

The Platform for Electro-mobility calls for the revision of the Alternative Fuels Infrastructure Directive

The Directive on the deployment of Alternative Fuels Infrastructure (AFI, 2014/94/EU) was adopted, at a time the market of alternative fuel vehicles was still an emerging market. Last year, a major milestone was reached as Europe accounted for its first million electric vehicles on the road¹ and the future market outlook is promising.²

European legislation is set to help accelerate the deployment of zero emission vehicles in the next decade. Over the past months, the European Parliament and the Council of the EU agreed on new legislation reducing CO₂ emissions of new passenger cars, light commercial and heavy-duty vehicles, as well as introducing zero- and low-emission vehicles benchmark, be it for new registrations and in public procurement, by 2030. Contrary to these positive developments, **the Platform for Electro-mobility considers that the current AFI directive should be revised to more adequately accompany the expected growing uptake of electric vehicles in the coming years and therefore calls for its speedy revision, in 2020 at the latest.**

Consistency with the long-term climate objective of the EU

In the context of the European long-term vision to decarbonise the economy, an increasing number of governments, civil society organisations and industrial leaders are calling **for carbon neutrality by 2050**. According to the latest IPCC special report³, the next 12 years are critical, if action is insufficient now, it will likely be impossible to make up for the deficit later⁴.

In the transport sector, this requires a substantial decrease in CO₂ emissions and a fast transition towards zero emission mobility. Road transportation is the most emitting but also the most feasible to decarbonise thanks to proven and soon cost-efficient technologies. Fast electrification is achievable for passenger cars and vans, as well as buses and trucks⁵. In its current form, **the AFI directive does not support the full decarbonisation of the road transport sector since the list of technologies is not limited to zero-emission fuels, including some fossil fuels.**⁶

In the energy sector, electro-mobility will increase European energy independency and also unlock flexibility benefits for the grids to better integrate renewable energy sources. The commitment of the European power sector to fully decarbonise electricity “well before 2050”⁷ will also contribute to decarbonise road transport.

Given the role of the AFI directive in defining which fuels should be encouraged in future legislative files, as is the case with the Clean Vehicles Directive, **it is critical that the AFI directive mandate infrastructure for zero emission transport modes only, to align with the 2050 EU objectives.**

¹ Source: <https://www.eafo.eu/vehicles-and-fleet/m1>

² IEA Global EV outlook <https://webstore.iea.org/global-ev-outlook>

³ Please refer to: <https://www.ipcc.ch/sr15/>

⁴ Source: <https://news.un.org/en/story/2018/10/1022492>

⁵ BDI suggests building 2.500 km of contact lines for truck in Germany by 2030

⁶ Source: [JEC “WELL-to-WHEELS Report” Version 4.a](#)

⁷ Eurelectric’s statement, October 2017. <https://www.eurelectric.org/policy-areas/electrification/>

Binding targets to accompany the expected development of electric vehicles

The current AFI directive requires Member States to set up national policy frameworks (NPFs) providing for minimum public infrastructure coverage by 2020, 2025 and 2030 depending on the fuel type. As illustrated in an analysis conducted in February 2018, the current plans set by Member States for the rollout of public charging infrastructure by 2020 are expected to keep pace with the anticipated growth in the number of vehicles⁸, on the condition that all Member States fully implement their plans.⁹

However, the current directive does not address the disparity of the recharging needs in terms of territory or power. In the light of the EU's CO₂ regulations, the uptake of electro-mobility after 2020 will accelerate. **Post-2020 policy for public infrastructure should reflect the expected increase of EV sales, the availability of publicly accessible, including as well privately owned-infrastructure (e.g. infrastructure situated on supermarket, railway stations or airport parking) and address the disparity of the recharging needs (urban, suburban, rural, normal, fast charging etc.).**

The Platform therefore calls for:

- **The revised Directive to set minimum binding targets per Member State** for the deployment of public electric charging infrastructure, reflecting the diversity of charging infrastructure options (AC-DC), driver preferences and EV requirements. In this regard, the European Commission and Member States should consider **new metrics and methodologies to assess the right geographical coverage of infrastructure to meet the demand of EV drivers**, considering the density of population or the increasing charging speeds and the evolution of batteries technology, among other criteria. Sub-targets should be set by Member States to address these different needs. for the different needs in terms of power.
- **A necessary condition for EV adoption is to make them convenient also for long journeys.** To neutralise range anxiety, it is crucial to install 150kW+ charging points (with acceptable charging times), evenly distributed in the EU territory. **The currently aspirational target of at least one charging point every 60 km¹⁰ on the TEN-T Core Network should be brought forward from 2025 to 2022 and made binding.** In addition, binding targets should be set for the TEN-T Comprehensive network with full coverage (one site every 60 or 100 km) mandated by 2025.
- Local and regional authorities have a strategic role in the planning, positioning and provision of charging points. **The Directive should encourage Members States to work closely with cities when setting targets and recommend local authorities to introduce smart charging planning in their Sustainable Urban Mobility Plan (SUMP).** The SUMP guidelines are currently under revision and the currently developed manual for cities should encourage planning for sustainable alternative fuel infrastructure in view of most beneficially integrating transport and energy needs.
- **Special attention should be given to public charging points in urban and densely populated areas where a growing number of EV drivers will not have access to a private garage or parking.** Good practices such as the “demand-driven” mechanisms already in place in several places, such as Amsterdam, [Oslo](#) or in the United Kingdom Workplace Charging Scheme¹¹, should be encouraged.

⁸ Analysis of the NPFs by the European Platform for electromobility “How EU Member States roll-out electric-mobility: Electric Charging Infrastructure in 2020 and beyond”, 28 February 2018

⁹ Based upon the European Commission recommendation of 10 EVs per public charging point

¹⁰ <https://publications.europa.eu/en/publication-detail/-/publication/1533ba56-094e-11e7-8a35-01aa75ed71a1>

¹¹ <https://www.gov.uk/government/collections/government-grants-for-low-emission-vehicles>

- **Dedicated infrastructure for heavy duty vehicles might also be necessary to decarbonise road freight, road passenger and public transport.** Several EU-level actions have been taken to stimulate supply of electric trucks (CO₂ standards, changes in cabin size, E-truck weight exemptions) or buses (Clean Vehicle Directive) but action on power supply infrastructure is still missing. The Platform encourages Member States to provide charging points for HDVs and to include public transport charging infrastructure in Member State's National Policy Frameworks, in line with targets under the Clean Vehicles Directive.
- **The opportunity of on-shore power supply (OPS).** So far, few Member States have studied the possibility to implement shore side electricity, which can provide significant air quality improvements close to sea ports and inland ports. OPS should be deployed on a mandatory basis in all EU ferry and cruise passenger terminals and cargo ship terminals. This would level the playing field with fossil fuel, that benefit from tax break. Low-voltage and high-voltage OPS should be distinguished (depending on current grid configuration, followed by technical/ economic/ standardisation feasibility assessment, for upgrading or new grid infrastructure deployment). The latter should be prioritised due to its high environmental and health benefits. It should be big enough to charge batteries of relevant ships for propulsion purpose.

A cost-efficient deployment of smart infrastructure

To enable the roll out of public charging infrastructure for electric vehicles, electricity grid infrastructure and particularly distribution grids, should also be addressed.

- **Member States should create an elaborated planning tool for optimised decision-making, carrying-out integrated transport and energy planning and using existing electricity network as much as possible to ensure future-proof investments.** Member States' plans on recharging infrastructure should be monitored during the European semester and in the Energy Union Governance. It should identify at an early stage backlog demand and allow to implement target-oriented funding programs in view of encouraging commercial uptake of infrastructure services. Special attention should be made to electricity networks along core highway networks, cities and near urban areas (also outside the TEN-T core network), as they would be a great catalyst for deployment of infrastructure that can feed electricity to vehicles.
- Yet, **the Commission should ensure that there is additional temporary financial support to assist with the high costs that this may entail.** The WiFi4EU concept – EU funding directly aimed at municipalities – could serve as a template for a 'Charging4EU' initiative: give municipalities funding for the amount of public charging points they install aimed at overnight charging. EU funding, for instance CEF cohesion fund money, should temporarily help and target regions where electro-mobility is less developed and business model is not yet profitable.
- Member States should also ensure that **EV charging infrastructure is equipped with smart technology** that enables flexible pricing in real time and by extension smart charging – the precondition for successful and cost-effective EV grid integration. When applicable, the inclusion of the upcoming smart charging standards for electric vehicles (i.e. OpenADR, ISO 15118 and IEC 63110) in the [2017 AFI Action Plan](#) acts as a further catalyst for Member States to move towards the harmonisation and interoperability of the charging infrastructure, and secure the real-world establishment and implementation of these objectives in the EU. This would be essential to enable electro-mobility to provide services to the electricity grids when a significant number of electric vehicles will be on roads and contribute to reduce its impact. It is also needed to enable innovative solutions of smart vehicle integration such as vehicle-to-grid services.

Improving customer experience and interoperability

Electric charging across Europe should be seamless and easy to ensure consumer acceptance and a faster uptake of electric vehicles. The AFI directive review should enable:

- **Easy access to information on the availability of charging stations**, including more granular data on charging points availability and applicable prices. Non-properly functioning and offline charging infrastructure should be reported faster. Stronger monitoring should be implemented and public database on the number of public charging infrastructure should be created.
- **Harmonisation of payment solutions**: access to a basic interoperable payment solution through credit card is essential to provide customers with an easy access to all public charging points. New digital technologies can also facilitate the charging process with easy payments thanks to RFID cards, via App/smartphone. Emphasis needs to be put on real-time billing data, easy billing, price transparency and accessibility to ensure a customer-friendly approach. Electro-mobility services should be included in the scope of the AFI directive, such as a harmonised approach for the EV users to roam between the different charging services networks, with no additional cost for the driver. This could be facilitated by the inclusion of the upcoming IEC 63119 series of standards, that will cover identification credentials, charging information sharing, business data exchange, security data encryption/transfer mechanisms, and other services.
- **Indicative charging tariff for ad-hoc payment** through harmonised principles should be elaborated (*kwh* vs. *timing* for stationary charging, and *kWh* vs. *km* for charging while driving).
- **Quality of service**: in case of public contract, charging operators should provide data to local authorities about the charging stations performance so that they can be evaluated. Good maintenance of charging points should also be ensured. For instance, Stockholm municipality requires the charging point to be in operation 90% of the time or the 5-year contract can be lost.
- **Better visibility of the fuel price**: customer price perception should be facilitated. The Platform supports the implementing regulation on common methodology for alternative fuels unit price comparison and ask for the online tool to be mandatory in all Member States. Next to the fuel prices (for electricity, be it by session or time), we also ask for the mandatory display at fuel stations of the comparison of different fuel prices, expressed in terms of indicative €/100 km.

To ensure a facilitated uptake of electro-mobility, **the electricity charging infrastructure should be interoperable and implement the following principles**:

- **Open and shared data**: relevant data, be it from the car, the charging point and the grid should be open and shared. It will enable market players to offer more intelligent charging services, secure grid stability and help to integrate intermittent renewable power production. Data should also be anonymised, secure and respect commercial confidentiality.
- **Open standards**: the charging infrastructure network should be accessible to all market players, be it for hardware communication to charge point operators or roaming between charge point operator and grid operators.
- **Provide a harmonised framework for product requirements** to ensure consumer's safety protection. Choice should be offered in the provision of cable-attached and socketed charging points in publicly available space when same level of safety is ensured.
- **Provide a high security level of charging and data exchange at the different interfaces** (e.g. open standards and protocols with high security levels using, e.g. TLS 1.2 and hashed tokens, fraud free authentication etc.)

Annex: A typology of charging points that encompass all innovative solutions

The electricity charging infrastructure market is dynamic. Some technologies are already available and implemented in public highways, and some other have been tested and have demonstrated their potential. It is important that the new AFI framework should enable innovation.

The Platform for Electro-mobility considers that several technologies have a proven potential and should be supported:

- **Renewable-supplied charging point** meaning a recharging point supplied entirely with renewable electricity, including via direct on-site generation, power purchase agreement, green electricity supply. This would support the principle of *additionality of renewables in transport*, as defined in the Renewable Energy Directive (art. 27.3), while relying on public authorities and public procurement procedures as a driver for zero-emission mobility.
- **Electric highways for heavy-duty vehicles** which is an option already being tested on some European roads (see [Germany already implemented on public highways](#), [Sweden already tested](#) and [other projects ongoing](#)) with the Commission and other Member States (e.g. [Italy](#)) also showing interest. Dynamic charging (whether catenary or ground-based) enables to feed and charge the truck while it is in motion, therefore allowing to rethink the battery size and capacity as well as autonomy issues, among others.
- **Automatic fast charging systems for electric buses** – which can be ground-based or pantograph solutions, where city public transport operators can ultra-fast-charge buses during very small intervals at each stop (examples and trials in Vienna, Sofia).
- **Ultra-fast high-power chargers coupled with stationary battery storage.**