SUSTAINABLE TRANSPORT FORUM

GUIDELINES FOR TENDER PROCEDURE FOR DEPLOYMENT of public electric recharging infrastructure for cars and vans

European Commission

Acknowledgements

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1. Introduction

1.1. Objective

Publication of an updated set of Guidelines for tendering the deployment of public recharging points to accompany the entry-into-force of the Alternative Fuels Infrastructure Regulation (AFIR) on 13 April 2024. The purpose of this update is to provide public authorities actionable guidance they can use as they prepare these tenders so that it is done efficiently, effectively, and successfully.

This document will be one part of a broader follow-up/update of the 2020 STF Recommendations for public authorities for procuring, awarding concessions, licences and/or granting support for electric recharging infrastructure for passenger cars and vans.

This guide is focused on recharging points for light duty vehicles. Recharging infrastructure for heavy duty vehicles will be covered in a subsequent publication. However, public authorities are advised to seek synergies, especially for corridor charging, between these two segments as, for example, grid capacity could be shared, and installation works combined.

This document also does not deal with the use of public funds for infrastructure.

The guide includes several examples of real-world situations and recommendations for public authorities. These are not exhaustive and, most likely other very good examples exist. Not all examples or recommendations can be applied to all circumstances. Therefore, they should not be interpreted as the only, or even the best way, to realise recharging infrastructure.

1.2. Acronym guide

- *AFIR — Alternative Fuels Infrastructure Regulation*
- *BEV — Battery electric vehicle*
- *EAFO — European Alternative Fuels Observatory*
- *CPO — Charge Point Operator*
- *DSO — Distribution System Operator*
- *EV — Electric Vehicle (comprising both BEV & PHEVs)*
- *LDV — light duty vehicle (cars & vans)*
- *HDV — heavy duty vehicle (trucks & busses)*
- *MSP — Mobility Service Provider*
- *NPF — National Policy Framework*
- *PHEV — Plug-in hybrid electric vehicle*
- *RED — Renewable Energy Directive*
- *STF — Sustainable Transport Forum*
- *SUMP — Sustainable Urban Mobility Plan*
- *TEN-T — Trans-European Transport Network*

1.3. The context in 2024

1.3.1. The market context

In 2020, the Sustainable Transport Forum (STF) published its *Recommendations for public authorities on procuring, awarding, concessions, licenses and/or grant support for electric recharging infrastructure for passenger cars and vans*[1]. Since then, the market for electric vehicles (EVs) and recharging services has grown and matured immensely. Overall, there are now over 5.1 million light duty battery-electric vehicles (BEV) and 3.9 million plug-in hybrid electric vehicles (PHEV) on EU roads (combined around 9mln electric vehicles on the road), a 363% and 300% growth since 2020 respectively, and nearly 782,000 publicly accessible recharging points (350% increase since 2020).[2] A lot has been learned from tenders which have been launched over the previous few years.

1.3.2. The legal context

On the regulatory side, the new Alternative Fuels Infrastructure Regulation (AFIR) was pub-

1 2020 Recommendations for recharging point tenders — European Commission (europa.eu)

2 European Alternative Fuels Observatory

lished in the Official Journal of the EU on 22 September 2023[3] and came into effect on 13 April 2024, setting interoperability standards and deployment targets and requirements for publicly accessible recharging infrastructure. In particular, AFIR sets fleet-based targets for the whole territory of the Member States, and distance-based targets along the Trans-European Transport Networks (TEN-T). The fleet-based targets are defined as the minimum power output to be provided for each electric vehicle registered on a Member State's territory (at least 1.3 kW per battery electric vehicle, and at least 0.80 kW per PHEV vehicle); the distance-based targets for light duty vehicles require the deployment of recharging stations at a distance of no more than 60 km between them, along the TEN-T Core and Comprehensive road network, with progressively higher power outputs over time.

The revised Renewable Energy Directive (RED III) was published in the Official Journal on 31 October and entered into force on 20 November 2023[4]. Its goal is to facilitate the transition to a decarbonised economy by increasing the share of the renewable energy to at least 42.5% by 2030 — with a goal of 45% — by 2040. It establishes a framework for electrification to enable robust and efficient coordination and expand market mechanisms to match both supply and demand in space and time, stimulate investments in flexibility, and help integrate large shares of variable renewable energy generation. Recharging of EVs, a mobile, flexible load centre, is an important element in the context of the Directive's electrification framework.

The revised Energy Performance of Buildings Directive (EPBD) was published in the Official Journal on 8 May 2024 and entered into force on 28 May 2024[5]. The deadline for transposition in Member States is 24 months from entry into force. Article 14 of the EPBD on infrastructure for sustainable mobility puts obligations on recharging infrastructure for new and renovated residential and non-residential buildings as well as on existing non-residential buildings. Art. 10 includes the European Solar Mandate which requires Member States to ensure the deployment of any solar energy technology (solar thermal, PV or the combination of both, PVT) on new and existing public and non-residential buildings, as well as new residential buildings and roofed carparks by different deadlines starting from December 2026 till December 2030.

Planning the EV recharging network in the EU to meet mobility and energy system needs, and how this interacts or integrates with national, regional, and municipal energy, transportation, and land use planning is core to the work of public authorities and requires alignment between all levels of governance.

1.4. Who is this document for?

This document is designed to support public authorities and relevant competent authorities at all governance levels in designing, deploying, and overseeing tenders for the deployment of public charging infrastructure for light duty vehicles on their territories. Tenders are a commonly used procedure for setting a contract to organise the deployment of recharging points while aiming at ensuring an open and competitive market for EV recharging services.

There are differences between, for example, national highway authorities and smaller municipalities and the types of charging stations, power level, and location design (technical criteria) and use cases they would be tendering for. Some of those differences are accounted for in this document, but the process and approach, and elements of what makes a good tender design are largely the same regardless.

AFIR places responsibility for reaching national targets on Member States, but the deployment of each recharging point is done in a specific area, in a specific province, in a specific town. It is expected that public authorities at all levels, from national to local, will be involved directly or indirectly in deploying EV charging infrastructure and helping meet the shared na-

3 Available in all EU languages https://eur-lex.europa.eu/eli/reg/2023/1804/oj

4 Available in all EU languages https://eur-lex.europa.eu/eli/dir/2023/2413/oj

5 Available in all EU languages: Directive — EU — 2024/1275 — EN — EUR-Lex (europa.eu)

tional targets for the minimum EV recharging network. In particular, the fleet-based targets set by AFIR are based on the number of EVs registered on the territory of a Member State; while the Regulation sets this requirement at the national level, regional and local authorities will play a key role in ensuring that the necessary recharging infrastructure to meet the demand for the EVs registered on their territory is deployed in time. The minimum power outputs defined in AFIR represent a useful reference for public authorities when estimating the recharging infrastructure needs on their territory.

Furthermore, all publicly accessible recharging infrastructure will need to respect general and technical requirements set by AFIR to allow consumer friendly and quality services.

The European Alternative Fuels Observatory (EAFO)

EAFO contains many resources which can help public authorities and other interested parties to find valuable information:

- Statistics — contains updated information on the numbers and type of charging infrastructure deployed and the EV fleet size, at EU level and in each Member State[6]
- Policy Recommendations — and other relevant documentation[7]
- EV charging decision tree — to help public authorities with their deployment planning needs
- Target Tracker — to help Member States monitor their country's progress in meeting their obligations set in AFIR

1.5. AFIR targets

AFIR provides precise definitions of what is a publicly accessible recharging point, station and pool, targets for the deployment of such infrastructure and additional requirements for its operation.

Under AFIR, all member states are obliged to meet targets for the deployment of recharging infrastructure for light duty vehicles to ensure the minimum and cohesive EV charging network in the EU. There are distance-based targets and fleet-based targets for installed recharging capacity per type of electric vehicle (AFIR Article 3; see the graphs here below). It is expected that concessions will be a commonly used tool for managing the deployment of these chargers by public authorities with the aim of reaching the AFIR targets as a minimum and responding to additional societal needs.

In more detail, Member States shall ensure from 2024 that, in their territory, publicly accessible recharging stations dedicated to light-duty electric vehicles (LDVs) are deployed in a way that is commensurate with the uptake of light-duty electric vehicles and that they provide sufficient power output for those vehicles. To that end, Member States shall ensure that, at the end of each year, starting from 2024, the following power output targets are met cumulatively:

(a) for each light-duty battery electric vehicle (BEV) registered in their territory, a total power output of at least 1,3 kW is provided through publicly accessible recharging stations; and

(b) for each light-duty plug in hybrid electric vehicle (PHEV) registered in their territory, a total power output of at least 0,80 kW

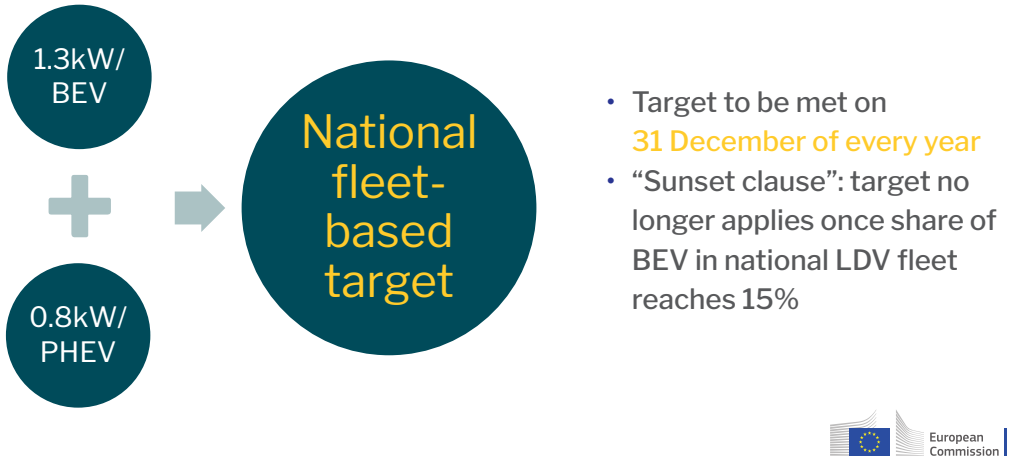
6 Road | European Alternative Fuels Observatory (europa.eu)

7 Policy recommendations | European Alternative Fuels Observatory (europa.eu)

is provided through publicly accessible recharging stations.

These targets will be of help to regional and local authorities in planning the charging capacity to deploy on their territories, as a function of the number of registered vehicles on their territory and the estimated growth of the EV fleet. This target will cease to apply once the share of BEVs in the national fleet of LDVs reaches 15%.

AFIR fleet-based target for LDV charging points



Source: Internal EC presentation

Regarding the distance-based targets, Member States shall ensure a minimum coverage of publicly accessible recharging points dedicated to light-duty electric vehicles on the road network in their territory. To that end, Member States shall ensure that:

1. along the TEN-T core road network, publicly accessible recharging pools dedicated to light-duty electric vehicles and meeting the following requirements are deployed in each direction of travel with a maximum distance of 60 km between them:

   (i) by 31 December 2025, each recharging pool offers a power output of at least 400 kW and includes at least one recharging point with an individual power output of at least 150 kW;

   (ii) by 31 December 2027, each recharging pool offers a power output of at least 600 kW and includes at least two recharging points with an individual power output of at least 150 kW;

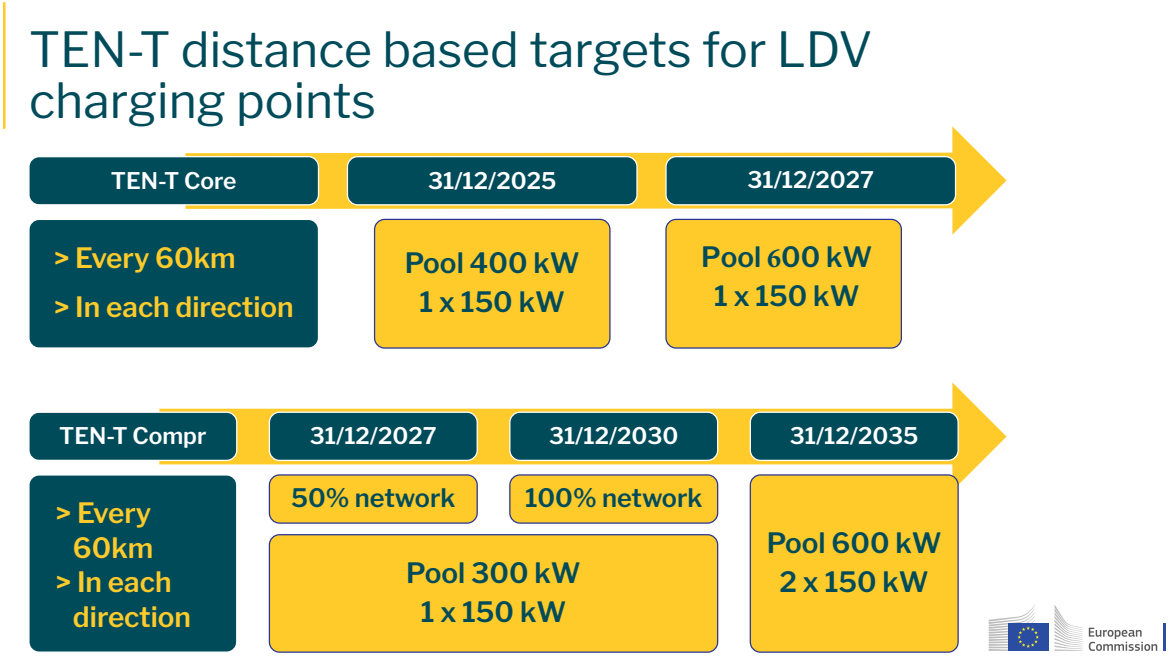
2. along the TEN-T comprehensive road network, publicly accessible recharging pools dedicated to light-duty electric vehicles and meeting the following requirements are deployed in each direction of travel with a maximum distance of 60 km between them:

   (i) by 31 December 2027, along at least 50% of the length of the TEN-T comprehensive road network, each recharging pool offers a power output of at least 300 kW and includes at least one recharging point with an individual power output of at least 150 kW;

   (ii) by 31 December 2030, each recharging pool offers a power output of at least 300 kW and includes at least one recharging point with an individual power output of at least 150 kW;

   (iii) by 31 December 2035, each recharging pool offers a power output of at least 600 kW and includes at least two re-

charging points with an individual power output of at least 150 kW.



Source: Internal EC presentation

National authorities will be in lead in planning the deployment of these recharging pools along TEN-T networks however regional and local authorities need to take account of these plans and will be involved in their implementation on their respective territories.

1.6. Partnership models

When developing recharging infrastructure public authorities need to set clear objectives and assess risks. By mapping these, they can identify the best contract model/policy instrument to serve public interests.

Key questions include: What are the goals of the network? What should the balance be between being driven by the private market and planned or coordinated by the public authority? Who should own and operate the infrastructure? Who should bear the risk?

Different aspects will influence the answer to these questions — most notably the expected costs (including human resources and competences) of deploying and operating such a network and its expected profitability, the degree of control public authorities want to maintain over infrastructure deployment and operation in their territories and if there is a lack of interest from the private sector to serve certain areas. As these aspects change over time, depending on the state of development of the recharging market, public authorities should regularly re-assess these questions.

In addition to these specific objectives driven by local considerations and specific objectives, public authorities should ensure that EV charging is rolled out in a timely and cost-effective manner and that the market which develops is open and competitive, permitting multiple suppliers of EV recharging services to compete for customers.

There are various partnership models that a public authority can choose from in working with a private partner to deliver EV recharging services. These are explained and compared in the 2022 European Investment Bank (EIB) Handbook: *Electric Vehicle Charging Conces-*

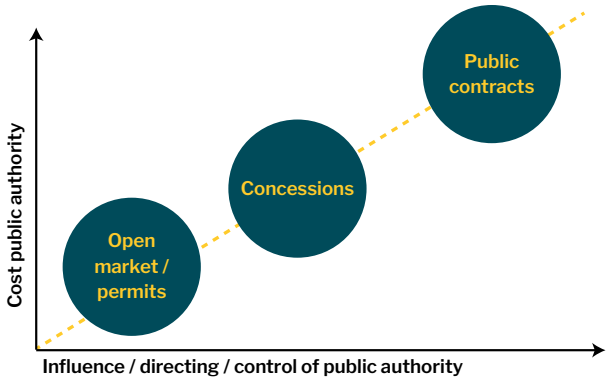
sions — A Contract Guide for Public Authorities[8].

The EIB distinguishes five main contractual models that can be used to roll-out recharging infrastructure:

1. The public contracting model: the public authority keeps control over the infrastructure and retains most of the project risks, from construction to exploitation.
2. The joint-venture model: the public and the private sector share the overall control of the infrastructure. The project risks are also shared. The model remains flexible on financing of the expenditure.
3. The concession model: a private party is given the concession to run and utilise (and build) a certain work or service. The (financial) risks lie with the concessionaire. The public authority can make more demands on where and what kind of infrastructure will be rolled-out according to a contract. There are many aspects of the concession model that can be tailored to suit the public authority's objectives and constraints.
4. The availability-based model: the public sector allocates the project risks between the public and the private sector, but the public sector collects the revenues from the consumer and therefore retains the demand (revenue) risk of the project. The private sector finances the expenditure and is paid back by the public authority over the duration of the contract only if the infrastructure is available for the intended use.
5. The licence model: A party that complies with the policy rules drawn up by the public authority can be given permission to erect, manage and operate recharging points in the public space. The licence can include constraints over what the private sector can do. The private sector keeps the control over the infrastructure and retains most of the project risks, from construction to operation, and finances the expenditures and collects the revenues from the consumer. Through licences it is possible to limit numbers, but erection at less favourable locations cannot be enforced. Where there is a limited number of licences or even just one licence, transparency obligations can apply when granting the licence.

Differences between these models concern the extent of control that the public authority has, who bears the risk, and who receives the revenues from charging. The figure below shows the relationship between investment costs and control for three main models, for the city of Leuven (and is applicable to other public authorities as well).

The choice of an instrument depends on the goal that the public authority wants to achieve. When selecting a contract model and policy instrument, authorities should perform a proper analysis of costs and risks for each affected stakeholder, including end users.



Source: City of Leuven. Integrated vision for the role out of charging infrastructure. Clean vehicles working group POLIS — 26 September 2019 — Bilbao.

Similarly to the EIB Handbook, this STF guide will focus on the concession model, as that is the model commonly used by public authorities to deploy EV charging. Further analysis of the other models can be found in the EIB Handbook.

Concessions give an opportunity to define a scope of services to be provided, specify the areas where that service should take place, and seek interested parties to provide that service. To promote competition, concessions should allow for the participation of multiple operators and regular competitive tendering procedures and may include caps on how many

8 https://www.eib.org/en/publications/electric-vehicle-charging-concessions

concessions each operator may have in a given area. 'Tendering' is the procedure a public authority uses to organize the approach that it wants to take to achieve its specific objectives, and then enlisting professionals to carry out the specialised work of delivering those services and bearing the risk.

Selected Definitions

1. **Concessions**[9] — means works or services concessions:
2. (a) 'works concession' means a contract for pecuniary interest concluded in writing by means of which one or more contracting authorities or contracting entities entrust the execution of works to one or more economic operators the consideration for which consists either solely in the right to exploit the works that are the subject of the contract or in that right together with payment;
3. (b) 'services concession' means a contract for pecuniary interest concluded in writing by means of which one or more contracting authorities or contracting entities entrust the provision and the management of services other than the execution of works referred to in point (a) to one or more economic operators, the consideration of which consists either solely in the right to exploit the services that are the subject of the contract or in that right together with payment.
4. **public authority** (PA) — any level of public administration in the context of this paper, a PA could be a national government (ministry), national highway authority, regional, municipal, or local government with responsibility for developing a tender for EV recharging services.
5. **publicly accessible alternative fuels infrastructure**[10] — means an alternative fuels infrastructure which is located at a site or premises that are open to the general public, irrespective of whether the alternative fuels infrastructure is located on public or private property, whether limitations or conditions apply in terms of access to the site or premise and irrespective of the applicable use conditions of the alternative fuels infrastructure.
6. **recharging service**[11] — means the sale or provision of electricity, including related services, through a publicly accessible recharging point.
7. **urban node**[12] — means an urban area where elements of the transport infrastructure of the trans-European transport network, such as ports including passenger terminals, airports, railway stations, bus terminals, logistic platforms and facilities and freight terminals, located in and around the urban area, are connected with other elements of that infrastructure and with the infrastructure for regional and local traffic.)

Other important definitions related to the area of electromobility can be found in each EU language in the text of AFIR regulation.

9 Directive 2014/23/EU on the award of concession contracts — Directive — 2014/23 — EN — EUR-Lex (europa.eu)

10 (AFIR, Article 2 Definitions)

11 (AFIR, Article 2 Definitions)

12 Regulation (EU) 2024/1679 of the European Parliament and of the Council of 13 June 2024 on Union guidelines for the development of the trans-European transport network, amending Regulations (EU) 2021/1153 and (EU) No 913/2010 and repealing Regulation (EU) No 1315/2013 (Text with EEA relevance) — https://eur-lex.europa.eu/eli/reg/2024/1679/oj

2. Defining the Deployment Approach

2.1. Importance of integrated, long-term mobility & energy strategies

2.1.1. National Policy Frameworks & Sustainable Urban Mobility Plans

Given the magnitude of the transition to electric vehicles, the numbers of vehicles (~aim to reach 30 million zero emission vehicles by 2030 according to the Sustainable and Smart Mobility Strategy[13]) and what this all means for the power system and overall mobility, it is essential for public authorities to develop a long-term, integrated mobility and energy strategy. Plans and strategies for the uptake of electromobility and the deployment of its recharging infrastructure should be part of this long-term mobility vision. This requires a clear vision on how the national, regional and local mobility and electricity markets should develop. Furthermore, this is called for in AFIR, Article 14 via the National Policy Frameworks (NPFs).

National Policy Frameworks

In these NPFs (with final plans to be submitted by 31 December 2025) Member States must explain what is the current state and future development of the market as regards alternative fuels in the transport sector, how Member States will meet related infrastructure targets, find the synergies between the deployment of EV charging infrastructure and the energy system, address bottlenecks to the growth of e-mobility and ensure cross-border continuity. These should ideally include measurable national targets to monitor progress and create a stable investment climate. A good analysis of the real needs is required to prevent that short term investments in infrastructure turn out to be suboptimal, or stranded assets in the longer term.

In addition, NPFs need to cover: measures, planned or adopted to remove possible obstacles to permitting, promote the deployment of recharging infrastructure for captive fleets, in particular for recharging stations for public transport services and recharging stations for car sharing; measures to promote a sufficient number of publicly accessible high-power recharging points; measures to promote recharging infrastructure in urban nodes, in particular with respect to publicly accessible recharging points and measures to encourage and facilitate the deployment of recharging stations for LDVs and HDVs in private locations that are not accessible to the public.

National authorities will be primarily responsible for the NPFs; however, regional and local public authorities, network operators, National Regulatory Authorities, and other stakeholders will have an important role to play in their development. According to AFIR, each Member State must make its draft national policy framework publicly available and shall ensure that the public is given early and effective opportunities to participate in the preparation of this document.

Sustainable Urban Mobility Plans

For regional and municipal public authorities, it will be important to have their Sustainable Urban Mobility Plans (SUMPs), which is a long-term, all-encompassing integrated freight and passenger mobility plan for the entire functional urban area, aligned with these NPFs and incorporate their land use vision and parking policy into their mobility strategy, so that they do not work at cross purposes.

The consideration of recharging infrastructure deployment in SUMPs is even more important in the context of a revised TEN-T Regulation, which was adopted on 13 June 2024. The co-legislators embraced the idea of strengthening the urban layer of the TEN-T policy. It was therefore agreed that a SUMP should be established for each urban node by 2027. The plan could include objectives, targets and indicators underpinning the current and future performance of the urban transport system. All 431 major urban nodes along the TEN-T network are required to develop SUMPs to promote zero-emission mobility. The TEN-T guidelines support all requirements regarding recharging infrastructure as set by AFIR for

13 https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0789

TEN-T networks. On top of that, they add the obligation to develop, by 2030, multimodal passenger hubs to facilitate first and last mile connections, with at least one recharging station for busses and coaches.

To ensure consistency, public authorities need to consider the most appropriate level of government to deploy/support the roll-out of recharging infrastructure and to ensure the coordination between public authorities representing different areas and levels of government. It can help if all levels of government have a consistent and similar approach to the deployment of tenders too, which can also be coordinated as part of the joined-up strategy. Cooperation with other public authorities to share tendering documentation or jointly procure recharging infrastructure can lead to specialisation, harmonisation and economies of scale, and thereby reduce costs.

Good Practise Example: *Regional Approach to Tendering in the Netherlands*

In the Netherlands, the MRA-E was founded in 2012 to support municipalities in the three provinces of Flevoland, North Holland and Utrecht with the development and implementation of EV policies. Supported by a team of electromobility experts, the municipalities share experiences and knowledge, develop demonstration projects, develop standard documents/templates to be used by all, and jointly procure/manage recharging infrastructure. The cooperation ensures that an interoperable recharging network is not only deployed in the main cities, but also in the surrounding municipalities.

The long-term strategies for recharging infrastructure require a clear vision on how the local mobility and electricity demand situation will develop. Main factors to consider include:

(a) The current situation and planned evolution of the power grid, such as available capacity, congestion issues and investment plans, the possibility of integration of recharging infrastructure with the energy system, including smart charging, integration of renewable energy and storage, and flexibility potential;

(b) Expected growth and evolution of the vehicle market, including demand for zero emission vehicles, reductions in private vehicle ownership and increased use of shared zero emission vehicles and consequent changes in traffic densities and traffic flows;

(c) Expected and desired modal shift towards public transport and active mobility solutions such as walking and cycling;

(d) Urban planning vision and changes, such as Urban Vehicle Access Regulations (UVARs), Low and Zero Emission Zones (LEZs/ZEZs), parking policy, and other mobility visions;

(e) Housing characteristics, especially regarding the amount and type of private parking (as per EPBD and market needs) and related need for publicly accessible charging infrastructure on public or private grounds;

(f) Fleet size and charging needs of captive fleets such as taxi, ride hailing, shared mobility vehicles and delivery vans — during operating hours and for overnight charging at depots and near drivers' residences;

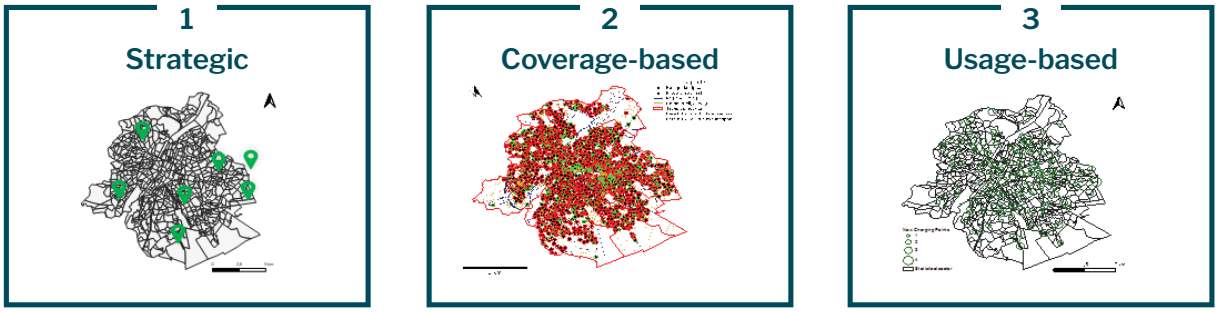
(g) The advent of new technologies, such as the uptake of connected and autonomous driving.

For public authorities, balancing the use of public space among competing uses (like bicycle paths, sidewalks, urban furniture, green space, parking, etc.) is one of their main responsibilities. To this end, local public authorities may limit the amount of recharging infrastructure in the public domain, for example by applying a 'hierarchy of recharging', requiring that publicly accessible recharging takes place as much as possible, off-street. It should be noted however, that limiting the number of EV charging spaces may also increase the cost to rent or use them.

In addition to the limited space in the public domain, there are other important deployment criteria that need to be considered: the high-investment costs and the residents dependency on publicly available recharging infrastructure. Where and how much infrastructure is needed will also depend on EV market maturity. Taking

these criteria into account, three different roll-out approaches can be described[14]:

1. The strategy-based roll-out: when there is no recharging infrastructure network present, suitable locations to install a limited number of recharging stations can be identified based on where EV drivers are more likely to recharge, and by considering 'visible' spots that are attractive to them.
2. The coverage-based roll-out: based on EV drivers recharging demand, this approach determines new locations to install infrastructure to ensure a maximal coverage with a minimal number of recharging stations. As almost all passenger cars will gradually become net-zero emitting, a good geographical coverage needs to be ensured. Mobility users in areas with lower population density will equally require good access to recharging infrastructure, so this should be planned for. This is also essential to achieve a socially just transition: no regions should be left behind in the transition to decarbonised mobility.
3. Usage-based roll-out: when an existing recharging network is up and running, advanced dynamic data analyses can help to determine where additional recharging infrastructure is needed based on EV driver's usage (e.g., by identifying those locations stations with a high turnover). CPOs could be required or encouraged to share this data with public authorities as a tender condition.



Different data can be used to define the location of recharging infrastructure, including socio-economic, land-use information, the recharging needs of different fleets like commercial vehicles or taxis, (expected) EV ownership, number of daily commuters coming to a given area, amount of transit, (long-distance) traffic, amount of publicly accessible (on public or private domains) and private recharging infrastructure.

How many publicly accessible recharging points need to be placed is a trade-off between EV drivers' convenience (e.g., being able to access a recharging station when needed) and how often the recharging points are used (e.g., utilization rate of the stations). Greater convenience will result in less utilization and vice versa. Still, the practice of public authorities could be to respond to direct requests for a new recharging point from an electric vehicle owners and users. Moreover, providing a recharging network that will serve all members of society is an important aspect of the roll-out strategies developed by several public authorities. Finally, achieving distance and fleet-based targets set by AFIR should be another aspect to consider while planning recharging infrastructure.

14 *Weekx, S. VUB-MOBI. Roll-out strategies for public charging infrastructure. Brugel, 23 April 2024, Brussels.*

In particular, when identifying appropriate locations for ultra-fast chargers (150kW or more), especially on the TEN-T network, AFIR targets and long-distance travel considerations should be borne in mind — including the occurrence of seasonal holiday destinations and related recharging needs. The issue needs to be addressed holistically, across borders, to enable uninterrupted EU-wide EV travel.

2.1.2. Consultation and Coordination for Grid Friendly EV Charging

It is essential, at the level of both long-term planning, as well as planning for individual tenders around specific locations, for public authorities to consult with distribution and transmission system operators (DSOs and TSOs) to ensure that there is alignment between their objectives and what is available on the power system side.

EV recharging demands may have significant impact on the grid, but it can also be organised and done in a more grid-friendly way. Consultations, as called for in AFIR, Article 15.3, can help ensure the best possible outcome. Clear advanced planning for recharging infrastructure can help Member States and grid operators prioritize grid upgrades and make other investment plans. A fuller discussion of this important topic is the subject of a dedicated 2023 STF report: *Best practices guide for permitting and grid connection procedures for recharging infrastructure*[15].

Given the long lead time for electricity grid extensions and upgrades, existing and planned grid capacity should be taken into account when preparing tenders for recharging infrastructure. Concession contracts can be used as an instrument to channel and funnel (future) charging demand to areas with sufficient capacity or where grid upgrades are feasible or planned for. Higher power hubs can be located in areas where shorter parking/charging times can be expected, and ideally where grid capacity is available or can easily be provided. This can be done through on-site optimisation and smart charging/load management, battery-supported approaches or with (future) committed capacity for e-mobility, from the grid or locally produced renewable energy. The availability of additional capacity will trigger even more market-based deployments. At the same time, clear planning for the deployment of recharging infrastructure can help provide the necessary long-term perspective to steer investments in new grid capacity.

Local and regional authorities can coordinate efforts across relevant public authorities and departments to accelerate the permitting of electricity grid extension and upgrades that will be required for the deployment of the planned recharging infrastructure. A coordinated approach like this is especially beneficial compared to a 'first come first served' approach as recommended by the 2023 STF report mentioned above[16]).

Tenders for all public recharging points built or renovated after 13 April 2024 will be obliged to require smart charging (AFIR, Recital 30). Thanks to this, the recharging of electric vehicles can be optimised and users can take full advantage of the availability of renewable electricity and low electricity prices in the system. Smart charging can thus reduce recharging costs for users and make EVs an asset to the grid. This can all be accounted for in integrated planning efforts.

AFIR calls for both a coordinated as well as market-based approach. Tenders help strike this balance between a planned/coordinated approach and market competition. A coordinated approach ensures achieving societal goals, such as providing sufficient recharging access in all areas and integration in other national, regional, and municipal mobility planning, and steering charging first to where there is available capacity or flexibility on the grid before new upgrades of the grids are realised.

Furthermore, tenders should be open and competitive, based on transparent and objective criteria. In cases where roles are not clearly divided — if a local authority acts as both regulator and CPO — there is a risk of abuse by potentially excluding rival operators. In these

15 Policy recommendations | European Alternative Fuels Observatory (europa.eu)

16 Ibid

cases, local authorities should separate their regulatory and operational roles by establishing independent bodies to oversee the tendering processes. DSO's too must act neutrally and treat all grid and service requests impartially.

Especially in the case of large, national tenders it is advisable for public authorities to consult with and get a positive opinion from national competition authorities or transport regulators. This ensures transparency, non-discrimination, and competition, and prevents conflicts of interest that could lead to the exclusion of rival operators.

2.1.3. Goals (what the public authority wants to achieve with the tender)

Tenders for concessions can be a way to orient the deployment of EV charging infrastructure to achieve the goals identified in the long-term mobility and energy strategy. In addition to the higher-level principles of ensuring competitive, open markets for recharging services and deployment in a timely manner at reasonable cost, these will be specific to each public authority and each community, based on the local context, policy priorities of that public authority, and societal goals they have identified. For example, these may include orienting the deployment of charging infrastructure:

(a) To meet AFIR targets (both distance and fleet based)

(b) Towards locations with available grid capacity and/or where future investment is planned and away from locations with congestion issues, lack of grid capacity, too high grid investment costs

(c) Towards locations with adequate 'building blocks' like space, grid connection, or amenities, to reduce overall deployment costs, time and nuisance

(d) Towards locations where it would be more cost-effective or permissible to co-locate renewable energy generation and storage facilities

(e) Towards multimodal transit locations

(f) Towards expanding access, by serving isolated, non-mature locations or areas with poor current coverage such as low income or rural areas

(g) To ensure a certain amount of charging is accessible for people with disabilities

(h) To serve differentiated needs for slow and fast charging in various locations for different types of EV drivers in line with the land use and parking vision

(i) To facilitate the ability of users to integrate their electric vehicles in the energy system (AFIR, Article 15.3)

(j) To support various business actors and models and to ensure that consumers, wherever they are located, can have access to, and choice of, several providers

2.1.4. What EV (Charging) means for Land use & Public Space Planning

Typology of EV recharging points[17]

AC — alternating current

DC — direct current

For AC recharging points:

- Slow AC recharging point, single-phase, P<7,4 kW
- Medium-speed AC recharging point, triple phase, 7,4 kW=<P <=22kW
- Fast AC recharging point, triple phase >22kW

For DC recharging points:

- Slow DC recharging point, P<50kW
- Fast DC recharging point, 50kW=<P<150kW
- Level 1 — ultra fast recharging point, 150 kW=<P<350kW
- Level 2 — ultra fast recharging point, P>=350kW

While public space and land use planning are core responsibilities of public authorities, there are characteristics of EV charging that are important to be aware of and taken into consideration because they will have different implications for land use, parking, mobility, and energy visions.

Infrastructure which takes up valuable public space, especially in urban areas, could potentially lead to nuisance, both during installation and operation. For the infrastructure to be socially accepted and sustainable in the longer term, these effects should be minimised. The power, and therefore the speed with which the EV-battery can be recharged at any given recharging point determines how that recharging point will be used, as well as its electrical capacity needs.

The most basic distinction in EV recharging between relatively slow charging (up to 50 kW) and fast or high-powered charging (50kW and more) is very relevant in this respect. The first type is primarily for situations when vehicles will be connected to the charger for an extended period of time (~2-8 hours), and able to recharge more slowly over a longer period of time. In general, this requires less power from the grid and is more affordable for an EV driver. The stations are smaller than normal power ones and do not have cables attached. This type of charging also better facilitates managed charging and EVs providing flexibility services back to the grid. However, it also means that vehicles tend to be parked at that spot for a longer period of time, and that more of these types of chargers are needed to serve more EVs. This means more parking spaces are necessary, with implications for parking policy, use of the public space, rights-of way, etc. Integrating recharging solutions in existing electrified structures, such as lamp posts or on-road telecom distribution boxes, could be an efficient, low-cost and fast means to roll-out slow recharging options in cities. Moreover, by avoiding the need to install new infrastructure on the streets, public authorities can minimse the use of public space.

Good practice example: *Barcelona's Hierarchy of Charging*

The city of Barcelona Electrification Strategy, which is part of a strategy to enable Barcelona to become a zero-emission zone by 2030, encompasses a growing public recharging infrastructure network. Currently offering 1.26 kW of power output per car,

17 European Alternative Fuels Observatory

the city is in line with AFIR requirements that are set at the national level only. Barcelona plans to increase the number of chargers from 1,000 in 2024 to 3,000 by 2027, doubling the power available in parking lots and tripling it on streets. This deployment is planned even though the city prioritizes reducing the number of vehicles in the public space and favouring pedestrianised areas, active modes and public transport.

For this, the city prioritizes the installation of on-street fast chargers available for residents and visitors who wish to "top-up" their EV battery capacity in short recharging sessions. Slow charging is mostly deployed in off-street underground parking areas, where vehicles can be parked for longer time.

To reduce the need for additional recharging infrastructure, public authorities and operators should seek to maximise the occupancy rate of recharging infrastructure as much as possible. EV parking policies can be an effective means to that end. Parking places that are equipped with a recharging point should be reserved for EVs when recharging infrastructure is still scarce. Progressive parking rates can be applied to limit the use of EV parking spaces by electric vehicles that are not recharging.

Good practice example: *Amsterdam's E-parking policy*

The city of Amsterdam allowed free parking for electric vehicles at EV parking spaces for a short while to encourage the uptake of EVs. This was gradually replaced by regular parking rates. However, EV owners living in the city of Amsterdam can apply for a special e-parking license. With very limited new parking licenses being granted, applications for e-parking licenses get priority, and are usually issued within weeks. For combustion engine vehicles these waiting times can run up to several years in certain parts of the city.

Moreover, the Dutch national government has recently adopted a new legal framework of parking policy, allowing cities and regions to differentiate parking rates between zero-emission vehicles and combustion engine vehicles. The city of Amsterdam will consider applying such differentiated parking policy.

Slow public recharging points would be particularly well adapted for applying smart charging where EV drivers would dwell for longer time periods, such as public on-street parking, park and rides, etc. At these, charging could be shifted by or on behalf of the user in response to signals, with greater consumption when there is available power and reduced or paused consumption when it is in greater demand. This would enable the contribution of EV recharging to greater flexibility of the grids via demand response and storage thanks to smart and bi-directional charging. It would also reduce the risk of grid congestion and allow enhanced integration of renewable electricity.

Fast or ultra-fast charging stations (50 — 350 kW) on the other hand, are larger and deliver more electricity in a given timeframe. They are for drivers who will not be parked there for as long (~10-40 minutes) and can charge multiple vehicles simultaneously, so there is higher turnover. However, they cost more to install and operate and therefore cost more for an EV driver to use. DC chargers also have cables attached (which is now required by AFIR). Fast power chargers are individually larger/take up more space, but fewer of them are needed to recharge the same number of vehicles.

These types of chargers have different characteristics and serve different use cases, which public authorities need to be aware of when considering how and where to deploy EV charging in line with their broader transportation, land use, parking, and energy visions.

Good practice example: *Brussels Tools for Citizens*

A region-wide vision plan to roll out a network of publicly accessible EV recharging points in Brussels:

- The Brussels Capital Region aims to reach net zero emissions by 2050. Road transport is responsible for 27% of the city's CO2 emissions.
- The government has taken several major steps to achieve this goal, including supporting the introduction of a network of recharging points.
- Different stakeholders were consulted when the region's recharging infrastructure delivery plan was developed. This was finalised in 2022 and includes an analysis of the needs, constraints, and actions to deploy infrastructure in cooperation with all relevant stakeholders.
- As part of the region's vision, the https://electrify.brussels/en website was launched to guide citizens and companies in the process of installing a private recharger or finding a publicly accessible recharging point through an interactive map: https://electrify.brussels/fr/ou-recharger

Technical and financial support provided by the EIB

The European Investment Bank (EIB) provides technical and financial support via different mechanisms such as the European Investment Advisory Hub (the Hub), which acts as a single access point to various types of technical and financial advisory services. The Hub has actively supported local authorities for their clean bus transition investments, including related recharging infrastructure, participates in urban mobility advisory and on the preparation of projects under the Cleaner Transport Facility or URBIS for integrated urban development investment programmes which can include urban mobility investments. Specifically, in electric mobility recharging infrastructure, the Hub also provides support to promoters seeking to apply under the CEF Blending Facility. The Hub's advisory services are available free of charge to public authorities and can be contacted via the online platform https://eiah.eib.org, where details on the different advisory EIB divisions can also be found like: the European PPP Expertise Centre (EPEC), the Financial Instruments Advisory (FIA), the InnovFin Advisory (IFA) or the Joint Assistance to Support Projects in European Regions (JASPERS), which all have solid experience in providing advisory services to support the development of EV recharging infrastructure projects.

3. Organizing Tender Procedures

3.1. Tender-specific coordination with DSOs & other relevant stakeholders

An essential pre-requisite to successful deployment of EV recharging infrastructure is establishing a grid connection and the related permitting. Yet, establishing this connection and getting these permits are the largest and most time-consuming obstacles reported by planners and CPOs, as documented in the 2023 *STF Best Practices Guide for Permitting & Grid Connection Procedures*[18] and the International Energy Agency's *Grid Integration of Electric Vehicles*[19] report. This situation is only becoming more severe as more and more EV recharging points (and other electrified loads) come on the grid, as highlighted in the *EU Action Plan for Grids (November 2023)*. One of the elements contributing to the long lead time for electricity grid extension and upgrading is the time required for permitting; good coordination between relevant departments of the competent local and regional authorities that are responsible for the permitting and those that are in charge of the deployment of recharging infrastructure can help accelerate this process.

It is highly encouraged to coordinate the locations for individual tenders with relevant grid development plans before issuing them. This will ensure that high-level national visions are carried out locally. This should help to select the specific locations and ensure that requested power levels are possible before the tender is issued and that the investment plans of the DSOs are aligned with the upcoming demand at those sites, including needed substation and transformers. Local and regional authorities can then help speed up the implementation of those investment plans by ensuring the timely processing of the relevant permitting procedures.

Consultations between public authorities and DSOs could yield several benefits:

- selection of locations for the tender where there is adequate grid capacity available, and alignment of tender criteria with that reality;
- proper forecasting for grid modelling and associated future investment in grid extension and upgrade;
- alignment between DSOs investment plans (substations, transformers, cables) and future grid capacity planning, so that available capacity at those locations could be scaled up over time (as is also called for by the AFIR distance targets);
- awareness of upcoming civil works which could be leveraged for multiple purposes.

Furthermore, where additional grid infrastructure is needed, it is essential to know which party should be responsible for funding and constructing it, and on what timeline.

Consulting all of this in advance will align the tender with the DSO's actual workplan and investment plan, will set the expectations of the public authority accurately, and will provide the CPOs with clarity in terms of what they are actually bidding for. It will also define which hardware and infrastructure belongs to which party when the contracted period comes to an end.

3.1.1. One-step principle

More generally, consultations between relevant stakeholders — and other departments or ministries, such as those responsible for transportation/roads energy, economy, construction or civil works, and digitalisation, would ensure help these stakeholders align. It would also help take advantage of existing works project (i.e., when a road is being ripped up to install broadband cables or water pipes, try to also use that opportunity to install ducting and cables for future EV charging, etc.). In addition, public authorities should work with DSOs and CPOs (and their contractors) to apply the so-called "one-step" principle, minimising the time and workforce needed to install the charging infrastructure and connect it to the grid. Licenced contractors could perform both the installation and commission of the charging infrastructure as well as connecting to the grid.

18 Policy recommendations | European Alternative Fuels Observatory (europa.eu)

19 Grid Integration of Electric Vehicles — Analysis — IEA

3.1.2. Designated areas & 'streamlined/ simple permitting'

Furthermore, these consultations could also lead to selecting different sites than might have been selected without the consultation. They could lead to the identification of preferred 'designated' areas for EV charging infrastructure, with streamlined or simple permitting requirements. Tendering authorities should however consider what it might mean for rental or other costs, if these designated locations are not on public land.

3.1.3. Pre-permitting and Grid Connection Applications

By identifying these areas in advance, the tendering authority could start the process of applying for grid connections and permits as soon as the locations are identified for the tender. Once selected, the operator would take over the grid connection application and permit paperwork from the authority. Similarly, tendering authorities could bundle already-permitted locations into the final tendering documentation.

The point being that progress on the required grid connection applications and permits will have already been made by the time the tender winners are selected or begin work, which would significantly speed up the amount of time it will take for a location to enter into operation and be available to EV drivers.

EU Action Plan on Grids

Recognizing the importance of the grid, as well as how it has become a bottleneck to the rapid deployment of charging infrastructure, the EU Commission launched its Action Plan on Grids[20] on 28 November 2023 to bring "grids to the centre of its agenda." The Action Plan proposes anticipating future infrastructure investments, capacity transparency, regulatory reform to incentivize faster connections and technical assistance to DSOs to digitize permitting, helping countries access funds to invest into distribution networks, and an increased focus on coordination in network planning and data exchange between system operators.

3.2. Public announcement & notification of tenders

3.2.1. How to announce your tender

A fundamental element of a tender being open and successful is that it is well publicised, so potential candidates know about it. This gives the tendering authority the chance for the strongest applicant pool to choose from, and thereby get the best possible terms.

Tenders should be announced via any and all channels that the tendering authority deems appropriate — government grants portal, newsletter, announcement in local or trade media, distribution to partners, national trade associations and even announcement to EAFO or EU level trade associations. This will help get the word out and make sure that qualified potential applicants know about the opportunity.

Here too, a national repository for such tenders could help, providing a more readily accessible place for international companies to look.

3.2.2. For how long?

Adequate time should also be given for such parties to research the terms, consider, and

20 eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023DC0757

apply. A period of 3+ months from initial public announcement to the last day applicants can apply is generally considered to be a minimum adequate period of time, but of course the size, complexity, and conditions of each specific tender need to be considered.

National Resource Centres for (EV Charging) Tenders

An important, technical capacity supporting role that national governments can play is to develop template documents and supporting resources, in local languages and based on relevant national laws, which regional and municipal authorities can use to develop their own tenders on. National authorities could even provide technical assistance experts or workshops, on request.

If they offer such resources, national authorities should make a point of adequately promoting it to regional and local authorities and encourage them to use it.

This could also serve as a repository of all of the EV recharging tenders issued in that country, by all authorities, both as resources for future tenders as well as to help would-be applicants more easily find them. This could follow the model proposed in the Official Journal of Tenders[21]. In this way it would help generate the most competitive and qualified pool of applicants to the tender.

Wherever documentation can be standardized, digitized, and shared among authorities this would add value. By standardisation where possible, both market parties and procuring public authorities benefit from lower costs.

Good Practice Example: *A regional approach to tendering in Flanders*

The department of mobility and public works from the Flemish region offers the possibility for all 300 cities and municipalities in Flanders to participate in a tender which selects a CPO for each of the 5 areas in the Flemish region. This way creates an interesting scale level for rolling out public charging infrastructure which is not too big (before it was only one CPO for the whole Flemish region, and now there is the possibility to have 5 different CPO's which give more potential for competition in the price for charging as well as to avoid a multitude of smaller tenders). The Flemish region is offering this service both for normal charging infrastructure and fast charging infrastructure. This approach is part of the Flemish Clean Power for Transport plan, in which the Flemish region has the goal of installing 35.000 charging points by 2025. At this moment the Flemish cities (13 centre cities) are preparing the framework for the next tender. In this approach, the region is also looking for a solution that allows for part of the income for selling energy to return to the local authority as at this moment private CPOs are given 'free public domain' to build a profitable business case.

21 Welcome to the EU Official Journal of Tenders — ted.europa.eu — TED

3.3. Designing Tender Elements

3.3.1. General rules

When developing selection criteria, a balance must be struck between ensuring that the bidding parties are able to deliver the recharging services being bid for at the quality level the tendering party expects, ensuring competition between service providers, and allowing new entrants to enter the market.

Certain tender elements will be different in the case of a tender for high power charging along a TEN-T roadway or in a municipal setting and so public authorities should keep that in mind.

3.3.2. Pre-selection process

It is important that the right criteria are used to determine eligible bidders. While price (i.e. rent to be paid) is naturally an important criterion, it should not be the only one, and should be considered at the right time in the tendering process.

3.3.3. Additional legal/ financial selection criteria

Because EV charging is a relatively new market, requirements of long financial history can be impossible to meet. For applicants which meet the quality/ experience criteria, public authorities should consider other ways to provide financial security, such as 3rd party or Group-level guarantees.

Additionally, it is important to clarify that just because a company has been awarded funds for the development of the public charging infrastructure network from EU or national sources, this does not mean that they should get preferential treatment for obtaining permission to install EV charging infrastructure in public areas. The awarding of a grant or investment of public funds should be separate from, and not influence the awarding of, a tender for recharging services.

3.3.4. De-risking Investments and Tender Duration

The largest portions of the EV charging investment — grid connection and related infrastructure and the charging hardware itself, particularly for high powered DC locations or hubs — takes place before the station even enters into operation. The payback period is a number of years, longer in less mature markets and where utilisation is low. Public authorities must take steps to de-risk the concession in order to incentivise companies to make this investment.

Concessions need to be for long enough periods for the operator to realise the investment, keeping in mind utilisation rates in the respective market. Adequate concession durations also incentivise companies to invest in and improve their locations and provide ever better services to EV drivers, as permitted under the tender's terms (sometimes this is even explicitly encouraged in the contract).

Particularly with regards to the needed grid infrastructure (which can be re-used after the initial concession period) but also even the recharging stations, tendering authorities could consider retaining ownership of it as a way to reduce the overall financial burden of the investment. However, this needs to be explicit in the contracting phase as this would affect project financing.

Regarding hardware, tenders can de-risk projects by requiring the right mix of requirements for durability, upgradeability, modularity and other future-proofing conditions, in combination with end-of-concession-period transfer of ownership.

Credits to be available for public recharging under the RED III are another revenue stream which can help de-risk the investment. The RED III requires that Member States have in place a crediting mechanism that allows operators of public recharging infrastructure to validate and sell credits that count towards national goals for the share of renewables for road transport, once these markets are in operation. Public authorities should consult their respective Ministries on the status of their national market.

Good Practise Example:
De-risking EV charging investment in Croatia

In Croatia, all cities and local municipalities have a restricted period for leasing public areas to private users, for a duration of 2-5 years. However, they have realized the need to update this policy for EV charging, a new asset class for which the restricted leasing period is not adequate. To update the local policy, the cities of Slunj and Omiš proposed to their respective City Councils, which they approved, a new decision on the management, disposition and use of property where, solely for the purpose of setting up charging stations for electric vehicles, they allowed the lease period of public space to be extended to a maximum of 20 years. Both cities created tenders for the lease of public areas for the installation and management of an ultra-fast charging station for electric vehicles and made it possible for CPOs to invest in infrastructure development, instead of cities and local self-government units.

3.3.5. Price and Pricing (Between Authority & Concessionaire)

After the quality and other pre-selection criteria, it is understood that the financial arrangement between the tendering authority and concessionaire is one of, if not the most important criterion, in the tendering process.

The optimal arrangement may vary between low and high utilization environments, and municipal networks as compared to corridor ones.

For example, concession fees are very common in corridor tenders but less so in municipal ones.

According to the EIB[22]:

„The public authority's decision on whether to demand concession fees, and the appropriate structure of the concession fee mechanism, will depend on the context of the specific concession arrangement. Concession fees need to be factored into the overall economics of the project, and ultimately be covered by revenues the private partner receives from users (and therefore reflected in user prices). For the first concession in an immature EV market, it may not be viable to demand any concession fees, or payment of concession fees might only be triggered if and when the concession performs exceptionally well. As the EV market matures, concession fees might become standard practice and the mechanisms more favourable to the public authority. Examples of concession fee mechanisms include:

- a single upfront payment on signature of the concession contract;
- regular fixed payments for each site on which EV charging infrastructure is installed (akin to rent);
- a percentage share of revenues or profits above a certain threshold or once specific targets (e.g. kWh per use, occupancy rate) are met;
- a fixed payment per kWh of charge.

In practice, concession fees structured as a percentage share of revenues or profits on an ongoing basis have been found to work well. These types of arrangement keep both parties interested and engaged in the continuing performance and success of the concession."

Where 'rent' is required, experience has shown that some flat or fixed component (rent / m2, or number # of parking places), plus some variable component (/kWh to reflect utilization) — work well. Fixed fees guarantee the property owner or lesee some revenues; the variable portion facilitates growth with the EV market.

There are other models which do not require 'rent' if the operator meets some other criteria — such as co-location of renewable energy generation, or finds locations on private rather than public land.

How these fee components can be structured, and what they cover also vary, and need to take into account other elements of the contract, as discussed above under grid investment, i.e., what additional costs a CPO is taking on, who

22 Electric vehicle charging concessions — A contract guide for public authorities (eib.org) Theme 5

will own the infrastructure after the concession period is over, etc.

Whichever fee structure is used, it is very important that it is known and explained in advance, with a clear, common methodology so that the various bids can accurately be compared and bidders understand what grounds their bids will be evaluated on.

Some tenders also seek to regulate the price that concessionaires can charge to their customers and/or the extent to which the operator can use differential pricing models, for instance by differentiating between subscribers and ad hoc users, or between the time of day. This practise however can have unintended outcomes.

Even though price floors and caps can bring price clarity and stability to consumers they also limit the opportunity for bidders to compete on service quality and price, which is a key area for competition. Therefore, where price controls are being considered, the consequences of these on competition and the incentive to invest must also be evaluated.

3.3.6. Location Scalability

Because of the lengthy timelines for establishing grid connections and the rapid growth of the EV market, it is increasingly the case that the operator may want to add more, or higher power, recharging points at a location, even before the permits or grid connection already applied for have been finalised. Tenders should include flexibility/room for growth in them. AFIR also supports this approach, with progressively increasing total power output at each location in the distance targets.

3.3.7. Clear Performance Measures & Enforcement

There must be clear, enforceable compliance and penalty terms in the contract, so that if a concessionaire is not meeting their obligations the public authority has recourse, up to cancelling the contract and bringing in a new operator or reopening the concession. Specific elements which should be accounted for (i.e., technical criteria) are described in Section 5 of this guide.

All this is intended to ensure successful operation of the tendered services. This is particularly relevant in geographic areas where demand and competition are limited and the incentives of providers to roll-out quickly are reduced. If the public authority ran its tender to ensure a plurality of suppliers, these conditions are less likely to be needed. Here too it is worth to reference the EIB guide at length:

“EIB Theme 4 — Creating a performance mechanism

To create meaningful incentives, the contractual requirements and standards concerning operation of the EV charging infrastructure and services must be accompanied by provisions for performance monitoring and reporting, as well as sanctions for non-performance. Collectively, the provisions on obligations, monitoring, reporting and sanctions comprise the “performance mechanism.”

There are numerous ways to approach and structure the performance mechanism in the contract, but good practice is to create a separate list or schedule of requirements and standards. These are often referred to as “performance measures,” and need to be defined to allow clear and objective measurement of whether or not they have been met. Some performance measures may be directly linked to the functioning of the EV charging infrastructure and services (including an obligation to respond within a certain period to maintenance issues). Others may be more general in nature and relate to management of the contract (such as submitting monthly reports to the public authority).

The contract should set out requirements for regular monitoring and reporting against the performance measures. Most contracts permit self-reporting by the private partner but entitle the public authority to dual-monitor and/or audit the private partner’s reports. Some performance measures will relate to obligations that must be met routinely, such as submitting monthly reports to the public authority, whereas others will need to be met and measured on

an ad hoc basis, such as responding to maintenance requests.

For each performance measure, the sanction for non-performance should be clear and objective. Some contracts allocate a fixed monetary value to each performance measure and apply this amount as a financial penalty when a failure occurs. Other contracts have a system that allocates performance points to each failure and then a monetary value to performance points. Both approaches can include weightings that reflect the performance measure's importance and the impact of failure: for example, not responding to an emergency assistance call attracts a higher penalty than late delivery of a report, while a one-day delay in completing a repair attracts a lower penalty than a one-week delay. The public authority needs to consider the appropriateness and fairness of the level of such penalties: the overall objective is to create the right incentives for the private partner to deliver without being overly punitive.

For some failures, it might be appropriate to allow a remedy period before applying a penalty. The remedy period might be embedded in the performance measure itself: for instance, a defect in the EV charging infrastructure might only be considered a failure if not rectified within 24 hours. Alternatively, the remedy period might apply after a failure occurs: for example, a defect in the EV charging infrastructure is an automatic failure but a 24-hour remedy period is then allowed before applying a deduction.

Performance is typically measured (and reported) monthly, although the public authority might also require real-time access to certain information and data. Any financial penalties are typically applied monthly or annually. Financial penalties are often capped at an annual amount and/or aggregate amount over the contract duration. "

.... and from earlier in the same section:

"To reinforce the private partner's natural incentives, the public authority should use the contract to specify its requirements and set standards for any or all operational aspects of the EV charging infrastructure and services. The precise requirements and standards will vary for each project, depending on the public authority's objectives and priorities. As a starting point, however, the contract will typically require the private partner to ensure a certain level of overall performance of the EV charging infrastructure network. Depending on the public authority's underlying objectives and the stage of EV market development in its area, overall performance might be measured by, for example:

- the "uptime" of all charging points installed to date under the contract;
- the available charging capacity available across the area at any point in time.

Some contracts apply different indicators of performance at different stages. For example, during the installation period, the private partner must respond to demand and ensure a certain level of available charging capacity (as demand increases, it must install new charging points). Then, once the installation period ends, the private partner must ensure the "uptime" of the charging points it has installed.

The private partner's performance might also be measured by more detailed requirements and standards relating to, for example:

- accessibility of the EV charging infrastructure to users (for instance, interaction with parking policy, interface with subscribers vs. one-off users);
- accessibility of the EV charging infrastructure to e-mobility service providers;
- functionality of the EV charging infrastructure (such as how quickly charging starts, availability of real-time charging information);
- number of service failures and timescales for responding to them;
- procedures and timescales for dealing with user enquiries, calls for assistance and complaints;
- procedures and timescales for inspections, maintenance and repairs
- policy on energy resources (e.g. renewable energy use, user choice of energy source);
- pricing policy and transparency, and user payment procedures (see Theme 5);

- reporting to and sharing data with the public authority (for monitoring contract performance, monitoring use and/or informing the public authority's overall EV strategy);
- inspection and monitoring rights for the public authority[23]. "

3.3.8. Use of Renewable Electricity & Storage

The use of renewable electricity for recharging electric vehicles is a central element of the policy for decarbonisation of transport, with specific provisions introduced in the AFIR and also in the RED III. AFIR, Article 15.3 requires Member States to assess how the deployment and operation of recharging points could enable EVs to further contribute to the flexibility of the energy system, including their participation in the balancing market, and to the further absorption of renewable electricity. RED III Article 20.a.1 introduces a requirement for TSOs (Transmission system operators) and DSOs (Distribution system operators) to make available information in close to real time on the share of renewables and the greenhouse gas emissions content of the electricity they supply. This data should be made available in a digital manner so it can be read by electronic communication devices such as smart metering systems and recharging points.[24]

Furthermore, AFIR, Article 20.2 c(iv), requires operators of publicly accessible recharging points to share whether the electricity powering a given station is 100% renewable or not.

Public authorities should consider the electricity supply of recharging points in their energy transition planning. Depending on local conditions, additional onsite renewable electricity generation could be part of a tender — or part of a separate process, coordinated with the procurement of public recharging infrastructure. For synergetic reasons, it makes a lot of sense to plan these elements together.

Whereas a vehicle at a fast-recharging point needs lots of power quickly, onsite storage can fill slowly over an extended period of time, particularly in off-peak time, when prices are lowest, and thus provide peak-shaving services to the grid. When an EV arrives to recharge, that power can come directly from the grid as well as from the onsite battery, thus reducing strain on the grid (congestion) and costs to a CPO as well as to an EV driver. This additional source of power could also reduce the need for additional grid infrastructure at that location.

Good practice example: *combining EV charging with solar PV and battery storage*

Zunder, the ultra-fast charging operator from Spain and Southern Europe, has developed a technical solution that allows shorter commissioning times. The deployment of Self-Sufficient Charging Stations drastically reduces red tape delays as the station doesn't require to be connected to the high voltage grid to operate. Zunder's ultra-fast charging stations are powered by the energy provided by second-life batteries who store the energy captured on site by the solar PV canopies and are connected to the low voltage network as back-up.

Once the station is connected to the high voltage grid, the modular batteries are easily moved to a new location to put it into operation. By deploying modular batteries Zunder accelerates the deployment of its ultra-fast charging network, offering its services earlier in new locations. The equipment has been designed to minimize red tape procedures, thus allowing the charging stations to be commissioned much earlier. As of 2024, the company currently has more than 640 operational charging points in Spain, France and Portugal.

In order to fulfil the AFIR and RED III vision of EV recharging enabling the (further) use of renewable electricity, effective price signals to the user — as well as easy options to respond to them, e.g. through a smart charging mode — should be in place to align EV recharging with

23 https://www.eib.org/en/publications/electric-vehicle-charging-concessions Theme 4 — Creating a Performance Measurement

24 This requirement will have to be transposed by Member States by 21 May 2025 (the transposition deadline). The Commission has published a dedicated guidance (C(2024) 5041 final) on these provisions to support Member States in implementing the revised RED (Art. 20a).

the actual availability of renewable electricity. Bi-directional charging and/or additional battery storage could be envisaged in combination with on-site renewable electricity generation to reduce the burden on the grid. This would simultaneously support the integration of (further) renewables, reduce grid congestion and enable lower charging costs for users. At the same time, the amount of space required and additional CAPEX costs associated with these investments can be significant and must be properly accounted for in tender design and accounting.

Operators of recharging points should be encouraged to offer flexibility to the electricity system. This can either be done by contracting dynamic price electricity supply contracts or by offering flexibility to electricity markets, for example to capacity or day ahead/intraday markets. Any electricity price variations or additional income generated by such schemes should be passed on to the EV user. In case of public tenders, the participation in such schemes can be included in the award criteria where electricity markets reward flexibility.

For the reasons explained above, tender design and objectives should encourage and incentivise locating renewable energy generation and stationary energy storage (batteries) in the close vicinity of EV recharging stations. On-site produced renewable energy, EV recharging points, and stationary energy storage create a virtuous cycle of creating, storing, and using green electricity in a way that brings benefits to the electricity system and the EV driver.

3.4. Promoting Competition

Open, competitive markets and redundancy are important principles. In some geographic areas, although there may be sufficient demand to ensure a plurality of providers and competition, tenders may still result in too little competition. In these cases, an authority should ensure that the tender conditions reserve some charging points to alternative providers/new entrants.

3.4.1. The AB-AB system

One effective way to ensure an open, competitive market and redundancy in infrastructure operation is by designing the tender to encourage multiple winners (known as the AB-AB system, though not necessarily limited to just 2 winners). The main point is that there is no single winner which takes all.

This can be structured in different ways:

- Divide the locations in a tender into multiple 'batches' — batch A, B, (C, etc..). One bidder 'wins' batch A and the other 'wins' batch B and so on. Again, no single bidder can win all of the batches. Given that consumers seek recharging points near where they live or work, it is particularly important to design the batches so that alternative providers are distributed in a way to offer different options to consumers. 'Batches' could include some high utilisation and some low utilization locations (such as rural or low-income areas which the public authority wants to make sure are also served and is doing so by batching them together with more attractive locations). Locations across batches should be close enough to each other so that there are multiple suppliers present.
- Create the list of all available locations and let bidding parties bid for the locations they want and would be able to operate — although capping the maximum number or percentage of locations any single company can win;
- Allow bidders to prioritise the locations they consider important to win by setting higher prices. This has the added benefit of permitting bidders to really go for the locations they want and offering rental / fees accordingly.
- In the case of major roadways, companies should not be awarded back-to-back locations. For example, the first location could be in batch A, 60 km later (per AFIR requirements) the next location would be in batch B, then 60 km later in batch C or A again and another 60 km B, and so on, so that at each subsequent rest area, users have a different choice of operator.

The AB-AB model ensures that no single 'winner takes all' and creates competition among operators to provide the highest quality service for the best possible price. It also serves as a redundancy guarantee. If one operator fails, the others remain operational, which is especially critical for the motorway charging network. And, it provides for recharging services to be offered in areas where market players would not necessarily go on their own.

Good practise example: *Stockholm & Stuttgart — Different approaches to support market competition*

Stockholm has mapped possible locations for on-street recharging points on a publicly accessible online map, inviting interested project developers and operators to apply for locations on a come-first served basis. In order to ensure competition, the city applies a limitation to the number of applications that can be made by the same party (maximum 30 applications/locations). Some streets have been or will be pre-cabled by a DSO and are identified as "orange" locations on the map. An applicant may only apply for a maximum of 4 orange locations.

Stuttgart has used the smallest possible lots (one location, two recharging points) in order to make the market as accessible as possible, in particular to smaller players (there are currently 4 investors, one of them a smaller market party). One of the lessons learned from experience is that it is not necessary to offer the smallest possible lot comprising only one location. The next tender offer will thus be split in 4-10 lots, comprising 50 — 125 locations. This way, competition can still be achieved while cherry-picking is avoided and a high level of efficiency in planning is maintained.

3.4.2. Competition across, not within, locations

Connected to batching is the concept of competition / exclusivity. As explained above, competition between operators brings the most value to EV drivers and ensures redundancy in the overall EV charging network. However, given the issues related to permitting, electricity grid connections and power availability, it would be extremely costly, time-consuming and ultimately counterproductive to have multiple CPOs requesting grid connections and capacity at the same location in particular in urban areas. Multiple CPOs operating at the same location also risk undermining the business case for each one, thereby risking lowering participation in the tender itself. Therefore, depending on the local circumstances, competition between operators should be ensured across different locations, but not necessarily within single locations.

Ensure open market for new (qualified) entrants

3.4.3. Unbundled Tenders

Another element related to ensuring an open, competitive market for EV recharging services, accessible by qualified new entrants, is ensuring that tenders are 'unbundled'. This means that EV recharging services should be the specific and sole focus of a tender designed to provide that service, not 'bundled' together with the need to provide other services, such as refuelling, concessions or hospitality. At the same time, companies which offer both refuelling and recharging services should be eligible to participate in such tenders and not be prohibited from doing so. Eligible companies can offer other services but should not be required to. However, these should be different tenders evaluated on their own merits.

Requirements to bundle services lead to either locking out of many eligible EV charging companies, or the creation of consortia, which can present other challenges.

There are examples where a public authority like a highway authority would like to allocate concessions to an entire rest area to a single real estate operator via a single tender and make that entity responsible for all the activities which would take place there. This is not a suggested practise as it leaves too much uncertainty about the development of critical infrastructure and limits competition in those

locations. It also puts the responsibility for offering services like EV recharging with an entity not expert in this area. However, if this is done, it should be explicit in the contract that this real estate entity will create its own open, competitive tender for the distinct services to be offered there.

It is in the best interest of a tendering authority, as well as EV drivers, that EV charging services is treated as a specialised sector and tenders are developed accordingly.

3.4.4. Existing Concessions

Another challenge to an open market for new entrants is the topic of existing concessions, which pre-dated the take-off of e-mobility but may have 10 or 20 years left in them, or even be open-ended. Where these existing contracts would undermine the development of EV charging or prevent attainment of AFIR objectives these could be looked at. There are often possibilities to modify or open up existing agreements — in particular those with an infinite duration. Moreover, the extension of existing concessions should be subjected to an open, competitive award procedure to avoid State aid concerns or other competition concerns related to granting of exclusive rights. Competition or consumer rights authorities should have a role to play to ensure that these existing concessions are not undermining an open market or reducing consumers rights.

Finally, public authorities could consider structuring tenders so that bidders could be eligible to only apply to a portion of the concession.

4. Technical Tender Requirements

4.1. Introduction

Tenders for offering recharging services should enable and support user friendly, interoperable, future proof, hardware while ensuring an open, competitive marketplace. The tender process should encourage participation from multiple operators to avoid market concentration and ensure a variety of services and best experience for EV drivers.

AFIR includes some technical criteria and requirements for publicly accessible charging infrastructure, which are listed below. There are other elements important for public authorities to consider, and these are also included below.

There are also areas where AFIR calls for specification of technical requirements via delegated acts — this work is ongoing and will take place on a rolling basis but this should not stop public authorities from issuing tenders to deploy recharging infrastructure today. This is the best way to gain experience on what is working and what should be done differently, as well as to meet targets and goals in time. Public authorities should monitor these updates and must incorporate legal requirements from delegated acts into their tender design as they are finalised.

4.2. Power Level & numbers of chargers

- AFIR targets are detailed above in section 1 of this guide. For LDVs, these distance-based targets specify minimum power levels of the recharging pools and belonging recharging points along the TEN-T Core and Comprehensive networks. There are no specific requirements at urban nodes for LDVs, nor for the geographic distribution regarding the implementation of fleet-based targets, however the minimum power outputs set in AFIR provide a good reference for local and regional planning.
- These fleet-based targets are minimum levels. Public authorities can go beyond them in their region.
- Tenders can include flexibility for further development and expansion at locations to respond to actual or anticipated demand or willingness of tendering party to invest.

4.3. Deployment speed

- AFIR provides deadlines for the deployment of recharging infrastructure along TEN-T networks.
- It is common for tenders to stipulate reaching deployment milestones within a certain time frame — i.e., x% of locations operational in first 6 months, etc.

4.4. Future Proof, Reliable Infrastructure

AFIR requires certain functionalities to be included in publicly accessible recharging infrastructure, namely:

- Digital Connectivity — By 14 October 2024, operators of recharging points shall ensure that all publicly accessible recharging points operated by them are digitally-connected recharging points.
- Smart Recharging — Operators of recharging points shall ensure that all publicly accessible recharging points operated by them and built after 13 April 2024 or renovated after 14 October 2024 are capable of smart recharging.
- Fixed cable on DC Chargers — all direct current (DC) publicly accessible recharging points have a fixed recharging cable installed by 14 April 2025.

In addition, the Commission will likely adopt a delegated act to mandate, among others, technical specifications regarding communication between an electric vehicle and a recharging point (AFIR, annex II, point 2.1) that recharging points will have to comply with.

Beyond the AFIR requirements, there are additional hardware and software design principles to be considered:

- Energy Efficiency of recharging stations with regard to AC-DC conversion where appropriate, incorporating ecodesign principles cover all life phases.

To the extent possible public authorities should consider requirements aimed at improving the electric energy-efficiency of charging points. For DC-recharging points specifically, this concerns most energy efficient AC-DC conversion, limiting energy losses in the rectification process and reducing the device specific cooling needs. The systemic electric energy-efficiency of medium — to high power DC recharging points depends primarily on four factors:

1. The principle efficiency level of the power electronics in the rectification modules, and for ultra-high power recharging points (P>150kW) also the efficiency of upstream transformers if required in function of middle-tension-grid- or low-tension-grid-connection concepts;
2. How efficiently the DC recharging device steers its modules to adapt to various DC-power levels demanded in individual recharging sessions, while able to respond to the differing demands from the large majority of EVs expected to be served;
3. How energy-efficiently the DC recharging point can adapt to the various voltage levels demanded by the large majority of EVs expected to recharge at the recharging point; and
4. The energy-efficiency of all accessorial components of the DC recharging point, notably regarding:
    a. its internal cooling and/or winter heating systems (incl. the subsystem providing fluid-cooling to the recharging cable and plugs in case of ultra-high power recharging points); and
    b. other accessorial loads like the display, communication devices, etc., notably with back-end connected smart charging devices. Also stand-by power consumption (when the device is not in use by a client) plays a role.

Point 4.b) applies logically also to smart AC-recharging points.

While the most effective incentive for CPOs to deploy energy-efficient infrastructure would likely follow from stricter rules on pricing and billing (i.e. allowing CPOs to only charge the amount of kWh effectively delivered to the EV), this practise is controversial and public authorities could, for ecological and economic reasons, set requirements in their tender specifications if feasible and if related information is available to the bidders. They could for instance require that the typical efficiencies of a DC-recharging point at different load conditions are transparently communicated by prospective developers of recharging infrastructure in their bids, for easy tender comparison. Currently, the full-system's electric energy efficiency levels around (and ideally above) 94% should be, as a minimum, attainable by DC-recharging points under typical application conditions (i.e. pertinent climatic conditions, etc.), and for modularly constructed DC-charging points also in partial load situations.

- Modularity and upgradeability requirements, to extend the technical life of the charging infrastructure, and also to keep up energy efficiency in partial load
- Cyber-security needs
- Proposed revisions to the Network Code Demand Connection (DC) and Requirements for Generators (RfG) covering electromobility, and in the latter case including bidirectional power transfer.

Technical specifications & Standards — to enable interoperability and prevent vendor lock-in, public authorities should require operators of recharging infrastructure the use of international and European standards and protocols adopted by these organisations in line with the mandatory requirements established in AFIR, Annex II — technical specifications, which are accessible to all parties through the online repositories of standardisation organisations. Industry stakeholders currently implementing other de facto protocol in the market should be strongly encouraged to cooperate with international and European standardisation organisations (ISO, IEC, CEN-CENELEC, etc.) to ensure market convergence and consolidation. Public authorities could also point operators of recharging infrastructure to the current Commission standardisation mandate (M-581)

prepared by CEN-CENELEC which includes all the relevant standardisation work under development in support of AFIR, Annex II.

4.5. Price Display & Transparency

AFIR, Article 5 includes specific requirements for how operators of public charging should make prices available.[25] The objective is that users have all the necessary information to make an informed decision before they start their session:

For all points deployed after 13 April 2024, operators of publicly accessible recharging points with a power output equal to or more than 50 kW shall, at the recharging stations, show the ad hoc price per kWh and any possible occupancy fee expressed in price per minute so that that information is known to end users before they initiate a recharging session and price comparison is facilitated.

Operators of publicly accessible recharging points with a power output of less than 50 kW shall, at the recharging stations operated by them, make the information on the ad hoc price clearly and easily available (for example via sticker, sign, mobile application, website), with all its price components.

The applicable price components shall be presented in the following order:

- price per kWh;
- price per minute;
- price per session;
- and any other price component that applies.

4.6. POI (point of interest) data sharing

- Providing EV drivers and other parties with consistent and up to date information on the charging points and locations is important. Therefore, AFIR, Art. 20 requires that the following static and dynamic data is shared by operators or owners of publicly accessible charging points (see the graph here below and more details in annex).
- This information must be made available by recharging and refuelling point operators publicly to Member States national access points (NAPs), at no cost, by 14 April 2025. Consequently, Member States shall ensure the accessibility of these data to data users (i.e., third parties) as of 31 December 2024.
- Upcoming delegated and implementing acts under AFIR will further develop these requirements, including adding additional data in view of technological developments or new services made available on the market, and specifications related to data format, frequency and quality, etc. — public authorities may monitor these, to support their planning for future infrastructure roll-out, according to their mobility plans.

25 Additionally European Commission have prepared Questions and Answers to respond specific technical questions regarding operation of recharging infrastructure.
https://transport.ec.europa.eu/transport-themes/clean-transport/alternative-fuels-sustainable-mobility-europe/alternative-fuels-infrastructure/questions-and-answers-regulation-deployment-alternative-fuels-infrastructure-eu-20231804_en

USER-FRIENDLY INFRASTRUCTURE

eMobility data ecosystem

- **Operating of recharging / refuelling points to make static and dynamic data available through Application Programme Interface (API) at no costs**
  - Static Data: geographic location, number and type of connectors, current (DC or AC), max power output of station and points (kW), vehicle type compatibility, no. of parkings for persons with disabilities, CPO ID code and contact information, opening hours, 100% renewable electricity supply contract
  - Dynamic data: operation status, availability, ad hoc price

*Consumers can **easily find** recharging / refuelling infrastructure, know in advance if it is technically **operational and free for use**, and what **price** they can expect to pay*

European Commission

Source: Internal EC presentation

Good Practise Example: *Identifying new locations for recharging infrastructure in Madrid and Stuttgart*

In Madrid, city authorities use data from the concessionaire to steer network deployment. In particular the concessionaire must "provide information concerning the parameters for the use of the recharging network, inter alia: state and maintenance of the network, recharging times, average consumption for each recharging session and user typology. Data must be transmitted in such a way that the collected information can be analysed to offer the city of Madrid a clear understanding of the development of electric mobility in its territory."

Madrid has also collected feedback about new recharging locations from carsharing companies and taxi services (included Uber, Cabify and others). Some of these companies provided the city with an anonymously collected city map where the most common journeys (origin / destination) were highlighted, to identify fast charging needs.

The city of Stuttgart bases its deployment strategy on the number of inhabitants and working places in each of the 152 city districts. The required amount of new recharging points in each city district is therefore determined at macro-level. It is subsequently left to market parties to decide where exactly in each city district they want to roll out the required amount of recharging infrastructure.

At the moment, the next tender offer with 500 additional AC charging stations is prepared. The model will be slightly improved: as before, the amount of new recharging points in each city district is determined at macro-level. Due to increasing technical limitations in finding appropriate locations to set up the hardware on the micro-level, the exact spots will now be pre-determined by the city administration. Then they will be offered to market parties in several lots.

4.7. User Friendly Charging Experience

To provide a smooth, harmonized user experience, AFIR stipulates payment methods for various power levels of charging:

4.7.1. Payment Methods

- Ad-hoc payments and charging following the provision in AFIR Article 5.1 is required at all newly deployed publicly accessible recharging points from April 13, and
- Applies retroactively to all points >50 kW along the TEN-T from January 2027 onwards
- Recharging points are to be equipped with the user-friendly payment methods based on the power level, as indicated in the graph here below
- Payment kiosks can serve multiple points in a pool. This means payment hardware can be on the kiosk instead of each recharging point, as long as the kiosk can accept payment in the required way, for the charging station.

In addition to the requirements in AFIR, public authorities should expect a high level of performance in their tenders. By requiring, for example:

4.7.2. Charge Point Operation and Maintenance:

- Uptime of charging infrastructure [X%] — % of overall time that a charger point is in operation and available to users; there is, however, no standardised method or metric for calculating this, yet
- Proof of valid Service Level Agreements (SLA's) in support of uptime target — maintaining high uptime in the face of wear and tear requires active maintenance and support. SLAs are agreements that the operator has with other service partners to proactively maintain the charger and/or respond to it going down and return it to service in a short period of time
- Obligations can require resolution within a given timeframe, clear procedures for categorizing and responding to failures, from both a hardware and software perspective
- Connectivity level — refers to the amount of time that a charger is properly connected to its backend system (above 97% is a good benchmark)

4.7.3. Customer Support Services

- 24/7 phone line with 1st level support in local and at least one foreign language. The phone number of the call centre should be clearly displayed on each recharging station
- 1st level support that can remotely solve most problems during the charging process
- High Response rate to calls, conversations and written inquiries in 3 working hours, (ie, over 95%)

4.7.4. Roaming

Enabling EV drivers to use different mobility service providers at recharging points is an important element of an open network ensuring the presence of multiple players. Tenders can encourage this through roaming requirements, whereby a recharging point supports users with MSP contracts other than the one affiliated to the operator of the recharging point.

In practise this means that charging stations supported under public tenders could be required to support a minimum level of roaming with market players, whether by connection to (a) roaming platform(s) or via a certain number or % of Peer to Peer connections.

4.8. Accessibility

Public Procurement Directives

When procuring goods, services and works technical specifications must be taken into account regarding accessibility criteria for persons with disabilities.

Article 42(1) of Directive 2014/24/EU[26] and Article 60(1) of Directive 2014/25/EU[27] state that: for all procurement which is intended for use by natural persons, whether general public or staff of the contracting authority, the technical specifications shall, except in duly justified cases, be drawn up so as to take into account accessibility criteria for persons with disabilities or design for all users. This means it is a legal obligation for public buyers (or utility sector entities) to take accessibility criteria into account.

Furthermore, Directives 2014/24/EU and 2014/25/EU require that, where mandatory accessibility requirements are adopted by a legal act of the Union; technical specifications are, as far as accessibility for persons with dis-abilities or design for all users are concerned, to be established by reference thereto.

This is the case under Directive (EU) 2019/882[28] on the accessibility requirements for products and services — known as the European Acces-sibility Act, which sets common accessibility requirements to ensure that persons with dis-abilities and older people can access products and services on an equal basis with others. It also reflects the obligation under the UN Convention on Rights of Persons with Disabilities (UNCRPD) that State Parties provide acces-sible products, services and infrastructures. Although according to the European Accessi-bility Act (EAA) accessibility requirements only apply from 2025 (103), given the obligation applicable under Directive 2014/24/EU and Di-rective 2014/25/EU, there is a strong case for referring to them in tender documents published before this date. This may help to comply with EU rules on technical specifications and ensure the market is prepared to deliver full accessibility from 2025.

In procurement documents, you may refer to harmonised standards or technical specifications for product or service delivery accessibility (please see further the section on the European Accessibility Act).

Concerning public procurement, for products and services not falling under the scope of the European Accessibility Act (EAA), the accessibility requirements of the EAA are not binding. However, where the Accessibility Act or other EU legislation sets out accessibility rules and obligations for any product or service, if the features, elements or functions comply with the corresponding EAA requirements they can be presumed to also comply with the other legislation, unless otherwise provided. Public buyers may in any case decide to apply accessibility requirements that go beyond the accessibility requirements set out in EU Law. The EAA also includes voluntary accessibility requirements on the built environment used by clients of services covered by EAA Directive itself. Member States may decide to require compliance with these requirements.

For further information and example for addressing accessibility in public procurement, please see Commission Notice “Buying Social — a guide to taking account of social considerations in public procurement (2nd edition)”. [29]

26 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0024

27 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0025

28 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0882

29 C(2021) 3573 final, DocsRoom — European Commission (europa.eu)

European Accessibility Act in details

European Accessibility Act, directive 2019/882 contains:

Directive (EU) 2019/882 on the accessibility requirements for products and services — known as the European Accessibility Act (EAA) — sets common accessibility requirements and obligations to harmonise accessibility of certain product and services. As a result, it will ensure that persons with disabilities and older adults can access products and services. It also reflects the obligation under the UN Convention on Rights of Persons with Disabilities (UNCRPD) to facilitate compliance with. This legislative proposal requires adoption by the EU co-legislators and transposition at national level.

The mandatory accessibility requirements ensure that products and services are designed and produced in such a way as to maximise their foreseeable use by persons with disabilities and are accompanied where possible in or on the product by accessible information on their functioning and accessibility features. In addition, Annex III of the EAA sets out accessibility requirements for the built environment, which may be applied by Member States. As the obligation to include accessibility requirements in technical specifications also applies to works contracts, the Annex can provide a useful starting point for design and construction contracts.

Similarly, public authorities can refer in the tenders to Harmonised standards or technical specifications for product or service on accessibility requirements (developed by European standardisation organisations), including those developed under the EAA.

The Directive covers the following products and services:

- Computers and operating systems
- Payment terminals and ATMs
- Ticketing and check-in machines
- Interactive self-service terminals providing information
- Smartphones
- TV equipment related to digital television services
- Telephony services and related equipment
- Access to audiovisual media services such as television broadcast and related consumer equipment
- Certain services related to air, bus, rail, and waterborne passenger transport
- Consumers banking services
- e-books
- e-commerce
- The answering to the single European emergency number ‘112’ Mandatory accessibility requirements for these products and services will apply from 2025 (57).

Harmonised standards or technical specifications for product or service accessibility requirements developed by European standardisation organisations, including those developed under the European Accessibility Act, may be referred to directly in procurement documents. For example, standard EN 301 549 contains accessibility requirements for ICT products and services, and EN 17210, includes accessibility requirements for a wide variety of buildings and infrastructures. The European Commission has issued an standardisation request M587, to the European Standardization Organisations in support of the European Accessibility Act. The M587, requires the revision of three standards on accessibility, namely those related to Information and Communication technologies, Built environment and Design for all. It also requests the development of 3 new standards, namely on non-digital information, answering to emergency communications and on support services.

Other EU legislation may also set out accessibility requirements for products or services, and compliance with the EAA may help to establish compliance with this legislation.

- AFIR, Article 14.2.i calls for Member states to report on measures to ensure that publicly accessible recharging and refuelling points for alternative fuels are accessible to older persons, persons with reduced mobility and persons with disabilities in accordance with the accessibility requirements of Directive (EU) 2019/882.
- This may include, for example, providing sufficient space around the parking place, ensuring that the recharging station is not installed on a kerbed surface, ensuring that the buttons or screen of the recharging station are at an appropriate height and the weight of the recharging and refuelling cables is such that persons with limited strength can handle them with ease.
- However, many recharging points are to be deployed in urban areas where kerbs are the norm, or as part of existing parking lots, governed by local parking policy. Given these constraining factors, it is important for public authorities to both be clear about minimum requirements bidding parties will need to meet but also allow flexibility in their application and permit alternative solutions to achieving them.
- This is especially so while more detailed guidance at the EU level is still under development. Recommendations for hardware and parking space layout, data requirements, distribution requirements, and future standards are being currently prepared by the Sustainable Transport Forum.

4.9. End of Tender

It is also important to include clear post-tender requirements and obligations related to infrastructure and hardware ownership or handover, for the charging stations and all related infrastructure. This will impact the project economics for the bidding party, and also the expectations and understanding of what will happen to the hardware at the end of the tender. If there is the possibility of extending the concession, and for how long, this is also important to know at the time of launching a tender.

5. Conclusions

Transitioning the light duty vehicle fleet to a zero-emitting, electrified one is essential to meeting Europe's decarbonization and climate neutrality targets, as well as improving air quality and health.

The EV market is still in its early days but growing rapidly, and a lot more charging infrastructure — public and private, of various power levels, and to serve a wide range of different use cases — is needed to support the growing fleet.

While the enabling policy framework at the EU level is now largely established through AFIR, EPBD and REDIII — member states are at varying levels of EV fleet size and infrastructure network development. This guide is designed to help public authorities at all levels — national, regional, and municipal — with concrete actions they can take to develop these charging networks. In particular, how to develop tenders for public charging networks and recharging services, and how to plan their development and work with grid operators and other stakeholders so that EV charging network development is done in the most grid-supportive way, while also meeting other societal goals and objectives.

6. Annex

Key Pieces of EU Legislation concerning EV Charging

The Alternative Fuels Infrastructure Regulation (AFIR) sets out mandatory minimum targets for the deployment of publicly accessible recharging and refuelling infrastructures for road vehicles, both LDVs and HDVs and requires Member states to develop national policy frameworks to meet these targets. It sets out further requirements which concern owners and operators of recharging infrastructure, and mobility service providers (MSPs), all towards ensuring the development of a smooth, harmonised, and consumer friendly EV recharging network across the EU.

Revised Renewable Energy Directive (RED) puts in place a stronger legal framework for the deployment of renewable energy across all sectors of the EU economy. The revised RED sets an EU binding renewable energy target of at least 42.5% by 2030, with an aspiration to reach 45%. It contains strengthened sectoral targets including an increased sub-target for transport of 29% renewables which could be achieved via a reduction in the carbon emissions of transport fuels of 14.5% by 2030. The revised RED introduces specific provisions for promoting electrification of transport through the creation of a credit mechanism for the supply of electricity to road transport and making available in close to real time the share of renewables and GHG emissions content in the electricity grid. It also contains requirements on enabling smart and bidirectional charging of non-publicly available recharging infrastructure and ensuring non-discriminatory access for EV batteries and other small storage assets to provide flexibility and balancing services to the grid.

The recast Energy Performance of Buildings Directive (EPBD) — the strengthened EPBD will boost the take-up of sustainable mobility thanks to provisions on pre-cabling, recharging points for electric vehicles in non-public settings, thus complementing AFIR regulation. Pre-cabling will become the norm for new and renovated buildings, thus facilitating access to recharging infrastructure. In addition, there will be strengthened requirements on the number of recharging points in both residential and non-residential buildings. Member States will also have to remove barriers to the installation of recharging points. Overall, recharging points will have to enable smart charging and, where appropriate, bi-directional charging.

Data Sharing requirements in AFIR — Art 20

By 14 April 2025, operators of publicly accessible recharging points and refuelling points for alternative fuels, or, in accordance with the arrangements between them, the owners of those points, shall ensure the availability of static data and dynamic data concerning alternative fuels infrastructure operated by them, or services inherently linked to such infrastructure that they provide or they outsource, at no cost. The following data types shall be made available:

(a) static data for publicly accessible recharging points and refuelling points for alternative fuels operated by them:
   (i) geographic location of the recharging points and refuelling points for alternative fuels,
   (ii) number of connectors,
   (iii) number of parking spaces for people with disabilities,
   (iv) contact information of the owner and operator of the recharging station and refuelling station,
   (v) opening hours;

(b) further static data for publicly accessible recharging points operated by them:
   (i) ID codes, at least of the recharging point operator,
   (ii) type of connector,
   (iii) type of current (AC/DC),
   (iv) maximum power output (kW) of the recharging station,
   (v) maximum power output (kW) of the recharging point,
   (vi) vehicle type compatibility;

(c) dynamic data for publicly accessible recharging points and refuelling points for alternative fuels operated by them:

(i) operational status (operational/out of order),

(ii) availability (in use/not in use),

(iii) ad hoc price,

(iv) electricity supplied is 100 % renewable (yes/no).

Each operator of publicly accessible recharging and refuelling points for alternative fuels, or, in accordance with the arrangements between them, the owner of those points, shall set up an Application Programme Interface (API) that provides free and unrestricted access to the data referred to in paragraph 2, and shall submit information on that API to the national access points.

The API of each operator of recharging and refuelling points, or, in accordance with the arrangements between them, the API of the owner of those points, shall comply with common technical requirements established by the Commission in the delegated acts referred to in paragraph 6 to enable an automated and uniform data exchange between the operators of publicly accessible recharging and refuelling points and data users.

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