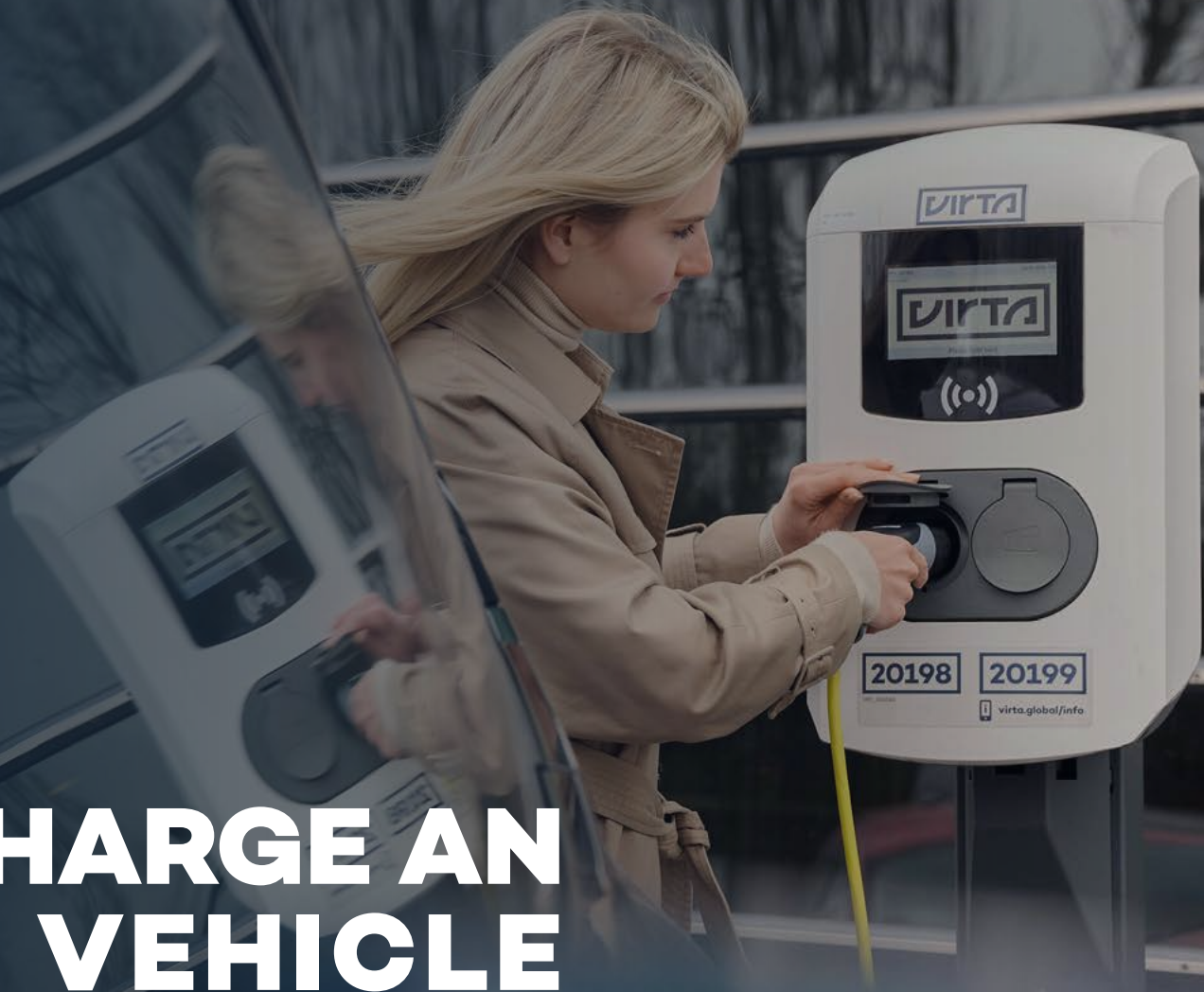


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HOW TO CHARGE AN ELECTRIC VEHICLE

in the public Powered by Virta network



INTRODUCTION

The truth is, that most charging takes place at home or work - in locations where cars are parked daily for longer periods of time. This is the most convenient way to charge electric vehicles (EVs).

But take your EV on a longer trip out of the city and public charging stations will surely come in handy. Public charging stations have one main purpose: **enabling long-distance travel.**

For a newbie, EV charging might sound like a drag. Don't let sockets, cables, devices or range anxiety mess with your head. EV charging is not rocket science.

And by the way, [range anxiety is a myth that we've debunked for you in our blog post.](#)

Just like an ICE car owner must know what gasoline to use, an EV driver has to know which socket fits their car. Knowing that is often enough. Other than that, it's quite easy.

In this guide, we'll take you through the public charging process, step by step.

We will cover:

- What you need for charging
- How to find charging stations
- How to charge
- How much charging costs
- Driving long distances with an EV



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1 WHAT DO YOU NEED FOR CHARGING?

A CABLE AND A CAR

Some EV drivers use public charging points only during longer trips, some almost daily. A large part of public chargers doesn't include a charging cable - this is why driving around with your own cable in the trunk is necessary.

Like with phone chargers, there are different plug types for EV charging. In the EU, **Type 2** is the standard charging plug type. That means that all public charging points must enable charging with a Type 2 cable.



No matter what car you drive, the most important equipment you need is **a cable with a Type 2 socket** at one end.

Fast charging devices have the cable fixed to the device. It's good to make sure if the device is suitable for your car before traveling there to charge.





MAKE IT EASY AND REGISTER

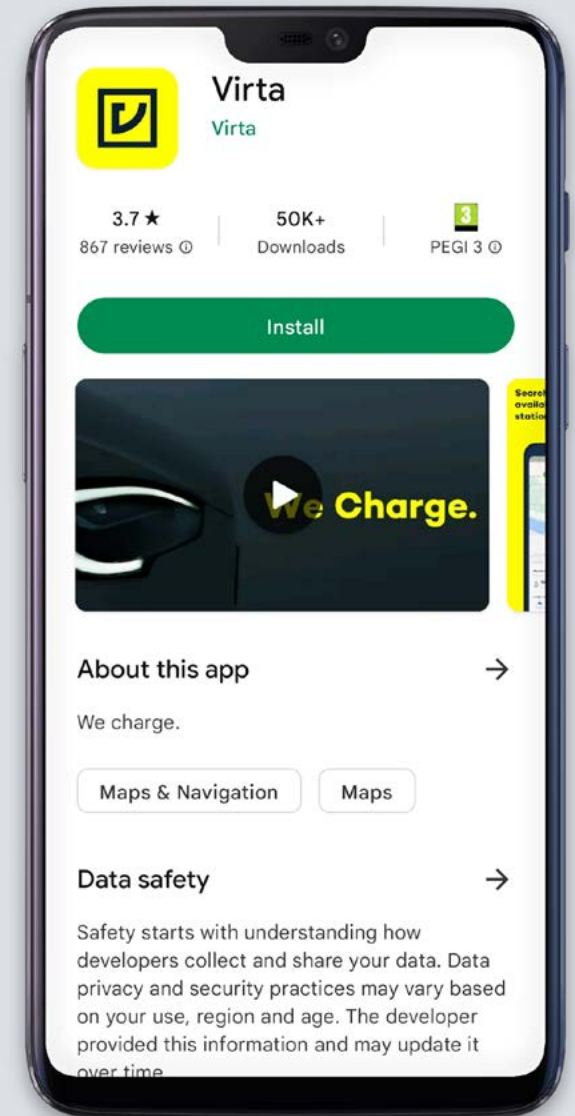
The charging stations in the Powered by Virta network can be used without registration by paying with a credit card. However, charging is effortless and much cheaper for registered users. There's no need to fill in your credit card details every time - or to even have a wallet with you.

When registering, your credit card is attached to your customer account. You'll be automatically billed for all your charging events based on the energy consumption.

Registered customers can get an RFID tag connected to their accounts. With this tag, you can identify yourself at the charging station, and start and stop charging.

Another convenient way to charge is with a mobile app. With the app, you can charge immediately after registration. Charging with a mobile app is the most painless option since most of us always carry a smartphone with us.

The Virta mobile app is available both on the App store as well as the Google Play store.





2 HOW TO FIND CHARGING POINTS?

CHARGING LOCATIONS EASILY ACCESSIBLE IN THE VIRTA MOBILE APP

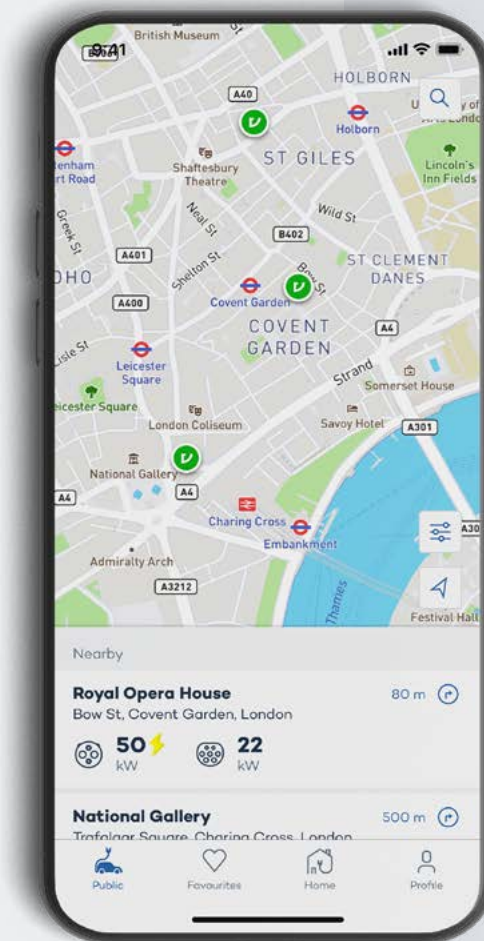
The Virta mobile app is the only tool you need for charging. You can find charging stations, view their availability and prices, identify yourself, start and stop charging and pay for your charging events.

The first thing you see in the mobile app is a map that shows you all public charging points in the Powered by Virta charging network.



TIP: Give your favourite charging points a star and you'll find them easily from your personal favourites list.

The map is also available for everyone in a web browser. In addition to the Powered by Virta charging points, you can view and charge at all charging points connected to roaming platforms all around Europe.



IS THE STATION AVAILABLE FOR ME?

The mobile application allows you to set filters for charging stations. You can for example choose to see only Virta charging stations, or set the filters to show only stations that have Type 2 or CCS Combo plugs.

You can easily check whether a charging point is available or not with just a quick glance.



Green icon means that the station has at least one charging point available.



If the station is currently occupied and someone else is charging there, the icon is blue.



Grey icon means that the station is either out of order or still under construction.


Some charging points can be reserved in advance with the mobile app. If you want to be certain to get a place to charge, you can reserve a spot for 15 minutes.




3 HOW TO CHARGE?

Charging might seem tricky as there are already hundreds of charger models in use. But no matter what the device looks like, most of them function in the same way.

The two most important things to remember are:

 If possible, start with plugging in the car.

 If not possible, start with identification. Then you can plug in and the charging event will start. This is because sometimes the socket is for example behind a hatch – in that case, identify yourself first, plug in second.

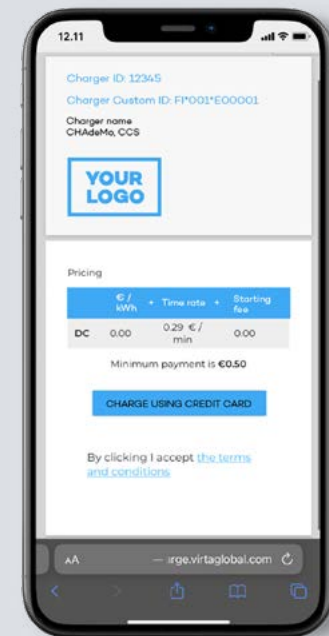


ONE-TIME PAYMENT

NOTE: When charging with a one-time payment, an extra 30% transaction cost is added to the price of charging.

Can you plug in? If yes, start with that. After this go to **the one-time payment web page** and follow the instructions there. Charging starts after filling in the credit card details. You can stop your charging event on the same web page.

What should you do if the charging station is locked? If the socket is for example behind a hatch, start with the payment. Fill in your credit card details on **the one-time payment web page**. Plug in when the socket door opens and your charging event will start.





REGISTERED CUSTOMERS

If you are a registered customer, follow these detailed instructions which work with most charging stations.

1. Plug in your car: Use your own charging cable unless there is a cable on the charger. And make sure the cable is fully plugged in.

2. Identify:

- Choose the charging point from the mobile app and press (or swipe) “Start charging”. NOTE: If the station has multiple sockets, make sure the charging point you have chosen has the same four-digit ID number as the charging point in the app.
- Or show your RFID keychain or card to the charging device. The RFID reader is usually marked on the device with a signal icon.

3. Charge: If the cable is plugged in properly, the charging event will start after successful identification.

And if the charger is locked and your car cannot be plugged in before identification, the only way is to do the whole thing another way around. **Identify first: Show RFID or start charging with the app: this will open the charger door -> Plug in -> Charging will start.**



FAST CHARGERS

Fast chargers use two different sockets and the charging cable is always attached to the charger.

Two different socket standards are used for fast charging, in addition to Tesla’s own socket type. Some fast chargers include both sockets, some only one of them. Check the available socket types from the mobile app in advance.

When charging at a fast-charging station:

- Start by connecting the car to the charger.
- Next, identify yourself in the mobile app or with an RFID card.

NOTE: Some fast chargers require you to press a start button on the charger after identification. Follow the instructions on the charger, since they can vary between models.



4 CAN I PARK HERE?

Prices for charging differ depending on the charging point owner. The same goes for the price of parking. The price of parking is often not included in the charging price: remember to always check the instructions on the parking lot signs.

Who can charge and how can I park?

As a charging business actor, we often come across a question of hybrid cars parking at charging stations. Can hybrid cars park and charge at the public charging stations? Is it acceptable to park at the charging point without charging? Here comes the simple rule of good behaviour:

EV charging points are meant for plug-in cars and for charging.

Most countries do not yet have laws or requirements about how EV charging stations should be marked and what should the signs look like. This will probably change over time.

Unfortunately, every now and then the charging station is blocked by an ICE car. Intentional or not, this causes an annoying hindrance. Leaving a (kind) note might help ICE car owners to keep their eyes open for charging points when parking in the future.

Another tricky scenario occurs when the charging cable cannot reach from the device to the car. This can be due to the position of the charger or another EV blocking the way. In most cases, the cars are partially to blame – the plug on an EV can be either at the front or back, on either side of the car. If two EVs want to charge with the same device and both have the plug at the same part of the vehicle, both might not be able to park in a way that the cables reach the device.

Some countries (Finland to mention one) have already changed legislation to ease the parking in cases like this. If necessary, the vehicle can be parked at the charging station the “wrong way around”: for instance against the driving direction at stations nearby roads.





5 HOW MUCH DOES CHARGING COST?

In the Powered by Virta network, charging point owners get to decide a price for charging. Owners get access to the Virta Platform where they can set the prices.

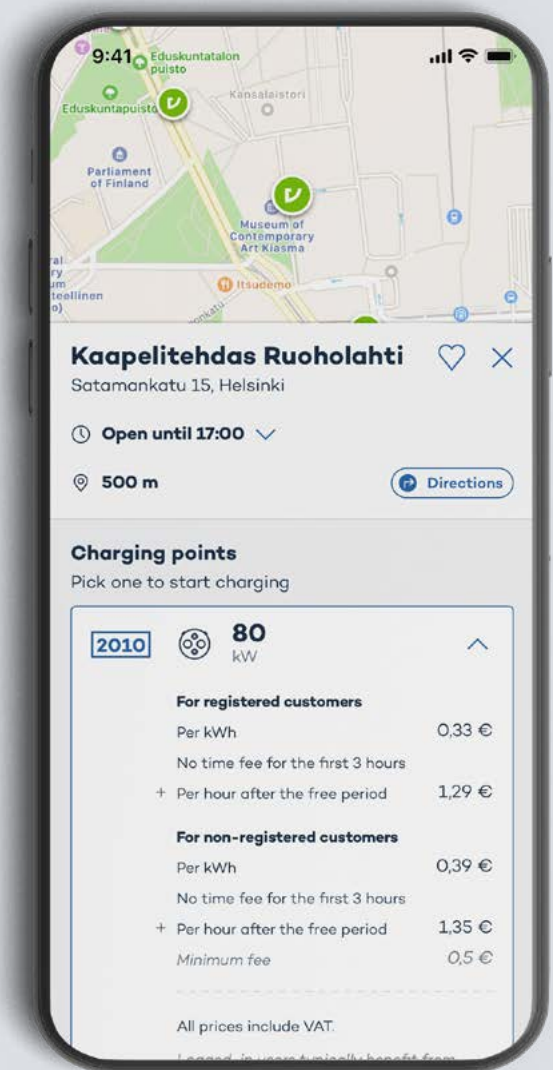
The price for charging can be set based on the used electricity, time spent, or a combination of these.

Usually charging costs approximately a few euros per 100 driving kilometres. Price can also be set to zero: for many businesses, offering EV charging is a new and attractive value-added service, and free charging attracts even more customers.

The price for charging at specific charging stations is always shown in the mobile app per kWh.

Example of a charging point pricing.

The price for charging can be set based on the used electricity, time spent, or a combination of these.





6 ARE EVs ANY GOOD FOR LONGER TRIPS?

A couple of times a year you should be able to drive hundreds of kilometres to your holiday destination. Today's electric cars suit long-distance travel just like any other car. Here are some tips for EV road-tripping:

TIPS FOR LONG-DISTANCE TRAVELLING WITH AN EV

- **Fast chargers, hurray!** If there are several route options to reach your destination, check the availability of fast chargers before you choose a route. The battery in a regular EV fills up in about 30 minutes at a fast charger: the perfect time to have lunch or take a coffee break to stay fresh for driving.

NOTE: Remember to make sure that the chosen charging locations suit your car. Not all fast-charging stations have both CCS Combo and CHAdeMO plugs.

- **Highway or no way?** Highways might not be the optimal route for EV road-tripping, since electric cars, like all cars, use much more energy with higher speeds. Keeping the speed below 100 km/h might be a saviour if you want to keep the amount of charging stops to a minimum. On the other hand, if there are multiple fast chargers on the route, maybe an extra stop doesn't matter if the gas pedal feels heavy.
- **Take it easy.** One thing is undeniable: the e-mobility sector is still young which is why road trips still require a little bit of planning. Making plans and schedules is ok, but be prepared for possible delays. Someone might be using a fast charger just when you arrive, which adds minutes to your schedule. Charger malfunctions are getting rarer as time goes by, but might still come your way on some unfortunate day.

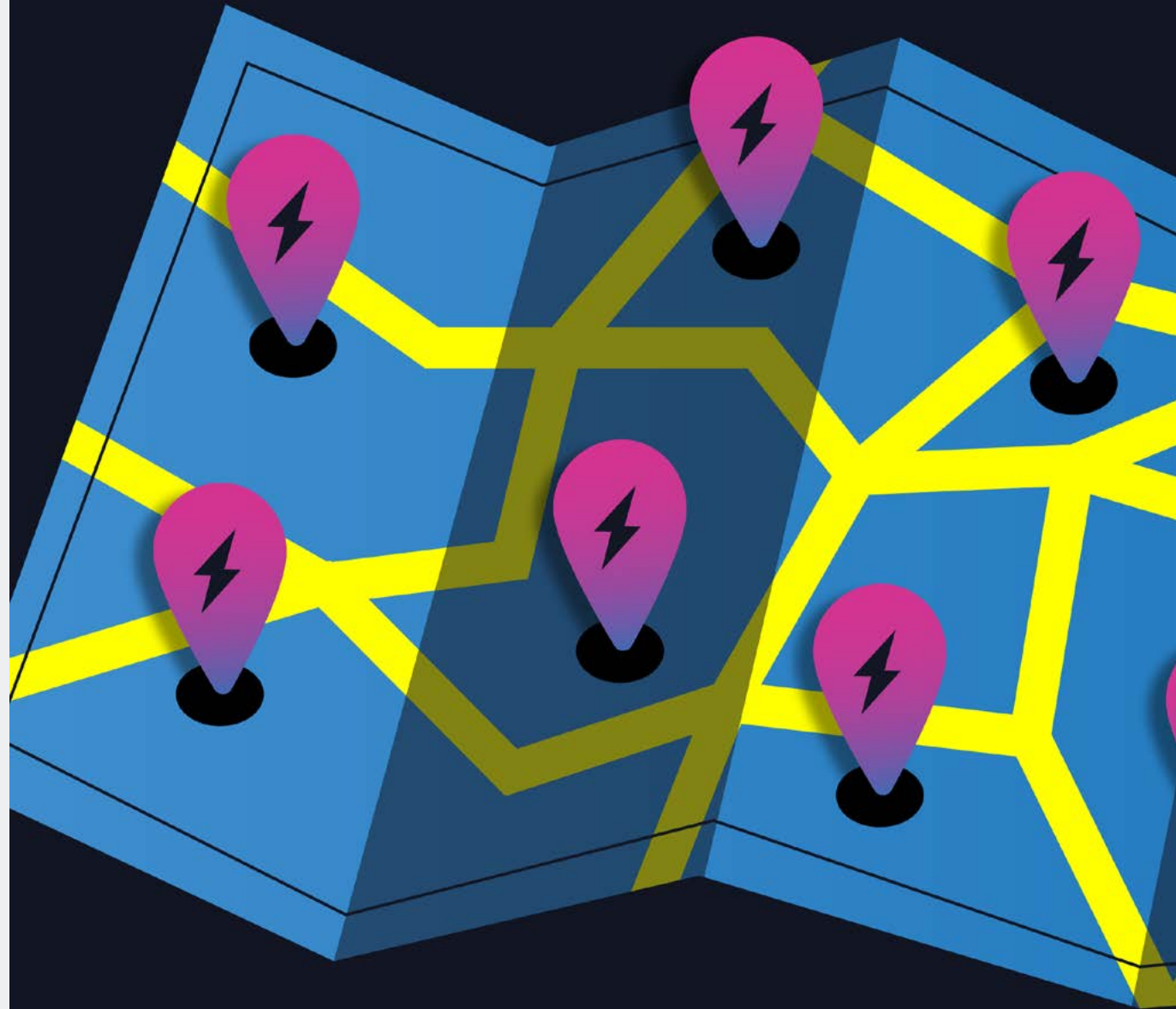




CHARGING FOR EVERYONE, EVERYWHERE.

Long-distance travelling with an EV still requires a hint of adventure-loving spirit. But with the rapidly growing charging networks and constant improvements in user experience, this won't be the case for long.

The Sustainable Development Scenario has predicted that the global amount of public slow chargers will be more than 20 million together with around 4 million public fast chargers by 2030. Yet, it should be noted that most of the charging happens at home. In the Sustainable Development Scenario, private chargers account for 90% of all chargers.



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**WE OFFER
CHARGING SERVICES
FOR EVERYONE,
EVERYWHERE**

With the Virta services, charging is fast and safe. The same RFID tags and mobile app work at all locations - at home and on the road.



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