

Getting European buildings up-to-speed with electro-mobility

As the European Commission embarks on the review of its long-term EU greenhouse gas emission reductions strategy, transport and buildings draw particular attention as they emerge as the two largest non-ETS emitting sectors. European transport today is still almost exclusively fuelled by imported oil, accounts for a quarter of the Union's total emissions and is the only sector whose emissions are still on the rise. In addition to its heavy carbon footprint, conventionally-fuelled road transport is responsible for the largest share of NOx (46% of total EU emissions) and is an important contributor to PM emissions, thereby positioning itself in the midst of Europe's air pollution-induced human health crisis. Bellona has, in fact, found that **if the heavy yet unaccounted for human health-related costs from conventionally fuelled road transport were to be paid by car manufacturers themselves, we would see a doubling in ICE cars' price tags.**

Buildings, on the other hand, are responsible for roughly 40% of the Union's energy consumption and 36% of total CO2 emissions. In addition, around **three quarters of the EU's building stock today is classified as energy inefficient.** This, in turn, is exacerbated by European buildings' high average age and exceptionally low renovation rates.

Clearly, timely EU and national policy action to tackle emissions from both transport and buildings will be crucial to enabling the Union to meet its climate and air quality objectives, while generating important health and economic benefits for society.

Earlier this year, EU policy makers reached an agreement over new rules governing the energy performance in buildings as part of the revision process of the EU Energy Performance of Buildings Directive (EPBD). Following the EPBD's publication in the Official Journal of the EU in June 2018, Member States now have 20 months' time to transpose its provisions into national laws. While not immediately obvious, **buildings play a key role in stirring the shift towards more sustainable forms of transport, namely electric mobility.** This is because the majority (90%) of an electric vehicle's (EV) charging time is spent while parked in buildings: at home overnight or daily at the workplace.

In light of this, buildings are central to satisfying EV user needs and to making EVs the preferred choice over ICEs for families and commuters. Importantly, the recently revised EU buildings legislation anticipates the needs of an ever-growing EV fleet, by mandating that buildings be pre-equipped with a minimum level of EV charge points or mere conduits for their cost-effective installation at a later stage. **If properly implemented, the EPBD can therefore offer a unique opportunity to boost the energy efficiency of buildings to the benefit of both the environment and consumers' wallets, while paving the way for a zero emission, electro-mobile future.**

In this regard, this paper provides a number of recommendations targeted at national governments as they prepare for transposition.

What the EPBD means for electro-mobility

- ✓ **Charge points required in 10%** of parking spaces in new and substantially renovated non-residential buildings*
- ✓ **Pre-tubing required in 20%** of parking spaces in new and substantially renovated *non-residential* buildings; and in **all** parking spaces of new and renovated *residential* buildings*
- ✓ **Simplified approval and permitting procedures** for the installation of charge points in existing buildings
- ✓ **Mixed-use buildings** to comply with provisions for new and substantially renovated non-residential buildings
- ✓ **Public parking lots** to be equipped with pre-tubing
- ✓ Coherent policies to be enacted for **soft and green mobility**, with a view to fostering multi-modality

* The above-mentioned pre-equipment provisions apply to buildings with more than 10 parking spaces only.

- × No obligation for charge points installed in new and substantially renovated non-residential buildings to be capable of **'smart charging'**
- × **Lax pre-equipment requirements for existing buildings** (i.e. by 2025 MS free to determine minimum numbers of charge points to be installed in buildings with over 20 parking spaces)
- × **Scope of application limited** due to:
 - × Pre-equipment provisions only apply where renovation affects parking lot or building's electrical system;
 - × Exemptions for SMEs;
 - × Exemptions where cost of pre-equipment provisions exceeds 7% of the total renovation cost.

Summary of Recommendations

Article 8 of the Energy Performance of Buildings Directive (EPBD) requires **buildings' 'readiness' for electro-mobility**, by mandating minimum pre-equipment measures in the parking lots of larger, new and substantially renovated commercial and residential buildings. In light of a mere 1% of EU buildings getting renovated annually, and as a result of **extensive, but unjustified exemptions** including those granted to SMEs, the electro-mobility infrastructure requirements set out in the EPBD will likely have a **marginal impact in practice**. Bellona urges Member States to take the following policy recommendations into account:

SMART CHARGING

EVs usually spend 90% of their charging time while parked either at home overnight or during the day at the workplace. This provides an ideal setting for smart charging, which in turn can provide important flexibility services to the grid. Equipping buildings with **charge points capable of smart charging** is therefore key to optimising energy use of buildings and reducing their carbon footprint, while paving the way for a cleaner transport system and lower energy bills for consumers. Member States should therefore ensure that EV users are well informed and incentivised to take part in **smart charging schemes** via the provision of time-variable electricity pricing and incentive payments.

CHARGE-POINTS IN NON-RESIDENTIAL BUILDINGS

The installation of **charge points should be made a key priority for non-residential buildings** such as shopping malls, commercial centres, and offices, in particular, which provide parking spaces that are not limited to a single user – thereby ensuring high visibility and frequent usage of installed infrastructure. Equipping office buildings with charge points is in fact said to lead to a 20-fold increase in the likelihood of EV purchase among employees.

CHARGE-POINTS FOR TENANTS

Despite requiring the application of pre-tubing in all parking spaces of residential buildings, the EPBD fails the mandate the installation of actual charge points in this category of buildings. Studies show that renters are roughly 3 times less likely to buy an EV than home-owners, even when income levels are the same. To mitigate this discrepancy, Member States should **prioritise the installation of both charge points and pre-tubing in public parking lots and areas concentrating multi-tenant apartment buildings**, thus going beyond requirements set in Article 8.

PRE-TUBING

The **extensive installation of pre-tubing is a cost-effective and future-proof measure**, the presence of which helps to bring down costs of installing actual charge points at a later stage by roughly 75%, and whose application should be considered the standard in all new and substantially renovated buildings, not only in those with more than 10 parking spaces.

'RIGHT TO THE PLUG'

The enactment of **'right to the plug' building codes** across all Member States is key to increasing the ease with which charge points can be installed in multi-tenant buildings. Member States should therefore put in place measures to guarantee that parking space owners in residential buildings are able to easily install, at their own expense, an electric charge point without any further approval procedure, other than the prior communication to the building co-owners.

EXISTING BUILDINGS

Adequate pre-equipment of **existing buildings** should not be side-lined as these represent 99% of the EU building stock. Member States should be urged to consider applying the same electro-mobility infrastructure provisions to existing residential and non-residential buildings, as those stipulated for new and substantially renovated buildings.

INTEROPERABILITY

Any charging infrastructure installed as a result of the EPBD's transposition should be **compliant with EU charging connector specifications for normal power charging (3.7 – 22 kW)** set out in the AFI Directive, in order to address interoperability concerns and ensure EV users can recharge anywhere in the Union.

ELECTRIC CONSTRUCTION MACHINERY

Important synergies can be exploited by urging builders to consider the use of **battery electric construction site machinery and equipment** for the construction and renovation of buildings.

MODAL SHIFT AND URBAN PLANNING

Last but not least, meeting EU climate and air quality targets will necessitate behavioural change and a shift towards greater reliance on public-, shared- and soft-mobility modes. In view of this, the revised EPBD rightly urges Member States to consider the need for **coherent policies for buildings, soft and green mobility, and urban planning**. The installation of bike racks in particular should be a requirement for all residential and commercial buildings with available parking spaces, in order to encourage the use of bikes and L-category vehicles for personal transport as well as for public services, such as postal delivery for example.

[The full Position Paper is available here](#)