

Feedback to the INCEPTION IMPACT ASSESSMENT on the Revision of the Energy Performance of Buildings Directive 2010/31/EU

22 March 2021

The European Copper Institute, representing the copper industry, welcomes the opportunity to provide input on the review of the Energy Performance of Buildings Directive. The copper industry is committed to support the decarbonisation of the building sector to achieve the objectives of the Climate Target Plan 2030 and the Renovation Wave communication.

Buildings account for 34% of annual copper use in the EU and copper is a key element for decarbonisation of the building stock due to its excellent electrical and thermal conductivity, making it the material of choice for low carbon, efficient and smart building technologies. Copper products have long service lives and can be recycled infinitely at the end of life, making copper a sustainable material.

The EPBD has laid the foundation for improving the energy performance of the European building stock but now the time has come to upgrade buildings from a problem area to a key solution for a just and inclusive transition to help cut greenhouse gas emissions in the EU by at least 55% by 2030 compared to 1990.

The next revision of the EPBD is an opportunity to ensure buildings, new and existing, can play this pivotal role, provided that the revision includes provisions that (1) really drive the digitalisation of the building sector; (2) put buildings at the centre of the wider smart and secure (electrified) energy system; (3) make electrical safety a prerequisite for a clean and just energy transition; and (4) is supported by standards that move beyond the lowest-hanging fruit options and promote operation-based energy performance.

We do not support broadening the scope of the Directive towards health and environmental issues as this risks diluting the strength of the EPBD in improving energy performance of buildings while making its implementation for Member States more complex.

Out of the policy options in the Roadmap the European Copper Institute supports **Option 3 – Amend the EPBD to translate the actions proposed in the Renovation Wave and the increased ambition towards building decarbonisation into legislation** and wishes to bring the following elements to the attention of the European Commission:

1. The revised Directive should ultimately drive acceleration of **digitalisation and smartness** of buildings, as the key elements of successful decarbonisation, fostering energy efficiency, sector integration, smart EV charging, demand response, load shifting, and mainstreaming renewables. This will facilitate transparency, trust, informed decision making and information sharing within the construction sector, among building owners and occupants, financial institutions, and public authorities.
 - **Digitalization of Energy Performance Certificate (EPC)** schemes would make them more dynamic and informative, with more frequent updates based on credible standards with verification. Available advanced metering and Building Automation and Control Systems allow inclusion of actual consumption data (as opposed to deemed savings approaches) into the digital energy performance certificate to ensure energy and CO₂ savings in buildings are real. Operation-based energy performance standards deliver huge energy and CO₂ savings, and provide buildings that can evolve with the needs of the energy transition.
 - **Building Renovation Passport (BRP)** is a key element to overcome operational, financial, as well as social barriers of renovation, to support building owners with personalised advice, and to ensure coordination of works during staged renovations. BRPs may complement EPCs, increase renovation rate and depth, accelerate **energy savings** as well as integrate important non-energy related recommendations, like improvement of **safety standards** (e.g. electrical, fire) of buildings.
 - We support use of a **Digital Building Logbook** as a dynamic tool that can include administrative documents, plans, technical building systems, traceability, and characteristics

of construction materials (material or product passport), and performance data such as operational energy use.

2. Put buildings at the centre of the **wider smart and secure (electrified) energy system**:

- To foster **sustainable mobility and smart integration of transport and building sectors** the existing requirements for electromobility should be strengthened for all types of buildings with parking spaces (new built, renovated, existing, non-residential and residential) and be complemented by mandating **smart charging** for all new charging points installed after the publication of the new directive, to be managed by aggregators or the Building Automation and Control System.

Recent middle segment full electric passenger cars have a range of around 400 km, more than enough for everyday use. With an EU average daily driven distance by passenger cars of 50 km, a charger of 3.7 kW will replenish the energy used during the day in less than 3 hours, preferably overnight with lower tariffs. 18% of EU cars are used by people living in apartment buildings with a private car park¹. In a number of Member States, a resident needs the approval of their neighbours (and/or a third party) to install a charger in their parking space. These people have a relatively higher income that makes them potential EV early adopters.

Therefore it would be important to **include a Right to Plug in the revised EPBD**, i.e. to replace the current wording of article 8.7 with “The installation of an electric vehicle recharging point for private use in the building's car park, provided that it is located in an individual garage space, will only require prior communication to the community. The cost of said installation and the corresponding electricity consumption will be fully assumed by the direct interested party(parties).” as it is stated in the Spanish and Dutch legislation.

During this decade the electricity demand and flow in buildings will increase due to the adoption of EVs, heat pumps and on-site renewable generation (mainly PV). So it is of key importance to install smart EV chargers to control demand from EVs in buildings and minimize congestion, the consequent upgrade investments and delays of the eMobility transition.

- **A credible mechanism for renewables-powered buildings** using a mix of on-site (where it makes sense) and offsite renewables (electrical grid, district heating networks) should gradually secure a 100% share of renewables in buildings in a reasonable time horizon. For offsite renewables, a credible mechanism needs to be developed that has additionality and is compatible with a liberalised market design.

3. **Electrical installations** – Article 14 and article 15 target inspection of heating and air-conditioning systems over 70kW but knowing that 30% of domestic fires have an electrical source (FEEDS report, March 2020²) there is a lack of attention regarding inspection of domestic electrical installations in the current Directive. The integration of highly efficient equipment can be unsafe with obsolete electrical installations. Moreover, while the Energy Transition, decarbonisation and energy performance will drive electrification, the readiness of existing electrical installations is not proven in the EU domestic building stock (132 million of dwellings are concerned). Considering also that vulnerable communities including citizens suffering from energy poverty are more sensitive to electrical safety concerns, it is crucial to improve electrical safety in domestic buildings.

To address those concerns within the EPBD scope, **electrical safety of domestic installations** must be a prerequisite for a green, just and digital transition and can be improved through periodical checks to protect citizens and properties. Thus, recommendations should be made for:

¹ [Driving and parking patterns of European car drivers](#) - a mobility survey, Joint Research Centre Institute for Institute for Energy and Transport

² [White Paper – Residential electrical safety – How to ensure progress](#), Forum for European Electrical Domestic Safety (FEEDS), March 2020

- Making sure the electrical installation is adequate to integrate new consumption paradigms (i.e. consumption increase), and renewables production, energy storage solutions prior to their installation.
 - The need for a safe and resilient electrical installation prior undertaking energy savings works.
 - Checking electrical installation safety prior to any renovation act so that the financial incentives go in the right direction.
 - Including an updated electrical safety check report in all buildings' certificates to provide transparency and clear data about the state of the electrical system.
4. The development of standards should support the EPBD revision, provided that such standards and their related calculation methodologies go beyond lowest hanging fruit options and are based on operation-based energy performance.
- The phased introduction of **mandatory minimum energy performance standards (MEPS)** for different types of buildings (public and private, non-residential and residential) relying on operation-based performance data is welcome. We advise to fully pin MEPS on bridging the energy performance gap (the over-estimation of energy savings based on design-based calculated promises) to ensure energy savings in buildings are realised. Linking performance standards to real (metered) operation-based energy performance would deliver huge energy and CO₂ savings, and avoid saddling the EU with a building stock that is far from energy efficient for decades to come. Measures that improve the efficiency of operation of building energy services equipment, such as building automation and control systems, should be fully recognised in the calculation methodologies as they help bridge this gap and produce quick wins towards the EU objectives. They can be deployed more rapidly across a broader mass of the building stock and because they don't involve such disruptive intervention, are much more acceptable to building owners and occupiers. The leading role of the public sector can secure transformation of public buildings (all government levels and all types of building) to nearly zero-energy buildings at an exemplary rate to be followed by other types of building. In the case of residential buildings support policies need to ensure affordability of housing.
 - Renovation financing should be linked to '**deep renovation**' standards and assure that these standards go beyond the lowest hanging fruit of decreasing energy demand (insulation, glazing) and ensure decarbonisation of energy demand by integration of **low carbon technical building systems** and link standards also to real (metered) **operation-based** energy performance.
 - Every day, more than 22 million m³ of hot water are consumed by European homes, accounting for 495 TWh final energy per year. It is the main source of energy consumption for new housing, and yet 80 percent of this heat ends up in sewers and is wasted. Considering 80 percent of hot water is used in showers, harvesting heat from shower drains in buildings could be a simple and cost-effective way to save at least 40 percent of wasted energy and related CO₂ emissions³. Revision of the Directive should define the best route to acknowledge the full potential of the system, e.g. by defining **recovered wastewater heat as a renewable source** of energy and take its contribution into account in energy performance calculations as well as in improvement recommendations in BRPs.
 - At least 10% of electrical energy generated in the EU gets lost before it reaches a final consumer. Of this, 30 TWh/year of electricity losses in buildings could be saved by applying the principle of economic cable sizing. **Technical building systems** should explicitly include the **electrical installation of non-residential buildings** as a technical system to be appropriately dimensioned and point to the relevant economic optimisation standards and regulations (EC 60287-3-2: Economic optimisation of power cable size, IEC 62125: Environmental considerations specific to electrical power and control cables, IEC 60364-8-1: Energy efficiency of low voltage electrical installations).

³ White paper - [Role of Wastewater Heat in Decarbonising European Building](#), European Copper Institute, November 2020