octopus
ELECTROVERSE

CHARGING INFRASTRUCTURE INSIGHTS
UK & EUROPE

MAY 2025

HIGHLIGHTS OF THE MONTH

UK Charging: A Quickly Developing Landscape

The UK's EV charging network continues to grow at pace, surpassing 108,000 EVSE charge points in May 2025, just two months after hitting the 100,000 milestone. With this continued growth, the UK government's goal of 300,000 charge points by 2030 is well underway, supporting the country-wide shift to electric vehicles with the charging infrastructure to match.

Charging Speeds: Driver Needs & Operator Specialisms

In the UK, Slow-speed connectors account for around 49% of all connectors, while Rapid and Ultra-Rapid make up about 24%. These varying speeds serve different driver needs: slower chargers maintain steady use throughout the day, with a noticeable spike overnight, driven by off-peak tariffs and residential charging habits. Despite collectively making up just 25% of connectors in the UK, Rapid and Ultra-Rapid chargers account for over 55% of total energy consumption via Electroverse drivers, underlining their efficiency and heavy usage.

In the UK, different operators have established their presence across the charging speed spectrum. Shell Ubitricity and Pod Point dominate the slower AC charging space with expansive networks across urban areas. On the DC side, Tesla leads the rapid charging race, closely followed by InstaVolt, BP Pulse and Osprey.

Europe's Growing EV Charging Landscape

Looking beyond the UK, Europe's charging landscape is expanding quickly, totalling over 1.25 million charge points in May 2025. Fast charging (8 - 50 kW) leads the way continent-wide, making up around 67% of all connectors. Interestingly, in May 2025, across both Europe and the UK, Ultra-Rapid charging connectors have seen the biggest growth. In Europe, Ultra-Rapid connectors grew by 17%, whereas in the UK, this number grew to 21%.

Overall these insights offer a snapshot of a maturing and diversifying EV charging ecosystem - one that's evolving rapidly to meet the needs of both everyday and long-distance drivers alike.

UK HEADLINE STATISTICS

30 MINUTES
Average charge time*

35,909
Locations

114,870
Connectors

1.51 MILLION
Electric Vehicles

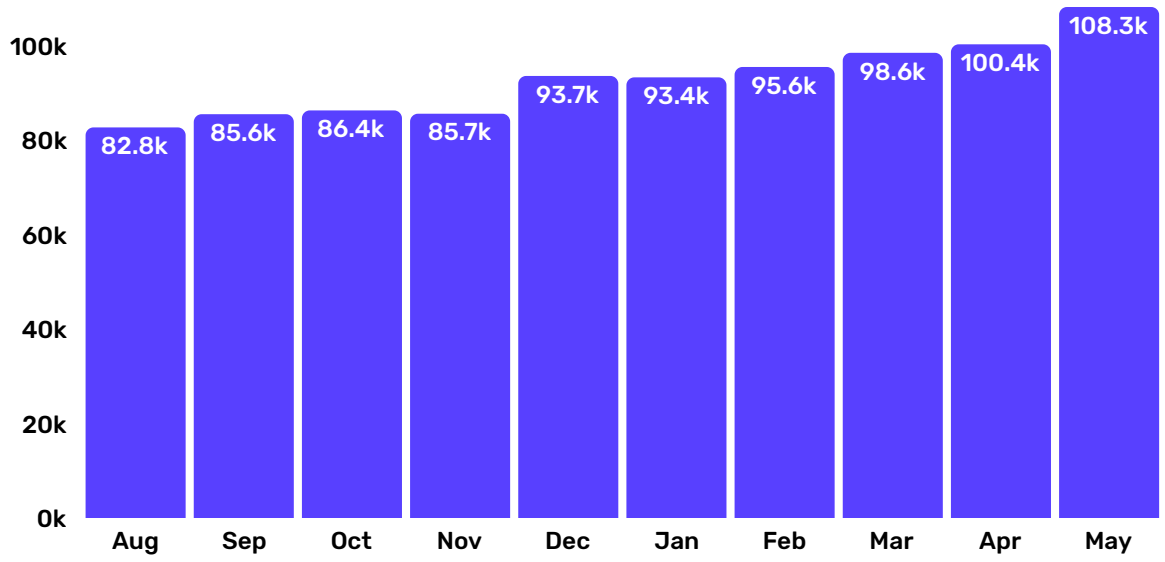
29.5 kWh
Average consumption per charge*

108,293
Charge Points

*Based on last month of Electroverse consumers charging data on Ultra Rapid Chargers

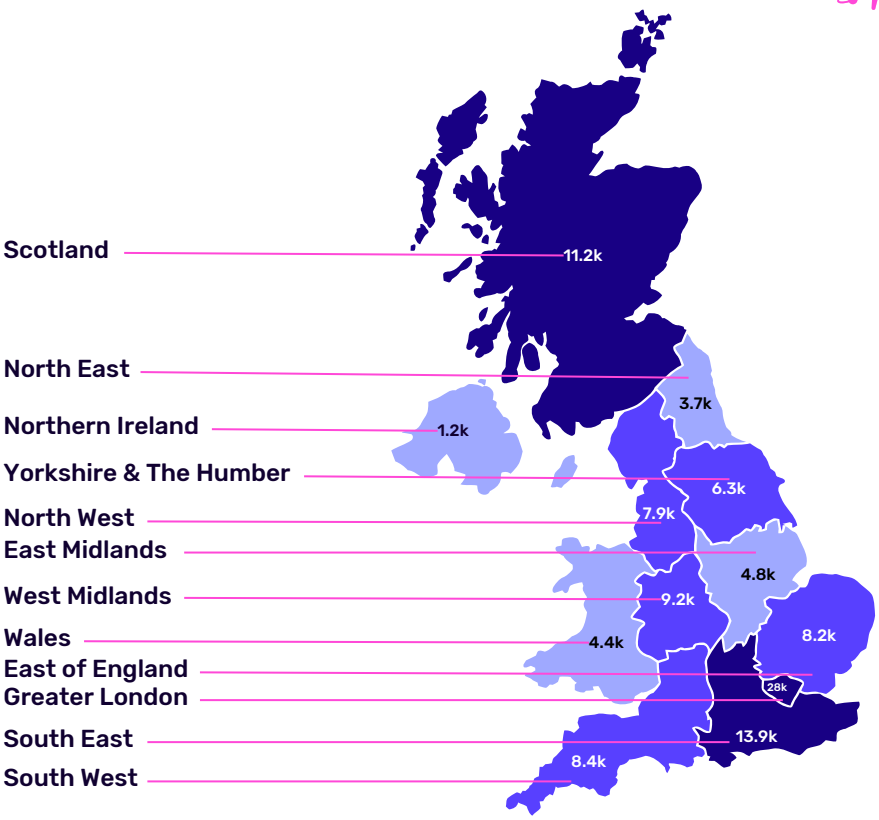
In May 2025, the growth in the number of charge points in the UK was the largest since December 2024. With May reaching over 108,000 charge points, that's a 7.5% growth - comparatively, the previous month of April saw growth of 1.8%. Highlighting another step towards to the government's 2030 goal of 300k charge points.

NUMBER OF CHARGE POINTS OVER TIME IN THE UK



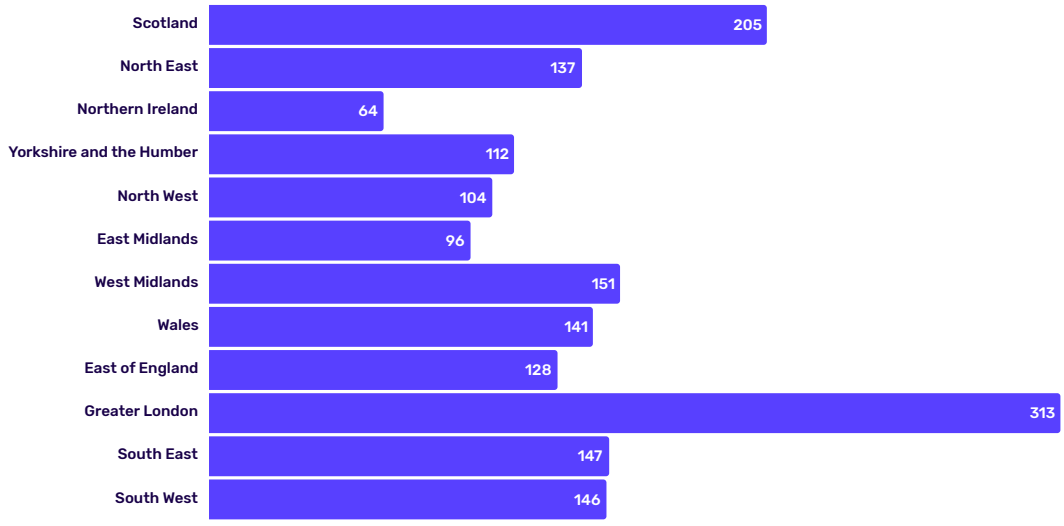
CHARGING INFRASTRUCTURE ACROSS THE UK

CHARGE POINTS BY REGION



< 1,000 | 1,001 - 5,000 | 5,001 - 10,000 | 10,001+

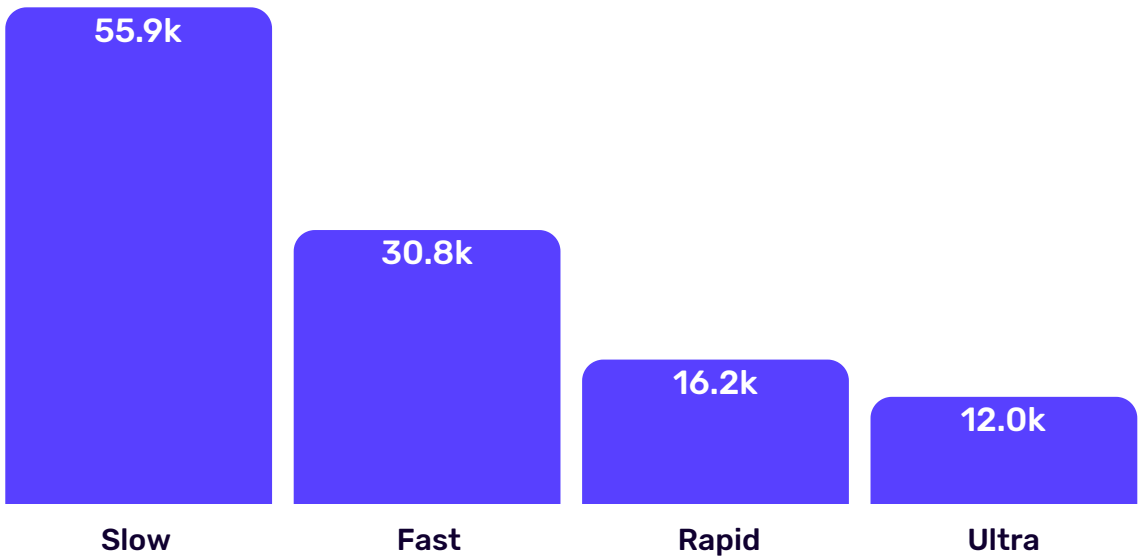
CHARGE POINTS PER 100K INHABITANTS



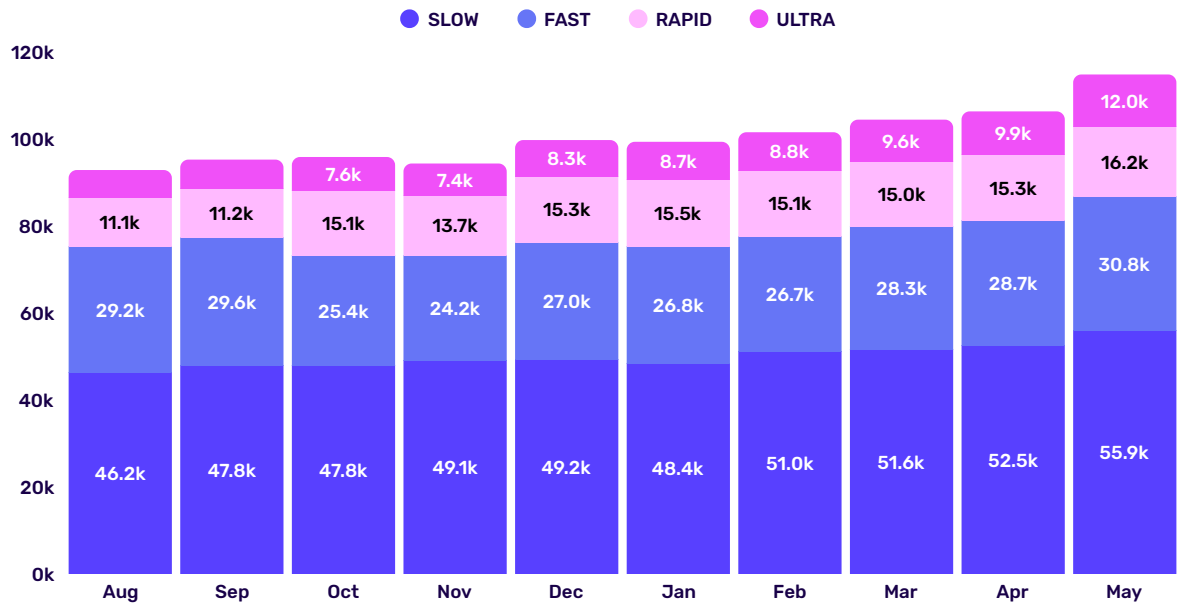
CHARGER CHARACTERISTICS

Charging connectors offer varying speeds (kW), and are classified as **slow** (< 8 kW), **fast** (8 - 50 kW), **rapid** (50 - 150 kW), or **ultra-rapid** (> 150 kW). In the UK, slow charging speeds make up around 49% of the total connectors - with rapid and ultra-rapid contributing around 24%. Charging speeds are often used relative to a variety of driver needs: some slower chargers can act as home charging alternatives, so a greater number is required to meet demand.

NUMBER OF CONNECTORS BY SPEED IN UK

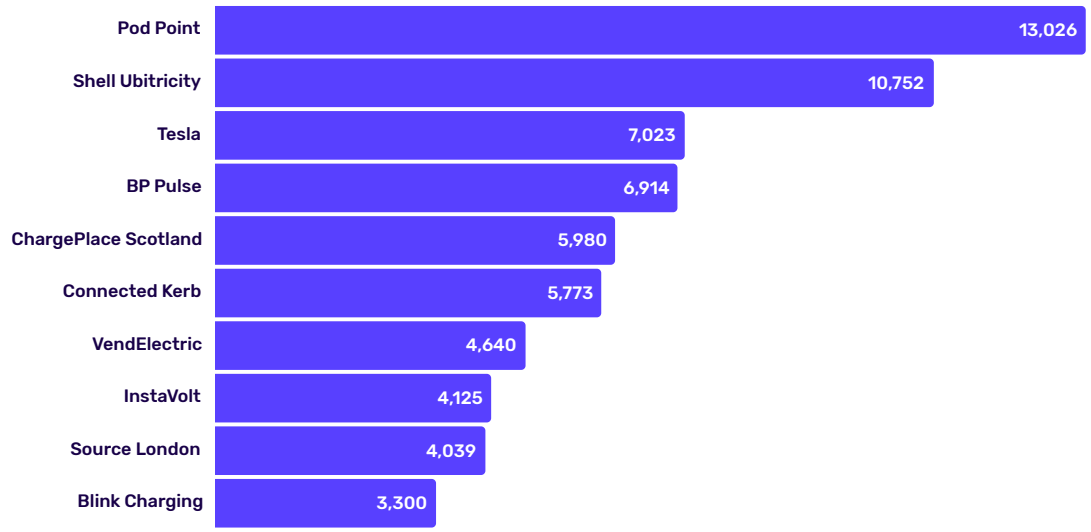


NUMBER OF CONNECTORS BY SPEED OVER TIME IN UK



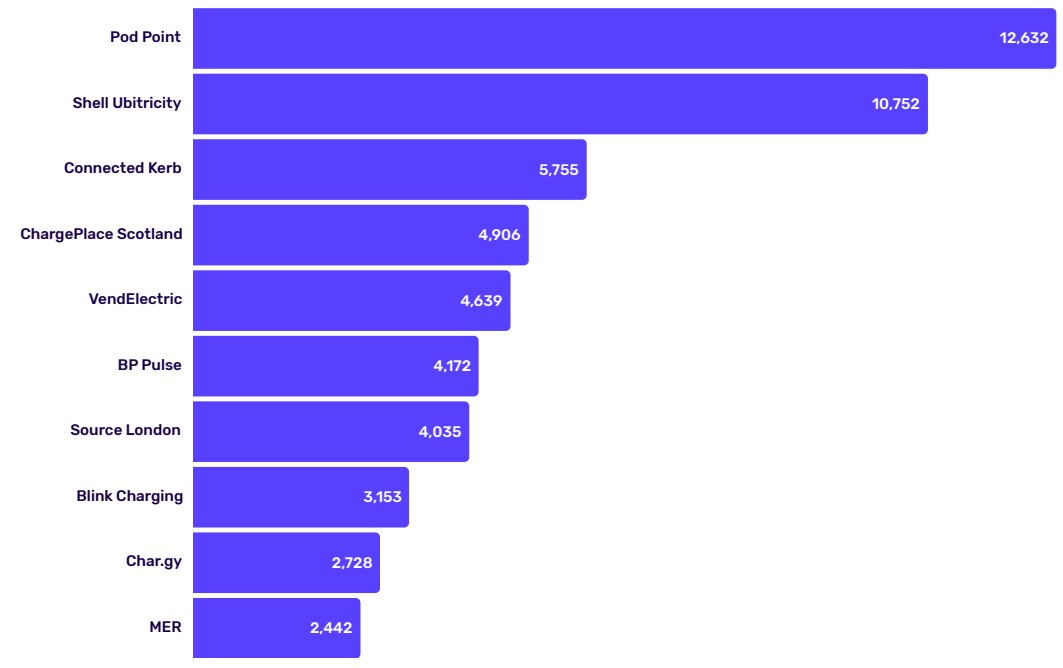
This graph details the largest operators by number of connectors across the UK. Operators - colloquially known as charging networks or ‘CPOs’ - run and maintain the charge points on their network.

LARGEST OPERATORS - NUMBER OF CONNECTORS

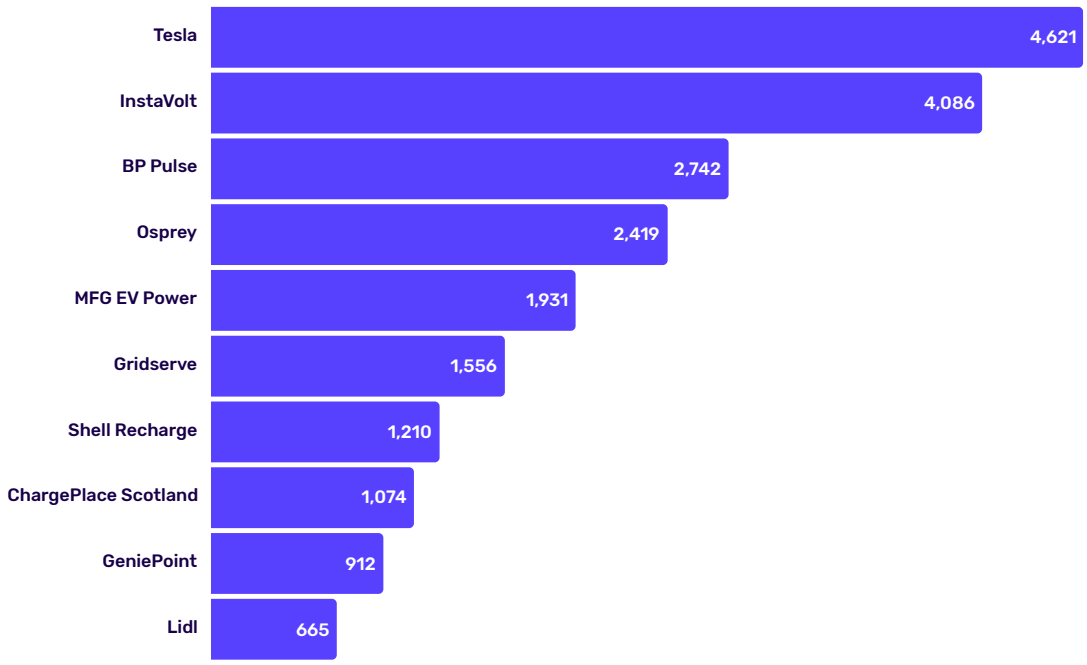


Operators specialising in slower AC charging, like Shell Ubitricity and Pod Point, have established a significant lead in the total number of connectors across the UK. In contrast, Tesla and Instavolt dominate the rapid DC charging landscape, closely followed by BP Pulse, and Osprey. While many CPOs focus on either AC or DC infrastructure, some, such as ChargePlace Scotland, offer both types of charging solutions.

LARGEST SLOW/ FAST OPERATORS - NUMBER OF CONNECTORS



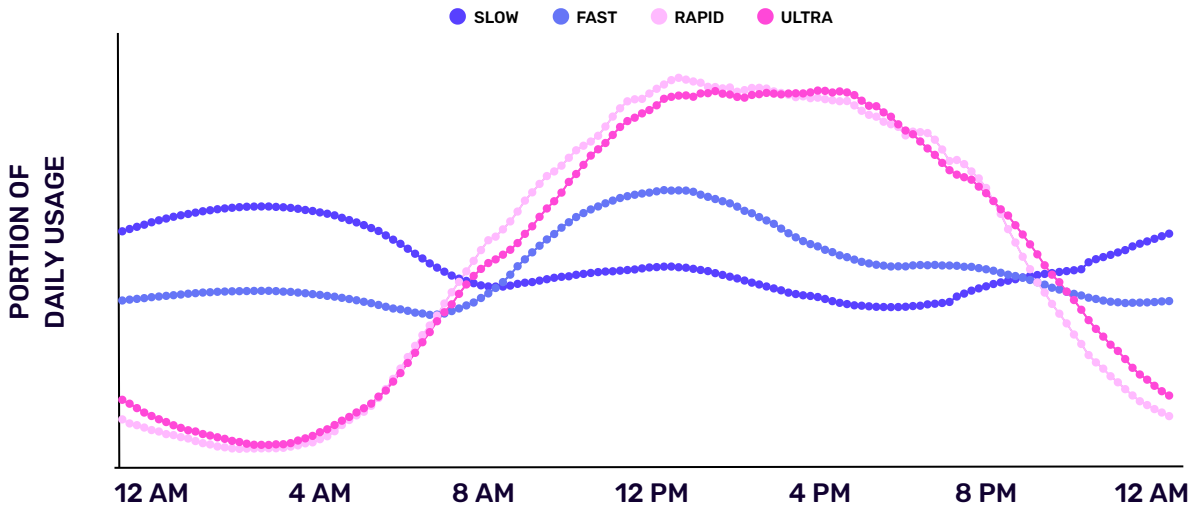
LARGEST RAPID/ ULTRA OPERATORS - NUMBER OF CONNECTORS



USAGE PROFILES

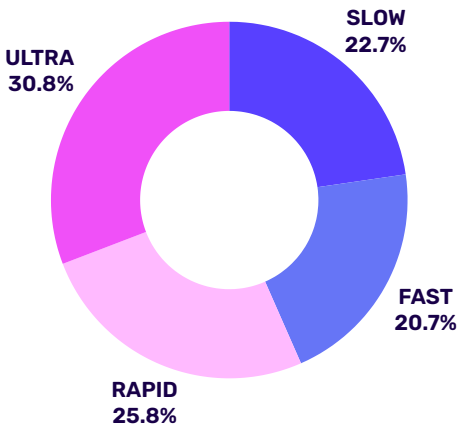
Daily usage curves highlight how EV drivers interact with EV charging infrastructure. Rapid and Ultra rapid charger usage peaks during the daytime when drivers are charging on-the-go. In contrast, slow charger utilisation remains steady throughout the day with an uptick overnight which aligns with drivers using cheaper slow chargers as an alternative to home charging.

CUSTOMER CHARGING PROFILES BY TIME OF DAY



Based on Octopus Electroverse consumption data from the last 12 months

CONSUMPTION BY SPEED



AVERAGE TIME CHARGING BY SPEED

SPEED	TIME
SLOW	05 hr 53 minutes
FAST	03 hr 36 minutes
RAPID	00 hr 38 minutes
ULTRA	00 hr 34 minutes

Based on Octopus Electroverse consumption data from the last month

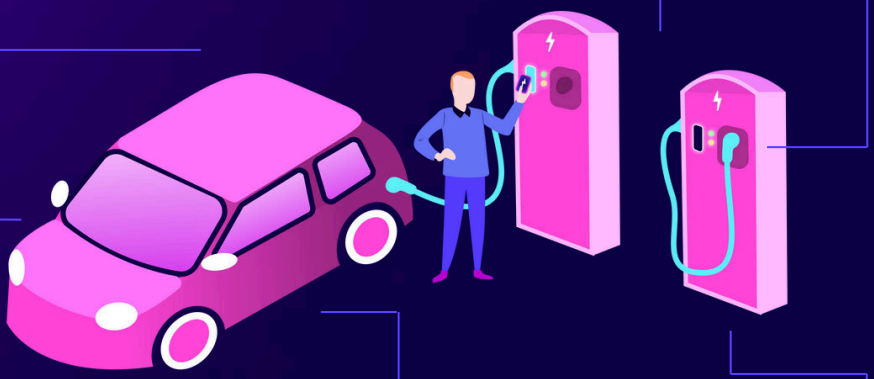
When we look at the distribution of Consumption by Speed, more than 55% of the total volume of kWh consumed by Electroverse drivers is via ultra-rapid & rapid chargers despite these only accounting for 10% and 15% of total connectors respectively. This is partly due to the fact that these connectors can deliver more energy more quickly.

EUROPEAN HEADLINE STATISTICS

29 MINUTES
Average charge time*

355,537
Locations

1,329,881
Connectors



13.7 MILLION
Electric Vehicles

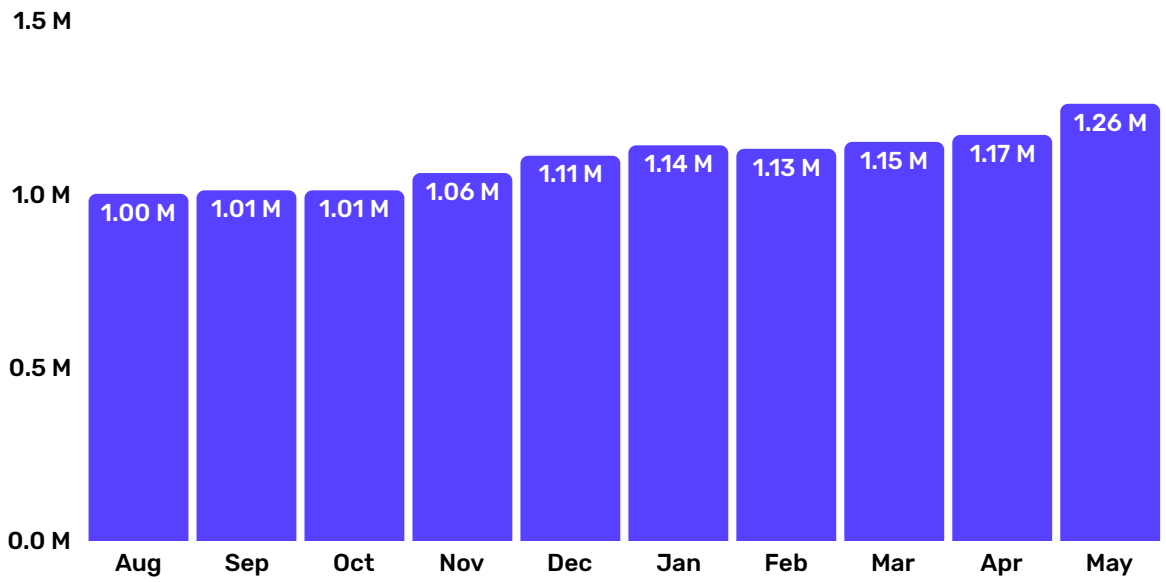
29.2 kWh
Average consumption per charge*

1,261,076
Charge Points

*Based on last month of Electroverse consumers charging data on Ultra Rapid Chargers

This graph highlights the steady growth of charge points across Europe - which now surpass 1.25 million. Similar to the UK, there has been an observed surge in the roll out of charge points across Europe in May, and graphs on the following pages demonstrate that mechanisms for achieving this growth vary widely across the specific European markets, both in terms of charging speeds and speed of roll out.

NUMBER OF CHARGE POINTS OVER TIME IN EUROPE

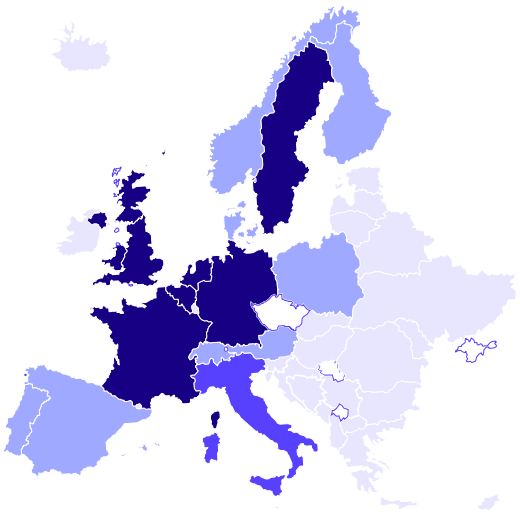


CHARGING INFRASTRUCTURE ACROSS EUROPE

CHARGE POINTS BY COUNTRY

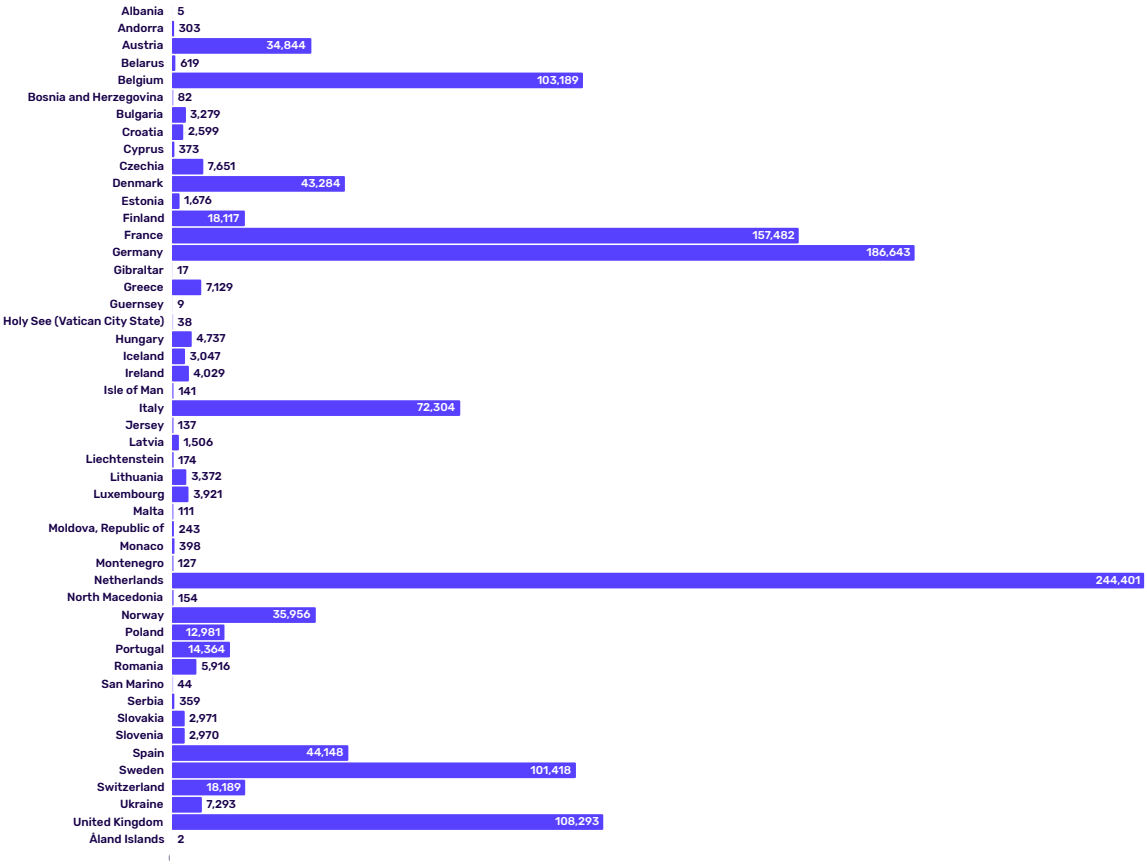
octopus ELECTROVERSE

- < 10,000
- 10,000 - 49,000
- 50,000 - 99,000
- 100,000+



CHARGE POINTS BY COUNTRY

octopus ELECTROVERSE



CHARGE POINTS PER 100K INHABITANTS

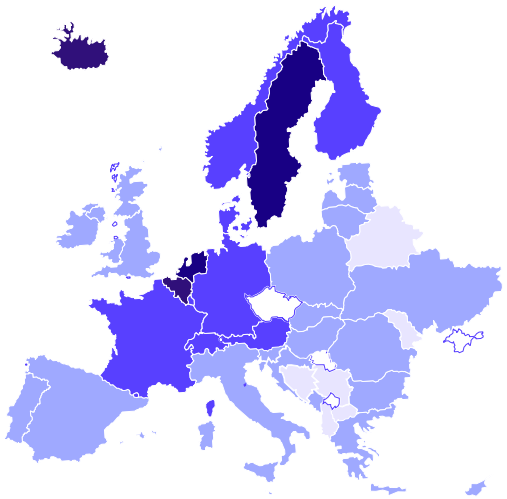
octopus ELECTROVERSE

< 10

10 - 199

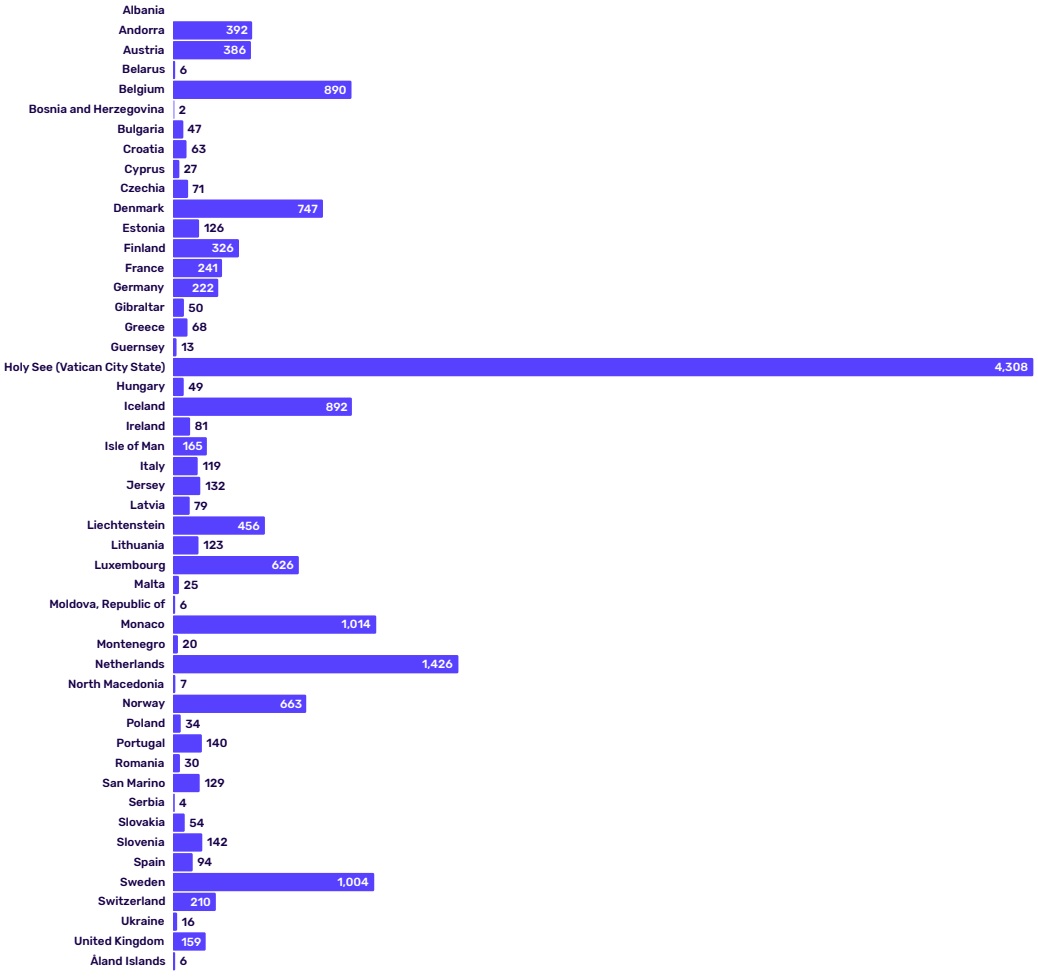
200 - 749

750 - 1000+

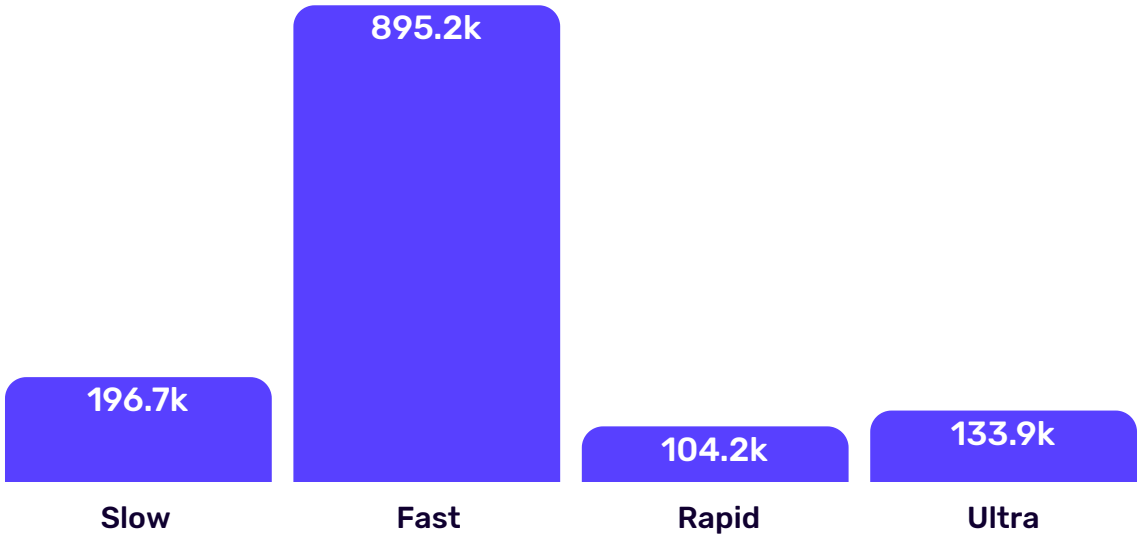


CHARGE POINTS PER 100K INHABITANTS

octopus ELECTROVERSE

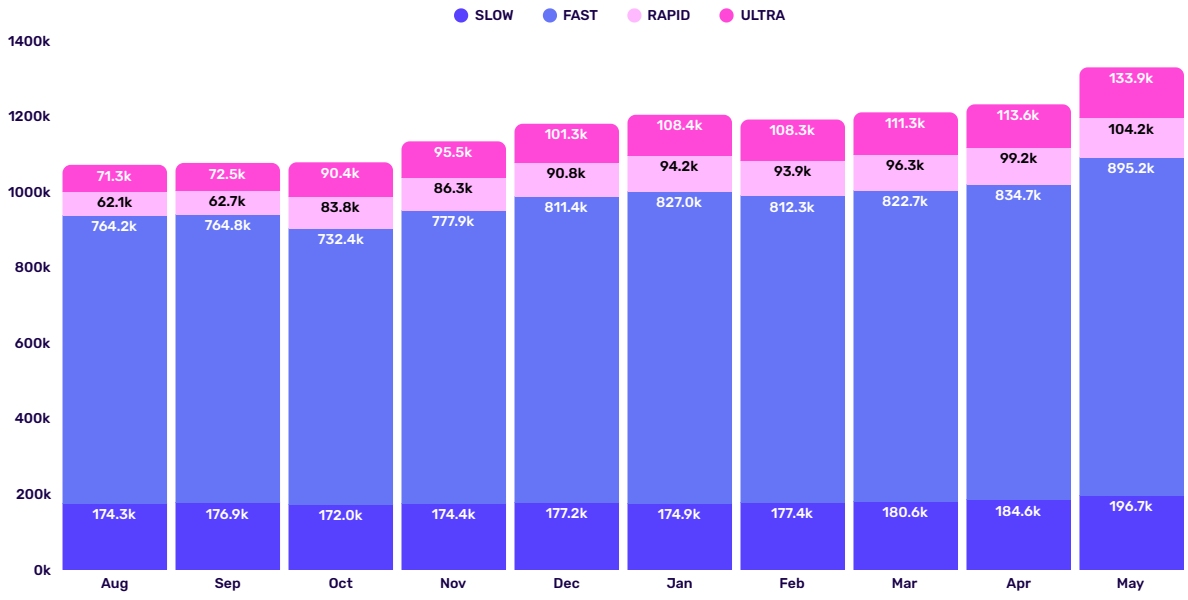


NUMBER OF CONNECTORS BY SPEED IN EUROPE

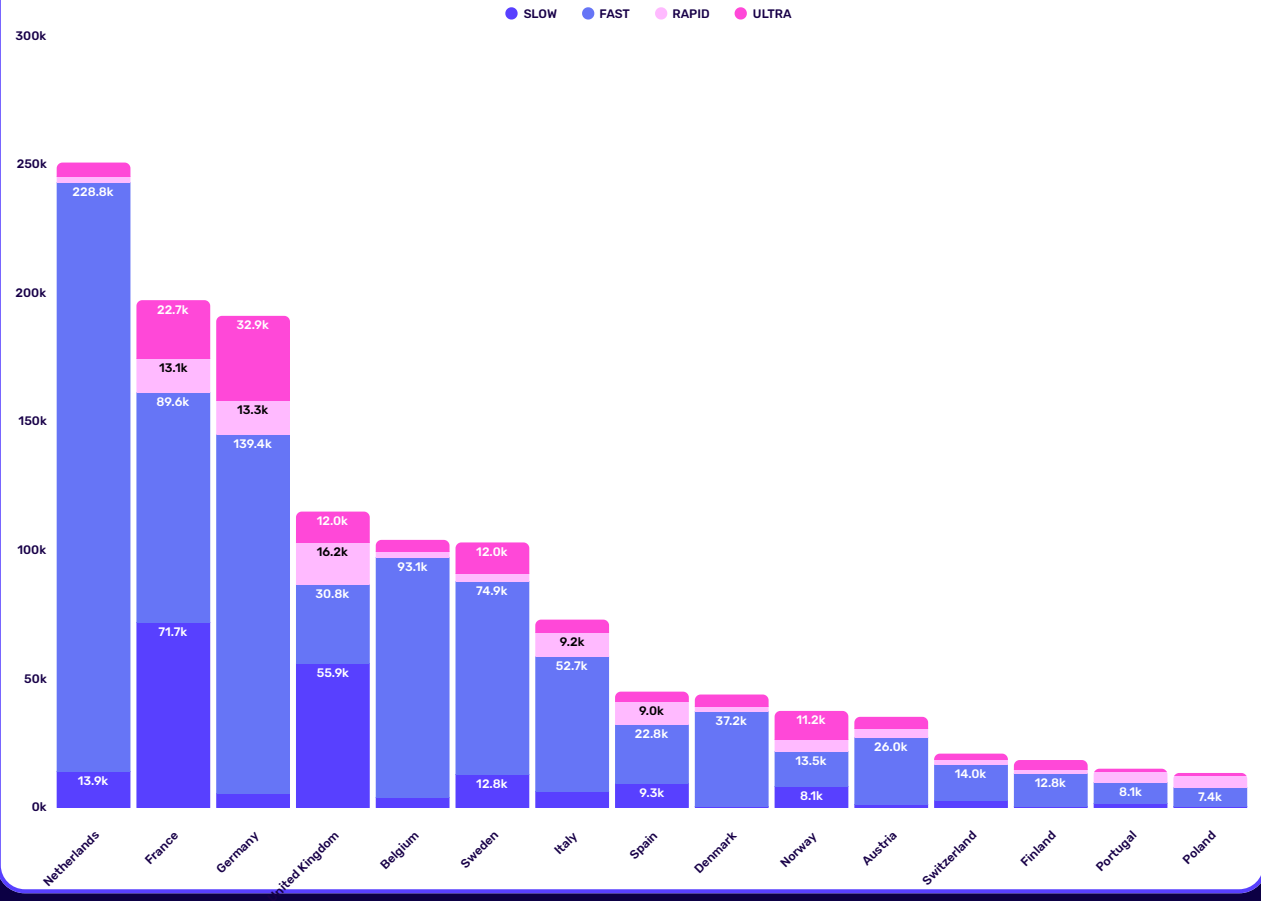


These graphs demonstrate the current state of charging speeds across Europe and offer insight into potential future trends. 8 - 50 kW fast charging speeds dominate Europe, contributing around 67% of total connectors - comparatively, the UK has a greater number of slow charging connectors (49% relative to total number). That said, if we look at the growth of charging connectors by speed in the last quarter, slow charging speeds have seen the most sustained growth in Europe.

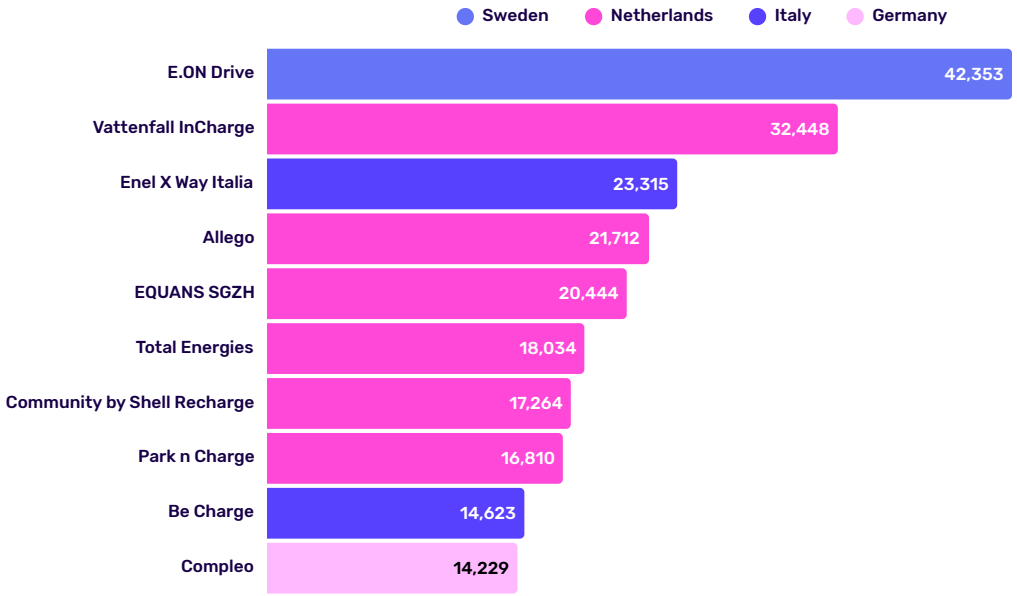
NUMBER OF CONNECTORS BY SPEED IN EUROPE



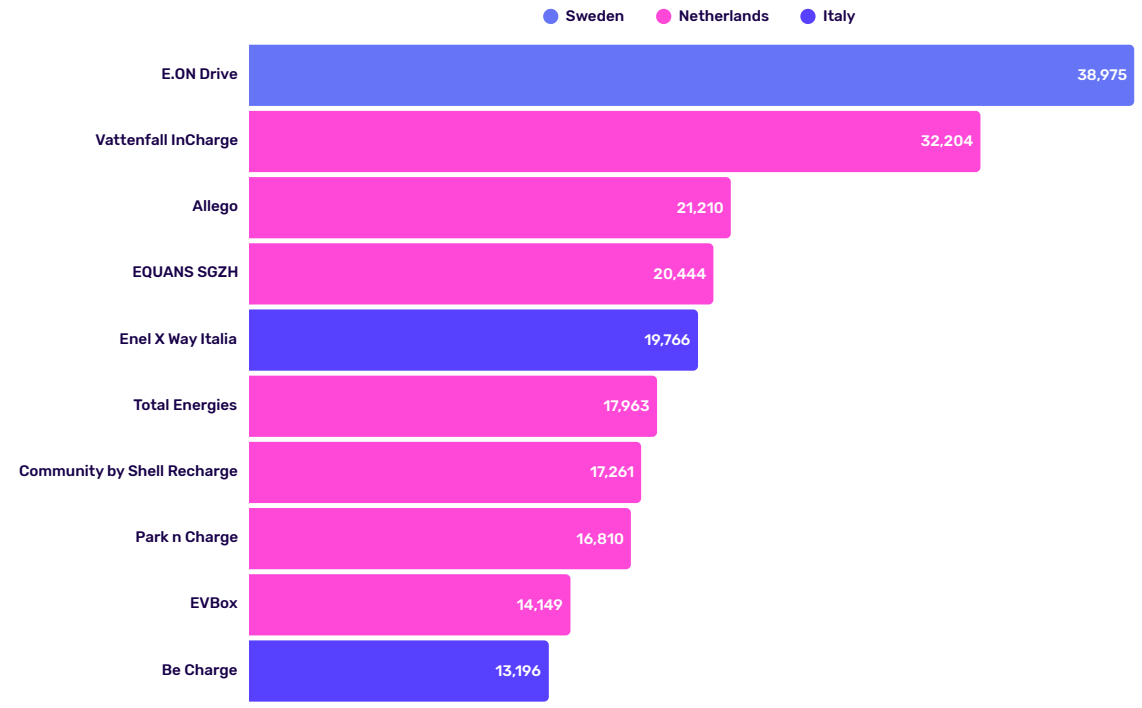
NUMBER OF CONNECTORS BY SPEED AND COUNTRY IN EUROPE (>10,000 CONNECTORS)



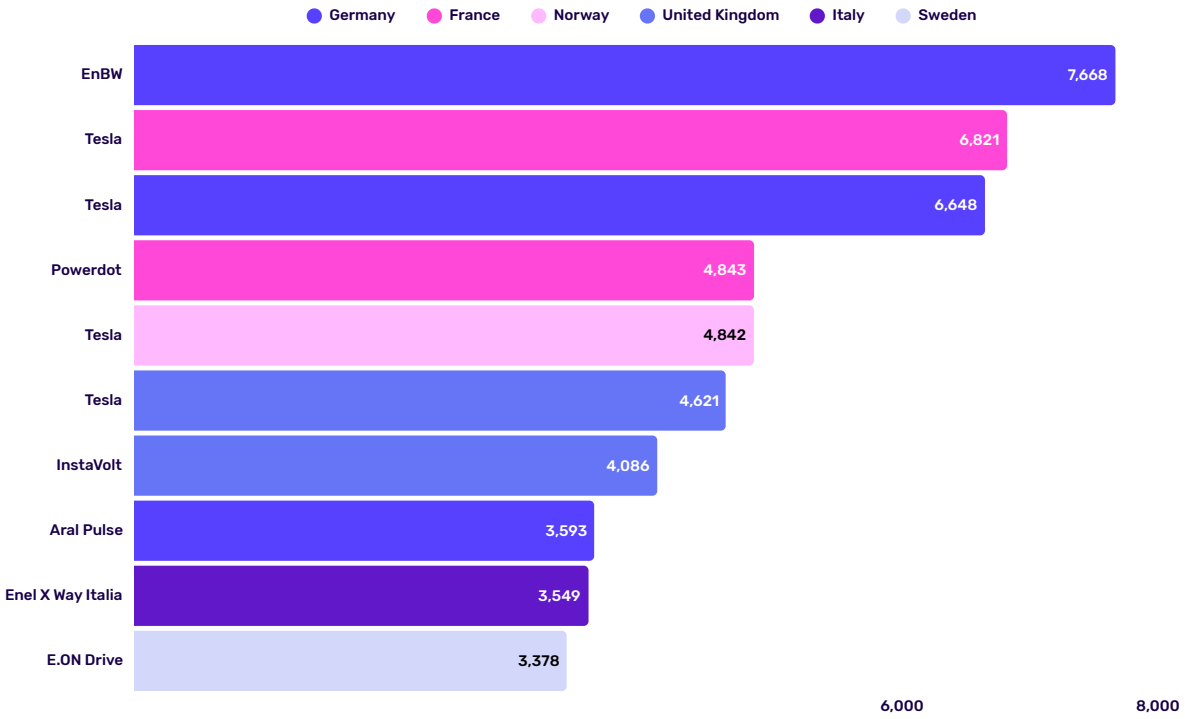
LARGEST IN EUROPE - NUMBER OF CONNECTORS



LARGEST SLOW/FAST OPERATORS - NUMBER OF CONNECTORS



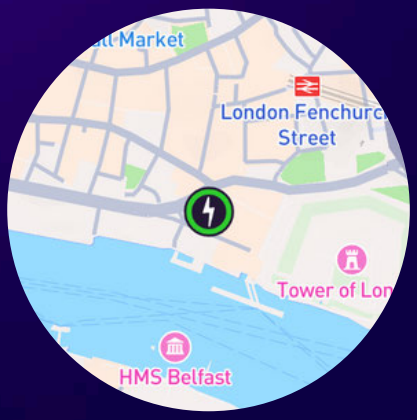
LARGEST RAPID/ULTRA OPERATORS - NUMBER OF CONNECTORS



DEFINITIONS

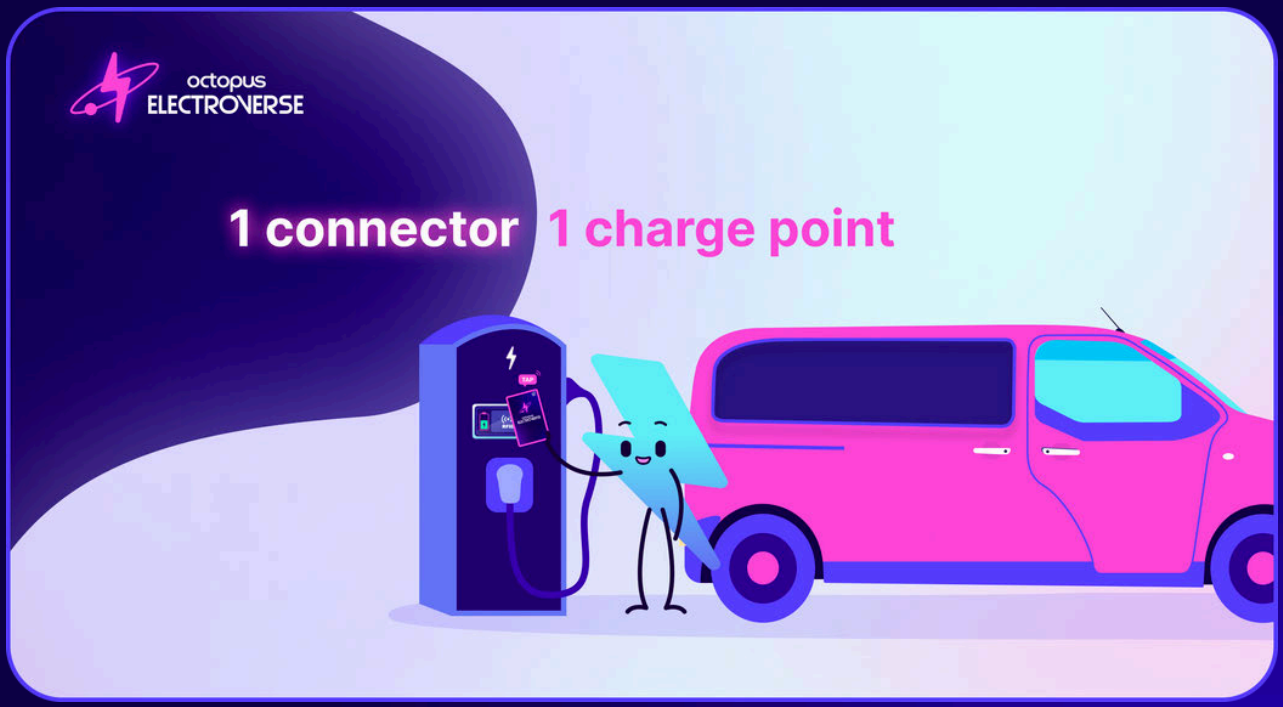
DEFINING A CHARGE POINT

We use the term ‘charge point’ to simplify the language - in the industry this is known as an ‘EVSE’, which stands for **Electric Vehicle Supply Equipment**. An EVSE is an independently operated and managed part of a charge point, that is **able to deliver energy to one EV at a time**. This is the industry-approved definition and forms part of the data structure we receive from Charge Point Operators (CPOs).

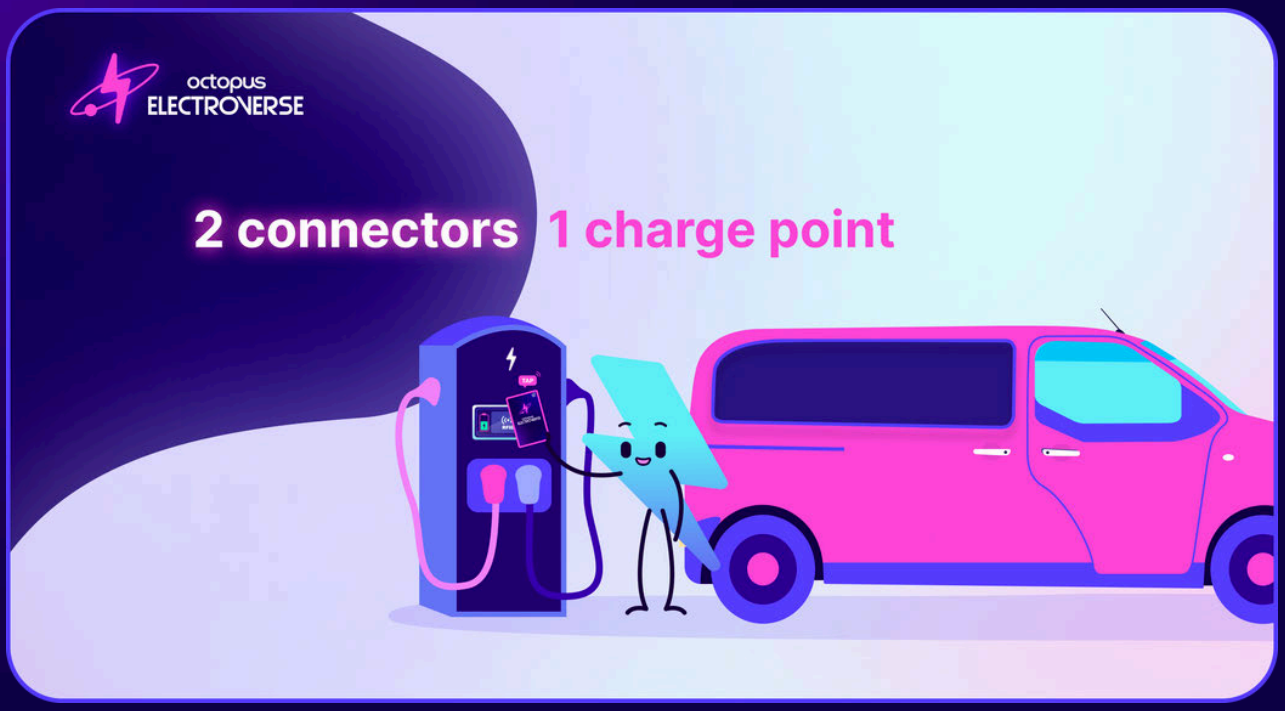


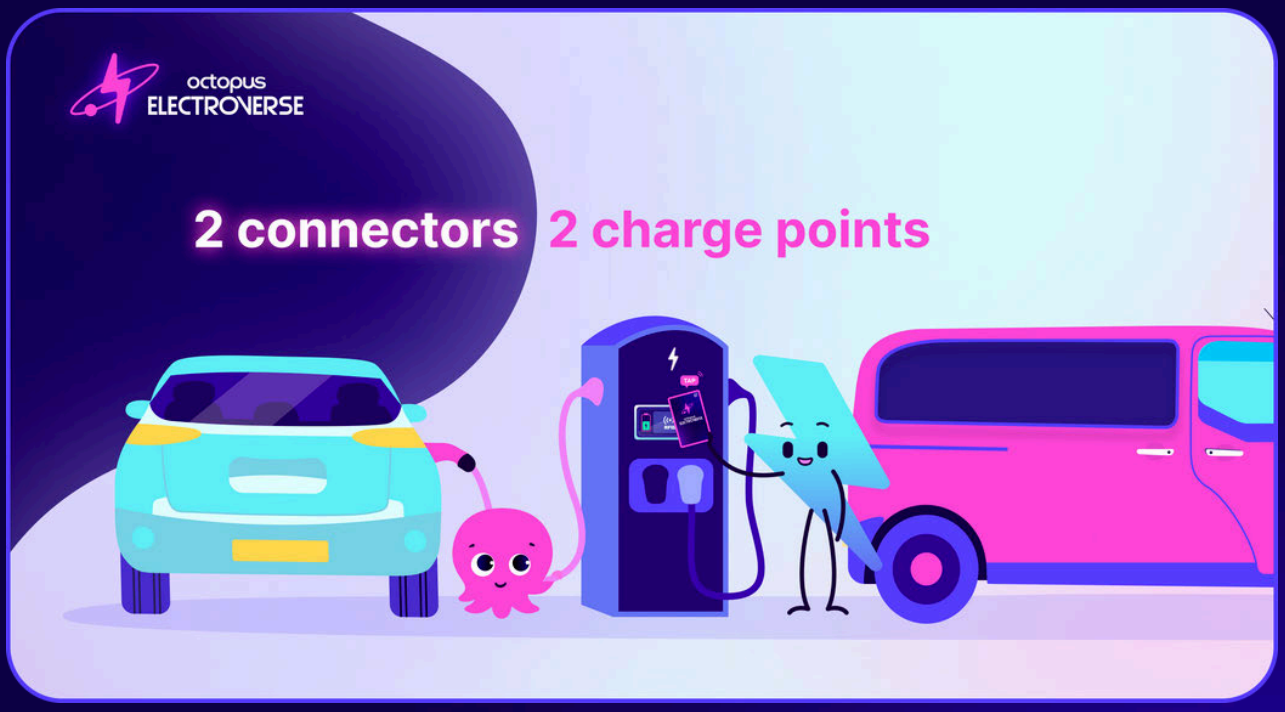
A **location** is a physical site where there are one or more charge points. Think of a location as a single pin on the Octopus Electroverse map!

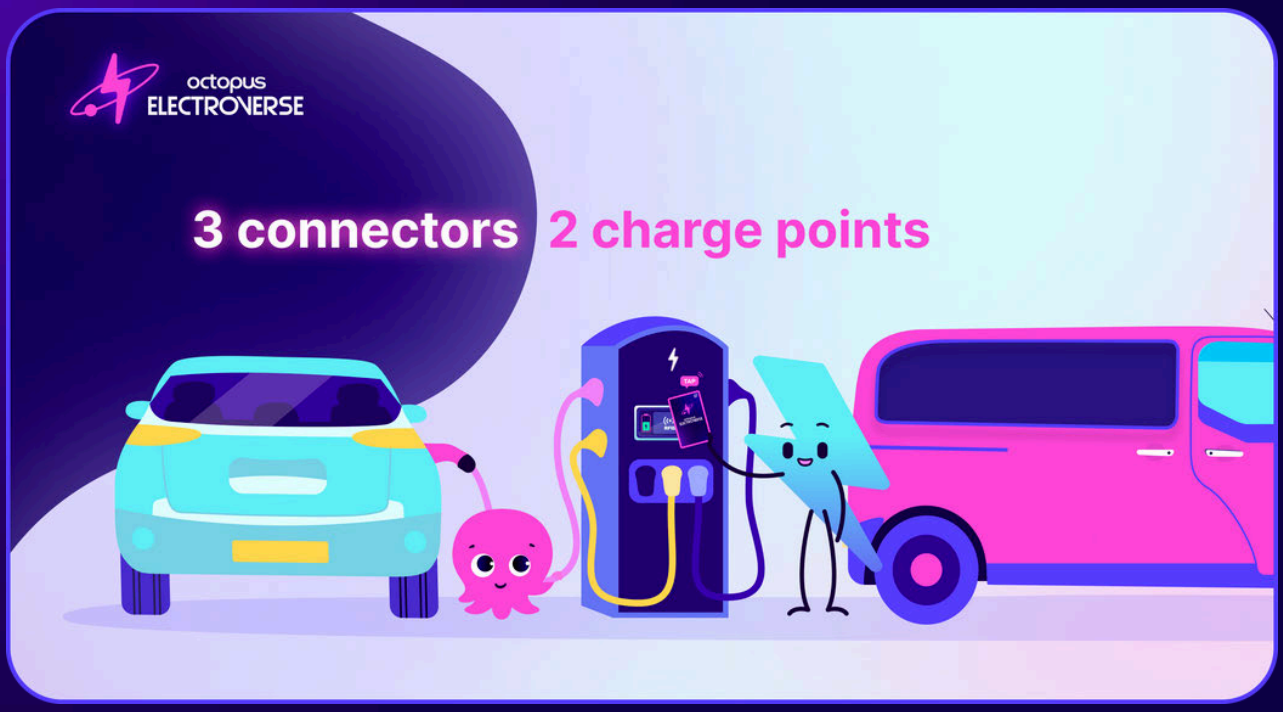
The EVSE hardware inside each charging unit determines how many vehicles can simultaneously charge at the same unit. A basic charge point has **one connector** and therefore **one charge point** that can be used to **charge one vehicle** independently.



While a charging unit may have **a choice of connectors**, sometimes, it may only have the capability to **charge one vehicle** at a time, defining it as a **single charge point**. Here are some more examples:



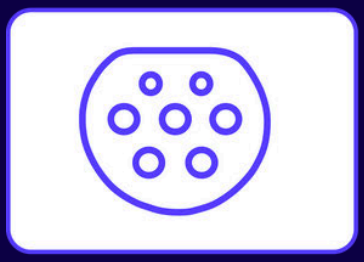




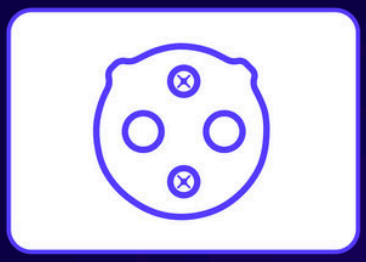
VISUALS OF CHARGING SOCKET TYPES

Currently, there are three main charging socket types: Type 2, CHAdeMO and CCS.

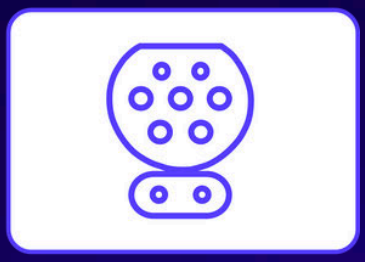
- **Type 2** sockets will typically be reserved for slow charging speeds, delivering AC power.
- **CHAdeMO** was the first type of DC socket, but is largely being replaced with CCS.
- **CCS** sockets are capable of delivering large amounts of power, so are typically found on rapid and ultra rapid charge points.



TYPE 2



CHAdeMO



CCS

GLOSSARY

CPO

Charge Point Operator. The mobility provider managing the charging infrastructure (e.g. IONITY, Osprey, Shell Recharge, Connected Kerb etc).

EVSE

Electric Vehicle Supply Equipment. An EVSE is an independently operated and managed part of a charge point, that is able to deliver energy to one EV at a time.

kW

A kilowatt represents the rate of power (e.g. a charger's output). The higher the kW rating of a charger, the faster it can charge an EV.

kWh

A kilowatt-hour is the unit used to measure the number of kW used (e.g. charging prices are stated in kWh, and charging sessions are measured in kWh).

kW vs. kWh

Simply put, a kWh reflects the total amount of electricity used, whereas a kW reflects the rate of electricity usage.

SOURCES & REFERENCES

The Society of Motor Manufacturers and Traders (SMMT) : https://www.smmt.co.uk/

The European Automobile Manufacturers' Association(ACEA) : https://www.acea.auto/

Open Charge Point Interface (OCPI) : https://evroaming.org/

Population of European Countries) : https://www.statista.com/statistics/685846/population-of-selected-european-countries/

UK Population by Region : https://www.statista.com/statistics/294729/uk-population-by-region/

All other data : The Octopus Electroverse database