



ChargeUp Europe calls for more ambitious e-mobility requirements under the EPBD

October 2021

Key Recommendations	3
1. Introduction	3
2. How buildings and transport can complement each other to achieve EU decarbonisation objectives	4
<i>EV charging contributes to the energy efficiency of buildings</i>	<i>4</i>
<i>Buildings play a key role in the decarbonisation of transport.....</i>	<i>4</i>
<i>Current issues halting the rollout of EV charging infrastructure.....</i>	<i>4</i>
3. The EPBD should introduce a dedicated chapter on e-mobility with clear requirements	5
A) Strengthen minimum EV charging requirements for non-residential and residential buildings.....	6
B) Focus on capacity planning.....	8
C) Make every (publicly and non-publicly accessible) charging point digitally connected	9
D) Include a definition on smart charging	9
E) Recognise the importance of V2X.....	9
F) Ensure interoperability of EV charging and the wider integration into the energy management and grid systems	9
G) Introduce a reporting obligation.....	10
H) Introduce a 'Right to Plug'	10
I) Address issues related to metering	10
J) Training and education.....	10
K) Fire safety	10
L) EU Funding and necessary grid upgrades	11
M) Include EVs under the scope of Energy Performance Certificates (EPCs).....	11
4. Other key requirements under the EPBD	11
A) Extend the definition of renovation/deep renovation	11
B) Include EVs under the scope of the Building Renovation Passport.....	11

Key Recommendations

1. ChargeUp Europe calls for the introduction of a dedicated chapter on e-mobility in the EPBD.
2. Ambitious minimum requirements should be introduced on cabling so that all parking spaces from all types of buildings allow for the installation of charging infrastructure by 2035.
3. The revised EPBD should include targets for installed capacity based on the level of fleet electrification for all non-publicly accessible charging stations (residential and non-residential buildings).
4. These non-publicly accessible charging stations should be able to support smart charging, as mandated under the recent proposal of the Renewable Energy Directive (REDIII).

1. Introduction

Europe has seen an e-mobility boom in recent years, with Electric Vehicle (EV) sales rising rapidly across the continent: in 2020, around 1.4 million passenger EVs were registered¹ in Europe. That number is expected to grow at least 40% annually over the next decade, resulting in over 42 million passenger EVs on the road² by 2030.

Widespread and easy EV charging options will be critical to drive the uptake of electric mobility. The revision of the Energy Performance of Buildings Directive (EPBD) therefore comes at a critical time to accelerate Europe's shift towards e-mobility. Buildings, as a primary charging location, are central to satisfying the needs of EV drivers. At the same time, EVs and charging infrastructure can play a critical role in making buildings more energy efficient and contribute to the EU's Green Deal objectives. Given that over 75% of EV charging takes place at home or at work³, the EPBD will be a key instrument in enabling the development and deployment of EV charging infrastructure. Nevertheless, numerous administrative and regulatory barriers are currently halting the roll out of charging infrastructure in residential and non-residential buildings.

In this paper, ChargeUp Europe outlines key recommendations for the ongoing revision of the EPBD and calls for the introduction of a dedicated chapter on e-mobility which includes ambitious minimum requirements on cabling, as well as capacity-based targets for all non-publicly accessible charging stations (at residential and non-residential parking locations). These non-publicly accessible charging stations should also support smart charging functionalities.

¹ International Energy Association (IEA) - [Global EV Outlook 2021](#)

² ChargeUp Europe – [Charging up Europe through binding capacity target for publicly accessible charging infrastructure and Member State action plans](#)

³ European Court of Auditors - [Special Report -Infrastructure for charging electric vehicles](#)

2. How buildings and transport can complement each other to achieve EU decarbonisation objectives

EV charging contributes to the energy efficiency of buildings

Buildings are currently responsible for 36% of energy related EU greenhouse gas (GHG) emissions in the EU⁴, and approximately 75% of the EU building stock is energy inefficient, i.e., most of the energy used in EU buildings goes to waste⁵. These energy losses can be minimised by investing in smart energy solutions. EVs are one of these solutions, carrying huge potential in achieving a zero-emission EU building stock due to their contribution to lowering emissions through energy balancing, flexibility, and storage functionalities.

At the same time, EVs contribute to the overall efficiency and resilience of the EU energy system as they can help cope with peaks in energy demand and facilitate smart charging in response to signals from the grid. The capacity to manage the load in response to a grid signal to increase the intake of power and avoid congestion is critical, as is the possibility of considering car batteries as a form of storage from which power can be re-injected into the distribution grid or the local system (Vehicle-to-everything - V2X).

Furthermore, EVs and charging infrastructure support the integration of renewable energy sources into the energy mix, and this, with balancing abilities, can enable buildings to be an active part of the overall energy system both as energy producers and consumers.

Buildings play a key role in the decarbonisation of transport

Given that over 75% of EV charging - in terms of volumes of electricity dispensed – currently takes place at home or at the workplace, buildings can play a central role in the decarbonisation of road transport. They are a crucial instrument to ensuring the uptake of electromobility and will be central to satisfying the needs of EV drivers. Properly equipping buildings with EV charging infrastructure will help EVs become the preferred choice for families and communities. By expanding the requirements for EV charging to all types of buildings (newly built, renovated, existing, non-residential, residential), the building and transport sector can be closely integrated.

Current issues halting the rollout of EV charging infrastructure

Administrative and regulatory hurdles must be removed

Existing regulatory and administrative barriers in national housing laws discourage drivers from purchasing EVs. In 2019, 46% of EU citizens lived in apartment buildings⁶, and this number is expected to increase over the coming years. In multi-residential buildings, request, and installation procedures for EV chargers are too long and complex. In many countries, tenants looking to have EV charging infrastructure in their buildings must wait for the general assembly of the tenants to give formal approval before even moving to the next step. Early adopters are also often faced with having to pay for the whole building to be rewired when pre-ducting is not available in their multi-residential building.

Similarly, tenants are faced with burdensome administrative, timing, and price barriers which often prevent them from accessing EV charging in multi-residential buildings where they hold a parking

⁴ European Commission EU ETS proposal 14 July – [Impact Assessment Report](#)

⁵ European Commission – [In focus: Energy efficiency in buildings](#)

⁶ Eurostat – [House or flat: where do you live?](#)

space. Clear provisions of tenant and owners' rights and obligations regarding pre-ducting, cabling and EV charging installation are lacking in national and European provisions. Lastly, there is no clear regulatory framework for those who do not have the possibility to install a charger at their place of residence to request a charger in their neighborhood, making EV adoption burdensome for many citizens.

Local grid capacity constraints hinder the rollout of EV infrastructure at specific locations

Low and medium voltage networks, where most of EV charging infrastructure will be connected, are not uniformly designed across Europe as their size and capacity highly depend on population density and electrification levels. While multiple studies have shown that the European grid is expected to be able to cope with the expected volume of EVs overall, grid reinforcements will nevertheless be required at local level. These upgrades also are and will remain a local exercise based on specific parameters. At the moment, many buildings and parking spaces often only have access to low-voltage networks, and most European cities still only have older one-phase energy systems in place. These systems are incapable of supporting higher normal AC charging capacities or fast DC charging, a significant issue in densely populated areas⁷ where fast charging remains scarce. Flexible smart charging and vehicle-to-grid solutions will offer an opportunity to lower network capacity reinforcements.

Fire safety measures halt the installation of charging stations in underground parking places

Strict fire safety measures are currently halting the development of EV charging infrastructure, especially in underground parking spaces. These regulations are not harmonised across EU countries or regions, making it difficult for the sector to accelerate the roll out of charging infrastructure across the Union. These regulations are also sometimes based on incorrect or outdated information about EVs and charging infrastructure. This constitutes a non-economical barrier to the rollout of EV charging infrastructure and should therefore be better aligned across the EU.

3. The EPBD should introduce a dedicated chapter on e-mobility with clear requirements

As the current EPBD does not sufficiently recognise the role of buildings in decarbonising transport and underestimates the role of EVs in increasing the energy-efficiency of buildings, there is a clear need for integration.

ChargeUp Europe therefore calls for the introduction of a dedicated chapter on EVs for non-residential and residential buildings, existing, new, and renovated, in order to deliver on EU climate objectives.

With the expected volumes of EVs entering the market in the coming years, residential and non-residential buildings need a strong policy signal.

The dedicated chapter on EVs under the revised EPBD should set ambitious EV charging requirements in terms of pre-ducting and cabling requirements, smart charging, storage, access, and availability of charging points.

⁷ European Federation for Transport and Environment (T&E) – [Recharge EU – how many charging points will Europe and its Member States need in the 2020s](#)

By equipping existing, new, and renovated buildings with future-proof infrastructure, policy makers can help to meet the energy and mobility needs of tomorrow.

A) Strengthen minimum EV charging requirements for non-residential and residential buildings

The current EPBD requires all new non-residential buildings and non-residential buildings undergoing major renovation to install at least 1 charging point per 10 parking spaces and to make available ducting infrastructure for at least 1 in 5 parking spaces. All new and heavily renovated residential buildings (with more than 10 parking spaces) must install ducting infrastructure for every parking space. For existing non-residential buildings with more than 20 parking spaces, the EPBD requires the installation of a minimum number of recharging points.

These existing targets fall short as they do not properly reflect the current market dynamics and are only mandated from 2025 onwards. In 2020, EVs already represented 11% of all new vehicles sold, and this number is expected rise even faster in the coming years. In a market-driven scenario, we expect that 34% of all new vehicles sold will be electrified by 2025 and by 2030 we expect that 65% of all new vehicles sold will be EVs. This would result in an overall EU EV fleet of 42 million vehicles⁸.

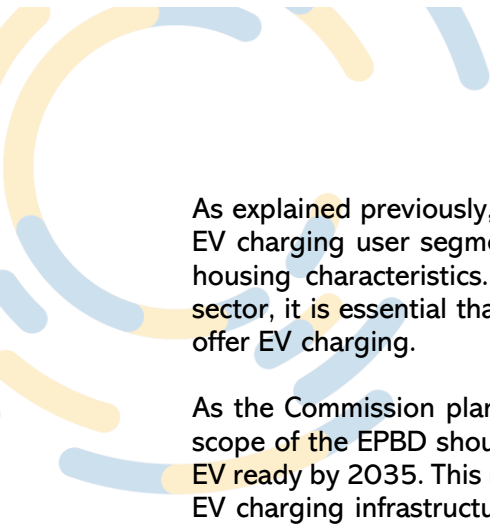
These market development trends go hand-in-hand with behavioural changes in charging among consumers. It is likely that public charging will increase from 25% (2020) to a minimum 30% (2025) and minimum 35% (2030) as the growth of urban EV drivers shifts charging behaviour towards publicly accessible sites. At the same time, this means that 2/3 of EV charging will still take place at private locations (i.e., non-publicly accessible charging locations). Home and workplace charging will thus remain the most important charging use-cases and this should be properly supported by the EPBD.

ChargeUp Europe therefore proposes to introduce more ambitious minimum cabling and ducting requirements and calls on the Commission to set capacity-based targets linked to level of fleet electrification in EU Member States for all non-publicly accessible charging points (residential and non-residential).

In the table below, we propose specific targets:

⁸ ChargeUp Europe – [Charging up Europe through binding capacity target for publicly accessible charging infrastructure and Member State action plans](#)

Scope		Member State Obligation				
		2025	2030	2035		
New buildings and buildings undergoing major renovation	Non-residential and residential buildings with more than 5 parking spaces	Ensure the installation of cabling for 100% of parking spaces	Ensure the installation of cabling for 100% of parking spaces	Ensure the installation of cabling for 100% of parking spaces		
		Ensure the installation of cabling for at least 50% of parking spaces	Ensure the installation of cabling for at least 70% of parking spaces	Ensure the installation of cabling for 100% of parking spaces		
Existing buildings	Non-residential buildings with more than 5 parking spaces	Ensure the installation of cabling for at least 50% of parking spaces	Ensure the installation of cabling for at least 70% of parking spaces	Ensure the installation of cabling for 100% of parking spaces		
All non-publicly accessible charging stations (across residential and non-residential sites)	Irrespective of the number of parking spaces	Share of EVs on the market				
		< 1%	1% -2.5%	2.5%-5%	5%-7.5%	> 7.5%
		Battery Electric Vehicles				
		Ensure the installation of at least 6kW/BEV	Ensure the installation of at least 6kW/BEV	Ensure the installation of at least 8kW/BEV	Ensure the installation of at least 8kW/BEV	No dedicated indicative infrastructure target needed anymore; operators will be active in the market
		Plug-in Hybrid Electric Vehicles				
		Ensure the installation of at least 4kW/PHEV	Ensure the installation of at least 4kW/PHEV	/	/	No infrastructure targets needed



As explained previously, private (residential and workplace) charging will remain the most important EV charging user segment throughout Europe (min. > 60% by 2030), irrespective of the national housing characteristics. Therefore, to achieve Green Deal targets and decarbonise the transport sector, it is essential that buildings (public and private, non-residential, residential, and commercial) offer EV charging.

As the Commission plans to phase out new internal combustion engine cars by 2035, the current scope of the EPBD should be extended to cover all existing buildings and ensure that all buildings are EV ready by 2035. This means that they should have the necessary cabling installed to accommodate EV charging infrastructure. Only introducing requirements for new and heavily renovated buildings would not be sufficient to meet future EV driving needs.

Member States must take a comprehensive view on all EV charging use cases and infrastructure in their country. This will help ensure the smart deployment of publicly accessible chargers and grid investments. Targets set for publicly accessible infrastructure should take into account the amount of infrastructure deployed in the private charging domain. This can easily be tracked by making sure that all non-publicly accessible charging points are digitally connected, as proposed under the revised Renewable Energy Directive (RED III).

As part of the national policy framework reporting process, EU countries should report on an indicative target for non-publicly accessible recharging points to ensure the right policy enablers are put in place at national/local level to stimulate the uptake of private chargers. The long timeline of construction and renovation projects requires this type of approach – they are multi-year projects involving significant planning, and buildings being planned now for construction or renovation over the next few years must have these targets set or the moment will be missed.

Likewise, the economics of construction, especially commercial projects, require that the investors know these targets and other required investments now, so they plan for these needs and gather the necessary capital to fund their projects.

B) Focus on capacity planning

To achieve these targets, proper capacity and investment planning is needed. For new projects, this is just a part of planning and construction for the overall needs of the building. For renovations, where extra capacity may be necessary in addition to what the building is already serviced with, an additional transfer station, grid connection point or reserved capacity may be required.

It is also very important to clarify if the costs of these energy infrastructure upgrades are a part of the project cost (i.e., a part of the percentage needed to consider something a major renovation) or if they are considered an additional cost.

C) Make every (publicly and non-publicly accessible) charging point digitally connected

Mandating every charging station to be digitally connected to a charge point operator back-end system allows the hardware to be up upgraded with smart functionalities over its lifetime, enabling smart charging capabilities, integration with renewable energy, integration with building energy management systems and the future range of flexibility options. At the same time, it allows Member States to track the deployment of charging equipment across all user segments in its territory.

D) Include a definition on smart charging

The revised EPBD should include a definition on smart charging, in line with the definition and ambition set under the recent RED III and the Alternative Fuels Infrastructure Regulation (AFIR) proposals. This means that all normal EV charging stations, public or non-public, should be able to support smart charging functionalities.

Smart charging capabilities should also integrate minimum level of control, allowing to delay the starting time of the charging session in response to price signals and to adapt the power level of charging. It should also allow intermittent recharging.

E) Recognise the importance of V2X

In addition to these smart charging requirements, the EPBD should also prepare for bidirectional charging features by mandating the stations to be digitally connected to allow future (still to be adopted) international standards to make V2X possible. If the operator of a recharging point makes vehicle-to-grid (V2G) or vehicle-to-home (V2Home) available, there should not be any market or regulatory constraints imposed by the distribution system operators (DSOs). Additionally, the EPBD should incentivise residential and non-residential building owners to integrate V2G in the overall building energy management system.

It will however also be important to implement the European electricity market design rules properly and urgently to regulate scarcity in DSO networks through proper electricity pricing. National policymakers need to allow for innovative charging concepts: network operators must be given the opportunity and tools to manage their grids with innovative network pricing signals to make optimal use of flexible EV loads. The decision of when to charge or not must always lie with the consumer. Innovative pricing will provide the right trigger to influence the charging behaviour. Controlling/switching off charging processes by DSOs are a measure of last result (in case of emergency) and the absolute exception.

F) Ensure interoperability of EV charging and the wider integration into the energy management and grid systems

The development of e-mobility across the EU will depend on open interoperable technology and communication protocols. ChargeUp Europe welcomes the various standardisation initiatives that are underway in our industry today and the work done in the Sustainable Transport Forum. This should facilitate the ease of doing business among the various actors in our value chain, enable non-discriminatory practices, ensure open and equal access, and avoid technology lock ins or closed ecosystems.

Open, non-discriminatory, and uniform communication protocols (such as OCPP and OCPI) and related standards in EV charging infrastructure are fundamental to facilitating a seamless charging experience for the driver. This also allows the integration of buildings and EVs into the wider energy system, in particular through smart grids.

To make this a reality, the legislation should ensure interoperability between all actors of the EV ecosystem, also at building energy management system level, and ensure that all publicly and non-publicly accessible EV charging networks are not built as a closed ecosystem.

G) Introduce a reporting obligation

To make sure that Member States are properly implementing the necessary requirements to ensure the uptake of EV charging infrastructure, the EPBD should introduce a reporting obligation on indicative targets (kW/BEV) for non-publicly accessible charging stations under the national policy frameworks, as mandated under the AFIR Proposal.

H) Introduce a 'Right to Plug'

The updated legislation should introduce national building frameworks that give all Europeans a 'Right to Plug' ensuring:

- **A speedy connection:** The time from the initial connection request from an EV user/representative to the DSO for installation of the connection should take no longer than 8 – 12 weeks for AC and 4 - 6 months for DC.
- **An administrative peace-of-mind:** Subscribing to an electricity provider must be made easy. Member States or regions should set-up an easily accessible web portal combining services of various building, parking, installer organizations with streamlined permit and installation procedures.
- **Guaranteed accessibility:** Tenants and citizens without access to a private parking space should have a right to request, to the landlord or the public authority, the installation of an EV charger in the parking space they rent or in the proximity of their building of residence or workplace.

I) Address issues related to metering

Digitally connected recharging stations connected to a charging point operator (CPO) backend can adapt power intake in a smart way. The installation of a separate smart electricity meter connected to the charging station is therefore unnecessary in residential or non-residential buildings.

J) Training and education

To effectively ensure the deployment of EV charging, it will be important to build the capacity and knowledge of those who carry out work on the ground, with local officials in particular. It is also important to train existing professionals (e.g., building designers, building managers, electrical inspectors, etc.) on how to design for the electrified future. ChargeUp Europe therefore calls for immediate investments necessary to educate the workforce to facilitate the building, installation, operation, and maintenance of charging infrastructure and related technologies. Professional associations can have a leading role here as well.

K) Fire safety

The EPBD should remove unnecessary and restrictive fire safety provisions, especially given the very good safety record of EV charging infrastructure. It should help find the right balance and embed strong recommendations to EU countries to modify local and regional fire safety regulations that hinder the rollout and installation of home/workplace and destination chargers.

L) EU Funding and necessary grid upgrades

To ensure that electrical infrastructure in existing buildings or near new sites is adequate for charging infrastructure, public funding should be mobilized for grid upgrades (e.g., from single to three power systems or low to medium voltage) and installing additional wiring. Additionally, EU funds should be linked to public procurement criteria with ambitious charging infrastructure requirements.

The recently proposed Climate Action Social Facility Fund also aims to help vulnerable households with their transition to clean mobility. It will allow Member States to introduce financial incentives or support for the installation of public and private charging infrastructure and should therefore be linked closely to the ongoing revision of the EPBD.

M) Include EVs under the scope of Energy Performance Certificates (EPCs)

The EPBD should include EVs under the scope of EPCs and define minimum standards for assessing EV charging infrastructure and electrical systems of buildings which can support smart features. These standards should apply to all residential and non-residential buildings. There is also a clear need for further harmonisation among Member States.

4. Other key requirements under the EPBD

A) Extend the definition of renovation/deep renovation

Renovating and future proofing the existing building stock can unlock the potential of electric mobility, smart energy systems, renewables, and other sustainable technologies. Legislation must review the definition of (deep) renovation and include EV charging infrastructure availability under the scope of this definition.

First, the revised EPBD needs to enlarge the definition of “renovation” to allow smaller renovations access to funding and enable and accelerate the integration of EV charging infrastructure.

Secondly, there is a need to clearly outline what falls under ‘deep renovation’ and clarify where the cost of EV charging infrastructure sits in relation to the size of the renovation.

Thirdly, the definition should include targets on smart charging as they can have a greater contribution to a more efficient energy system.

Finally, the definition should cover all types of buildings, residential and non-residential, and introduce minimum cabling requirements to ensure EV charging availability.

B) Include EVs under the scope of the Building Renovation Passport

As the Building Renovation Passport (BRP) aims to establish a long-term, step-by-step renovation roadmap to ensure that renovations improve the energy performance of buildings, it should include targets on EV charging availability.

ChargeUp Europe is the voice of the electric vehicle (EV) charging infrastructure industry. ChargeUp Europe has been formed to accelerate the transition to zero emission mobility and to ensure a seamless driver experience with access to high quality, readily available charging infrastructure across Europe



ChargeUp

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