EV Risk Intelligence in Wales 2026

A national postcode-level analysis of electric vehicle infrastructure risk across Welsh communities

97,767	97.8%	35+	6
Postcodes Scored	Low Risk	Data Factors	Welsh Districts

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Executive Summary

This report presents the first postcode-level analysis of electric vehicle infrastructure risk across Wales, drawing on 97,767 scored postcodes across six district areas. The data is derived entirely from government and statutory sources including the Environment Agency, the Department for Transport, Police.uk, HM Land Registry, and the Welsh Government Welsh Index of Multiple Deprivation.

The findings reveal a clear geographic divide. Cardiff concentrates the highest risk scores in Wales, driven by collision rates, traffic volumes, and urban density. However, the most significant policy challenge lies not in the highest-risk postcodes but in the most underserved ones. Mid Wales and rural North Wales have very low risk profiles yet almost no rapid charging infrastructure, with residents in Powys travelling an average of 10.3 kilometres to reach the nearest rapid charger.

Wales has the infrastructure, the data, and the policy mandate to address this gap. Unlike England, where the Local Electric Vehicle Infrastructure fund channels money directly to operators, Wales funds EV charging through the Regional Transport Grant administered by Corporate Joint Committees. This report provides the postcode-level evidence base to support those decisions.

Key Findings

97.8%	of Welsh postcodes score Low risk for EV infrastructure deployment.
CF Score 3.3	Cardiff records the highest average risk score in Wales, with individual postcodes reaching 41 out of 100.
10.3 km	Powys (LD) is the most underserved district: average risk score 1.0, yet nearest rapid charger averages 10.3 km away.
4.2 chargers	Mid Wales border areas (SY) have an average charger count of just 4.2 within 5 kilometres.

Methodology

Data Sources and Scoring Model

The EV Insight risk model scores every active UK postcode across 35 factors grouped into six categories: vehicle crime, flood and surface water risk, road collision history, charging infrastructure proximity, traffic exposure, and socioeconomic deprivation. All underlying data is sourced from statutory and government bodies and is licensed under the Open Government Licence v3.

Source	Data Provided	Licence
Environment Agency	Flood zone and surface water risk	OGL v3
Department for Transport	Road collisions and traffic counts	OGL v3
Police.uk	Crime categories by LSOA	OGL v3
ONS ONSPD	Postcode spine and geography	OGL v3
Welsh Government WIMD	Welsh Index of Multiple Deprivation	OGL v3
HM Land Registry	House Price Index 2004 to present	OGL v3
OpenStreetMap	Points of interest and infrastructure	ODbL

Risk scores are calculated at postcode centroid level using a weighted model. Vehicle crime carries the highest weighting at 30 percent, reflecting its primary influence on charge point vandalism and theft. Flood zone classification and road collision density each contribute 10 percent. Mitigating factors including CCTV coverage and street lighting reduce the overall score. All 1,792,342 active UK postcodes have been scored using this model.

National Context

Wales Within the GB Picture

Across the full GB dataset of 1,792,342 postcodes, the score distribution is heavily skewed toward low risk, with the highest scoring postcodes concentrated in central London. The top score nationally is 100, recorded at postcodes in WC2N (Trafalgar Square area). Welsh postcodes sit firmly in the lower end of the national distribution, with Cardiff as the only Welsh urban area approaching the upper Medium band.

Band	GB Total	Wales Total	Wales Share
Low	1,513,505	95,633	6.3%
Medium	254,115	2,079	0.8%
High	23,665	55	0.2%
Critical	1,057	0	0.0%

Table 1: Risk band distribution across GB and Wales.

Wales has no postcodes in the Critical band. This reflects the lower urban density and vehicle crime rates found outside the major English cities. For charge point operators, Wales presents a predominantly benign deployment environment from a risk perspective, with the primary challenge being infrastructure gap rather than active risk.

Regional Analysis

Risk and Infrastructure by District

District	Area	Postcodes	Avg Score	Max Score	Avg Chargers (5km)	Avg Nearest Rapid (km)
CF	Cardiff	23,437	3.3	41	22.0	3.4
NP	Newport / Valleys	13,889	2.6	34	14.7	3.1
SY	Mid Wales Border	14,620	2.5	28	4.2	6.8
SA	Swansea / West Wales	23,300	1.9	27	15.1	5.4
LL	North Wales	20,301	1.3	30	6.0	4.8
LD	Powys / Mid Wales	2,220	1.0	16	2.9	10.3

Table 2: Regional risk and infrastructure summary. IMD decile 1 is most deprived, 10 is least deprived.

Cardiff (CF)

Cardiff records the highest average risk score across Wales at 3.3, with the highest individual postcodes concentrated in the CF24 district covering Roath and Cathays. These areas combine high traffic volumes, elevated collision counts, and IMD decile 2 deprivation. The city is relatively well served for charging infrastructure, with an average of 22 chargers within five kilometres, but rapid charger proximity averages 3.4 kilometres, suggesting gaps in on-street rapid provision within the city centre.

Newport and the Valleys (NP)

Newport and the South Wales Valleys present a moderate risk profile with the highest average deprivation of any Welsh district at IMD decile 5.2. Infrastructure provision is reasonable, with 14.7 chargers within five kilometres on average, and the nearest rapid charger at 3.1 kilometres. The valley communities remain underserved relative to their deprivation levels and the proportion of residents without access to private off-street charging.

Mid Wales Border (SY)

The SY district covering the Mid Wales border presents a particular infrastructure challenge. With an average of only 4.2 chargers within five kilometres and a nearest rapid charger distance of 6.8 kilometres, this area has among the lowest provision of any Welsh district. The relatively moderate average risk score of 2.5 confirms that risk is not a barrier to deployment here. The constraint is investment prioritisation.

Swansea and West Wales (SA)

Swansea and the wider SA district score Low risk on average, with a maximum of 27. Charger availability at 15.1 within five kilometres is reasonable, but the nearest rapid charger averages 5.4 kilometres, indicating that while slow charging is accessible, rapid charging for longer journeys remains limited across much of the area.

North Wales (LL)

North Wales presents a low risk, low infrastructure profile. With an average of six chargers within five kilometres and a nearest rapid charger at 4.8 kilometres, the LL district serves a large geographic area with limited provision. Tourism and seasonal demand add further complexity, with visitors to coastal and rural areas potentially finding rapid charging significantly further away than national averages suggest.

Powys and Mid Wales (LD)

Powys records the lowest average risk score in Wales at 1.0 and the highest average distance to a rapid charger at 10.3 kilometres. This represents the most acute infrastructure gap in Wales. Powys is the largest local authority area in Wales by geography, with a dispersed rural population that is more dependent on private vehicle use than urban counterparts. The combination of low risk and near absence of rapid charging infrastructure makes Powys the strongest candidate for targeted Regional Transport Grant investment. In 2026 to 2027, Powys received £300,000 for EV charging at public car parks. Against a backdrop of 10.3 kilometres average distance to a rapid charger, that allocation illustrates the scale of the gap between available funding and the infrastructure required.

Policy Implications

Infrastructure Investment Priorities

The data in this report supports four conclusions for transport planners, local authorities, and charge point operators active in Wales.

1. Risk is not the primary barrier to deployment in Wales

With 97.8 percent of Welsh postcodes scoring Low risk, Wales is a broadly safe environment for EV infrastructure investment. Operators can deploy with confidence across the vast majority of the country without the elevated vehicle crime, flood, or collision risk found in English urban centres.

2. The equity gap is geographic, not economic

The communities most underserved by rapid charging infrastructure in Wales are not the most deprived urban areas but the most rural ones. Powys residents face a 10.3-kilometre average journey to a rapid charger. This is a structural barrier to EV adoption that cannot be resolved by market forces alone. Wales funds EV charging through the Regional Transport Grant rather than through a dedicated vehicle infrastructure programme. That grant is administered by Corporate Joint Committees and covers road safety, active travel, public transport, and highways within a single allocation. EV charging must compete for priority within that broader envelope and is not ring-fenced. In 2026 to 2027, the entire South East Wales region received just £50,000 for ULEV activity, allocated to an evaluation study rather than deployed infrastructure.

3. Procurement capability and public understanding are the operational barriers

Funding alone does not deliver chargepoints. Across Wales, local authorities and CJCs face a consistent challenge in translating grant allocations into deployed infrastructure. Procurement processes for EV charging are complex, site selection criteria are often poorly defined, and elected members and officers frequently lack the technical grounding to make confident investment decisions. Public understanding of charging infrastructure, range, and suitability also lags behind adoption targets. These are not problems of political will. They are problems of evidence and capability. Postcode-level risk and infrastructure data gives procurement teams a defensible, auditable basis for site selection, business case development, and grant applications.

4. Cardiff investment should focus on equity, not expansion

Cardiff already has the highest charger density in Wales at an average of 22 chargers within five kilometres. Further expansion of slow charging in the city centre would add marginal value. Investment should instead target the deprived postcodes within Cardiff that lack rapid charging, particularly within the CF24 corridor where IMD decile 2 postcodes score highest for risk.

"Powys has the lowest EV infrastructure risk in Wales and the furthest distance to a rapid charger. This is not a market failure. It is a policy opportunity."

About EV Insight

EV Insight is a national postcode-level data intelligence platform built and operated from Wrexham, Wales. The platform scores 1,792,342 active UK postcodes across 35 factors using data sourced exclusively from government and statutory bodies. All source data is licensed under the Open Government Licence v3 or equivalent. EV Insight is an ICO Registered Data Controller (ZC106985).

The platform provides API access to risk scores, infrastructure data, deprivation indices, flood risk, and collision data at postcode level. It is designed for charge point operators, insurers, local authorities, and property platforms requiring accurate, defensible location intelligence.

For API access, data licensing, or to commission a bespoke analysis for your area, contact business@evinsight.co.uk or visit evinsight.co.uk.