



ChargeUp Europe – the case for open, non-prescriptive payment technology requirements in AFIR

Overview

- The Alternative Fuels Infrastructure Regulation proposal puts forward the obligation for direct payment card functionality on public charging stations and to retrofit stations with power output above 50Kw with such readers by 2027.
- When combined with the requirements of the Payment Services Directive (PSD 2), this can result in the need not just to install card readers but also pin pads in order to comply with strong customer authentication requirements.
- For AC stations (3,7 - 22kW), such obligations could raise the hardware cost of new stations by over 20%, in other cases to around 50%, excluding additional operational, labour, administrative and contractual costs.
- An obligation to retrofit DC stations (with capacity >50kW) with card readers could increase costs by over 5,000 euros for the hardware adaptation alone, excluding additional labour, administrative and contractual costs.
- In some cases, these requirements could result in a 20% price increase for consumers for ad-hoc charging on AC and DC stations. The environmental impact of replacing widely used existing stations goes against the principles of the Green Deal.
- For the EV driver, there are many ways to pay for ad-hoc charging of an electric vehicle. From mobile apps to contactless payment options, EV charging stations already come equipped with solutions for site hosts to collect payments and are widely used.
- Mandating specific payment types, while consumer behaviour and payment technologies are evolving rapidly, does not reflect the market and consumer payment trends for EV charging.

ChargeUp Europe calls for:

- Removal of any payment technology mandate for AC stations (power output below 50Kw)
- No retrofit obligation for existing DC stations (power output equal to or above 50KW)
- An exemption from PSD2 requirements to install card readers with pin-pads for all existing and future AC & DC stations

Note: Statistics taken from public sources and survey amongst ChargeUp Europe members



Introduction

The European Commission proposal for an Alternative Fuels Infrastructure Regulation (AFIR) can pave the way towards sustainable transport, driven by electrification and digitalisation.

One of the key aspects of the proposal relates to ad-hoc charging payments at fully publicly accessible stations. ChargeUp Europe strongly supports the goals of the AFIR proposal to make EV driving more accessible and user-friendly for EU citizens. Ad-hoc charging is very important in accelerating the transition towards e-mobility and should be available at all fully publicly accessible stations.

To increase the accessibility and reliability of the EV charging network it is vital to install more chargers at more locations, so that every EV user has a place to reliably recharge. This is why ChargeUp Europe supports the calls for binding infrastructure targets at the member state level.

However, we are extremely concerned that the approach taken with regard to payment technologies would have numerous unintended negative consequences delaying the energy transition. Mandating payment card readers on publicly accessible charging infrastructure, with additional retrofit obligations, will slow down the deployment of infrastructure, reduce options or increase prices for customers.

For the EV driver, ad hoc charging options are widely available today. For payment and authentication, they use methods including web-based payments and mobile applications. EV drivers are well served by these methods. At the same time consumer behaviour and payment technologies are evolving rapidly. Mandating specific payment methods and technologies, especially ones which may soon be outdated is not future-proof and does not reflect the market and consumer payment trends for EV charging.

Therefore, it is critical for the AFIR proposal to maintain an open, future-proof approach to authentication and payments and avoid the mandating of card terminals on publicly accessible stations.

What is the AFIR proposing for ad-hoc payments and what does it mean?

In Article 5.2 of the AFIR proposal, the European Commission proposes to mandate payment card readers on public charging stations, with an obligation to retrofit any existing stations with power output equal to or above 50KW with these card readers by 2027. Importantly, when combined with the requirements of the Payment Services Directive (PSD2), this could also require installing pinpads (and in some cases printers for receipts) alongside card readers in order to enable 'strong customer authentication' (SCA) of payments¹.

Such obligations would have a major negative impact on the industry, affecting the cost and speed of rollout of infrastructure, making existing recently installed infrastructure obsolete and resulting in stranded assets.

Below we outline why this obligation doesn't make sense and the potential consequences of such a mandate.

¹ According to the Payment Service Directive II (PSD II), the use of a card terminal requires the entry of a PIN for every fifth payment transaction or amount over 50.00 EUR

How are payments made today and where are consumer trends going?

While at first glance, mandating card payment terminals for ad-hoc payments may seem like a means of ensuring harmonization and payment availability, this simply does neither reflect the way people charge and pay, nor consumer payment trends in general.

As a first point, although not the focus of this paper, the **EV charging subscription model is by far the most popular and widely used means of charging**. The subscription model accounts for the vast majority of charging customers among ChargeUp Europe members, with some members receiving 95-99% of payments via subscription (e.g. via a subscription through an app or charging card).

For ad-hoc charging, credit card payments are already possible via web-based systems, which are widely available and used. Along with QR codes (which direct to an operator's payment environment), particularly for AC stations which are small and lack the space for a card reader, they are the most popular for the majority of Charge Up Europe members surveyed.

It is vital that the issue of making card payments available and making card terminals and pin pads available are not confused. **Card payments do not depend on card terminals and pin pads.**

Currently, more than 472 million people have a subscription to a mobile service – that is 86 percent of Europe's population. Smartphone penetration covers 78 percent of EU citizens² and is predicted to reach 84 percent by 2025). **Smartphones are widely used to carry out and authenticate EV charging payments without the use of a card reader or pin pad. When looking at EV drivers in particular, we can expect the numbers to be even higher. Indeed, digital payments are increasing in popularity and are expected to grow by 70% between 2020 and 2025³.**

Mandating the introduction of card terminals, which in turn may result in the need for installation of pinpads, when consumer behaviour is spread across different payments means does not make sense.

AFIR ad hoc payment requirements means investments will need to focus on upgrading existing infrastructure instead of deploying new charging stations

The proposed payment technology obligations will have a major impact on both AC and DC stations.

As a growing market where competition and innovation should be encouraged, mandating such requirements can price start-ups and SMEs out of the industry as the investment cost will outweigh the potential benefits. Additionally, smaller companies will not be able to compete with larger players who may be able to soak up the losses that come from either re-designing stations or retrofitting and replacing existing stations.

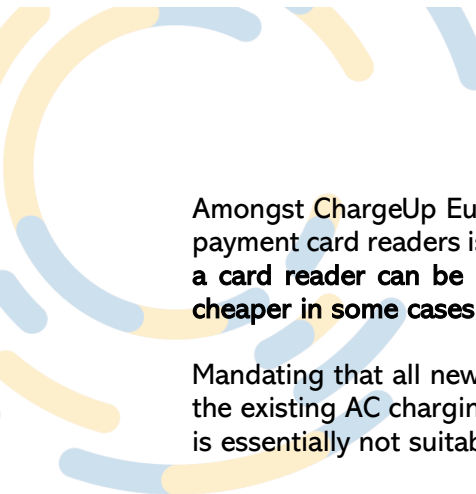
It may also negatively affect the available funds to invest in infrastructure and/or increase the charging cost for the EV driver, as the increased hardware and operating cost risk being transferred to the consumer. When looking further, at use cases such as municipal AC stations - this could severely undermine the public AC market case altogether – due to increased costs.

This impacts the overall objective of making EV driving more accessible, affordable, and convenient.

AC stations

² GSMA – [Mobile Economy Europe 2021](#)

³ <https://thefintechtimes.com/ppro-research-finds-digital-payments-in-europe-to-grow-by-70/>



Amongst ChargeUp Europe members surveyed, the percentage of public charging stations with payment card readers is less than 2% for AC stations. **The cost of deploying an AC station without a card reader can be 20-30% cheaper for some ChargeUp Europe members and up to 50% cheaper in some cases.**

Mandating that all new AC stations should have payment card readers would completely distort the existing AC charging ecosystem, by obligating the introduction of a payment technology that is essentially not suitable or used for AC charging.

Amongst ChargeUp Europe members surveyed, the most common method for paying for AC charging sessions was through QR codes (linking to the operators own environment or to banking environments) and web-based card systems. Physical credit/debit cards payments on AC stations represent a tiny fraction of payments. Mandating the introduction of payment card readers simply doesn't reflect the consumer or business use cases.

When it comes to the possibility of obligating retrofits of payment card readers on AC stations (which is being suggested by some stakeholders), ChargeUp Europe members surveyed stated that the cost and technicality of the retrofit was not feasible, and it would be required to replace existing stations with new ones. This would be a complete waste of existing charging stations at the time when we are trying to encourage and assure people of availability.

DC Stations

Amongst ChargeUp Europe members, the percentages of DC stations with payment card readers varies widely depending on the business model. **Some ChargeUp Europe members estimate the cost of retrofitting an existing DC station as approximately 5,000 euros for the hardware adaptation alone, excluding additional labour, administrative and contractual costs.**

The cost of updating and adapting such charging stations to installing, operate and maintain card readers will set high barriers to entry and discourage private investment. The operation of such technology involves additional burdens/requirements such as the need to calibrate the terminal and offer printed receipts at the point of sale.

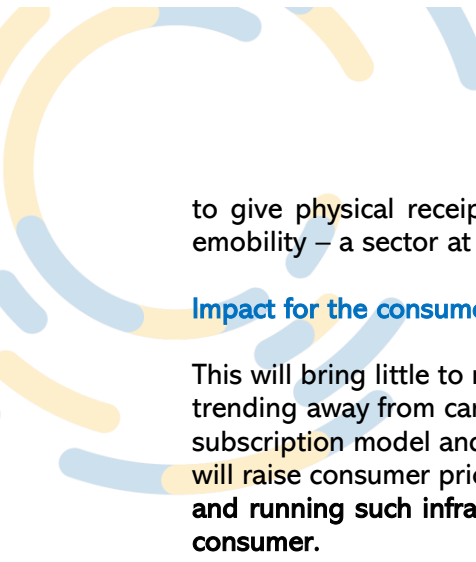
The retrofitting requirement is particularly concerning and backward looking. The obligation will result in the wasteful and environmentally unfriendly discarding of newly installed infrastructure which could otherwise stay in place for 10-15 years. Retrofitting charging stations with card terminals is extremely time consuming and expensive and trade's off with other activities, that could be spent developing payment innovations, new services and technologies on the part of the hardware manufacturers and on the CPOs who need to install them.

Compounding the problem with requirements for Pinpads

The current PSD2 requires the use of a card terminal with PIN authentication every fifth payment transaction or amount over 50.00 EUR. **If, according to the Strong Customer Authentication (SCA) requirement laid down in the PSD2, a Pin pad is required to be installed on the charging station, this will have considerable cost consequences and effect the installation space of this type of equipment in the field.** This will in turn affect the roll out of publicly accessible AC and DC EV charging stations, lead to higher costs and inevitably to higher consumer prices.

The typical cost of a charging session on an AC station is less than 10 euros and even for DC, while cost can be higher, it typically does not reach the 50 euro threshold.

Based on these typical charging costs, it is clear that introducing requirements which in turn would lead to the need to install physical pinpads is not proportionate. On top of this, depending on the Member State, additional installations may be required such as that of a printer in order



to give physical receipts. This is not the way forward if the EU is serious about switching to emobility – a sector at the intersection of energy, digital and transport.

Impact for the consumer

This will bring little to no additional consumer benefit due to the fact that payment behaviours is trending away from card payments, the vast majority of EV drivers prefer to use the EV charging subscription model and it will raise the cost of installation and servicing of stations which in turn will raise consumer prices. **For some ChargeUp Europe members, the additional cost of installing and running such infrastructure would need to be offset by a 10-20% increase in price for the consumer.**

These added costs will making charging more expensive – again – for little to no added value. This would prove to be a significant backward step in regard to charger availability and price and as such create exactly the fear and lack of confidence that the AFIR proposal seeks to avoid.

Conclusion

Ultimately, based on what is seen in the EV charging payment world and the broader payments world, consumer trends and user experience are moving rapidly away from card terminals and towards other solutions. Web based solutions, banking apps, and web-based card payments are now the norm and seen across different mobility solutions such as ride-hailing, e-bikes, e-scooters and more.

E-mobility is at the crossroads of digital, transport and energy. It's backbone is as a digital business and using the digital tools available to us allows for smooth and seamless payments and creates the greatest benefits – now is the time to move forwards, not backwards, to roll out more infrastructure, not roll back what is already deployed.

This is why it's critical that the AFIR proposal maintains an open approach to payment technologies for ad-hoc charging and removes the specific provisions in Article 5 that would obligate the installation of payment card readers.