

TAKING CHARGE

A comparative analysis of current and required public EV charging infrastructure in four European cities

EXECUTIVE SUMMARY



Electrifying road transport is an essential part of cities' shift to zero-emission mobility. Europe's cities are already moving in this direction, but the transition can only succeed at scale if charging is reliable, affordable and easy to access, including for people who cannot charge at home. **Sufficient public charging infrastructure is therefore central to a successful transition.**

This briefing is aimed at city governments, local policy makers and stakeholders. It **sets out what it will take for Greater London, Madrid, Paris and Warsaw to build the charging networks needed to support electrification at pace.** It compares the current state of public electric vehicle (EV) charging in these four cities, and models the public charging infrastructure requirements by 2030 and 2035. Because the cities have different administrative boundaries, urban forms and starting points, the comparison should not be read as a ranking.

The findings show that **all four cities need to expand public charging substantially, but not in the same way** or at the same starting point.

- ▶ **Public charging provision varies widely**, from 5.3 charge points per 1,000 inhabitants in Paris to just 0.5 in Warsaw, with London (3.2) and Madrid (1.0) in between. Paris and London have more developed networks, built largely around slow alternating current (AC) charging, while Madrid and Warsaw are at an earlier stage and have deployed a higher share of fast direct current (DC) infrastructure. These different starting points create different challenges and opportunities as EV markets grow.
- ▶ Across all cities, the challenge is not only the number of charge points, but where they are located, how affordable they are, how reliably they serve people who cannot charge at home, and how well they fit with wider urban

mobility goals. **Chargers remain concentrated in central and commercially attractive districts, with outer and some lower-income neighbourhoods often less well served.** The key equity issue is charging dependency: whether those without access to home charging have convenient, affordable and reliable public alternatives.

- ▶ **Utilisation rates also vary considerably:** London and Paris show the highest rates, both exceeding 15%, suggesting their networks are better matched to current demand, while Madrid's network is the least utilised, at around 7%, with Warsaw slightly higher at around 14%.
- ▶ Ad-hoc public charging is most expensive in London on a purchasing-power-adjusted basis, and **DC charging carries a substantial price premium in all four cities**, ranging from 20% to 51%.
- ▶ **All four cities need to expand their networks significantly before 2030**, and further still by 2035. **Smarter policy can reduce the scale of expansion needed:** shifting demand towards workplaces, destinations, and higher-power charging cuts projected requirements by around one fifth, and combining this with a ten percent reduction in car ownership cuts them by more than a quarter. But these efficiencies do not remove the need for grid planning, investment and careful site selection, nor do they remove the need to ensure that expansion serves all residents equitably.

The cities that act early, plan well and build for everyone will be best placed to turn the electric transition from a promise into a reality.



GREATER LONDON

Existing charging points (2026)



Electric Vehicle share of passenger car fleet



MADRID

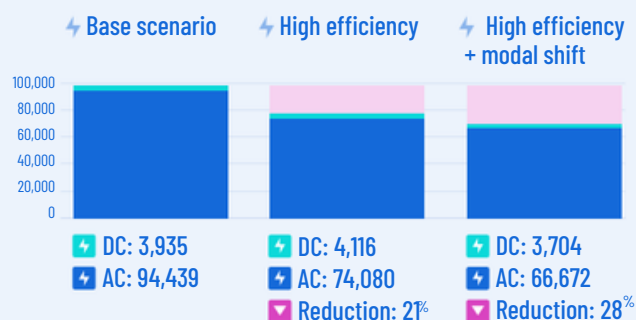
Existing charging points (2026)



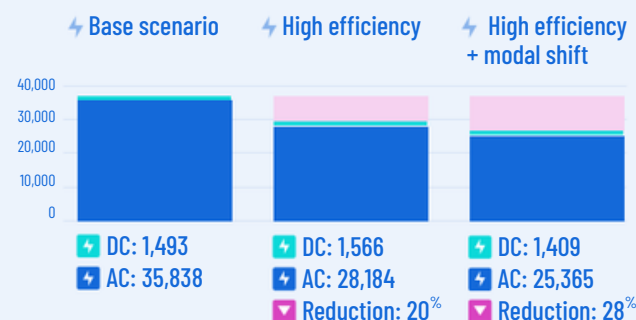
Electric Vehicle share of passenger car fleet



Number of charge points required (2035) under the three scenarios



Number of charge points required (2035) under the three scenarios



PARIS

Existing charging points (2026)



Electric Vehicle share of passenger car fleet



WARSAW

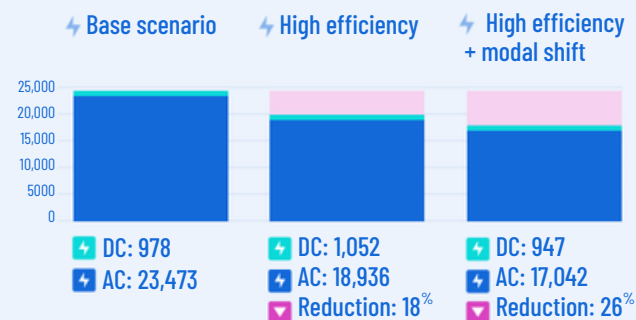
Existing charging points (2026)



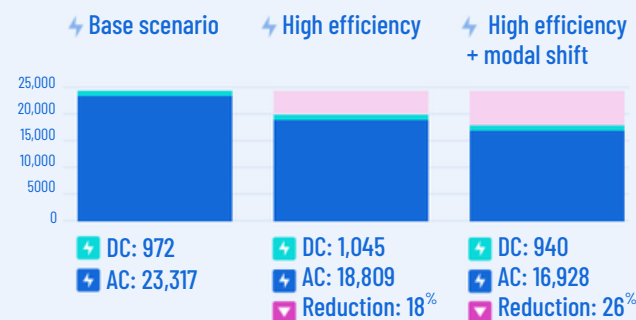
Electric Vehicle share of passenger car fleet



Number of charge points required (2035) under the three scenarios



Number of charge points required (2035) under the three scenarios



Policy recommendations:

- ▶ **Plan strategically, not reactively.** Develop a Charging Masterplan that maps projected demand by district, identifies grid constraints early, and sequences rollout over time. Districts with high public charging dependency, and particularly residential areas without off street parking should be prioritised.
- ▶ **Align charging with broader urban mobility goals.** Pairing a more efficient rollout of EV infrastructure with investment in public transport, cycling and shared mobility can cut infrastructure requirements by almost 30%. Fewer cars means less infrastructure, lower costs and more public space for other uses. Rolling out charging infrastructure should not entrench car dependency in cities.
- ▶ **Shift demand away from the street.** Reduce public charging needs by steering residential demand towards workplaces, semi-public spaces, car parks and private garages using spatial planning and procurement. On-street charging should primarily serve households with no viable alternative. Data and utilisation thresholds should be used to guide expansion.
- ▶ **Make charging affordable for all.** Use procurement and concession contracts to require transparent kWh-based pricing and set maximum ad-hoc prices where appropriate.
- ▶ **National governments and grid operators** should remove the bottlenecks cities cannot solve alone, and national governments should introduce effective and enforceable right to plug rules for tenants and owners.
- ▶ **At EU level,** ambitious and predictable targets, such as the CO₂ standards and the proposed Clean Corporate Vehicles regulation, are the single most important driver of EV adoption at EU level and must be maintained. Price transparency rules in the AFIR should be strengthened.