Bundeswettbewerbsbehörde

Sector Inquiry
EV Charging Infrastructure

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1 Introduction

1.1 Methodology and scope

The Austrian Federal Competition Authority (**"AFCA"**) has conducted a Sector Inquiry into the electric mobility (**"e-mobility"**) sector (**"Sector Inquiry"**), drawing on the expertise possessed by E-Control. Such a Sector Inquiry may be initiated when circumstances give reason to suspect competition is being restricted or distorted in a particular branch of the economy. Specifically, the Sector Inquiry was intended to analyse and carry out a competition assessment of the publicly accessible charging infrastructure for electric vehicles (**"EV charging infrastructure"**) in Austria.

The Austrian Federal Government's climate protection and energy strategy (cf. *Out of a Sense of Responsibility for Austria: Government Programme 2020–2024*, pp. 17–18) envisages a clear reduction in CO2 emissions. This goes back to initiatives taken by the European Union (EU) that set targets for the years 2030 and 2050, as enshrined in legislation adopted by the European Parliament and the European Council. Under the EU's Green Deal, the original target of cutting emissions at least 40% by 2030 compared to 1990 has been made more ambitious with the European Climate Act, rising to at least 55% net in order to satisfy the requirements of the Paris Agreement.

The twenty-seven European Union Member States have set themselves the target of being climate-neutral by the year 2050. This too is anchored with legally binding force in the European Climate Act. The European Commission presented its Fit for 55 package of proposals in July 2021 with a view to the achievement of these targets. These proposals include the amendment of a range of existing pieces of fundamental legislation (e.g. the Effort Sharing Regulation, the Emissions Trading Directive and the Energy Efficiency Directive). For Austria, they provide for a 36% reduction of greenhouse gas emissions (outside the Emissions Trading System) compared to 2005 by the year 2030.

Since road traffic is responsible for a significant proportion of total greenhouse gas emissions, such a target will only be attainable if there is a corresponding reduction in the numbers of cars powered by internal combustion engines (ICE cars). At present a transformation is taking place in the direction of e-mobility. One of the greatest challenges of this transition from the internal combustion engine to the electric motor lies in the roll-out of efficient, universal, safe charging infrastructure and the upgrading of power grids.

The AFCA would like to gain an overview of the market as it is currently constituted and the players who are active on it at an early stage of the transformation that has now begun, which will help it deal with potential future competition issues. At the same time the AFCA's results and recommendations are also intended to enable it to lead the policy/regulatory discourse about the market's further development on the basis of relevant surveys.

The roll-out of universal EV charging infrastructure that is provided by charge point operators and embraced by consumers is the precondition for the success of e-mobility in Austria. With this Sector Inquiry, the AFCA wishes to highlight possible competition problems in the field of EV charging infrastructure and so contribute to the success of its further roll-out in Austria.

Fair, diverse competition will increase the attractiveness of EV charging infrastructure for customers with transparency, quick, low-threshold access to facilities, choice and appropriate prices, thus helping significantly to accelerate the conversion of road traffic to CO2-reduced mobility.

Since these relatively new business models are still in their infancy, it is necessary, on the one hand, to ensure innovative business models can continue to develop; on the other hand, the formation of potential regional or national monopolies by providers needs to be combated in good time where they could have anti-competitive effects. This would be associated over the medium term with lock-in effects, developments that inhibited innovation, lessened quality and reduced productivity and, ultimately, a loss of welfare. The AFCA has therefore also examined what structural and, if required, officially regulated parameters will have to be put in place if there is to be a pro-competitive environment in the field of EV charging infrastructure.

The Sector Inquiry has purely looked at **publicly accessible EV recharging stations**. These are charging facilities at which an alternative fuel (in the form of electrical power) is offered and to which all users have non-discriminatory access. Non-discriminatory access may involve various forms of authentication, use and payment. Private recharging stations (e.g. located at residential buildings) were not covered by this definition and therefore did not fall within the scope of the Sector Inquiry.

The results of the Sector Inquiry are based on surveys of market participants, academic literature, relevant publications and intensive discussions with stakeholders, including undertakings, interest groups, institutions and public authorities.

As part of its comprehensive market analysis, the AFCA sent out lengthy requests for information to **260 market participants** in the e-mobility sector in May 2022. The response rate to these requests was 68%. E-Control's charge point registry was used to identify possible contacts. According to the charge point registry, there were **13,441 publicly accessible charge points in Austria** at the time when the market survey was sent out. The responses to the request for information covered 11,573 charge points. This amounted to about 86% of all the publicly accessible charge points in Austria.

The **Austrian Automobile, Motorbike and Touring Club (ÖAMTC)** carried out a survey with the involvement of the AFCA in which it asked its members about e-mobility, and made the results available to the AFCA. According to this survey, the overwhelming majority of electric car drivers use privately accessible recharging stations. The proportion of drivers in urban areas who do not have private charging facilities and are therefore dependent on publicly accessible charge points (31%) is significantly higher than the average (approx. 16%). Overall, about a quarter of the respondents were able to use more than one private charging facility, with domestic plug sockets and wallboxes with power output up to 11 kW at drivers' own homes being mentioned most frequently. Roughly one-third have access to private charging facilities at their workplaces. About one-third of electric car users in urban areas are dependent on publicly accessible charge points. It is to be assumed the rise of electric vehicles will increase this **dependency yet further**, thus boosting the significance of publicly accessible charge points.

As the results from its analysis, the Sector Inquiry sets out **ten recommendations** on how functioning competition should be ensured in future in this dynamically developing sector:

- **Transparency about prices, energy purchased and charging session duration**.
  Transparency for consumers is essential. It must be ensured to a greater extent that consumers are able to keep track of the energy they have purchased via charging infrastructure and what they are billed for it in a transparent manner. Furthermore, consumers should have charging options that meet their individual needs, including opportunities for ad hoc charging or billing methods such as billing by the kWh (e.g. as shown on the charge point display). The appropriate technical, legal and practical options should be created for this purpose. Fair competition must prevail on the provider side if this objective is to be achieved. The same also applies for the roaming market. An appropriate level of transparency in relation to **roaming services** can be ensured by making sure consumers are **informed** about the (itemised) **costs** of charging their vehicles on the spot before each session, just as they are in the mobile phone sector.

- **Federal-level grants and non-discrimination.**
  Grant award policy currently appears a highly suitable instrument with which to achieve the targets set for e-mobility. Against the background of the tendencies found towards concentration, consideration should be given to whether there is and will be **sufficient competition** between current and potential market participants when grants are awarded. With a view to the welcome premiss of **non-discrimination**, it appears advisable, in particular, to combat distortions of competition on the provider side.

- **Grant funding and local competition.**
  The AFCA recommends that the legislature draw up a **strategy** for the **award of grants to small and micro charge point operators** as local competitors. The main concerns are that they should be able to set the parameters of competition themselves, that they should have non-discriminatory access to navigation services and comparison platforms, and that grants should be awarded for innovative projects/business models at the local level.

- **Ensuring provider diversity at the municipal level.**
  It is recommended the municipalities plan strategically for a **local mix** of providers of publicly accessible charge points, in particular when municipal sites are allocated for the installation of charge points. A local mix will ensure providers compete on price and quality, to consumers' advantage.

- **Prevention of regional concentrations.**
  From a competition perspective, it is recommended the (provincial) energy suppliers also operate to a greater extent as active, relevant competitors providing publicly accessible charge points **beyond the borders of their own provinces**.

- **Stronger compliance with cartel law.**
  Where an undertaking has market power, the **bundling or coupling** of charge cards and, for instance, domestic power may distort competition. When such products are being designed, it is recommended the energy suppliers **set strict standards** by taking **pre-emptive compliance measures** so as to avoid the semblance of any possible suspicion cartel law is being breached, even at this early stage.

- **Roll-out of fast charging facilities.**
  In order to ensure the goals of greater vehicle range and diversity of provision are attained, the pace at which fast charge points are being rolled out along major traffic routes such as motorways and expressways is to be stepped up. The service stations equipped with charge points along these routes will have particular significance in making sure prices are fair for EV drivers who are dependent on fast charge points (e.g. on holidays, business trips, excursions).

- **Standardised billing.**
  A regulation of the Federal Office of Metrology and Surveying on the calibration of electrical tariff devices for the metering of electrical energy at charge points should be promulgated soon in order to ensure drivers are given the **option to choose usage-based billing (by the kWh)** of the amounts of power with which their vehicles have been charged at all publicly accessible charge points in the near future.

- **Tariff and price monitoring.**
  The AFCA welcomes the ideas put forward by **E-Control** and the **Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)** concerning the mandatory reporting of ad hoc charging tariffs to the charge point registry. In this connection, it should be evaluated in future whether dynamic pricing and price discrimination pose risks to consumers. The AFCA does not see any immediate signs of such risks from the charge cards with fixed prices that are common at the moment.

- **Competition between regulatory approaches.**
  If pro-competitive measures do not have the desired effect and an excessively concentrated market becomes firmly entrenched, it would, in line with the proposal made by the German Monopolies Commission (*7. Sektorgutachten Energie*), be possible as a last resort to weigh up quite fundamentally altering the conceptual approach to the charging current market, which posits free competition to provide publicly accessible charging current on the basis of the competing offers from operators of charge points. As an alternative, it would be imaginable to open up the charging infrastructure for various power providers to sell power directly to consumers. The market design would therefore be comparable to that for domestic power, and the expectation would be that competition between power suppliers would create similar opportunities for individuals to switch provider as are enjoyed by domestic power customers.

2 Executive summary

A brief overview and summary of the main aspects addressed and conclusions arrived at are given below. See the relevant sections of the report for in-depth discussions of the issues raised.

The AFCA believes it is sensible to explain key terms connected with e-mobility at the outset. Section 3 therefore lists definitions of terms as they are used in the Sector Inquiry.

Section 4 describes the current status of the EV charging infrastructure in Austria, where the motor car is absolutely crucial for both private individuals and businesses. At present road traffic is going through a phase of transformation from the internal combustion engine to electromobility. What is needed during the current phase in the roll-out of e-mobility is charging infrastructure for electric vehicles that meets drivers' needs in order to make switching to electric cars an attractive proposition.

Section 5 explores the relevant legal and regulatory parameters. Apart from the main legislation at the European level (section 5.1), there is also a discussion of national legal sources at the federal level (section 5.2) and the provisions of building law at the provincial level (section 5.3). Furthermore, given the city's particular practical significance, an excursus looks at the installation of charge points in Vienna (section 5.3.2).

Various instruments to promote the roll-out of charging infrastructure in the e-mobility sector are available at the federal level. These include the federal-level grants awarded for the installation of EV charging infrastructure, a topic dealt with in detail in section 5.4.

Developments in the e-mobility sector are affecting all the EU's Member States. Section 5.5 therefore compares the situation in Austria selectively with the legal regimes that have been put in place in Germany and the Netherlands. it was crucial to the choice of these countries that both have taken on leading roles for the EU in the field of charging infrastructure. In Germany, the aim is for approximately seven to ten million electric vehicles to be registered by 2030. The country has seen a double-digit percentage increase in the number of charge points over the last few years. Despite these efforts, the charge points available at the moment cannot adequately meet demand throughout the country. Projections suggest more than 200,000 new charge points will be needed in Germany's five most populous cities in 2025. At the policy level, the target has been set

of using funding programmes to ensure a million charge points are available in Germany by 2030. In order to keep pace with the numbers of electric vehicles to be expected, it is felt to be necessary to provide for an appropriate mix of public, semi-public (e.g. shop car parks etc) and private charge points (above all wallboxes), with the overwhelming majority to be operated privately.

In the Netherlands, policymakers have been focussing more strongly on electromobility since 2009. The target was set that up to 20,000 electric vehicles were to be in use on Dutch roads in 2015. This target was actually exceeded, with more than 70,000 electric vehicles registered that year. A total of 200,000 electric vehicles were to be registered by 2020, and a million by 2025. This was to be accompanied by the creation of nationwide charging infrastructure. There are more than 260,000 charge points in the Netherlands at the moment. The country is pursuing what is known as the "charging pyramid approach", under which market participants are expected to rely on less expensive solutions (such as "open" private or semi-public charge points on company sites etc). The emphasis is placed on private investment, with incentives being set by the public sector (e.g. temporarily reduced tax rates on energy for particular forms of charging infrastructure). In absolute figures, by far the greater part of the charging infrastructure is consequently in private hands. Against the background of the dynamic development that is taking place, however, the e-mobility sector is facing challenges in the Netherlands as well. According to some calculations, approximately 1.9 million electric vehicles will have to be on the country's roads by 2030 if the policy targets are to be met. This means the Netherlands' charging infrastructure will need to deliver 7,000 gigawatt hours of power, for which 1.7 million charge points will be required. The implication is that at least 550 charge points will have to be installed every day as of 2025. If the demand for EV charging in Austria is to be satisfied, approximately 30,000 stations with charge points will have to be installed by 2030.

Section 6 comments on the conditions on the Austrian market from a competition perspective. The functioning of the market and the principal market participants are discussed in detail. With a possible definition of the market in mind, it is to be noted that no in-depth analysis of publicly accessible charge points has yet been carried out by either the Austrian Cartel Court or the Austrian Supreme Cartel Court. For guidance, it has been possible to refer to previous publications from other European competition authorities, the work of the German Monopolies Commission and the practice of the European Commission. In particular, the progress report on the ongoing sector inquiry into infrastructure at charging stations published by the German Federal Cartel Office in October 2021 has been a useful source. This report distinguishes three separate market levels: 1. the provision of suitable sites for the installation of publicly accessible charging infrastructure, 2. the operation of publicly accessible charging infrastructure (CPO level)

and 3. the marketing of charging current and/or provision of mobility services to end customers (EMP level). What is more, consideration is given to a further subdivision at the CPO level based on power output and the location of charging infrastructure. In addition, two different relevant product markets can be identified at the EMP level: 1. the market for the provision of charging current to end customers ("charging current market") and 2. the market for the provision of a network of charging facilities by the issuers of EV charge cards ("EMP market"). Geographically, these markets are classified as regional/local (CPO level and charging current market) or as regional or nationwide (EMP level).

Apart from the (provincial) energy suppliers, the principal market participants include the public and private charge point operators, at whose charging facilities customers purchase the power for their vehicles, and the roaming platform providers, who facilitate the use of charge points within roaming networks. A network of this kind usually allows both individual billing relationships to be established between two roaming partners, and also open offers made to multiple interested parties. In this way, the roaming platforms ensure the charging networks linked with them are connected to each other for billing purposes.

Section 7 discusses in detail the comprehensive market survey conducted by the AFCA, which made it possible for the Sector Inquiry to be conducted on a robust, factual basis. This involved sending out 260 requests for information to market participants in the e-mobility sector, to which 165 responses were received.

The survey revealed the development of publicly accessible charging infrastructure is currently being driven by public energy suppliers operating on a commercial basis. Since these energy suppliers are also directly owned by municipalities that allocate parking places for the installation of charge points or the higher-level local or regional authorities, non-discriminatory access to sites is decisive for all charge point operators. To safeguard competition over the long term, it is recommended a mix of different providers be planned for strategically at the local level when allocating public space for publicly accessible charge points. In this context, the AFCA would like to emphasise that, by calling for a range of different providers, it does not wish to imply any preference for private over public undertakings. Rather, public providers that concentrate on the areas where they have historically operated in the EV charging infrastructure field are urged here to extend their activities more widely as well.

Potential obstacles to functioning competition on the market for EV recharging stations became apparent when the market survey was evaluated: on the one hand, there is a

widespread lack of transparency about charging tariffs, which makes it difficult to gain an overview and compare services; on the other hand, the predominant market position of the provincial energy suppliers may result in competition being affected.

Section 8 sets out a competition assessment of the information that has been gathered. Analysis of the legal framework demonstrates, first and foremost, the great significance and practical relevance of the European legal sources. The proposal for a European regulation on the deployment of alternative fuels infrastructure appears particularly promising. Ostensibly, the proposed regulation is part of the European Green Deal and is intended to form a pillar supporting the transformation to sustainable mobility. In detail, it proves to be pushing ahead on several fronts. The proposed regulation also appears welcome from a competition perspective. This is true, firstly, of the payment instruments that are envisaged, the diversity of which is intended to ensure there is likely to be correspondingly lively competition between the companies offering payment services and no major barriers to market entry are to be anticipated. Secondly, the provisions concerning payment instruments also appear advantageous from the consumer's point of view. Ad hoc payment instruments are to be seen in a similar light as well, although they should be provided for on a mandatory basis.

In summary, these aspects appear essential if there is to be comparability and choice for consumers. At the same time an intensification of competition for consumers should start to be seen too as a result. The roaming market, which is also addressed by the proposal, appears ambivalent in some respects from a competition perspective. On the one hand, roaming may in principle make cross-border e-mobility possible (just as in the mobile phone sector), thus benefiting consumers. On the other hand, however, it is to be feared roaming services are not sufficiently comparable given the lack of transparency for consumers. As far as this is concerned, it would appear expedient if there were an EV charging costs calculator that also gave full details of roaming costs in future.

With regard to the current development of publicly accessible charging infrastructure, it is evident this is being driven by public energy suppliers operating on a commercial basis. Since these energy suppliers are also directly owned by municipalities that allocate parking spaces for the installation of charge points, non-discriminatory access to sites for all charge point operators is decisive. To safeguard competition over the long term, it will therefore be necessary to plan for a mix of different providers at the local level.

The domination of the market for publicly accessible charge points by energy suppliers who bundle the liberalised marketing of domestic power and the provision of publicly accessible charge points within a single undertaking may incentivise conduct that distorts

competition. Where individual electric car drivers are dependent on particular providers due to the formation of local monopolies, the bundling or coupling of charge cards and domestic power may distort competition. As a matter of principle, it is to be expected undertakings will not knowingly contravene cartel law. The AFCA will, however, observe the market closely in this connection and follow up justified suspicions cartel law is being breached.

Finally, in section 9 the AFCA makes a number of **competition recommendations**, which are intended to help organise competition in Austria more fairly and accord with the purpose of non-discrimination.

3 E-mobility definitions

In order to avoid misunderstandings and ambiguities, the definitions of a number of terms as they are used in the Sector Inquiry are set out below.

Term	Definition
Charge point, recharging point	An interface that is capable of charging one electric vehicle at a time or exchanging a battery of one electric vehicle at a time
Charge point operator, CPO	An entity that operates a charge point
Charging infrastructure	The entirety of charging facilities
Charging pool, recharging pool	Consists of one or more charge points
Charging station, recharging station	A single physical installation at a specific location, consisting of one or more charge points; charging poles and/or wallboxes
Electric vehicle	A motor vehicle equipped with a powertrain containing at least one non-peripheral electric machine as energy converter with an electric rechargeable energy storage system, which can be recharged externally; vehicles with plug-in-hybrid drives or fuel cells are not covered by this definition
E-mobility provider	An entity that provides e-mobility services
Energy supplier	An undertaking belonging to the energy industry whose operations involve the supply of energy
E-roaming	The exchange of data and payments between the operator of a recharging or refuelling point and a mobility service provider from which an end user purchases a recharging service
E-roaming platform	A platform connecting market actors, notably mobility service providers and operators of recharging or refuelling points, to enable services between them, including e-roaming
Fast charge point, high-power recharging point	A recharging point that allows for a transfer of electricity to an electric vehicle with a power output of more than 22 kW
Inbound roaming	The customer is able to charge their vehicle at a CPO's charging station using a roaming partner's charge card
Outbound roaming	The customer is able to charge their vehicle at a roaming partner's charging station using an EMP's charge card
Power output	The theoretical maximum power, expressed in kW, that can be provided by a recharging point, station, or pool or a shore-side

Term	Definition
	electricity supply installation to a vehicle or vessel connected to that recharging point, station, pool or installation
Publicly accessible charge point, publicly accessible recharging point	A recharging point […] at which an alternative fuel is offered and to which all users from the union have non-discriminatory access; non-discriminatory access may involve various types of authentication, use and payment
Wallbox	A home charging station or AC and DC charging installation that complies with relevant standards and is licensed in Austria

4 Current status of EV charging infrastructure in Austria

The motor car contributes crucially to many Austrians' quality of life. But numerous undertakings are also reliant on their fleets of vehicles in order to be able to do business. At present road traffic is going through a phase of transformation towards electromobility (e-mobility) which, very much in the spirit of creative destruction, has the potential to refashion the structure of the market.

Austria is in an outstanding position from which to start moving towards sustainable e-mobility on account of the large proportion of its domestic primary energy production that derives from renewable sources (85%).[1] In its Government Programme 2020–2024,[2] the Austrian Federal Government agreed to further increase the proportion of the country's power supply (on the national balance sheet) that comes from renewable energy, which is to rise to 100 per cent by 2030.[3] Building on sustainable power generation, e-mobility in its various manifestations creates very good conditions for the reduction of the negative effects on the environment caused by the transport sector, above all by reducing greenhouse gas emissions and local emissions of pollutants. However, the conversion of vehicles to electric drives will also require a cost-effective supply of charging current, as a result of which there is potential for dependencies on the operators of publicly accessible recharging stations to exist or emerge for certain groups or in certain situations.

What is needed during the current phase in the roll-out of e-mobility is charging infrastructure for electric vehicles that meets drivers' needs in order to make switching over to electric cars an attractive proposition. In 2020, according to Eurostat, Austria had the fifth-highest proportion of electric cars in its fleet in the EU after the Netherlands, Denmark, Sweden and Luxembourg, and the sixth highest proportion of electric cars among new vehicle sales after the Netherlands, Sweden, Germany, Denmark and France. The number of electric cars has grown rapidly in the last few years, as shown by data from

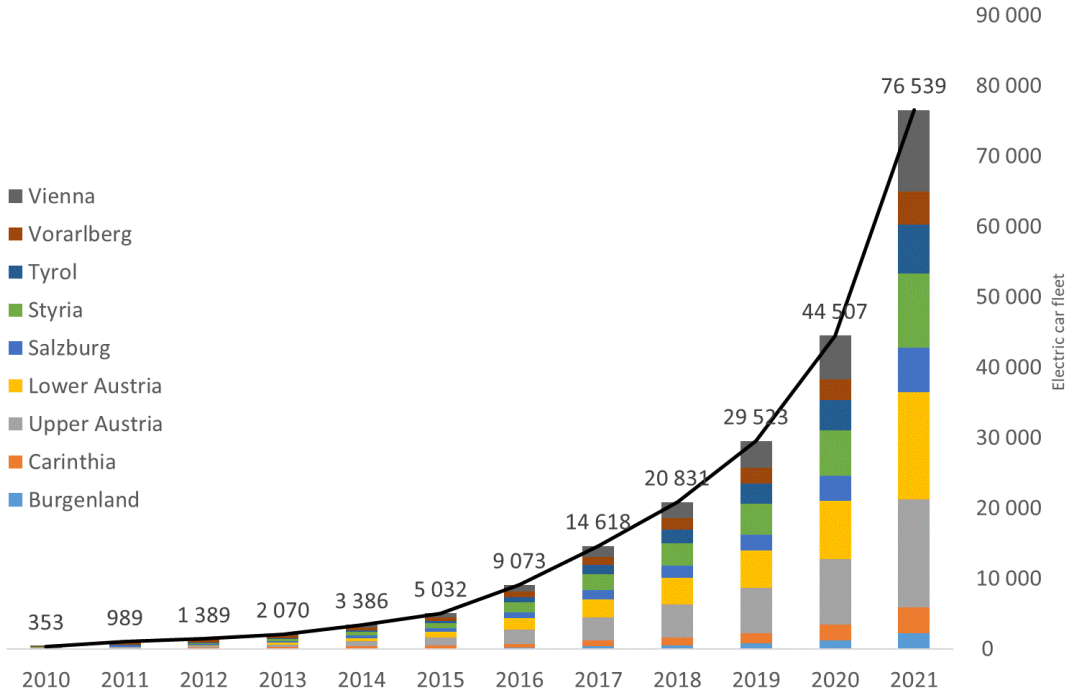
[1] **Domestic primary energy production**: domestic production of primary energy carriers that are obtained or extracted from natural resources and do not go through any process of conversion.

[2] *Out of a Sense of Responsibility for Austria: Government Programme 2020–2024* (2020), p. 17, https://www.bundeskanzleramt.gv.at/en/federal-chancellery/the-austrian-federal-government/government-documents.html.

[3] BMK, *Energie in Österreich: Zahlen, Daten, Fakten*, Vienna (2021), https://www.bmk.gv.at/dam/jcr:bbe5cd73-a161-46fc-8c80-2eb5fc500acb/Energie_in_OE2021_UA.pdf.

Statistics Austria: while there were just 353 electric cars in Austria in 2010, the fleet grew to 76,539 by 2021. Figure 1 shows this development, which is reminiscent of an exponential rise. In 2021 the fleet of electric cars was distributed as follows between the Austrian provinces: 20% in Lower Austria, 20% in Upper Austria, 15% in Vienna, 14% in Styria, 9% in Tyrol, 8% in Salzburg, 6% in Vorarlberg, 5% in Carinthia and 3% in Burgenland.

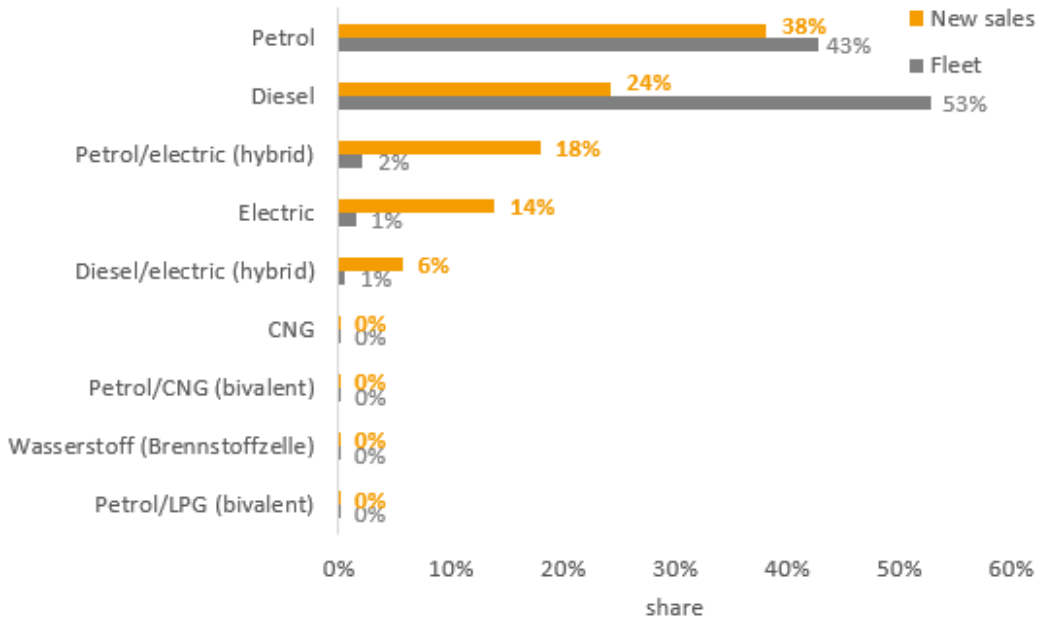
Figure 1: Electric car fleet in Austria, 2010–2021



Source: Statistics Austria.

Figure 2 shows the proportions of electric vehicles in new car sales and Austria's total fleet in 2021. At present petrol and diesel cars still make up by a long way the largest proportion of the car fleet (approx. 96%), but alternative drives are gradually gaining in significance. The data show the electric drive has come to be accepted as an alternative technology, while the numbers of cars powered by hydrogen or compressed natural gas (CNG) are effectively negligible. In 2021 about 14% of new sales were electric cars, which was considerably higher than their proportion in the fleet that year (1%). If this development is sustained in future, as is to be expected, the proportion of the fleet made up of electric cars will consequently increase rapidly as well. Hybrid cars (petrol/diesel engine and electric drive) are enjoying great popularity too. The proportions of pure petrol and diesel cars among new sales have fallen inversely to the rise in alternative types of drive to 62%, which will progressively impact on their representation in the vehicle fleet. Diesel cars are being hit particularly directly and hard by this decline.

Figure 2: New car sales and car fleet in 2021 by fuel type and energy source



Source: Statistics Austria.

The development that has been set in motion towards electric cars will not only be sustained but, as the exponential rise in the fleet of electric cars gives reason to suspect, continue to gain momentum. As part of its Fit for 55 climate package, the EU is planning that from 2035 on it will only be permitted for new cars to be sold if they do not emit any greenhouse gases.[4] Hybrid cars, new sales of which are currently becoming increasingly popular, will cease to be of significance again by this point at the latest. In short, substantial shifts in the vehicle fleet towards electric cars are only a matter of time.

The Directive on the deployment of alternative fuels infrastructure[5] gives a clear idea of what this means for charging infrastructure. According to the directive, Member States should ensure recharging points accessible to the public are rolled out with adequate coverage, making it possible for electric vehicles to circulate at least in urban/suburban agglomerations and other densely populated areas, and, where appropriate, within networks determined by the Member States. As an indication, the appropriate average number of recharging points should be equivalent to at least one recharging point per ten cars, also taking into consideration the type of cars, charging technology and available private recharging points. Public authorities should take measures to assist users of such

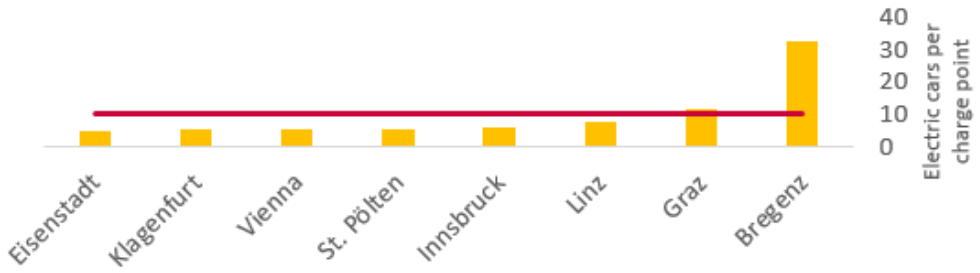
[4] https://www.europarl.europa.eu/news/de/press-room/20220603IPR32129/fit-fur-55-emissionsneutralitat-fur-neue-pkw-und-lieferwagen-ab-2035.

[5] Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure, OJ L307/1.

vehicles by ensuring the appropriate infrastructure with sufficient electric vehicle recharging points is provided by site developers and managers.

Figure 3 shows the numbers of electric cars per charge point in Austria's provincial capitals. Eisenstadt, Klagenfurt, Vienna and St. Pölten have about five electric cars per charge point, Innsbruck about six, Linz about eight, Graz about eleven and Bregenz about thirty-two. Measured in the terms of the directive, which sets the target of ten electric cars per charge point, only Bregenz lies significantly above this level. To put this in context, it should be mentioned that the private charge points to be taken into consideration under the Directive are to be assessed quite differently from region to region. The AFCA does not have any data on this issue, but it is probable there will be more private charging facilities in predominantly rural areas than in conurbations on account of the larger numbers of detached houses and parking spaces at workplaces. Nor do the good figures for most of the provincial capitals give any indication of how the charging stations are distributed. Especially where there is a very small number of electric cars (across the whole of Austria, 1% of all cars were electric in 2021), coverage may still be inadequate.

Figure 3: Number of electric cars per charge point



Sources: E-Control charge point registry, Statistics Austria.

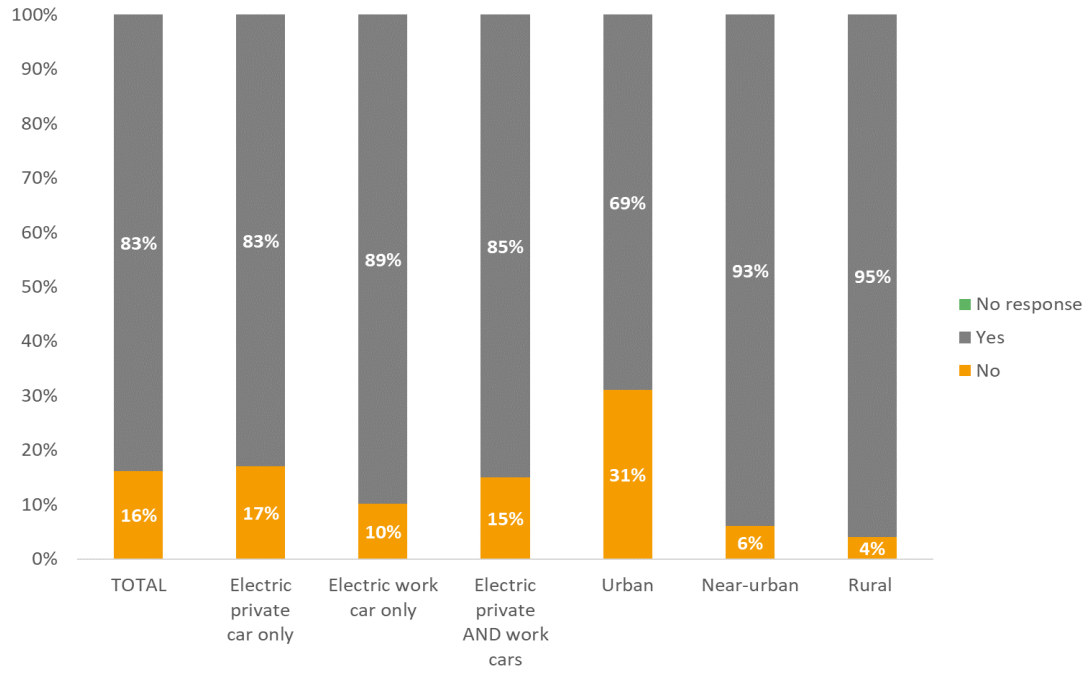
With the successful development of new sales of electric cars, the roll-out of charging infrastructure is becoming more of a necessity as well. Here too, the trend is moving upwards: on 12 April 2022 there were 13,441 regular and fast public charge points listed in E-Control's charge point registry. Although this represents a basis on which to meet the demand for charging current, the real challenge will be getting Austria's charging infrastructure in shape for the complete conversion of motor car traffic to electric drives. This is true, in particular, for urban areas, where a large number of potential owners of electric cars do not have their own parking spaces or it is difficult to convert existing parking spaces with charging facilities – whether for technical, economic or legal reasons.

A large number of people will, however, not have private charging facilities because they are unable to charge their vehicles either at home or at work, which means they will be dependent on publicly accessible charge points. Similar dependencies also exist in

relation to other staple goods and services, such as ICE car drivers' dependency on filling stations, power customers' dependency on energy suppliers and mobile phone users' dependency on mobile phone network operators. In all these cases, competition and regulation protect consumers from unfair market outcomes. This is why it is important to lay down the parameters for charging infrastructure in good time in such a way that local competition to provide charge points is stimulated (e.g. through transparency and by ensuring there is a range of providers) and possible dependencies due to vertically integrated local quasi-monopolies are addressed.

In its 2022 survey, the ÖAMTC asked its members about e-mobility. According to the survey, eight out of ten electric car drivers, so the overwhelming majority, used privately accessible charging stations, although an urban/rural gap was apparent. The proportion of drivers in urban areas who did not have private charging facilities and were therefore dependent on publicly accessible charge points (31%) was significantly higher than the average (about 16%; see Figure 4). A quarter used more than one private charging facility, domestic plug sockets or wallboxes at their own homes with power output up to 11 kW being mentioned most frequently. About one-third also had access to private charging facilities at their workplaces. But this also means roughly one-third of electric car users in urban areas are already dependent on publicly accessible charge points today. Such dependency will grow yet more prevalent with the paradigm change towards e-mobility.

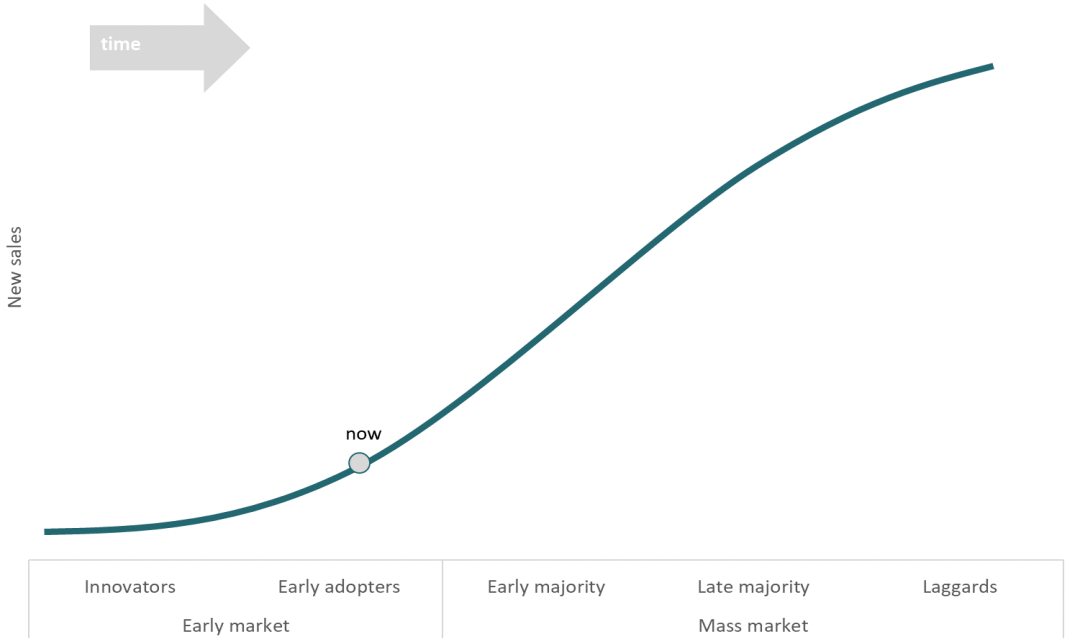
Figure 4: Access to private charging stations



Source: ÖAMTC survey, conducted 4–13 March 2022 (response rate 19.6%, N=1,419, n=1,036).

According to the ÖAMTC survey, the transition to electric cars is currently at a stage where the relevant target group consists of early adopters with little concern for tradition and a high average age (see Figure 5). The implication is that, when interpreting findings from the survey, the proportion of individuals who are unable to use private charging facilities for instance, it is important to emphasise the situation could still change as the market develops, and this is indeed likely to happen.

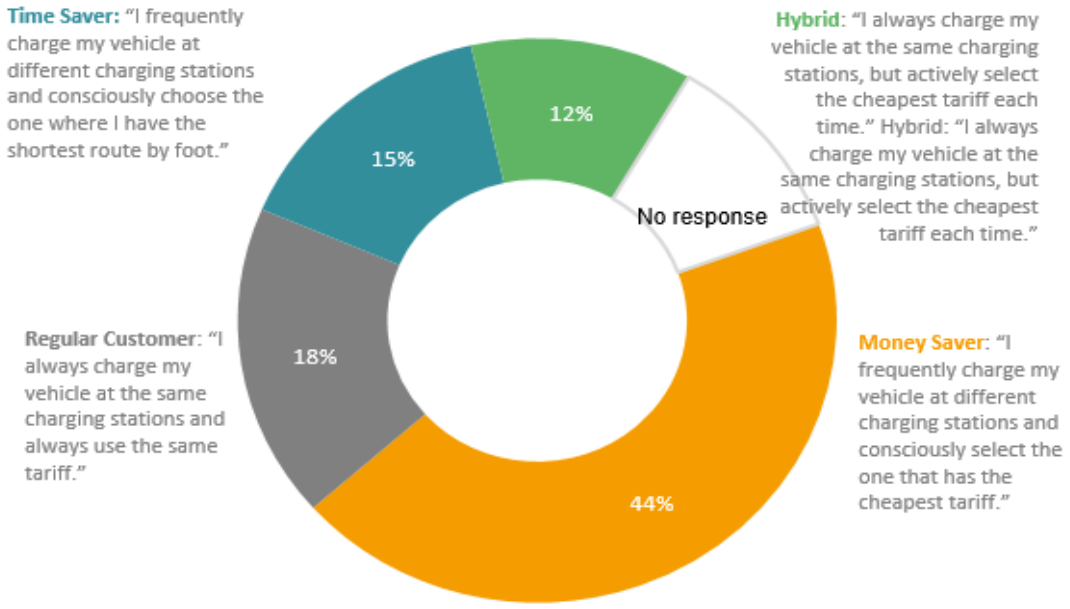
Figure 5: Schematic representation of electric cars' market penetration



Source: AFCA graphic.

When asked what criteria they used to choose publicly accessible charging stations, the respondents in the ÖAMTC customer survey said cost was the main factor in their choice of charge points. Almost half (44%) regularly drove deliberately to the charge point with the cheapest tariff. Approximately one-fifth (18%) were regular customers who always recharged their vehicles at the same charge point and used the same tariff, and merely about one in seven were time savers who only worried consciously about the shortest route by foot. Unfortunately, it has not been possible to ascertain how drivers behave who do not have access to a private charge point.

Figure 6: Choice of charge points and tariffs – customer types



Source: ÖAMTC survey, conducted 4–13 March 2022 (response rate 19.6%, N=1,419, n=1,036).

The ÖAMTC survey also asked about the top motives for using publicly accessible charging stations. For the sake of completeness, however, it should not go unmentioned that income and occupation certainly seem to be significant factors at present when individuals decide whether to acquire an electric car. This is shown by a look at the most frequently purchased new electric cars in 2021. The list is led by the Tesla Model 3 (list price 43,880 euros–66,465 euros), followed by the VW ID.3 (list price 31,495 euros–49,685 euros) and the VW ID.4 (list price 36,950 euros–58,820 euros).[6] Together, these top three models account for 27% of new sales of electric cars. Given the structure of the present user group, which is not representative of the mass market, the current motives for the use of public charging stations only give a snapshot of a changing situation.

The top motives for the use of publicly accessible charge points according to the ÖAMTC survey are greater vehicle range and/or long journeys (e.g. driving on holiday), free or cheap charging, fast charging facilities, free parking while charging in Vienna and battery charging in general, but also because no private recharging station is available.

It is therefore to be anticipated that the motive of battery charging because there is no private charging station available will gain in significance generally, to a greater extent in

[6] The lower end of each range gives the cheapest list price for that model on https://www.adac.de/rund-ums-fahrzeug/autokatalog/ (accessed 7 June 2022). List prices may be considerably higher, depending on the vehicle's specific configuration.

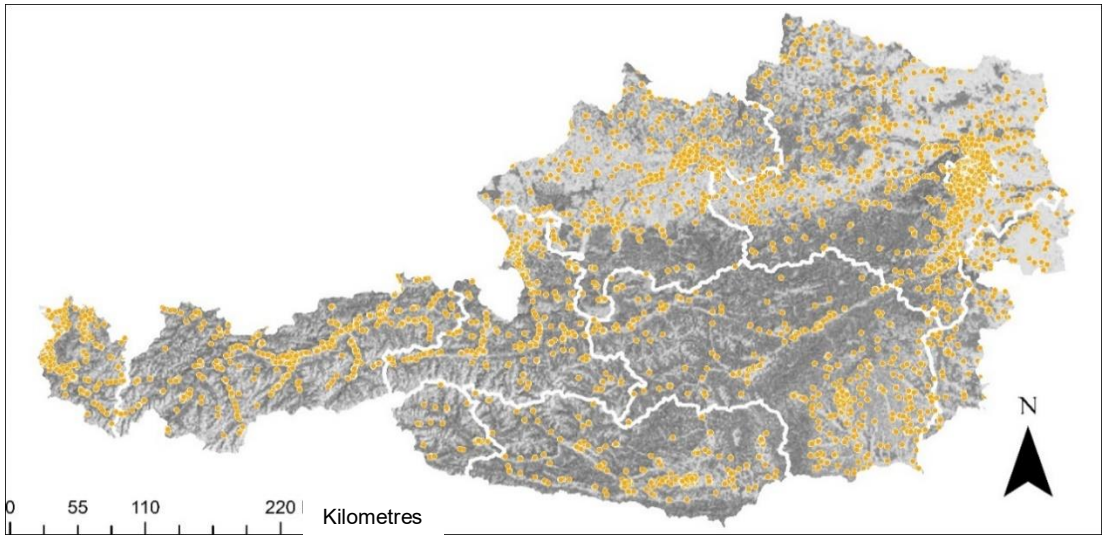
urban areas than in the countryside. As this happens, drivers' dependency on publicly accessible charge points will also increase. On the one hand, this allows it to be inferred that during the transition from an early market (innovators and early adopters) to a mass market (early majority, late majority and laggards) more and more vehicle owners will be affected who do not have private charging facilities, and the relative demand for publicly accessible charge points per electric car will therefore rise. On the other hand, strong competition is to be observed between different land uses, particularly in urban areas, which is inhibiting the economically viable provision of charge points. In future, furthermore, charging technology may also continue to vary between different types of vehicle, with low-income households tending to purchase electric cars that have less advanced features. Areas with large numbers of low-income households would then also require greater numbers of charge points because the charge time per electric car there would be greater and charge points would consequently be occupied for longer. In the absence of a regulatory framework, dependency may grow into market power where there are quasi-monopolistic local market structures, which could make regulatory interventions necessary.[7] Furthermore, should market power be abused, supervisory action under cartel law to halt abuses pursuant to Sec. 5 Federal Cartel Act (KartG) would be called for.

4.1 Selective overview of charging infrastructure in Austria

The Province of Tyrol has the most charge points relative to its total number of cars. There are 234 cars and four electric cars per charge point there, after which follow, in descending order, Salzburg with 283 and six, Vorarlberg with 297 and six, Vienna with 315 and five, Lower Austria with 352 and five, Burgenland with 383 and four, Carinthia with 528 and five, and Upper Austria with 564 and nine. Overall, there are 382 cars and six electric cars per charge point in Austria. The heterogeneous distribution of charge points in Austria is shown by Figure 7. There are thirty-one ASFINAG service stations with charging stations along the 2,223 kilometres of Austrian motorways and expressways, most of which are equipped with four or more charge points.

[7] Cf. German Monopolies Commission, *7. Sektorgutachten Energie: Wettbewerb mit neuer Energie*, paras. 295–299.

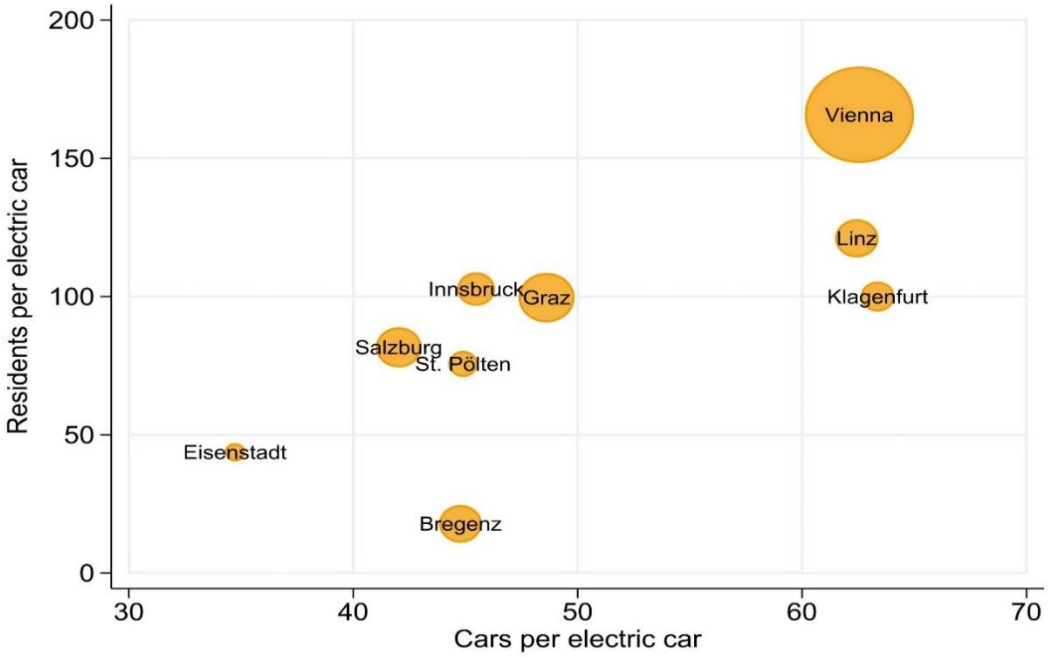
Figure 7: Map showing the distribution of charge points in Austria



Source: E-Control charge point registry.

As has been discussed in depth, the provision of publicly accessible charge points in urban areas will be of particularly great significance, firstly on account of the lower availability of private charging facilities in these areas, secondly because of their high population density and therefore the heavy competition between land uses. *Figure 8* shows the numbers of residents per electric car and cars per electric car for Austria's individual provincial capitals.

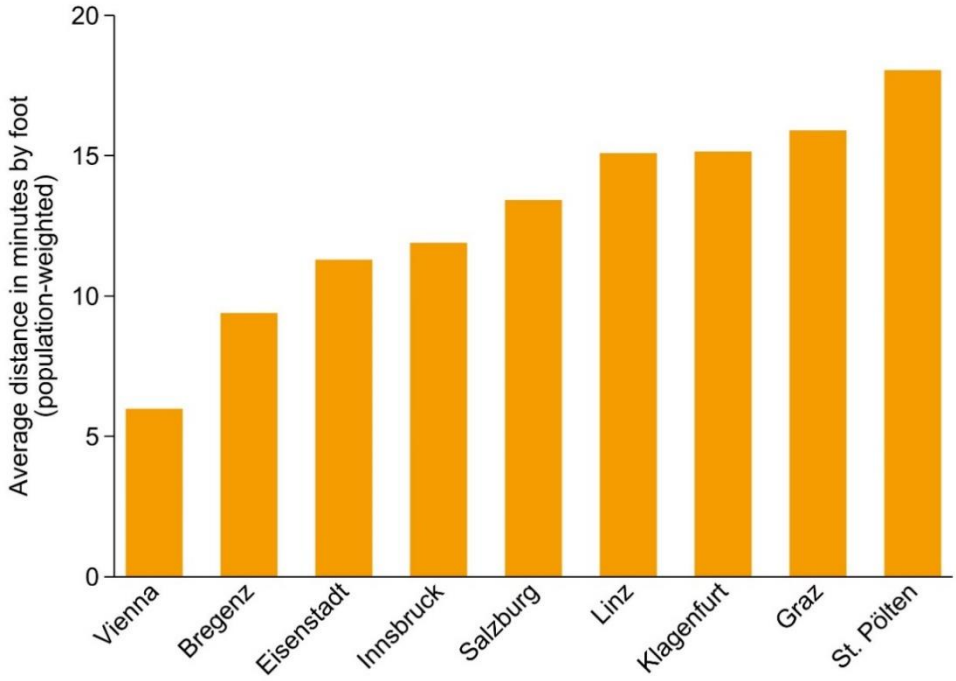
Figure 8: Electric cars in Austria's provincial capitals



Note: The sizes of the circles reflect the relative sizes of the cities' electric car fleets.
Sources: E-Control charge point registry, Statistics Austria.

While the numbers of charge points per resident and car may give an indication of potential occupancy rates, the charge points' accessibility relative to drivers' main places of residence can be analysed to gain a better understanding of the provision on the ground. For this purpose, the mean distance in minutes by foot from individuals' main places of residence to the nearest charge point has been calculated, which was done using data about main places of residence from Statistics Austria mapped on a 100x100 grid and publicly accessible charge points from the E-Control charge point registry. In conurbations, the main place of residence is of great significance because, when people are unable to charge their vehicles privately, there is a great deal of demand for overnight charging, which has to happen close to the driver's main place of residence. Finally, charge times of several hours may be reckoned with to fully recharge electric cars. It was found Vienna tops the list at about six minutes by foot and St. Pölten comes last at about eighteen minutes. Since this is a dynamically developing market, the minutes by foot shown in *Figure 9* make clear how good the population-weighted coverage with publicly accessible charge points is, which in turn affects how strong the incentives are for individuals without private charging facilities to acquire or switch over to electric cars. Nonetheless, the actual level of provision depends not just on accessibility, but availability as well.

Figure 9: Minutes by foot to the nearest charge point in Austria's provincial capitals

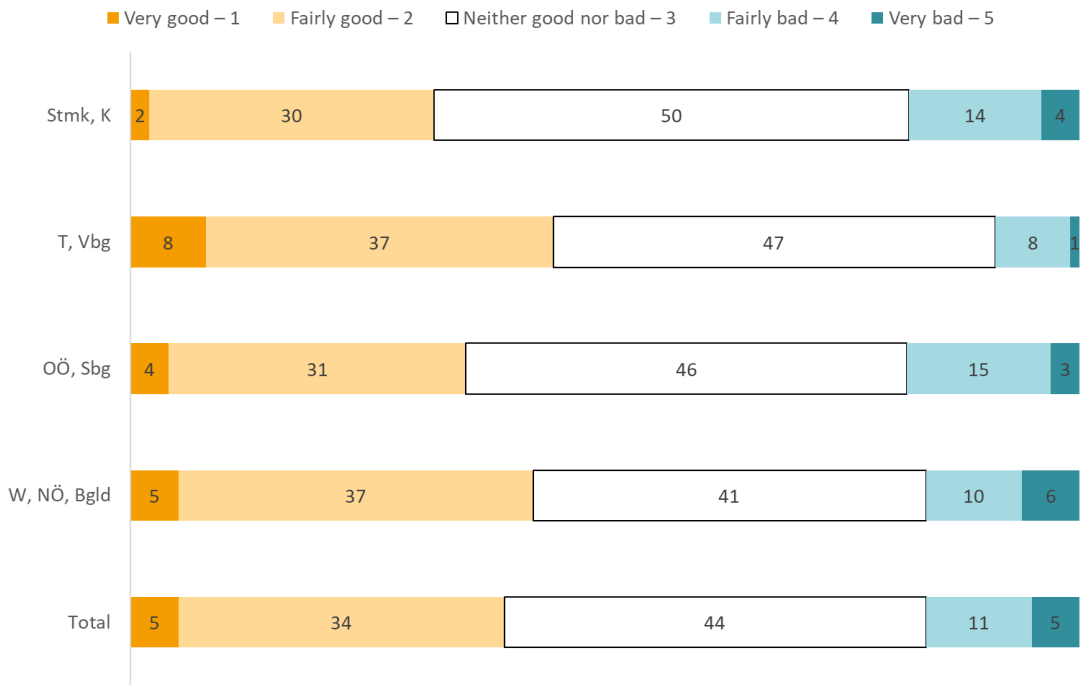


Sources:

E-Control charge point registry, Statistics Austria.

A charge point a short distance away from a driver's main place of residence is of little use to them if it is constantly occupied. This sets the market for charge points apart from the filling station market. Accessibility is the main criterion on the filling station market because vehicles can be refuelled so quickly. Availability is an additional factor when it comes to charge points. Since charging sessions can last several hours, it is hardly an option to wait for a charge point to become free – the exceptions here being the fast charge points such as the ones along motorways. It is not possible to evaluate charge points' actual occupancy rates on account of a lack of data. As shown in Figure 10, the ÖAMTC survey at least supplies information about the general perceptions of the availability of publicly accessible charging stations at present. Overall, the respondents' verdict was that availability was "good" to "neither good nor bad". Just 5% of respondents said availability was very good.

Figure 10: Availability of publicly accessible charge points[8]



Source: ÖAMTC survey, conducted 4–13 March 2022 (response rate 19.6%, N=1,419, n=1,036).

Apart from ever greater numbers of electric cars, getting Austria's charging infrastructure in shape for a car fleet that has been converted completely to electric technology will therefore also require a corresponding roll-out of charging infrastructure that meets drivers' needs.

[8] Vienna (W), Lower Austria (NÖ), Burgenland (Bgld), Upper Austria (OÖ), Salzburg (Sbg), T (Tyrol), Vorarlberg (Vbg), Styria (Stmk), Carinthia (K).

4.2 Excursus: Vienna

The particular significance of publicly accessible charge points in urban areas has already been touched upon. On account of its size and prominence, the Austrian capital, Vienna, will be discussed separately. The E-Control charge point registry listed 2,303 charge points in Vienna on 12 April 2022, of which 18% were fast charge points with ≥22 kW power output, of which 4% were ultra-fast (≥150 kW). Since no information on the power output of about 34% of the Wien Energie charge points in Vienna was given in the charge point registry, the actual proportion of fast charge points was somewhere between 18% and 45%. In comparison to the number of fast charge points in Graz (68%), however, this still seems rather low. It has an impact on the length of charge times. Longer charge times make overnight charging more attractive, which may be intended strategically for reasons of energy policy as a means of shifting the delivery of charging current from times of the day when there is high demand on the grid (evenings) to times when demand is low (nights). This is interesting, in particular, in connection with renewable energies such as wind power, which can provide charging current overnight without intermediate storage.

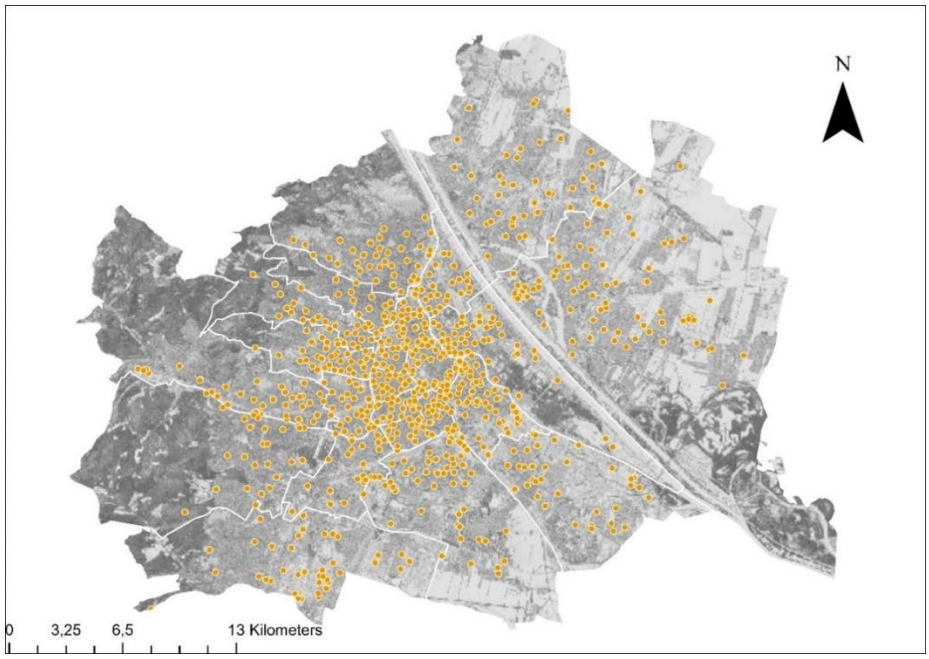
The following example calculation is intended to underline the particular challenge faced in conurbations where space is used intensively. If it is assumed ICE cars will be converted 1:1 to electric cars in Vienna, it can be expected, based on the city's car fleet in 2021, that Vienna will have 725,100 electric cars. According to the ÖAMTC survey, 31% of the respondents resident in urban areas do not have access to a private charge point, the implication being that 224,781 electric car drivers would be dependent on publicly accessible charge points. If the target ratio of ten electric cars to every charge point is taken as a standard,[9] it is found subject to very restrictive assumptions that about 22,500 publicly accessible charge points would be needed as a minimum, just in order to supply the electric car drivers who are dependent on publicly accessible charge points. Of course, it cannot be ruled out that the car fleet itself might shrink too once it has been converted to electric cars, but it has actually been growing steadily over recent years. There is also the possibility technological improvements will make charging more efficient and therefore alter the ten-to-one ratio aspired to by the EU, while electric cars' range may expand as well thanks to larger batteries. The assumption that 31% of drivers will be dependent on publicly accessible charge points is also rooted in the current situation, and an increase in this figure is very probable if e-mobility penetrates the mass market. Finally, it is to be noted that electric car drivers who have private charge points will, of course, sometimes want or have to use publicly accessible charge points as well. In summary, these restrictive assumptions

[9] Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure, OJ L307/1.

essentially suggest the figure arrived at is to be understood as a minimum level of provision. The scale of the task involved in installing a minimum of 22,500 charge points illustrates the great challenge with which urban areas and large conurbations, in particular, are confronted. After all, a charge point does not just require a publicly accessible parking space, but also has to be connected to an efficient power grid.

Figure 11 shows Vienna and the distribution of publicly accessible charge points there. It becomes clear from an initial visual analysis that they are clustered in the city's inner districts, while coverage is thin in the outer districts. This is understandable from a demand-oriented point of view to the extent that early adopters' top motives for using publicly accessible charge points are greater vehicle range or the chance to park for free when recharging their vehicles in Vienna. As things stand, these drivers usually have access to private charge points. The consequence is higher demand in the city centre (destination approach) and not in the residential districts where vehicles are recharged overnight.

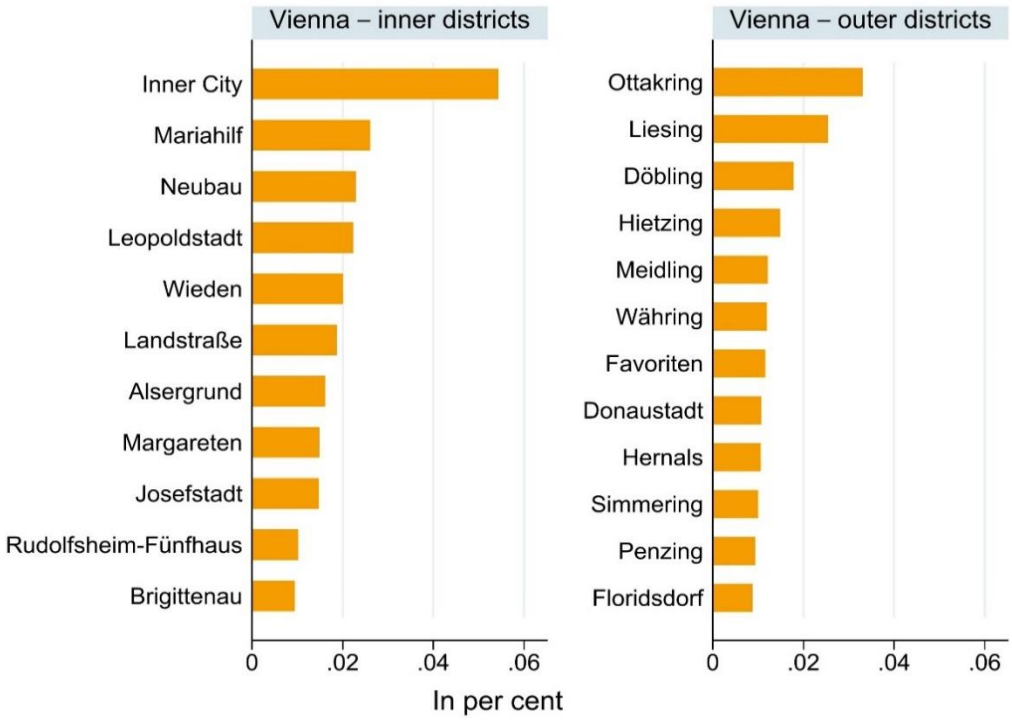
Figure 11: Distribution of charge points in Vienna



Source: E-Control charge point registry.

Figure 12 breaks down Vienna's fleet of electric cars, showing what percentages they make up of the car fleets in the city's individual districts. It is evident the transition has been progressing at varying rates in the different parts of Vienna. As would be expected, the proportions of electric cars are greater in the city's more central, higher-income districts. The Inner City stands out particularly in this respect.

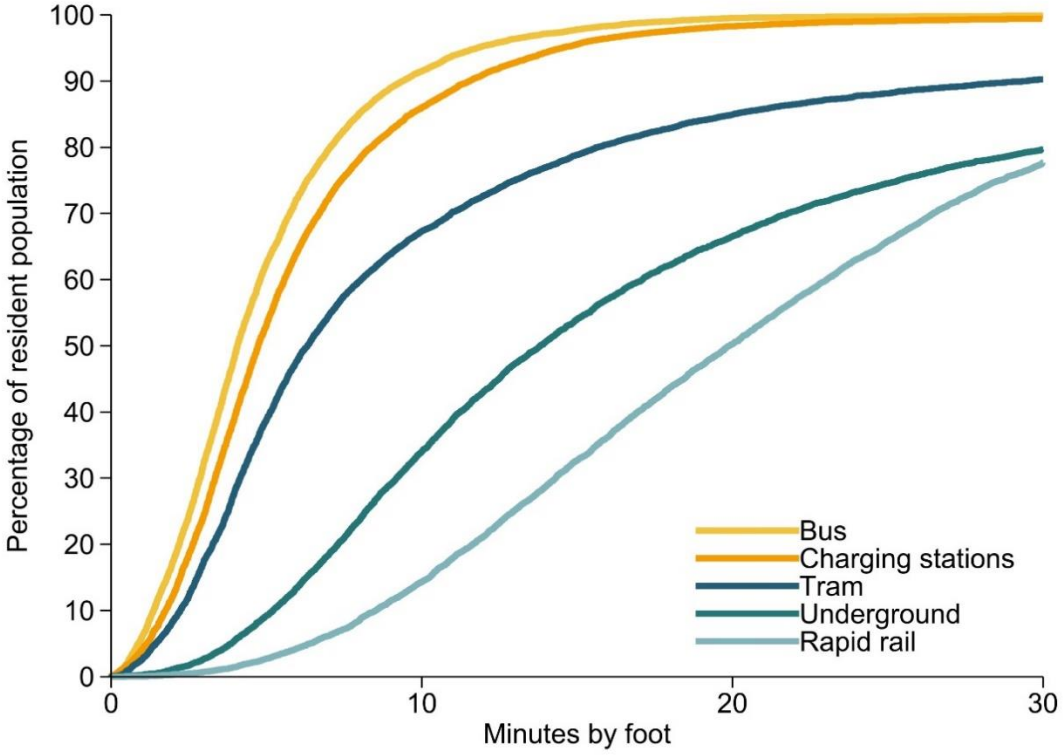
Figure 12: Proportions of electric cars in the car fleets of Vienna's municipal districts



Sources: E-Control charge point registry, Statistics Austria.

One indicator of the current coverage with charge points is depicted by Figure 13. In this graph, the minutes by foot to the nearest publicly accessible charge point are set in relation to the walking times to the nearest public transport stop/station (bus, tram, underground or rapid rail (*S-Bahn*)). Specifically, the curves show the levels of coverage with transport services enjoyed by 0% to 100% of Vienna's residents (based on their main places of residence), indicating how many minutes it takes x per cent of Vienna's residents to reach the nearest public charge point or public transport stop/station by foot. This comparison shows the attractiveness of overnight charging and is informed by the assumption that the greater convenience of having to walk for fewer minutes makes it more attractive for drivers who do not have private charge points to acquire an electric car. It is apparent the population-weighted distance to the nearest charge point is roughly the same as the distance to the nearest bus stop. This suggests there is good coverage with charge points. The implication is that, if charging infrastructure responsive to drivers' needs is to be created, the next step should be to increase the density of the network.

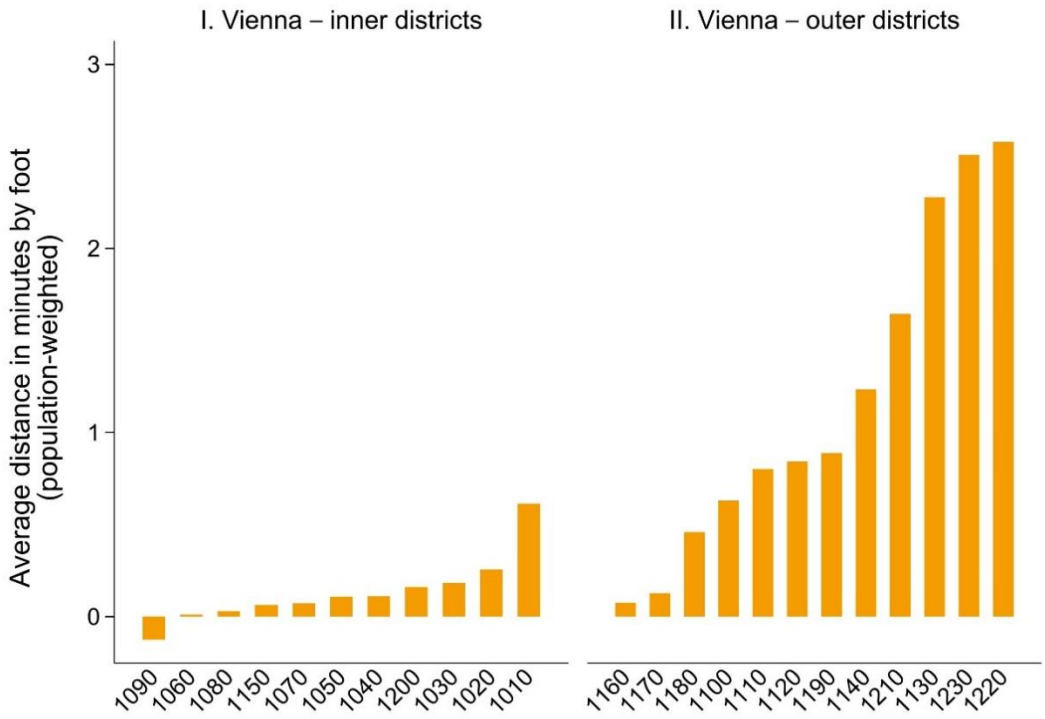
Figure 13: Distance to nearest public transport stop/station by proportion of the population in Vienna



Sources: E-Control charge point registry, Statistics Austria, Open Data Austria. Calculations by the AFCA.

While the distribution of charge points has been analysed across the whole of Vienna above, *Figure 14* shows how they are distributed among Vienna's inner and outer districts, breaking the figures down once again between the individual districts. At the district level, it is apparent the coverage is thinner in the outer districts. The population-weighted deviation depicted in the graph shows how much longer it is necessary to walk to the nearest public charge point than to the nearest public transport stop/station (irrespective of the mode of transport in question). The absolute differences are ultimately very minor, but it has to be remembered that what matters is the perceived inconvenience of picking up a car from a charge point at the end of a charging session that has lasted several hours. This inconvenience is placed in relation to the alternative of travelling by public transport. The information value of this diagram therefore lies less in the absolute figures, than in their levels relative to one another, which allow the coverage with charge points to be analysed in individual districts. Since the vehicles drivers own are frequently parked closer to their residences than the nearest public transport stop/station, negative values for the difference depicted would be desirable from a convenience point of view if the changeover to electric cars is to be made more attractive.

Figure 14: Difference between average minutes by foot from main place of residence to nearest charge point and nearest public transport stop/station



Sources: E-Control charge point registry, Statistics Austria, Open Data Austria.

Note: A negative value indicates the nearest charge point is closer than the nearest stop/station.

In order to draw conclusions from this about whether the charging infrastructure in place meets drivers' needs, concrete data would also be needed on the occupancy rates of the individual charge points so their availability could be quantified. It has not been possible to obtain data of this kind. Nor do the data from the ÖAMTC survey permit inferences to be drawn at the district level. At the current stage of development on the market for charge points, however, it appears not to be availability that is the stronger criterion of competition, but accessibility. Attempts to exert competitive pressure are still frequently unsuccessful due to the accessibility of alternative providers' public charge points and not yet due to their availability. Availability is therefore not dealt with in the analysis below, not least on account of a lack of data.

Finally, it is important to recall once more that the current status of Austria's charging infrastructure is only a snapshot of a market that is continuing to develop dynamically and will keep on growing. The increased profitability that will go hand in hand with this development may prompt more undertakings to look at whether they should enter the

market. However, it appears highly likely there will be a general development towards e-mobility, not least thanks to the EU's planned requirement that the only new cars to be sold as of 2035 must be electric. Nonetheless, the current early phase also offers opportunities for the legislature because the foundations for the future design and structure of the market are being laid. There are risks as well though, posed for instance by the creation of vertically integrated regional monopolies that could make complex regulatory interventions in the market necessary during subsequent phases.

5 Legal framework

There are large numbers of regulatory parameters at both the European and national levels that apply to the entirety of charging infrastructure for electric vehicles. This section discusses selected pieces of significant European and national fundamental legislation with relevance for charging infrastructure that, from a competition perspective, may have an influence on the availability of charge points for users of electric vehicles in Austria.[10]

5.1 European legal sources

The European legal sources may be subdivided essentially into primary and secondary legislation. The primary legislation consists of the Treaty on European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU).[11] Pursuant to Art. 288 Treaty on the Functioning of the European Union, the secondary legislation is further subdivided into directives and regulations. Directives are binding with regard to the result to be achieved, but have to be transposed into national law by the Member States. By contrast, regulations are binding in their entirety and directly applicable in each Member State.

5.1.1 Directive on the deployment of alternative fuels infrastructure (2014/94/EU)

Directive 2014/94/EU[12] governs the deployment of infrastructure for alternative fuels and pursues the aim of harmonising technical standards for charging infrastructure in the e-mobility sector.

Pursuant to Art. 3 Directive 2014/94/EU, each of the Member States has to adopt a national policy framework for the development of the market as regards alternative fuels in the transport sector and the deployment of the relevant infrastructure. Pursuant to Art. 10(1), a report was to be submitted about the framework's implementation by

[10] Further laws and regulations relating to charging infrastructure can be found in the Legal Information System of the Republic of Austria ("RIS"), https://www.ris.bka.gv.at/defaultEn.aspx.

[11] Consolidated Version of the Treaty on the Functioning of the European Union ("TEU"; 2016), OJ C202/01; Consolidated version of the Treaty on the Functioning of the European Union ("TFEU"; 2012), OJ C326/01.

[12] Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure, OJ L307/1.

18 November 2019 and subsequently every three years. Implementation reports were submitted to the European Commission (EC) by the Member States most recently in 2019.

The provisions set out in Art. 4(8)–(12) Directive 2014/94/EU are intended to ensure non-discriminatory access

- to the power grid for operators of charging points and
- to charging points for users of electric vehicles.

Art. 4(10) obliges the Member States to ensure "*prices charged by the operators of recharging points accessible to the public are reasonable, easily and clearly comparable, transparent and non-discriminatory.*" On the one hand, this addresses substantive factors because prices have to be reasonable and non-discriminatory. On the other hand, the price must be identifiable prior to the charging session and the prices of different charge point operators have to be comparable.[13]

Art. 4(10) lays down requirements concerning the prices "*charged by the operators of recharging points accessible to the public*". What is open to question is whether the wording of this provision also extends to e-mobility providers who may have dealings with customers, but do not operate charge points themselves.[14]

Pursuant to Art. 7(3), it is to be ensured the prices of various (conventional and alternative) fuels are comparable at refuelling stations by applying a common methodology. This is intended to contribute to transparency and help raise awareness among consumers. In Implementing Regulation (EU) 2018/732, the European Commission stipulated that the common methodology should involve stating amounts of the applicable currency per 100 kilometres for passenger cars that are comparable in view their weight and power, but use different fuels.[15]

[13] *Winner*, "Rechtsgutachten zur Preistransparenz bei öffentlichen Ladepunkten für die Elektromobilität" (2018), p. 5.

[14] Discussed critically in Winner, "Rechtsgutachten zur Preistransparenz bei öffentlichen Ladepunkten für die Elektromobilität", p. 13.

[15] Implementing Regulation (EU) 2018/732 on a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU of the European Parliament and of the Council, OJ L123/88.

5.1.2 European Commission proposal for a regulation on the deployment of alternative fuels infrastructure

In the opinion of the European Commission, the transposition of Directive 2014/94/EU (cf. section 5.1.1) has led to the uneven roll-out of infrastructure in the Member States, which is why the dense network of infrastructure for alternative fuels that is needed is not being created. It is for this reason that the European Commission has drawn up a proposal for a regulation on the deployment of alternative fuels infrastructure.[16] The proposed regulation is currently the subject of negotiations at the EU level and is due to enter into force at a later point in time.[17]

Art. 5 ("Recharging infrastructure") of the proposed regulation, in particular, would be relevant to charge points. Art. 5(2) of the proposed regulation would stipulate that operators of recharging stations accessible to the public were free to purchase electricity from any electricity supplier. Furthermore, Art. 5(2) would require operators of recharging points with a power output below 50 kW to offer one of the following payment services:

- payment card readers;
- devices with a contactless functionality that was at least able to read payment cards;
- devices using an internet connection with which for instance a Quick Response code could be specifically generated and used for the payment transaction.

Operators of recharging points with a power output equal to or more than 50 kW would have to offer

- payment card readers or
- devices with a contactless functionality that was at least able to read payment cards.

Art. 5(4) of the proposed regulation would stipulate that the prices at publicly accessible recharging points were to be reasonable, easily and clearly comparable, transparent and non-discriminatory. Where relevant, it would only be possible for the level of prices to be differentiated in a proportionate manner, according to an objective justification. With regard to methods of payment, it would also be stipulated that ad hoc payment instruments (not requiring a contractual relationship) had to be accepted at all publicly

[16] Proposal for a Regulation of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU of the European Parliament and of the Council (**"proposed regulation"**), COM/2021/559 final.

[17] Procedure 2021/0223/COD.

accessible recharging points. In the interests of transparency, the ad hoc prices (depending on the charging station) would have to be displayed, including the price per session, price per minute or price per kWh.

Art. 13 of the proposed regulation would create the basis for the Member States' national policy frameworks. By 2024 each Member State would be obliged to draw up a national policy framework for the development of the market as regards alternative fuels and the deployment of the relevant infrastructure. As a minimum, such a national policy framework would, among other things, have to provide for supporting actions (cf. section 5.4). These would, for instance, include measures to encourage the installation of recharging stations on private premises that were not accessible to the public (Art. 13(1)(f)), measures to promote alternative fuels infrastructure in urban nodes, in particular with respect to publicly accessible recharging points (Art. 13(1)(g)), and measures to promote a sufficient number of publicly accessible high-power recharging points (Art. 13(1)(h)).

5.2 Legal sources at federal level

5.2.1 Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure

Directive 2014/94/EU (cf. section 5.1.1) is transposed nationally in Austria by the Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure (BGIAK).[18]

With regard to charge points for electric vehicles, the Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure essentially governs the rights and duties of charge point operators (Sec. 3 BGIAK) and technical specifications for publicly accessible charge points (Sec. 4 BGIAK). Sec. 4a of the act places an obligation on E-Control[19] to administer a charge point registry that contains information about the locations and operators of publicly accessible charge points, and is to be made available to all users in an open and non-discriminatory fashion.

[18] Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure, *Austrian Federal Law Gazette* (*BGBl.*) I no. 38/2018 as most recently amended.

[19] *Energie-Control Austria für die Regulierung der Elektrizitäts- und Erdgaswirtschaft* (Energy Control Austria for the Regulation of the Electricity and Natural Gas Industries).

Sec. 3 para. 2 indents 1–3 Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure set out the cases in which a charge point is definitely to be operated as a publicly accessible facility. This applies, for instance, to charge points on public land or land used for public transport infrastructure (indent 1) and at refuelling stations or in the grounds of refuelling stations (indent 4). Furthermore, charge points are to be operated as publicly accessible facilities at important transport locations[20] such as railway stations (indent 2), airports (indent 2) and service stations on the higher-level road network (indent 3). Pursuant to Sec. 3 para. 3 of the act, there are exemptions for charge points where it is necessary to restrict who is allowed to use them for compelling operational reasons. In the view of the legislature, for instance, this covers e-taxi services, electric carsharing models, private car parks and charge points that are primarily provided for the recharging of mass transport vehicles.[21]

Sec. 3 para. 4 Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure stipulates that operators of publicly accessible charge points also have to permit occasional recharging for users of electric vehicles without a contract for the performance of a continuing obligation having to be concluded with the operator of the charge point. In this connection, it is to be remarked that users of electric vehicles do not usually enter into contracts for the performance of continuing obligations with the operator, but with a third party, an e-mobility provider. It is therefore open to question whether the wording of this provision is likely to achieve the desired objective.[22]

The Federal Minister for Digital and Economic Affairs (now the Federal Minister for Labour and Economy) has laid down the technical specifications for regular and fast publicly accessible charge points in the Charge Point and Refuelling Station Regulation.[23] In this respect, the Charge Point and Refuelling Station Regulation makes reference to Sec. 4 para. 1 Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure, which in turn makes reference to Annex II ("Technical Specifications") Directive 2014/94/EU. The technical specifications laid down in Annex II Directive 2014/94/EU for regular and high-power recharging points are therefore applicable.

[20] Explanatory Notes to the Government Bill, Annex 137 to the Stenographic Records of the National Council, 26th Electoral Period, p. 1.

[21] Explanatory Notes to the Government Bill, Annex 137 to the Stenographic Records of the National Council, 26th Electoral Period, pp. 1–2.

[22] Discussed critically in Winner, "Rechtsgutachten zur Preistransparenz bei öffentlichen Ladepunkten für die Elektromobilität" (2018), p. 6.

[23] Regulation of the Federal Minister for Digital and Economic Affairs on Technical Specifications for Charge Points and for Refuelling Stations for Alternative Fuels (**"Charge Point and Refuelling Station Regulation"**, "LT-V"), *Austrian Federal Law Gazette* II 280/2019 as most recently amended.

5.2.2 Electricity Sector and Organisation Act 2010 (ElWOG 2010)

Sec. 7 para. 1 indent 11 Electricity Sector and Organisation Act 2010[24] defines an electricity company as an entity "*that with the intention of making profit from the functions of the generation, transmission, distribution, supply or purchasing of electrical energy performs at least one such function and performs the commercial, technical or maintenance-related tasks connected with these functions, with the exception of end consumers.*"

The systematic approach enshrined in the Electricity Sector and Organisation Act 2010 requires customers' ("*end consumers*'") installations to be permanently connected to the power grid. Electric vehicles are connected to the power grid only temporarily for charging. The charge point itself, by contrast, has a permanent, fixed connection to the power grid. Furthermore, the charge point operator has a contract for the performance of a continuing obligation with the grid operator. The charge point operator is therefore not an electricity company but an end consumer within the meaning of the act.[25]

It follows from the classification of the charging station operator as an end consumer within the meaning of the Electricity Sector and Organisation Act 2010 that the charging station operator themselves is subject to the obligations electricity law places on end consumers. These include the duty to pay a flat-rate renewable power levy, the ecopower funding contribution and a flat-rate levy for the funding of cogeneration plants.

5.2.3 Trade Code (GewO 1994)

Since charge point operators are not electricity companies within the meaning of the Electricity Sector and Organisation Act 2010 (cf. section 5.2.2), the exemption of electricity companies from the scope of the Trade Code pursuant to Sec. 2 para. 1 indent 20 Trade Code 1994[26] does not apply to charge point operators.

The commercial operation of charge points is an "unregulated trade" within the meaning of Sec. 157 Trade Code 1994,[27] which is why no evidence of qualification is required in order to operate a charge point.

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[24] Federal Act Providing New Rules for the Organisation of the Electricity Sector (**"Electricity Sector and Organisation Act"**, **"ElWOG 2010"**), *Austrian Federal Law Gazette* I 110/2010 as most recently amended.
[25] *Winner*, "Rechtsgutachten zur Preistransparenz bei öffentlichen Ladepunkten für die Elektromobilität" (2018), pp. 7ff.
[26] Trade Code 1994 ("GewO 1994"), *Austrian Federal Law Gazette* 194/1994 as most recently amended.
[27] Eigner and Schneider, "Stromtankstellenbetreiber unterliegen der Gewerbeordnung, nicht dem Elektrizitätsrecht", *Zeitschrift für Tarifrecht* (*ZTR*) 2019, p. 215.

5.2.4 Services Act (DLG)

Charge point operators are subject to the Services Act[28] and have to fulfil the duties to provide information laid down in Sec. 22 of the act.

Sec. 22 Services Act obliges the service provider to supply the service recipient with particular information "*of their own accord*". Pursuant to Sec. 22 para. 4 Services Act, this information must be "*clear, comprehensible and unambiguous, and must be made available to the service recipient in good time prior to the conclusion of the contract or, if no written contract is concluded, prior to the provision of the service*." The information it is mandatory to provide includes the service provider's trading name, the general terms and conditions that are applicable and the price of the services.

The information may be communicated to the service recipient (user of the electric vehicle) by the service provider. Alternatively, the charge point operator may keep the information easily accessible at the location where the service is provided or the contract is concluded or also electronically, or set it out in comprehensive information documents about the service provided for service recipients (for more details, cf. Sec. 22 para. 2 DLG).

The Services Act therefore contains provisions concerning the publication of prices both by charge point operators and by e-mobility providers. However, there are no provisions in the act that ensure the simple and clear comparability of the prices billed by various charge point operators – as required by Art. 4 indent 10 Federal Procurement Act (BVergG) 2018. Furthermore, the large number of different billing models found on the market makes it more difficult for users of electric vehicles to compare prices.

5.2.5 Excursus: regulation on the calibration of EV charging stations

In the course of the further expansion of e-mobility, regarded as it is as an essential building block for the achievement of climate protection targets and the reduction of CO2 emissions, there will be ever greater demand for a dense, efficient network of charging facilities for electric vehicles. In view of the constantly rising numbers of new electric vehicles being sold and the increased demand for EV charging infrastructure this is stimulating, the concomitant significance of energy metering in EV charging infrastructure has also been examined. Infrastructure operators, electricity suppliers, consumer organisations and groups representing the interests of road users are calling for drivers to be billed for the energy actually delivered at charge points.

[28] Federal Act on the Provision of Services (**"Services Act"**, **"DLG"**), *Austrian Federal Law Gazette* I 100/2011 as most recently amended.

At present models based on the measurement of time, the metering of electrical energy or a combination of both approaches are among those applied for the billing of the services associated with vehicle recharging. In Austria, electricity meters and tariff devices that are used or made available for official or legal transactions are subject to mandatory verification (Sec. 8 para. 1 indent 4 Metrology Act (MEG)). Metrology law does not include any provisions concerning billing by time tariffs or flat-rate fees. Should instruments that measure electrical energy be provided at charge points for charging sessions, however, Sec. 8 Metrology Act makes it mandatory for these measuring instruments to be verified.

In order to ensure the use of suitable measuring instruments that are regulated uniformly and subject to appropriate preconditions for their approval, pursuant to Sec. 39 Metrology Act, the Federal Office of Metrology and Surveying is to promulgate a regulation on the calibration of electrical tariff devices for the metering of electrical energy at charge points for the operation of electric vehicles. Consultations are currently ongoing on this regulation. The period for the submission of comments expired on 3 November 2022.[29] It is planned to notify the European Commission of the regulation in the first quarter of 2023. A transitional period is provided for until the end of 2023.

The Regulation of the Federal Office of Metrology and Surveying on the Calibration of Electricity Meters, Electrical Tariff Devices and Auxiliary Equipment,[30] which lays down the requirements placed on these instruments and devices, has been in force since 2006. The regulation is intended to contribute to the transposition of the Measuring Instruments Directive (2014/32/EU) in respect of energy metering in households, commercial premises and industrial facilities. Energy metering when electric vehicles are charged requires transparent technical parameters for the processing of data, which are specified in these pieces of metrological legislation. These requirements are also intended to ensure consistent levels of security for energy metering in the e-mobility sector.

5.3 Provincial building legislation

5.3.1 Building law

At the provincial level, building law serves, in particular, as a statutory instrument with which to promote the installation of charge points. The relevant legislation in force in the individual Austrian provinces is described below.

[29] Cf. https://www.ris.bka.gv.at/Dokument.wxe?Abfrage=Begut&Dokumentnummer=BEGUT_FCCCC51C_5E86_487E_BCDD_EF238C736A00.

[30] *Amtsblatt für das Eichwesen*, Sondernummer 3/2006.

5.3.1.1 Vienna

Pursuant to Sec. 62a para. 1 indent 10 Vienna Building Code,[31] the installation of charging stations requires neither permission nor notification. Nevertheless, pursuant to Sec. 3 para. 1 indent 4 Vienna Garage Act (WGarG) 2008,[32] the creation of charging spaces for electrically driven motor vehicles in buildings for the parking of motor vehicles requires building permission. In order to promote the roll-out of charging infrastructure, Sec. 6 para. 3 Vienna Garage Act 2008 stipulates that consideration is to be given to the possibility of the subsequent creation of charging spaces for electrically driven motor vehicles when garages are constructed.

5.3.1.2 Lower Austria

When a building is newly built, extended or renovated, Sec. 64 para. 3 Lower Austrian Building Code 2014[33] requires the installation of appropriate cabling infrastructure for the subsequent installation of charge points and, in particular cases, the actual installation of charge points.

The Lower Austrian Building Code 2014 focuses on the installation of fast charge points with power output of at least 22 kW. For this purpose, Sec. 64 para. 6 Lower Austrian Building Code 2014 stipulates that the following infrastructure is to be installed at buildings with publicly accessible car parking facilities and other publicly accessible car parking facilities with more than ten mandatory parking spaces:

- the cabling infrastructure for the subsequent installation of charge points for electric vehicles with an output of at least 22 kW at at least one parking space per five mandatory parking spaces that have been commenced and
- one charge point for electric vehicles with an output of at least 22 kW at at least one parking space per twenty-five mandatory parking spaces that have been commenced.

[31] Vienna Urban Development, Urban Planning and Construction Code (**"Vienna Building Code**"), *Vienna Provincial Law Gazette* (*LGBl.*) 11/1930 as most recently amended.

[32] Act on the Parking of Motor Vehicles, Power-driven Parking Systems and Refuelling Stations in Vienna (**"Vienna Garage Act"**, "WGarG 2008"), *Vienna Provincial Law Gazette* 46/2010 as most recently amended.

[33] Lower Austrian Building Code 2014 ("NÖ BO 2014"), *Lower Austrian Provincial Law Gazette* (*LGBl.*) 1/2015 as most recently amended.

5.3.1.3 Styria

Sec. 3 indent 7 Styrian Building Act[34] exempts EV charge points from the scope of the act. EV charge points require neither notification nor permission.

In order to promote the roll-out of charging infrastructure, Sec. 92a para. 1 Styrian Building Act specifies that, when shopping centres are constructed and at parking facilities for motor vehicles and bicycles with more than fifty parking spaces, provision is to be made for preparations to subsequently install charge points for electric vehicles (e.g. empty cable ducts) at at least fifty parking spaces. Pursuant to Sec. 92a para. 2 Styrian Building Act, municipalities are entitled to increase or reduce the number of parking spaces and/or specify more extensive preparations for the subsequent installation of charge points for electric vehicles or the full installation of such charge points – by means of a regulation derogating from para. 1.

5.3.1.4 Tyrol

Sec. 10 Tyrolean Building Code 2018[35] requires the Tyrolean Provincial Government to adopt a regulation setting out more detailed provisions on the infrastructure to be constructed in order to demonstrate sufficient parking spaces for motor vehicles are provided, where this is necessary for the transposition of Directive 2018/844[36] and/or achievement of the objectives laid down in the national policy framework (cf. section 5.1.1). As far as can be ascertained, no regulation of this kind has been promulgated to date.

Sec. 28 para. 2 indent g Tyrolean Building Code 2018 stipulates that, with the exception of buildings, the installation and modification of free-standing charge points for electric vehicles require notification, but not permission.

5.3.1.5 Vorarlberg

Pursuant to Sec. 20 para. 3 Vorarlberg Building Act,[37] the installation and modification of charge points for electric vehicles and their incorporation into existing structures are unrestricted building projects that require neither a building notification nor building permission.

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[34] Act of 4 April 1995 Promulgating Building Regulations for the Province of Styria (**"Styrian Building Act**"), *Styrian Provincial Law Gazette* (*LGBl.*) 59/1995 as most recently amended.

[35] Announcement of the Provincial Government of 6 February 2018 on the Re-enactment of the Tyrolean Building Code 2011 ("**Tyrolean Building Code 2018**"), *Tyrolean Provincial Law Gazette* (*LGBl*.) 28/2018 as most recently amended.

[36] Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency, OJ L156.

[37] Vorarlberg Building Act, *Vorarlberg Provincial Law Gazette* (*LGBl.*) 52/2001 as most recently amended.

5.3.1.6 Carinthia

Sec. 50e para. 1 Carinthian Building Regulations[38] stipulates that, when non-residential buildings are erected and renovated that have more than ten parking spaces, at least one charge point and, for every fifth charge point, the necessary cabling infrastructure for the subsequent installation of one charge point are, as a matter of principle, to be installed. Sec. 50e para. 3 Carinthian Building Regulations exempts buildings owned and used by micro undertakings and small and medium-sized undertakings from this obligation.

Pursuant to Sec. 50e para. 2 Carinthian Building Regulations, when residential buildings are erected and renovated that have more than ten parking spaces, the necessary cabling infrastructure for one charge point must, as a matter of principle, be installed at each parking space.

Comparable provisions are included in the building legislation of Salzburg (cf. section 5.3.1.7), Upper Austria (cf. section 5.3.1.8) and Burgenland (cf. section 5.3.1.9).

5.3.1.7 Salzburg

Sec. 37a para. 1 Salzburg Technical Building Act 2015[39] stipulates that, when buildings are erected with more than ten mandatory parking spaces, cabling infrastructure for each mandatory parking space must be installed at residential buildings (indent 1), while at non-residential buildings one charge point and cabling infrastructure for every fifth mandatory parking space that has been commenced are to be installed (indent 2). Comparable provisions are found in the building legislation of Carinthia (cf. section 5.3.1.6), Upper Austria (cf. section 5.3.1.8) and Burgenland (cf. section 5.3.1.9).

Pursuant to Sec. 37a para. 2 Salzburg Technical Building Act 2015, the same applies for the renovation and conversion of buildings too if the works undertaken also affect the mandatory parking spaces or the building's electrical installations.

An exemption from this obligation is possible pursuant to Sec. 49a Salzburg Technical Building Act 2015, in particular where the costs would be disproportionately high.

[38] Act of 19 June 1985 Promulgating Building Regulations for the Province of Carinthia (**"Carinthian Building Regulations"**, "K-BV"), *Carinthian Provincial Law Gazette* (*LGBl.*) 56/1985 as most recently amended.

[39] Act of 7 October 2015 on Technical Building Regulations in the Province of Salzburg (**"Salzburg Technical Building Act 2015**", "BauTG 2015"), *Salzburg Provincial Law Gazette* (LGBl.) 1/2016.

5.3.1.8 Upper Austria

Pursuant to Sec. 26 indent 12 Upper Austrian Building Code 1994,[40] the installation of charge points for electric vehicles does not require either permission or notification.

Sec. 20 Upper Austrian Structural Engineering Regulation 2013[41] contains a provision comparable to Sec. 50e Carinthian Building Regulations (cf. section 5.3.1.6), Sec. 37a para. 1 Salzburg Technical Building Act 2015 (cf. section 5.3.1.7) and Sec. 40a Burgenland Building Regulation 2008 (cf. section 5.3.1.9), according to which charge points and/or preparatory infrastructure are, as a matter of principle, to be installed when residential and non-residential buildings are newly built and renovated.

5.3.1.9 Burgenland

The Burgenland Building Regulation 2008 also includes a provision under which charge points and/or preparatory infrastructure are, as a matter of principle, to be installed when residential and non-residential buildings are newly built and renovated. Comparable provisions are to be found in the building legislation of Carinthia (cf. section 5.3.1.6), Salzburg (cf. section 5.3.1.7) and Upper Austria (cf. section 5.3.1.8).

5.3.2 Excursus: installation of charge points in Vienna

The installation of charge points on public land requires examination of the relevant provisions at provincial and municipal level. The legal sources that have to be taken into account when a charge point is installed on public land in Vienna are discussed below.

For the installation of built structures in public spaces, an application for the private utilisation of public space must be submitted to Municipal Department 28 (Road Management and Construction) in order to obtain a permit for the utilisation of the land pursuant to Sec. 1 Vienna Land Utilisation Levy Act.[42] Since no set tariffs are stipulated for

[40] Provincial Act of 5 May 1994 Promulgating a Building Code for Upper Austria (**"Upper Austrian Building Code 1994"**, "Oö. BauO 1994"), *Upper Austrian Provincial Law Gazette* (*LGBl.*) 66/1994 as most recently amended.

[41] Regulation of the Upper Austrian Provincial Government Promulgating Implementing Provisions to the Upper Austrian Structural Engineering Act 2013 and concerning Building Plans (**"Upper Austrian Structural Engineering Regulation 2013"**, "Oö. BauTV 2013"), *Upper Austrian Provincial Law Gazette* 36/2013 as most recently amended.

[42] Act on the Issue of Permits for the Utilisation of Municipal Public Land and the Collection of a Levy for Such Utilisation (**"Land Utilisation Levy Act 1966"**, "GAG"), *Vienna Provincial Law Gazette* 20/1966 as most recently amended.

charge points in the Vienna Land Utilisation Levy Act, when such an application is approved a contract is to be concluded between the installer of the charge point and the City of Vienna as the landowner pursuant to Sec. 1 para. 2 Vienna Land Utilisation Levy Act.

Additionally, pursuant to Sec. 82 para. 1 in conjunction with Sec. 94d indent 9 Highway Code 1960,[43] permission is to be obtained from Municipal Department 46 (Traffic Management and Organisation) for the installation of a charge point on a public highway (including its pavement). Permission is to be granted if this utilisation of the highway will not significantly affect the safety, ease and flow of traffic, and noise emissions in excess of customary levels are not to be expected.

It is not necessary for permission to be given under building law. Pursuant to Sec. 62a para. 1 indent 10 Vienna Building Code, charge points for electric vehicles on public land used for transport infrastructure do not require either permission or notification (cf. section 5.3.1.1).

5.4 Federal grant funding programmes for the installation of charge points

Measures of various kinds can be taken at the federal level to promote the roll-out of charging infrastructure in the e-mobility sector. These include the award of grants for the installation of EV charging infrastructure.

As far as can be ascertained, the Austrian Climate and Energy Fund is of particular relevance in this respect. Against this background, the issue is discussed in greater depth below. Sec. 1 Climate and Energy Fund Act (KLI.EN-FondsG) defines the fund's purpose as being to make contributions to the realisation of a sustainable energy supply (with energy efficiency being enhanced and renewable energy carriers' market share increased), the reduction of greenhouse gas emissions and support for the implementation of the government's climate strategy.

Essentially, it is possible to draw a distinction between grants for private and publicly accessible EV charging infrastructure. Given the present Sector Inquiry's focus on publicly accessible charging infrastructure, federal-level grants in this field are discussed below.

[43] Federal Act of 6 July 1960 Promulgating Provisions concerning the Highways Police (**"Highway Code 1960"**, "StVO. 1960"), *Austrian Federal Law Gazette* 159/1960 as most recently amended.

5.4.1 Qualifying criteria

In order to benefit from federal-level grant funding as publicly accessible EV charging infrastructure within the meaning of Sec. 3 para. 2 Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure, charge points have to satisfy several qualifying criteria. Permanently installed charge points are regarded as qualifying for grant funding. These may include charging poles and wallboxes.[44]

In addition, with regard to the features of the services provided, it is necessary, firstly, that public EV charging infrastructure offers non-discriminatory access.[45] This also means the charge point has to be capable of supporting roaming services and roaming fees have to be set for it.[46] These requirements may be satisfied *inter alia* by an "offer to all" on a roaming platform. A roaming contract is subsequently to be concluded with a roaming partner on fair terms within an appropriate period of time.[47] Furthermore, payment using common debit cards or credit cards (including contactless transactions) is to be permitted if possible.[48]

Secondly, a federal-level grant for publicly accessible EV charging infrastructure is predicated on the facilities being entered in the E-Control register pursuant to Sec. 3 para. 5 Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure.[49] Furthermore, the ad hoc price must be publicised at the charging facility or on the Internet.[50] In this connection, vehicle charging will have to be billed for by the kWh in future in the interests of clarity and transparency.[51]

[44] Austrian Climate and Energy Fund, *Leitfaden E-Mobilität für Betriebe, Gebietskörperschaften und Vereine*, p. 16 with further references, https://www.klimafonds.gv.at/wp-content/uploads/sites/16/Leitfaden_EMob_Gewerbe_2022.pdf.

[45] BMK, "E-Mobilitätsoffensive 2022", p. 8.

[46] BMK, "E-Mobilitätsoffensive 2022", p. 8

[47] BMK, "E-Mobilitätsoffensive 2022", p. 8

[48] BMK, "E-Mobilitätsoffensive 2022", p. 8

[49] Kommunalkredit Public Consulting, "Informationsblatt Förderungsaktion E-Ladeinfrastruktur", www.umweltfoerderung.at/fileadmin/user_upload/media/umweltfoerderung/Dokumente_Betriebe/Fahrzeuge_Mobilitaet_Verkehr/UFI_Pauschalen_Infoblatt_E-INFRA_PAU_Ergaenzung_Ladestellenverzeichnis.pdf.

[50] BMK, "E-Mobilitätsoffensive 2022", p. 8.

[51] BMK, "E-Mobilitätsoffensive 2022", p. 8.

As far as the time scale of the projects is concerned, the EV charging infrastructure must be kept in operation for four years.[52] Grant applications for 2022 can be submitted from February 2022 to March 2023, subject to the availability of budgetary funds.[53]

5.4.2 Value of grants

Each grant is calculated specifically in the form of a lump sum.[54] The power output made available is taken into account in these calculations. It is possible for grants to cover a maximum of 30% of the environmentally relevant (net) capital costs.[55]

5.4.3 Administration

The federal-level grants awarded for publicly accessible EV charging infrastructure are administered by Kommunalkredit Public Consulting GmbH.[56]

5.4.4 Other grant funding opportunities

For the sake of completeness, it may be noted there are further grant funding opportunities for public charging infrastructure at the federal level. The grants awarded by Austria Wirtschaftsservice Gesellschaft mbH (AWS) appear worthy of mention in this context in particular. AWS is the Austrian Federation's economic development bank.[57]

The precondition for a grant from AWS in this field is the installation of EV charging stations that solely supply power from renewable energy carriers.[58] Furthermore, pursuant to Sec. 3 para. 4 Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure, it must be possible to pay for a charging session at a publicly accessible charge point without a contract with the "charging station

[52] Austrian Climate and Energy Fund, *Leitfaden E-Mobilität für Betriebe, Gebietskörperschaften und Vereine*, p. 8.
[53] BMK, "E-Mobilitätsoffensive 2022", p. 1, https://www.bmk.gv.at/themen/mobilitaet/alternative_verkehrskonzepte/elektromobilitaet/foerderungen/e-mobilitaet2022.html.
[54] Austrian Climate and Energy Fund, *Leitfaden E-Mobilität für Betriebe, Gebietskörperschaften und Vereine*, p. 5 with further references.
[55] Austrian Climate and Energy Fund, *Leitfaden E-Mobilität für Betriebe, Gebietskörperschaften und Vereine*, p. 5.
[56] BMK, "E-Mobilitätsoffensive 2022", p. 14.
[57] Cf. https://www.aws.at/ueber-die-aws/ with further references.
[58] AWS, "aws Investitionsprämie: Fragenkatalog (FAQ)", https://www.aws.at/fileadmin/user_upload/Downloads/Sonstiges/FAQ_Investitionspraemie_v._29.09.2021_fachlich_abgenommen_Clean.pdf.

operator". Grants may be awarded for publicly accessible charging poles and wallboxes. Up to 14% of the costs may be covered by the grant.[59]

Finally, reference is to be made to the proposed European regulation (cf. section 5.1.2). Against the background of the need for national supporting actions of the kind stipulated in the proposed regulation, it is to be assumed suitable opportunities to obtain grants at the federal level will open up to a greater extent in future too.

5.4.5 Excursus: the scattergun approach versus targeted support

The scattergun approach to support measures involves the distribution of grants and/or subsidies in such a way that each recipient receives the same assistance without their specific circumstances being taken into account. The scattergun approach is a simplistic method of awarding/distributing financial resources that does not include any examination of need or urgency. It allows as many market participants as possible to benefit from the support, and favouritism is ruled out as far as possible. Furthermore, disbursing subsidies in this way allows the expense of the bureaucracy required to award grants, supervise projects and arrange collateral for them to be minimised and the support process automated as far as possible.

Generally, supporting measures reduce the costs the subsidised undertakings have to pay for external capital. The demand for market-based finance declines. In contrast to the scattergun approach, targeted support with screening mechanisms has the advantage that the urgency and importance of each individual case can be weighted during the process. This means only those projects and undertakings are awarded grants that really need them and have an affinity with the intended purpose of the subsidies. Furthermore, from an information theory perspective, support for specific undertakings can be regarded as sending out a signal to investors that investments in those particular undertakings have good prospects.

Should the screening stage be omitted and the grant award process be very largely automated, as is done under the scattergun approach, all market participants receive the same level of support, irrespective whether undertakings' operations are economically profitable or innovative. The signal screening-based support potentially sends out to commercial investors about individual undertakings is lost.

[59] AWS, "Anhang 1 Punkt 21", https://www.aws.at/fileadmin/user_upload/Downloads/Links-aws_Invest-Praemie/Anhang_1_Punkt_21_Link_EPKWv2.pdf.

Viewed macroeconomically, decisions about whether or not to follow the scattergun approach when support packages are being designed depend, on the one hand, on the *costs of screening* and, on the other, on the *proportion of undertakings with good prospects on the market.* Subsidies paid under the scattergun approach only increase welfare if there is a negligible proportion of undertakings with poor prospects on the market, in other words the costs of supporting undertakings that do not deserve to be supported are less than the total value of the benefits that accrue. At the same time subsidy schemes that involve screening undertakings/projects are only to be preferred when their administrative costs can be kept down. [60]

5.5 Comparative discussion of selected legal regimes

Selected legal regimes are compared below in order to gain some idea of the efforts being made and initiatives being taken across the EU concerned with e-mobility. This comparative discussion looks at Germany and the Netherlands. Apart from geographical and demographic aspects, it was crucial to the choice of these countries that both have taken on leading roles for the EU in the field of charging infrastructure.[61] Against this background, their main regulatory parameters are summarised below.

5.5.1 Germany

5.5.1.1 Starting position

The German Federal Government has committed to cut CO2 emissions in the transport sector 42 per cent by 2030 compared to 1990.[62] With this in mind, it has set the target that approximately seven to ten million electric vehicles are to be registered in Germany by

[60] Takalo, Tuomas and Tanayama, Tanja, *Adverse Selection and Financing of Innovation: Is There a Need for R&D Subsidies?* (12 September 2008), Bank of Finland Research Discussion Paper No. 19/2008, https://ssrn.com/abstract=1268314 or http://dx.doi.org/10.2139/ssrn.1268314.

[61] ACEA, "Risk of two-track Europe for e-mobility with sharp divisions in roll-out of chargers, auto industry warns", https://www.acea.auto/press-release/risk-of-two-track-europe-for-e-mobility-with-sharp-divisions-in-roll-out-of-chargers-auto-industry-warns/.

[62] German Federal Government, "1,000 rapid charging stations", https://www.bundesregierung.de/breg-en/service/archive/faq-rapid-charging-act-1916410.

2030.[63] Charging infrastructure is regarded as essential to the achievement of this target. In recent years there has been a double-digit percentage rise in the number of charge points in Germany.[64] Despite these endeavours, the absolute number of charge points cannot meet demand satisfactorily throughout the country at present.[65] Projections suggest more than 200,000 new charge points will be required in Germany's five most populous cities in 2025.[66] At the policy level, the target has been set of using funding programmes to ensure a million charge points are available in Germany by 2030.[67]

5.5.1.2 Main parameters

From a regulatory perspective, the main parameters in place bear the stamp of the requirements laid down in European law. Directive 2014/94/EU, Directive (EU) 2018/844 and Directive (EU) 2019/944 have the greatest practical significance for the national legal situation in Germany.[68]

The German Electric Mobility Act is therefore to be regarded as an essential piece of national legislation.[69] The act is intended to make it possible to implement measures that prioritise electric vehicles in road traffic.[70] Specifically, it seeks to do this by defining terms, providing for electric cars to be given preferential treatment in traffic on public highways and requiring the mandatory identification of electric vehicles.[71] Sec. 2 Electric Mobility Act accordingly regulates which electric vehicles qualify for funding. Pursuant to

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[63] *Mehr Fortschritt wagen: Koalitionsvertrag zwischen SPD, Bündnis 90/Die Grünen und FDP*, 2021; Horváth & Partner Management Consulting, *Faktencheck E-Mobilität Update 2020 – Status quo der E-Mobilität in Deutschland*, p. 4.

[64] Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 3; Horváth & Partner Management Consulting, *Faktencheck E-Mobilität Update 2020 – Status quo der E-Mobilität in Deutschland*, p. 5.

[65] Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 5.

[66] Horváth & Partner Management Consulting, *Faktencheck E-Mobilität Update 2020 – Status quo der E-Mobilität in Deutschland*, p. 5.

[67] German Federal Government, "Masterplan Ladeinfrastruktur: Ziele und Maßnahmen für den Ladeinfrastrukturaufbau bis 2030" (2019).

[68] Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure, OJ L307/1; Directive (EU) 2018/844 of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency, OJ L156/75; Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast), OJ L158/125; Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 13.

[69] Act on the Prioritisation of the Use of Electrically Powered Vehicles (**"Electric Mobility Act"**), *German Federal Law Gazette* (*BGBl.*) I (2015), p. 898.

[70] German Federal Ministry for Digital and Transport, *Leitfaden zum Elektromobilitätsgesetz* (2022), p. 6.

[71] Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 5.

Sec. 3(4)(1)–(4) Electric Mobility Act, the preferential treatment given to electric cars on public roads includes, for example, special parking entitlements, and exemptions from access restrictions and prohibitions on through traffic.

Another significant piece of fundamental legislation in Germany is the Charging Station Ordinance.[72] The core elements of the original version of the Charging Station Ordinance included harmonised technical standards and definitions of terms.[73] The German legislature tightened up the Charging Station Ordinance when it was revised in 2017.[74] In particular, the definitions of "charging station operator" and "occasional (re)charging" have been refined in the version that is now in force.[75] Accordingly, pursuant to Sec. 2(8) Charging Station Ordinance, a charging station operator is an entity that, subject to consideration of the legal, economic and actual circumstances, exercises decisive influence over the operation of a charge point. Pursuant to Sec. 2(9) Charging Station Ordinance, occasional recharging means the charging of an electric vehicle that is not delivered as a service under a contract with the user for the performance of a continuing obligation.

The Act on Tax Incentives for Electric Mobility in Road Transport is viewed as a further cornerstone of the German legal regime in the e-mobility sector.[76] The tax measures adopted essentially involve support for electric mobility in the road transport sector, temporary incentives to purchase electric vehicles, further funding for the roll-out of charging infrastructure and additional efforts to promote the public procurement of electric vehicles.[77]

Another of the statutory starting points for the deployment of charging infrastructures in Germany is the Energy Industry Act.[78] In particular, it includes provisions aimed at creating a secure legal environment for the roll-out of charging station infrastructure and

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[72] Ordinance on Minimum Technical Requirements concerning the Safe and Interoperable Deployment and Operation of Publicly Accessible Charging Points for Electrically Driven Vehicles ("**Charging Station Ordinance**"), *German Federal Law Gazette* I (2016), p. 457.

[73] Linnemann and Nagel*, Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 14.

[74] Cf. for instance Becker Büttner Held, "Die Ladesäulenverordnung II – mehr Spontanität in der Elektromobilität", https://www.bbh-blog.de/alle-themen/energie/die-ladesaeulenverordnung-ii-mehr-spontaneitaet-in-der-elektromobilitaet/.

[75] Linnemann and Nagel*, Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 14.

[76] Act on Tax Incentives for Electric Mobility in Road Transport.

[77] German Federal Ministry of Finance, "Gesetz zur steuerlichen Förderung von Elektromobilität im Straßenverkehr", https://www.bundesfinanzministerium.de/Content/DE/Gesetzestexte/Gesetze_Verordnungen/2016-11-16-G-stl-Foerderung-Elektromobilitaet.html.

[78] Act on the Supply of Electricity and Gas (**"Energy Industry Act"**), *German Federal Law Gazette* I (2005), p. 1970.

its connection to the energy supply grid.[79] Pursuant to Sec. 20 Energy Industry Act, for example, the operators of energy supply grids have to allow non-discriminatory access to their grids. It follows from Sec. 3 Energy Industry Act that charge point operators in Germany are not classified as energy companies (Sec. 3(18)) or suppliers (Sec. 3(15c)). Pursuant to Sec. 3(25) Energy Industry Act, they are end consumers because they provide energy, infrastructure, customer service and parking services, but there is no onward supply of power.[80]

The Metering Point Operation Act is one more relevant legal source.[81] It also contains significant provisions concerning charging infrastructure and, for instance, smart metering point operators. For example, Sec. 3(2)(1) of the act requires the energy drawn, consumed and fed-in at charging stations to be metered in conformity with metrology law. Furthermore, the same paragraph (Sec. 3(2)(4)) stipulates that transparency and non-discriminatory arrangements and administration are to be guaranteed.

Finally, the Rapid Charging Act is intended to lay the legal foundations for the universal roll-out of a fast charging network in Germany.[82] Its purpose is to bring about the provision of universal infrastructure for the fast charging of pure battery electric vehicles.[83] On this basis, provision is made for Europe-wide invitations to tender.[84] Pursuant to Sec. 4(1)(4) Rapid Charging Act, the objective of these invitations to tender is effective competition between the providers of fast charging infrastructure both during such tendering processes and subsequent to their conclusion. Two large tendering rounds have been carried out to date.[85]

[79] Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 14.
[80] Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 35.
[81] Act on Metering Point Operation and Data Communication in Smart Energy Networks (**"Metering Point Operation Act"**), *German Federal Law Gazette* I (2016), p. 2034.
[82] Act on the Provision of Universal Rapid Charging Infrastructure for Pure Battery Electric Vehicles (**"Rapid Charging Act"**), *German Federal Law Gazette* I (2021), p. 2141.
[83] German Federal Government, "1,000 rapid charging stations", https://www.bundesregierung.de/breg-en/service/archive/faq-rapid-charging-act-1916410.
[84] German Federal Government, "1,000 rapid charging stations", https://www.bundesregierung.de/breg-en/service/archive/faq-rapid-charging-act-1916410.
[85] electrive.net, "Zweite Deutschlandnetz-Ausschreibung gestartet", https://www.electrive.net/2021/12/20/zweite-deutschlandnetz-ausschreibung-gestartet/.

Apart from this, there are also private-sector initiatives launched by businesses in Germany that want the country to have the most universal and efficient charging infrastructure possible.[86]

Furthermore, there is another instrument to hand in the form of grants disbursed as bonus payments for the purchase of electric vehicles.[87] As a matter of principle, this support is available to both private individuals and enterprises.[88]

5.5.1.3 Prospects

Fundamentally, electric mobility is regarded as a highly complex topic from a regulatory point of view in Germany.[89] In this context, for instance, mention is made of the precise nature of the billing arrangements that are in place and a lack of (overarching) standardisation.[90] Furthermore, the roles and interaction of different market participants are seen as posing further challenges for the operation of (universal) charging infrastructure in Germany.[91]

It is regarded as necessary for the charging infrastructure to be capable of keeping pace with the numbers of electric vehicles that are to be expected in Germany. An appropriate mix is envisaged for this purpose. This mix will be divided between public, semi-public (e.g. parking facilities at shops etc) and private charge points (above all wallboxes).[92] The overwhelming majority of the charge points in Germany are accordingly to be privately operated.[93]

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[86] Cf. for instance https://ionity.eu/de.

[87] Act on Tax Incentives for Electric Mobility in Road Transport, *German Federal Law Gazette* I (2016), p. 2498; Board of Academic Advisers to the German Federal Minister of Transport, Building and Urban Affairs, "Herausforderungen bei der Entwicklung der Elektromobilität in Deutschland", p. 1.

[88] Horváth & Partner Management Consulting, *Faktencheck E-Mobilität Update 2020 – Status quo der E-Mobilität in Deutschland*, p. 8.

[89] Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. 99.

[90] Board of Academic Advisers to the German Federal Minister of Transport, Building and Urban Affairs, "Herausforderungen bei der Entwicklung der Elektromobilität in Deutschland", p. 4; Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), pp. 99ff.

[91] Linnemann and Nagel, *Elektromobilität und die Rolle der Energiewirtschaft* (2020), p. V.

[92] Helbig, *Elektromobilität – die freie Wahl des Stromlieferanten an der Ladesäule für Elektrofahrzeuge* (2015), pp. 67ff.; Horváth & Partner Management Consulting, *Faktencheck E-Mobilität Update 2020 – Status quo der E-Mobilität in Deutschland*, p. 5.

[93] Helbig, *Elektromobilität – die freie Wahl des Stromlieferanten an der Ladesäule für Elektrofahrzeuge* (2015), pp. 67ff.; Horváth & Partner Management Consulting, *Faktencheck E-Mobilität Update 2020 – Status quo der E-Mobilität in Deutschland*, p. 5.

5.5.2 The Netherlands

5.5.2.1 Starting position

It should be noted at the outset that the Netherlands occupy something of an exceptional position in the e-mobility sector.[94] This is true, firstly, of the peculiarities of the country's geography and population. For instance, the highest natural elevation in the European part of the Netherlands is approximately 300 metres above sea level. Furthermore, the Netherlands are very densely populated, which helps to explain why the majority of the population regularly drives no more than 100 kilometres a day.[95]

Dutch policymakers have been focussing more strongly on electromobility since 2009.[96] It was set as a target that up to 20,000 electric vehicles were to be travelling on Dutch roads by 2015. This target was actually exceeded, with more than 70,000 electric vehicles registered that year.[97] A total of 200,000 electric vehicles were to be registered by 2020, and a million by 2025.[98] This was to be accompanied by the creation of a nationwide network of charging infrastructure.[99] The Amsterdam Metropolitan Area already has over 1,200 publicly available charge points today,[100] and there are more than 260,000 charge points in the Netherlands overall.[101] The country is pursuing what is known as the "charging pyramid approach", under which market participants are expected to rely on less expensive solutions (such as "open" private or semi-public charge points on company sites etc).[102] The emphasis is placed on private investment, with incentives being set by the public sector (e.g. temporarily reduced taxes on energy for particular forms of

[94] Klerk, *E-mobility in The Netherlands – a general overview*, p. 14.

[95] "Development of e-mobility in the Netherlands at a glance", p. 8.

[96] Helmus et al, "Assessment of public charging infrastructure push and pull rollout strategies: The case of the Netherlands", p. 37.

[97] *We are the Netherlands, your partner in E-mobility!*, p. 9.

[98] Amsterdam University of Applied Sciences, *E-mobility: getting smart with data*, p 28.

[99] "Development of e-mobility in the Netherlands at a glance", p. 2.

[100] "Development of e-mobility in the Netherlands at a glance", p 12; *We are the Netherlands, your partner in E-mobility!*, p. 20.

[101] Agence France-Presse, "Netherlands has the largest number of EV charging stations in Europe", https://www.dailysabah.com/life/environment/netherlands-has-the-largest-number-of-ev-charging-stations-in-europe; ACEA, "Risk of two-track Europe for e-mobility with sharp divisions in roll-out of chargers, auto industry warns", https://www.acea.auto/press-release/risk-of-two-track-europe-for-e-mobility-with-sharp-divisions-in-roll-out-of-chargers-auto-industry-warns/.

[102] *We are the Netherlands, your partner in E-mobility!*, p. 23.

charging infrastructure).[103] In absolute numbers, by far the greater part of the charging infrastructure is consequently privately operated.[104]

In summary, these measures are intended to help the Netherlands achieve CO2 neutrality as far as new sales of vehicles are concerned by 2035. The Dutch government's overarching goal is to reduce CO2 emissions a total of 60% by 2050 in comparison to 1990.[105]

5.5.2.2 Main parameters

As in the case of Germany, the legal parameters in the Netherlands have also been shaped to a massive degree by the European legislation discussed in section 5.1 above.[106] Directive 2014/94/EU and Directive (EU) 2018/844 appear to be of particular significance there. At the national level, furthermore, the Green Deal on Electric Transport 2016–2020 and the Climate Agreement are deserving of mention, being viewed as catalysts and foundations for action.[107]

One unique facet of the situation in the Netherlands may be seen in the fact that the main parameters appear so multifaceted and diversified. In particular, the integration of the various market participants and levels in the electromobility sector is a priority. In this context, mention should be made, for example, of the Formula E-Team. This is a national platform for e-mobility in the Netherlands that consists of representatives from business, academia and the government, and is tasked with advancing e-mobility across the country.[108] One of its achievements has been the coordination of an interoperability agreement. Specifically, this involved the national recognition of charge cards and possible ways of overcoming legal obstacles to the development of charging

[103] Dijk et al, "Forks in the Road to E-Mobility: An Evaluation of Instrument Interaction in National Policy Mixes in Northwest Europe", p 15; Suresh, "Strengthening the charging infrastructure for promoting E-mobility in the Netherlands", pp. 17, 35.

[104] Agence France-Presse, "Netherlands has the largest number of EV charging stations in Europe", https://www.dailysabah.com/life/environment/netherlands-has-the-largest-number-of-ev-charging-stations-in-europe.

[105] "Development of e-mobility in the Netherlands at a glance", p. 2.

[106] Dijk et al, "Forks in the Road to E-Mobility: An Evaluation of Instrument Interaction in National Policy Mixes in Northwest Europe", p. 3.

[107] IEA, "Green Deal on Electric Transport 2016–2020 (Green Deal 198)", https://www.iea.org/policies/3009-green-deal-on-electric-transport-2016-2020-green-deal-198; "Climate Agreement", https://www.government.nl/documents/reports/2019/06/28/climate-agreement.

[108] Nederland elektrisch, "Formula E-Team", https://nederlandelektrisch.nl/formula-e-team.

infrastructure.[109] Apart from this, there are also plenty of other initiatives in the sector, such as those taken by the Netherlands Enterprise Agency (*Rijksdienst voor Ondernemend Nederland*), the E-laad Foundation and the National Knowledge Platform for Charging Infrastructure.[110]

The regulatory parameters created by European and national action have encouraged cooperation at various levels of the e-mobility sector in several regions of the Netherlands. Examples can, for example, be found in the Amsterdam, Rotterdam and Utrecht regions.[111] In this context, financial incentives have also been made available to provide support. The specific arrangements put in place will depend on how the market develops.[112]

5.5.2.3 Prospects

This mix of various measures has resulted in the Netherlands currently possessing a nationwide network of (fast) charging infrastructure.[113] Against the background of these dynamic developments, however, there are also challenges for the e-mobility sector in the Netherlands. According to some calculations, approximately 1.9 million electric vehicles will have to be on the country's roads by 2030 if it is to meet the policy targets that have been adopted. These calculations suggest the Netherlands' charging infrastructure will need to deliver 7,000 gigawatt hours of power, for which 1.7 million charge points will be required. At least 550 charge points will consequently have to be installed every day from 2025 on.[114]

[109] Dijk et al, "Forks in the Road to E-Mobility: An Evaluation of Instrument Interaction in National Policy Mixes in Northwest Europe", p. 9.

[110] Suresh, "Strengthening the charging infrastructure for promoting E-mobility in the Netherlands", p. 17.

[111] Suresh, "Strengthening the charging infrastructure for promoting E-mobility in the Netherlands", p. 37.

[112] Suresh, "Strengthening the charging infrastructure for promoting E-mobility in the Netherlands", p. 37; "Everything You Need To Know About EV Incentives In The Netherlands", https://blog.wallbox.com/en/netherlands-ev-incentives/.

[113] Suresh, "Strengthening the charging infrastructure for promoting E-mobility in the Netherlands", p. 45.

[114] Suresh, "Strengthening the charging infrastructure for promoting E-mobility in the Netherlands", p. 8.

6 Market conditions from a competition perspective

6.1 Functioning of the market

Neither Vienna Higher Regional Court as the Cartel Court nor the Austrian Supreme Court of Justice as the Supreme Cartel Court have concerned themselves with publicly accessible recharging stations to date. The definition of this dynamically developing market will have to be examined specifically on a case-by-case basis. Further to this, the AFCA wishes to elucidate how the market functions, but will not put forward its own product-based or geographical definition. Previous publications from other competition authorities and the German Monopolies Commission, as well as the practice of the European Commission have been drawn on as points of reference for the analysis. In particular, the progress report on the ongoing sector inquiry into infrastructure for charging stations published in October 2021 by the German Federal Cartel Office (BKartA) is to be highlighted in this respect.

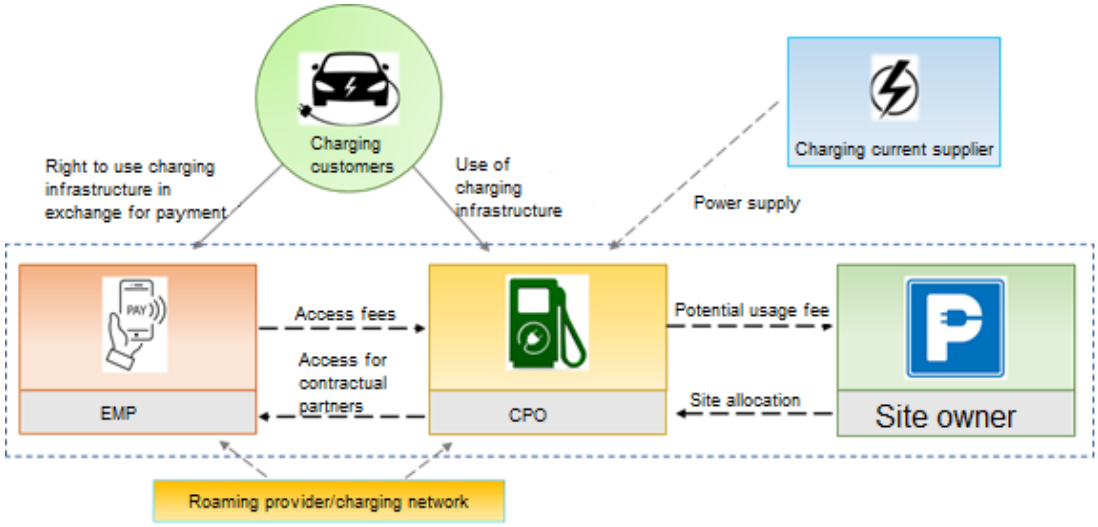
Product market

The German Federal Cartel Office concludes in the preliminary results of its sector inquiry that there are separate markets for publicly accessible charge points and privately accessible charge points. Privately accessible charge points are found, for example, on enclosed company premises and as “wallboxes” or domestic power sockets in consumers’ own garages. Figure 15 shows the German Federal Cartel Office’s interpretation of how the market for publicly accessible charge points functions. Three separate market levels are distinguished:[115]

(i) the provision of suitable sites for the installation of publicly accessible charging infrastructure;
(ii) the operation of publicly accessible charging infrastructure (CPO level); and
(iii) The marketing of charging current and/or provision of mobility services to end customers (EMP level).

[115] It may be noted that undertakings are frequently active at both the CPO level and the EMP level, and may own their own sites as well.

Figure 15: Overview of the market for publicly accessible charge points



Source: German Federal Cartel Office (translated).

Charge point operators (CPOs) are frequently the owners of charge points as well and therefore responsible for decisions about investing in them, but in some cases they only rent charge points. It is incumbent upon the CPO to install and maintain the charge points it operates. It also usually procures the power for its charge points, concluding contracts with power suppliers for this purpose. Regional energy suppliers often act themselves as CPOs. Drivers of electric cars who wish to recharge their vehicles on an ad hoc basis – that is, without using a mobility service provider that acts as an intermediary – conclude a contract with the CPO for this purpose at the charge point. Payment is not necessarily made electronically for ad hoc charging, but this is typically the case. The price for charging a vehicle can usually be set freely by the CPO when ad hoc charging is offered.[116]

Only a small fraction of charging sessions are paid for on an ad hoc basis. Rather, it is customary for an intermediary level between the CPOs and the charging customers, what is known as an electromobility provider or e-mobility provider (EMP), to facilitate the process. An EMP offers charging customers contracts that give them access to charge points using authorisation systems, in particular smartphone apps and “charge cards”. In practice, the use of a charge point with an EMP’s charge card is the most-widespread and best-established method of charging an electric vehicle. CPOs are frequently active as EMPs themselves too. [117]

Some EMPs restrict access to the holders of their own charge cards, while others attempt to allow access to the largest possible number of charge points operated by various CPOs.

[116] German Monopolies Commission, *7. Sektorgutachten Energie: Wettbewerb mit neuer Energie*, para. 146.
[117] German Monopolies Commission, *7. Sektorgutachten Energie: Wettbewerb mit neuer Energie*, para. 148.

This is done by roaming services, which involve EMPs (who are frequently CPOs as well) concluding contracts with CPOs that make it possible for their charge points to be used with the EMPs' charge cards as well. Such contracts are usually concluded on roaming platforms, either by the acceptance of a public offer or by bilateral agreement. The charging current used by the customer is then billed at a previously agreed charging tariff. This means a range of charging tariffs may be payable at one and the same charge point, partly due to ad hoc charging and the variety of charge cards, but partly because the individual charge cards accepted may offer a range of different charging tariffs as well.

Following its preliminary analysis, the German Federal Cartel Office gives consideration to a further subdivision of the market at the CPO level based on power output or the location of the charging infrastructure:[118]

(a) power output: for example, <22 kW, 22–100 kW, 100–150 kW, 150–300 kW and >300 kW); or
(b) charge point location: for example, on-motorway or off-motorway.

This view corresponds with earlier decisions handed down by the European Commission,[119] which found a separation between e-mobility services and the manufacture, supply and installation of charging infrastructure. In more recent decisions, the European Commission has also given consideration to distinctions based on regular (≤22 kW), fast (>22–100 kW) and ultra-fast (≥150 kW) charging speeds, as well as charge point locations.

Having conducted its preliminary assessment, the German Federal Cartel Office sees two different relevant product markets at the EMP level: (1.) the market for the provision of charging current to end customers ("charging current market") and (2.) the market for the provision of a network of charging facilities by issuers of EV charge cards ("EMP market"). CPOs that offer ad hoc charging and EMPs that offer charge cards are meeting the same demand from users of electric vehicles and, to this extent, are essentially competing against one another on the charging current market, although the alternative providers who actually came into question in the specific case would appear to be relevant. The German Federal Cartel Office believes it is likely the charging current market is subdivided into submarkets based on output classes or types of location. On the EMP market, which is quite distinct from the charging current market, the providers of EV charge cards are competing with one another to meet end customers' crucial need: the availability of a network of

[118] German Federal Cartel Office, "Sektoruntersuchung zur Bereitstellung und Vermarktung öffentlich zugänglicher Ladeinfrastruktur für Elektrofahrzeuge: Sachstandsbericht" (October 2021), paras. 45–49.
[119] European Commission, M.6641 – Verbund/Siemens/E-Mobility Provider Austria; European Commission, M.8870 – E.ON/Innogy

charging facilities that can be accessed using charge cards on the terms agreed with the EMPs. The German Federal Cartel Office currently does not have sufficient information to subdivide the EMP market into submarkets based on output classes or types of location. It is therefore possible that there is a single EMP market. [120] A distinction between the services provided to private and business customers would also have to be examined.

Some EMPs contract roaming providers to roll out and operate the networks of charging facilities they offer to end customers on particular terms. Roaming providers are active in facilitating business relationships between CPOs and EMPs. [121]

Geographical market

In the preliminary results of its sector inquiry, the German Federal Cartel Office concludes that the geographical market at the CPO level is regional or local, depending among other things on power output, but certainly smaller than national.[122] This opinion corresponds with the recent decisions handed down by the European Commission, in which it has considered narrower, local definitions as well. The European Commission has also given consideration to a potentially national dimension for publicly accessible charge points on motorways.[123]

Geographically, the German Federal Cartel Office expects the various distinct charging current markets to be defined regionally or locally. It believes it would not be expedient to follow purely administrative territorial boundaries such as those of the German counties. What are significant for the geographical definition of the EMP market are the real alternative options electric car drivers have to satisfy their demand for charging facilities using an EMP charge card. In this respect, account is to be taken of what is known as "multihoming", which involves drivers using the services of several EMPs in parallel. The German Federal Cartel Office has not yet reached a conclusion either on whether the EMP market is regional or national in Germany, since the EMPs' business models are still developing dynamically in the current ramping-up phase. [124]

[120] German Federal Cartel Office, "Sektoruntersuchung zur Bereitstellung und Vermarktung öffentlich zugänglicher Ladeinfrastruktur für Elektrofahrzeuge: Sachstandsbericht" (October 2021), paras. 54–61.
[121] German Federal Cartel Office, "Sektoruntersuchung zur Bereitstellung und Vermarktung öffentlich zugänglicher Ladeinfrastruktur für Elektrofahrzeuge: Sachstandsbericht" (October 2021), para. 62.
[122] German Federal Cartel Office, "Sektoruntersuchung zur Bereitstellung und Vermarktung öffentlich zugänglicher Ladeinfrastruktur für Elektrofahrzeuge: Sachstandsbericht" (October 2021), paras. 50–53.
[123] European Commission, M.8870 – E.ON/Innogy, paras. 199–203.
[124] German Federal Cartel Office, "Sektoruntersuchung zur Bereitstellung und Vermarktung öffentlich zugänglicher Ladeinfrastruktur für Elektrofahrzeuge: Sachstandsbericht" (October 2021), paras. 63–67.

6.2 Principal market participants

6.2.1 Roaming platform

Roaming platform providers communicate the offers made by different CPOs and EMPs when recharging points are used. A roaming network usually allows both individual billing arrangements to be put in place between two roaming partners, and also open offers to be made to multiple interested parties. In this way, roaming platforms ensure the charging networks linked with them are connected to one another for billing purposes. CPOs and EMPs typically join at least one roaming platform. The undertakings listed in section 6.2.2 below all use the Hubject clearing platform.

Hubject GmbH

Hubject GmbH was founded in 2012 by leading companies in the energy, technology and automotive industries. Hubject GmbH's shareholders are the BMW Group, Bosch, Daimler, EnBW, innogy, Siemens and the Volkswagen Group. With its roaming platform, Hubject connects charge point operators and providers of charging current in real time, enabling electric car drivers to access charging infrastructure. Hubject does not operate any charge points itself, but makes the exchange of data possible in the background via its intercharge network. More than 280 undertakings use the platform all over the world, including manufacturers of electric vehicles, energy suppliers, mobility service providers and telecommunications companies.

If a CPO joins the intercharge network, Hubject's standard contract provides for it to make an "offer to all". This offer must set out its roaming prices and terms for roaming partners. An offer to all does not have to be accepted by other providers. See section 7.2 for a discussion of the problems raised by access fees in offers to all. It is also possible for bilateral contracts to be concluded.

6.2.2 Charge point operators (CPOs)

This section presents the largest public and private charge point operators in Austria. The public providers listed (Wien Energie, EVN, SMATRICS, illwerke, Salzburg AG, Energie Steiermark, Energie AG, TIWAG, Burgenland Energie, LINZ AG and Kelag) operate 67% of the charge points in E-Control's charge point registry. The descriptions given below also illustrate the strong cross-ownership links characteristic of the Austrian energy

industry.[125] The private providers listed (has.to.be, da emobil, the ÖAMTC, ELLA, MOON POWER, bestinparking and IONITY) operate 23% of the charge points in the charge point registry. The operators discussed below are therefore responsible for 90% of all publicly accessible charge points in Austria. All the undertakings mentioned cooperate with the Hubject clearing platform. The remaining 10% of Austria's charge points are divided between a large number of smaller public and private providers. The data cited from the charge point registry reflect the situation on 12 April 2022.

It is not compulsory to complete all the data fields for the charge point registry, such as the charge point's power output (in kW). The information given on this aspect below is therefore to be understood as indicating the minimum level of provision available. Discrepancies may also be noticed between the number of charge points in the charge point registry and the number of charge points reported in the market survey, as for instance in the case of has.to.be. This is attributable to the fact that the data are not always submitted to the register by the CPOs that actually operate the charge points.

[125] Cf. AFCA, "Freigabe des Zusammenschlusses Wiener Stadtwerke GmbH / EVN AG: Fallbericht zu BWB Z-4931", table 1: "Direkte und indirekte Anteile der Wiener Stadtwerke inkl Wien Energie".

6.2.2.1 Largest public providers

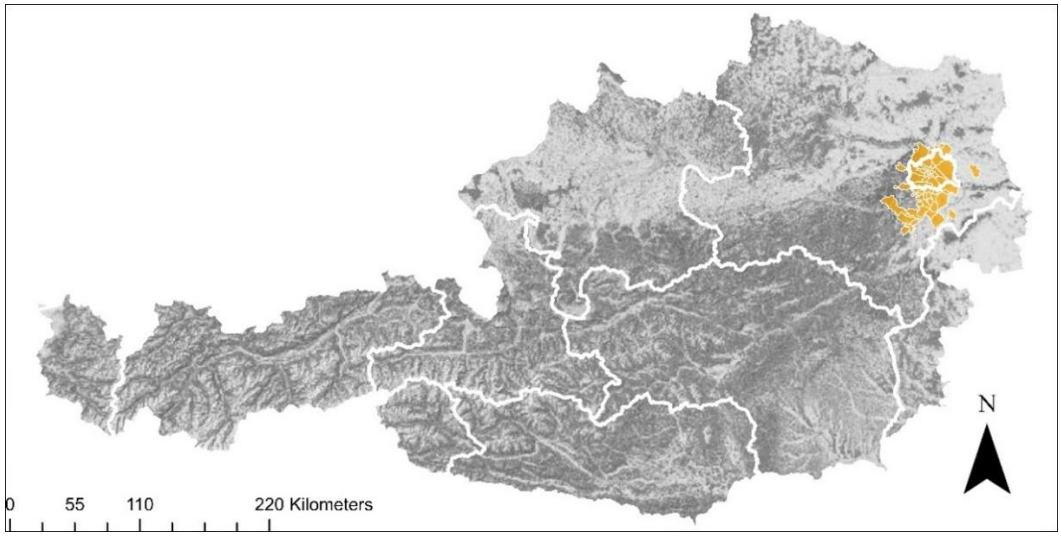
Wien Energie GmbH

Wien Energie GmbH (Wien Energie) is a regional energy supplier based in the Austrian capital, Vienna. It is a subsidiary of Wiener Stadtwerke GmbH and therefore owned by the City of Vienna.

According to the market survey, Wien Energie is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider, owner of charging infrastructure and roaming. Wien Energie cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

Wien Energie lists 2,056 charge points in the charge point registry. These are overwhelmingly located in Vienna (86%). The remaining 14% are located in Lower Austria. Of Wien Energie's charge points, 4% are fast charge points with ≥22 kW output. None of them are ultra-fast (≥150 kW). No information is available about the power output of 33% of the charge points. Figure 16 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 16: Municipalities with Wien Energie charge points



Source: E-Control charge point registry.

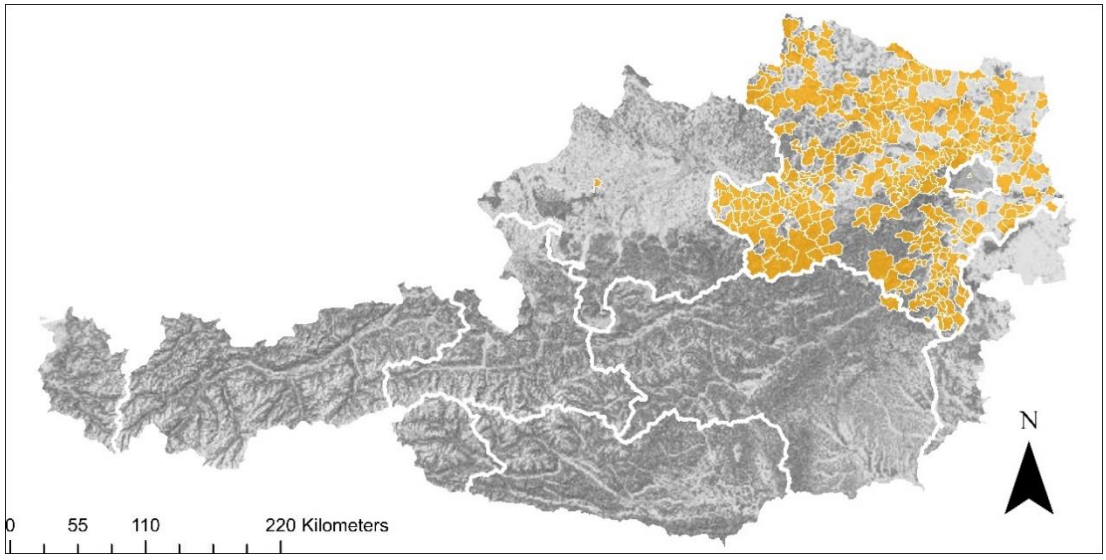
EVN AG

EVN AG (EVN) is a regional energy supplier based in Maria Enzersdorf, Lower Austria. The majority of the company's share capital (51%) belongs to the Province of Lower Austria through NÖ Landes-Beteiligungsholding GmbH. The other shares are held by Wiener Stadtwerke (28.4%) or in free float, including employee shares (19.7%), or are treasury shares (0.9%).

According to the market survey, EVN is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider, owner of charging infrastructure and roaming. EVN cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

EVN lists 1,845 charge points in the charge point registry. These are overwhelmingly located in Lower Austria (98%). The remaining 2% are located in Burgenland, Vienna and Upper Austria. Of EVN's charge points, 29% are fast charge points with ≥22 kW output, of which 3% are ultra-fast (≥150 kW). No information is available about the power output of 1% of the charge points. Figure 17 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 17: Municipalities with EVN charge points



Source: E-Control charge point registry.

SMATRICS GmbH und Co KG

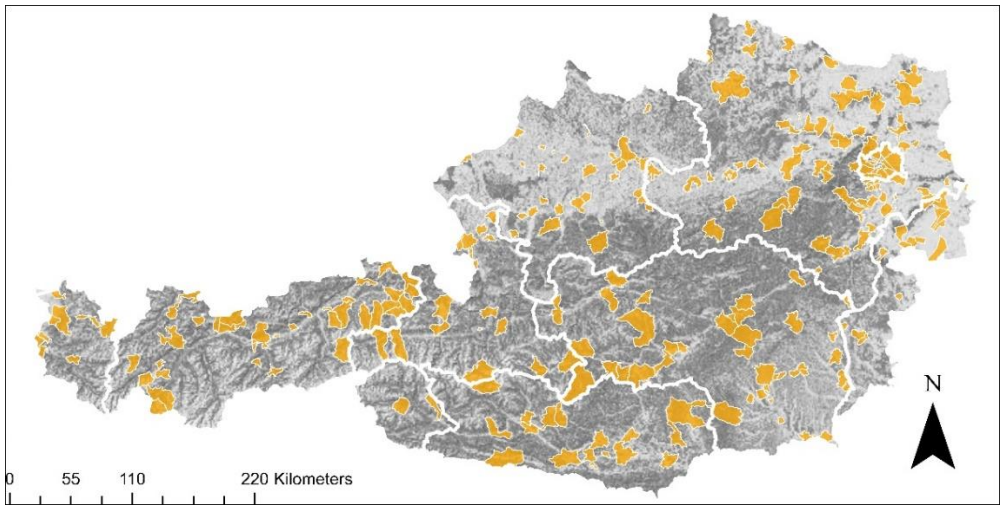
SMATRICS GmbH und Co KG (SMATRICS) is a joint venture that has been registered since 2012 and was originally owned in equal parts by Siemens Austria and Verbund AG. During the period from 2015 to 2017 Verbund increased its holding to 86%. OMV invested in SMATRICS in 2017. In 2021 both Siemens and OMV sold their stakes in the joint venture. The German company Energie Baden-Württemberg (EnBW) became a shareholder in 2022 – EnBW is the third-largest energy supplier in Germany and is almost entirely publicly owned. The majority of SMATRICS's shares (74.9%) are currently held by the partly state-owned Verbund AG and 25.1% by EnBW.

According to the market survey, SMATRICS is active at the following levels: charge point operator, e-mobility provider, owner of charging infrastructure and roaming. SMATRICS cooperates with Hubject, as well as other clearing platforms. The company installs EV charging infrastructure for itself and for customers.

SMATRICS lists 1,152 charge points in the charge point registry. These are spread across the whole of Austria. The three provinces with the most charge points are Lower Austria (25.9%), Styria (15.9%) and Vienna (13.1%). Of SMATRICS's charge points, 72% are fast charge points with ≥22 kW power output, of which 12% are ultra-fast (≥150 kW). No information is available about the power output of 1% of the charge points.

Figure 18 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 18: Municipalities with SMATRICS charge points



Source: E-Control charge point registry.

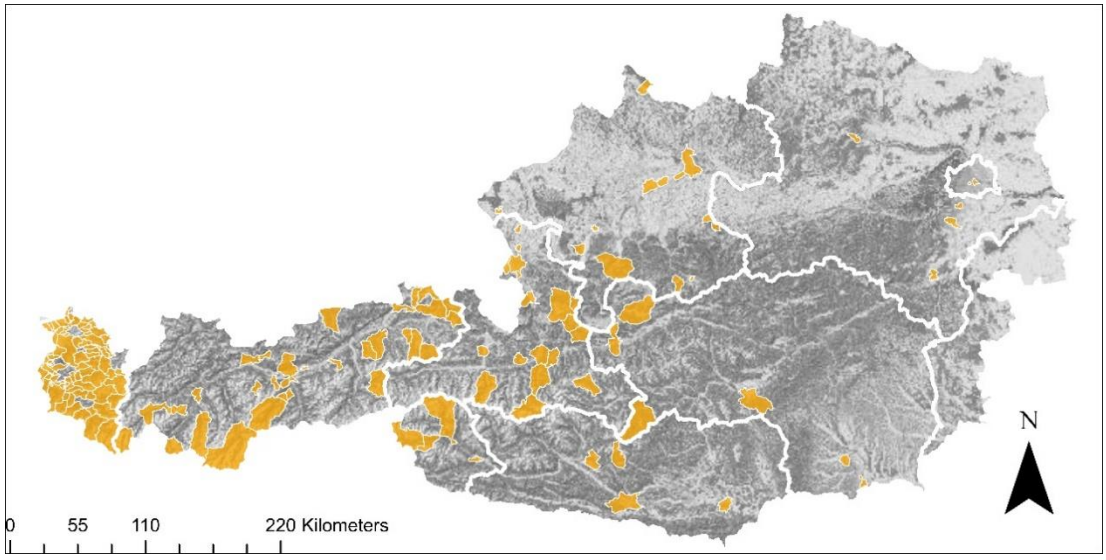
illwerke vkw AG (formerly Vorarlberger Kraftwerke AG)

illwerke vkw AG (illwerke) was formed in 2019 as a result of the merger between two companies that were both majority owned by the Province of Vorarlberg, Vorarlberger Kraftwerke and Vorarlberger illwerke. It is a regional energy supplier based in Vorarlberg's provincial capital, Bregenz. The Province of Vorarlberg directly holds 95.5% of the shares in the newly founded combined stock corporation formed out of the two largest energy suppliers in Vorarlberg, as well as another 4.5% that are held indirectly.

According to the market survey, illwerke is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider, owner of charging infrastructure and roaming. illwerke cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

illwerke lists 845 charge points in the charge point registry. These are overwhelmingly located in Vorarlberg (77%). Another 13% are located in Tyrol, 4% in Salzburg and 3% in Upper Austria. The remaining 3% are spread around the rest of Austria. Of illwerke's charge points, 95% are fast charge points with ≥22 kW output, 2% of which are ultra-fast (≥150 kW). Figure 19 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 19: Municipalities with illwerke charge points



Source: E-Control charge point registry.

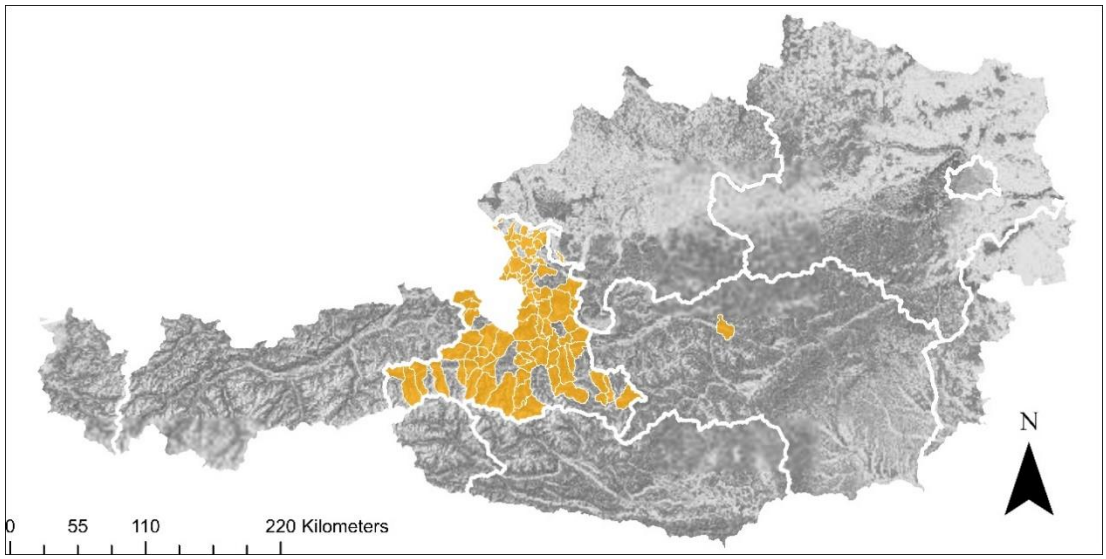
Salzburg AG für Energie, Verkehr und Telekommunikation

Salzburg AG for Energie, Verkehr und Telekommunikation (Salzburg AG) is a regional energy supplier based in Salzburg's provincial capital, Salzburg. Ownership of the company is shared between the Province of Salzburg (42.56%), the City of Salzburg (31.31%) and, indirectly, Energie AG Oberösterreich (26.13%).

According to the market survey, Salzburg AG is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, owner of charging infrastructure and roaming. Salzburg AG cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

Salzburg AG lists 700 charge points in the charge point registry. 98% of them are located in Salzburg. The remaining 2% are located in Upper Austria. Of Salzburg AG's charge points, 75% are fast charge points with ≥22 kW output, of which 8% are ultra-fast (≥150 kW). No information is available about the power output of 0.4% of the charge points. Figure 20 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 20: Municipalities with Salzburg AG charge points



Source: E-Control charge point registry.

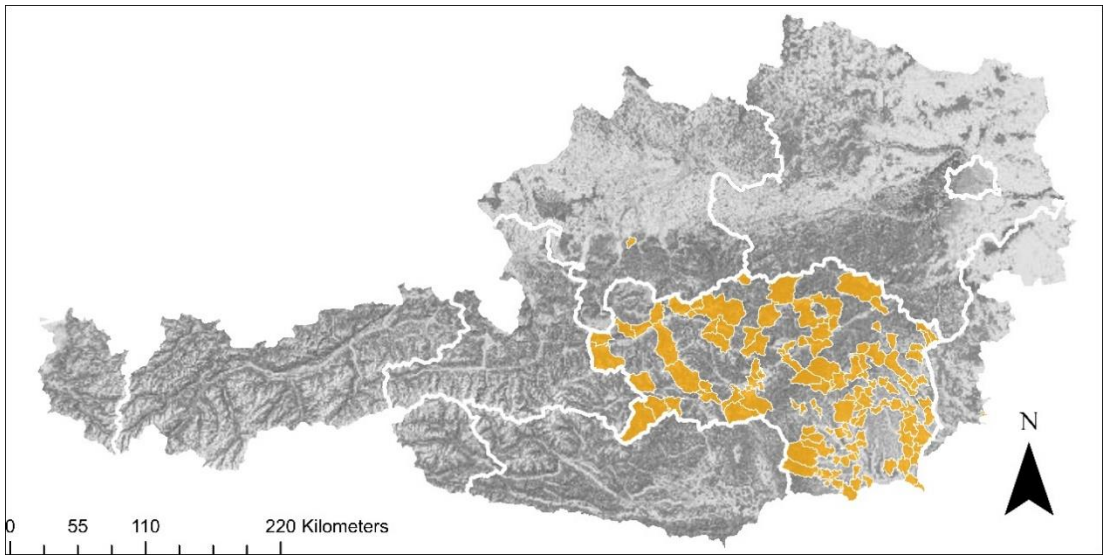
Energie Steiermark AG

Energie Steiermark AG (Energie Steiermark) is a regional energy supplier based in Graz, Styria. The majority of its shares (75% less 150 shares) are held by the Province of Styria. The remaining shares are held by the Australian financial group Macquarie.

According to the market survey, Energie Steiermark is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider and owner of charging infrastructure. Energie Steiermark cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

Energie Steiermark lists 510 charge points in the charge point registry. 99% of them are located in Styria. The remaining 1% are located in Burgenland and Upper Austria. Of Energie Steiermark AG's charge points, 69% are fast charge points with ≥22 kW output, of which 1% are ultra-fast (≥150 kW). No information is available about the power output of 22% of the charge points. Figure 21 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 21: Municipalities with Energie Steiermark charge points



Source: E-Control charge point registry.

Kilometres

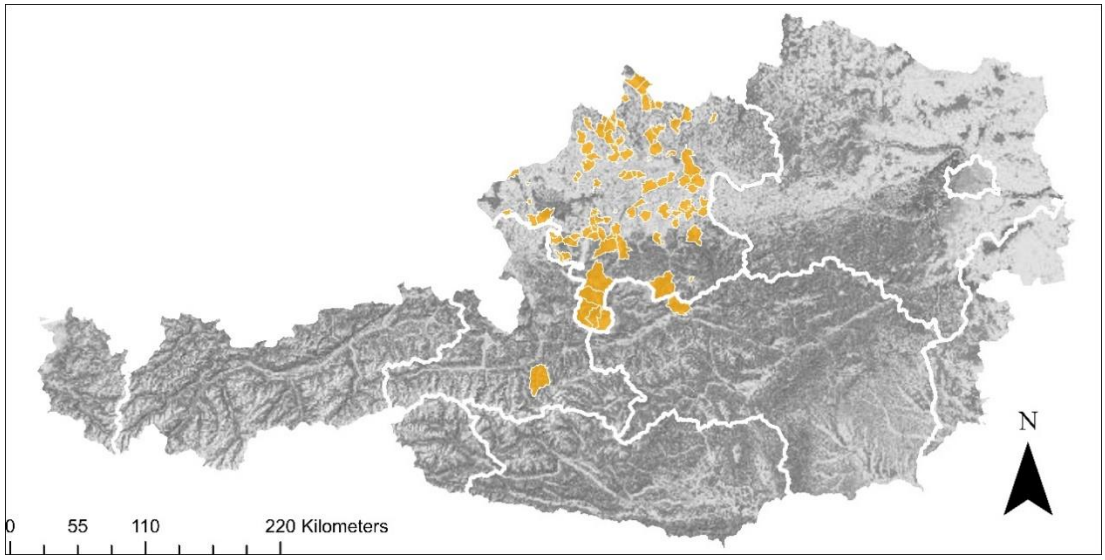
Energie AG Oberösterreich

Energie AG Oberösterreich (Energie AG) is a regional energy supplier based at Linz, Upper Austria. It is owned by a group of core shareholders from Upper Austria, including banks, insurance companies and some of the province's leading businesses, as well as employees and strategic partners. The majority of its shares (52.71%) are held by OÖ Landesholding GmbH and therefore the Province of Upper Austria.

According to the market survey, Energie AG is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider, owner of charging infrastructure and roaming. Energie AG cooperates with Hubject, as well as other clearing platforms. The company installs EV charging infrastructure for itself and for customers.

Energie AG lists 482 charge points in the charge point registry. 98% of them are located in Upper Austria. The remaining 2% are located in Styria and Salzburg. Of Energie AG's charge points, 38% are fast charge points with ≥22 kW output, of which 1% are ultra-fast (≥150 kW). No information is available about the power output of 3% of the charge points. Figure 22 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 22: Municipalities with Energie AG charge points



Source: E-Control charge point registry.

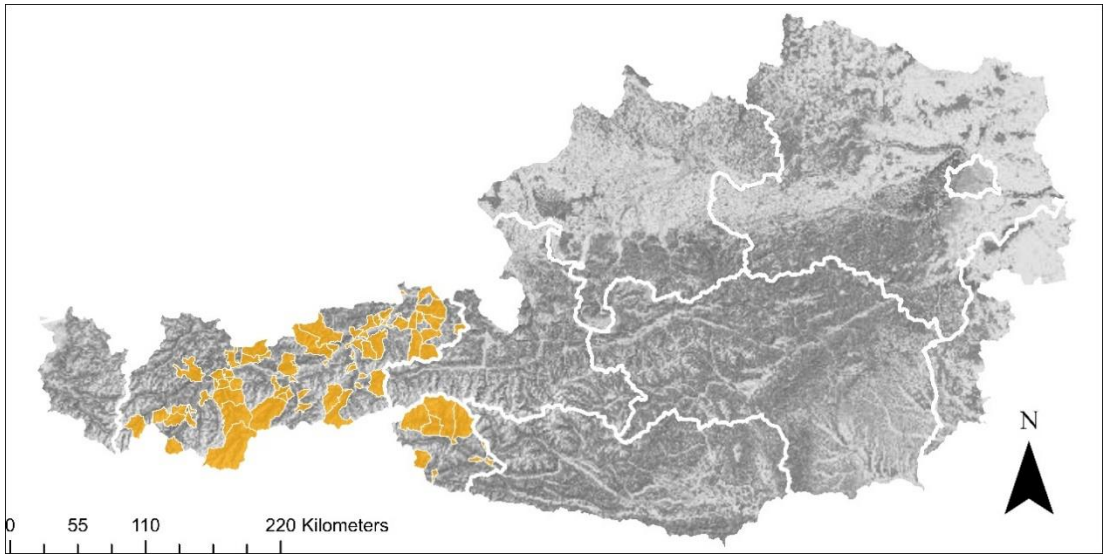
TIWAG-Tiroler Wasserkraft AG

TIWAG-Tiroler Wasserkraft AG (TIWAG) is a regional energy supplier based in Tyrol's provincial capital, Innsbruck. Its sole shareholder is the Province of Tyrol.

According to the market survey, TIWAG is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider, owner of charging infrastructure and roaming. TIWAG cooperates with Hubject, as well as other clearing platforms. The company installs EV charging infrastructure for itself and for customers.

TIWAG lists 471 charge points in the charge point registry. 98% of them are located in Tyrol. Of TIWAG's charge points, 69% are fast charge points with ≥22 kW output, of which 2% are ultra-fast (≥150 kW). No information is available about the power output of 0.4% of the charge points. Figure 23 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 23: Municipalities with TIWAG charge points



Source: E-Control charge point registry.

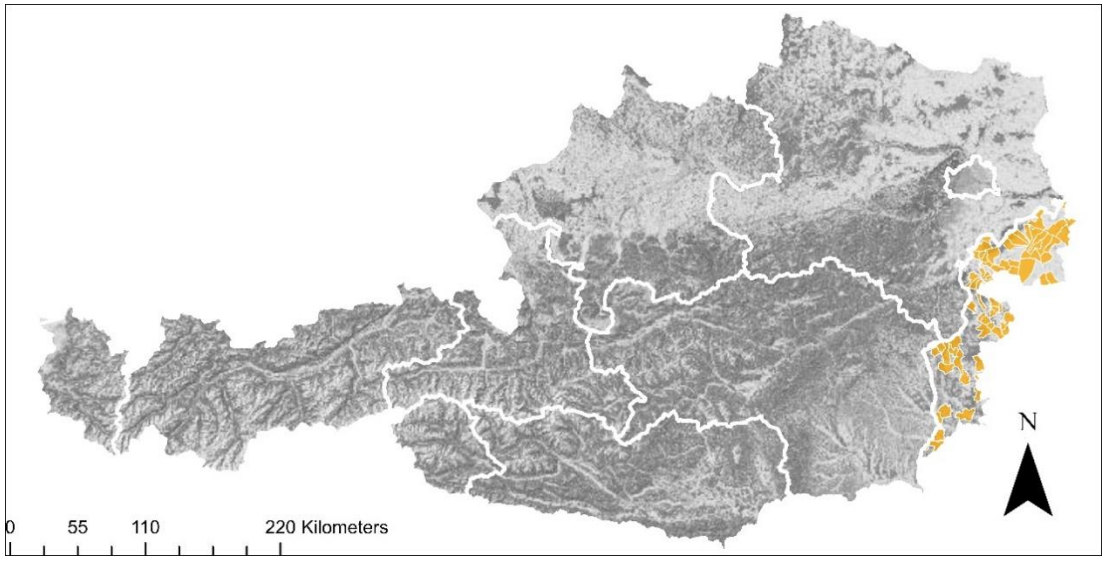
Burgenland Energie AG

Burgenland Energie AG (Burgenland Energie) is a regional energy supplier based at Eisenstadt, Burgenland. The majority of its shares (51%) are held by Landesholding Burgenland GmbH and therefore the Province of Burgenland; 49% are held by Burgenland Holding AG. Burgenland Holding AG is backed by EVN AG (73.63%), VERBUND AG (10.04%) and Wien Energie GmbH (6.59%), with the remaining 6.59% of its shares being held in free float.

According to the market survey, Burgenland Energie is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider, owner of charging infrastructure and roaming. Burgenland Energie cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

Burgenland Energie lists 372 charge points in the charge point registry. 99% of them are located in Burgenland. Of Burgenland Energie's charge points, 29% are fast charge points with ≥22 kW output, of which 15% are ultra-fast (≥150 kW). No information is available about the power output of 30% of the charge points. Figure 24 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 24: Municipalities with Burgenland Energie charge points



Source: E-Control charge point registry.

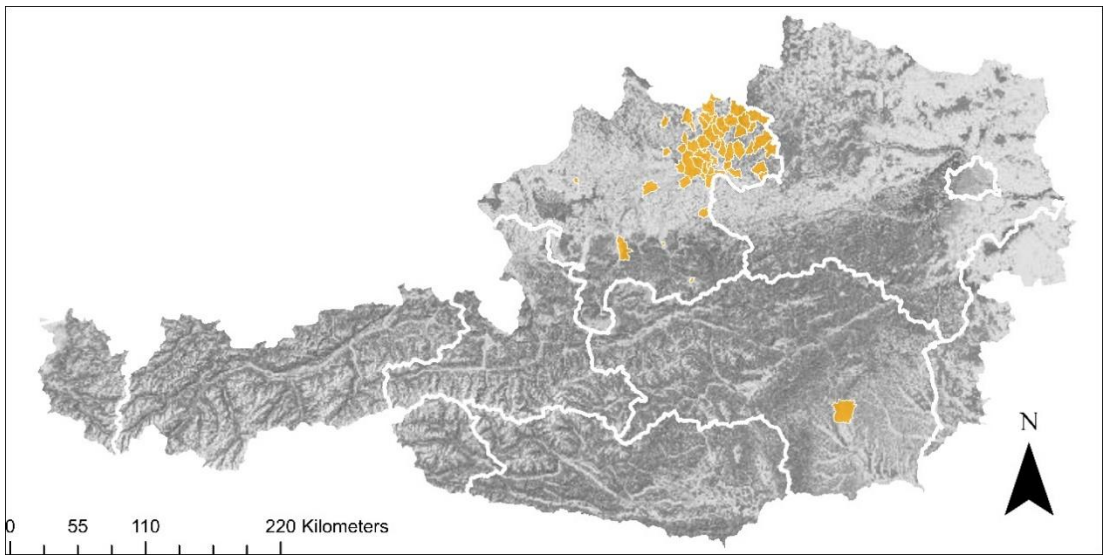
LINZ AG für Energie, Telekommunikation, Verkehr und Kommunale Dienste

LINZ AG für Energie, Telekommunikation, Verkehr und Kommunale Dienste (Linz AG) is a regional energy supplier based in Linz, Upper Austria. Linz AG is owned by Unternehmensgruppe der Stadt Linz Holding GmbH, which means it is controlled by the City of Linz.

According to the market survey, LINZ AG is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider, owner of charging infrastructure and roaming. LINZ AG cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

Linz AG lists 354 charge points in the charge point registry. 99% of them are located in Upper Austria. The remaining 1% are located in Styria. Of Linz AG's charge points, 12% are fast charge points with ≥22 kW output, of which 18% are ultra-fast (≥150 kW). Figure 25 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 25: Municipalities with Linz AG charge points



Source: E-Control charge point registry.

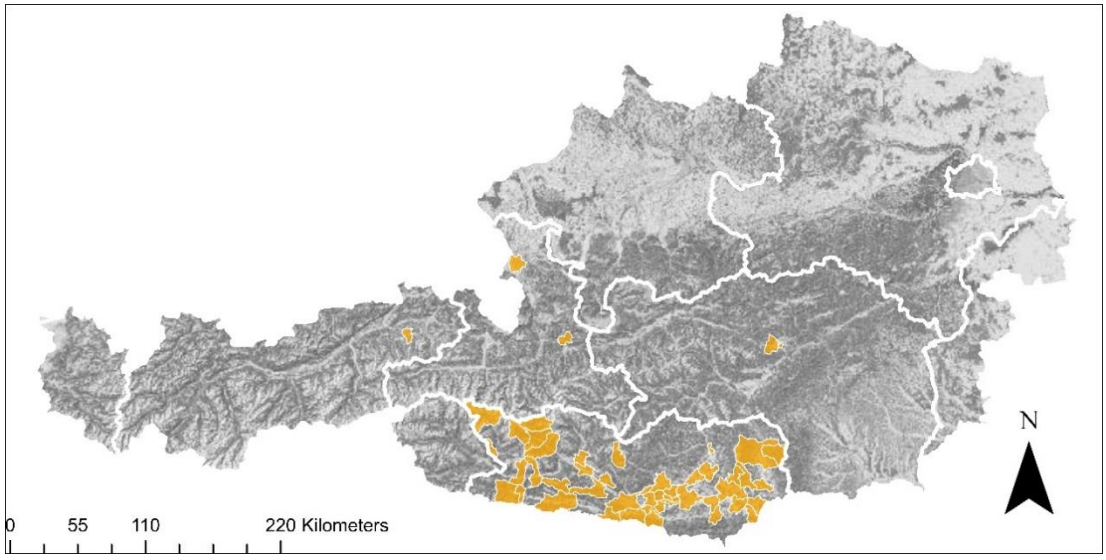
KELAG – Kärntner Elektrizitäts-Aktiengesellschaft

KELAG – Kärntner Elektrizitäts-Aktiengesellschaft (Kelag) is a regional energy supplier based in Klagenfurt am Wörthersee, Carinthia. The majority of its shares (51.07%) are held by KÄRNTNER ENERGIEHOLDING BETEILIGUNGS GMBH, 51% of which is in turn owned by the Province of Carinthia and 49% indirectly by RWE. Furthermore, VERBUND AG holds 35.17% of the shares in Kelag and RWE holds 12.85% indirectly. The remainder of the shares (0.91%) are held in free float, including employee shares.

According to the market survey, Kelag is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider and owner of charging infrastructure. Kelag cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

Kelag lists 265 charge points in the charge point registry. 94% of them are located in Carinthia. The remaining 6% are located in Salzburg, Styria and Tyrol. Of Kelag's charge points, 39% are fast charge points with ≥22 kW output, of which 8% are ultra-fast (≥150 kW). Figure 26 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 26: Municipalities with Kelag charge points



Source: E-Control charge point registry.

6.2.2.2 Largest private providers

has.to.be gmbh

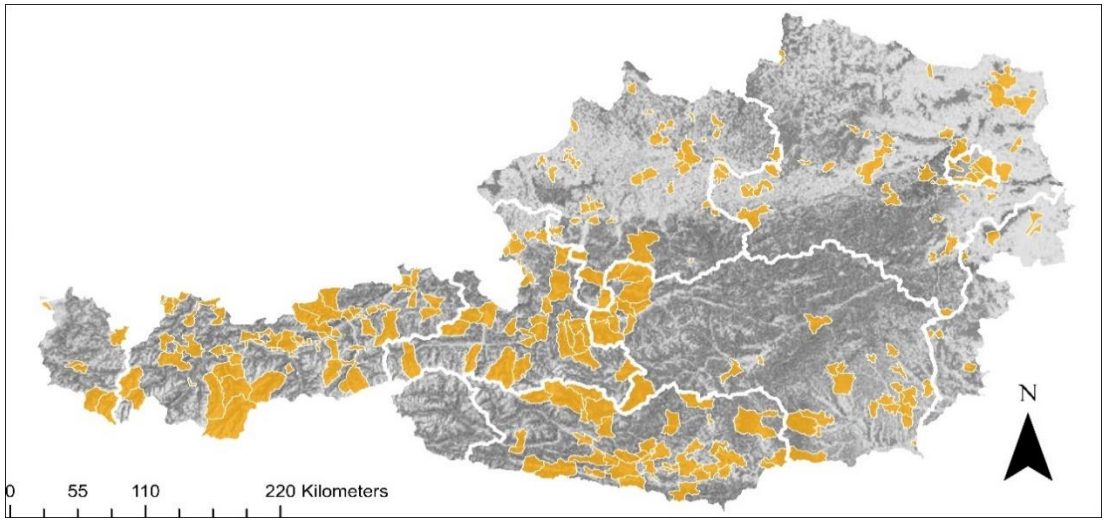
has.to.be gmbh (has.to.be), based at Radstadt, Salzburg, is a subsidiary of the Dutch company ChargePoint European Holdings B.V.

According to the market survey, has.to.be is active at the following levels: charge point operator, e-mobility provider, owner of charging infrastructure and roaming. has.to.be cooperates with Hubject, as well as other clearing platforms. The company does not install EV charging infrastructure itself.

has.to.be lists 1,342 charge points in the charge point registry. These are spread over the whole of Austria. The three provinces with the most charge points are Tyrol (23.8%), Carinthia (20.0%) and Styria (14.3%). Of has.to.be's charge points, 78% are fast charge points with ≥22 kW output, of which 3% are ultra-fast (≥150 kW). No information is available about the power output of 0.4% of the charge points. Figure 27 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

However, most of the charge points listed by has.to.be in the charge point registry are not owned by the company. has.to.be's business model is based not on operating its own charge points, but on selling software for the operation of charge points, customer billing and identification systems (cards/apps), marketing some of these products to roaming partners, and reselling electricity. has.to.be also offers customers ad hoc charging, with has.to.be administering the billing process (and therefore acting, in a broader sense, as a CPO). As a matter of principle, with the exception of eight charge points, has.to.be does not operate publicly accessible charge points. Instead, they are operated by its clients themselves. The clients set the prices, charging speeds and opening times, as well as owning the hardware.

Figure 27: Municipalities with has.to.be charge points



Note: has.to.be does not act as a competitor; the main parameters of competition are controlled by its clients.

Source: E-Control charge point registry.

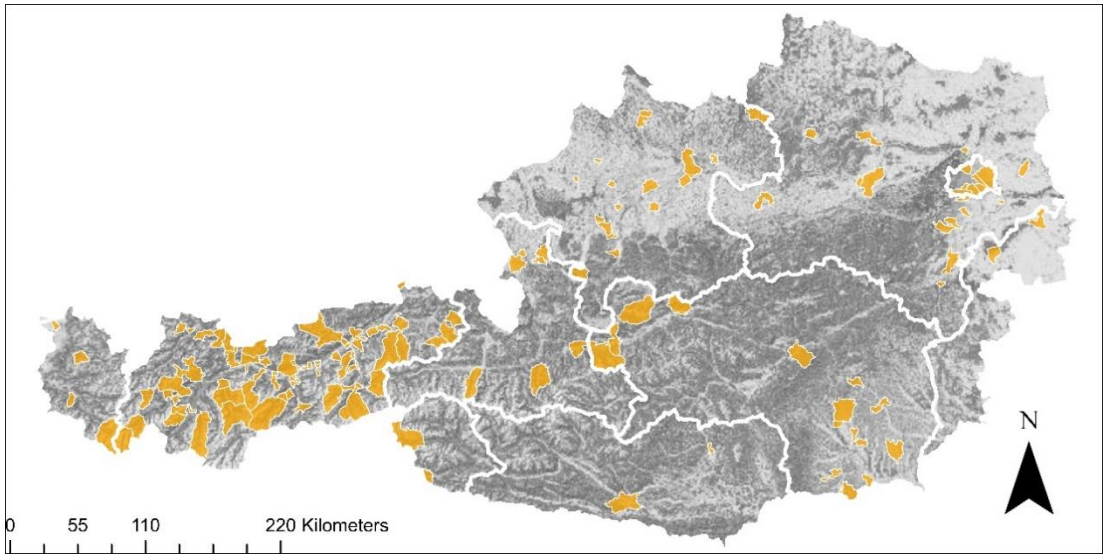
da emobil GmbH & Co KG

da emobil GmbH & Co KG (da emobil), based at Innsbruck, Tyrol, is a subsidiary of the two Tyrol-based companies F & S Beteiligungs GmbH (45%) and Gutmann Gesellschaft m.b.H. (45%). The remaining 10% of its shares are privately owned. The two companies are backed by private specialists in electrical engineering and energy supply.

According to the market survey, da emobil is active at the following levels: charge point operator, e-mobility provider, owner of charging infrastructure and roaming. da emobil cooperates with Hubject, as well as other clearing platforms. The company installs EV charging infrastructure for itself and for customers.

da emobil lists 817 charge points in the charge point registry. Its main area of activity is Tyrol (52%), with the remainder of its charge points spread across the rest of Austria. The three other provinces with the most charge points are Upper Austria (10.6%), Styria (10.3%) and Lower Austria (9.8%). Of da emobil's charge points, 86% are fast charge points with ≥22 kW output, of which 14% are ultra-fast (≥150 kW). No information is available about the power output of 3% of the charge points. Figure 28 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 28: Municipalities with da emobil charge points



Source: E-Control charge point registry.

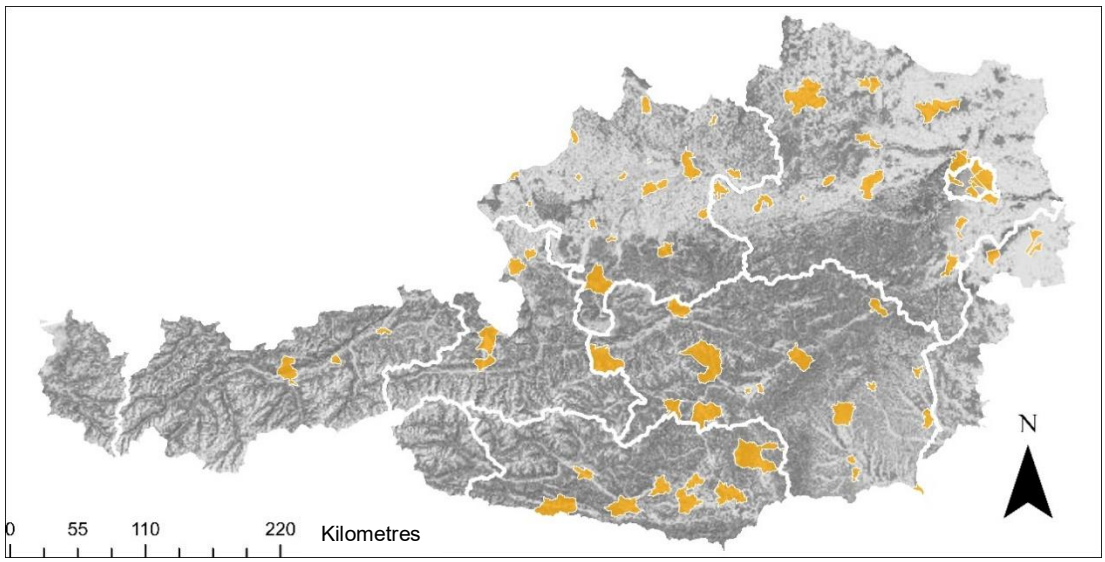
ÖAMTC-Betriebe, Gesellschaft m.b.H

ÖAMTC-Betriebe, Gesellschaft m.b.H (the ÖAMTC), based in the Austrian capital, Vienna, is a subsidiary of the Austrian Automobile, Motorbike and Touring Club, the largest membership organisation for motorists in Austria.

According to the market survey, the ÖAMTC is active at the following levels: charge point operator, e-mobility provider and owner of charging infrastructure. The ÖAMTC cooperates with Hubject, as well as other clearing platforms. The company installs EV charging infrastructure for itself and for customers.

The ÖAMTC lists 274 charge points in the charge point registry. These are spread across the whole of Austria. The three provinces with the most charge points are Vienna (24.1%), Lower Austria (20.8%) and Upper Austria (19.3%). Of the ÖAMTC's charge points, 90% are fast charge points with ≥22 kW output, of which 2% are ultra-fast (≥150 kW). No information is available about the power output of 2% of the charge points. Figure 29 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 29: Municipalities with ÖAMTC charge points



Source: E-Control charge point registry.

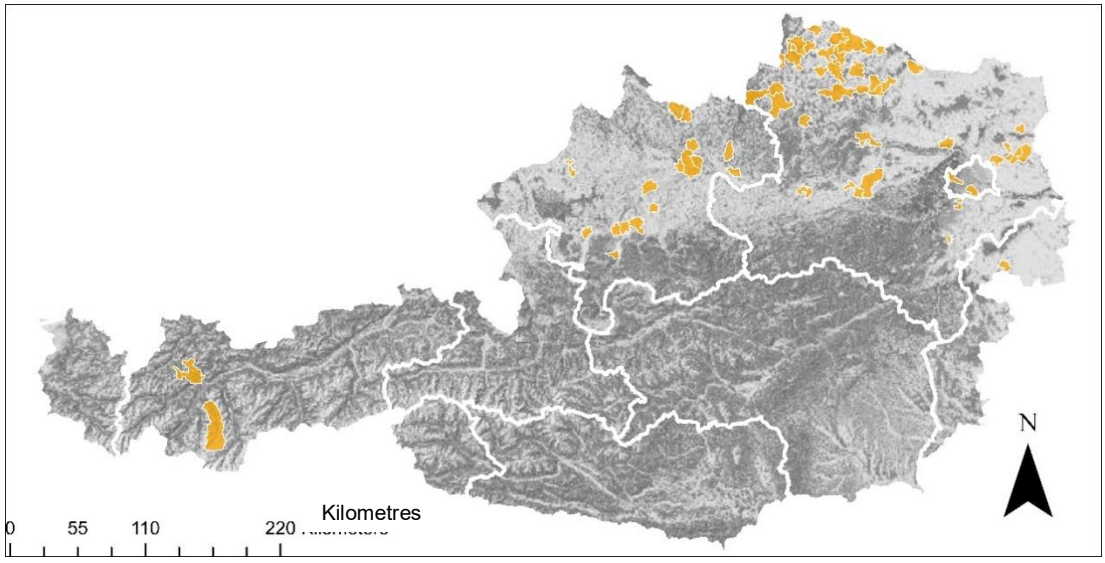
ELLA GmbH & Co KG

ELLA GmbH & Co KG (ELLA), based at Pfaffenschlag bei Waidhofen, Lower Austria, is an Austrian private company specialised in e-mobility.

According to the market survey, ELLA is active at the following levels: energy supplier (provision of power for EV charging infrastructure), charge point operator, e-mobility provider, owner of charging infrastructure and roaming. ELLA cooperates exclusively with the Hubject clearing platform. The company installs EV charging infrastructure for itself and for customers.

ELLA lists 225 charge points in the charge point registry. These are mainly located in Lower Austria (64.9%) and Upper Austria (26.2%). The remaining 9% are spread across Vienna, Tyrol and Vorarlberg. Of ELLA's charge points, 64% are fast charge points with ≥22 kW output, of which 1% are ultra-fast (≥150 kW). Figure 30 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 30: Municipalities with ELLA charge points



Source: E-Control charge point registry.

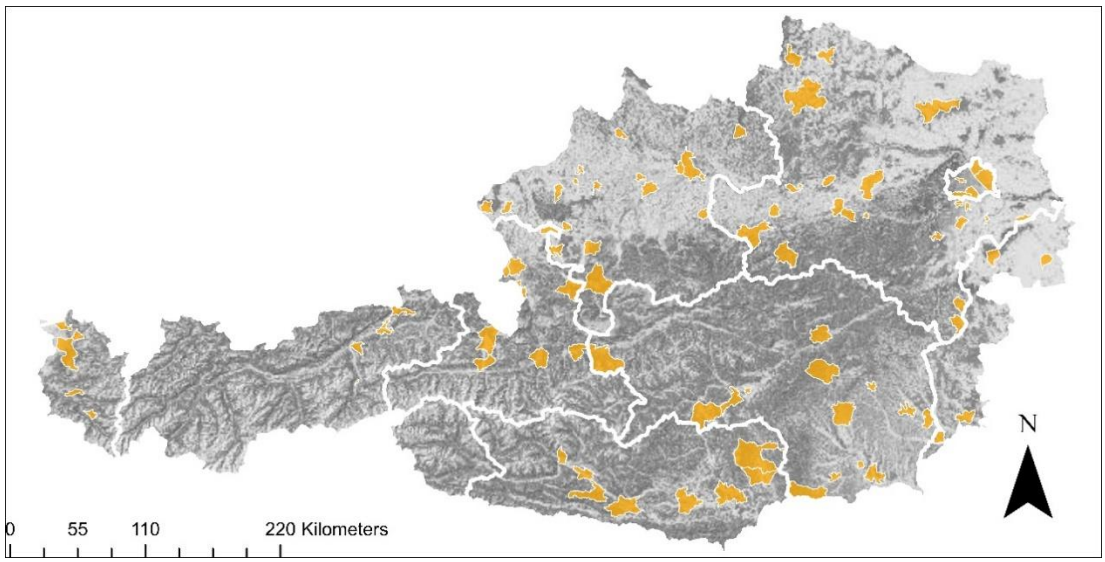
MOON POWER GmbH

MOON POWER GmbH (MOON POWER), based in Salzburg's provincial capital, Salzburg, is a subsidiary of Porsche Holding Gesellschaft m.b.H. and therefore Volkswagen, the biggest automotive manufacturer in the world.

According to the market survey, MOON POWER is active at the following levels: charge point operator, e-mobility provider, owner of charging infrastructure and roaming. MOON POWER cooperates with Hubject, as well as other clearing platforms. The company installs EV charging infrastructure for itself and for customers.

MOON POWER lists 221 charge points in the charge point registry. These are spread across the whole of Austria. The three provinces with the most charge points are Lower Austria (20.4%), Upper Austria (19.0%) and Styria (17.6%). Of MOON POWER's charge points, 88% are fast charge points with ≥22 kW output, of which 8% are ultra-fast (≥150 kW). No information is available about the power output of 0.5% of the charge points. Figure 31 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 31: Municipalities with MOON POWER charge points



Source: E-Control charge point registry.

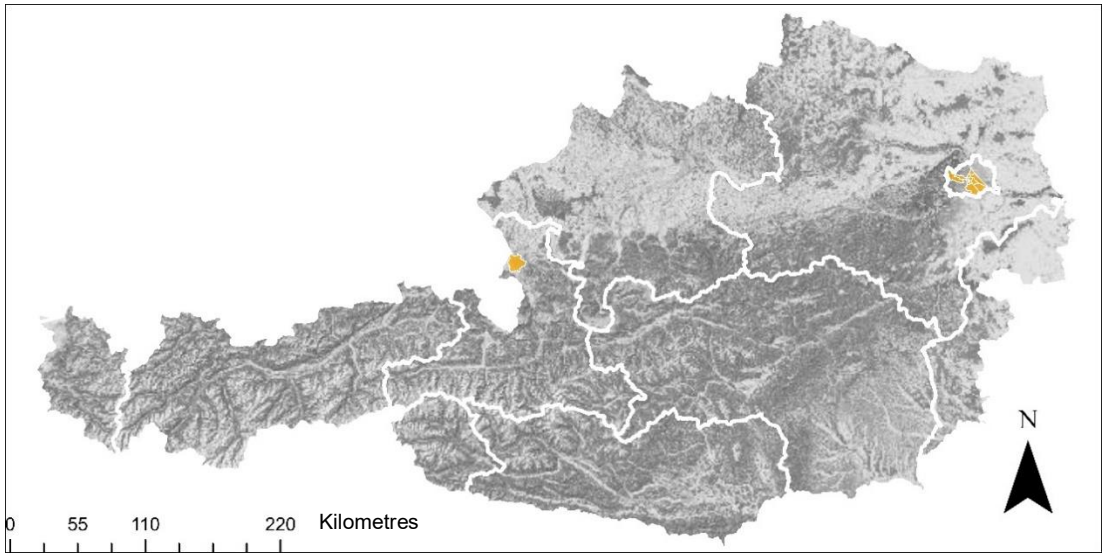
Best in Parking Garagen GmbH & Co KG

Best in Parking Garagen GmbH & Co KG (Best in Parking), based in the Austrian capital, Vienna, is indirectly owned by Best in Parking AG, whose shareholders are the Dutch company Traso Holding B.V. (50.27%) and a number of investment companies and foundations. Best in Parking AG offers smart parking and urban mobility solutions.

According to the market survey, Best in Parking is active at the following level: charge point operator. Best in Parking does not cooperate with any clearing platforms. The company installs EV charging infrastructure for itself and for customers.

Best in Parking lists 105 charge points in the charge point registry. 96% of them are in Vienna and 4% in Salzburg. Of Best in Parking's charge points, 3% are fast charge points with ≥22 kW output, none of which are ultra-fast (≥150 kW). Figure 32 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 32: Municipalities with Best in Parking charge points



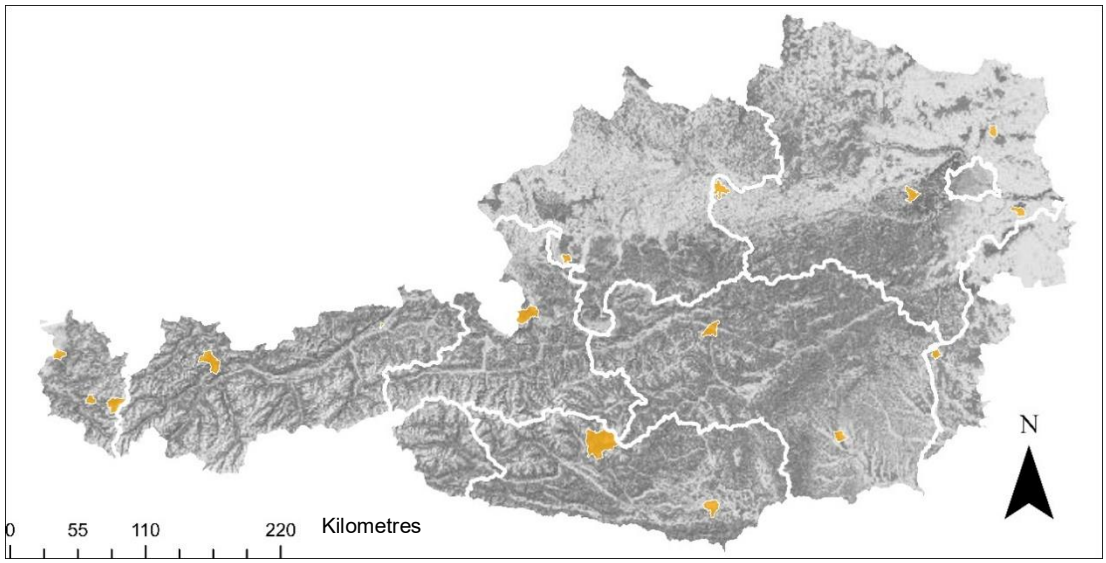
Source: E-Control charge point registry.

IONITY GmbH

IONITY GmbH (IONITY), based in Munich, Germany, is a joint venture between the automotive manufacturers BMW Group, Ford Motor Company, Hyundai Motor Group, Mercedes Benz AG and Volkswagen Group, including Audi and Porsche, and BlackRock's Global Renewable Power Platform as a financial investor. What makes IONITY unique is that its aim as a business is to install, operate and maintain publicly accessible charging infrastructure along motorways all over Europe.

IONITY lists 84 charge points in the charge point registry. These are spread across the whole of Austria. The three provinces with the most charge points are Vorarlberg (25%), Lower Austria (19.0%) and Tyrol (13.1%). Of IONITY's charge points, 98% are fast charge points with ≥22 kW output, of which 78% are ultra-fast (≥150 kW). No information is available about the power output of 2.4% of the charge points. Figure 33 shows the geographical distribution of the company's charge points, with the districts where they are located coloured yellow.

Figure 33: Municipalities with IONITY charge points



Source: E-Control charge point registry.

7 Market survey

As part of the Sector Inquiry, the AFCA sent out requests for information to 260 market participants in the e-mobility sector on 12 May 2022. E-Control's charge point registry was used to identify possible contacts. According to *Sec. 3 para. 5 Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure*, operators of public charging stations are obliged, as a minimum, to report the location of their charging stations for this registry.

Of the 260 market participants who were written to, sixteen operators were released from their obligation to respond[126] and 165 answered the request for information. The response rate was therefore 68%, only counting those operators who answered the request for information and had not been released from their obligation to respond.

According to E-Control's charge point registry, there were 13,441 publicly accessible charge points in Austria at the time when the market survey was sent out. The responses to the request for information covered 11,573 charge points. Information was therefore gathered about approximately 86% of all the publicly accessible charge points in Austria.[127]

In reply to the requests for information that had been sent out, the AFCA received responses from all nine provincial energy operators, Smatrics, all the major private operators of EV charging infrastructure in Austria and also numerous municipal utilities, and city, town and village councils.

The requests for information were sent out by the AFCA on the basis of Sec. 11a para. 1 Federal Competition Act (WettbG). However, the AFCA did not have to make use of its powers to order the parties to respond by means of an administrative decision (Sec. 11a para.3 WettbG) or to impose fines for failure to respond (Sec. 11a para. 5 WettbG).

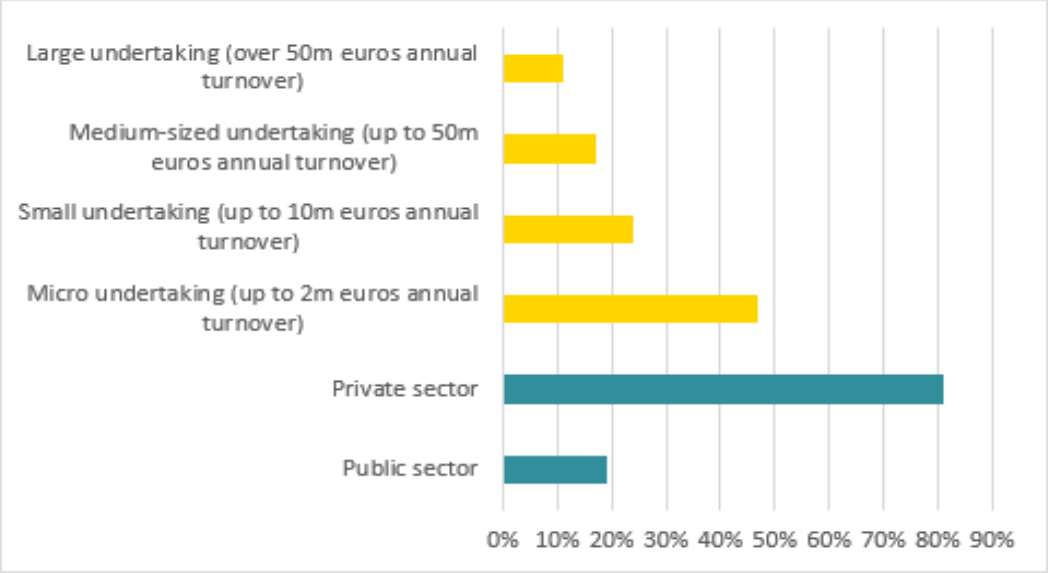
[126] There were various reasons for this: wrong email address, company did not operate any public charge points, business had closed, charge point no longer existed etc.

[127] All figures cited here and below relate to the situation in May 2022.

7.1 EV charging infrastructure

In order to gain an impression of the structure of Austria's publicly accessible infrastructure, it was decided to undertake a classification of the market participants, dividing them into various categories. With regard to the economic size of the entities looked at, they were categorised on the basis of their turnover figures.[128] Figure 34 shows that micro and small undertakings made up more than 70% of the operators surveyed, and only about 11% of the undertakings had annual turnover of more than 50 million euros. In total, about 80% of the undertakings were to be assigned to the private sector and just under 20% to the public sector.[129]

Figure 34: Categories by annual turnover and sector



In the public sector, the nine provincial energy suppliers, Smatrics, and numerous municipalities and municipal utilities were active in this field. In the private sector, there was a highly diverse range of locations where public charging infrastructure was provided. It was to be found *inter alia* at the premises of small and medium-sized industrial businesses, craft businesses, restaurants and hotels, car dealerships, banks, supermarkets, mountain railways, car park operators and refuelling stations.

[128] The public sector has been included in this categorisation because it too consists of undertakings, which are governed either by public law or by private law and are majority or wholly owned by the state or one of its subordinate organs.

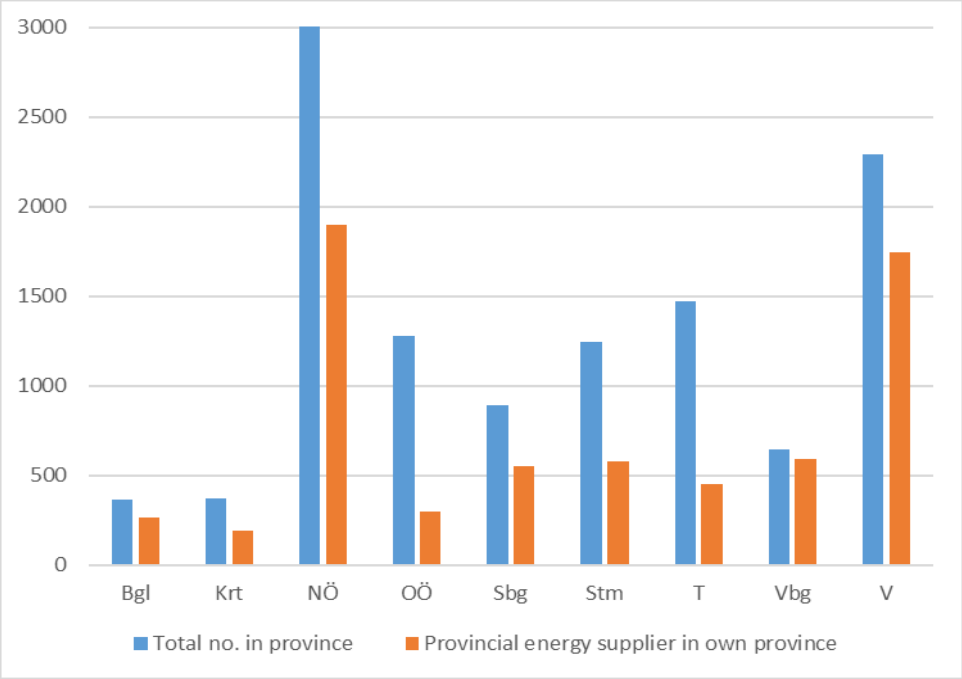
[129] The undertakings were asked whether they were audited by a (federal or provincial) audit institution (= public sector).

The market for publicly accessible EV charging infrastructure consists of several levels and numerous actors. Of the undertakings surveyed, 149 owned their charging infrastructure. Thirty-four undertakings were energy suppliers and therefore provided power for EV charging infrastructure. Fifty-six undertakings were charge point operators and twenty-two were electromobility providers.

Twenty of the undertakings surveyed were simultaneously active as energy suppliers, owners of charging infrastructure and charge point operators. These included all the provincial energy suppliers, as well as municipal utilities. Of these undertakings, fourteen were simultaneously e-mobility providers too. This group included eight of the provincial energy companies. Salzburg AG was alone in not marketing charge cards.

Of the 11,573 charge points mentioned by the 165 respondents, 6,971 were operated by provincial energy suppliers, of which 6,557 were located in the companies' own provinces.

Figure 35: Total numbers of charge points in the Austrian provinces and charge points operated by provincial energy suppliers in their own provinces[130]



[130] Burgenland (Bgl), Carinthia (Krt), Lower Austria (NÖ), Upper Austria (OÖ), Salzburg (Sbg), Styria (Stm), Tyrol (T), Vorarlberg (Vbg), Vienna (V).

At the provincial level, the picture found of Austria's charging infrastructure was as shown in Figure 35. It is clear from this graph there are three provinces where the provincial energy suppliers have market shares less than 50%: Upper Austria (23.1%), Tyrol (30.5%) and Styria (46.6%). Otherwise, the provincial energy suppliers' market shares in their own provinces are greater than 50%. They range from 91.8% in Vorarlberg and more than 70% in Vienna and Burgenland to well over 60% in Salzburg and Lower Austria and about 51% in Carinthia.

The proportion of all charge points operated by the provincial energy suppliers can be seen in Figure 36. The graph also shows Smatrics's 1,038 charge points, which are spread across the whole of Austria. A large number of fast charge points are operated by Smatrics as well. Together with Smatrics, the provincial energy suppliers are responsible for more than 63% of all the public charge points in Austria.

Figure 36: Proportions of charge points operated by provincial energy suppliers, Smatrics and other providers

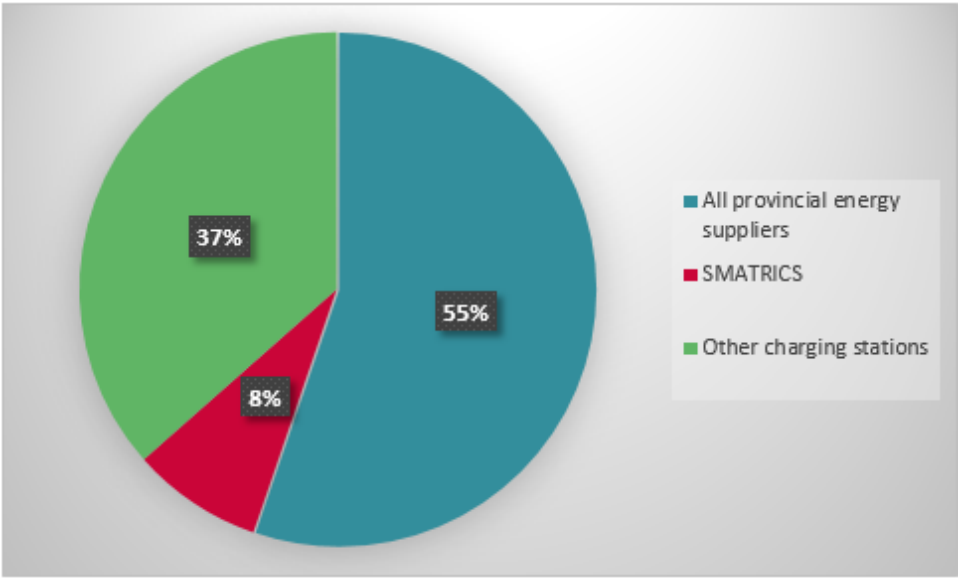
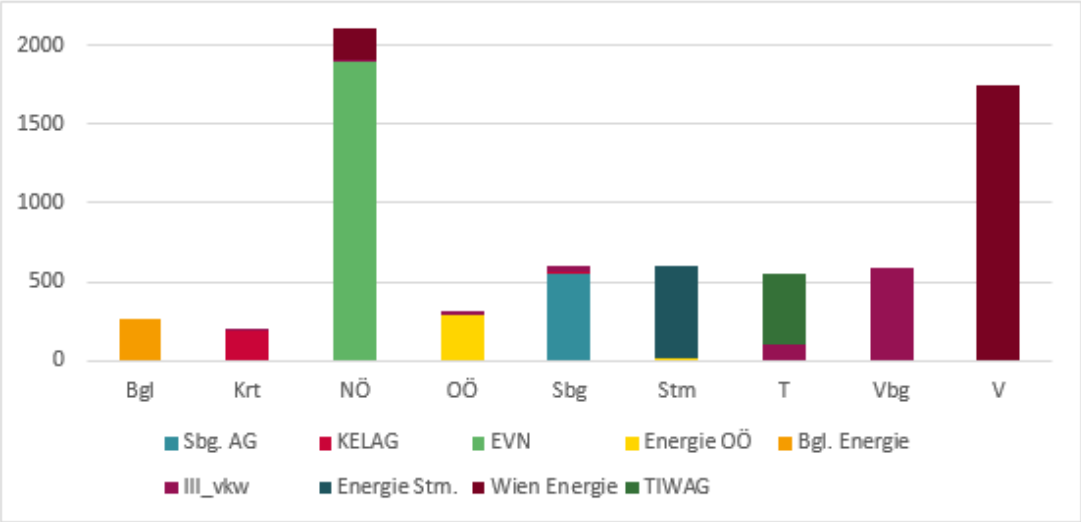


Figure 37 depicts the numbers of charge points operated by the provincial energy suppliers in the various provinces. It is noticeable that, for the most part, they merely operate infrastructure in their own provinces. The main exception in this respect is Illkraftwerke VKW AG, which operates charge points in all the provinces except Burgenland,[131] followed by Wien Energie, which operates 204 charge points outside

[131] Illkraftwerke VKW AG operated six charge points in Carinthia, seven in Lower Austria, seventeen in Upper Austria, thirty-five in Salzburg, eight in Styria, 106 in Tyrol and two in Vienna.

Vienna in Lower Austria. The other provincial energy suppliers do not have significant capacities in other provinces.

Figure 37: Charge points operated by provincial energy suppliers in the Austrian provinces[132]

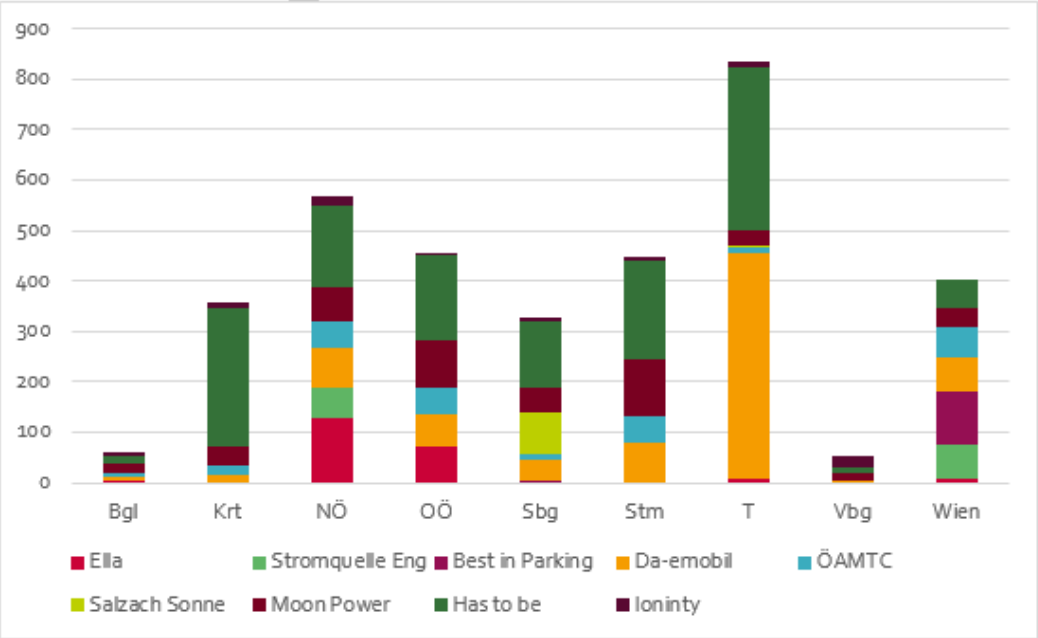


Merely a modest number of private providers with significant estates of charge points (more than eighty) were found on the Austrian market (as owners, CPOs or EMPs). These providers and the distribution of their charge points between the provinces are shown in

Figure 38. The biggest providers were Has to be GmbH (1,342 charge points) and da emobil GmbH (805 charge points), followed by Moon Power GmbH (457 charge points) and the ÖAMTC (267 charge points). Other providers included Ella GmbH & Co KG (220 charge points), Stromquelle Energietechnik GmbH (131 charge points), Best in Parking Garagen GmbH (108 charge points), Salzach Sonne GmbH (88 charge points) and Ionity GmbH (84 charge points).

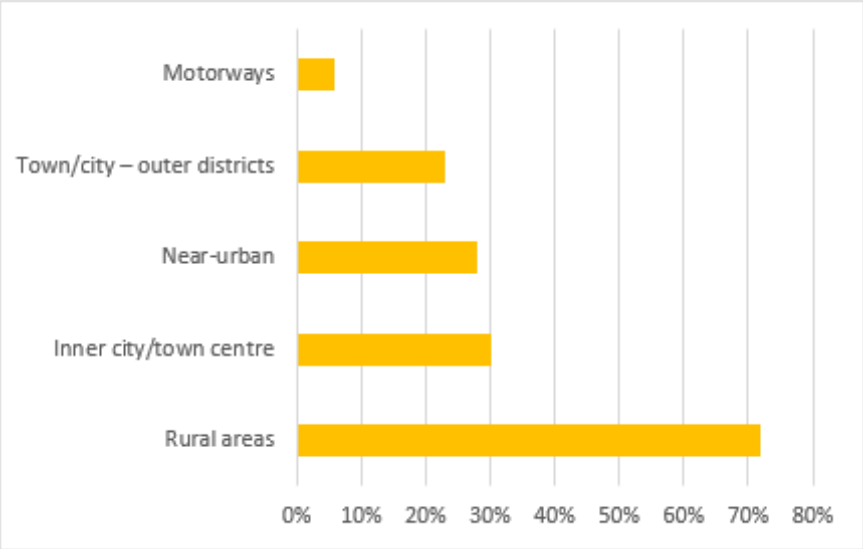
[132] Salzburg AG (Sbg. AG), Kärntner Elektrizitäts-Aktiengesellschaft (KELAG), EVN AG (EVN), Energie AG Oberösterreich Vertrieb GmbH (Energie OÖ), Burgenland Energie (Bgl. Energie), Illwerke vkw AG (Ill_vkw), Energie Steiermark AG (Energie Stm.), Wien Energie AG (Wien Energie), Tiroler Wasserkraft AG (TIWAG).

Figure 38: Private providers with more than eighty charge points



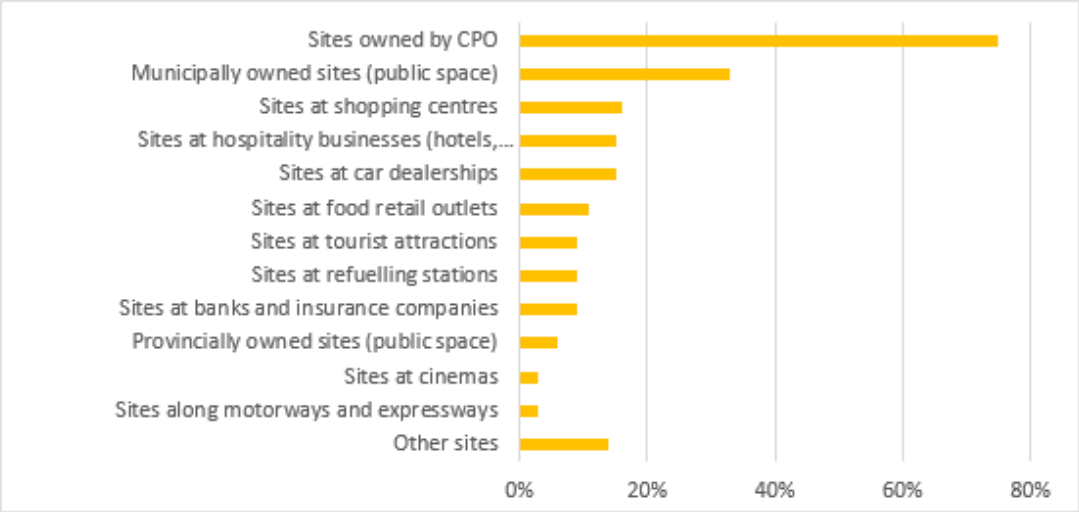
With regard to the geographical distribution of EV charging infrastructure, the respondents reported operating charge points at the kinds of location shown in Figure 39 (multiple responses were possible to this question). Many of the undertakings operated or owned infrastructure in rural areas. The proportion of providers with charge points in the outer districts of towns and cities was lower than that with charge points in town centres/inner city areas, where it was roughly the same as in near-urban areas. By contrast, there is likely to be a greater concentration of operators along the motorways because the proportion of providers who mentioned charge points in these locations is the lowest.

Figure 39: Where are the sites on which you own and/or operate charge points? (251 mentions)



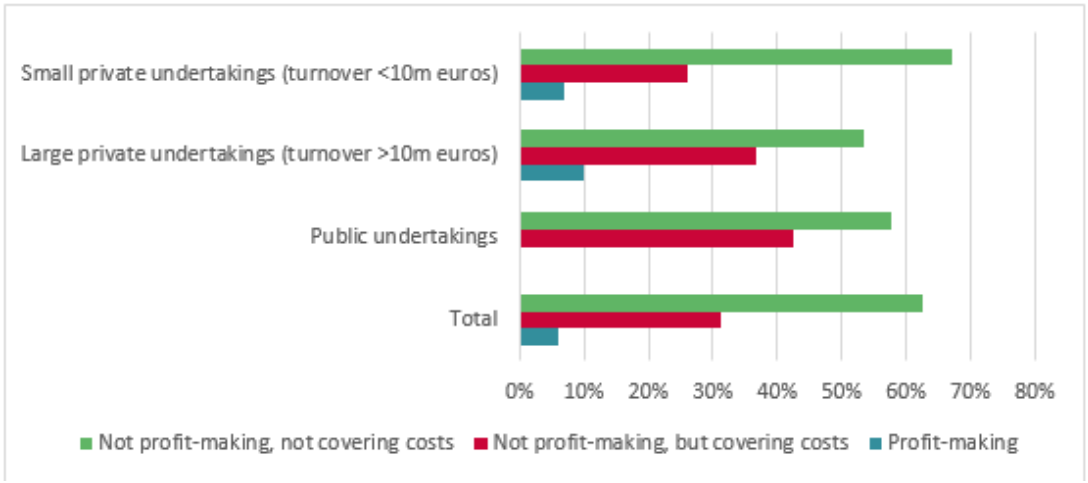
When it came to the sites on which charge points were installed, more than 70% stated they owned sites themselves (see Figure 40). About 33% of the operators reported they owned charge points on public sites. However, the proportion of charge points on public sites is likely to be higher because all the public sector undertakings stated they owned charge points on their own sites. Apart from this, the most-mentioned locations were shopping centres, hospitality businesses and car dealerships. Then came food retailers, tourist attractions, refuelling stations, banks and insurance companies. As already evident from the previous question, there was only a small number of operators with charge points along motorways or expressways.

Figure 40: What kinds of sites have your charge points been installed on?



Another significant aspect of the developing market for EV charging infrastructure was charge points' profitability. The CPOs were asked whether the charge points they operated were profit-making, whether they earned a contribution margin, in other words were least covering their fixed costs, or whether they were purely loss-making operations. As shown in Figure 41, just 6% of all the undertakings surveyed stated their charge points were profit-making. If the operators were subdivided into public and large or small private operators, the only profit-making charge points were run by private operators. By contrast, this was not claimed by any of the public undertakings. However, more than 40% of the public undertakings stated that positive contribution margins were being earned by their EV charging infrastructure businesses. Only 37% of the large private undertakings reported this, and only 26% of the small private undertakings. The proportion of all undertakings who were not earning either a profit or a contribution margin was relatively high among small private undertakings (67%), 53% for large private undertakings and 58% for public undertakings).

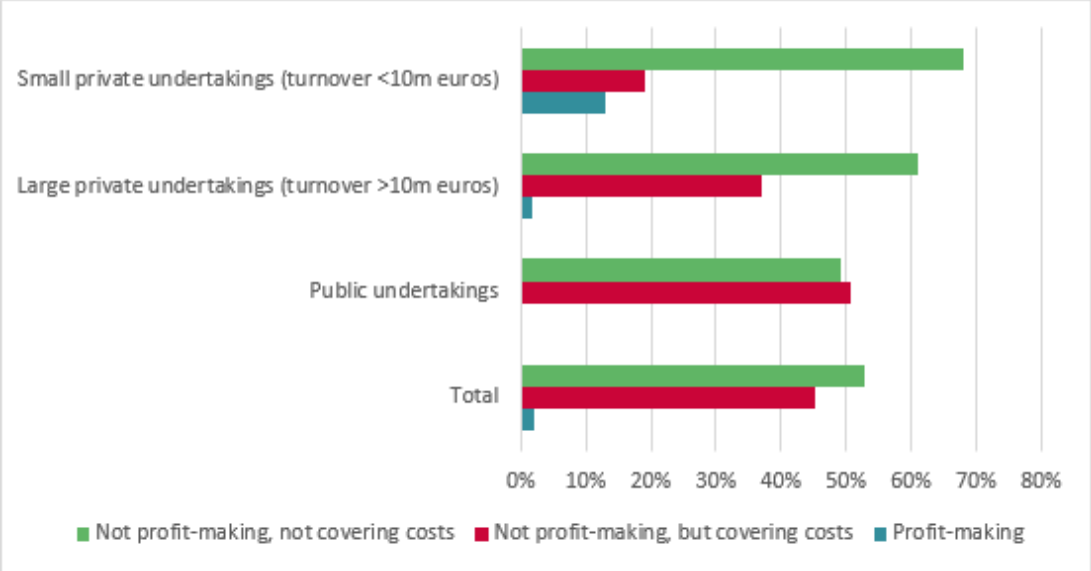
Figure 41: Profitability of EV charging infrastructure as a business field, proportions of undertakings



If the answers are weighted by the charge points the CPOs operate, a rather different distribution is found (see Figure 42). Of the total number of charge points, the proportion that are profit-making proves to be even lower (2%). For public undertakings, by contrast, the proportion of charge points that earn a positive contribution margin (51%) is higher than the proportion of those that do not earn a positive contribution margin. For small undertakings, in turn, the proportion of charge points that cover their costs is lower, whereas the proportion of profit-making charge points is higher. The proportion of profit-making charge points is again lower for large private undertakings, but otherwise the proportions are similar.

Overall, it can be concluded from these responses that the publicly accessible charging infrastructure segment is a still young growth market. Only a very small proportion of charge points have been operated at a profit to date, and more than 50% of all charge points in this segment are not profitable and do not earn a positive contribution margin. Against this background, it may be viewed as a particular challenge to organise this market segment with as much transparency, as few barriers and as little discrimination as possible, and thus encourage as many innovative operators as possible to move into this field and so exploit potential opportunities for growth.

Figure 42: Profitability of EV charging infrastructure business, proportions of charge points



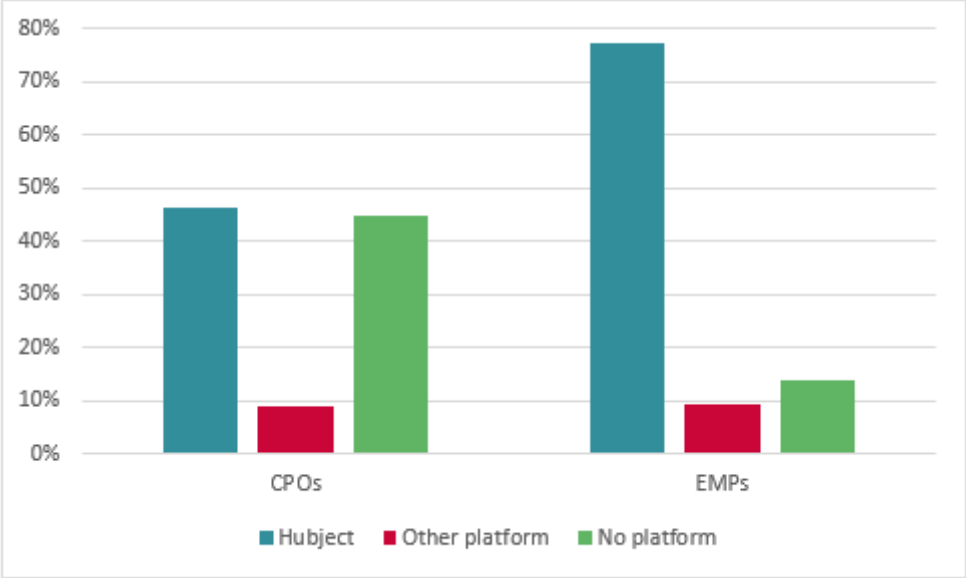
7.2 Clearing and e-roaming

On the EV charge point market, the operator of the charge point at which a vehicle is charged does not necessarily have to be identical with the e-mobility provider with whom the customer maintains a contractual relationship. Despite this, the charging session is supposed to be billed on a contractual basis. This requires a functioning roaming solution. The customer has to be identified at the charging station by the CPO, using a charge card or mobile app for example. The CPO transmits the session data to a clearing platform (e.g. Hubject) for this purpose. The clearing platform forwards these data to the EMP, which bills the session to its customer.

In its survey of market actors, the AFCA also wanted to shed light on how roaming services were organised on the national market and what clearing platforms were of significance in Austria. The respondents were therefore asked whether they cooperated with clearing platforms or not. The results from this question are summarised in Figure 43. At the CPO level, a large proportion of operators (45%) did not cooperate with any platforms. These were mainly small providers. By contrast, 46% of all CPOs cooperated either exclusively with the Hubject clearing platform (30%) or with Hubject and other clearing platforms as well (16%).

The proportion of e-mobility providers and actors involved in marketing charge cards who did not cooperate with a clearing platform was, as might have been expected, lower (14%). The proportion of EMPs that cooperated with Hubject (and other platforms) was 77%. These companies operated 11,389 charge points,[133] representing 98.4% of all charge points mentioned in the market survey (coverage: 85% of all charge points). It may consequently be concluded Hubject is the dominant clearing platform on the Austrian market. The proportion of EMPs that cooperated with other platforms was just 9%, but they merely offered access to approximately 1.6% of the charge points. The following platforms were mentioned in this context: e-clearing.net, Gireve, eRound (Stromnetz Hamburg), has.to.be, be.Energised.

Figure 43: Cooperation with clearing platforms



[133] This includes the charge points operated by Salzburg AG. Although Salzburg AG is not an EMP, the EMP whose charge points Salzburg AG manages cooperates with Hubject, as well as with Salzburg AG as a CPO.

A CPO that wishes to cooperate with Hubject as a clearing platform has to make its charge points available for roaming to all EMP partners. When doing so, it is possible to choose between two kinds of offer: either the CPO negotiates bilaterally with a selected partner or it makes an offer to all EMPs. This "offer to all" sets out the charging prices that will be applicable if the offer is accepted. From its discussions with market participants, the AFCA became aware some of these offers included access fees. The survey found that, of the thirty-three undertakings (EMPs and CPOs) who cooperated with Hubject, five demanded an access fee and twenty-eight did not. Among the twenty-eight undertakings who did not demand access fees, the offer to all was accepted by seventeen EMPs on average, the minimum being zero and the maximum forty-seven. Of the five undertakings who did demand access fees, one had had its offer accepted by a single EMP, but otherwise none had been taken up. This confirmed market participants' suspicion that an offer to all including an access fee could be a "deterrent offer".

7.3 Payment at charging stations

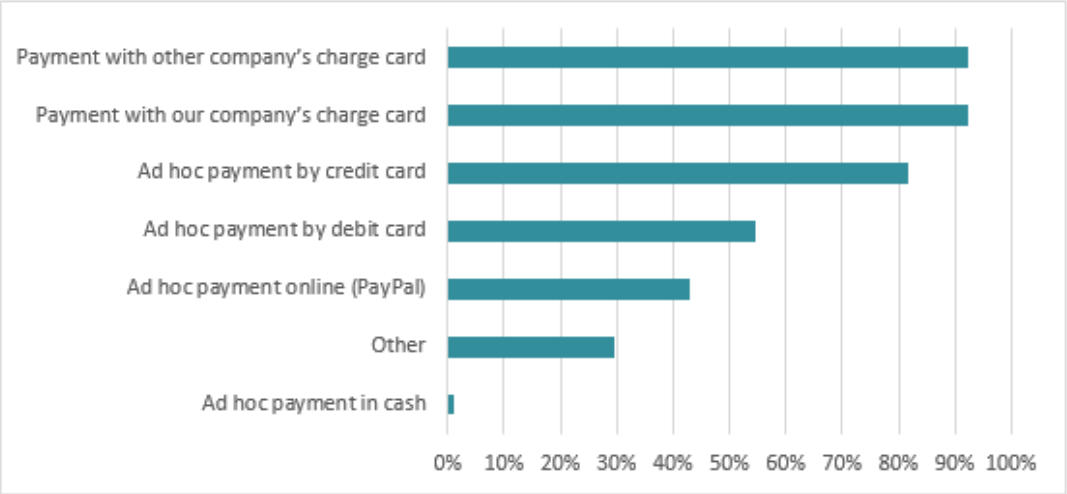
The undertakings were also asked what payment methods were offered at their charge points. The respondents were able to choose from the following payment methods, with multiple responses being possible:

- Ad hoc payment in cash
- Ad hoc payment by credit card
- Payment with our company's charge card
- Other, please describe: ……
- Ad hoc payment by debit card
- Ad hoc payment using online payment services such as PayPal
- Payment with another provider's charge card

A summary of the responses to this question is given in Figure 44. It shows the proportion of all charge points covered by the survey at which each payment method could be used. Since multiple mentions were possible, the figures add up to totals greater than 100%. Relatively high figures are seen for common payment methods. For instance, it was possible to pay by charge card at 92% of the charge points mentioned, either using the CPO's own charge card or a card issued by another EMP. The number was almost as high for payment by credit card, which was possible at 82% of all the charge points covered. The figure was somewhat lower for paying by debit card (54%), while that for online payment services such as PayPal was similarly low (43%). There was hardly anywhere

where it was possible to pay in cash, which was accepted at just 139 charge points (1%). Other payment methods were mentioned for 30% of all charge points, including: payment apps, Google Pay or Apple Pay and parking prices that included charging fees. Some operators stated they did not bill any fees for vehicle charging.

Figure 44: Payment methods at EV charge points



7.4 Grant funding for EV charging infrastructure

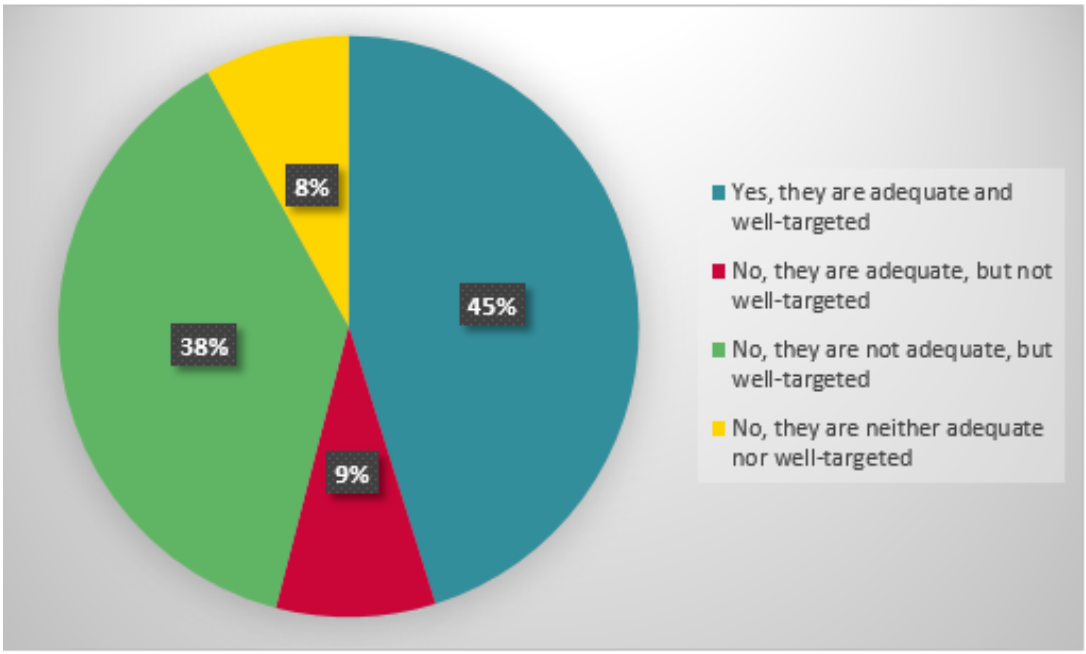
Another aspect addressed by the survey was that of the grants that had been applied for and received from the Austrian Federation.[134] The survey of market participants found eleven companies had had their grant applications rejected. Grants had been approved for 134 companies. There was wide variation in the value of the grants approved, which ranged from 250 euros to 225,297 euros per company with one stand-out case where an applicant had received a grant of 635,000 euros. Of the provincial energy suppliers, two stated they had never applied for federal grants, six had frequently had such grants approved and one had had just a single grant approved. The grants awarded to five of the these undertakings ranged in value from about 12,000 euros to 168,500 euros. Two provincial energy suppliers did not disclose the value of the grants that had been approved for them.

Of the undertakings surveyed who had had grants approved, 61% stated they would not have installed EV charging infrastructure without a grant, while 39% stated they would have installed it regardless whether they had received a grant or not. Another focus was

[134] This survey only asked about federal grants because the grants awarded by the provinces and municipalities tend to be aimed mainly at promoting electric cars rather than publicly accessible infrastructure.

the extent to which the companies supported in this way perceived the grants to be adequate and well-targeted. The respondents' verdict on federal grants was not completely negative. Almost half of grant recipients (45%) believed they were adequate and well-targeted (see Figure 45). 38% felt the grants were well-targeted but not adequate. The grants were viewed as not being well-targeted by just 17% of grant recipients.

Figure 45: Perceptions of federal grants



The question about how grants from the Austrian Federation for the installation of publicly accessible EV charging infrastructure could be improved prompted a diversity of comments and suggestions. The most frequently raised issue was the abolition of the *de minimis* rule, which is anchored in the requirements for grant funding from Kommunal Kredit Publik Consulting (KPC), a public company that operates on behalf of the Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, and also applies for the grants awarded by Austria Wirtschaftsservice GmbH.[135] These points were, of course, raised by larger operators.

Another aspect of KPC's grant award criteria to be criticised was the obligation to join a roaming platform as a precondition for grant funding. This is formulated as the requirement that an "offer to all" be made on a clearing platform. It was criticised that, de facto, there was only one dominant platform on which such an offer could be made. A

[135] Cf. https://www.aws.at/ueber-die-aws/ with further references.

CPO contract then had to be concluded with this platform, which meant incurring one-off costs of 5,000 euros and a monthly fee of 99 euros. Many small undertakings were said to find this hard to justify in business terms.

It remains to be discussed how far joining a roaming platform promotes transparency and competition on this new market. There were also responses that argued for the actors to be freed from the roaming platforms and ad hoc payment instruments introduced at all charge points because this would make charging transactions more transparent.

Another suggestion was for the costs of the grid connection, access to the grid, the expansion of the grid and supply cables to be taken into account when grants were awarded.

8 Competition assessment

8.1 Legal aspects

Analysis of the legal framework demonstrates, first and foremost, the great significance and practical relevance of the European legal sources. The proposed European regulation on the deployment of alternative fuels infrastructure appears particularly promising. Ostensibly, the proposed regulation is part of the European Green Deal and is intended to form a pillar supporting the transformation to sustainable mobility. In detail, it proves to be pushing ahead on several fronts. It appears welcome from a competition perspective as well. This is true of the payment instruments that are envisaged (Art. 5(2)). A diversity of payment methods would, firstly, ensure correspondingly lively competition was likely among the companies that offered payment services and significant barriers to market access would not need to be anticipated. Secondly, the provisions concerning payment instruments also appear advantageous from the consumer's point of view. This is true, for instance, of the provision concerning the transparency and comprehensibility of the prices at publicly accessible recharging points (Art. 5(4)). Ad hoc payment methods are also to be seen in the same light, although they should be made mandatory. To sum up, these aspects appear significant if comparability and choice are to be ensured for consumers. At the same time competition for consumers should also start to intensify as a result. The issue of roaming addressed too by the proposed regulation appears fundamentally ambivalent in some ways from a competition perspective. On the one hand, roaming may, in principle, make cross-border e-mobility possible (rather as in the mobile phone sector), something that is in the interests of consumers. On the other hand, however, it is to be feared services will not be sufficiently comparable because there is so little transparency for consumers. As far as this is concerned, it would appear expedient for there to be an EV charging costs calculator in future that also gave full details of roaming costs. It would be possible to ensure an appropriate level of transparency with regard to roaming services if consumers were informed on the spot about the (itemised) costs of recharging their vehicles before each session, just as in the mobile phone sector.

Most of the relevant national legislation is also informed by these (European) principles. It was, for example, the Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure, which was adopted for the transposition of the relevant European directive, that placed an obligation on E-Control to administer a charge point registry (Sec. 4a). This is recognisably a step in the same direction with regard to

transparency and comprehensibility for consumers that will ultimately be conducive to competition as well. At the same time the systematic approach embodied in the Federal Act Adopting Harmonised Standards for the Deployment of Alternative Fuels Infrastructure and its sometimes vaguely worded formulations (e.g. several of the rights and duties of operators of charge points enumerated in Sec. 3) allow a certain amount of leeway for interpretation, which is not necessarily conducive to the aim they are intended to achieve. The outcome is that, as a result, barriers to market access may even be created (unconsciously) for (potential) operators and possibly have negative impacts on competition. The proposed regulation appears to address certain points and close a number of gaps. It is to be assumed the same approach will also be taken *mutatis mutandis* to the pieces of material legislation in other fields that impact on the e-mobility sector (e.g. the ElWOG 2010 and the provisions of building law). Although the material legislation in related fields is probably not crucial when looked at in isolation, in itself the overall intensity of regulation may possibly be decisive for current or future operators. In this case, it is advantageous to weigh up the justified interests pursued with regulation against the objective of sufficiently pluralist competition. In any event, it should be ensured that the same (non-discriminatory) legal and de facto conditions apply directly and indirectly for all market participants on the supply side. No other approach to grant funding could possibly be entertained from a competition perspective. On the one hand, grants serve as indispensable instruments for the transformation towards e-mobility. On the other hand, they can distort the market in certain ways. Against this background, it also appears essential for grants awarded at the federal level to be organised transparently and sustainably in future so that they meaningfully enhance healthy competition. Finally, comparison of the Austrian system with the legal regimes in other countries brings out interesting aspects that are evidently conducive to competition in those jurisdictions. The Netherlands, in particular, appear to have taken on something of a pioneering role in most areas of e-mobility. Above all, the trailblazing and comparatively lean legal framework they adopted early on has, in retrospect, proved to be a model for success. In comparison to the rest of Europe, e-mobility in the Netherlands still has certain unique features today that – in combination with the other factors that have been discussed – help competition to flourish there.

8.2 Economic aspects

Electromobility is of growing significance for the electricity industry. For instance, e-mobility will prospectively force the power sector to supply new levels of consumption, which will also impose new structural demands on the energy industry. Charging infrastructure will have an important role in this context. As one element of charging

infrastructure, publicly accessible charge points are a specific form of infrastructure that is being rolled out at the moment. This means new markets are currently taking shape, whose competitive structure may continue to become more economically significant. While the refilling station market has been analysed many times by competition economists in the past, no corresponding studies about these dynamically developing markets have been published in Austria to date.

The roll-out of charging infrastructure is often regarded by policymakers as a task for the public sector, which gives the public energy suppliers a key position. In this connection, however, it is to be noted publicly accessible charge points are perfectly normal economic assets that, essentially, it is possible to create just as well through private investment activities. The role played by the public sector is also a consequence of the fact that the roll-out of charging networks driven by private businesses has been making only slow progress in the last few years and has failed to meet the targets set for it.

On account of the methodological problems thrown up by the direct measurement of market power, it has been necessary, in order to conduct a more-wide-ranging analysis, to resort to the concept of indirectly assessing market power by analysing the structure of the market. The significance of market structure analysis also derives directly from cartel law, in particular Sec. 4 para. 2 Federal Cartel Act, which lays down the criteria under which an undertaking may be suspected of having relative market power. It is accordingly suspected an undertaking is dominant on a market (a suspicion that can be rebutted) and, looked at economically, holds significant market power, if it has a market share of at least 30%. Not least in view of the great significance of accessibility and availability, local concentrations accurately reflect the individual alternatives open to consumers.

The following statistical analysis draws on data from the E-Control charge point registry, which was accessed on 12 April 2022. The proportions of charge points controlled by different providers in each region have been calculated from the data available.

From a product-market perspective, all the charge points were looked at, while narrower definitions would have resulted in the markets being found to be more concentrated. An evaluation based on power output is not possible on account of the lack of information about some charge points' output. A number of providers display the cross-ownership links typical of the Austrian energy market (cf. section 6.2), but these have not been factored into the analysis below. It is highly probable these reciprocal equity holdings would have influenced the results presented, with a weakening of competitiveness and therefore a risk of increases in actual market power.

Geographically, market shares were calculated at the municipal level, which deviates from the German Federal Cartel Office's preliminary market definition discussed in section 6.1. This approach has been taken because the present report is intended to give a global impression of the competition situation so that initial inferences can be drawn about the functioning of competition in the provision of charging current at publicly accessible charge points across Austria, thus allowing recommendations to be derived for the public and decision-makers. The fact that these are dynamic markets in the process of being built up provides further support for this approach. The picture sketched out below is therefore likely to help in identifying problematic developments in good time and so supply decision-makers with a basis for action to combat such developments in good time.

8.2.1 Concentrations

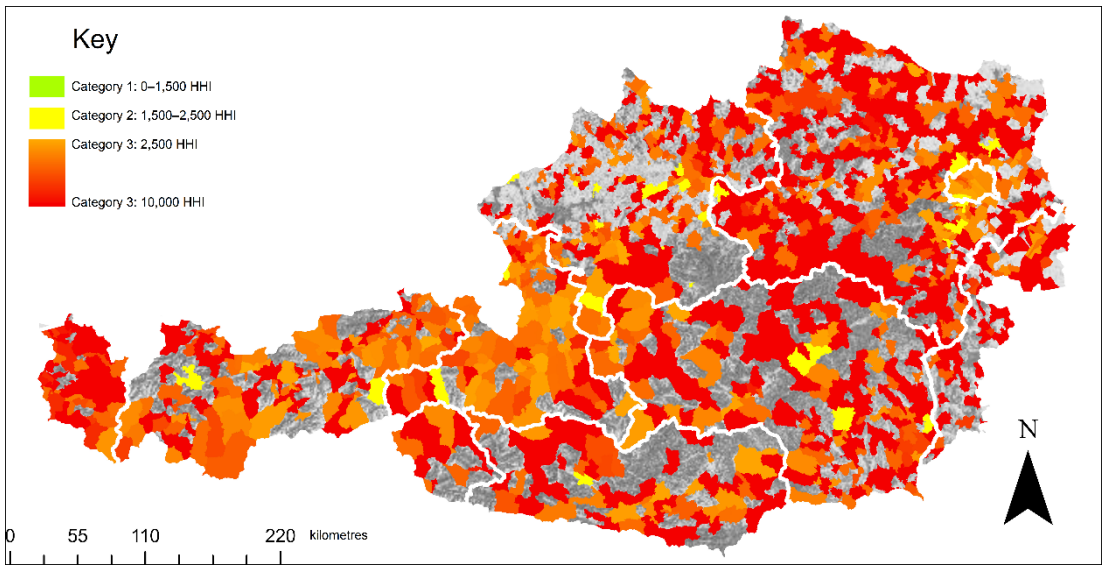
Figure 46 gives an overview of the concentration of publicly accessible charge points at the postcode level. Here, market power is measured indirectly using the Herfindahl-Hirschman Index (HHI).[136] The HHI is generated from the market shares of all the undertakings active on the market. In order to support the reader in its interpretation, three categories have been defined: Category 1 (0 to and including 1,500), Category 2 (1,500 to and including 2,500) and Category 3 (2,500 to and including 10,000), while 10,000 is the arithmetical maximum where a monopoly exists. These categories are taken from the Horizontal Merger Guidelines of the US Department of Justice and Federal Trade Commission.[137] The US authorities use them to review whether mergers are harmful or not.

When the concentration of all providers of charge points is analysed at the municipal level a high degree of concentration is evident. Figure 46 shows this graphically: there are no municipalities in Category 1, thirty-one in Category 2 and 1,251 in Category 3. The remaining municipalities had no charge points at the time when the data were gathered. Municipalities' HHIs range from 1,735 to 10,000 in Lower Austria, from 2,138 to 10,000 in Tyrol, from 2,044 to 10,000 in Styria, from 1,742 to 10,000 in Upper Austria, from 2,294 to 10,000 in Salzburg, from 1,917 to 6,860 in Vienna, from 3,080 to 10,000 in Burgenland, from 3,373 to 10,000 in Vorarlberg and from 2,176 to 10,000 in Carinthia (the provinces have been listed here in ascending order by HHI at the provincial level).

[136] $HHI = \sum_{j=1}^{J} MA_j^2$, where MA stands for market share and j for an undertaking in set J of all undertakings.

[137] https://www.ftc.gov/system/files/documents/public_statements/804291/100819hmg.pdf.

Figure 46: Concentration at municipal level measured by HHI



Source: E-Control charge point registry.

8.2.2 Public energy suppliers as the largest charge point operators

The discussion of the numbers of charge points operated by each provider in section 6.2 has already drawn attention to the public energy suppliers' regionally concentrated operations and the small number of providers active throughout Austria. Table 1 gives these concentrations for Austria's provinces and provincial capitals, listing the proportions of charge points provided by the largest CPO in each territory. It is apparent that the largest provider of publicly accessible charge points in all the provinces and provincial capitals is a public energy supplier, usually with a large market share. Carinthia, where the private company has.to.be maintains an active presence on behalf of its clients, has a slightly special status in this respect (see the discussion of has.to.be in section 6.2.2.2).

A narrower geographical market definition, as discussed in section 6.1, would usually be expected to result in larger regional market shares. From a competition perspective, large market shares make it more difficult for consumers to switch between alternative charge point operators, which can result in them becoming dependent on particular providers. There is frequently another form of economic dependency on regional energy suppliers because they provide connections to the grid. Thanks to the liberalisation on the power market, domestic power customers are no longer dependent on particular providers in the same way.

Table 1: CR1 concentration rate in Austria's provinces and provincial capitals

Territory	Largest charge point operator	Ownership	Proportion of charge points
Vorarlberg Bregenz (District)	Illwerke Illwerke	Public Public	88% 94%
Burgenland Eisenstadt	Energie Burgenland Energie Burgenland	Public Public	70% 63%
Styria Graz	Energie Steiermark Energie Graz	Public Public	38% 30%
Tyrol Innsbruck	TIWAG Innsbrucker Kommunalbetriebe	Public Public	26% 46%
Carinthia Klagenfurt	Kelag[138] Kelag[139]	Public Public	35% 13%
Upper Austria Linz	Energie AG LINZ AG	Public Public	28% **72%**
Salzburg Salzburg	Salzburg AG Salzburg AG	Public Public	**61%** **70%**
Lower Austria St. Pölten	EVN EVN	Public Public	**57%** **56%**
Vienna	Wien Energie	Public	**77%**

Source: E-Control charge point registry.

One factor that exacerbates the dependency of all those electric car drivers who do not have their own private charging facilities is that they are unable to fall back on such facilities by making minor changes to their behaviour. It has previously been noted in section 0 that the people who are currently able to afford electric cars are more likely to have the option of charging them privately (e.g. in their own garages) than is to be presumed for the average Austrian car driver. As electric cars spread through the vehicle fleet, it is to be anticipated drivers will become more dependent on publicly accessible charge points, particularly in conurbations.

The current market outcome with the energy suppliers holding dominant positions results from the important role played by the provincial and municipally owned energy suppliers in the roll-out of e-mobility. The local and regional authorities are also acting through

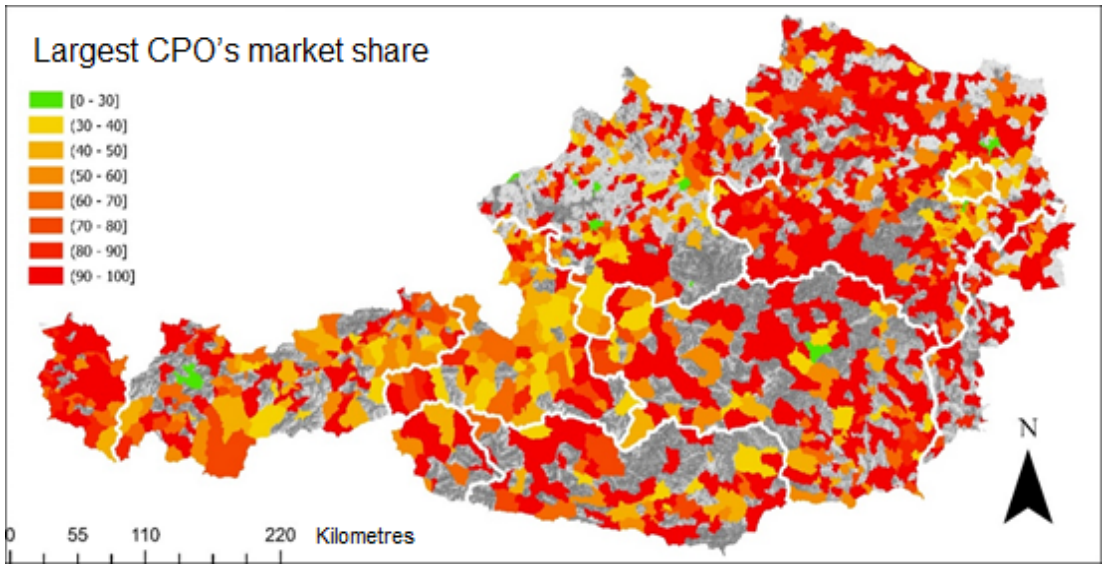
[138] Although has.to.be lists the most charge points for Carinthia in the charge point registry (39%), they do not constitute a single competitive entity (see the discussion of has.to.be in section 6.2.2.2).

[139] Although has.to.be lists the most charge points for Klagenfurt in the charge point registry (75%), they do not constitute a single competitive entity (see the discussion of has.to.be in section 6.2.2.2).

their energy suppliers because the roll-out of charging networks by private businesses has been making only slow progress in the last few years.

Figure 47 shows the current market outcome graphically, depicting the proportions of charge points operated by the largest provider in each postcode. In this context, the (rebuttable) suspicion of relative market power as of a market share of 30% pursuant to Sec. 4 para. 2 Federal Cartel Act represents a comparative yardstick. It reveals that consumers do not have particularly good opportunities to switch providers in many parts of Austria. Such concentration may represent one source of market power. This observation is qualified by the fact that charging infrastructure is still in the early stages of its development. In the market survey, for instance, 96% of operators stated they were not yet making any profits in this business field. It cannot be ruled out that new participants will enter the market as profit expectations rise. From a competition perspective, however, pro-competitive measures should be taken in good time so as to forge a competitive market structure if the market starts to display tendencies towards saturation with high occupancy rates, a situation in which both the incentives to attract new customers and, in parallel, the incentives to demand competitive prices as well would become weaker.

Figure 47: Market shares of the largest CPOs in each municipality



Source: E-Control charge point registry.

8.2.3 Competition classification of EMPs

Charging customers frequently use charge cards issued by EMPs and not the ad hoc charging services offered by CPOs. This ready use of EMPs with set charging tariffs might convey the impression that location-based competition between charge point operators

is not of outstanding significance for price competition. In particular, this appears to be the case when many areas are covered by the same tariff.

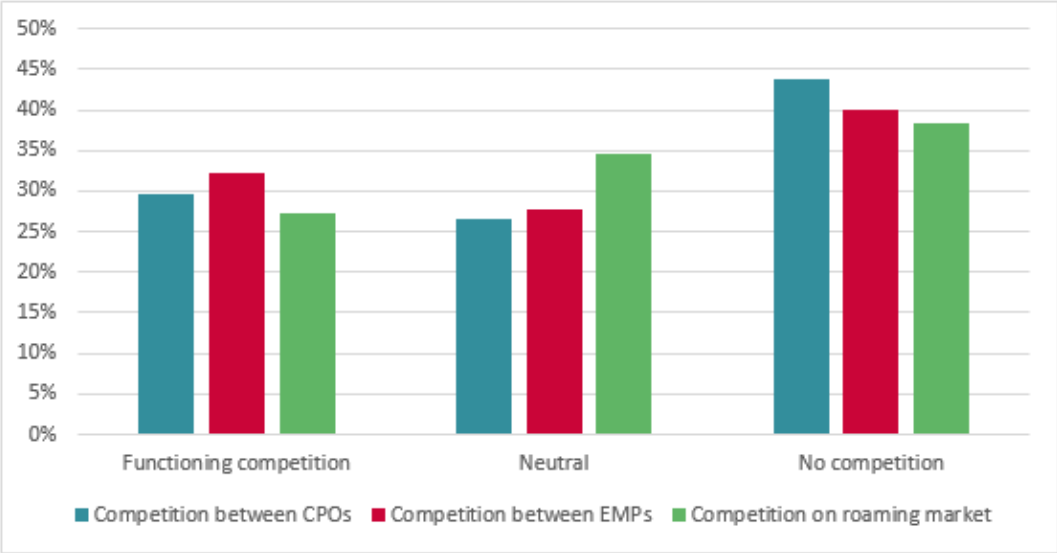
However, since charge point operators are able to ask for different trade prices from different EMPs for roaming, negotiation theory suggests the operator can always demand higher trade prices when the EMP is reliant on concluding a contract with them, or demand prohibitive fees and/or trade prices in order to keep the EMP out of a region. Concentration at the level of charge point operators is therefore not balanced out by the EMP level. Rather, it is the case that if an EMP decides not to cooperate with a provider who has a strong position on a regional market, it can only offer its customers inadequate coverage with charging facilities in that area. In this context, it is worrying, in particular, if individual charge point operators publicly offer prohibitively poor conditions on roaming platforms in order to force EMPs into bilateral contracts. This could result in unfavourable terms being concealed and/or imposed.

Conversely, it is also conceivable small charge point operators might be dependent on large EMPs whose charge cards are used by many electric car drivers in a particular region. In this case, the EMP is able to impose economically worse trade prices, which makes entry into the regional market less likely and therefore reduces potential competition. The most effective instrument against this appears, however, to be the possibility of ad hoc charging, allowing competitive prices to be offered. This alternative means charge point operators always have a different way of entering into direct contact with consumers.

8.2.4 Rating of competitive conditions in the market survey

In the last part of the market survey, the respondents were asked about their perceptions of the intensity of competition on this market. Competition between charging infrastructure operators, competition between e-mobility providers and competition on the roaming market were distinguished. It was possible to give scores on a scale from 1 (functioning competition) to 5 (no competition). The results are summarised in Figure 48. For reasons of clarity, scores 1 and 2 have been combined in Figure 48 as “functioning competition” and scores 4 and 5 as “no competition”, while score 3 has been labelled neutral. It can be taken from the graph that only 27% of the respondents felt there was functioning competition on the roaming market, 30% believed there was functioning competition between CPOs and just 32% saw functioning competition between EMPs. At the same time 44% of respondents perceived no competition between CPOs, 40% no competition between EMPs and 38% no competition on the roaming market. There would definitely seem to be room for improvement in these figures.

Figure 48: Rating of competition between CPOs, between EMPs, and on the roaming market



The evaluation of the question about the greatest obstacles to functioning competition on the market for EV charging stations brought two problematic points to light. On the one hand, there was a lack of transparency about charging tariffs and, on the other hand, there was the associated issue of the inconsistency of billing arrangements, with some operators billing by charge duration and others by the kWh. Billing by usage (by the kWh) is likely to be preferred by charging customers. Although it was said there were many providers who offered usage-based billing, the absence of a statutory foundation for billing by the kWh meant these providers were operating in a legal grey area,[140] which therefore gave them a competitive advantage over those who did not wish to venture into this grey area.

Another critical point that was raised several times was the extent of the provincial energy suppliers' influence and their position on the market. There were complaints that they controlled the connections to the grid for all other actors, setting the use of system fees for example. Many respondents criticised that these fees were too high and possibly not billed to their own CPOs and EMPs under the provincial electricity suppliers' internal pricing systems, which meant these integrated undertakings had a cost advantage in this respect. Another criticism expressed in this context related to the terms for roaming: here

[140] According to the respondents, no regulation of this kind on the conformity of charging stations with metrology law has yet been promulgated. Consultations are still ongoing on the missing regulation at the moment. On this topic, see also section 5.2.5

too, it was said the large providers were making access difficult by demanding high prices. On this topic, see also the problems described in section 7.2, Clearing and e-roaming

It is discernible from these responses to the market survey that relevant competitive forces, which are regarded as crucial for an efficient, customer-friendly market where discrimination is kept at bay and there is transparency for all market participants, have not yet really been able to develop on the market for publicly accessible charge points.

With regard to the lack of transparency about charging tariffs that has already been discussed at several points above, E-Control's planned Charging Tariff Calculator could bring about an improvement in the situation.

In future E-Control would like to use the same concept as for its domestic power tariff calculator to contribute to price transparency and therefore help ensure there is a fair market in the e-mobility sector as well. Although the "ad hoc price" for charging at publicly accessible charge points without a long-term contract can already be reported to the existing E-Control charge point registry and this will also be obligatory under the Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology's forthcoming Charge Point Data Regulation, this price is only relevant for less than 15% of domestic EV drivers' charging sessions because more than 90% of them use charge cards, so have long-term charging contracts.

To date there has not as yet been any suitable possible method with which to compare these services, which are in some respects designed in very different ways, and interested consumers have had to laboriously research the relevant offers individually, on the internet for example, if they did not want to accept the first product they were offered, such as the one provided by the manufacturer of their car, without actually knowing whether it was suitable for their personal requirements. The forthcoming Charging Tariff Calculator (working title) is intended to provide assistance in this respect.

By entering their annual mileage, the amount of power they purchase from public charge points in a year and the maximum charging speed of their current or future electric car, users will then be able to compare all offers that are potentially of interest, then further narrow them down to match their own requirements by applying filters based on personal criteria like "fast charging preferred" etc. Since the wider population is only just starting to learn about e-mobility and many current and, above all, future electric car drivers still have little idea how many kilowatt hours an electric car consumes covering 100 km, for example, assistance will be provided by allowing users to select their car model, so that the

manufacturer's data can simply be fed into the calculations, which is sufficient as the basis for an objective comparison of offers.

The beta phase for this new application is planned by E-Control for the first quarter of 2023.

8.2.5 Excursus: Vienna

The City of Vienna conducted an economic study looking at the effects of an increase in parking prices introduced in Vienna on 1 March 2012. According to this study, the elasticity of demand for parking spaces relative to the level of parking prices is -0.26 in the central 1st District and -0.47 for the 6th District.[141] This means a 1% increase in the price of short-stay parking reduces the demand for parking spaces by 0.26% in one district and by 0.47% in the other. It is therefore apparent demand is highly inelastic, so hardly reacts to price rises. This observation is also relevant to publicly accessible charge points because they are frequently installed in public parking spaces. Even if short-stay parking is an extreme example because the prices are set by the public authorities and there are hardly any alternative options, it may be expected drivers' behaviour will be similar when it comes to EV charging. Inelastic demand therefore means high market prices can be obtained.

Competition counters a high-priced market outcome because it ensures there are sufficient alternative options. However, if no alternative option is (freely) available, or if this alternative entails high costs or considerable effort (whether because it takes more time or because it involves practical inconveniences), prices will be demanded above a competitive level. In short, there is a danger of inelastic demand or dependencies being exploited. Competition therefore also means ensuring freedom of choice for consumers and is to be preferred to regulation.

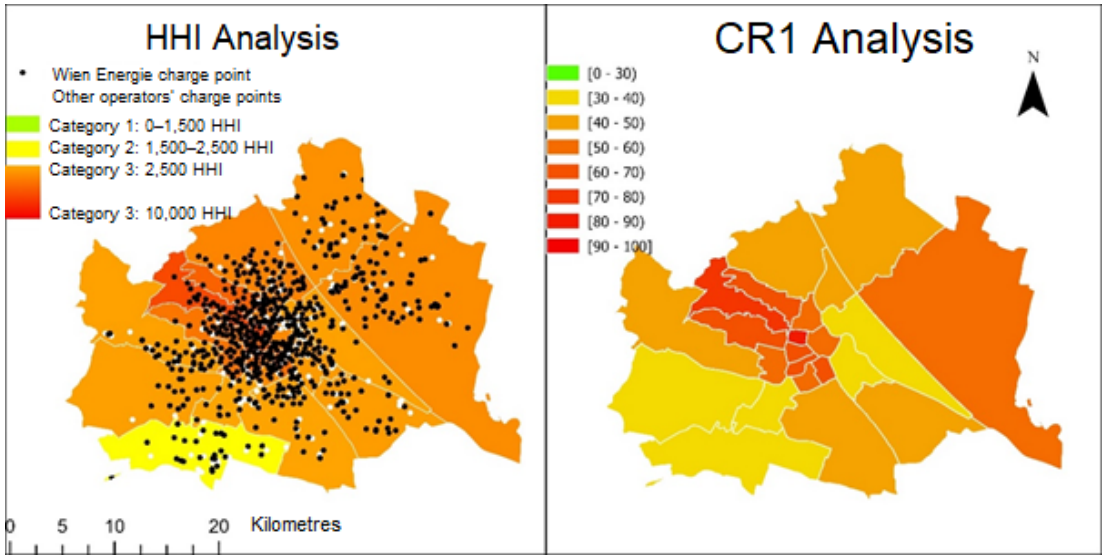
Figure 49 depicts the situation in Vienna. On the one hand, it shows the heavy clustering of publicly accessible charge points in the city; on the other hand, this clustered provision is essentially concentrated in the hands of a single charge point operator, Wien Energie. While the rapid roll-out of charging infrastructure is to be welcomed, the number one on the Vienna charging market also has a responsible role, especially because Vienna is Austria's biggest conurbation. In a conurbation of this kind, it is to be expected many electric car drivers will not have private charging facilities when they switch to e-mobility

[141] https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008294.pdf.

on account of the tough competition for space and they will therefore be dependent on publicly accessible charge points.

Over the last few years academic research has increasingly been looking at optimal ways of designing charging infrastructure for urban areas. Unfortunately, this research has not so far paid any attention to the providers among whom these optimally distributed charge points could be shared and what competition implications this would have. Nor is there any evidence about what effects the market entry of potential charge point operators such as food retailers, shopping centre operators or restaurants with car parks could have. Certainly, it would be worrying if market concentration were to become more firmly entrenched or even more pronounced compared to today on a mature market for charging infrastructure.

Figure 49: Concentration in Vienna



Source: E-Control charge point registry.

8.2.6 Conclusions

The development of publicly accessible charging infrastructure is currently being driven by public energy suppliers operating on a commercial basis. Since these energy suppliers are directly owned by municipalities that also allocate parking spaces for the installation of charge points or the higher-level local or regional authorities, non-discriminatory access to sites for all charge point operators is decisive. To safeguard competition over the long term, it is important there comes to be a mix of different providers at the local level. In this context, the AFCA would like to emphasise that, by calling for a range of different providers, it does not wish to imply any preference for private over public

undertakings. Rather, it would be desirable from a competition perspective if the public charge point operators were to start operating as CPOs outside the areas where they have historically been active.

The dominance of the market for publicly accessible charge points by energy suppliers who bundle the liberalised marketing of domestic power and the provision of publicly accessible charge points within a single undertaking may incentivise conduct that distorts competition. Where local monopolies make individual electric car drivers dependent on particular providers, the bundling or coupling of charge cards and domestic power may distort competition. As a matter of principle, it is to be expected undertakings will not knowingly contravene cartel law. The AFCA will, however, observe the market closely in this connection and follow up justified suspicions cartel law is being breached.

Pursuant to the Charge Point Data Regulation, the charge point registry is to be expanded so that it not only supplies information about charging stations' accessibility (geographical location), but also about their availability (occupied/free). In the current environment, with drivers overwhelming using charge cards that fix prices for a bundle of charge points over a longer period (e.g. a year), this appears *ex ante* unproblematic. However, the AFCA wishes to highlight the fact that these data make dynamic pricing possible through the application of automatic algorithms. The combination of data and inelastic demand permits price discrimination, as a result of which, economically speaking, the entire consumer surplus could actually be skimmed off, in other words the maximum achievable price could be demanded. This would be disadvantageous for the consumer.

In order to retain the competitiveness of small CPOs and seek to prevent them being taken over by EMPs with strong positions on the market, it is vital, firstly, that independent CPOs continue to be guaranteed the ability to set prices for ad hoc charging themselves. Secondly, it is important that these CPOs' publicly accessible charge points also feature in the main navigation software packages, including data about their accessibility (geographical location) and, where relevant, their availability (occupied/free) as well – should this be the standard on the market. The expansion of E-Control's charge point registry will make a valuable contribution to the achievement of this goal.

Even if private charge points constitute a separate market from public charge points, they nevertheless have their place in the hierarchy of services. Private charging with domestic power is usually the cheapest alternative and therefore has an impact on the prices at publicly accessible charge points, particularly if price discrimination is not possible. Grant funding for private charge points is therefore also suitable as a means of easing the

competitive situation at publicly accessible charge points, although it is to be ensured prices are attractive (in comparison to domestic power).

Apart from the publicly accessible charge points provided by energy suppliers, there are also innovative projects to create charge points that diverge from the classic model of charging in public parking spaces and therefore combat market concentration. One example of such innovation is the German CrowdStrom research project, which is trialling a new business model.[142] The idea is for ordinary citizens to install peer-to-peer charge points on their private property and make them available via a platform. The owners receive compensation when their charge point is used. Similar business models would also appear interesting for tenants' associations at apartment blocks in conurbations as a way of reducing their operating costs by earning additional income. What is important is that such projects act as independent competitors too and that the main parameters of competition (such as pricing) are not placed in the hands of companies with strong positions on the market.

In line with a proposal put forward by the German Monopolies Commission,[143] market concentration among the operators of charge points could be combated effectively if – as a last resort – the operation of charge points were effectively decoupled from access to them for third-party charging current providers. At present, the conceptual approach chosen for charge points posits free competition to provide publicly accessible charging current on the basis of the competing offers from charge point operators, backed up by EMPs. If this market design is retained, it is undeniable concentration amounts to market power, which makes abuse possible. It would also be possible to weigh up fundamentally altering the conceptual approach to the charging current business. As an alternative, consideration would be given to opening up the charging infrastructure so that various suppliers could sell power directly to end customers, as under the liberalisation of the power market. The market design would therefore be comparable to that for domestic power, and the expectation would be that competition to supply power would create similar opportunities for individuals to switch provider as are enjoyed by domestic power customers. This would be predicated on appropriate regulation of access, under which the regulated access fees would have to take account of each charge point's specific technical and economic significance. However, action of this kind would only appear necessary if pro-competitive measures had not been taken in good time and the market had reached a sufficient level of saturation. By contrast, during a roll-out phase in which

[142] Cf. Azarova, Valeriya et al (2020): "The potential for community financed electric vehicle charging infrastructure", in: *Transportation Research Part D*, vol. 88, article 102541 (2020).

[143] See German Monopolies Commission: *7. Sektorgutachten Energie: Wettbewerb mit neuer Energie*, para. 295, for a related recommendation.

hardly any profits are yet being made and competition is driven by innovation, the regulation of access might also reduce competition between providers for the most suitable locations or hamper innovative business models. This is why it is important for all concerned to set or accept incentives for more competition now. Nonetheless, the early market phase does not justify establishing, consolidating or even supporting regional monopolies. It is therefore necessary to factor in competition considerations, even at this early stage, to prevent more drastic regulatory interventions becoming necessary in the future.

9 Competition recommendations

- **Transparency about prices, energy purchased and charge duration**.
  Transparency for consumers is essential. It must be ensured to a greater extent that consumers are able to keep track of the amounts of energy they purchase via charging infrastructure and what they have been billed in a transparent manner. Furthermore, consumers should have charging options that match their individual needs, such as opportunities for ad hoc charging or arrangements for billing by the kWh (e.g. with prices shown on the charge point display). The appropriate technical, legal and practical options should be created for this purpose. Fair competition will have to prevail on the provider side if this objective is to be attained. The same also applies for the roaming market. It would be possible to ensure an appropriate level of transparency with regard to roaming services if consumers were informed on the spot about the (itemised) costs of recharging their vehicles before each session, just as in the mobile phone sector.

- **Federal-level grant funding and non-discrimination.**
  Grant award policy currently appears a highly suitable instrument with which to achieve the objectives that have been set for e-mobility. Against the background of the tendencies found towards concentration, consideration should be given to whether there is and will be **sufficient competition** between current and potential market participants when grants are awarded. With regard to the welcome premiss of **non-discrimination**, it would appear advisable, in particular, to take action against distortions of competition on the provider side.

- **Grant funding and local competition.**
  The AFCA recommends the legislature draw up a **strategy** for the **award of grants to small and micro charge point operators** as local competitors. The main concerns are their ability to set the parameters of competition themselves, non-discriminatory access to navigation services and comparison platforms, and the grant funding of innovative projects/business models at the local level.

- **Ensuring provider diversity at the municipal level.**
  It is recommended the municipalities plan strategically for a **local mix** of providers of publicly accessible charge points, in particular when making municipal sites available for the installation of charge points. A local mix ensures providers compete on price and quality, to consumers' advantage.

- **Prevention of regional concentrations.**
  From a competition perspective, it is recommended the (provincial) energy suppliers operate to a greater extent as active, relevant competitors providing publicly accessible charge points **beyond the borders of their own provinces** too.

- **Stronger compliance with cartel law.**
  Where an undertaking has market power, competition may be distorted by the **bundling or coupling** of charge cards and, for instance, domestic power. When such products are being designed, it is recommended the energy suppliers **set strict standards** by taking **pre-emptive compliance measures** so as to avoid the semblance of any possible suspicion cartel law is being breached, even at this early stage.

- **Roll-out of fast charging facilities.**
  In order to ensure the goals of greater vehicle range and diversity of provision are attained, the pace at which fast charge points are being rolled out along major traffic routes such as motorways and expressways is to be stepped up. The service stations equipped with charge points along these routes are of particular significance in making sure prices are fair for EV drivers who are dependent on fast charge points (e.g. on holidays, business trips, excursions).

- **Standardised billing.**
  A regulation of the Federal Office of Metrology and Surveying on the calibration of electrical tariff devices for the metering of electrical energy at charge points should be promulgated soon in order to ensure drivers are given the **option to choose usage-based billing (by the kWh)** of the amount of power with which their vehicle has been charged at all publicly accessible charge points in the nea r future.

- **Tariff and price monitoring.**
  The AFCA welcomes the ideas put forward by **E-Control** and the **Austrian Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology** about the mandatory reporting of ad hoc charging tariffs to the charge point registry. In this context, it should be evaluated in future whether dynamic pricing and price discrimination pose any risks to consumers. The AFCA does not see any immediate signs of such risks from the charge cards with fixed prices that are common at the moment.

- **Competition between regulatory approaches.**
  If pro-competitive measures do not have the desired effect and an excessively concentrated market becomes firmly entrenched, it would, in line with the proposal

put forward by the German Monopolies Commission (*7. Sektorgutachten Energie*), be possible as a last resort to weigh up quite fundamentally altering the conceptual approach to the charging current market, which posits free competition to provide publicly accessible charging current on the basis of the competing offers from charge point operators. As an alternative, consideration would be given to opening up the charging infrastructure so that various suppliers could sell power directly to end customers. The market design would therefore be comparable to that for domestic power, and the expectation would be that competition between the different power suppliers would create similar opportunities for individuals to switch supplier as are enjoyed by domestic power customers.

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