


Seamless Payments

The key accelerator for
the EV Charging Market

White Paper



**White Paper from Worldline,
in collaboration with Visa,
Elmtronics and e-Totem.**

Hemlata Narasimhan

SVP Merchant Sales & Acquiring at Visa Europe

Sara Sloman

Head of Future Mobility Partnerships at Elmtronics

Hervé Sonneville

President at e-Totem & Atomelec Group

Abdelkrim Azzouza

Segment Marketing Manager,
Global Verticals EV Charging at Worldline

A booming Electric Vehicle (EV) market that requires adapted infrastructures

In recent years, the number of electric vehicles on the roads has grown significantly. The effective ban on the sale of new petrol and diesel cars starting in 2035, proposed by the European Union in July 2021, aims to further speed up the switch to zero-emission electric vehicles (EVs) as part of a broad package of measures to combat global warming.

Current levels of charging infrastructure have been sufficient for the market to date. However, with the EV fleet expected to grow by 15 times by 2030 – reaching 34 million vehicles in Europe - countries and regulators need to prioritise electric charging infrastructure to match the increasing demand for public charge points. To keep up with this electric surge, the number of European EV public chargers needs to rise from 200K today to more than 3 million by 2030.

Sources

EU proposes effective ban for new fossil-fuel cars from 2035 | Reuters
From 185,000 EV charging points now to 3 million in 10 years, says T&E analysis | www.transportenvironment.org

One of the key factors for the successful deployment of EVs is that these **charging points evolve from slow charge to fast and ultra-fast**, making EV charging (EVC) as easy as fueling a fossil-fuel based car.

Such a surge in EVC can only happen if the user experience is simple, allowing the user to drive from one station to the next, and across country borders without friction. **Drivers**

are expecting simple solutions to charge their vehicles anywhere, anytime.

This is where **seamless payment can be an accelerator for EVC**, enabling drivers to pay and charge their electric vehicles at any charging station easily, whether they are in their home country or abroad, by enabling charging point operators to accept both domestic and cross-border payments.

	European phase out of fossil-fuel based vehicles	End of fossil fuel fleet announcement	Public EV Chargers in Europe	Size of European EV Fleet
2025	Norway Belgium Austria	Jaguar Volkswagen	200K	2.3M
2030	UK Netherlands Germany	Volvo	1M	9M
2040	Spain France	Audi	3M	34M

Sources: Reuters (2021) / The Economist (2021) / ChargeUp Europe (2021) / Transport & Environment (2020)

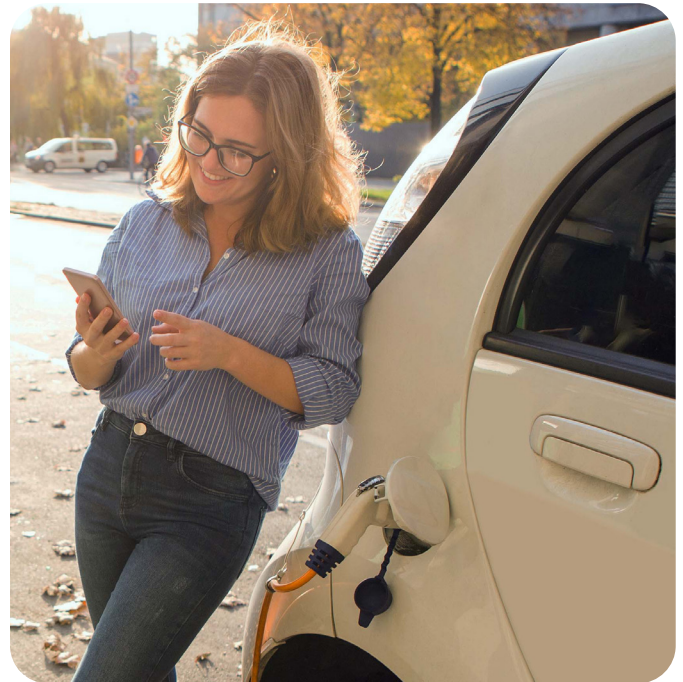


Barriers to payments in EV charging

A first challenge is **the number of ways there are to pay for EV charging** – a wide range of debit and credit cards, mobile wallets, app-based payments, and mobile payments and services. For a fully electric future, all currencies and regulatory regimes in different countries will also need to be considered.

Furthermore, not all payments will take place at the charging point itself: just like 'click and collect' allows consumers to pay for their coffee order ahead of their arrival, 'click and charge' systems could allow EV drivers to pay for their charging even before they reach a charging point. There would then need to be a **seamless interface between the app and the charging point**, making the process as simple as it is in cafés.

Lastly, EV infrastructure owners, EV charging manufacturers and charging point operators are unlikely to standardise their offering. All operators will have different methods when it comes to taking payments. Charging stations operated by petrol stations will likely continue their current loyalty programmes, so these will need to be incorporated into their charging systems, which would also need to be networked to receive updates, which again introduces security issues. This highlights how a loyalty scheme can cause problems unless there is a **unified, end-to-end solution that can be used by everyone**.



Optimising the payment process is key to driving an EV future

The number of charging infrastructures will grow and EV charging points will become as common as petrol stations are today. **Over the next decade, EVs will become the standard choice for many drivers.** To get to this stage, we need to understand and tackle the barriers to payments, and thus bring this electric future a little closer to reality.

Having built-in card payment solutions such as WL Easy EV in an EV charger will bring the same payment convenience to chargers as the consumer experiences today when paying at a petrol station or in-store.

Widespread implementation of chip card and contactless technology, mobile device payment and e-payment will bolster EV market acceptance and deployment, meeting drivers' needs with a seamless payment experience. This will avoid the need for drivers to register and setup with multiple Charge Point Operators (CPO) to charge their vehicles.

Payment solution providers such as Worldline and international payment schemes like Visa have to serve the EV charging sector with **solutions that guarantee the payment to the CPO and the Infrastructure Owners.**

Dedicated to the Electrical Vehicle Charging segment, WL Easy EV, allows the CPO an easy integration in their EV infrastructure and offers a wide range of payment means (online payment cards, e-commerce, mobile payments, in-app integrations including one-click payment and even loyalty cards). **The vehicle driver enjoys an intuitive and trusted user experience.** Meanwhile, the key payment functionalities made available by Worldline: security; contactless pre-authorisation; management of card fallback - will allow end users to address many payment scenarios.

<https://business.worldline.com/en/wl-easy-ev>

Building a new payment infrastructure to power an EV future

In order to address the EV Charging market, it is important to take into consideration the expectations from all the elements and players within the ecosystem. This includes manufacturers/integrators, Charge Point Operators, infrastructure owners and Mobility Service Providers, and also drivers/end-users.

Users/ EV Drivers



Role
Drive EV car

Manufacturers/ Integrators



Role
Building future-proof chargers

Charge Point Operators



Role
Operating EV charge points in several countries

Infrastructure Owners



Mobility Service Providers



Role
Managing a mobile and web platform

Partnering with these key players and exchanging best practices will accelerate the deployment of EV Chargers, and drive payment innovation:



Security

- Solutions to manage security across various payment scenarios from contact to contactless.
- Compliance with European regulations and local requirements.
- Consolidated reporting to manage and monitor transactions.



Support growing businesses

- Standardised and unified self-service "plug and play" payment solutions to cover geographical expansion and customer specific payment preferences.
- Functionality to attract non-enrolled and occasional users with proximity payment.
- Easy integration tools for in-app and web payment.



Facilitate EMV payment adoption

- Simplify the payment experience for customers.
- Provide trusted payment means to every customer, from high use to occasional.
- Enable drivers to reach their destination without planning upfront where and when to charge.

As both EVs and digital payments continue growing rapidly over the next decade, EV payment solutions tie these together to create a streamlined solution, to drive an electric future in the transport and mobility market.

The latest solutions bring to EVs the very best of what customers are used to in other parts of their life, regardless if they are either using electric vehicles now or will be soon. While providing the hardware and software, charging station manufacturers and providers of the EVC solutions also need to satisfy the end-users' demand and expectations regarding payment methods.

**The future of payment
solutions in EV Charging**
Our customers and
partners say it best!





Visa has a successful history of supporting technology and payment enablers to deliver digital payments acceptance in the urban mobility sector – mass transit, shared mobility services, parking, tolls and also in electric vehicle charging sector.

To fully transform the passenger and driver experience from the first mile to the last, Visa is supporting contactless implementations around the world by providing guidance, best practices and hands-on assistance – helping launch projects more quickly and with maximum impact.

Consumer demand for contactless, mobile and online payments has continued.

As of March 2021, 29 countries across Europe have increased contactless payment limits. Visa applauds these actions and is supporting the rollout of contactless-enabled terminals, cards and mobile devices.

- More than 80% of Visa payments in Europe are now contactless (June 2021)
- One billion Visa contactless payments within the new, higher limits have been processed, including over 400 million in the UK (March 2021)
- In many countries in Europe, the share of contactless Visa transactions has increased by at least 20% (YOY growth, March 2020 – March 2021).

The share of Visa transactions that are contactless has increased across all countries and now represents the majority of all card present transactions:

Supporting seamless customer experience

- What we are seeing is that frictionless payment technology, such as contactless, is critical in a world where no-contact, touchless experiences are here to stay.
- Implementing contactless payments provides an opportunity for EV charging operators to remove payment related pain-points and offer more seamless experiences for drivers.
- Visa's role goes well beyond enabling contactless payments; helping cities across Europe to grow sustainably and take advantage of the latest digital commerce solutions.
- In the near future, many other everyday objects will be equipped with a payment function. For example, connected cars will, just like smartphones today, be linked to a Visa card, making everyday life easier for consumers.

Contactless Penetration	Jun-21
Central Eastern Europe	around 95%
Central Europe	around 80%
France, Belgium, Luxemburg	around 70%
Nordics and Baltics	nearly 80%
South Eastern Europe	around 80%
Southern Europe	nearly 75%
UK & Ireland	around 80%

“Our approach to sustainability is twofold: focusing on what we, as an organisation, can do within Visa and what we can achieve through enabling clients and partners.

- **At Visa we are 100% committed to tackling climate change and our role at the heart of the ecosystem means we are in a unique position to bring together stakeholders to consider and address these issues.**
- **Visa's role in enabling sustainable customer behaviours also includes supporting digital payments in the EV charging space, that help address interoperability, security and seamless customer experience to further drive adoption of zero emission vehicles.”**

Hemlata Narasimhan
SVP Merchant Sales & Acquiring, Visa Europe

e-Totem

e-Totem has been positioned in the EVCI (Electric Vehicle Charging Infrastructure) market since 2012 and is now one of the leaders in France thanks to its integrated management of the value chain, from OCPP/OCPI supervision solution, outsourced management service, project management, investment in and operation of electric vehicle charging station networks. Hervé Sonneville is the Founder and President of the company since 2008.

“Freedom and simplicity are essential in gaining trust from EV drivers and in accompanying the booming demand for public charging infrastructures. The universal nature of contactless payment – with specific features like estimated authorisation, tokenisation and digital receipt – is essential to ensure accessibility of the service throughout their journey.

Contactless payment is definitely the major contributor to the expansion of the uses of electric vehicles and therefore to making it massive at European level, allowing anyone to charge anywhere at any time. Simple, ergonomic and reliable, contactless payment, implemented since 2018 in our EVC solutions, is now at the heart of the development of our new ultra-fast stations to be deployed soon.”

Hervé Sonneville
e-Totem and Atomelec President



Elmtronics

“For the general public, contactless will be essential to give confidence on the road. In the UK the public charging network has responded to the increase in the public’s desire for contactless payment options, and as part of the Department for Transport «Road to Zero» plans, contactless is hailed as a vital solution to deliver interoperability and better customer experience, rather than having to have multiple cards and apps.”

Sara Sloman

*Elmtronics, Sara has been named as EV Champion in 2018
and featuring on the GreenFleet “100 Most influential” list in 2019, 2020 and 2021!*



About Worldline

Worldline [Euronext: WLN] is the European leader in the payments and transactional services industry and #4 player worldwide. With its global reach and its commitment to innovation, Worldline is the technology partner of choice for merchants, banks and third-party acquirers as well as public transport operators, government agencies and industrial companies in all sectors. Powered by over 20,000 employees in more than 50 countries, Worldline provides its clients with sustainable, trusted and secure solutions across the payment value chain, fostering their business growth wherever they are. Services offered by Worldline in the areas of Merchant Services; Terminals, Solutions & Services; Financial Services and Mobility & e-Transactional Services include domestic and cross-border commercial acquiring, both in-store and online, highly-secure payment transaction processing, a broad portfolio of payment terminals as well as e-ticketing and digital services in the industrial environment. In 2020 Worldline generated a proforma revenue of 4.8 billion euros.

worldline.com



For further information

<https://business.worldline.com/en/wl-easy-ev>



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SMART CHARGING | CHARGING SERVICES



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