

PROCHIP[®]

Special issue on e-mobility



Issue #1, September 2022



Initiative Deutsche
Zahlungssysteme e.V.

German Payment Systems Initiative

E-MOBILITY IN GERMANY

4 Editorial
The path is clear for standardised payment systems at e-charging stations

6 Endeavour mobility turnaround
Charging must be made easier

8 Perspective consumer protection
The future of e-mobility depends on transparent rates

12 Revision of the German Charging Station Regulation
From the till to the charging station

14 #enquired:
Diversity of viewpoints



E-MOBILITY IN EUROPE

16 Survey on e-mobility among consumers
Card payment needs to be possible at charging stations throughout Europe

20 In dialogue with policy makers
Guest commentary by MEP Ismail Ertug: AFIR – The future for sustainable road traffic in the EU

22 Case study on the barriers to topping up electric vehicles
Payment chaos at Europe's charging stations

28 In dialogue with policy makers
Interview with MEP Markus Ferber on the legislative process of the AFIR

30 A drive with a change of perspective
Travelling by electric car in a new landscape

33 Glossary
Imprint



The Initiative Deutsche Zahlungssysteme e.V. (German Payment Systems Initiative) based in Berlin, sees itself as a network for companies and institutions that accept cashless payment methods of the German credit industry or provide the necessary infrastructure. It bundles the interests of its members and represents them in relation to politics and the media. The association researches new application possibilities, initiates pilot projects, and supports existing activities of its members, especially in the areas of marketing, public relations, and public affairs. The German Payment Systems Initiative has been dealing with payments in Germany for fifteen years.

CHARGING STATIONS IN GERMANY AND EUROPE ARE SUBJECT TO A BAFFLING WEB OF RATES, AND A HOST OF DIFFERENT PAYMENT SYSTEMS MAKE LIFE HARDER FOR MANY DRIVERS OF ELECTRIC VEHICLES. ALL THIS MUST BE REPLACED BY TRANSPARENT, SECURE AND EASILY ACCESSIBLE PAYMENT OPTIONS.

THE PATH IS CLEAR FOR **STANDARDISED PAYMENT SYSTEMS AT E-CHARGING STATIONS**

The revised German Charging Station Regulation, approved in September 2021, is good news for everyone who already drives an electric vehicle in Germany or is considering doing so. And it is good news for climate protection, as it has removed a major barrier to the breakthrough of electric mobility in Germany.

This is because well-developed charging infrastructure with easily accessible, secure and standardised payment options at every charging station is a key factor in enabling consumers to switch to electric vehicles. However, these essential conditions for a successful transformation of transport have yet not been put in place.

Instead, Germans face a veritable web of rates. For instance, there are almost 300 different rates for car electricity in Germany, as Mastercard has calculated in conjunction with the German Fleet Association (Bundesverband Fuhrparkmanagement e.V.). This means that on average, drivers of electric vehicles need to carry ten payment methods in order to reach their destination. Anyone with a conventional combustion-engined car would struggle to imagine a filling station refusing to accept a debit or credit card. But this has been the norm for owners of electric vehicles so far. The LSV is designed to rectify this situation over the next few years, in Germany at least.

A debate on what form modern – and, most importantly, consumer-friendly – public charging infrastructure should take is still in full swing at European level. Consumer-friendly and non-discriminatory payment options at charging stations are crucial to the ability of citizens of the European Union (EU) to get around in their electric vehicles in Europe without major restrictions. Debit and credit cards were used just under 64 billion times in the EU in 2020 alone. 5.9 billion payments were made with the girocard, as the German debit card, last year. And usage levels are on the rise. In 2021, for the first time ever, more revenue was generated with the girocard (42.4 percent) than with cash (38.5 percent) in Germany, where cash is still widely used. Therefore, publicly accessible charging stations should be obliged to offer standardised card payment options regardless of their capacity. It should make no difference whether a charging station is in the German town of Coburg in Upper Franconia, on the Portuguese Atlantic coast in Lisbon or in Milan, the fashion capital of Italy.

Card acceptance does not exclude consumers who don't own a smartphone, and payment remains possible even if mobile phone reception is limited. Payments can be made directly at a payment terminal with a debit or credit card

with no need for an internet connection, registration or prior login.

Purely internet-based payment options are no alternative to the widely accepted and established debit and credit cards with their high security standards. After all, payment at publicly accessible charging stations must be as simple and secure as paying at conventional filling stations. A payment jumble of apps, RFID charging cards and credit accounts slows down the transition to electric vehicles and causes uncertainty among consumers – especially on cross-border journeys.

Ingo Limburg

Chairman of the Initiative Deutsche Zahlungssysteme e.V.

THEREFORE, THE ACCEPTANCE AND EXPANSION OF ELECTRIC MOBILITY DEPENDS ON A STANDARDISED AND WIDELY ACCEPTED PAYMENT SYSTEM AT CHARGING STATIONS THROUGHOUT THE EU WITHOUT CONSUMERS HAVING TO ENQUIRE ABOUT OR REGISTER WITH NATIONAL OR LOCAL CHARGING PROVIDERS BEFOREHAND.





Endeavour mobility turnaround

CHARGING MUST BE MADE EASIER

WHEN IT COMES TO ROAD TRAFFIC, THE SUPERLATIVES COME THICK AND FAST: THE 82 MILLION PEOPLE IN GERMANY OWN 48 MILLION CARS BETWEEN THEM. JUST UNDER 52 MILLION TONNES OF FUEL WERE CONSUMED IN 2020, WITH DIESEL ACCOUNTING FOR TWO THIRDS, PETROL JUST UNDER A THIRD, AND BIOFUEL A SMALL PROPORTION. THESE FIGURES SHOW THE SHEER VASTNESS OF THE SYSTEM THAT NOW HAS TO BE OVERHAULED IN MANY RESPECTS.

Although electric mobility is still on a fairly small scale, it is growing fast: in 2021, just under 42 percent of all newly registered vehicles were equipped with alternative drive systems – including electric drives as well as fuel cells, gas and hydrogen. It was only around half as many in the previous year, when just under 22 percent of newly registered vehicles had alternative drive systems.

EVEN SO, THE LAST GERMAN GOVERNMENT'S TARGET OF HAVING A MILLION ELECTRIC VEHICLES ON GERMAN ROADS HAS BEEN ACHIEVED.

A little over half of them are battery electric vehicles (BEV), and a little under half are plug-in hybrids that can cover short distances powered by electricity and have a combustion engine on board for longer journeys. Therefore, the figure of a million vehicles in terms of the intended contribution to climate protection is somewhat misleading.



In 2021, just under 42 percent of all newly registered vehicles were equipped with alternative drive systems. In 2020, this figure was only around half of this.

FEDERAL GOVERNMENT ON TRACK

When unveiling their coalition agreement, the three-way coalition of the Social Democrats (SPD), the Greens and the Liberals (FDP) set a target of 15 million electric vehicles. To promote electric mobility, the German MP, Ye-One Rhie from Aachen, wants to start with the people themselves. Rhie, a spokesperson on transport policy for the Social Democrats in her home town, is calling for one thing in particular: information. "Many find the subject exciting, and would be willing to engage with it, but there are questions about the operating costs, the charging facilities, whether you need a wall-mounted box by the front door, who is responsible the charging points at rented properties, how long the car's batteries last and how much it all costs," said Rhie. Information of this kind should be made available uniformly and centrally throughout Germany.

PEOPLE NEED TO BE TOLD THAT ELECTRIC MOBILITY IS NO MORE COMPLICATED THAN USING A CAR WITH A COMBUSTION ENGINE.

E-FUTURE: CHARGING CAPABILITY IS A KEY POINT

Of all the questions of future owners of electric vehicles, the question of charging capability is key, said Rhie: "This isn't just about the lack of charging stations. There's also a perception that you need a whole wallet just for the charging cards. It's off-putting to have to find out where it's possible to charge and which RFID card you need before driving to another city," said Rhie.

AT PRESENT, THERE ARE AROUND 45,500 CHARGING POINTS WITH A WHOLE RANGE OF OUTPUTS IN GERMANY. THE REVISED GERMAN CHARGING STATION REGULATIONS, WHICH CAME INTO FORCE IN JANUARY 2022, IS INTENDED TO IMPROVE THE SITUATION.

For instance, the ordinance states that newly installed charging points must be able to transmit information on their location, operating state and availability from July 2023. In addition, the operators of public charging stations must provide an option to pay using a common debit or credit card at the charging point or nearby. The plans met a muted response from associations in the energy sector, the automotive industry and electrical engineering, with critics branding them too complicated and too expensive.

CHARGING STATION CHAOS: SOMETHING HAS TO CHANGE

Rhie welcomes the revised regulation but also has her doubts: "Things should improve, but whether they actually do remains to be seen." However, to her, the reason is nothing to do with technical difficulties or excessive costs. In her view, the problem is that with the uncontrolled growth in recent years, it will be hard to bring all the stakeholders together again. "But it's clear that something has to change, as it's no joy at the moment. It's a constant stress factor if you don't know where you can charge your car and for how much," says Rhie.

The former German government can regard the revised Charging Station Regulation and a major step towards consumer convenience as a success. The current German government is continuing to map out the expansion of the charging infrastructure in Germany in the Master Plan for Charging Infrastructure II.



Perspective consumer protection

THE FUTURE OF E-MOBILITY DEPENDS ON TRANSPARENT RATES

IT WAS A STRESSFUL WORKING DAY. WHEN THE FATHER GOT INTO HIS ELECTRIC VEHICLE FOR THE DRIVE HOME, HE DISCOVERED THAT THERE WAS ONLY JUST ENOUGH CHARGE IN THE BATTERY TO GET THERE. BEFORE HE COULD DRIVE HIS TWO CHILDREN TO THEIR GRANDPARENTS' HOUSE THE NEXT DAY AS PLANNED, HE WOULD HAVE TO MAKE AN EXTRA JOURNEY TO A CHARGING STATION. NO PROBLEM. THERE WAS ONE ON HIS WAY HOME. ON ARRIVING THERE, THE DISPLAY ON THE CHARGING STATION TOLD HIM THAT THE ELECTRICITY WAS VERY CHEAP THAT DAY AND IT WAS REALLY EASY TO PAY FOR THE BATTERY TOP-UP THAT DAY BY TAPPING HIS BANK CARD ON THE READER. BY THE TIME HE HAD DONE HIS SHOPPING AT THE SUPERMARKET NEXT DOOR, THE BATTERY HAD CHARGED ENOUGH TO MAKE THE PLANNED FAMILY VISIT POSSIBLE AGAIN.



Although the transformation of transport in Germany has been urged on for years, a scenario like this is still a long way off. In particular, the switch to electric mobility still presents huge barriers, particularly to consumers who rely on public charging stations because they do not own their own home.

“Access to charging stations is not always easy, pricing remains opaque and payment can be complicated. Without a subscription, payment with common cards is not always possible,” complains the Federation of German Consumer Organisations (Bundesverband Verbraucherzentrale, vzbv).

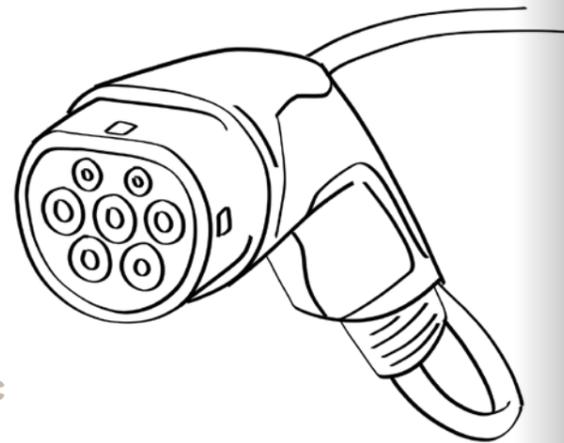
OPAQUE PRICING STRUCTURE UNDER FIRE

The opaque pricing structure of the charging stations has kept the consumer rights campaigners particularly busy in recent years. For instance, it is often hard for customers to see how much they need to pay for a kilowatt hour of electricity at a charging station. Last autumn, the vzbv actually cautioned three operators of charging stations for electric vehicles for breaches of the German Price Indication Ordinance.

“THE FUTURE OF ELECTRIC MOBILITY DEPENDS ON BOTH THE EXPANSION OF CHARGING STATIONS AND FAIR, TRANSPARENT RATES,”

said Kerstin Hoppe, legal advisor at the vzbv, when the cautions were issued. “This is often anything but the case at the moment. Customers sometimes have to pay by charging time rather than for the amount of energy supplied. In addition, they are constantly having to pay high prices because of their charging behaviour – without being told why.”

The vzbv sees the consumer-friendly expansion of the charging infrastructure as an important aspect of effect climate protection, its press release adds.



“CHARGING AN ELECTRIC VEHICLE MUST BE AS EASY AND CONVENIENT AS POSSIBLE IN ORDER TO HELP CONSUMERS MAKE THE TRANSITION TO ELECTRIC MOBILITY,”

said Marion Jungbluth, Mobility and Travel team leader at the vzbv. Ahead

Ahead of the Bundesrat’s (German Federal Council) decision on the revision of the German Charging Station Regulation, Klaus Müller, the then Executive Director of the vzbv, reiterated that the switch to electric vehicles was essential to effective climate protection:

“EASY-TO-USE PUBLIC CHARGING INFRASTRUCTURE HELPS CONSUMERS TO ACCESS ELECTRIC VEHICLES AND CHANGE TO THEM FROM CARS WITH COMBUSTION ENGINES. CHARGING STATION OPERATORS MUST BE OBLIGED TO OFFER PAYMENT BY DEBIT AND CREDIT CARD AT ALL NEW CHARGING STATIONS.”

Consumers, he said, must have the certainty to be able to charge without a contract any time, anywhere. “Relying solely on digital payment solutions is the polar opposite of simple and excludes lots of consumers. Card payment is familiar, transparent and desired by consumers. Climate protection without consumers is doomed to failure.”

As well as having easily accessible charging infrastructure in Germany, electric vehicles must be able to move freely throughout Europe. This is why the vzbv welcomes the European Commission’s proposal for a regulation on building up the infrastructure for alternative fuels. Its vision of modern charging infrastructure fit for the future is one where drivers of electric vehicles can charge their vehicle everywhere easily and with a clear understanding of the rates involved.



ROOM FOR IMPROVEMENT IN THE EU’S PROPOSALS

However, along with lots sound regulatory proposals, the vzbv sees room for improvement on certain points. For instance, the vzbv believes that card payments should be possible and an indication of the price per kilowatt hour (kWh) should be compulsory at all charging stations – i.e. including those with a capacity of under 50 kilowatts – from 2023 onwards. This is because, in their view, drivers of electric vehicles should also be able to read comprehensive information on the latest prices whenever they decide to charge their battery.

The vzbv also sees room for improvement in the buyer’s premium for electric vehicles in Germany. Klaus Müller maintained that only electric vehicles costing up to EUR 40,000 and used cars should be subsidised, as the vzbv feels it is not expedient to subsidise large, expensive electric vehicles. The consumer rights campaigners have been saying for years that small, environmentally friendly cars should be subsidised more effectively instead of large and powerful ones.

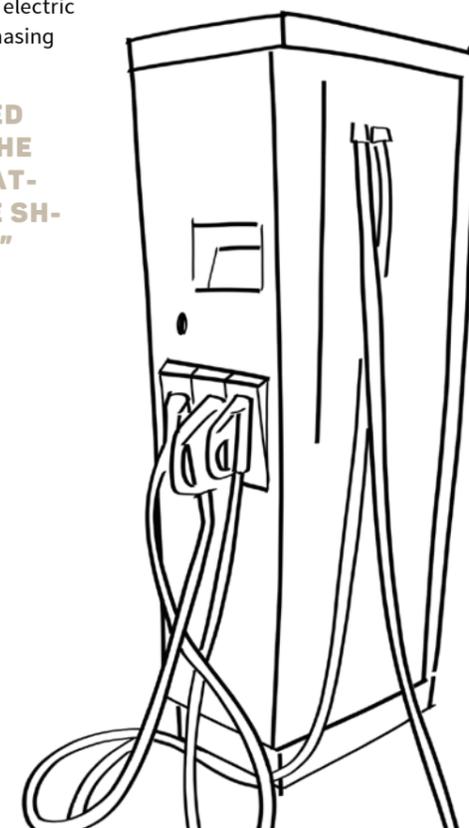
And when it comes to developing an attractive used-car market with electric vehicles, they believe that purchasing incentives are not enough.

“WHEN BUYING A USED ELECTRIC VEHICLE, THE CONDITION OF THE BATTERY SHOULD NOT BE SHROUDED IN SECRECY,”

said Klaus Müller. “In the future, consumers must be able to rely on objective and comparable details on the state of the vehicle’s battery.” The battery is said to be the most expensive single component of an electric vehicle, and so knowledge of its durability is crucial.

In Germany, according to the consumer rights campaigners, an electric motor is already the most affordable drive in many cases if the overall maintenance costs, purchasing incentives and tax benefits are taken into account. A study commissioned by the vzbv shows that a small or medium-sized electric vehicle purchased today has the drive with the lowest costs, over a total service life of 16 years. With an electrically powered medium-sized car, first-time buyers reduced costs by around 29 percent or EUR 11,000 in four years compared with a vehicle with a petrol engine.

Accordingly, a functioning used-car market for electric vehicles would help people who cannot afford a new car, as their financial advantage is 19 to 29 percent. It is increased further if consumers can stick solely to public charging stations.



WHAT IS CHARGE ROAMING?

Mention the term “roaming” and most people think of making calls on their mobile-phone. When someone is away from home, the network of local providers is used for mobile-phone reception. In this way, users can make calls and surf the internet abroad, for instance. For many years, the drawback was the additional fees.

This principle also applies to roaming when charging electric vehicles. Based on a contract with their e-mobility provider, car drivers can use the provider’s public charging stations – often within a specific area. However, to enable customers to charge their electric vehicle throughout Germany and abroad via different operators, roaming comes into play.

Whereas roaming in the mobile-phone sector is now subject to uniform regulations within the European Union and has been free since 2017, the costs for charge roaming depend on the respective country and e-mobility provider, and can vary.

Revision of the German Charging Station Regulation

FROM THE TILL TO THE CHARGING STATION

“COMING TOGETHER IS THE BEGINNING. KEEPING TOGETHER IS PROGRESS. WORKING TOGETHER IS SUCCESS.” THESE WORDS OF HENRY FORD COULD NOT BE MORE APPROPRIATE TO THE ACHIEVEMENTS OF A STRONG NETWORK OF PARTNERS OF THE MOBILITY AND BANKING INDUSTRIES, CITY COUNCILS, RURAL DISTRICTS, MUNICIPALITIES, CONSUMER REPRESENTATIVES AND THE “INITIATIVE DEUTSCHE ZAHLUNGSSYSTEME E.V. (IDZ)” AT A POLITICAL LEVEL: IN THE FUTURE, ACCEPTANCE OF A COMMON AND STRAIGHTFORWARD PAYMENT METHOD WILL ALSO BE COMPULSORY WHEN TOPPING UP ELECTRIC VEHICLES. IN E-MOBILITY, WHAT HAS LONG BEEN STANDARD PRACTICE IN RETAIL IS A BREAKTHROUGH THAT STARTED WITH THE REVISION OF THE GERMAN CHARGING STATION REGULATION IN 2021.

All signs point to “e-volution”

The involvement of the IDZ dates back to the parliamentary evening in 2019, prompted by the question of whether mobile payment etc. would enable e-mobility to make the breakthrough. At that point, it was already clear that e-mobility would only become widespread if the charging and payment process were as easy and intuitive as possible.

Tomorrow’s drivers of electric vehicles also confirm this finding: 79 percent of them state that if they had a free choice, they would prefer to pay at the charging station with their debit or credit card (physical or digital) ¹.

The then German government saw this need for action and introduced a regulation of payment methods at charging stations with the revised Charging Station Regulation. As part of this, in December 2020, in its first public pronouncement, the initiative issued a joint statement with other strong partners that consumer convenience means establishing the acceptance of card-based payment methods at charging stations as a minimum standard. In May 2021, the German federal cabinet finally issued a draft ordinance that commits charging station operators to offer contactless payment by debit and credit card for ad-hoc charging as a minimum standard in the future. 60 percent of future drivers of electric vehicles in Germany approve of this step, and expected it.

Decision in the Bundesrat (German Federal Council)

Yet the journey did not end with the cabinet’s decision. There was still the matter of the final vote by the German federal states in the Bundesrat (German Federal Council). Some stakeholders in the energy and automotive industries remained determined to restrict card acceptance at charging stations to credit cards. The IDZ saw this as a step in the wrong direction: Not all consumers have a credit card, and furthermore, it was clear to the association from the outset that acceptance of debit cards boosts a national payment method and is therefore important to competitiveness against non-European companies.

Acceptance of card payment is becoming the standard at German e-charging stations

In July 2021, the IDZ organised a virtual information event for expert contacts in the Bundesrat. Political representatives engaged in small groups with experts from the mobility sector, retail and the financial industry. It became clear here that along with the IDZ, many other stakeholders were also campaigning for an expansion of the charging infrastructure with open and consumer-friendly payment methods. And the network of supporters was constantly growing. In tandem with numerous partners in the banking, mobility and charging station production industries and the municipal sector, a statement making this very point came about.

The joining of forces and the host of voices that drove the public debate on Twitter under the hashtag #nachgefragt proved effective: In the last full session in September 2021, the revised German Charging Station Regulation was passed with no amendments, paving the way for uniform, consumer-friendly payment at charging stations in Germany.

Following this national success, the IDZ has turned its attention to Europe, as Brussels is looking to regulate payment options at European charging stations by drafting the new “Alternative Fuels Infrastructure Regulation” (AFIR). With its network, the IDZ is therefore continuing its campaign to establish acceptance of debit and credit cards as a consumer-friendly payment solution as a minimum standard in Europe, too. The German federal government now has the opportunity to shape the future for the whole of Europe with the successful example of the German Charging Station Regulation.



Initiative Deutsche Zahlungssysteme e.V.

ADAC bankenverband

BVR BecN

VÖB die öffentlichen Banken Finanzgruppe Deutscher Sparkassen- und Giroverband Deutscher Städtetag

DStGB Deutscher Städte- und Gemeindebund DEUTSCHER LANDKREISTAG wallbe Driving eMobility

¹ Representative online survey of 1,058 people aged between 18 and 69 by infas quo on behalf of the “Initiative Deutsche Zahlungssysteme e.V.”, September 2021.

² More about the parties involved and the contents of the statement can be found [here](#) (GER).

³ More about the Twitter campaign can be found [here](#) (GER).



Dietmar Benkert

is an authorised representative at the energy provider SÜC Energie (Städtische Werke Überlandwerke Coburg GmbH).

When we planned the fast charging station in Coburg, we aimed to do it from the perspective of consumers. People who charge their vehicles with us should be able to do it at the speed they are used to with petrol and diesel. With this in mind, we have installed a payment system that is familiar to customers: The station accepts the girocard and credit cards, as well as other established payment systems. Being competitive is equally important to us: Those who top up with us find out straight away how much a kilowatt hour costs, and that price alone is charged.

MANY INTEREST GROUPS ARE AFFECTED BY THE EXPANSION OF THE CHARGING INFRASTRUCTURE AND THE QUESTION OF EXACTLY WHAT FORM IT WILL TAKE – CAR DRIVERS, LOCAL COUNCILS AND THE PROVIDERS OF THE ELECTRICITY USED FOR CHARGING. WE ASKED AROUND AND GATHERED A FEW OPINIONS.



Gerhard Hillebrand

is the President for Traffic at the German General Automobile Club (Allgemeiner Deutscher Automobil-Club, ADAC).

Paying at the charging station should not be more complicated than filling up at a gas station. Therefore, we need the ability to pay directly by credit or debit card. That is the only way to keep the hurdles for consumers as low as possible and ensure growing acceptance of electromobility.

DIVERSITY OF VIEWPOINTS



Markus Emmert

is the Head of Strategic Cooperations and member of the Management Board at the German Association for E-Mobility (Bundesverband eMobilität e.V.).

It is great that the Charging Station Regulation passed by the German federal government gives car drivers the option of paying by debit or credit card at all new charging stations in the future without using a mobile phone. However, all common payment methods must also be possible at charging stations, including the new NFC technology and payment via smartphone, as we are used to in retail. Rather than remaining a national peculiarity, the regulation implemented in Germany should also be replicated in European legislation.



Reinhard Sager

is President of the German County Association (Deutscher Landkreistag).



Electric and hydrogen vehicles will only become a genuine option for people if they can be topped up everywhere in towns, cities and the countryside. Also, the subsequent payment must be possible in an easy, secure and user-friendly way with conventional payment methods. Paying by card is by far the most common payment method and enjoys considerable trust among consumers. Therefore, it must be possible at all charging and filling stations.



Dr. Karl Peter Schackmann-Fallis

is an Executive Member of the Board of the German Savings Bank Association (DSGV).

Ad-hoc charging – and paying for it – must not be impeded by new, artificial barriers in Europe that some are trying to set up in the form of closed-loop payment solutions at charging stations. Borderless electric mobility in Europe will not take off with today's jumble of charging cards, apps and accounts. It is hugely counterproductive to confront drivers of electric vehicles with separate contracts and legal details in other languages on their travels across Europe. That is why we – together with our partners in the German Banking Industry Committee – support the European Commission's goal of enabling ad-hoc charging at all charging stations throughout the EU and breaking up the prevalence of contract-based models. The Commission's proposal for an Alternative Fuel Infrastructure Regulation (AFIR) should be urgently amended so that customers at all charging stations are always given the option of paying with the credit and debit card of their choice – such as the girocard.



Tina Zierul

is an e-mobility expert.

A bill for ad-hoc payment at charging stations in the interest of consumers is a pressing concern: however, the legally prescribed secure receipt is already in use for card payments. So we're not starting from scratch. Some banks and issuers of debit and credit cards are already issuing transparently itemised bills. In addition, drivers can check the details of the charging transaction again via an integrated link to the service provider.



Survey on e-mobility among consumers

CARD PAYMENT NEEDS TO BE POSSIBLE AT CHARGING STATIONS THROUGHOUT EUROPE

E-MOBILITY

Many people in Europe would like to be able to charge their electric vehicle (EV) at public charging stations and to pay with their own bank card. More than two-thirds of the respondents confirm this in a recent study conducted by infas quo GmbH on behalf of the Initiative Deutsche Zahlungssysteme e.V. in selected European countries. Currently, payment options at charging stations across Europe are still dominated by proprietary, closed loop payment solutions from charging station operators and local electricity providers - spontaneous payment by common debit and credit cards is often not possible. With the Alternative Fuels Infrastructure Regulation (AFIR), the European Parliament now has it in its hands to meet the interest of European citizens in easily accessible and non-discriminatory payment solutions for electric charging in legislation.

18

E-MOBILITY IN EUROPE

ATTITUDES TO CARD PAYMENTS ARE SIMILAR ACROSS BORDERS

To obtain a balanced picture of consumers' payment preferences across Europe, the survey was conducted in various European countries of diverse banking and payment infrastructures (France, Greece, the Netherlands, Poland, Slovenia, and Sweden). If consumers were able to make a free choice at the charging station, a clear majority in all the countries surveyed, would prefer to pay the amount due for electric charging with their bank card, or the debit or credit card stored in their smartphone. At 91 percent, Greece has the highest approval ratings. But the will of the consumer is also clear in France and Poland (89 percent each), Slovenia (83 percent), the Netherlands (79 percent), Germany (78 percent), and Sweden (67 percent).

78%

FUTURE EV DRIVERS IN GERMANY PREFER TO PAY AT CHARGING STATIONS USING THEIR FAMILIAR DEBIT OR CREDIT CARD

Germany	78%
France	89%
Greece	91%
The Netherlands	79%
Poland	89%
Sweden	67%
Slovenia	83%

UNIFORM PAYMENT SOLUTIONS THROUGHOUT EUROPE WILL MAKE A DECISIVE CONTRIBUTION TO THE ACCEPTANCE OF E-MOBILITY

The market potential for e-mobility is huge: a very large number of respondents are already planning to buy an electric vehicle. Poland and Greece are at the forefront here. There, 77 percent and 75 percent, respectively, are planning to buy a new or used EV. In all the other countries surveyed, approval is also at more than 50 percent in each case. However, without uniform and easily accessible payment solutions, traveling through Europe by electric vehicle is currently much more difficult than with conventional combustion cars. Spontaneous charging is almost impossible. For widespread acceptance of e-mobility, however, electric refueling has to be as easily accessible and consumer-friendly as normal refueling. Actively promoting this acceptance is an important step toward achieving the Paris climate targets. Future EV owners firmly expect to use public charging stations. Especially in the Netherlands (76 percent) and Slovenia (76 percent), but also in Germany (71 percent), Poland (70 percent), Sweden (67 percent), France (55 percent) and Greece (24 percent) future EV drivers plan to stop at public charging stations. They want to be able to rely on a well-developed network, as they are already used to from the conventional gas station infrastructure, without being dependent on one charging service provider.

FUTURE EV OWNERS PLAN TO USE PUBLIC CHARGING STATIONS

Sweden	67%
Germany	71%
The Netherlands	76%
France	55%
Greece	24%
Poland	70%
Slovenia	76%

19

AFIR: A SOLUTION FOR EUROPE

The majority of the surveyed European countries consider an EU-wide regulation to be useful that ensures the acceptance of contactless payment with at least one common debit or credit card at every new charging point. The biggest supporters are citizens from Greece (81 percent) and Germany, the Netherlands, and Slovenia (76 percent each), followed by Poland (71 percent), France, and Sweden (65 percent each). The European Commission has now recognized that payment at charging stations is an important aspect in the expansion of a cross-border, consumer-friendly charging infrastructure. The new Alternative Fuels Infrastructure Regulation (AFIR) is intended, among other things, to simplify payment at European charging stations, thus bringing with it the opportunity to make the payment process as simple as possible for consumers. After all, the current chaos of payment schemes, including apps, RFID charging cards, and credit accounts, is making the switch to e-mobility more difficult for consumers and making them feel very insecure.

THE COURSE IN GERMANY HAS ALREADY BEEN SET BY THE LEGISLATOR

In Germany, the federal government has followed the wishes of its citizens. The amended German charging station regulation will come into force in 2023 and will regulate by law the mandatory acceptance of debit and credit cards at public charging stations. The amendment of the German charging station regulation could point the way for this decision and provide a practicable and cross-border applicable problem-solving approach for the whole of Europe. The survey results clearly show: consumers in Europe want to be able to pay at charging stations with common debit or credit cards – as plastic card or digital version in their smartphone – in the future. With the new Alternative Fuels Infrastructure Regulation (AFIR), the EU now has the opportunity to meet the desire for freedom of choice and easily accessible payment options at charging stations.

About the study

The results are based on a representative online survey conducted by infas quo GmbH on behalf of the Initiative Deutsche Zahlungssysteme among motor vehicle owners aged 18 and over in September 2021 in Germany (1,058 people) and November 2021 in France (538 people), Greece (535 people), the Netherlands (514 people), Poland (529 people), Slovenia (538 people) and Sweden (535 people). The countries surveyed differed in particular in their location in Europe as well as the spread of e-mobility and their banking and payment infrastructures.



AFIR

THE FUTURE FOR SUSTAINABLE ROAD TRAFFIC IN THE EU

In dialogue with policy makers

Traffic and mobility are core parts of our daily lives that influence the well-being of European citizens. Sustainable alternative fuels and expansion of their infrastructure, such as electric charging of a car, play a key role in the transition to successful decarbonisation of the transport sector. However, the transformation towards clean and sustainable road transport can only be made if we persuade people to accept this. The Alternative Fuels Infrastructure Regulation (AFIR) gives us the opportunity to do that. It covers aspects such as expansion of the charging infrastructure in Europe.

In summer 2021, the European Commission launched a legislative proposal that is currently under discussion in the European Parliament and is likely to be enacted in summer 2022. I therefore warmly welcome the European Commission's proposal to convert the directive into a regulation. Regulations override national law and must be enacted by member states. In the EU, legally binding minimum requirements for the member states will guarantee the best possible high standards on aspects such as payment. So far, each member state has been free to decide which payment options are available when charging in the absence of uniform EU rules. That is set to change. In my draft amendment to the current proposal of the European Commission, I call for the option to pay by card, and I would like to make this a binding, integral component of the legislation for all charging stations – throughout Europe. To me, this is a key issue in the AFIR: user-friendly harmonisation of ad-hoc payments.

Citizens should be able to charge at a charging station as easily as possible and pay with their own credit or debit card. We cannot expect all citizens to be familiar with Google or Apple Pay, QR codes or app-based payment. This is also apparent from recent surveys by the "Initiative Deutsche Zahlungssysteme"², the General German Automobile Club (Allgemeiner Deutscher Automobil-Club, ADAC)³ and Mastercard⁴. The results suggest that most respondents in Germany and selected European countries want simple card payment at the charging station. Consumer associations such as the Federation of German Consumer Organisations (Bundesverband Verbraucherzentrale, vzbv) are also campaigning for the offering of card payment at charging stations to be made compulsory. We cannot ignore this: Charging with electricity should be as easy as filling up with petrol!

A further investigation by the German National Centre for Charging Infrastructure (Nationale Leitstelle Ladeinfrastruktur) concluded that the additional costs for installing a card terminal would be around 0.002 cents per kWh for highly utilised fast chargers with a service life of eight years⁵. I think this extra amount is minimal and affordable. To me, the following premise applies:

THE MORE USER-FRIENDLY THE CHARGING, THE GREATER THE ACCEPTANCE OF ELECTRIC MOBILITY – WHICH IS ALSO BETTER FOR THE CLIMATE AND TRANSPORT EMISSIONS.

All publicly accessible charging and filling stations should also be fully accessible to people with restricted mobility. In addition, the operators of charging stations must be made to display the ad-hoc price as a "price per kWh" before charging commences. And to enable improved management of the power supply and ultimately attain lower electricity prices for consumers, all charging stations should be capable of intelligent charging. With intelligent charging, it can be ensured that the power supply can be automatically shut down in the event of overload without overcharging.

Ultimately, I firmly believe that consumers are keen to see an improvement in the transparency and quality of the data that is made available by the operators of charging and filling stations. Therefore, the Commission should set up a European access point that links all national points together.

THE AIM IS TO SET UP AN EU APP OR INTERFACE THAT ALLOWS USERS TO ACCESS A COMPREHENSIVE EU-WIDE CARD AND A ROUTE PLANNER IN WHICH ALL PUBLICLY ACCESSIBLE CHARGING AND FILLING STATIONS ARE LISTED ALONG WITH ALL IMPORTANT INFORMATION.



Ismail Ertug

Ismail Ertug has been a member of the European Parliament since 2009. As a member of the transport and industry committee he is working towards a green transformation of the transport sector in the European Union. In 2013, he has already been the shadow rapporteur for the Alternative Fuels Infrastructure Directive, the predecessor of the AFIR.

² Representative online survey by infas quo on behalf of the "Initiative Deutsche Zahlungssysteme" among car owners aged 18 and over in November 2021 in France, Greece, the Netherlands, Poland, Sweden and Slovenia.

³ Standardised online survey by puls Marktforschung GmbH on behalf of the ADAC among drivers of electric cars.

⁴ Quantitative study by the market research institute FTI Consulting on behalf of Mastercard among respondents from Germany, France, Italy, Austria, Poland, Sweden and Spain.

⁵ Study by the German National Centre for Charging Infrastructure (Nationale Leitstelle Ladeinfrastruktur), January 2022; not yet published.

Case study on e-mobility in Europe

PAYMENT CHAOS AT EUROPE'S CHARGING STATIONS

CONVENTIONAL CARD PAYMENT MOSTLY IMPOSSIBLE

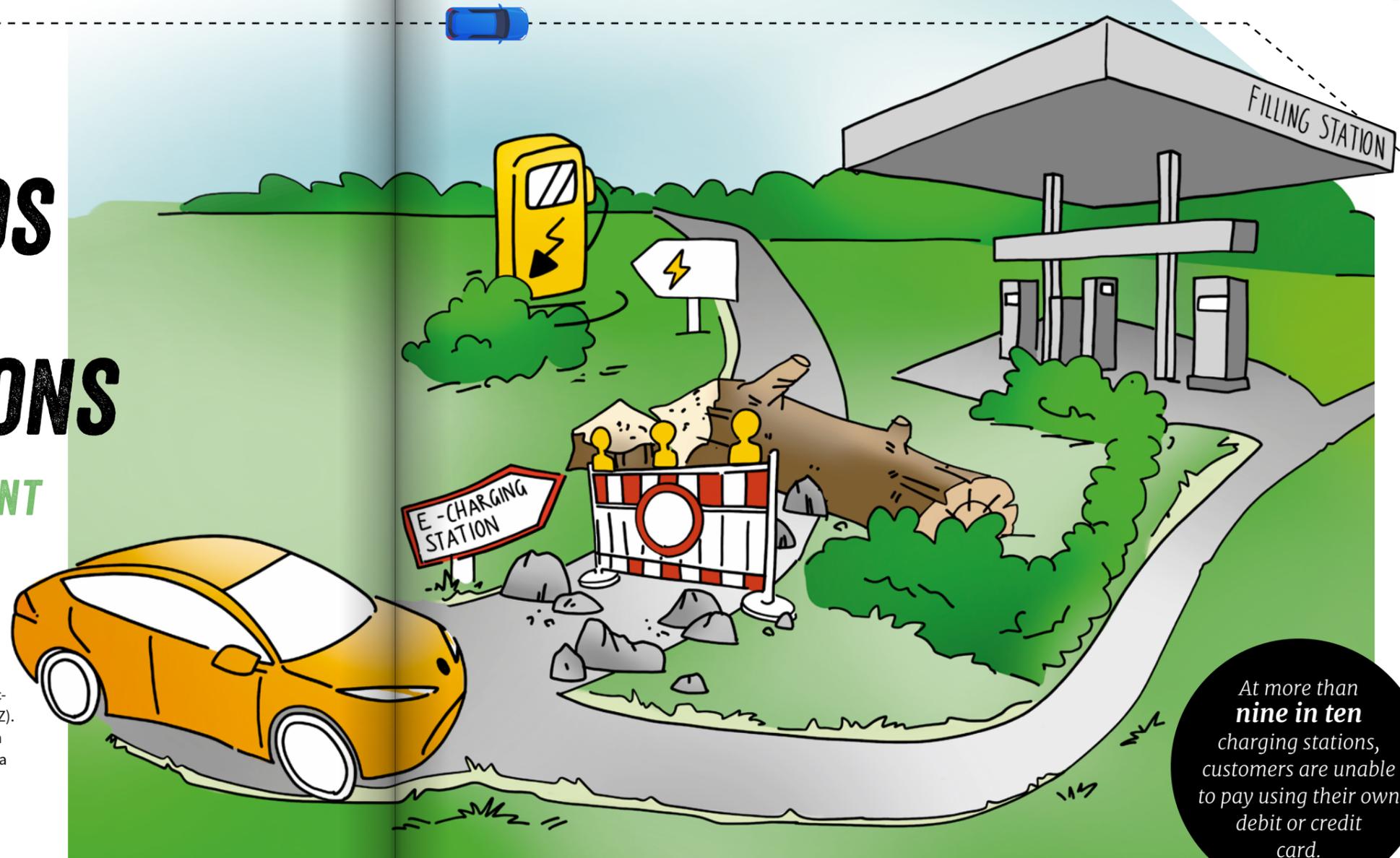
Topping up electric vehicles in Europe is a game of chance. At more than nine in ten charging stations, customers are unable to pay using their own debit or credit card. This is one of the findings of a case study conducted by KANTAR on behalf of the "Initiative Deutsche Zahlungssysteme" (IDZ). More than two-thirds of future electric vehicle drivers in selected European countries would prefer to pay for charging spontaneously and without data collection using their own bank card⁶. In practice, however, consumers at public electric charging stations in Europe are forced to use closed-loop payment systems that often involve proprietary charging cards, apps or websites requiring prior registration. The IDZ and other players are joining forces to demand a consumer-friendly solution at the European level.

In many European countries, topping up spontaneously is impossible or is not customer-friendly. The payment process in many places is complicated and involves various barriers. This is one of the findings of a survey of the payment options offered by 61 charging station operators with a total of almost 30,000 publicly accessible charging stations in twelve European countries (Germany, the Netherlands, Italy, France, Austria, Sweden, Portugal, Spain, Poland, Slovenia, the Czech Republic and Greece). The survey covered operators in urban (40) and rural (21) regions.

CLOSED-LOOP PAYMENT SYSTEMS DOMINANT IN EUROPE

55 of the charging station operators surveyed only offer closed-loop payment methods, such as proprietary charging cards, apps or websites that require prior registration. To receive a charging card, customers typically have to conclude a contract with the operator. Of the 59 charging station operators that offer payment using a charging card issued by them or one of their roaming partners, only 32 also include a static QR code on their charging stations to guide customers' smartphones to a website where they can pay once they have entered their payment details. This well-meaning service is susceptible to abuse because fake QR codes can be stuck over the original codes, allowing fraudsters to guide consumers to bogus websites and gather sensitive data or even intercept payments.

⁶ Representative online survey of car owners conducted by infas quo on behalf of IDZ in Germany, France, Greece, the Netherlands, Poland, Sweden and Slovenia between September and November 2021. [SOURCE](#)



At more than **nine in ten** charging stations, customers are unable to pay using their own debit or credit card.

50 charging station operators also offer a proprietary charging app, although some of these require prior registration or a corresponding login before customers can begin the charging and payment process. Regardless of whether they use an app or a website, these payment processes are complicated and involve effort and barriers for consumers. In any case, drivers of electric vehicles need to have a smartphone and a stable Internet connection. The market research also found that apps and websites are often only provided in the respective national language and are rarely available in English, making it even harder for consumers to access the charging infrastructure. Furthermore, it was found that, in the vast majority of cases, the price per kilowatt-hour or per charge is significantly higher when paying by debit or credit card via an app or a website than when topping up with a proprietary charging card. This makes spontaneous charging especially unattractive for drivers of electric vehicles.

Only six of the charging stations surveyed – two in France and one in each of Germany, Austria, Sweden and Poland – allowed spontaneous payment by inserting a debit or credit card into a card terminal or using contactless payment.

SIMPLE, STANDARDISED PAYMENT METHODS THROUGHOUT EUROPE ARE CRUCIAL TO ACCEPTANCE OF E-MOBILITY

Broad-based acceptance of e-mobility in society depends on electric charging stations offering standardised, easily understandable and, above all, easy-to-use payment solutions.

When it comes to topping up their electric vehicles, consumers need a reliable, well-developed charging infrastructure with conventional payment options like the ones they use at traditional filling stations or when paying for their everyday shopping – whenever their battery level requires it, and without having to search, book in advance, or make a detour. The results of the survey underline the familiar demands made by various players, including the German banking industry associations, leading municipal organisations in Germany, the ADAC, the German Federal Association of Electronic Cash Network Operators (BeCN) and IDZ. Together, they are calling for spontaneous payment by debit and credit card via a payment terminal to be established as a minimum requirement for electric charging stations throughout Europe as part of the legislative process on the "Alternative Fuels Infrastructure Regulation" (AFIR).

Netherlands

With more than 91,000 publicly accessible charging points, the Netherlands has one of the most advanced charging infrastructures in Europe. Even here, however, the conditions for spontaneous charging leave a lot to be desired: In addition to closed-loop payment using a proprietary charging card from the operator or one of its roaming partners, none of the four charging station operators included in the survey offered a link to the operator's website for customers to enter their own credit card details, let alone a card terminal for them to pay using their own debit or credit card. In other words, consumers are faced with the choice between a charging card issued by the operator or app-based payment. Furthermore, one of the charging stations surveyed did not provide details of the available payment options in the app and did not show the price per kilowatt-hour at the charging station.

France

The likelihood of encountering a charging station that allows payment by debit or credit card using a card terminal is higher in France's major cities than in the rest of Europe. Of the five urban charging stations investigated, two allowed contactless payments by Carte Bleue, the French debit card, directly at the charging station. However, tourists not in possession of the debit card have to pay using an app or by following a website link. According to the operator, there are 1,500 such charging stations on French roads. The models surveyed each have one charging point. Assuming them to be standard models, these charging stations thus account for less than three percent of France's charging infrastructure. There is less acceptance of card payments in rural areas than in cities. None of the four charging stations surveyed allowed spontaneous charging and payment via a card terminal. Consumers without the right charging card for the respective operator can follow a link to the provider's website and enter their credit card details in order to pay for charging at six of the eight stations surveyed. The public charging infrastructure in France encompasses a total of 54,700 charging points. One interesting observation is that the charging infrastructure in Paris is especially geared towards e-scooters. Many charging stations offer a separate charging rate for this new form of urban mobility.

Germany

Although Germany rivals the Netherlands for Europe's most developed charging infrastructure with around 62,700 public charging points, it is almost impossible for customers to pay at charging stations using their own debit or credit card. The survey included ten charging station operators in Germany, only one of which allows customers to pay directly at the charging station via a contactless terminal using the girocard, the German debit card. The operator in question accounts for just a small proportion of the charging infrastructure: 66 charging stations and 138 charging points. Another operator says it is fitting contactless card terminals to some of its fast charging stations. It has around 150 stations on German roads, each with two charging points. Between them, these two providers account for a vanishingly small proportion of the around 4,600 charging stations belonging to the ten German operators included in the survey. Another problem is illustrated by one of the charging stations investigated: Customers using a proprietary charging card pay EUR 0.35 per kilowatt-hour, whereas customers without a charging card who have to use an Internet-based payment method and enter their credit card details on a website or in an app are faced with a rate of EUR 0.79 per kilowatt-hour – a form of price discrimination that is detrimental to the consumer.

Sweden

With a total of 20,200 publicly available charging points, Sweden is well placed in a European comparison. However, only one of the five charging station operators surveyed allows customers to pay for charging at a terminal using their own debit or credit card. The operator in question says that it has around 450 charging stations. As there are some differences in the models of charging station used, it is difficult to estimate the number of charging points compared with the country's charging infrastructure as a whole. Four of the five charging stations investigated only offer closed-loop payment systems, and only two of them allow customers to follow a link to a website in addition to paying with a charging card or via an app. One feature of note is that some parking providers in Sweden allow customers to top up their electric vehicles in public places such as train stations or department store car parks. While they have to pay for parking in most cases, charging at these locations is still free.

Poland

In Poland, one of the four charging station providers surveyed allows customers to pay for charging by presenting their debit or credit card at a contactless terminal. There are only nine of these charging stations in the country, all located at railway stations in major Polish cities. They only allow debit or credit card payments using the terminal, with no sign of closed-loop payment systems. Although this model represents best practice, it clearly underlines the fact that, as in other countries, payment by debit or credit card is a rarity in Poland. By contrast, debit and credit card payments are not possible at three of the four charging stations investigated. Two charging stations restrict payment to a proprietary charging card or an app in which customers are required to enter their debit or credit card details. Furthermore, the information on all four charging stations in the latest country study was only available in Polish, making it particularly hard for tourists to use them. With around 2,700 publicly available charging points, Poland is one of the countries where the public charging infrastructure is least developed.

Czech Republic

There are around 2,300 publicly accessible charging points in the Czech Republic. With almost 1,000 charging points, the two charging station operators included in the survey account for just under half of this infrastructure. Both operators accept proprietary charging cards and allow users to enter their own credit card details on a dedicated website. However, neither provider offers information in languages other than Czech, so foreign drivers are likely to find it confusing to use their charging stations. Neither of the Czech operators provides card terminals so that users can pay directly at the charging station using their own debit or credit card. The price information for one operator is unclear and inconsistent (with different information at the charging station and on the website), while charging with the other operator costs more if you do not possess a proprietary charging card and have to pay using other methods instead.

DRIVING BY ELECTRIC VEHICLE IN EUROPE

HOW DO DRIVERS TOP UP AND PAY FOR CHARGING IN NEIGHBOURING EUROPEAN COUNTRIES?



The 61 operators have around 30,000 publicly accessible charging stations throughout Europe



Spain

The charging infrastructure in Spain encompasses around 12,500 publicly available charging points. None of the charging stations included in this survey had a terminal allowing customers to pay using a debit or credit card. While all four charging station operators allow payment using a charging card or their proprietary app, only one linked to a website where customers can enter their own credit card details. After downloading the app and registering, it was possible to enter personal debit or credit card information and complete the payment process in the app. It was also notable that none of the four operators provided details of their electricity prices at their charging stations in a public and transparent fashion. Only one of the charging stations in the survey provided information in English as well as Spanish.

Portugal

The infrastructure in Portugal is also relatively undeveloped: With almost 4,000 publicly available charging points, the country is currently ranked in the bottom third in a European comparison. According to their own information, the four charging station operators surveyed account for more than half of all charging points in Portugal. None of the charging stations investigated allowed customers to pay for charging at a card terminal using their own bank card. Indeed, one of the operators only allows payment using a charging card, meaning that it is not possible to charge an electric vehicle at its charging stations without being in possession of a card issued by the operator. App-based payment is available at three of the four stations surveyed, although one of the apps requires an Android smartphone. Only one of the stations gives customers the option of simply following a link to a website where they can enter their own credit card details in order to make payment. Furthermore, information was only available in Portuguese at all four of the charging stations investigated, while two of the stations did not provide details of the current price per kilowatt-hour.

4,000
Charging points
in Portugal

About the survey:

The results are based on a survey conducted by KANTAR on behalf of IDZ in May and June 2022. The countries included in the survey were Germany (10 charging station operators), Austria (9), France (8), Italy (6), Sweden (5), the Netherlands (4), Portugal (4), Spain (4), Poland (4), Slovenia (3), the Czech Republic (2) and Greece (2). The charging stations surveyed were located in cities (40) and rural regions (21). The selected countries include popular holiday destinations in Europe with different payment cultures and variations in terms of the maturity of their charging infrastructure. In all, the 61 operators have around 30,000 charging stations throughout Europe, most of which have 2 or 3 charging points per station. Information on the total number of charging stations was not available for four of the charging station operators included in the survey. The number of publicly accessible charging points in the countries surveyed can be seen on the website of the European Alternative Fuels Observatory (EAFO). The EAFO is the European Commission's key reference portal for alternative fuels, infrastructure and vehicles in Europe. The reference values for this case study are the figures for 2021.

26,900
Charging points
in Italy

Italy

Italy has around 26,900 publicly available charging points, putting it in fourth place when it comes to the size of its public charging infrastructure. With around 10,200 charging stations, most of which have two charging points, the six charging station operators included in the survey account for almost all of the country's charging infrastructure. However, any attempts to pay by card directly at a charging station in Italy are in vain. Even payment via a website link is only offered by three of the charging station operators investigated. While credit card details for payment can be stored via a web link or an app at all of the charging stations, there are differences in terms of the credit cards accepted. Two operators do not provide any information on which credit cards are accepted, while the rest accept a combination of Visa, Mastercard and American Express. Payment via PayPal is also possible at four of the stations, although one of them requires customers to use the PayPal app rather than providing a website link. The six Italian charging stations investigated do not offer extensive information about the charging and payment process. Instead, QR codes are affixed to the stations – two of which did not work. With their impenetrable mix of different payment options, Italian charging station operators make it particularly difficult for consumers wishing to top up their vehicles spontaneously.

Greece

The Mediterranean holiday destination has the least developed charging infrastructure among the countries surveyed, with around 600 publicly accessible charging points. With 340 charging stations, most of which have two charging points, the charging station operators included in the survey account for almost all of Greece's charging infrastructure. The two charging station operators investigated in Greece only offer payment using a proprietary charging card or an app. There is no option to pay by following a link to a website, never mind using a card terminal. One of the two charging stations in the survey provided information in Greek and English, while the other only offered information in Greek. Details of the price per kWh were only available at one of the two charging stations.

17,400
Charging points
in Austria

Austria

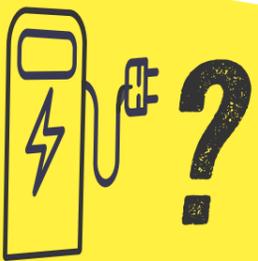
In Austria, only one of the nine charging station operators surveyed allows customers to pay at a card terminal using their own debit or credit card. This operator represents something of a novelty because it only uses an open-loop payment method with conventional debit and credit cards. It does not allow for payment using a proprietary charging card, an app or a website for the use of Internet-based payment methods. According to the charging station operator, there are around 220 of these charging stations in Austria and most of them have two charging points. 440 charging points would be equivalent to around 2.5 percent of the 17,400 publicly accessible charging points in Austria. Seven of the nine charging stations investigated offer payment via a website link where customers can enter their credit card details or pay for charging via PayPal in addition to using their proprietary charging card technology. The remaining charging station provider only allows for payment via charging card and app.

5,500
Charging points
in Slovenia

Slovenia

Slovenia is home to around 5,500 publicly accessible charging points. Here, too, proprietary charging cards and apps seem to be the norm. None of the three charging station operators investigated offers a card terminal. One of the charging stations allows users to pay on the operator's website without prior registration. One of the three operators provides a link to a website where users can pay by entering their debit or credit card information. Slovenia also has one charging station where it is cheaper to use a charging card issued by the operator. Users must pay a fee in order to start charging. This costs EUR 0.50 when using the charging card – but EUR 1.00 when paying via the app or entering debit or credit card details on the website. The language barrier can also be problematic in Slovenia: Only two operators also provide information in English at their charging stations, while the third requires users to navigate the charging process in Slovenian.

600
Charging points
in Greece



**“AT PRESENT,
70 PERCENT OF ALL
CHARGING STATIONS IN THE
EU ARE SITUATED IN JUST
THREE MEMBER STATES”**

In dialogue with policy makers

At EU level, a proposal by the Commission for an Alternative Fuels Infrastructure Regulation (AFIR) is currently under discussion. It governs aspects such as the payment methods at electric charging stations. Markus Ferber (Christian Social Union, CSU), Member of the European Parliament, spoke to us about this.



Mr Ferber, what legal consequences would an EU regulation have for Germany, where the Charging Station Regulation would be amended?

The Alternative Fuels Infrastructure Regulation is a binding piece of legislation that all EU member states must implement in full as soon as it is passed. If the rules in the EU regulation contradict those in the German Charging Station Regulation, the German regulation must be amended accordingly in the event of doubt.



The Commission's proposal criticises the current lack of user-friendliness of the public charging infrastructure within the EU. What aspects is the criticism specifically aimed at?

The biggest problem is simply that many member states do not yet have extensive charging infrastructure for alternative fuels. At present, for example, around 70 percent of all charging stations for electric vehicles are situated in just three member states, namely Germany, France and the Netherlands. By contrast, the situation is fairly bleak in many Central and Eastern European countries. If we want to achieve a tangible reduction in emissions in the transport sector, we need the requisite infrastructure across the board that must also be interoperable, making it attractive for people to buy an electric vehicle, for instance.



In the European Commission's eyes, what essential conditions need to be met so that payment at public charging points is easy and convenient for drivers of electric vehicles?

The Commission's proposal states that payment for refuelling or charging must be possible via a payment method that is widely used in the European Union. This is a sensible approach in principle, but the devil is in the detail here.



According to the draft, three payment methods will be accepted for charging stations with a capacity of less than 50 kW by the end of 2026: payment by card reader, contactless card payment and web-based payment – e.g. via a specially generated QR code. Consequently, card payment must be accepted at all charging stations from 1 January 2027. How do you regard this regulation compared with the revised German Charging Station Ordinance?

Essentially, payment by card should be possible for every new charging station – as soon as these charging stations become operational and not just from 2027 onwards. That is the only user-friendly and customer-friendly solution, and it would also comply with the regulations in the German Charging Station Regulation. There is no reason why we should establish different payment standards for charging stations than for the purchase of other goods and services. I believe that closed loop payment solutions using an app are neither expedient nor user-friendly. At best, systems of this kind can act as an added extra.



Is Germany taking a united stand on this issue in Brussels?

There is unanimity on the pressing need for a Europe-wide expansion of the charging infrastructure. Whether everyone also agrees how this should proceed will become apparent in the next few weeks, as soon as the consultations in the Parliament's Transport Committee have been completed and the Parliament and the member states have agreed on a compromise.



By when do you expect a decision on the precise content of the EU regulation, and what would it ideally look like for you?

I am confident that the Parliament will agree on a joint position in summer 2022 so that negotiations with the member states can get under way. I would like the regulation to generate significant momentum for a comprehensive expansion of the infrastructure for alternative fuels. This infrastructure must be fully interoperable, and payment within it must be as easy as possible for customers. In other words, it must be cheap, and a wide selection of payment options must be available. It is important that all European member states commit to expanding their infrastructure. Otherwise, we cannot guarantee seamless cross-border mobility for electric vehicles.



Markus Ferber

Markus Ferber has been a member of the European Parliament since 1994. He is the vice chairman of the economic committee and is particularly active in the transport committee.



A drive with a change of perspective

TRAVELLING BY

ELECTRIC CAR

IN A NEW LANDSCAPE

WHEN SOMEONE GOES ON A JOURNEY, THEY HAVE A STORY TO TELL, ESPECIALLY IF THEY TRAVEL IN AN ELECTRIC VEHICLE. ENSURING THAT THE HOLIDAY RUNS SMOOTHLY AND THAT THE TALES TOLD ARE POSITIVE REQUIRES GOOD PLANNING, AND AT LEAST THREE TRUTHS SHOULD BE ACCEPTED FIRST.

THE FACT THAT TRAVEL CAN BE EXCITING WAS NOT LOST ON THE BROTHERS GRIMM, WHO DEFINED THE TERM REISEFIEBER ("TRAVEL BUG") IN THE EIGHTH VOLUME OF THEIR GERMAN DICTIONARY IN 1893. THESE DAYS, AT THE DAWN OF THE AGE OF ELECTRIC MOBILITY, THE TWO LINGUISTS COULD DELIGHT IN A WONDERFUL NEW WORD: RANGE ANXIETY. IN AN ELECTRIC VEHICLE, THE DIGITAL DISPLAY OF THE KILOMETRES LEFT DOES NOT EXACTLY CAUSE PERMANENT STRESS, BUT IT DOES CONSTANTLY CAPTURE THE ATTENTION.

1.

PLANNING THE TRIP

Good planning is also important before setting off. Apps like Chargemap, which lists 270,000 charging points throughout Europe as well as displaying the charging speed and type of connection, are useful here.

2.

HOPPING BETWEEN CHARGING STATIONS

The days when it was possible to drive the 1,000 kilometres from Frankfurt to Florence without a fuel stop are over for the time being.

3.

DRIVING SLOWLY

Those who drive faster arrive later. This apparent paradox stems from the increased consumption of electric vehicles at high speeds. Consequently, speeders need to stop more often.

TRAVEL PREPARATIONS INVOLVE A CHANGE OF PERSPECTIVE

When things are unfamiliar but uncontrollable – such as the range of an electric vehicle – the best thing to do is change your attitude to them. Therefore, travel-loving drivers of electric vehicles should embrace at least three new notions. The first one is this: The days when it was possible to drive the 1,000 kilometres from Frankfurt to Florence without a fuel stop are over for the time being. At any rate, this is the case until an electric vehicle can travel twice as far as the one with the highest range in a recent test by the General German Automobile Club (Allgemeiner Deutscher Automobil-Club, ADAC) under real-life conditions. The car, the grandly named "Ford Mustang Mach-E Extended Range", covers 480 kilometres, beating the second-placed Tesla Model X 100D by just under 30 kilometres.

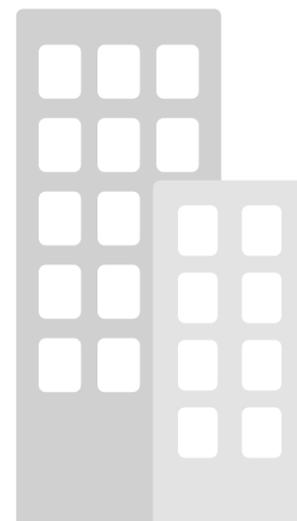
THE JOURNEY IS THE REWARD: LEARN TO ENJOY CHARGING BREAKS

Finally, the third piece of advice: Charging breaks are not simply irritating interruptions but a welcome part of the journey itself. Depending on the capacity of the charging points and the size of the battery, charging can take between half an hour and several hours. Of course, the fast charging stations help, though most of them are situated

The second calming thought is this: Those who drive faster arrive later. This apparent paradox stems from the increased consumption of electric vehicles at high speeds. Drag rises exponentially, while there is no energy recovery as a result of braking, unlike in urban traffic. Consequently, speeders need to stop more often. It is important here to calculate the optimum blend of speed and charging stops, which is different for every electric vehicle. For instance, the specialist magazine "Auto Motor Sport" has calculated this for the Hyundai Ioniq over a distance of 600 kilometres. The outcome: A speed of 120 km/h and three charges results in the fastest journey. The key factor here is the capacity of the available charging points: the higher it is, the shorter the charging break.

along the motorway. Good planning is also important before setting off. Apps like Chargemap, which lists 270,000 charging points throughout Europe as well as displaying the charging speed and type of connection, are useful here. You can also order a RFID card.

Another handy tip is the Nextcharge app, which has similar functions, and also shows whether the charging station is available. This, and the opportunity to reserve the charging station, can reduce the amount of stress. However, there is no RFID card here. The EnBW mobility + app shows 200,000 charging points in a somewhat smaller selection of Western European countries.





THE BEST ADVICE: EXPECT THE UNEXPECTED

Hop between charging stations, drive slowly, take a break – when embarking on a long journey, owners of electric vehicles should take note of these three truths, and also remember that sometimes, anything that can go wrong will go wrong.

A jumble of charging cards, a lack of charging stations, faulty charging stations and other misfortunes – events like these show that electric mobility is still in its infancy, especially as far as long and cross-border journeys are concerned. It was no different in the early days of vehicles with combustion engines, when car drivers bought petrol from pharmacies.

Yet time is on electric mobility's side, and the chaos of charging and payment options in Europe is gradually starting to clear up. In theory, independent

providers like Shell Recharge (250,000 charging points) provide access to nearly all charging stations in Europe through corresponding collaborations. Yet "almost" is the operative word. In Germany, the recently adopted Charging Station Regulation is meant to ensure that eventually, payment with common debit and credit cards will be possible and provider-specific cards will not be required everywhere. At European level, similar rules are being worked on with the "Alternative Fuel Infrastructure Regulation (AFIR)".

However, at present, you still need to have the right RFID card before you can get started. So holidaymakers with an electric vehicle need to invest lots of time in planning their trip, and ideally apply for RFID cards for various systems in plenty of time. But payment would be so much easier if people could just whip out their usual debit- or credit card and pay, as at ordinary filling stations.

NORTH-SOUTH DIVIDE IN THE CHARGING INFRASTRUCTURE

This may also be of interest when planning a journey: Close inspection of the geographical spread of charging points reveals a clear north-south divide. According to the ratio of charging points to cars, which indicates how many electric vehicles need to share a public charging point, the Netherlands is the clear leader with 109, followed by Norway (147), Sweden (353) and Luxembourg (377). Germany is ranked a lowly 11th with 1,014 electric vehicles per charging point. The distribution is worse still in popular holiday destinations such as Italy (2,273) and Spain (3,118). And in Greece, facilities are really rather scarce, with over 17,000 having to share a public charging point. There is possibly a fourth tip for travelling by electric vehicles: Don't head for where the sun shines but where you can charge your battery reliably. Iceland (551) is said to be lovely in the summertime ... although it's a bit trickier to get there in your own electric vehicle.



4.

TAKING A BREAK

Charging breaks are not simply irritating interruptions but a welcome part of the journey itself. Depending on the capacity of the charging points and the size of the battery, charging can take between half an hour and several hours. Of course, the fast charging stations help, though most of them are situated along the motorway.

GLOSSARY

CHARGING STATION VS. CHARGING POINT: A charging station may contain several charging points, i.e. connections that allow several electric vehicles to be charged simultaneously.

SPONTANEOUS CHARGING allows customers to charge their own electric vehicle at the respective public charging station and pay directly at the point of service without having to conclude a long-term contract in advance.

OPEN-LOOP PAYMENT SYSTEMS are direct payment methods that are accessible to everyone without prior registration, e.g. using a debit or credit card to pay at a terminal in the same way as in shops or at traditional filling stations.

A **CARD TERMINAL** at a charging station allows customers to pay for charging with a debit or credit card in the same way as in shops or at traditional filling stations, for example. Contactless payment is typically available for amounts up to EUR 50.

CLOSED-LOOP PAYMENT SYSTEMS are payment methods that require consumers to register via a charging app or website and enter their payment information or conclude a contract under specific conditions (e.g. contract term) in order to receive a charging card from the charging station operator.

An **RFID CARD** (radio frequency identification) is a charging card for a specific operator. It can only be used at the operator's charging stations or within a defined network via roaming.

ROAMING is an access model for charging stations from different operators. Roaming agreements allow an operator's customers to access the charging infrastructure of various different charging station operators or networks without having to apply for additional means of authentication, e.g. RFID cards.

In **INTERNET-BASED PAYMENT METHODS**, a static QR code (in the form of a physical sticker or a digital image) is typically used to guide consumers to a website where the payment process takes place. Consumers are required to enter their payment information, e.g. their credit card details, on the website. In addition to credit card payments, some websites allow for payment to be made via service providers like PayPal.

Consumers must have a smartphone and a working Internet connection in order to use the **OPERATOR'S PROPRIETARY CHARGING APP**. This app is typically used to start and end the charging process at the charging station. The payment options stored in the app may vary from provider to provider. Payment information such as credit card details must be stored in the app. The app can only be used at the operator's own charging stations or within the defined network. Some operators offer apps that only show the locations of their charging stations and that cannot be used to start the charging process or make payment.

IMPRINT

PUBLISHER

Initiative Deutsche Zahlungssysteme e.V.

CHAIRMAN

Ingo Limburg

CONTACT

Initiative Deutsche Zahlungssysteme e.V.
tel.: +49 30 2123422-71
www.initiative-dz.de

EDITING

Initiative Deutsche Zahlungssysteme e.V.

CONCEPTION AND DESIGN

2m Advertising GmbH

PICTURE CREDITS

Dietmar Benkert (p. 14), Markus Emmert (p. 14), ADAC/Peter Neusser (p. 14), Deutscher Landkreistag/Kreis Ostholstein (p. 15), Tina Zierul (p. 15), Ismail Ertug (p. 21), Markus Ferber (p. 27), Mumbächer Fotografie (p. 1, 2, 6, 12-13, 16), istock (p. 4, 8, 18, 20)