EuropeOn position paper on the revision of the Energy Performance of Buildings Directive

Electrical contractors and installers, a sector of over 1.8 million professionals across Europe, are directly in touch with consumers and end-users and offer advice on how to improve the energy performance of buildings with clean energy installations, such as installing or renovating electrical systems, integrating rooftop PV or EV charging points, or by setting up automation and control systems. EuropeOn welcomes the Commission's proposal for a revised EPBD and offers 5 targeted suggestions to ensure that the new directive can be implemented on the ground and can actively contribute to reaching climate-neutrality:

1. Address skills and workers shortages to turn this threat to mass renovations into an opportunity for our economy (Article 23 + Annex II)
2. Ensure EPCs reflect the intrinsic energy performance of buildings (Article 16 + Annexes I and VI)
3. Duly consider electrical installations (Articles 2, 8, 20 + Annexes II and V)
4. Ensure buildings are fully charging-ready (Article 12)
5. Fully harness the efficiency potential of BACS (Article 20)

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1. Address skills and workers shortages to turn this threat to mass renovations into an opportunity for our economy (Article 23 + Annex II)

The decarbonisation of the EU's building stock brings tremendous opportunities for the creation of green jobs, with around 270,000 openings for electrical contractors and installers[1]. However, our sector and the whole European construction sector already report difficulties in recruiting new professionals and in up-skilling the existing workforce. As an example, German electrical contractors currently have job openings corresponding to 1/5th of their sector. Although workforce considerations have been highlighted in the EPBD as early as 2010 (Recital 56), they have not yet been sufficiently tackled. If not addressed as a key priority by the EU and Member States, this issue is set to worsen with the new objectives stemming from the Climate Law and the REPowerEU plan and will ultimately undermine the attainment of said objectives.

The current EPBD proposal has taken steps in the right direction with the new Article 23 and the addition of skills and workforce considerations in the National Building Renovation Plans.

However, the proposed provisions must be strengthened. Indeed, NBRPs are an ideal tool to help Member States anticipate potential bottlenecks to the attainment of EPBD objectives, such as skills and workforce shortages. **NBRPs must require Member States to precisely quantify the gap between the necessary and available workforce by 2030, 2040 and 2050, so that they are confronted with the magnitude of the challenge and can consequently take the necessary measures to close this gap.** The current proposition falls short on this pressing issue as illustrated by the euphemism "expected wider benefits: job creation" (Annex II (b)) which does not convey any requirement for pro-activity.

[1] "Powering green jobs growth with electrical contractors", EuropeOn (2021) - LINK

Such an analysis of the gap between available and needed professionals should be carried out in conjunction with similar analyses under the Renewable Energy Directive and the Energy Efficiency Directive in order to maximise its impact[2].

2. Ensure EPCs reflect the intrinsic energy performance of buildings (Article 16 + Annexes I and VI)

Energy Performance Certificates (EPCs) aim to guide builders and consumers towards energy-performant and future-proof buildings, but their methodology is not always consistent with the goals of EU energy policy. Indeed, EPCs must currently measure energy performance in primary energy as indicated in the "Common general framework for the calculation of energy performance of buildings" (Article 3) and primary energy has now also been emphasised in the new proposal's Article 16. This is wrong for two reasons.

First, this is misleading consumers about the real energy efficiency of their buildings. By basing EPCs on primary energy, their rating is distorted by Primary Energy Factors where applicable, which are not linked to the building itself in any way but derived from what occurs upstream in the energy system. Consumers are not always aware of the intricacies of energy systems and pay their bills in final energy, making EPCs more confusing than they should be and contradicting their aim as a consumer information tool[3]. By focusing to a larger extent on GHG emissions rather than pure energy consumption, EPCs would better answer consumers' desire to make an environmental and climate-friendly choice.

Second, fossil fuels consumed within buildings have a favourable Primary Energy Factor compared to electricity, regardless of CO2 intensities. This means that a building that does not use fossil fuels anymore (switching to full electric) could be artificially penalised in its EPC even though its final energy performance is similar. Additionally, electricity is decarbonising fast and will keep decarbonising over the 5 to 10 years lifetime of an EPC. This situation is not consistent with the aim to steer buildings towards (nearly) zero-emission buildings.

To redress this inconsistency, the EPBD should allow for EPCs to be expressed in final energy.

3. Duly consider electrical installations (Articles 2, 8, 20 + Annexes II and V)

To ensure buildings successfully contribute to the EU commitments under the Climate Law and REPowerEU initiative, the modernisation of electrical installations[4] in buildings must be considered to a larger extent in the EPBD.

The EU's new climate and energy targets, such as the 2021 RED proposal to reach 49% of renewables in buildings or the new mandates for rooftop solar[5] mean citizens and companies will be pushed to install electric technologies such as solar panels or electric vehicle (EV) chargers in buildings. However, in many cases, such installations require the renovation of electrical systems to ensure that they can cope with these increases in electrification and avoid both energy losses and fire hazards.

[2] For the RED, see proposed amendments 656 (Renew), 662 (EPP), 665 & 715 (Greens), 666 (S&D); for the EED, see proposed amendments 118 (S&D), 1002 (EPP)

[3] "Experts urge rethink of energy metrics to fully decarbonise buildings", Euractiv (12 May 2022), LINK

[4] 'electrical installation' means the system composed of all the fixed components (such as switchboards, electrical cables, earthing systems, sockets, switches and light fittings) aiming to distribute electrical power within a building to all points of use or transmit electricity generated on-site;

[5] Solar Rooftop Initiative (2022), LINK

Currently, European buildings are ill-equipped to deal with this scale up of electrification and increased loads. In Germany, 70% of buildings have outdated switch boxes and wiring that need replacing. In France, 2/3 of houses built over 15 years ago suffer from electrical hazards. Electrical fires currently account for 25-30% of all domestic fires in Europe. Further, 2% of the electricity generated in the EU (64 TWh energy) is lost in behind-the-meter networks and roughly half of these losses could be avoided by addressing electrical installations[6].

The EPBD proposal already recognizes the need to properly dimension electrical installations in Article 12 for EV charging. Further, the Solar Strategy and the European Solar Rooftops Initiative also highlight the need for buildings to be "solar ready", enabling solar to be installed on buildings without major works. Duly considering electrical installations throughout the EPBD will cater to those needs while also ensuring a similar logic is implemented for all other electric technologies, and especially heat pumps.

Electrical installations should be addressed directly in the EPBD by adding them to the definition of Technical Building Systems, ensuring they are duly taken into consideration. Further, **inspections of electrical installations, at regular intervals and when new devices (PV panels, heat pumps, etc) are added, will also trigger renovations when necessary while ensuring the efficiency and fire safety of buildings.** Finally, including information into EPCs about the state of electrical installations, especially after an inspection, will further ensure building owners and tenants can carry out the necessary works when necessary.

4. Ensure buildings are fully charging-ready (Article 12)

EuropeOn welcomes the new Article 12, making buildings increasingly charging-ready by lowering the thresholds for mandatory pre-cabling of parking spaces and installation of charging points and by requiring to dimension pre-cabling to enable the simultaneous use of all chargers. Charging-readiness is a key element of future-proof buildings that will enable the shift to zero-emission mobility.

Yet, the EPBD should go a step further to ensure consistency with objectives of the EU. With the planned end of ICE engines by 2035, push for energy independence, and new climate targets, **pre-cabling requirements should apply to all parking spaces** no matter how many are available in each building, enabling the full decarbonisation of personal transport. Further, the appropriate dimensioning of cabling should encompass the electrical installations needed to support the charging infrastructure.

Pre-cabling for all parking spaces in new and heavily renovated buildings is a cost-efficient solution. It will not incur significant upfront costs while retrofitting cabling can be expensive, acting as a strong deterrent to potential EV users (recital 38). Moreover, cabling will be necessary sooner or later in the building's lifetime as almost all EU cars will have to become zero-emissions before 2050.

5. Fully harness the efficiency potential of BACS (Article 20)

Building automation and control systems (BACS) are an all-round solution to energy efficiency, integration of renewables, cost reductions, consumer engagement and information and building-related data generation. BACS will also contribute to the aims of the Solar Strategy and maximise the self-consumption of onsite renewables.

The current EPBD proposal already took a meaningful step in the right direction by lowering the threshold for mandatory BACS installations in non-residential buildings from 290kW of heating/cooling power to 70kW, starting in 2030.

[6] "White paper economic conductor size optimisation in buildings", ECI (2020), LINK

However, the proposed EPBD only extends limited requirements for BACS capabilities to residential buildings, which is a clear missed opportunity. **The same BACS requirements as for non-residential buildings should become mandatory for residential buildings with an effective rated output of over 70kW.** Such a threshold would only address larger buildings, not single-family buildings. Buildings under 70kW should still be addressed with a minimal level of BACS functionalities.

Finally, BACS and building automation reach their highest degree of efficiency and integration when all building systems can interoperate smoothly. The EPBD proposal already addressed the issue of interoperability in Article 12, mandating all EV smart chargers to be interoperable and based on non-proprietary communications protocols. **This requirement for interoperability must be extended to all technical building systems in order to maximise efficiency** and, for instance, allow for a heat pump to be efficiently managed by a BACS from a different manufacturer.