

Policies for sufficient EV charging infrastructure deployment in the EU – a view from the European electricity industry

Eurelectric position paper

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:

- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

Dépôt légal: D/2019/12.105/22

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A Eurelectric position paper

August 2019

KEY MESSAGES

Electrification of transport based on low carbon energy sources within an increasingly cleaner electricity mix¹ is the most effective, efficient and sustainable way to decarbonise the sector, reduce air pollution and its dependence on fossil fuels imports outside Europe. Electrification will possess an essential role within the European Commission Long Term Climate Strategy and Europe's emission reduction objectives in the road transport domain.

In this context, Eurelectric considers that the current Alternative Fuels Infrastructure Directive (AFID) does not set an adequate framework to incentivise and accompany a growing uptake of electric vehicles (EVs), and consequently calls for its urgent revision with the following priorities in mind:

- Besides a significant increase of available electric vehicles, a robust EV charging infrastructure framework will be the main enabler for decarbonising the road transport sector. Harnessing the synergies between the electricity and transport sectors will be essential for the success of Europe's competitiveness. An industrial strategy for building the first 1 million electric vehicle charging points on the European roads will be in the interest of businesses and consumers alike.
- The European power sector trusts that decarbonisation of the economy and decarbonising mobility must go hand in hand in order to extract the greatest benefits from both. To deliver on this, the transport industry will see significant amounts of direct electrification compared to today's levels along with increased penetration of renewables.² Fully harnessing these synergies would be feasible only when a robust charging infrastructure policy is put in place.
- Effective deployment criteria have to reflect the vehicle market, demographic and geographic parameters, as well as the power required both from a network and user perspective. Technological and behavioural trends also play a key role in explaining the charging infrastructure needs and sufficiency. In this sense, revision of the National Policy Frameworks is essential in order to increase the ambition level across Member States.
- Interoperable public EV charging infrastructure is the backbone for the successful transformation of the transport sector. Facilitating the interconnection between Charging Point Operators (CPOs) and E-Mobility Service Providers (EMSPs) will lift barriers for the users. By nature, service contracts concluded in one European country should be valid in any of the other Member States in order to facilitate EV drivers to charge everywhere across Europe.
- The creation of favourable investment frameworks and robust charging infrastructure support measures have proven successful for EV roll-out. Therefore, European funding models have to be target oriented. Bundling of European, national and regional funding schemes should be made possible in order to speed up the deployment of publicly accessible charging infrastructure

¹ As of 2018, 59% of Europe's electricity mix is carbon neutral

² [Eurelectric Decarbonisation Pathways study](#) foresees about 80% of renewables in the EU energy mix by 2045, p.58

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1. Introduction

Eurelectric welcomes the ongoing evaluation process of the Alternative Fuels Infrastructure Directive (AFID). As presently constructed, the Directive includes and supports fossil fuels which would clearly impede the path towards decarbonisation of the road transport sector. Electrification of transport based on a clean electricity mix is the most effective, efficient and sustainable way to decarbonise the transport sector and reduce air pollution. At the same time, electrification of transport will help achieve the Commission's Long Term Climate Strategy and Europe's emission reduction objectives. In pursuing this goal, our industry firmly believes that a revision would be needed in order to facilitate smart charging infrastructure deployment across Europe and fully enable electric mobility. Consequently, Eurelectric considers that the current AFID does not set an adequate framework to incentivise and accompany a growing uptake of electric vehicles (EVs), and consequently calls for an urgent revision.

The European power sector trusts that decarbonisation of the energy and transport sectors must go hand in hand in order to extract the greatest benefits from both. To deliver on this, the transport industry will see significant amounts of direct electrification compared to today's levels coming from increased penetration of renewables.³ Reversely, the energy sector could clearly benefit from additional storage capacity for increased flexibility. Fully harnessing these synergies would be feasible only when a robust charging infrastructure policy framework is put in place.

1.1 Where does AFID fall short?

The core objective of the Directive is to set National Policy Frameworks (NPFs) where Member States outline their targets and supportive actions for clean mobility market development. These plans have largely failed in terms of ambition, based on the European Commission's own assessment and do not seem to be fit-for-purpose.⁴ The NPFs have not led to effective EV charging **planning strategies** across Europe and in some Member States (e.g. Spain) the NPF does not even include a 2020 target for charging points, which violates a basic requirement of the Directive. A more comprehensive deployment method with improved sufficiency criteria for smart charging infrastructure roll-out is needed to ensure sufficient coverage across geographical profiles in line with market developments and expectations.

In order to scale up deployment, however, the Directive should also take stock of the **operational characteristics of the charging infrastructure**. There is a significant need to address aspects related to the functionality of the infrastructure as well as accompanying communication specifications and consumer services, while at the same time fostering innovation and collaboration. In addition, implementing a European open platform for knowledge exchange and transfer could enable sharing best practices and technical expertise on EV charging infrastructure between regional policy makers and market actors.

1.2 Aligning AFID with policy and market developments

The Directive should reflect the targets of the newly approved **policies** on vehicle CO2 standards⁵ and public procurement of clean vehicles⁶ in order to coherently react to the expected growth of alternatively fueled vehicles with adequate deployment of charging infrastructure across all

³ [Eurelectric, Decarbonisation Pathways](#), p.59

⁴ [European Commission NPF analysis, SWD-2019-0029](#)

⁵ Separate CO2 emission standards for light- and heavy-duty vehicles

⁶ Clean Vehicles Directive, recast

Member States post-2020. Particularly in terms of road transport, it is essential to review the definition of ‘alternative fuel’ considering the state of the art technologies and align it with the 2050 EU vision for a decarbonised transport sector⁷.

At the same time, the Directive needs to take into account the technical progress across the ecosystem and the improving market learning curves scaling up and the announcements made by automotive manufacturers. All of the above assumes that a significant build-up of public and private charging infrastructure is required but the conversation goes beyond simply counting the number of charging points (CPs).

2. Charging infrastructure planning and deployment

2.1. NPFs and targets

The current Directive is underpinned by the supply-driven assumption that EV infrastructure sufficiency can be achieved by ensuring public charging point⁸ (PCP) to EV ratio of 1 to 10 or 1 PCP every 60km of highways. Such apparent patterns between electric vehicle uptake and charging infrastructure availability have been observed in literature⁹. While this type of sufficiency estimate helps revealing trends on average, it cannot be conclusive for all locations and countries. Future technology leaps and product scaling in the transport sector also need to be anticipated.

Against this background, an adjustment of the legislation is needed to ensure both the timely acceleration of the expansion of exclusively smart charging infrastructure and the recognition of investment costs for the network operators with a long-term perspective. Therefore, several other interrelated considerations should be added to the debate on alternative metrics and methodology for assessing infrastructure coverage and sufficiency:

- **Charging behaviour** is essential for determining drivers’ needs. According to industry-wide figures, more than 80% of the private car charging happens at home or work and this trend is expected to continue.¹⁰ Independent to this finding, there is an increasing demand for public charging in the next 10 years based on the lack of private charging opportunities for people living in urban areas. As the Directive does not explicitly take into account realistic private charging development, where the number of charging points today equals that of the vehicles¹¹, an improved capacity to track this type of information will be essential going forward;
- **Charging power** depends on both the capacity of the battery and its management system as well as the performance of the charging unit. In the coming years, Europe will see large number of longer range vehicle models being able to charge at higher power (although average distances travelled per day will not increase, and hence, energy needs will remain unchanged) and this could lead to increased need for DC public charging. In fact, a differentiation between DC and AC is not currently reflected in the Directive and neither are the expected technological evolutions of batteries and vehicles;
- **Charging locations** have different grid capabilities, approval procedures and specificities. Some more sensitive to those factors locations include highways intersections, multi-

⁷ [European Commission Long Term Strategy: supporting analysis on achieving 2050 climate neutrality](#), requiring significant uptake of zero-emission vehicles in road transport

⁸ Charging stations can have multiple charging points

⁹ [ICCT White Paper, Emerging best practices for electric vehicle charging infrastructure](#)

¹⁰ [Eurelectric, Decarbonisation Pathways](#), p. 29

¹¹ [IEA Global EV Outlook, 2019](#): Estimates for private chargers assume that each electric car is coupled with 1.1 private chargers. Ratio will be changing in favour of public charging.

dwelling areas and remote areas. As the EV market matures, fast charging hubs will be developing in urban areas. In this regard, smart public infrastructure deployment targets should take into account the ratio of parking to charging space and prioritise a faster charging option, with respect to the existing grid capabilities;

- **Demographic conditions**, such as population density, number of inhabitants, traffic intensity and its projected growth or decline;
- **Expected vehicle sales** based on CO2 vehicle legislation, public procurement targets and automotive sector announcements

Based on the considerations above, Eurelectric recommends the consideration of a sufficiency ranges in terms of **1 PCP per X sq.km** while differentiating between AC and DC and the above described criteria. Special attention must be given to high population density areas. At the same time, extending the AFID coverage to include both the TEN-T Core and Comprehensive networks as well as urban nodes would be convincing for future EV owners and also ensure coverage to drivers which pass by. The inclusion of urban nodes is paramount as these allow public and private partners to acquire direct EU-funds for infrastructure deployment^{11a}. Such strategy entails a targeted infrastructure build-up with multiple charging points at locations alongside high occupancy roads and spaces, a necessary condition for sustainable development through viable business models.

The creation of an EV infrastructure projection tool with the above listed parameters, similar to examples in the US^{11b} (EVI-Pro) and Germany (STELLA, RWTH Aachen)^{11c}, could allow local authorities to explore data and run assumptions for reference purposes. Ultimately, the successful roll-out of charging points for electric vehicles will also require a differentiated approach between countries given the respective EV market uptake.

2.2. Support measures for infrastructure deployment

Following an exploration of national policies all around Europe, support measures for infrastructure deployment have proven to be an important enabler for the achievement of the NPF targets. Our findings¹² show that 18 Member States actively support the roll-out of public but also private charging points. Three other (Denmark, Poland and Slovakia) are currently finalising similar incentive policies. Financial incentives, subsidies and funding programs constitute the lion's share of national support mechanisms but the creation of favourable investment frameworks is a major reason for the success of planning strategies.

Still, structural differences in support measures between countries do exist and in turn lead to diverse market conditions, characterised by different market actors' roles, electricity system operation procedures, and administrative requirements. Eliminating administrative red-tape should be tackled at national level with EU advice. In addition, non-restrictive guidelines on smart infrastructure deployment should be considered for incentivising investment in view of the following practices:

- Infrastructure **location is a key parameter – both in terms of supply and demand**. The right location guarantees sufficient occupancy rate for the charger, which guarantees its business

^{11a} [Urban nodes are defined in the TEN-T Guidelines Regulation \(EU\) 2013/1513. The project partners in urban nodes can use funding from Connecting Europe Facility, Cohesion fund, Horizon 2020 and Interreg-programs.](#)

^{11b} [CEC EV Infrastructure Projection Tool \(EVI-Pro\)](#)

^{11c} [Site selection model for EV charging infrastructure, STELLA, RWTH Aachen](#)

¹² [Eurelectric Public EV Charging Factsheet, 2019](#)

case. From a supply side, charging points would be ideally located where grid upgrade works (and thus costs and waiting times) are minimised. Developing smart charging options, which react to external signals related to power system constraints, will be key to ensure this.

- Whether we are looking at urban or highway public charging, **permitting schemes and other administrative procedures** tend to act as barriers for placing infrastructure installations and hospitality services and this should be addressed. Faster approval procedures should be promoted, together with the designation of single points of contact regarding planning concerns for construction and grid connection.
- Facilitate **mechanisms for demand-driven infrastructure roll-out**, especially for off-street/curb-side residential charging where EV owners cannot plug in at home. Existing utilities-led schemes in the Netherlands¹³ and the UK¹⁴ are proving the success of this model. Other innovative ways include using lamp posts as charging points¹⁵ or planting fully retractable under the ground installations¹⁶ where technically feasible.
- Ensuring that EV drivers can **opt in for energy offers from suppliers providing decarbonised electricity**, especially in Member States where carbon intensity of the energy mix remains relatively high. In fact, clean electricity options are already made possible in many European countries¹⁷ through specific requirements in public tender procedures or via green energy supply contracts. Delivering clean electricity is even more crucial at places where vehicles are parked the longest (work/home/overnight charging) in order to effectively integrate renewables.
- Translating the ambition of the NPFs into the operating plans of **public transport services** to ensure coherence with the Clean Vehicles Directive goals for individual Member States. Charging infrastructure for public transport vehicles present interesting features regarding synergies with the power system. If feasible, enhancing and simplifying the financing tools available at EU level could be proportionally considered to the targets in the revised Directive.
- Mechanisms and regulation should promote and allow installation of private charging points in private residential and commercial buildings, where energy and parking space is shared among tenants –currently a huge obstacle to EV adoption in cities – and available power capacity is scarce. As indicated in the Electricity Market Design Directive, in case of no market interest, DSOs can temporarily support the deployment of public charging infrastructure.
- Regulation should allow different business models and different competitive players, as a one-size-fits-all approach has not proven to be successful in the past. To incentivize investment, the private sector should not be restricted to one pre-determined business model – e.g., in the Portuguese case, any publicly accessible CP must be connected to Mobi.e, which controls the business model and the relationship with the customer.
- Bundling of European and national funding schemes should be made possible in order to speed up the deployment of public charging infrastructure.

¹³ [Public Charging scheme in Amsterdam](#)

¹⁴ [Power my Street Initiative](#)

¹⁵ [Ubitricity](#)

¹⁶ [Urban Electric](#)

¹⁷ [Eurelectric, Public EV Charging Factsheet, 2019](#)

Eurelectric believes that the already established Sustainable Transport Forum is the appropriate agent for steering Member States towards better implementation of their NPFs. However, in addition to the coordination activities and reporting on the progress made, our sector believes that the Forum should step up efforts on sharing best deployment practices at regional level to help local authorities lacking expertise on EV integration matters. The promotion of Sustainable Urban Mobility Plans and their principles¹⁸ is an essential element of a targeted electric mobility strategy.

3. Operational specifications and functionalities

Apart from sufficiency, EV charging infrastructure should also strive to offer a seamless user-centric mobility experience while integrating the vehicle within the power system for greater synergies. Placing the end-user at the forefront, public EV charging must be able to facilitate aspects related to **accessibility, billing, quality of service and price transparency** harnessed through principles for **shared relevant data and communication standards**. Such European-wide state-of-the art public charging should be encouraged with the review of the Directive from several perspectives while enforcing the application of appropriate standards already in place.

3.1. Vehicle integration to the power system

The deployment of charging infrastructure capable of smart interaction with the power system, *or smart charging*, is essential for unlocking the synergies between the transport and energy sectors. **Smart charging of an EV occurs when the charging cycle can be altered by external events, allowing for adaptive charging habits**¹⁹. When charged or discharged smartly, electric vehicles provide flexibility services both at the local and system levels. At local level, this can make a decisive difference in avoiding additional network investments to accommodate future high EV penetration levels. As a result of the ability of the EV to integrate into the power system, additional grid investments are limited²⁰ and drivers take control of their consumption. At the system level, smart charging is a key feature of the energy management systems (e.g. to limit peak (fossil-based) generation, to store RES surplus during off-peak periods, to provide auxiliary services for network stability at lower cost, etc.) and designing a smart charging strategy to fit the power mix is essential going forward. To this end, **key enablers are a future-proof electricity market design coupled with coordinated standardisation measures**.

From an **electricity market design perspective**, competitive balancing services and retail markets are still largely missing in Europe today. The recently adopted Electricity Directive²¹ has taken a positive step forward by providing incentives for the procurement of flexibility services at distribution level. This has opened up a clear pathway to include electric vehicles in view of congestion management via load shifting and peak shaving, adding an alternative to the costly physical grid reinforcement. Eurelectric believes that developing local flexibility markets will reward financially the contribution of smart charging to the power system. At retail level, dynamic pricing plans could be an effective tool to incentivise smart charging when the high-peak to off-peak price difference is greater compared to the benefit provided by time-of-use tariffs. Such plans have already been introduced²² and have to be further explored.

The increasing penetration of electric vehicles in such markets also underlines the need for coordinated communication standards and data availability between different e-mobility actors.

¹⁸ [Electrification in sustainable urban mobility planning, European Platform on SUMPs, 2019](#)

¹⁹ [Eurelectric, Smart Charging paper, 2015](#)

²⁰ [IRENA \(2019\) Innovation Outlook: Smart charging for Electric Vehicles, Box 4](#)

²¹ [Electricity Directive, official text](#), Article 32

²² [Agile tariff, Octopus Energy](#)

Requiring even a greater deal of standardisation, the facilitation of two-way electricity flows will be essential going forward for realising additional services and revenues. This would be possible once vehicle manufacturers make dynamic data related to the battery within the vehicle (notably loading power and storage capacity) available to private actors in order to enable the development of non-discriminatory market of smart charging services. Standardisation is discussed in greater detail in the next Section.

3.2. Interoperability aspects and payment solutions

Receiving the sufficient power is only one part of the equation on the road to successful EV integration. Although the AFI Directive currently indicates interoperability principles at the plug/connector level (Annex II), charging infrastructure interfaces and back-end communications are less harmonised in view of providing system interoperability. An imperative objective of public charging in particular is to guarantee that any EV can access the public infrastructure.

In this sense, crucial market model features include **authentication, authorisation and payment**. Additionally, interoperability levels can be taken into account with regard to the smartness of the charging process and overall grid integration. The information exchange along these processes and its subsequent utilisation provide market actors with the ability to perform the required interoperability functions.

An interoperability assessment becomes necessary in order to understand the characteristics of the EV charging services. Eurelectric appreciates the work by international standardisation organisations (e.g. IEC, ISO) as a continuous process which is complemented by the development of protocols and partnerships by private actors. Essentially, this communication constitutes the 'handshake' enabling the energy exchange between the vehicle and the power system. In this sense, interoperability requires a standardised series of protocols to ensure communication and information exchange in the same language.

Service contracts concluded in a European country should be valid in any of the other Member States in order to facilitate EV drivers to charge everywhere throughout Europe. The AFI Directive should essentially lift barriers for the user, making several options available in the short- and mid-term and letting the market converge into a seamless experience in the long term according to customers' choices. This has led to different market approaches to ensuring interoperability in view of EV roaming and payment solutions.

EV roaming

In view of the e-mobility market growth, emerging solutions to link charging point operators (CPOs) with e-mobility service providers (EMSPs) are of paramount importance for enabling customers to conveniently charge at more charging points. There are different ways the market can set up such **EV charging roaming services**:

- The basic model is via **peer-to-peer (P2P)** connections where the market actors conclude bilateral deals, which allow customers to use increasing number of charging points.
- The approach of an **e-roaming platform** simplifies the charging of electric vehicles on a cross-operator and cross-border level. Such simplification via one interface leads to reduced transaction costs and thereby reduced costs for the customers, which should be a guiding principle.

EV roaming is in the basic interest of a CPO and an EMSP but the choice of IT protocol or P2P versus roaming platform should be a market outcome and not prescribed. In any case, the solution needs to guarantee fair interoperability conditions among all actors involved.

Payment methods

In addition, the AFI Directive stipulates that non-discriminatory access may include different terms of **payment**.²³ Providing the possibility for **ad-hoc charging** has been a successful feature of AFID²⁴ and should remain available by default. For the customer, it would be beneficial in any case to indicate the cost components of the final price for transparency purposes before charging. In view of **contract-based charging**, there are several payment solutions currently available on the market to consumers – bank card, app/smartphone, or cash. In a competitive environment, the customer will be the one deciding their preference.

Ultimately, Eurelectric remains supportive of fair conditions and market-driven activities on the above points and a non-discriminatory access. The chosen technology should not be specified but the market forces should make room for competitive means. All charging stations should offer ad-hoc access and pricing and in addition customers should have a choice of means to get access and pay. Particularly, projects that receive public or EU funding should remain as open as possible to all users.

3.3. Other relevant elements to consider

Power classification

One of the reasons why the AFID has been considered outdated by many²⁵ lies in the impressive technological advancement in the charging infrastructure sector, where over the last years charging power has increased by orders of magnitude.²⁶ These recent market dynamics have resulted in **improved charging techniques** or **'modes'**, taking into account not only power capacity but also communication and payment features. While these functionalities add significantly greater value for customers, the lack of consensus when it comes to the specifications oftentimes prevents scaling up business models and creates fragmentation.

Visibility of fuel prices and accurate tools of comparison

Article 7.3 from the AFI Directive has provided for a common methodology to be implemented in 2020²⁷, which allows to establish comparison of alternative fuels prices but is currently restricted to natural gas and hydrogen. In relation to the inclusion of electricity, Eurelectric has previously supported a fuel price comparison, expressed in EUR/100km, as part of a European Commission study²⁸ assessing the feasibility to include electricity in such methodology. Such price comparison should also take into account the efficiency of the vehicles. National or EU legislation could facilitate the usage of remote displays (apps²⁹) which will more conveniently inform drivers as well

²³ Directive 2014/94/EU, Article 2[7]

²⁴ Directive 2014/94/EU, Article 4[9]

²⁵ [Platform for Electromobility, position paper on AFID](#)

²⁶ A general overview could be found in Annex I of this document

²⁷ Commission Implementing Regulation (EU) 2018/732

²⁸ [European Commission, Study on Implementation of Article 7.3 of AFID](#)

²⁹ [EV.X app by EDP Commercial records user's trip on a combustion engine car and compares it with any electric vehicle of their choice.](#)

as greatly stimulate the consumer understanding of the efficiency of Battery Electric Vehicles (BEVs) which are considered four times more efficient than a combustion engine equivalent³⁰.

Energy taxation

The taxation of energy products and fuels is a central tool for transport policy, by providing a key price signal to consumers and ensuring a fast redistribution of energy transition costs. The EU energy taxation policy must therefore be modern and up to the challenge of a European prosperous, competitive and carbon-neutral economy. The need of an environmental taxation based on the polluter pays principle could be key for increasing EV deployment. Electric vehicles' batteries can bring additional flexibility to the electricity system, thus optimize the vehicles charging patterns and grid integration but also support the integration of renewable energies.

Cybersecurity

While increased connectivity and continuous digitalisation of EV charging could unlock benefits, there are typical risks associated with the e-mobility services. Some examples include using private data without permission and manipulating wrong data for scheduling a charging session, ultimately to the detriment of the user. Being part of the equation, smart charging requires a set of baseline security requirements and attention should be given to remove risks related to cyber threats. It is therefore essential to provide a practical set of cybersecurity considerations to municipalities and network operators.

Metering

Accurate metering at the charging point is a key issue for public usage of the EV infrastructure. There is a lack of guidance regarding the metering requirements and meter conformity assessment for DC charging, compared to AC charging which is covered by the Measuring Instruments Directive 2014/32/EU.

4. National legislation aspects

By and large, European legislation on EV charging should avoid leading to varying national implementation. Below are some observations:

- In some countries charging is seen as selling electricity and in others as a service. Charging of electric vehicles should be clearly defined as a **service** (and cannot be interpreted as fuel delivery or electricity retail). Given the cross-intersection potential of EV charging with other services (e.g. parking, shopping, restaurants), legislation should avoid hampering solutions that may unlock customer value and convenience.
- A great challenge to EV charging pertains to the classification of the charging transaction for VAT purposes where interpretations vary greatly between different national tax authorities. VAT bottlenecks have been identified to cause unnecessary red tape, extra tapes and ultimately hinder companies to make cross border business in the EU.³¹
- VAT of cross-border transactions could lead to national implementation issues if companies want to fulfil such operations, notably in view of the market roles. For example, an enabler

³⁰ RED, Article 27(2)b

³¹ [Transactions related to the recharging of electric vehicles, European Commission VAT Committee, 2019](#)

could be the optional MOSS scheme³² for accounting VAT in only one EU country once EV charging is clearly defined as a service.

Under the ITS Directive³³, Member States are setting up National Access Points to facilitate access, easy exchange and reuse of transport related data, in order to help support the provision of EU-wide interoperable travel and traffic services to end users. Synergies with the AFID should be explored, making it easier to gather and analyse EV charging data for local authorities.

5. Best practices and ways forward

By and large, the above points cover the public charging aspects. A lot also needs to be fixed when it comes to private charging infrastructure, which certainly has a big role for future electric vehicle adoption. For example, issues related to the **'right-to-plug'** have appeared across Europe. Such operational difficulties could prevent tenants to install a socket or delay this action by a year, which clearly shows the need to i) simplify administrative procedures, ii) support installation in multi-unit residential buildings and iii) facilitate the public access to viable information regarding the infrastructure. Member States should make use of increased guidance especially following the adoption of the revised Energy Performance of Buildings Directive. The potential revision of AFID provides a momentum to also address challenges for private infrastructure deployment.

Even though the Sustainable Transport Forum is actively working with Member States, our sector believes that an increasingly regional outreach and sharing best practices will significantly boost the infrastructure deployment in more remote areas. This could go hand in hand with increased streamlining of public and EU funding to these projects coupled with better technical assistance to the local players. Existing best practices for infrastructure deployment should be promoted by all means possible.

Eurelectric and its members are looking forward to working with the Commission, the co-legislators and other relevant stakeholders in order to contribute to successful EV charging infrastructure deployment policies. The European electricity sector has continuously shown its commitment to electrification and decarbonisation of transport and will remain involved in the discussions with its insights and expertise.

³² [VAT on digital services \(MOSS scheme\)](#)

³³ Directive 2010/40/EU

Annex I: Power classification³⁴

Category	Sub-category	Definition	Power
Category 1	A	Normal power recharging points, single-phase (AC)	$P < 7.4\text{kW}$
	B	Rapid power recharging points, triple-phase (AC)	$7.4\text{ kW} \leq P \leq 22\text{ kW}$
Category 2	A	High power recharging points (DC)	$22\text{ kW} < P < 50\text{ kW}$
	B	High power recharging points (DC)	$50\text{ kW} \leq P < 150\text{ kW}$
	C	Ultra-high power recharging points (DC)	$150\text{ kW} \leq P < 350\text{ kW}$
	D	Ultra-high power recharging points (DC)	$P \geq 350\text{ kW}$

³⁴ Given the fast technological progress, the Commission could review the categories every 3 years, if considered necessary.

Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability



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