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GA Data Analytics Bootcamp

Are UK public chargers keeping up with EV demand?

Comparing UK public charging infrastructure to privately-owned BEVs at local authority level

Why this matters

Government targets for EV adoption / petrol ban.

For drivers, what matters is convenient, reliable access to charging

Risk of regional Inequality: some areas may be over- or under-served.

Data: three main sources

OPENCHARGEMAP:

PUBLIC CHARGING SITES & PLUGS (LOCATION, POWER, ACCESS TYPE, OPERATOR)

Department for Transport

DFT VEH9901:

LICENSED BATTERY-ELECTRIC CARS BY LOCAL AUTHORITY

Office for National Statistics

ONS POSTCODE DIRECTORY

LAD BOUNDARIES

Approach: from raw data to insights

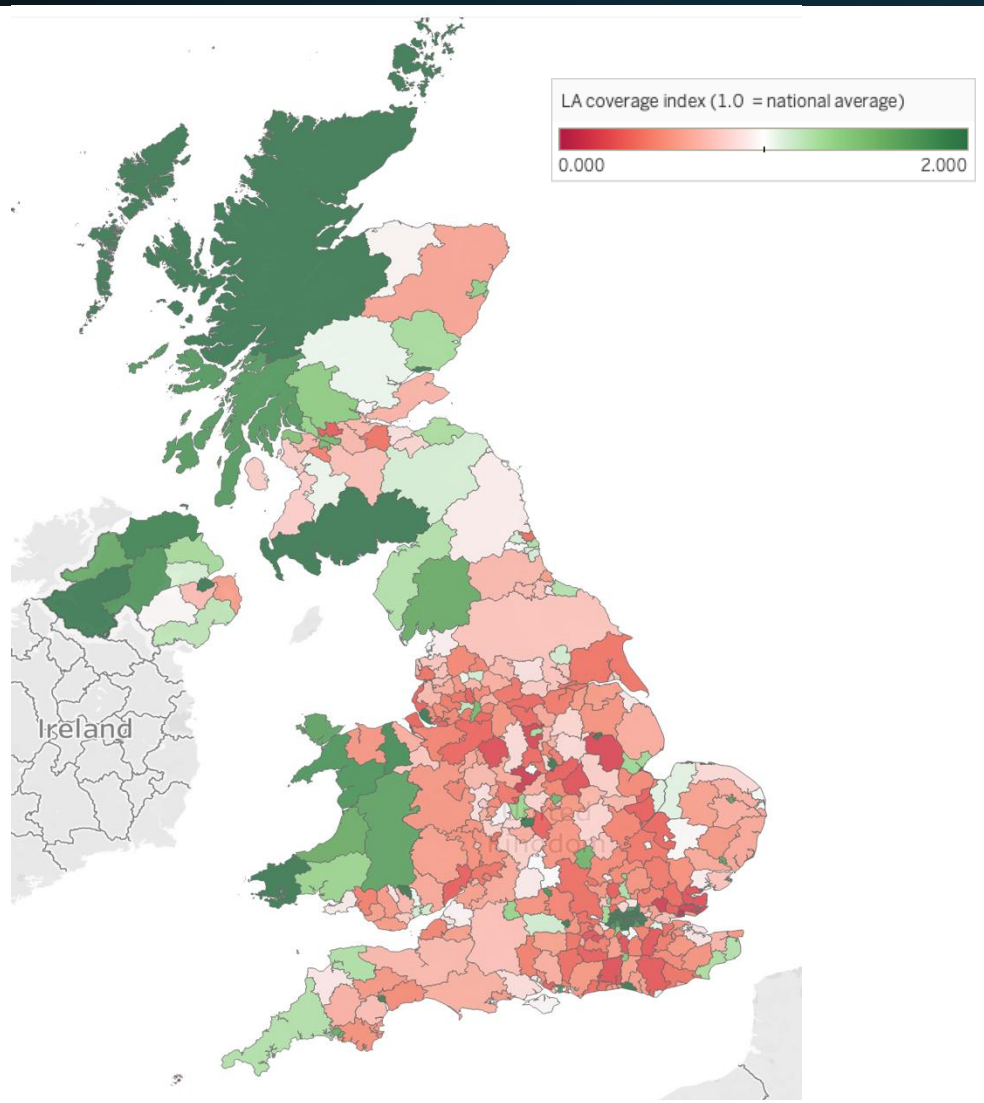
1. Collect and clean

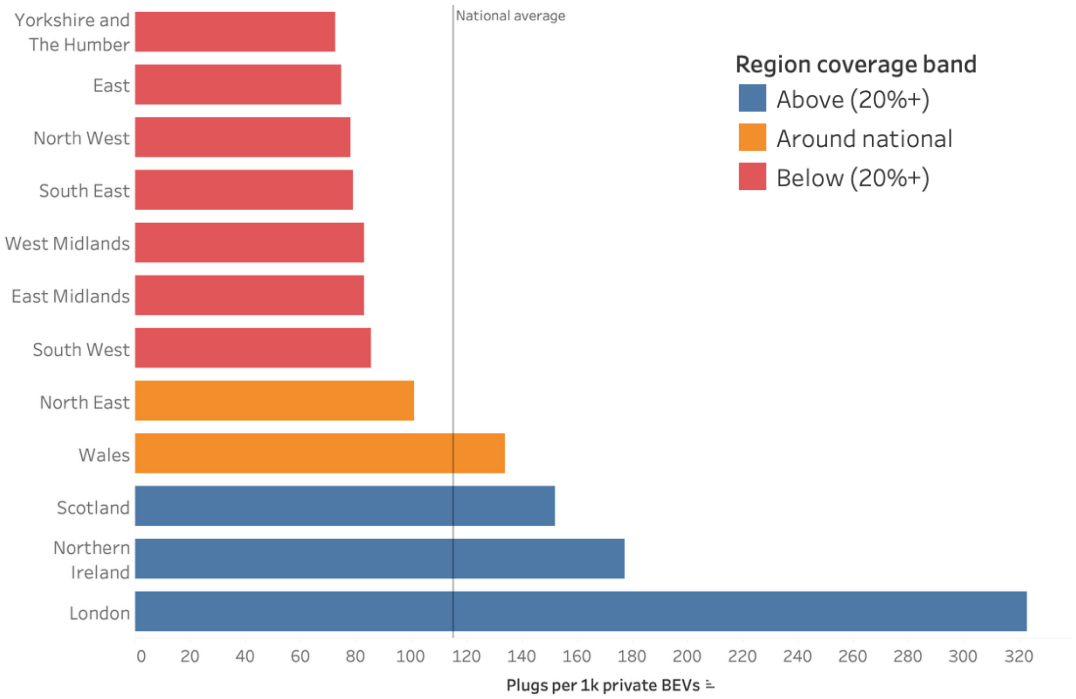
2. Model in a database

3. Build a simple coverage metric

4. Explore & visualise

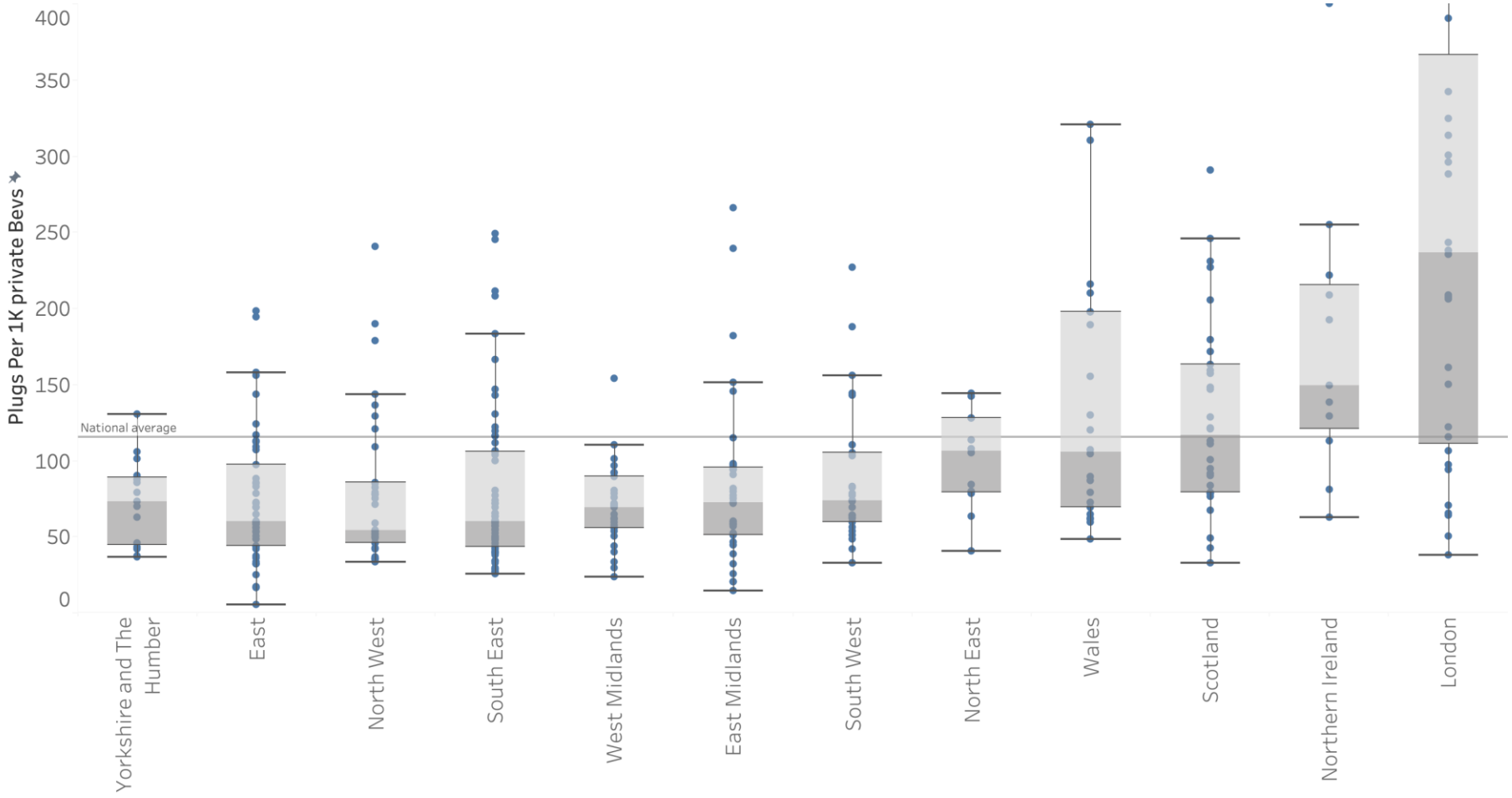
National picture – how coverage compares to the UK average



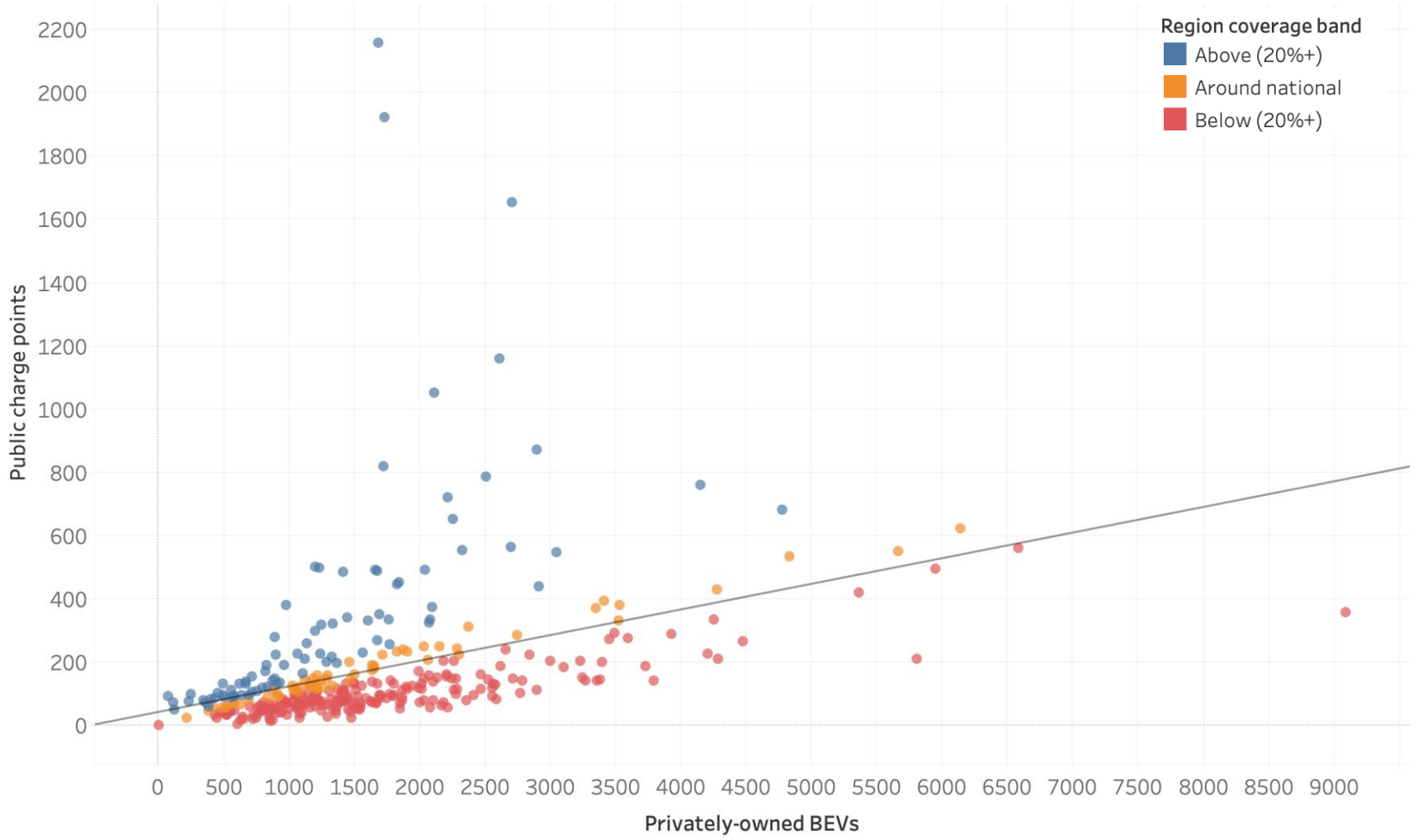


Private BEVs: **586,972**
Public charge points: **62,302**
Average plugs per 1,000 private BEVs (UK): **115.1**

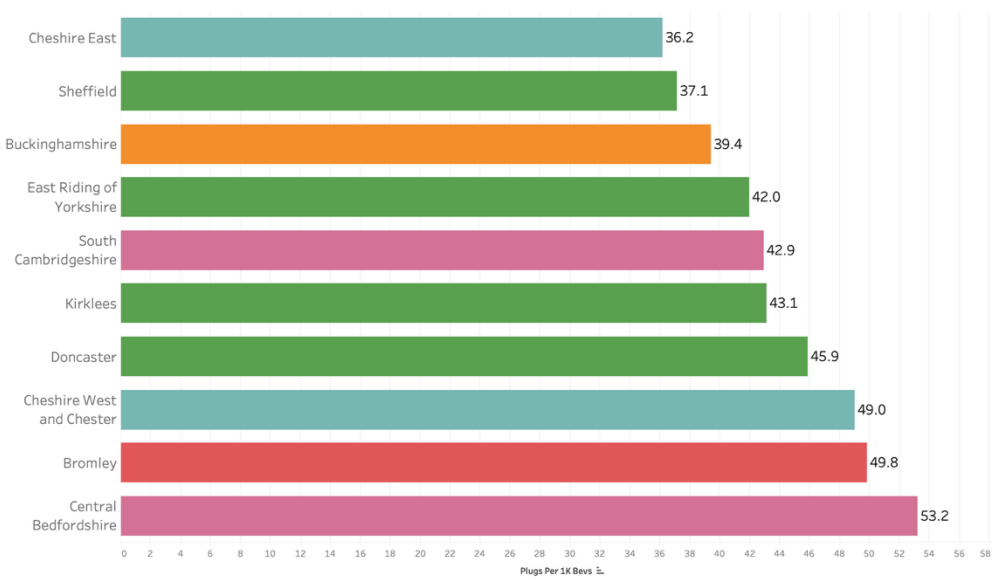
Big variation within regions, not just between them



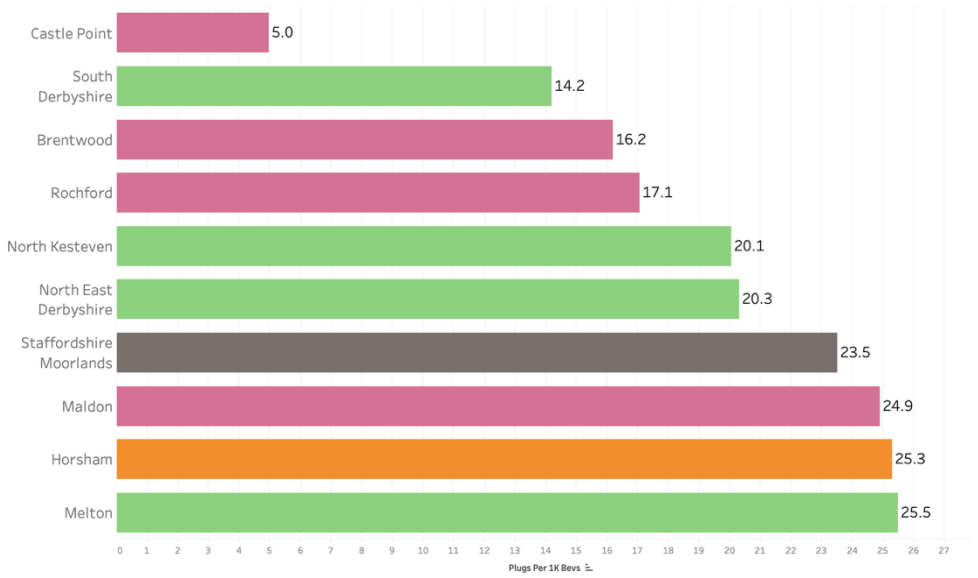
EV demand vs public charging by local authority



Where under-supply matters most



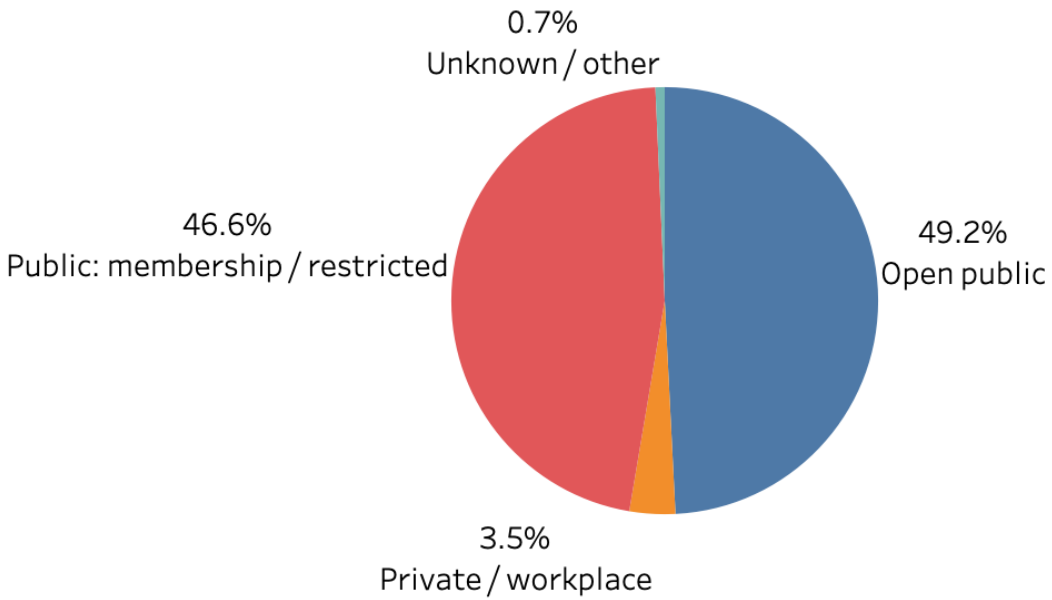
High BEV demand, below-average coverage

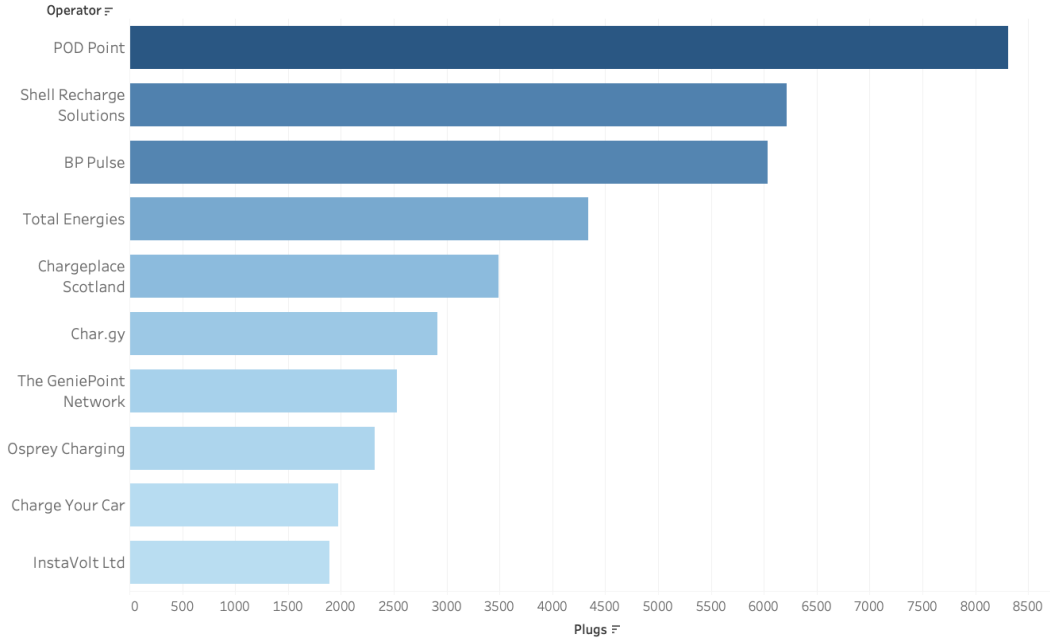


Lowest plugs per 1,000 private BEVs

These are priority areas for improving public charging

Who runs the network, and how accessible is it?

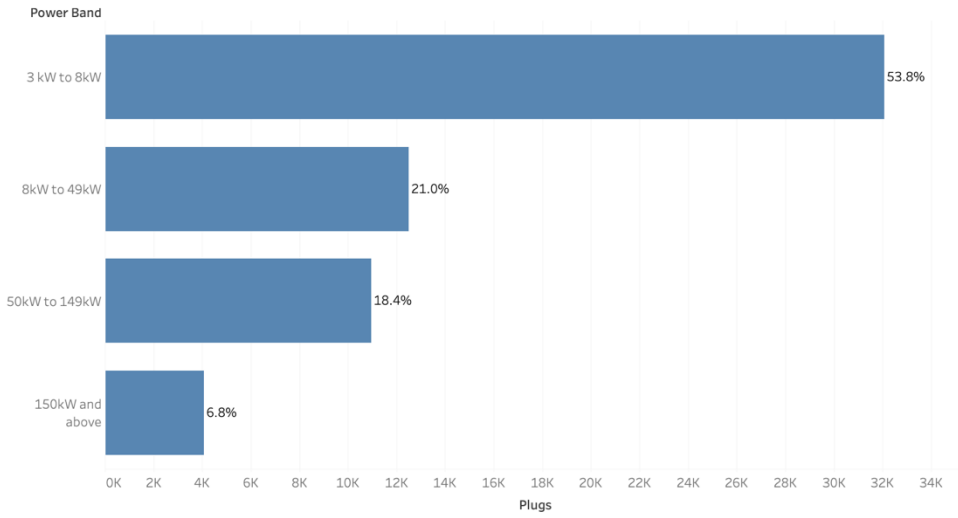


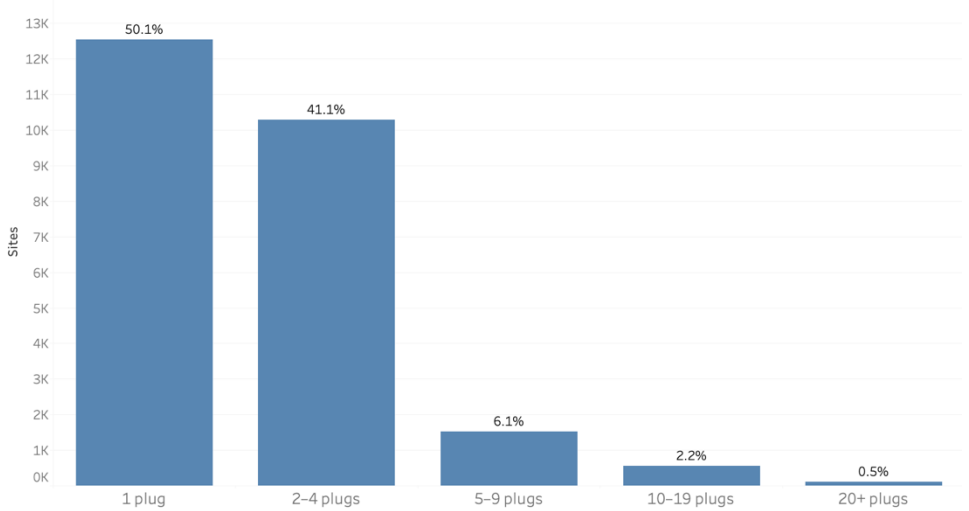


Access: around 50% of plugs are fully open public, around 50% are membership/restricted, with only a small clearly private/workplace slice.

Operators: A few big networks run a large share of public plugs

Network quality: speeds and site size





- Public network is still dominated by slower 3–8kW chargers
- Rapid and ultra-rapid (50kW+) plugs are present but a small share of the total
- Most sites are very small: 1–4 plugs, with relatively few larger hub-style locations

Limitations

OpenChargeMap mainly covers public locations – workplace/home charging not represented.

I filtered to privately-owned vehicles only so company cars and fleets not included.

Data is a snapshot: both EV registrations and chargers are changing rapidly.

Coverage metric treats every plug equally so doesn't capture speed, reliability or price

Recommendations

1. PRIORITISE WHERE TO INVEST

FOCUS ON HIGH-DEMAND, LOW-COVERAGE COUNCILS HIGHLIGHTED AS “HIGH DEMAND BUT UNDER-SERVED”.

TARGET REGIONS AND LOCAL AUTHORITIES BELOW THE NATIONAL PLUGS-PER-BEV BENCHMARK FOR ADDITIONAL PUBLIC FUNDING AND INCENTIVES.

2. IMPROVE QUALITY OF COVERAGE

INCREASE THE SHARE OF RAPID AND ULTRA-RAPID CHARGERS, ESPECIALLY IN UNDER-SERVED AREAS AND ALONG KEY ROUTES.

SUPPORT DEVELOPMENT OF LARGER HUB SITES (MULTIPLE PLUGS PER SITE) RATHER THAN RELYING MAINLY ON ISOLATED SINGLE-PLUG LOCATIONS.

Thank you for listening!

Questions?

View interactive dashboard