



BRIEFING - January 2025

Right to plug

How to guarantee seamless EV charging in shared buildings

Summary

Charging at home will remain the most convenient and [affordable](#) way to charge an electric vehicle (EV). But while installing an EV charger at home is quite simple for people living in single-family houses, it can be more challenging for people living in apartment buildings.

The Energy Performance of Buildings Directive (approved in April 2024) sets targets to install EV chargers in buildings with more than 3 parking spaces. But the rules for existing residential buildings, and especially apartment buildings, are too vague and lack concrete targets to guarantee easy and swift access to private charging.

Given this policy gap, it is crucial that EU member states go beyond the EU's EPBD text and implement a '*right to plug*' to allow EV drivers living in apartment buildings to install an EV charger at their own cost in their private parking space.

T&E analysed the regulatory framework in 6 countries (France, Germany, Italy, Poland, Spain and the UK), and compiled best to ensure that EV drivers can have seamless access to home charging, whether they live in a house or in an apartment.

Member State	France	Germany	Italy	Poland	Spain	UK
Legal provision dedicated to the Right to Plug?	Yes	Yes	Yes	Yes	Yes	No
Can owners veto without justification?	No	Yes	Yes	Yes	Yes	Yes
Can the co-owners' association veto without justification?	No, only for serious and legitimate reasons	No, only for serious and legitimate reasons	Only if changes in common facilities are required	No, only for serious and legitimate reasons	No, owners simply need to be notified	Yes
Grounds to reject the demand	Pre-existence of charging infrastructure or intention to install infrastructure	Unsafe, technically feasible, too costly	No particular rule	Unsafe, unavailability of power connection	Vary locally	No obligation to consent at all
T&E assessment	😊 Favourable	😬 Favourable but can be improved	😞 Unfavourable	😬 Favourable but can be improved	😬 Needs improvement	😞 Unfavourable



T&E recommendations to member states:

- 1. Implement a clear and simple *right to plug* into national law, for both owners and tenants:** it should only require notification to the co-owners, unless there are serious and

legitimate grounds to oppose it, with a streamlined administrative process.

2. **Ensure that all new and renovated apartment buildings are fully cabled for EV charging:** pre-cable 100% of parking spaces, adapt the buildings' electrical infrastructure and upgrade the grid connection to equip all parking spaces, without delaying individual connection requests.
3. **Design national strategies to equip existing multi-family buildings:** Member states should roll-out strategies to pre-cable existing apartment buildings and set concrete objectives for 2035, in line with the expected local uptake of EVs.
4. **Help fund the installation of chargers in multi-family buildings:** Member states should subsidise the purchase and installation of charging points to incentivise EV drivers to get an individual charger, and encourage innovative business models covering the upfront costs of equipping all parking spaces
5. **Mandate all new chargers to be bidirectional-ready in all buildings:** to allow EV drivers to reduce their electricity bill by charging during off-peak hours with low electricity prices, and by selling back to the grid the stored energy in the EV during peak demand and high electricity prices

1. The EPBD fails to guarantee easy access to EV charging in existing residential buildings

The [Energy Performance of Buildings Directive](#) (EPBD) is the only existing EU legislation setting out targets for private charging infrastructure for light duty vehicles. It was officially adopted in April 2024 and entered into force in May 2024. Member States have until May 2026 to transpose it into national legislation.

Article 14 of the EPBD sets clear requirements to install EV chargers in new buildings and buildings undergoing major renovations, as well as in existing non-residential buildings. But for existing residential buildings, which make up the [largest part](#) of the existing building stock, the EPBD falls short of concrete provisions. Considering the [slow rate](#) of building renovations in the EU (around 1% annually), this means that a large part of EU buildings will not be prepared for drivers to charge their EV at home.

Installing EV chargers can be particularly challenging in co-owners associations (i.e. multi-family buildings, or apartment buildings) due to their multi-layer ownership structure, which makes decision making more complex.

Article 14 (8) of the EPBD requests member states to streamline and accelerate the procedure for the installation of charging points for both tenants and owners, unless there are “serious and legitimate grounds” to refuse their demand. But the requirements of this article are too weak to be considered a robust and effective ‘*right to plug*’: there is no definition of what serious and legitimate grounds might be, nor any other binding target to pre-equip multi-family buildings for EV charging.

If member states don't implement more ambitious requirements for multi-family buildings, a considerable part of the EU population risks facing serious challenges and delays when installing an EV charger at home - depriving them of the most convenient and affordable way to charge. This could discourage drivers to switch to EV and could slow down the uptake of EVs in the EU.

Summary of the requirements for charging infrastructure in the EPBD recast:

For *new non-residential* buildings and buildings undergoing major renovations¹ (> 5 parking spaces)

- Pre-cabing for at least 50% of parking spaces
- Pre-ducting (conduits for electric cables) for the remaining parking spaces
- At least one charging point for every five parking spaces
- For office buildings: at least one charging point for every two parking spaces

***Existing non-residential* buildings with more than 20 parking spaces**

- At least 10% of parking spaces equipped with a charging point, or pre-ducting of 50% of parking spaces by 01.01. 2027
- For public or publicly used buildings, additional pre-cabing for 50% of parking spaces by 01.01.2033 at the latest

***New residential* buildings and residential buildings undergoing major renovations (> 3 parking spaces)**

- Pre-cabing for at least 50% of parking spaces
- Pre-ducting for the remaining parking spaces
- At least one charging point per building

***Existing residential* buildings:**

- Member States should streamline the processes to install a charging point and remove existing barriers. Requests for installation can only be rejected on serious and legitimate grounds, whether it comes from tenants or co-owners.

2. Barriers to installing chargers in multi-family buildings

The process of installing an EV charger at home can become complicated and lengthy for people living in multi-family buildings, as the ownership structure involves several individuals (landlord, co-owners, etc.) that may oppose the project. How long it takes on average to install an EV charger in apartment buildings in Europe, and what the main challenges are throughout Europe, is not precisely known as there is currently no comprehensive data on this topic.

¹ According to Article 2 of the EPBD: "major renovation" means the renovation of a building where:

- (a) the total cost of the renovation relating to the building envelope or the technical building systems is higher than 25 % of the value of the building, excluding the value of the land upon which the building is situated; or
- (b) more than 25 % of the surface of the building envelope undergoes renovation.

Member States may choose to apply point (a) or (b)."

T&E has created a survey to gather the experience of EV drivers, or prospective EV drivers, when it comes to installing an EV charger at their private parking space in their apartment building². In-depth interviews were also conducted with relevant stakeholders in the six largest European markets: Germany, France, the UK, Spain, Italy and Poland, to assess the regulatory frameworks, barriers and opportunities to improve the *right to plug*.

2.1 Installing a charger in multi-family buildings is long and complex

The main barrier quoted by interviewees when it comes to installing a charger in a multi-family building was the complexity and length of the process to get the landlord's or co-owners' approval, which can range from a couple of weeks or months to years in some cases. This can deter apartment dwellers from getting their own charger or even switching to an EV.

Insufficient regulatory frameworks across Europe

The *right to plug* is far from being uniformly implemented throughout Europe, as some countries have no provision at all to allow a tenant or co-owner to install an EV charger: this often means that the applicant will need to get the consent from several stakeholders, which can oppose an installation project arbitrarily. In the UK for instance, there is no specific regulation governing the installation of EV charging points in multi-family buildings. In the best-case scenario, permission would be needed from the owner of the dwelling and the owner and operator of the building. In the worst-case scenario, permission would be needed from a tenant, a landlord or [leaseholder](#), and a [freeholder](#) of the individual dwelling, as well as the owner and/or operator of the building. None of these stakeholders are under legal obligation to consent to the request to install EV charging infrastructure.

In other countries, where a *right to plug* has been implemented in some form, provisions might not be sufficient to guarantee a smooth installation of an EV charger for all residents. In Germany, Italy, Poland and Spain, for instance, the *right to plug* only applies to owners, meaning that tenants still need the approval of the landlord. Extensive administrative requirements to obtain permits and authorisation also complicate the process, especially if they are not harmonised across regions and municipalities. This is the case Spain for example, where each Autonomous region has its own rules.

Lack of enforcement

Misinformation or lack of awareness of stakeholders' rights and obligations is another barrier to the installation of private chargers in multi-family buildings, even in countries where a *right to plug* exists in the law. This has been observed in almost all the countries under investigation.

2.2 Installing a charger in multi-family buildings is too expensive

The total cost of installing a private EV charger is composed of two main elements. The first is the cost of the EV charger itself, which can range from a couple of hundred euros to over a thousand euros, depending on the type and features of the EV charger. The second component is the cost of installation, which includes all the equipment needed, such as the cables to connect the EV charger, and the cost of labour required for the installation.

² More participants would be needed to have robust insights throughout the EU. The survey will remain open on T&E's webpage, available in [English](#), [French](#), [German](#), [Italian](#), [Polish](#) and [Spanish](#).

In the impact assessment of the EPBD, the total cost for a simple installation requiring no structural work is estimated to be [around €2,500](#). Costs are likely to be higher in multi-family buildings since structural adaptations are usually needed to upgrade the electrical infrastructure for instance. Other factors, such as the age of the building or the distance between the parking spots and the meter, also impact the total cost.

Distributing the costs

These high upfront costs can deter drivers from installing an EV charger at home or from switching to an EV altogether, especially in multi-family buildings where incomes are usually lower, such as in social housing.

While the *right to plug* requires that the charger is installed at the applicant's own expense, other residents are often unaware of that, and might express concerns about the distribution of costs related to the installation of the charging infrastructure and to the electricity consumed for charging, which creates resistance. The extra cost for property developers also raises the concern of rent increases.

Smart chargers can help bring down the long term cost of installing an EV charger and would only add a small cost compared to a standard charger, while bringing other co-benefits to the building, such as load balancing. The latest EPBD (art.14 §6) requires all EV chargers installed in new and renovated buildings to be smart and bidirectional where appropriate, but does not set specific requirements for chargers in existing buildings. Requirements should be the same for all buildings, existing and new, and as forward-looking as possible to ensure future interoperability and maximise the benefits they can bring. Concretely, this means that all chargers installed in buildings should be bidirectional-ready.

Adapting the electrical infrastructure

This cost issue is exacerbated by the fact that most apartment buildings' electrical installations were not designed to support EV charging, creating important infrastructural constraints. Many residential buildings lack capacity to manage the additional loads due to EV charging, which limits the number of individual charging points that can be installed without requiring significant renovations and upgrades. Retrofitting the electrical system and pre-cabing all parking places at once, instead of adapting them one by one, is the most cost-effective and future-proof approach to cater to existing and future charging needs.

Equipping all parking spaces at once in multi-family buildings is more cost-efficient: example of Germany

A previous [T&E study](#) led by Fraunhofer showed that the unit cost of pre-cabing and installing EV charger on one parking space is higher than that of equipping multiple parking spaces at once.

The reason for that is a combination of decreasing costs per unit for some components (such as personal costs for commissioning and installation of the charging points) and fixed costs (such as hardware and software installations connecting the EV charging station to the local energy and load management system). In Germany for instance, this would bring the unit cost per parking space from 2,440€ for one spot down to €1,864 per spot if 10 spots are equipped.

Financial support is therefore needed to address the cost issues - especially up-front costs - and related equity concerns. Funding programmes should make sure to target disadvantaged populations, such as residents in social housing, who might face more administrative difficulties since they are mostly tenants, and have less financial capacities to install EV chargers.

2.3 Overview of the *Right to Plug* transposition by Member States

The transposition of the *right to plug* is fragmented across the six countries under examination, as some have introduced dedicated provisions to regulate the installation of EV chargers in apartment buildings, while others did not. The table below compares the implementation of the *right to plug* in the six countries, more details about national regulatory frameworks are provided in annex 1.

Member State	France	Germany	Italy	Poland	Spain	UK
Legal provision dedicated to the Right to Plug?	Yes	Yes	Yes	Yes	Yes	No
Can owners veto without justification?	No	Yes	Yes	Yes	Yes	Yes
Can the co-owners' association veto without justification?	No, only for serious and legitimate reasons	No, only for serious and legitimate reasons	Only if changes in common facilities are required	No, only for serious and legitimate reasons	No, owners simply need to be notified	Yes
Grounds to reject the demand	Pre-existence of charging infrastructure or intention to install infrastructure	Unsafe, technically feasible, too costly	No particular rule	Unsafe, unavailability of power connection	Vary locally	No obligation to consent at all
T&E assessment	😊 Favourable	😬 Favourable but can be improved	😞 Unfavourable	😬 Favourable but can be improved	😬 Needs improvement	😞 Unfavourable



3. T&E policy recommendations to implement a right to plug

As national governments transpose the requirements of the EPBD law, T&E recommends that Member States design wider national charging plans which adequately cover private charging in buildings. These



plans should include the following:

1. **Implement a clear and simple *right to plug* into national law, for both owners and tenants:**
 - a. The *right to plug* should apply to both owners and tenants and only require a notification to the co-owners' association.
 - b. The co-owners' association should not be able to oppose the project unless there are serious and legitimate reasons, clearly defined in the law, to do so. These reasons should only be safety issues, lack of power availability, pre-existence or commitment to install collective charging infrastructure within a fixed timeframe.
 - c. Administrative requirements (i.e. necessary authorisations) should be kept to a minimum and procedural steps involving other stakeholders should have legal timelines to shorten the approval and installation processes.

Good practice: The French [right to plug](#), introduced in 2019, is a good example of a regulation that allows both owners and tenants to get an EV charger installed in multi-family buildings at their own expense.

The applicant simply needs to notify the co-owners association of the project. The co-owners association has 3 months to oppose the request, if the installation is technically impossible, or in case of pre-existence of collective charging infrastructure in the building, or intention to build one in the near future and needs to appeal to the relevant court. Once the 3 months are gone, or if the condominium did not appeal to the relevant court, the applicant has the right to go on with the installation.

In case the co-owners association decides to install a collective charging infrastructure, the [DSO](#) has 6 months to deliver the grid connection. Beyond this delay, the DSO receives a fine corresponding to 0.55%³ of the total cost for each day of delay.

2. **Ensure that all new and renovated apartment buildings are fully cabled for EV charging:** pre-cable 100% of parking spaces, instead of the 50% required by the EPBD; adapt the buildings' electrical infrastructure and anticipate grid connection needs.
3. **Design national strategies to equip existing apartment buildings:** EPBD does not set concrete targets for existing buildings, and thus fails to cover the vast majority of the building stock. By 2026, member states should draft strategies and targets to pre-cable existing buildings to allow for easy access to EV charging for future EV drivers. Such targets should be in line with the expected local uptake of EVs.
4. **Help fund the installation of chargers in apartment buildings:** Member states should help fund the equipment of multi-family buildings by supporting the purchase and installation of charging points for individuals and co-owners' associations, and by encouraging innovative business models covering the upfront costs of equipping all parking spaces with no additional public funding required.

³ Interview with Enedis.

Good practice: In Italy, the “[Home Charging Station Bonus](#)”, introduced in July 2024, can offer individuals up to 1,500€ (80% of the cost) to install an EV charger at home, and up to 8,000€ to condominiums if they install a collective charging solution.

Good practice: In France, Logivolt was created as a subsidiary of the public investment group “Caisse des Dépôts”, with a dedicated fund to subsidise the equipment of multi-family buildings. Among other solutions, it allows [grid operators](#) to use the Logivolt fund to extend the public electric distribution network into the building and pre-cable all parking spaces, at no cost for the co-owners’ association. It recoups its investment by delivering a grid connection to individual parking spaces for residents who request it. Residents are then free to choose their energy provider to charge their vehicle. Licensed [third-party operators](#) also offer their own equipment solution, supported by Logivolt⁴.

5. **Mandate all chargers to be bidirectional-ready in all buildings** to allow EV drivers to reduce their electricity bill by charging during off-peak hours with low electricity prices, and by selling back to the grid the stored energy in the EV during peak demand and high electricity prices. Next to lowering the cost of owning an EV, this would [also help](#) to balance the electricity load in the building, and lower the overall energy system cost.

What are the solutions for EV drivers with no access to private off-street parking?

Some residents in apartment buildings don’t have dedicated off-street parking, and thus won’t be able to install a private charger at home. Those residents will need to rely on other convenient and affordable charging options to benefit from the switch to EVs.

For these (potential) EV drivers, charging at work, charging at supermarkets or at other non-residential buildings open to the public will be one of the best ways to charge their vehicle comfortably and for an affordable fee. It is therefore crucial to make sure that member states promptly implement the EPBD provisions for non-residential buildings, both existing and new or renovated.

Next to that, affordable slow overnight on-street public charging should also be developed, particularly in neighbourhoods with few off-street parking spaces. The On-Street Residential Charging Scheme ([ORCS](#)) in the UK was a good example of targeted support, as it allowed local authorities to install slow overnight charging (until 22 kW) for residents without off-street parking. With the support of the ORCS, the [Ubitricity programme](#) was set up and delivers charging

⁴ Third party operators offer a solution where they install a new common metre for EV charging in the building and install cables for all parking spaces. Residents who want a charger can pay for the third party operator to install one on their private parking space. The third party operator then recoups its investment by selling the charger and the charging subscription. The list of third party operators licensed by Logivolt can be found here: <https://logivolt.fr/operateurs-references/#operateurs> and other third party operators offering similar solutions in France can be found via the AFOR association: <https://www.afor-ve.org/les-membres-de-lafor/>

infrastructure that is directly connected to already installed lamp posts or other street furniture, which minimises the amount of civil works required.

Further information

Clara Ouvrier

Electric Vehicle Policy Officer

Transport & Environment

clara.ouvrier@transportenvironment.org

Mobile: +32(0)49 125 25 78

Annexes:

Annex 1: Detailed overview of the *right to plug* in Member States

Country	Dedicated legal provision	Barriers to a solid right to plug			Legal deadlines during the process	Guidelines and incentives
		Can owners veto without justification?	Can the co-owners' association veto without justification?	Grounds to reject the demand		
France	Mobility Orientation Act	No, only for serious and legitimate reasons	No, only for serious and legitimate reasons	Serious and legitimate grounds only: <ul style="list-style-type: none"> - Technically unfeasible - Pre-existence of a collective charging infrastructure (CI) - Intention to install a collective CI within reasonable delay 	Max. 3 months for the co-owners' association to oppose the project Max. 6 months for the co-owners' association to install a collective infrastructure if they oppose the project Max. 6 months for the DSO to provide grid connection	<p>Guideline by Avere-France</p> <p>Tax cut: 75% of the cost of purchase and installation, up to 500€, only for smart charging points.</p> <p>ADVENIR programme: for individuals, 50% of the cost of purchase and installation, up to 600€; for co-owners' associations, 50% of the cost of purchase and installation costs, up to 8000€. Only for smart charging points.</p>
		<ul style="list-style-type: none"> • The co-owners' association can only oppose the project for serious and legitimate reasons. • To oppose a project, the co-owners' association needs to seize the relevant court within 3 months after being notified. After the deadline, the installation can go on. 				

<p>Germany</p>	<p>For owners: Art. 20 Condominium Act</p> <p>For tenants: Art. 558 German Civil Code</p>	<p>Yes</p>	<p>No, only for serious and legitimate reasons</p>	<p>Serious and legitimate grounds only:</p> <ul style="list-style-type: none"> - Technically unsafe - Disproportionate cost 	<p>No legal deadline or standardised procedure.</p>	<p>Guideline by NOW</p> <p>No incentive at national level, but some states have their own programme.</p> <p>e.g. Nordrhein Westfalen covers up to 40% of the purchase and installation costs, up to 1000€ in co-owners' associations. Grid connection costs can be covered up to 20%, up to 10,000€.</p>
<p>Italy</p>	<p>Decree of 3 August 2017</p>	<p>Yes</p>	<p>No</p>	<p>No authorisation / certification needed if the charging point:</p> <ul style="list-style-type: none"> - Does not require a new connection or a modification to the existing connection to the electricity distribution system - Complies with safety and technical standards 	<p>No legal deadline or standardised procedure.</p>	<p>Guideline by Motus-E</p> <p>Home Charging Station Bonus: 80% of the cost of purchase and installation, up to 1500€ for individuals and up to 8000€ for co-owners' associations.</p>
		<ul style="list-style-type: none"> • The co-owners' association can only oppose the project for serious and legitimate reasons, but meetings only occur once a year. • Grid connection procedures are not standardised across the 800 DSOs, causing delays. • No legal provision for tenants (need the landlord's approval) 				

<p>Spain</p>	<p>Art 17 (5) Horizontal property law</p>	<p>Yes</p>	<p>No, only notification to the co-owners' association</p>	<p>Varies depending on the region</p>	<p>No legal deadline or standardised procedure.</p>	<p>Subsidy under MOVES III: 70% to 80% of cost of purchase and installation, or pre-equipping of the building, for individuals and co-owners' association.</p>
		<ul style="list-style-type: none"> Horizontal property law states that notification to the co-owners' association is enough for the installation of a private charging point by an owner. Ways to oppose are not defined. Autonomous regions craft their own rules about grounds to oppose a project: e.g. in Catalonia, a co-owners' association can reject a project by proposing the installation of a collective installation instead. No legal provision for tenants (need the landlord's approval) 				
<p>Poland</p>	<p>Art 12(b) Act on Electromobility and Alternative Fuels</p>	<p>Yes</p>	<p>No, only for serious and legitimate reasons</p>	<p>Serious and legitimate grounds only:</p> <ul style="list-style-type: none"> Technically unsafe Lack of available power connection 	<ul style="list-style-type: none"> Max. 30 days for the co-owners' association to commission the expert after being notified Max. 30 days to oppose the project after receiving the expert's report 	<p>Guideline by PSNM</p> <p>No incentive for private charging points.</p>
		<ul style="list-style-type: none"> Applicants need to check if the building is on the list of national monuments; if so, approval from the provincial conservator of monuments. The co-owners' association can only oppose the project for serious and legitimate reasons. The co-owners' association commissions an expert to verify the technical feasibility of the installation project. Simple majority vote required for chargers above 11kW. No legal provision for tenants (need the landlord's approval) 				

UK	No legal provision	Yes	Yes	No justification needed	No legal deadline or standardised procedure.	EV chargepoint grant for renters and flat owners : up to £350, or 75% of the cost of purchase and installation of a charging socket.
		<ul style="list-style-type: none"> No legal provision regulating the installation of charging points in private environments, all stakeholders need to approve the project: tenants, leaseholders, freeholders, etc. No justification needed to oppose a project and no obligation to answer a request. 				EV chargepoint and infrastructure grant for landlords : up to £350, or 75% of the cost of purchase and installation of a charging socket. Up to £30,000, or 75% of the cost of building and installation works for collective infrastructure.

Annex 2: Expanded list of recommendations and good practices

Roadblocks	Solutions / levers	Example / Best practices
Approval process is too complicated and takes too long	<ul style="list-style-type: none"> Make the right to plug applicable to <u>both owners and tenants</u> and <u>without approval needed</u> from the board of owners below a certain power level. Opposition limited to <u>serious and legitimate grounds</u> only (safety issues, pre-existence of charging infrastructures or plans to install some). 	<p><i>The French right to plug can be exercised by both tenants and owners and does not require any approval from the board of owners.</i></p> <p><i>They can only oppose the request if there are pre-existing charging infrastructures or if there is a plan to install collective infrastructures.</i></p>
	<ul style="list-style-type: none"> Define <u>clear timelines and procedures</u> at national level to give certainty to applicants. 	<p><i>In France, the board of owners has 3 months to reject a demand, and needs to seize a specific court to do so. Otherwise the applicant can move forward with the installation.</i></p>
	<ul style="list-style-type: none"> Allow <u>regular (ad hoc) meetings</u> of the board of owners to discuss the installation of charging points whenever necessary. Allow for a <u>simple majority vote</u> when a vote is required (i.e. for collective charging infrastructure). 	<p><i>In Germany, meetings of the board of owners usually happen once a year, considerably extending the waiting time to get a charger installed.</i></p> <p><i>In Italy, votes during a general assembly require all the co-owners to be present, which makes the decision making difficult.</i></p>
Installing a charger is too expensive	<ul style="list-style-type: none"> Provide <u>direct grants and other financial support schemes</u> to lower the upfront costs of getting a charger installed. Provide <u>additional subsidies for disadvantaged communities</u> (e.g. residents in social housing). 	<p><i>In France, residents in apartment buildings can combine direct grants under the ADVENIR programme (up to 960€ / private charger; up to 1660€ / collective charger) and tax cuts (75% of the equipment cost up to 500€ / resident). Italy, Spain and the UK also have national programmes to support the installation of private EV chargers, see Annex I.</i></p>

		<p>In New Jersey (USA), the subsidies targeted at apartment blocks in disadvantaged communities are higher than the standard subsidies (up to 6000\$ per installation instead of up to 2000\$).</p>
	<ul style="list-style-type: none"> • Innovative business models can help <u>cover important upfront costs</u>, such as the cost of equipping a whole building in one go. 	<p>In France, some CPOs offer to cover the costs of equipping all parking spaces in a building. Residents that want a charger can get one installed on their private parking space and the CPO recoups its initial investment by selling residents a charging subscription.</p> <p>Enedis (main DSO in France) can also pre-finance the installation of chargers for a whole apartment building and recoups its investment by charging a connection fee to residents when they want to install a charger at their parking spot. This fee has a minimum and a maximum cap intended to keep it affordable, regardless of actual cost of the electrical installation. Exceeding fees applied in newer buildings compensate for deficit fees applied in older buildings.</p>
<p>The building does not have adequate grid capacity</p>	<ul style="list-style-type: none"> • For <i>new buildings</i>, <u>pre-cable 100% of parking spaces</u>, adapt the buildings' electrical infrastructure to allow all residents to have a charger installed easily. • For <i>existing buildings</i>, building managers should coordinate with electric utilities to <u>adapt electrical installations</u> before the building runs out of capacity for EV chargers. 	<p>In France, building codes for new residential developments require pre-ducting for 100% of parking spaces and a dimensioning of the electrical panel to provide power to at least 20% of parking spots simultaneously, with a power per charging point of 7.4 kVA.</p>

	<p>Require DSOs to inform building managers about <u>remaining power capacity</u> when the first charger request is issued.</p>	
	<ul style="list-style-type: none"> • Prioritise <u>slow charging infrastructures</u> to better manage the load on the electrical infrastructure and minimise the need for grid capacity expansion. 	<p><i>In Poland, the procedure is easier for chargers under 11kW (no vote required). Above 11kW however, a simple majority vote is required.</i></p>
<p>Misinformation, lack of awareness</p>	<ul style="list-style-type: none"> • Information about the benefits and options to charge at home should be provided <u>at the point of sale</u> (or by the company for company cars). • Information should also be provided through <u>clear and accessible guidelines</u>, with content tailored to each stakeholder and to different groups of EV users. • Subsidise and/or make <u>training on charging in apartment buildings</u> mandatory for all stakeholders on the building management side. 	<ul style="list-style-type: none"> • <i>PSNM guideline in Poland</i> • <i>Motus-E guideline in Italy</i> • <i>AVERE guideline in France</i>
	<ul style="list-style-type: none"> • Subsidise <u>expert counselling to assess a building's EV readiness</u> and to provide tailored advice to building managers about charging options. 	<p><i>In the Netherlands, co-owners associations can receive a 75% discount (up to €1,500) for consultation service led by a licensed expert to assess the building's EV readiness (electrical installation needs, safety measures) and evaluate costs (identify available incentives, possible cost distribution).</i></p>

<p>Residents have no private off-street parking</p>	<ul style="list-style-type: none"> • Encourage the development of <u>shared and/or public charging solutions</u> near apartment buildings to provide convenient (i.e. bookable) and affordable charging to residents without private parking. <p>When carefully planned, collective or public charging installations can limit stranded assets by ensuring higher utilisation rates.</p> <ul style="list-style-type: none"> • Encourage employers to create convenient and affordable charging options for residents without private parking by providing <u>workplace charging</u>. • <u>Peer-to-peer private charging solutions</u> can also provide affordable charging options that create revenue streams for the owner of the installation. 	<p><i>E-Quartierhubs in Baden-Württemberg (Germany) is a programme that provides funding to equip off-street parking with charging points if they free-up on-street parking space.</i></p> <p><i>The American company itselectric covers the upfront costs to install and maintain slow public chargers near apartment buildings and is paid back by residents that have a membership for charging.</i></p> <p><i>The On-street Residential Chargepoint Scheme (ORCS) in the UK provides funding to deploy slow overnight charging options for residents with no private parking space.</i></p> <p><i>In the UK, the company Co Charger has developed an app that facilitates peer-to-peer charging by allowing EV drivers to charge at their neighbours' home charger for a lower fare than at public facilities.</i></p>
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For more details and recommendations, see the [ICCT publication](#) "Policies and innovative approaches to maximising overnight charging in MUD".