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Ultra-fast EV charging stations : How can you predict your performance ?

Discover the 7 main criteria that help you predict ROI even before installation in France

How to predict the performance of an ultra-fast charging station in France

For operators, defining an effective expansion strategy is essential to securing sustainable growth and maximizing revenue. Yet not all charging stations perform the same: why do some sites overperform while others stagnate? And above all: how can you forecast the future performance of a location before installing an ultra-fast charger?

At MyTraffic, we developed a predictive model, the kWh Model, to help our clients plan the expansion of their network. Before training it, we identified and quantified the indicators that truly influence the performance of ultra-fast charging stations.

In this study, a charging point is considered ultra-fast when it exceeds 150 kW.

Key figures :

Number of charging points analyzed across France :

53 407

221 kWh

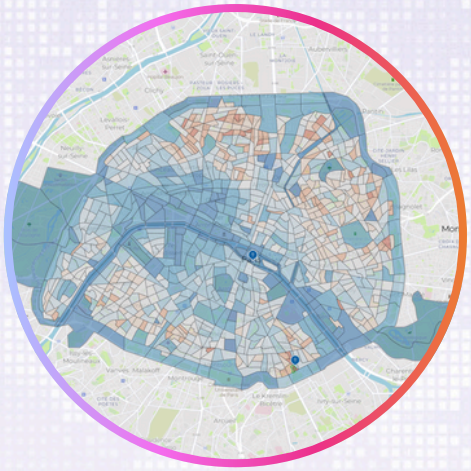
Average predicted output of stations in the Top 1% of the highest-potential areas in France

THE 7 CRITERIA THAT DETERMINE THE SUCCESS OF ULTRA-FAST CHARGING STATIONS IN FRANCE

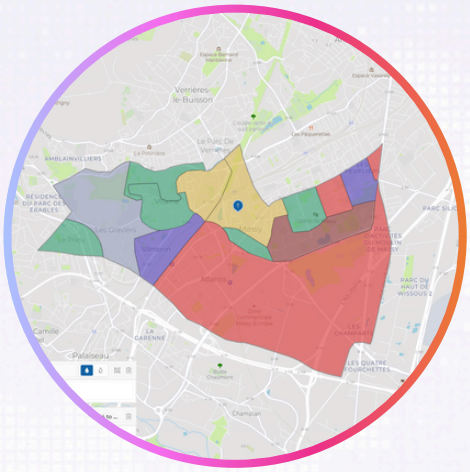
POPULATION DENSITY

The most important criterion for predicting the performance of a charging station is the density of the surrounding population.

The more potential users there are, the higher the demand for ultra-fast charging will be.



Heatmap of population density
in the city of Paris



Busiest times of day
in the city of Massy

12:00
17:00
16:00
18:00

AVERAGE PEAK-HOUR TRAFFIC

The second most important criterion is the presence of a high volume of vehicles during peak hours, as this reflects strong visibility and significant traffic flow.

The more surrounding traffic there is, the greater the charging potential.

ELECTRIC VEHICLE DENSITY

If the area already concentrates a large number of electric vehicles, the total addressable market is by definition larger. This criterion measures the immediate availability of active customers and is therefore very common in locations where ultra-fast charging stations overperform.

EV ADOPTION RATE

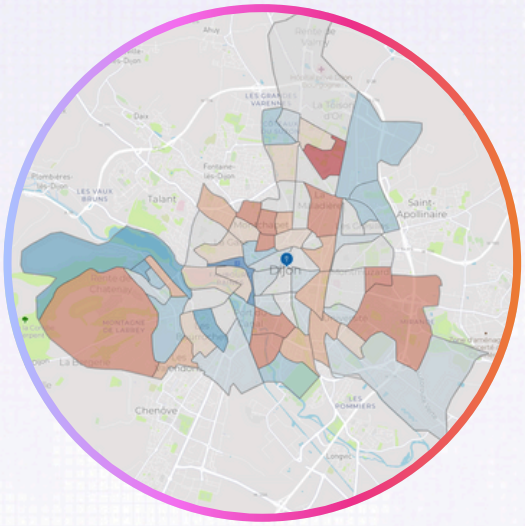
Not to be confused with density, the adoption rate reflects the maturity of the territory in terms of electric vehicle uptake.

The higher the market share of electric cars, the more it reduces demand uncertainty and ensures structurally strong demand in the area. It is a leading indicator of long-term performance.

24%

of all vehicles registered in France in 2024 were hybrid or electric.

Source : European Environment Agency



Average visit duration
in the city of Dijon

AVERAGE TIME SPENT IN THE AREA

The longer people stay around the zone, the more it indicates the presence of attractive shops and services.

This allows drivers to make use of the charging time while doing something else (shopping, coffee break, dining, etc.). Such a context significantly improves the conversion rate toward ultra-fast charging.

NUMBER OF EXISTING CHARGING STATIONS WITHIN 500 METERS

The presence of other ultra-fast charging stations often indicates that there is already established EV traffic and that users know they can rely on the area when needed: the location is a proven hotspot. A slight concentration of stations can even enhance the overall attractiveness of the zone.

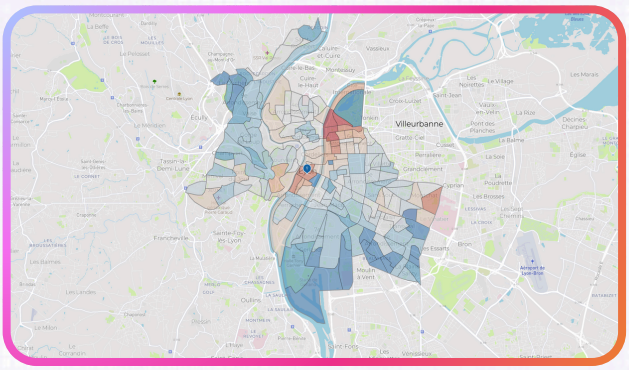
Non-exhaustive list of charging stations in the city of Rennes

However, be mindful of saturation if density becomes too high. For example, the city of Madrid has an excessive number of charging points, which reduces the performance of each individual station.

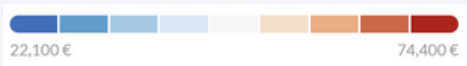
AVERAGE PURCHASING POWER PER INHABITANT

Higher average income is correlated with a stronger rate of EV ownership and a greater willingness to pay for premium ultra-fast charging.

These areas often generate a higher number of sessions and improved profitability.



Average purchasing power per inhabitant in the city of Lyon



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To predict the future performance of an ultra-fast charging station in France, evaluating each of these signals will enable you to make better-informed location decisions and prioritize your investments with **greater confidence**. These indicators form a solid foundation for understanding the business dynamics of a site, but **every location remains unique**, with its own driver behaviors, visitation patterns, and local specificities.

To go further, structure your analysis at scale and accelerate your network expansion with EVConnect , designed to size, compare, and plan the opening of your next ultra-fast stations in multiple european countries such as the UK and Germany. All the criteria covered in this study, and many others, are available, allowing you to adopt a truly **data-driven approach to your expansion**.

🔗 Analyse your next charging location

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