concrete objectives for an amount of vulnerable households' homes renovations per year.

The deadline for submitting NBRPs should be revised to fit with the implementation of the Renovation Wave

Establishing requirements for phasing out fossil fuels from H&C systems and introducing renewables energy-based buildings systems – with relevant funding mechanisms and insurance frameworks incentivising these.

(Article 3, Annex II)

5. FACILITATE SUSTAINABLE FINANCE

Financial measures for energy performance

These should be linked to the ACHIEVED energy savings and the energy audit should be a mandatory criterion for this – a part of validated EPCs. The ‘energy audit’ should be defined accordingly in Article 2.

Financing for one-step renovations should be included and incentivised as the most cost-effective form of deep renovation.

Mortgage portfolio (and other sustainable finance) standards, including Taxonomy

These are currently projected to be based on EPCs, which are only fit for purpose if they are validated and include energy audits before and after a retrofit. Recognise the crucial role played by insurers. (Article 15 para 9)

APPENDIX 1 – EPBD ARTICLES AND ANNEXES

For clarity, a summary of the Articles of the EPBD discussed above is included below:

- Article 1: Subject matter
- Article 2: Zero Emission Buildings; Deep Renovation / Staged Deep Renovation; Mortgage Portfolio Standards.
- Article 3: National Renovation Plans
- Article 4: Verification of calculated energy use with metered data
- Article 5: Minimum Energy Performance Requirements
- Article 6: Cost-Optimal Methodology / cost effectiveness (11)
- Article 7: New Building provision time scales including ZEBs and Level(s) reporting

- Article 8-10 and 15: Retrofit – Major Renovation minimum energy performance (consequential improvement) requirements; Worst Performing Buildings; Building Renovation Passports; One-Stop-Shops; Training.
- Article 11: decarbonisation of Technical Building Systems; Monitoring IEQ in new buildings and major renovations
- Article 12: Sustainable Mobility
- Article 13: Smart Readiness Indicator
- Article 14: Access to Building Systems data; interoperability.
- Article 16-19 Energy Performance Certificates – harmonised scale (Annex V.) issue, display, database; primary energy use kWh/m².y; operational GHG emissions; renewable energy; national databases for EPCs, renovation passports, SRIs, Building Stock Observatory

Annex I COMMON GENERAL FRAMEWORK FOR THE CALCULATION OF ENERGY PERFORMANCE OF BUILDINGS

Annex II - TEMPLATE FOR THE NATIONAL BUILDING RENOVATION PLANS

Annex III - REQUIREMENTS FOR NEW AND RENOVATED ZERO-EMISSION BUILDINGS AND CALCULATION OF LIFE-CYCLE GLOBAL WARMING POTENTIAL (GWP)

Annex IV - COMMON GENERAL FRAMEWORK FOR RATING THE SMART READINESS OF BUILDINGS

Annex V - TEMPLATE FOR ENERGY PERFORMANCE CERTIFICATES

Annex VI - INDEPENDENT CONTROL SYSTEMS FOR ENERGY PERFORMANCE CERTIFICATES

Annex VII - COMPARATIVE METHODOLOGY FRAMEWORK TO IDENTIFY COST-OPTIMAL LEVELS OF ENERGY PERFORMANCE REQUIREMENTS FOR BUILDINGS AND BUILDING ELEMENTS