



Accelerating Electric Recharging Infrastructure Deployment in Europe

Executive Summary

Brussels, November 2016

Electro-mobility offers an unequalled solution to make Europe's transport more efficient, less dependent on imported energy, low carbon, clean and quiet. Specifically, the electrification of surface transport will enable Member States to meet their greenhouse gas emission reduction targets for 2030 and to address the public health crisis arising from urban air pollution.

The construction of **private recharging infrastructure as well as an EU-wide interoperable public infrastructure** remains an important pre-condition for the wide-scale deployment of electro-mobility. On a positive note, 2016 and 2017 are set to be decisive years for accelerating the roll-out of electric recharging infrastructure in light of the expected submission in November 2016 of EU Member States' National Policy Frameworks (NPF) for the implementation of the Alternative Fuels Infrastructure (AFI) Directive 2014/94/EU. The AFI Directive aims to address consumer anxieties by (i) facilitating the deployment of private recharging points, (ii) mandating the build-up of sufficient numbers of publicly accessible charging stations and (iii) setting EU-wide harmonised standards for charging connectors as well as for user information requirements. While this is an important step in the right direction, a common understanding, increased Member States' coordination as well as timely and appropriate implementation of the Directive across Europe will be crucial.

The Platform for Electro-Mobility is an alliance of organisations from across industries and transport modes representing manufacturers, infrastructure managers, operators and users of all types of vehicles as well as cities, civil society and other stakeholders. It shares a vision of electro-mobility for surface transport delivered through multiple modes including electric bikes, cars and vans, trucks, buses, rail and other public transport. The Platform has been created to drive forward this transformation.

This paper provides a number of recommendations for the implementation of the AFI Directive, as well as more specifically for overcoming interoperability issues central to electro-mobility, namely those relating to:

- normal- and high-power recharging infrastructure;
- intermodal electro-mobility synergies;
- shore side electricity;
- parking schemes;
- smart charging;
- and payment solutions.

1. *How to support deployment of the needed recharging infrastructure?*

An open and innovation-driven approach is paramount to allow improved technologies and business models to emerge

The harmonisation of technologies and common standards are key for the mass rollout of current and future electric vehicles (EVs) across Europe, which makes the implementation of the AFI Directive of crucial importance. Nevertheless, the EV market is a fast moving environment where technological and business innovations are crucial and should be promoted. This is essential in order to create a competitive market where services and products are constantly improved to the benefit of end users. In this regard, the Platform calls:

- On Member States to avoid an inflexible implementation of connector requirements of the AFI Directive. The Directive's implementation should allow operators of recharging points not accessible to the public to offer diverse charging technologies and encourage operators to offer multi-standard-solutions on publicly accessible recharging points.
- On Member States to uniformly follow the definition of "*public accessibility*" (art. 2.7 of the AFI Directive) as suggested by a growing number of Member States to ensure timely and coordinated implementation across Europe.

Normal power charging from 3.7 to 22 kW in the private and public domain is the backbone for the daily recharging of passenger EVs¹ as well as Light Electric Vehicles (LEVs).

In light of this, the Platform calls:

- For a simplification of regulations and approval procedures to facilitate the deployment of individual charging points in existing apartment/office buildings.
- For refurbished homes, apartment and office buildings, car parks and commercial developments with off street parking to include provisions for EV and LEV charging. At EU level, this can be achieved via the upcoming review of the Energy Performance of Building Directive by end of 2016.
- On European cities to simplify permitting procedures and to provide coordinated financial incentives for the deployment of on and/or off-street charging infrastructure, based on the city land-use planning as defined in their Sustainable Urban Mobility Plans.

The deployment of high power charging points is needed to enable full electric long distance driving and thus render EVs a viable alternative to ICEVs (e.g. around 150 kW but capable of serving all existing and new vehicles). The Platform therefore calls:

¹ 88% of all EU public recharging infrastructure today consists of normal power recharging points. According to the latest 2016 statistics from the European Alternative Fuels Observatory (EAFO) 82,660 out of 92,118 charging points in Europe provide normal power charging (up to 22 kW).

- On the European Commission and Member States to use the opportunity of the mid-term Multiannual Financial Framework revision to increase the resources allocated to the Connecting Europe Facility, to fund multiple high power charging point locations in future calls.
- For all new EU- or nationally-funded charging infrastructure that would link two urban nodes and/or Member States within the Trans European Network for Transport corridors to include multi-standard, downward compatible 150 kW high power charging points that can cater to all current and future EVs. In doing so, they shall seek to exploit potential synergies with other innovative solutions, such as electric road freight.

Electric buses are expensive to purchase and in many cases require the deployment of opportunity charging stations in the city to guarantee full day operations. The Platform calls for:

- An accelerated standardisation of the charging interface for electric buses.
- European funds to be made available for purchasing electric buses and setting up of charging infrastructure.
- Easy administrative procedures for the deployment of high-power opportunity charging points in carefully selected areas of the city.

2. Exploiting intermodal electro-mobility synergies

The establishment of recharging points in cities should **make use of existing infrastructures** such as railway stations and connections to electric infrastructure already in place for public (and private) transportation, such as ships, trains, trams, metros and trolley buses and to public transport subscription cards. The Platform calls for:

- Investments to be directed towards charging stations that foster multi-modal mobility and make use of existing electric infrastructure from public transport.
- Further investments to be directed towards the deployment of systems capable of recovering, storing and reusing the braking energy of rail-based public transport.
- Public Transport Authorities and Public Transport Operators to be granted the right to recover parts of the initial investment by selling energy at charging points also to private customers.
- Technical specifications related to shore-side electricity (SSE) set out in the AFI Directive to be fully enforced as soon as possible.
- The commitment of Member States to deploy by 2020 SSE in berths close to large residential/ commercial areas and in all cruise ships and ferry terminals, and in particular in ports of the TEN-T core network.

3. Electro-mobility in cities: ensuring appropriate parking schemes to maximise benefit from existing EV infrastructure

Putting appropriate parking schemes in place is essential for ensuring that recharging points are optimally used and misuse prevented. In this regard the Platform calls:

- For giving local public authorities the competence to decide how and where to implement charging stations in areas where there are diverse transport modes.
- For the provision of appropriate parking schemes, which include appropriate parking for LEVs to ensure optimum use of recharging points. In fact, approximately 1.5 million LEVs were sold in the EU last year. The strength and specific needs and requirements of these vehicles should be recognised.
- For the addition and prioritisation of EV and LEV charging spots within national parking regulations to enable towing away of wrongly parked vehicles (first and foremost ICEVs).
- For a publicly accessible network that allows LEVs to be charged at public transport hubs and buildings with large numbers of commuters.
- For the progressive introduction of time-based pricing signals in order to stimulate correct parking behaviour for EV users and avoid excessive over-staying when charging is finished.

4. Smart charging: making EVs an asset to the electricity value chain

While parked (90% of their lifetime²), **thanks to smart, controlled charging, EVs can provide flexibility services to the electricity system** like (i) “valley filling” (shifting consumption to times when energy is under-utilised), (ii) “peak shaving” (avoiding charging or sending power back to the grid when demand is high) and (iii) ancillary services (voltage control, frequency regulation) at system level and at local level. In order to stimulate smart charging, appropriate measures should be included in the context of the Energy Market Reform in 2016. More concretely the Platform calls for:

- Enabling consumers to use smart charging through the deployment and use of intelligent metering systems as proposed by the AFI Directive³; and removal of double grid fees for energy storage.
- Enabling existing electricity retailers and new market entrants to offer new services to consumers, such as real-time pricing and explicit demand response services.
- Enabling market players to use smart charging and demand response for different purposes, by ensuring new market players’ participation in energy markets through aggregation, as well as the possibility for DSOs to procure demand-side flexibility for local system management through a market-process.

5. Payment solutions: enabling seamless access and payment for publicly accessible stations

Customer-friendly finding, accessing and payment options on publicly accessible charging points across Europe are needed for the EV market to take off Union-wide. The Platform recommends the following approach to achieving this:

² Paul Barter, “Cars are parked 95% of the time”. *Let's check!*, (2013), Reinventing Parking website: <http://www.reinventingparking.org/2013/02/cars-are-parked-95-of-time-lets-check.html>

³ AFI Directive 2014/94/EU, art. 4.7

- Payment solutions should encompass both ad-hoc/direct payment and subscription-based payment, neither of which should be neglected in order to speed up the buildup of charging infrastructure in Europe. While the possibility for ad-hoc charging is necessary, the opportunity for subscription-based charging for final consumers (e.g. seamless cross-EU interoperability using one single charging contract), for the integration of electro-mobility in the electricity market at large (e.g. smart charging) and for a multi-modal mobility system should not be neglected.
- EU policy makers should keep an open approach as to the means and technologies used to offer access and payment on publicly accessible stations in order to avoid excessive costs to operators and to promote innovative solutions.

6. EV charging services: enabling more choice and more transparency for consumers

A key principle guiding progress towards a consumer-driven electro-mobility market in Europe should be the provision of transparent information with regards to pricing, level of service, origin of the electricity and the ability for consumers to easily choose/change between different charging services or providers. The Platform recommends to:

- Ensure proper implementation of art. 4.12 of the AFI Directive across Member States so as to facilitate the development and business of charging point operators.
- Use the AFI Directive and upcoming Energy Market Reform to confirm that charging services are different from traditional electricity market roles.
- Facilitate an open framework for the deployment of all types of technical and commercial solutions that improve consumer service and choice like for example roaming, mobile metering or any other solution.
- Enable an open market and ensure affordable, transparent and non-discriminatory pricing for charging services, especially for charging points installed in the public domain or that are publicly funded.
- Encourage EV charging services that offer affordable renewable energy.

