



octopus
ELECTROWORLD

QUARTERLY CHARGING REPORT

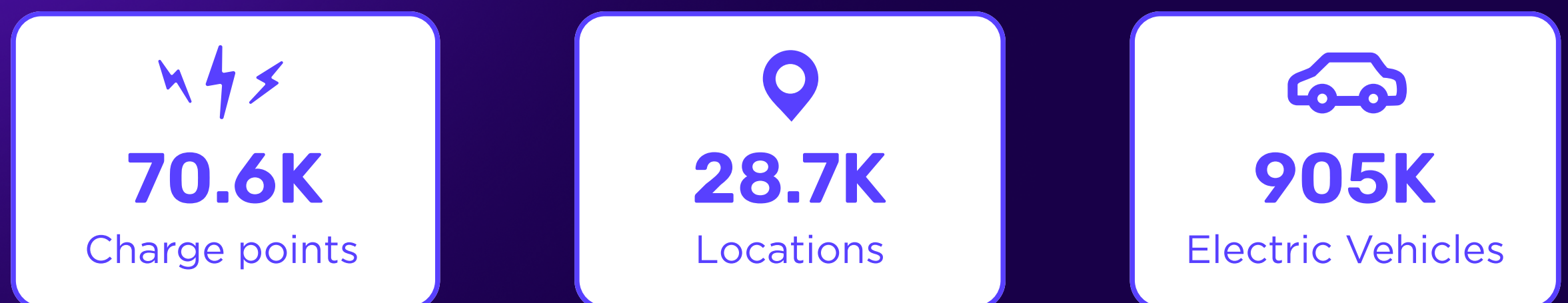
Q3 2023

Published Monday 2nd October 2023

QUARTERLY CHARGING REPORT

The UK's public charging infrastructure is rapidly expanding to meet the growing demand and adoption of electric vehicles. **Octopus Electroverse** is offering a closer look at the UK's electric vehicle ecosystem through key public charging statistics.

UK HEADLINE STATISTICS



Throughout the graphs and statistics in this report, it's useful to understand how charge point 'levels' are broken down:

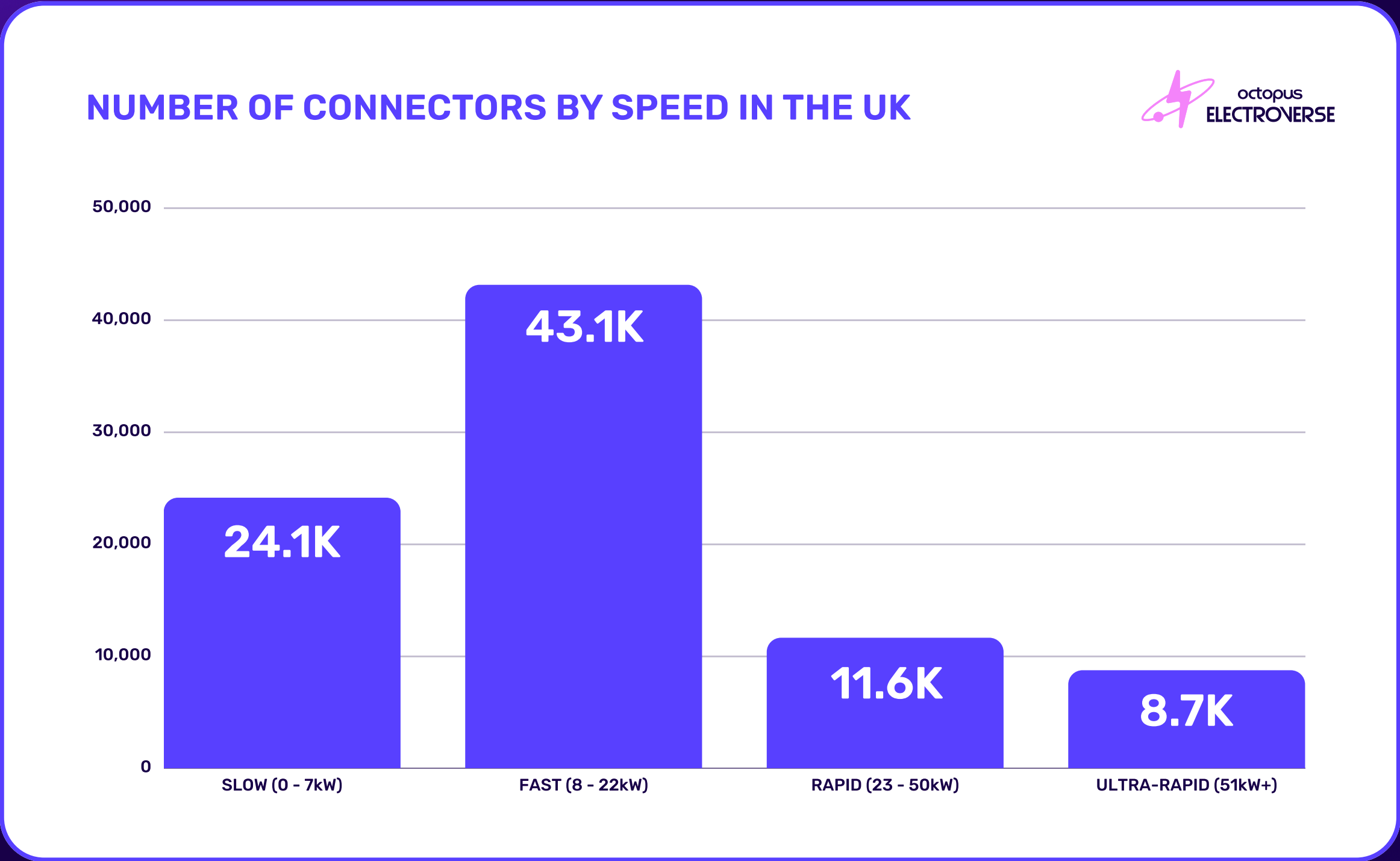
- A **location** refers to a distinct area with charging points, for any one charging operator. For example, a single location could have one lamppost charge point, or it could have six rapid chargers.
- A **charge point** means one piece of charging equipment that can charge one vehicle at a time. In industry terms, this is known as an EVSE.
- A **connector** means the physical connector options on a charge point, such as a Type 2 socket or a CHAdeMO socket. Many charging characteristics are defined at a connector level, such as speed, which is why several of the graphs below are based on connector numbers. There are currently **88,000+ connectors** available in the UK.

At the bottom of this report you can find a full explanation of charge point definitions, along with some handy visuals.

SECTION 1: CHARGER CHARACTERISTICS

NUMBER OF CONNECTORS BY SPEED IN THE UK

This graph details the total number of connectors in the UK by speed of charging. Speed can vary by connector (e.g. CCS vs. CHAdeMO), hence the need to count speed at a connector level.



TOTAL NUMBER OF CHARGE POINTS PER OPERATOR

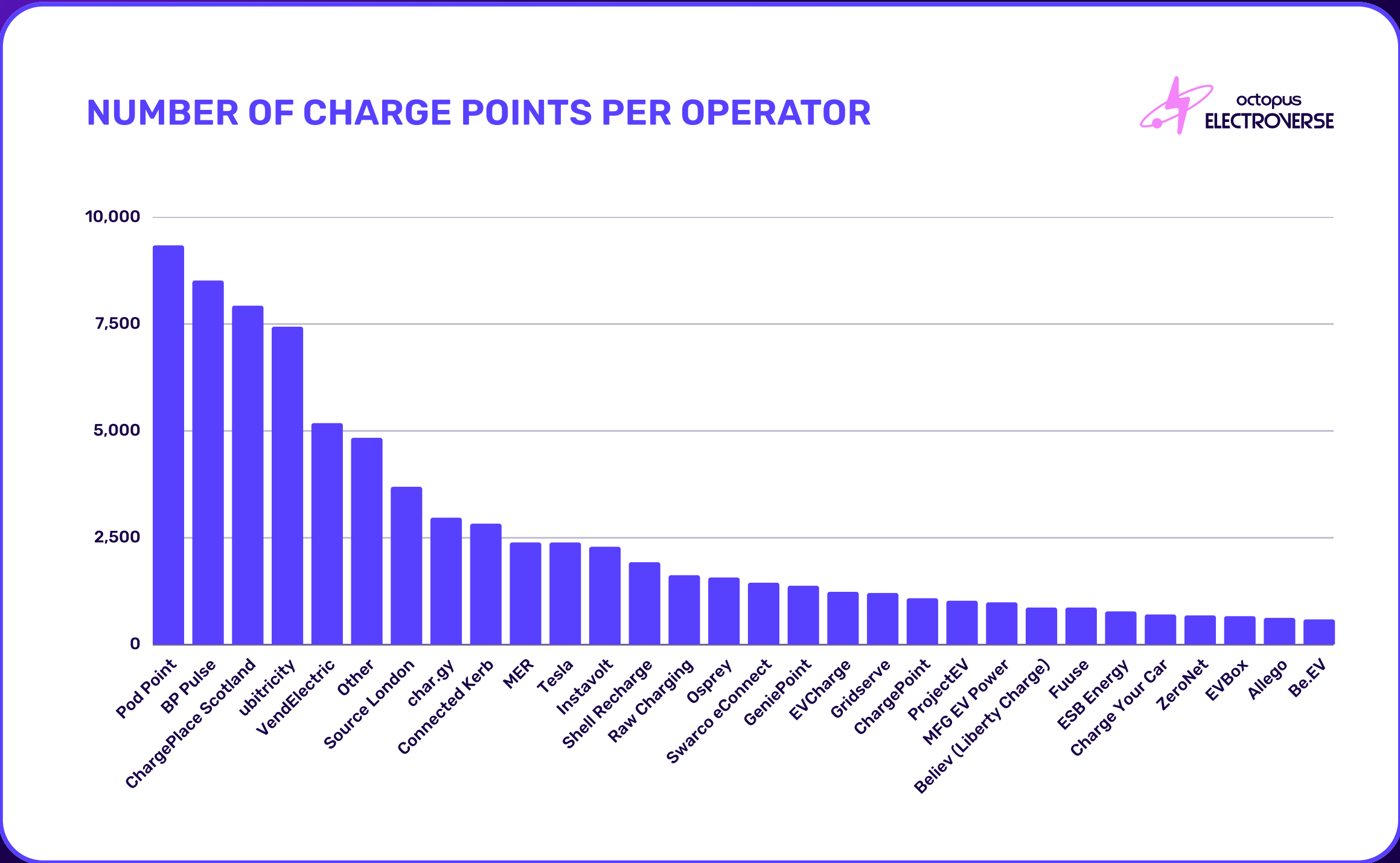


TABLE SHOWING TOTAL NUMBER OF CHARGE POINTS PER OPERATOR

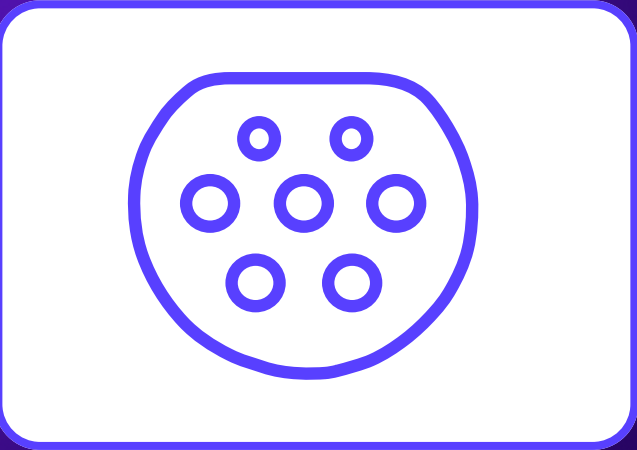
OPERATOR	# OF CHARGERS
Pod Point	9,330
BP Pulse	8,500
ChargePlace Scotland	7,910
Ubitricity	7,420
VendElectric	5,160
Other	4,480
Source London	3,670
Char.gy	2,950
Connected Kerb	2,810
MER	2,370

OPERATOR	# OF CHARGERS
Tesla	2,370
Instavolt	2,270
Shell Recharge	1,910
Raw Charging	1,600
Osprey	1,550
Swarco eConnect	1,430
GeniePoint	1,360
EVcharge	1,220
Gridserve	1,190
ChargePoint	1,070

OPERATOR	# OF CHARGERS
ProjectEV	1,010
MFG EV Power	970
Believ (Liberty Charge)	850
Fuuse	850
ESB Energy	760
Charge Your Car	690
Zero Net	660
EVBox	650
Allego	600
Be.EV	570

NUMBER OF CONNECTORS BY SOCKET TYPE

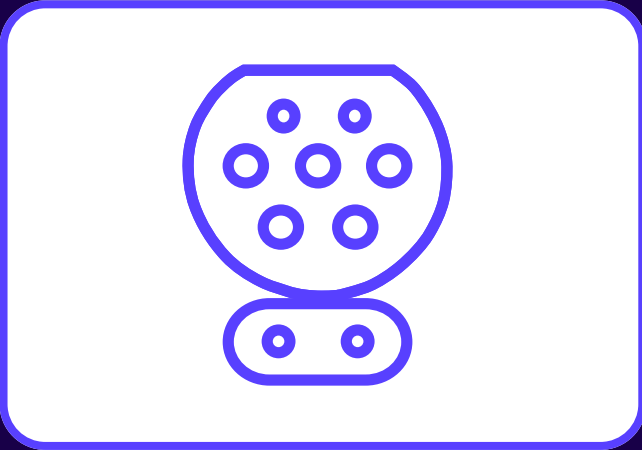
SOCKET TYPES



TYPE 2

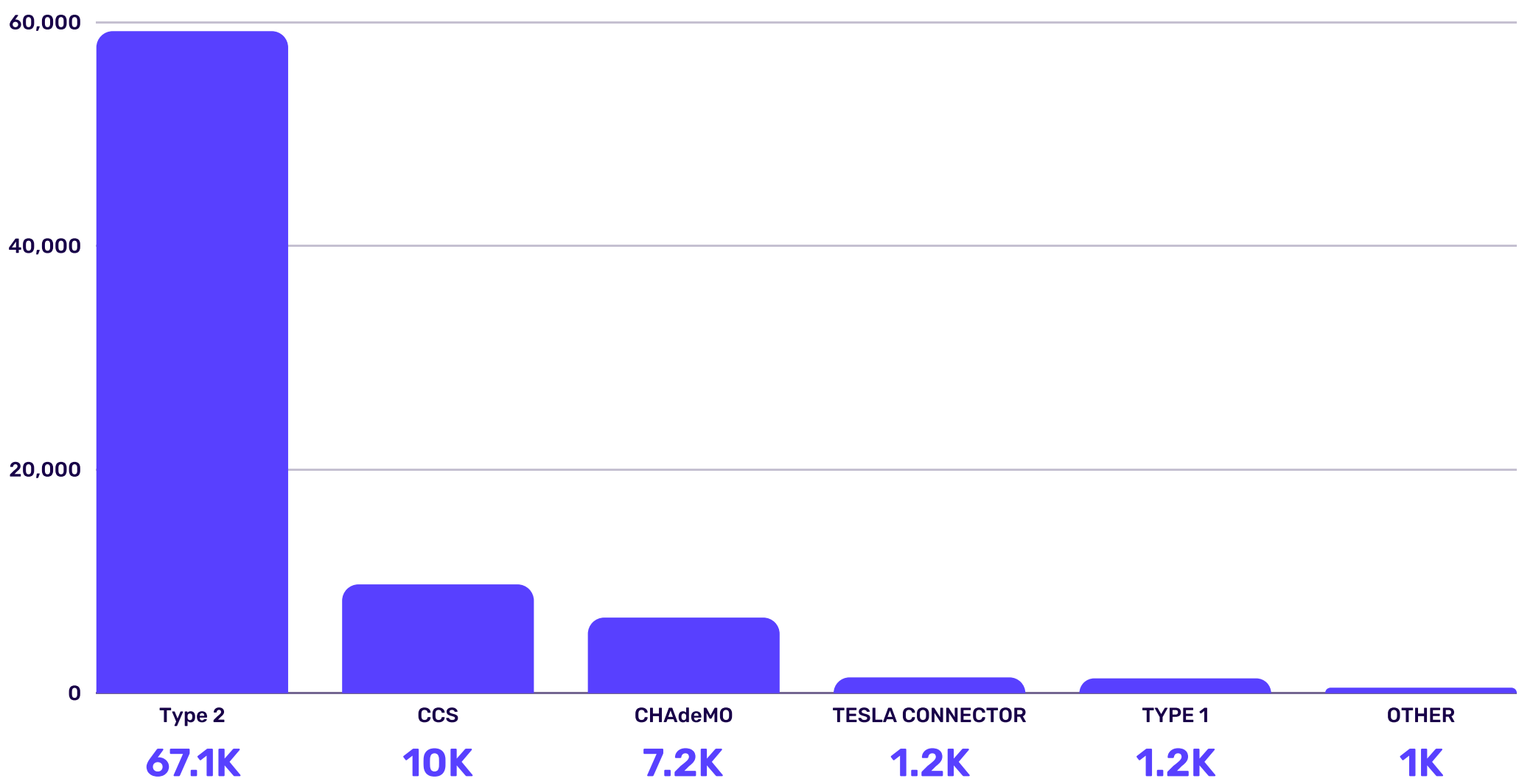


CHAdEMO



CCS

NUMBER OF CONNECTORS BY SOCKET TYPE

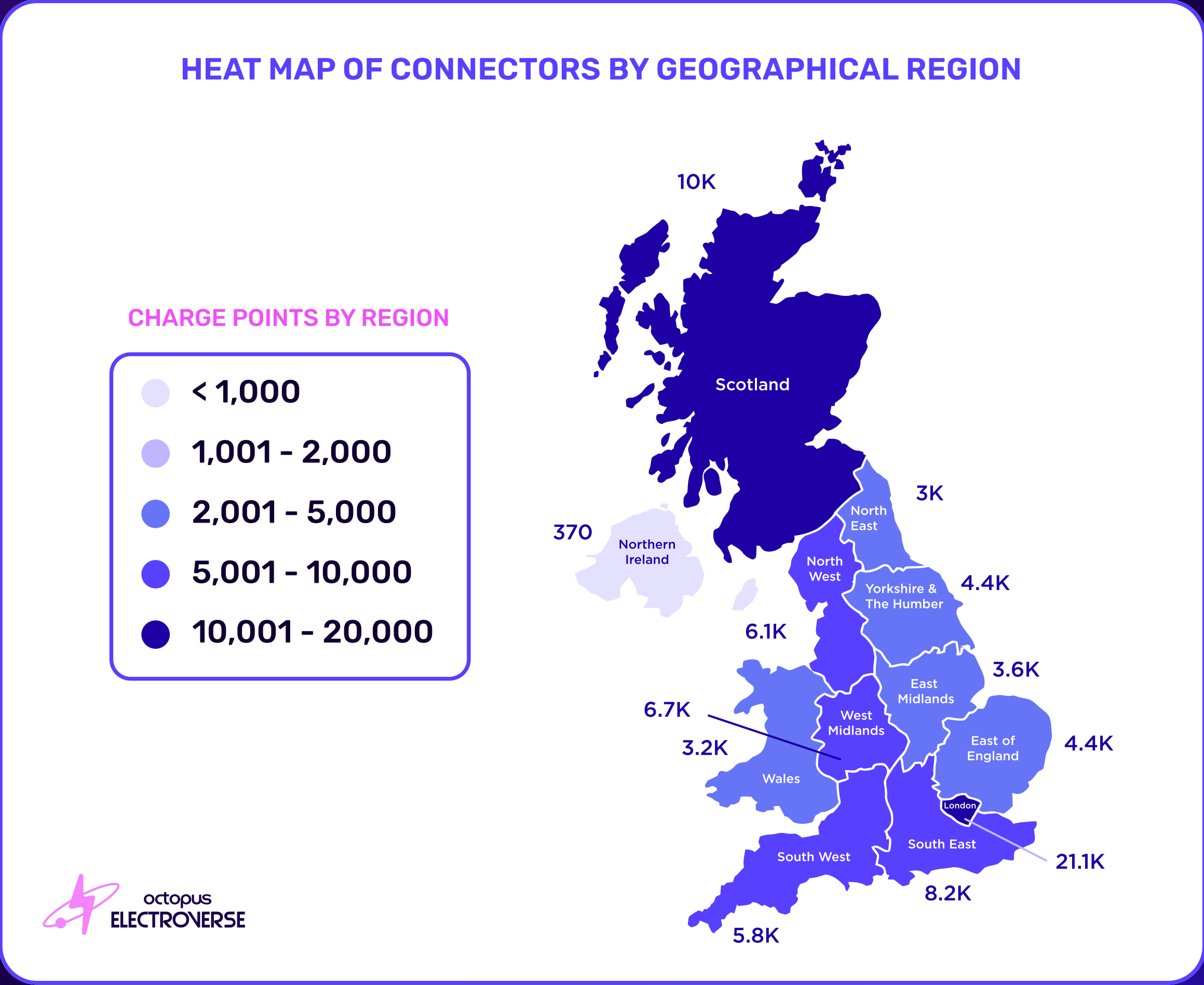


SECTION 2: CHARGER LOCATIONS

HEAT MAP TO SHOW DISTRIBUTION OF CONNECTORS BY GEOGRAPHICAL REGION

Greater London leads the way, while Scotland and the South East also have higher concentrations of EV charge points. The North East and West Midlands have the lowest number of chargers.

Any analysis of geographical distribution should also consider the specifics and needs of the region, such as average journey length and population density.



HEAT MAP TO SHOW DISTRIBUTION OF CHARGE POINTS BY SPEED AND GEOGRAPHICAL REGION

A more detailed look at the speed of charging infrastructure per region. Scroll down to compare the different charger speed categories.

HEAT MAP OF CHARGE POINTS BY GEOGRAPHICAL REGION

SLOW CHARGERS [0 - 7kw]

<div>< 100</div>	NORTHERN IRELAND	60
<div>101 - 500</div>	EAST MIDLANDS	250
	SCOTLAND	370
	WALES	480
<div>501 - 800</div>	EAST OF ENGLAND	580
	YORKSHIRE & THE HUMBER	630
<div>801 - 1,000+</div>	SOUTH WEST	840
	NORTH EAST	1000
	NORTH WEST	1320
	SOUTH EAST	1450
	WEST MIDLANDS	1800
	GREATER LONDON	13330



HEAT MAP OF CHARGE POINTS BY GEOGRAPHICAL REGION

FAST CHARGERS [8 - 22kw]

<div>< 1,000</div>	NORTHERN IRELAND	250
<div>1,001 - 3,000</div>	NORTH EAST	1340
	WALES	1860
	EAST MIDLANDS	1950
	YORKSHIRE & THE HUMBER	2340
	EAST OF ENGLAND	2710
	WEST MIDLANDS	2800
	NORTH WEST	2890
<div>3,001 - 6,000</div>	SOUTH WEST	3130
	SOUTH EAST	4400
	GREATER LONDON	5130
<div>6,001 - 8,000+</div>	SCOTLAND	7930



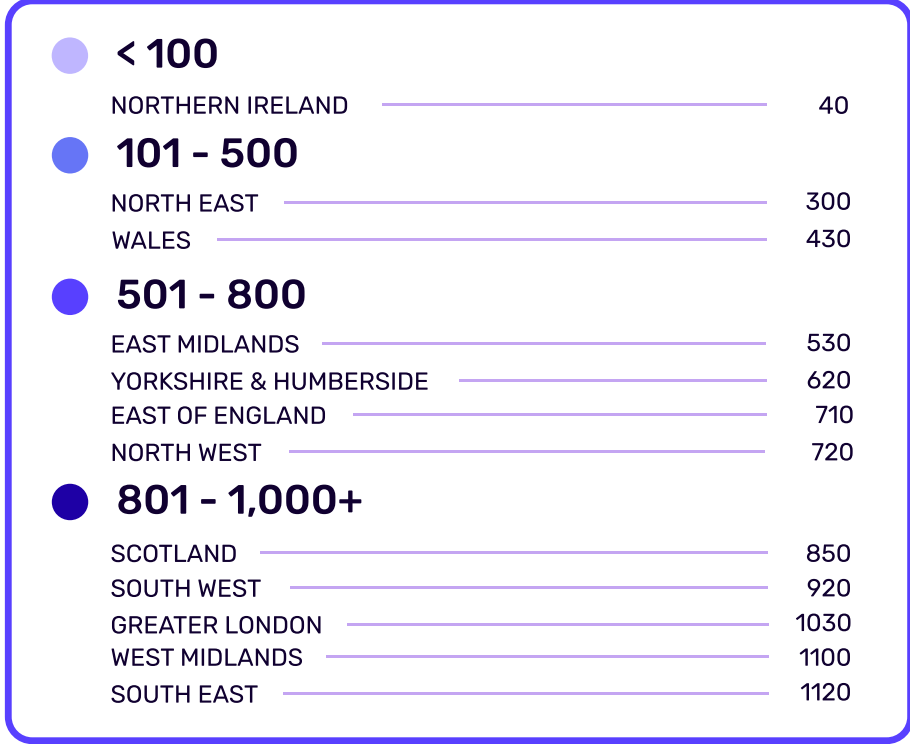
HEAT MAP OF CHARGE POINTS BY GEOGRAPHICAL REGION

RAPID CHARGERS [23 - 50kW]



HEAT MAP OF CHARGE POINTS BY GEOGRAPHICAL REGION

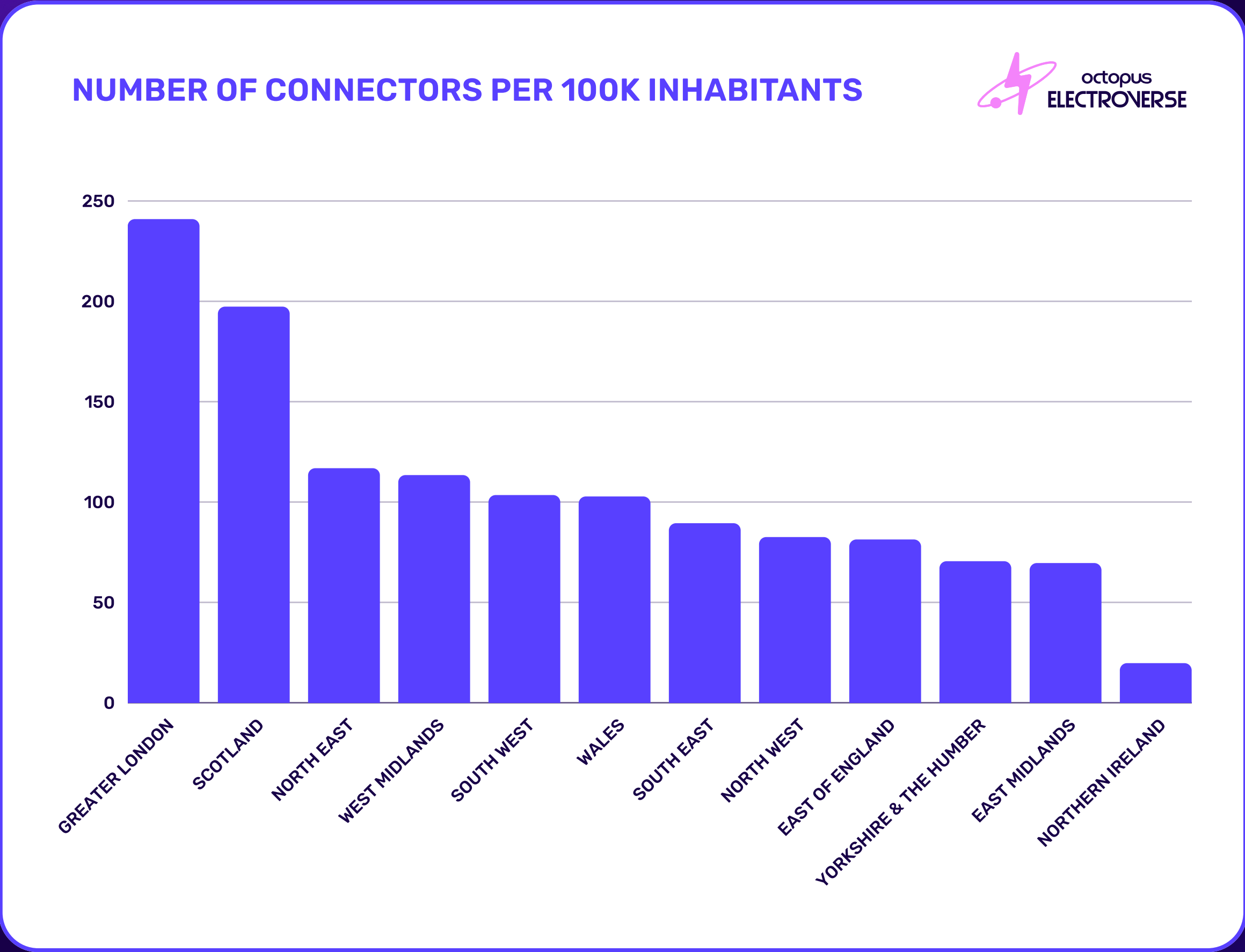
ULTRA RAPID CHARGERS [51kW+]



SECTION 3: PER CAPITA ANALYSIS

NUMBER OF CONNECTORS PER 100K INHABITANTS

Building on the geographical analysis above, the below graph examines charging infrastructure deployment against population density.



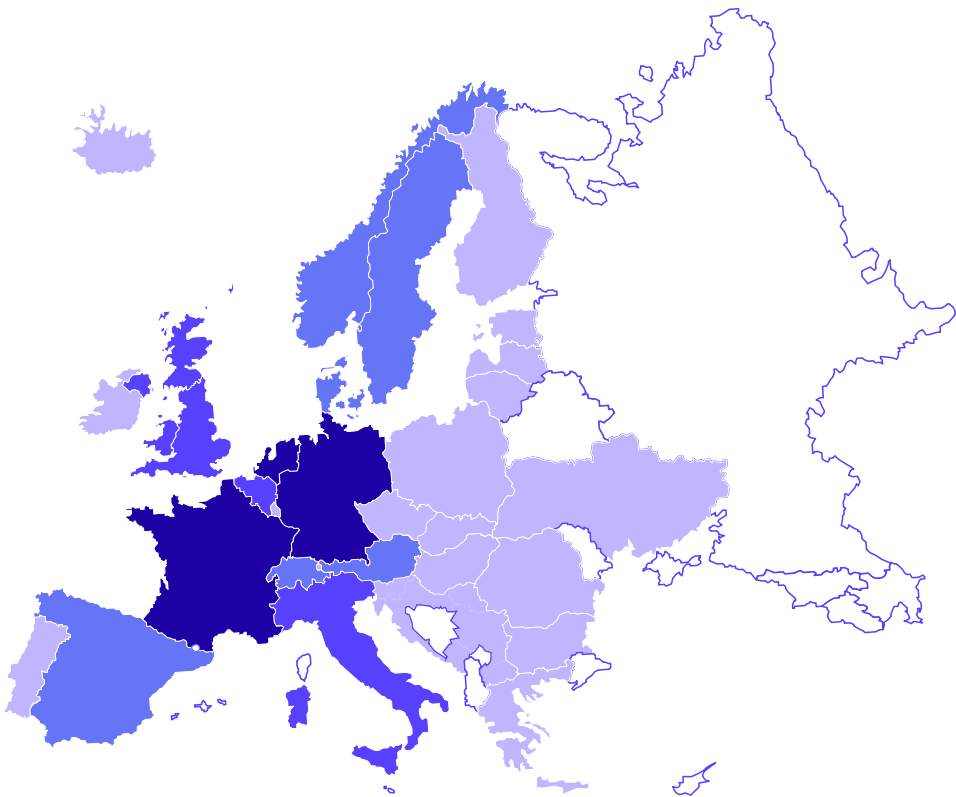
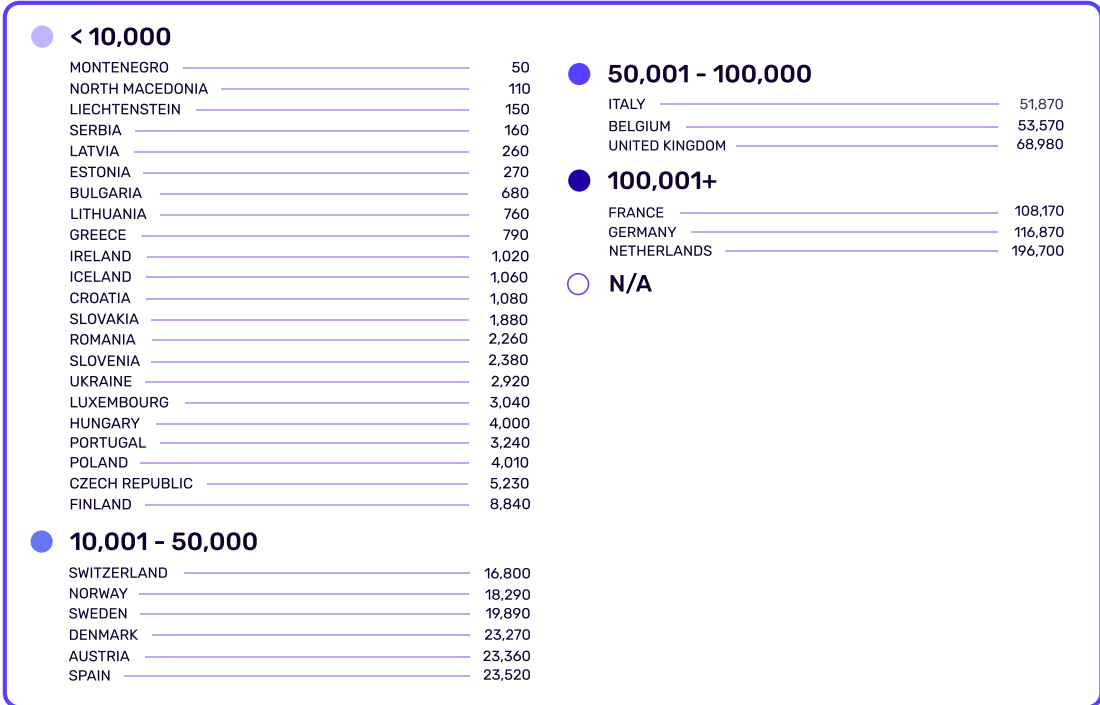
For data sources, please refer to the [Sources & References](#) section on page 14.

SECTION 4: EUROPEAN COMPARISON

EUROPEAN COMPARISON: TOTAL NUMBER OF CONNECTORS

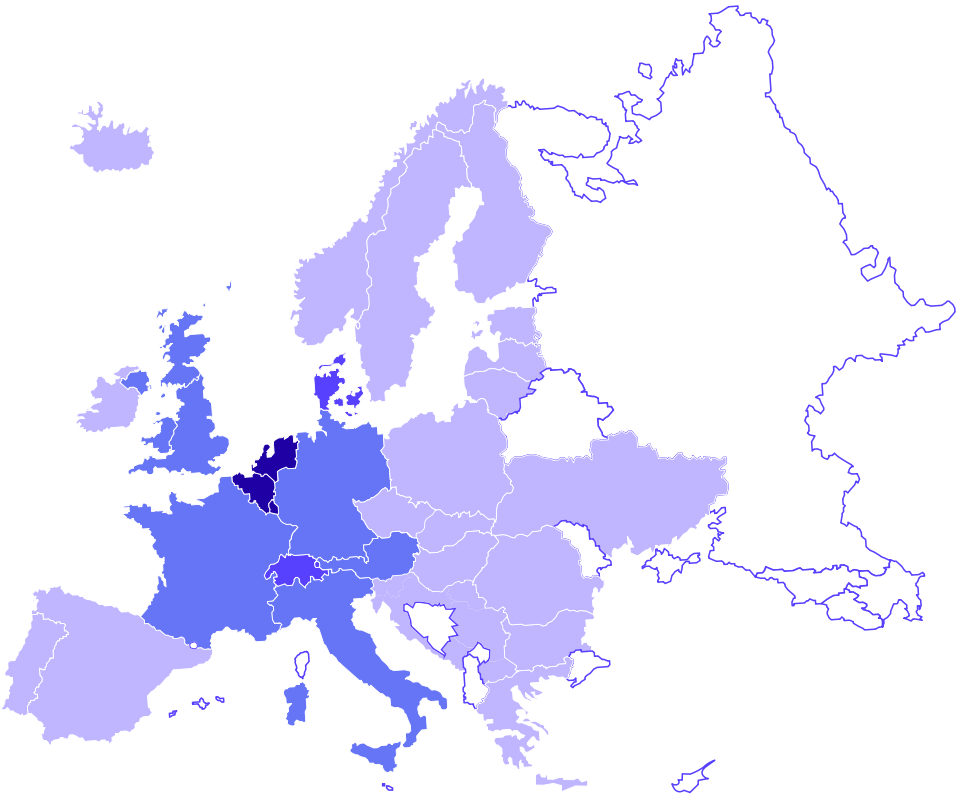
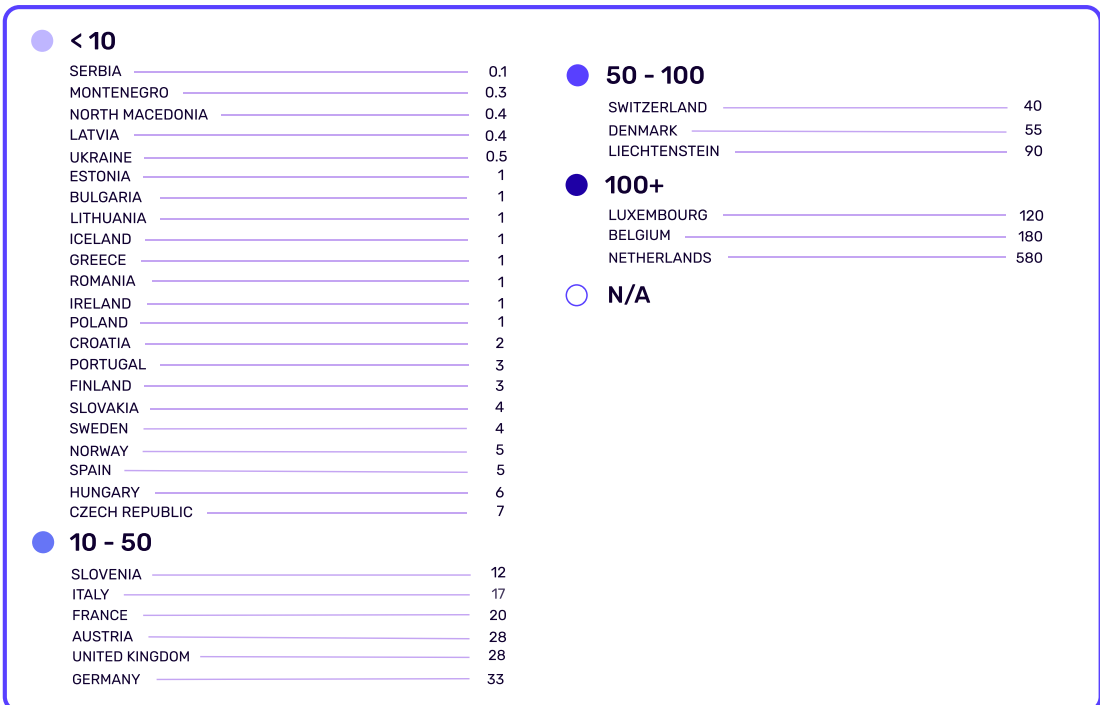
TOTAL NUMBER OF CHARGE POINTS PER COUNTRY

CHARGERS PER COUNTRY



TOTAL NUMBER OF CHARGE POINTS PER HECTARE

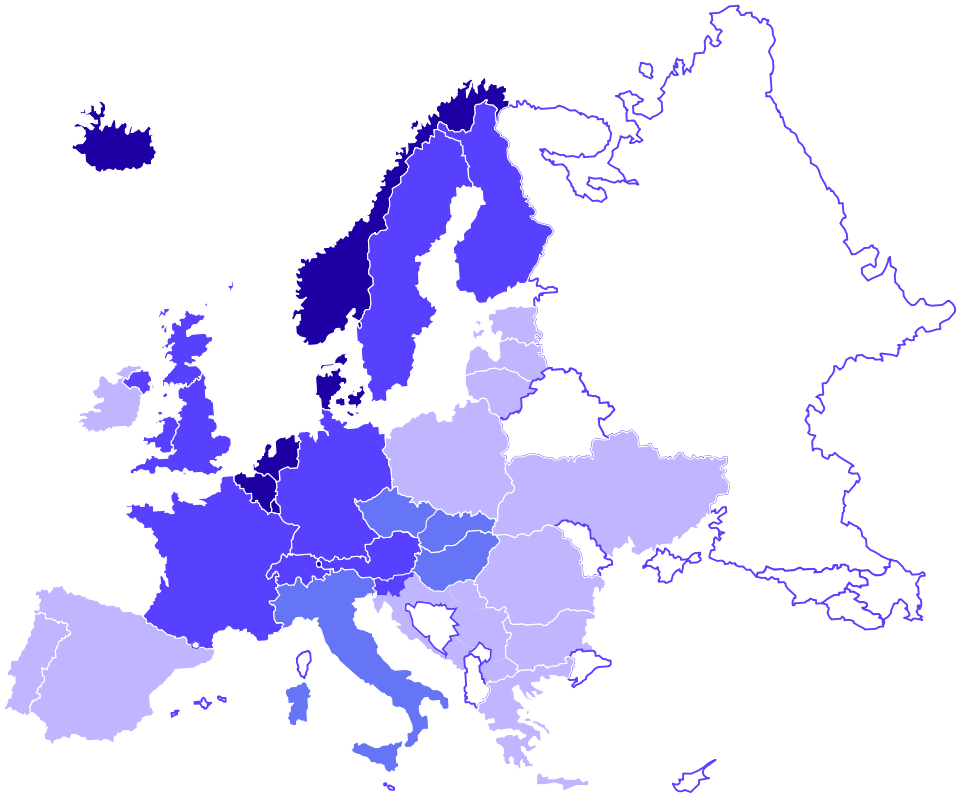
CHARGERS PER COUNTRY



EUROPEAN COMPARISON: NUMBER OF CONNECTORS PER 100K INHABITANTS AT COUNTRY LEVEL

NUMBER OF CONNECTORS PER 100K INHABITANTS

CONNECTORS PER 100K INHABITANTS



DEFINITIONS

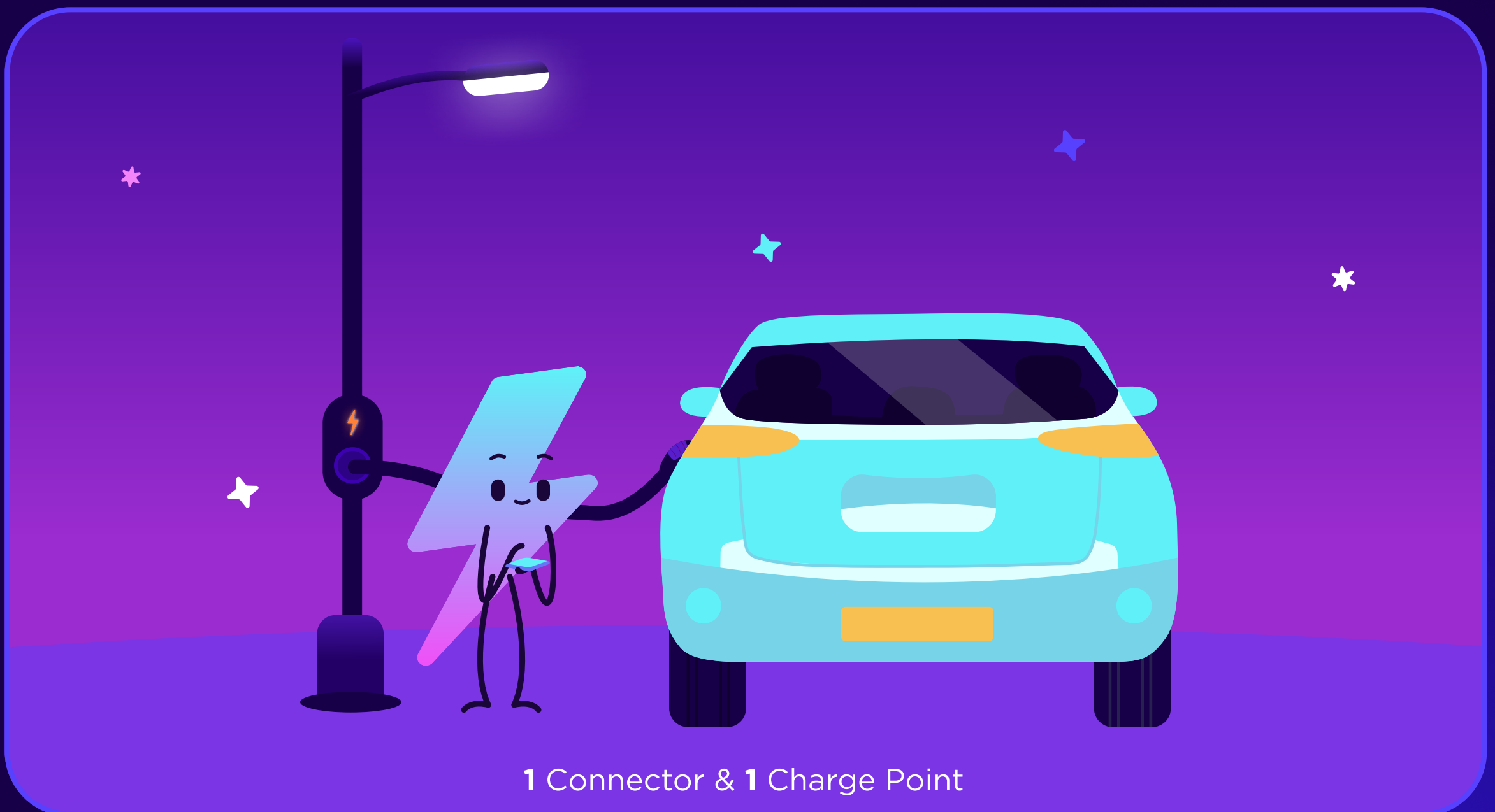
DEFINING A CHARGE POINT

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).

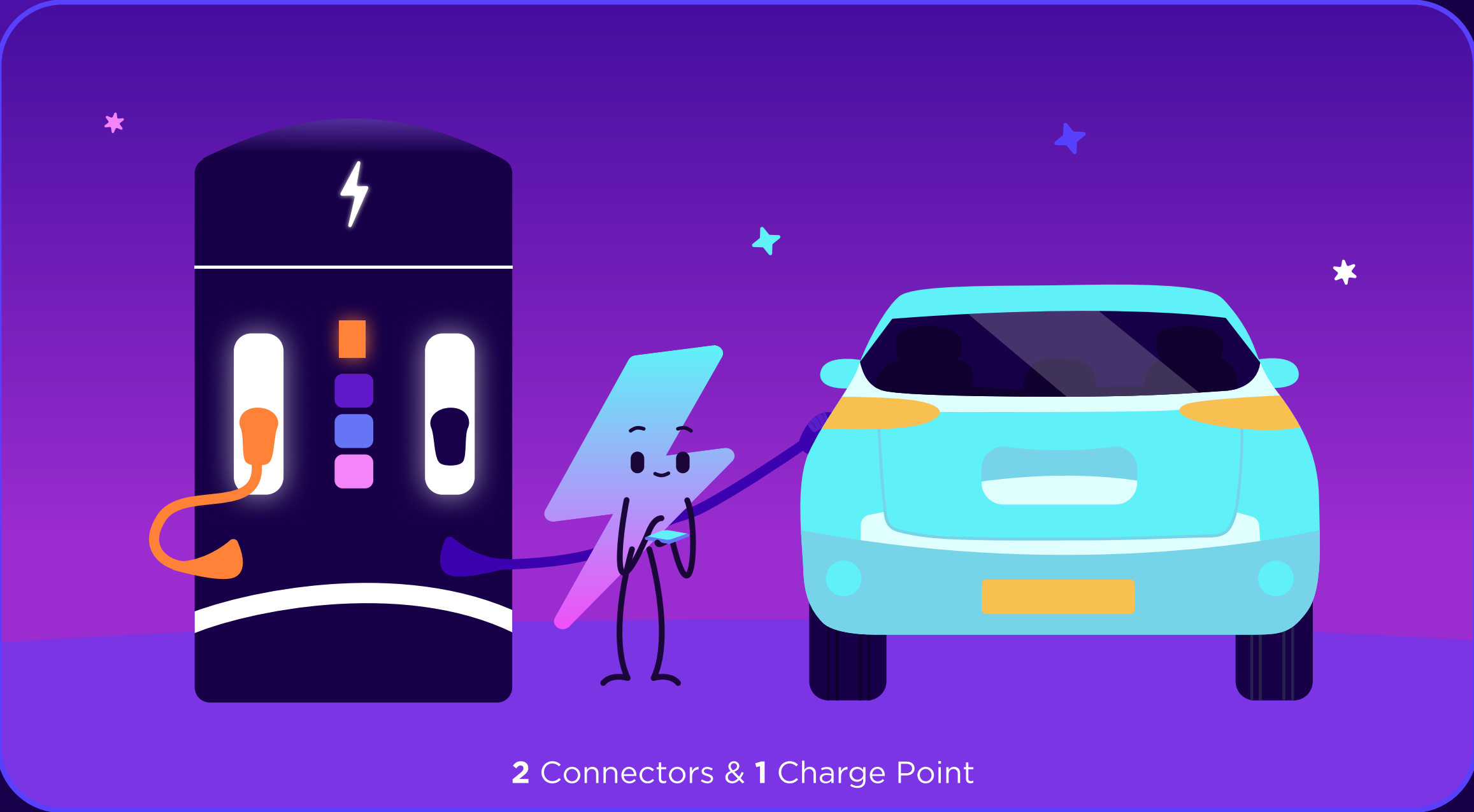


A location is a physical site where there are one or more charge points. Think of a location as a single pin on the Octopus Electroverse map! Let's breakdown what constitutes a charge point...

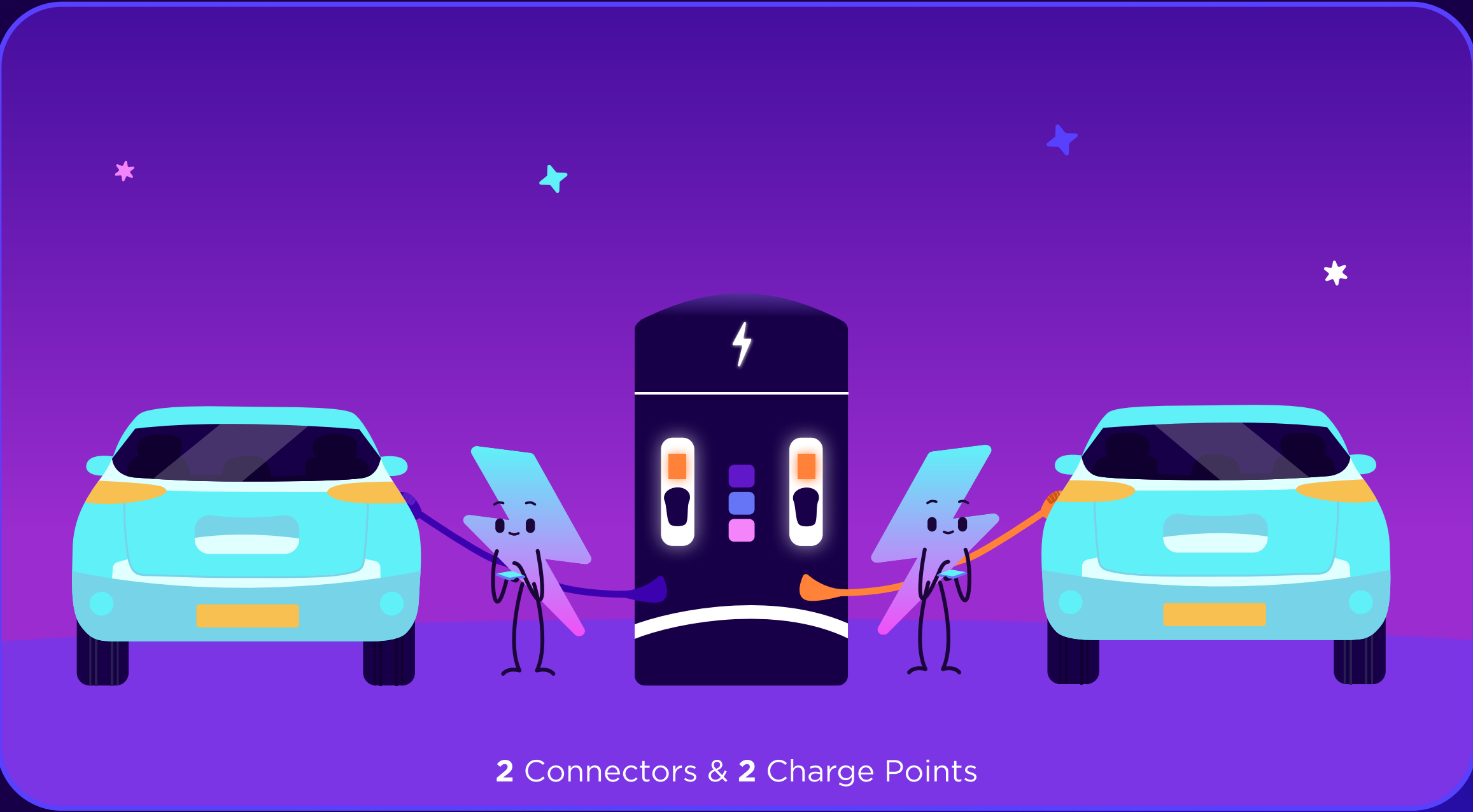
The EVSE hardware inside each charging unit determines how many vehicles can simultaneously charge at the same unit. A basic charge point has **one cable or connector** and **one charge point** that can be used to **charge one vehicle independently**.



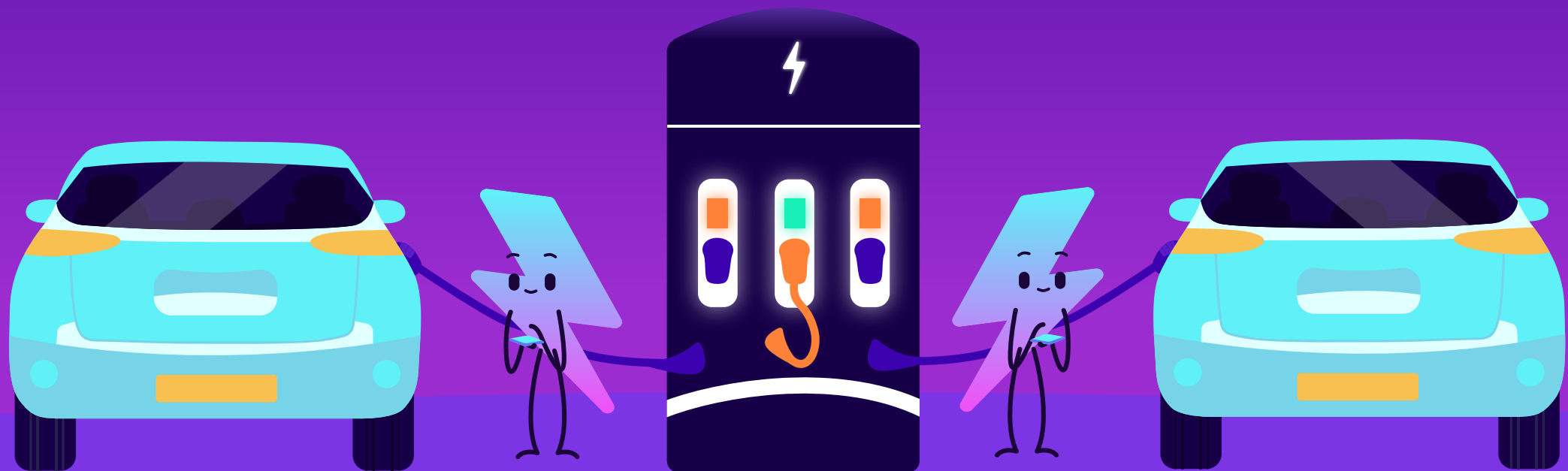
While one EVSE or charge point may have **multiple connectors or cables**, sometimes to suit different types of EVs, it may only have the capability to **charge one vehicle** at a time, defining it as a **single charge point**. Here are some more examples:



2 Connectors & 1 Charge Point



2 Connectors & 2 Charge Points

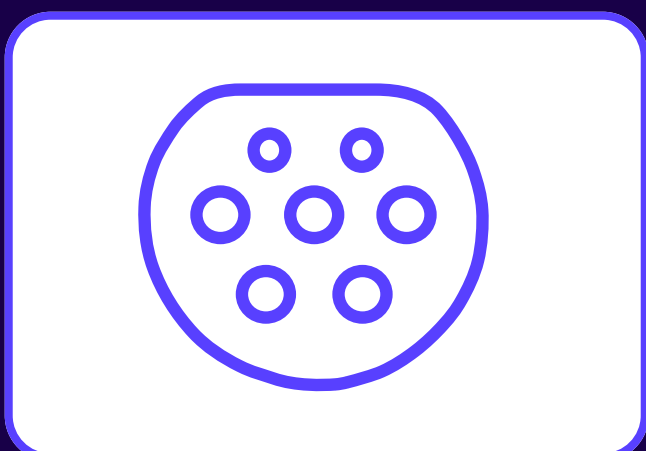


3 Connectors & 2 Charge Points

Please note:

1. Other companies may define a charging unit as a single charge point despite more than one car being able to charge at a time. In our view this isn't quite the correct approach - charging infrastructure growth is ultimately about the number of drivers simultaneously able to charge.
2. In this report we tend to analyse data at a charge point level for consistency. However, you may note that some graphs utilise data at a connector level. This difference in analysis arises because some data is defined at a connector level, such as kW speed.

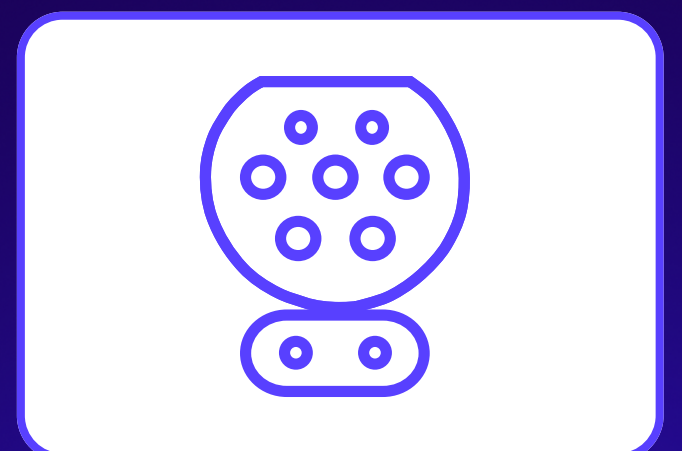
SOCKET TYPE VISUALS



TYPE 2



CHAdeMO



CCS

GLOSSARY

CPO

Charge Point Operator

EVSE

Electric Vehicle Supply Equipment

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 transfer electricity to an EV.

kWh

A kilowatt-hour is the unit of energy for the number of kW charged/used over an hour.

SOURCES & REFERENCES

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

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/>