

SELECT COMMITTEE REVIEW: ELECTRIC VEHICLE INFRASTRUCTURE AND FUTURE POLICY DIRECTION FOR THE BOROUGH

Committee name	Public Safety and Transport Select Committee
Officer reporting	Steve Clarke – Democratic Services
Papers with report	None.
Ward	All

HEADLINES

This item will act as the first session of the Select Committee's review into Electric Vehicle (EV) Infrastructure and Future Policy Direction for the Borough. This report provides Members with an overview of the national and local context for EVs and associated infrastructure as a starting point for the Committee's review.

The aim of the review is to support the Cabinet and Council in developing its future policies with regard to EVs and EV infrastructure within the Borough; to explore how the Council has so far adapted to the transition to EVs, and how the Council's own fleet, transportation and highways responsibilities may need to adapt moving forward. In addition to the Council's own zero-carbon commitment and climate emergency declaration, this review would tie in with related deadlines set by central government such as the proposed ban on the sale of new petrol and diesel cars and vans in the UK from 2030.

RECOMMENDATIONS:

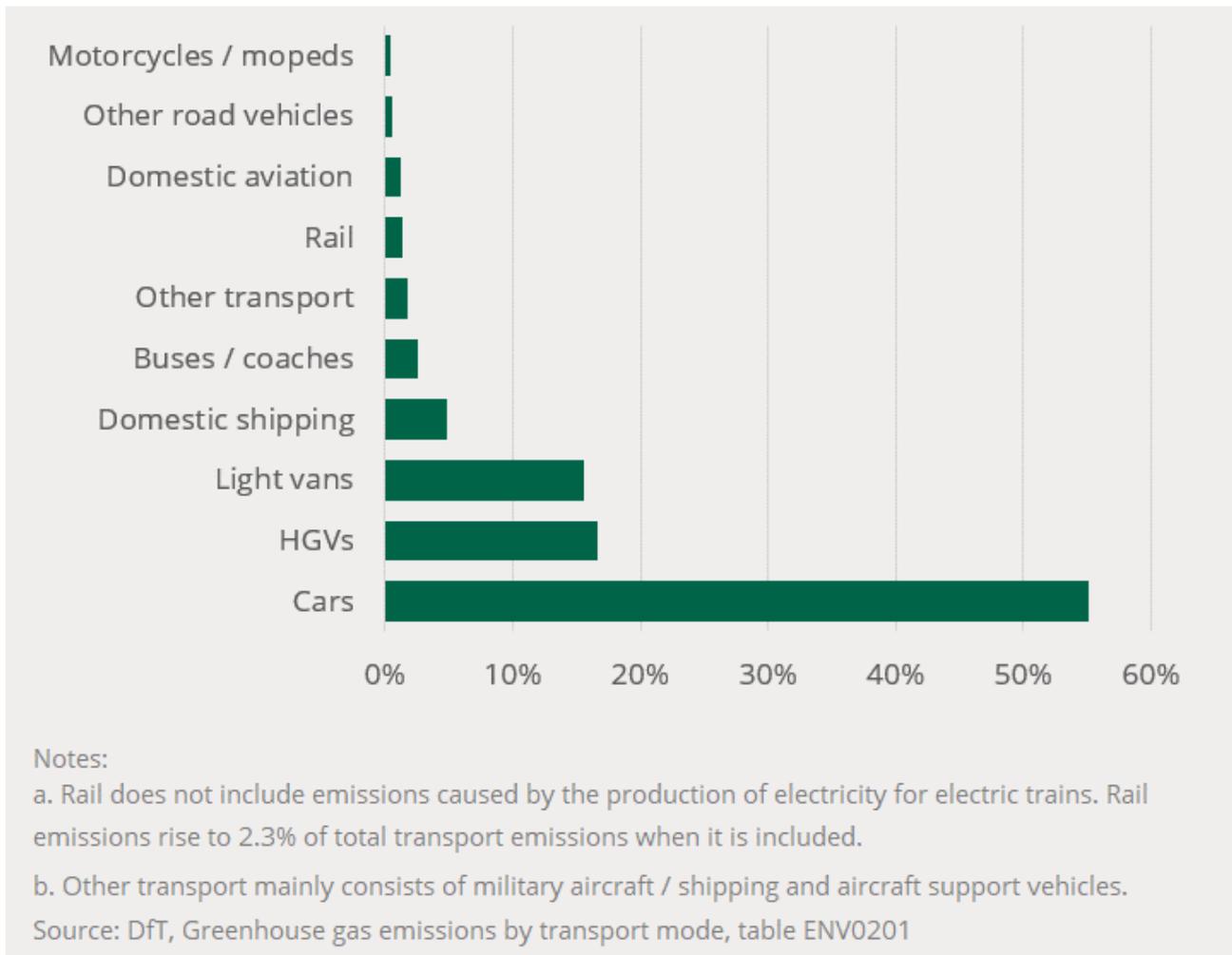
That the Select Committee note the contents of the report and use the first session of the review to enquire as to the Council's existing stance on Electric Vehicles and EV Infrastructure.

SUPPORTING INFORMATION

National Context

The UK has committed to Net-Zero carbon emissions by 2050. Transport is currently the largest emitting sector of the UK economy, responsible for 28% of total UK greenhouse gas emissions; within this, cars are responsible for 55% of transport emissions. The transition to EVs will play a pivotal role in reducing emissions and as the 2030 ban on the sale of new petrol and diesel cars and vans approaches, demand for EVs and the expectations of EV infrastructure will grow exponentially. There is pressure on the Government and local authorities, in addition to car manufacturers, infrastructure providers and charging companies, to facilitate the transition from Internal Combustion Engine (ICE) vehicles to EVs.

The chart below shows greenhouse gas contributions from transport in 2019 by vehicle type:



The consumer market for EVs is immature, yet growing, with 8.5% of newly registered vehicles being EVs in 2020. Meanwhile, only 1.8% of used car sales, responsible for approximately 80% of transactions, involved alternatively fuelled vehicles. In early 2010, there were around 9,000 ultra-low emission vehicles on Britain's roads, by the end of 2020, this had increased to 432,000; it should be noted that these are not solely fully electric vehicles and include low emission vehicles such as petrol-electric hybrid vehicles. Although the proportion of EVs still remains relatively small compared to ICE vehicles, the growth rate will increase as the 2030 ICE ban approaches.

On matters of air quality, although electric vehicles offer clear benefits for local air quality due to zero exhaust emissions at street level, they still emit particulate matter from road, tyre and brake wear. This means EVs cannot entirely eliminate issues of air pollution in urban areas. The total emissions from an EV are known as the "lifecycle emissions" and combine the emissions from manufacturing the vehicle, powering it through its life, and decommissioning. The Council's Air Quality Action Plan 2019-2024 identifies the issue that road vehicle emissions contribute significantly to pollution levels in the Borough. Just over half of the road traffic emissions are associated with vans, heavy goods vehicles and buses with just under half from cars, including taxis. Recognising this, the air quality action plan includes specific action measures aimed at promoting the use of EV infrastructure to bring about a reduction in pollution emissions. These are detailed below:

- Action 15 - Council procurement policies to promote the use of cleaner vehicle technologies via contract tendering process;

- Action 16 - opportunities taken in new developments and town centre improvement workstreams to reduce emissions from deliveries to local businesses and residents;
- Action 17 - reducing emissions from the Council fleet;
- Action 24 - installation of ULEV (Ultra-Low Emissions Vehicle) infrastructure e.g. EV charging points, fast chargers, rapid chargers (where feasible)

Charging Infrastructure

Accessibility and convenience to vehicle charging and refuelling is frequently raised by prospective consumers as a key concern in choosing to purchase and use an EV. The number of EV Charge Points (EVCP) per 100km of road in the United Kingdom has increased from 42 in 2011 to 570 in 2019. The number of EVCPs is increasing year on year; between 2018 and 2019, there was a 50% increase as a further 10,000 connections were added in the UK. Whilst most charging is expected to take place at home, the Committee for Climate Change have suggested 1,170 EVCPs will be required per 100 km of road by 2030. This is to be supported by £1.3 billion funding, partly covering the strategic road network but also importantly reserved for local authorities (for on-street charging).

Most charging is expected to take place domestically, The Electric Vehicle Homecharge Scheme provides grant funding of up to 75% towards the cost of installing EVCPs at domestic properties across the UK. However, EVCPs cannot be installed in all properties, for instance, terraced or apartments properties may not have allocated off-street parking. In 2016, the government announced the On-Street Residential Chargepoint Scheme aimed at local authorities to increase the availability of on-street EVCPs for plug-in EVs. In February 2021, £20 million of further funding was made available; of the circa 111,476 households in Hillingdon, around 34,419 do not have off-street parking, this represents nearly a third (31%) of all households in the Borough. It is important to note that there is no duty placed upon local authorities to provide electric charging points, it is up to them to decide, based on local priorities, whether to do so. However, in 2019, the Government urged local authorities to take advantage of the funding available through the On-Street Residential Chargepoint Scheme.

The Council has received a modest but growing volume of requests from residents asking for on-street EVCPs to be provided near to where they live. For residents without a driveway/garage, if they are to be able to own an electric car, then on-street EVCP becomes a key request. Although it is possible that the situation may change as the desire for EVCP infrastructure grows, it should be noted that the Council has never received a resident petition asking for communal EVCPs.

There are a series of important considerations associated with on-street EVCP which should be noted:

- **Cables across the footway:** It would be an offence under the Highways Act 1980 and could provide an obvious trip hazard if residents were permitted to trail a charging cable from their property out on to the public highway in order to charge their EV. A typical scenario might be an electric vehicle left on charge overnight and a cable, even if 'guarded' by a proprietary sleeve, would form a

trip hazard. In the case of an injury and subsequent accident claim, the Council would be likely to be held liable if it could be shown to have sanctioned such an arrangement. A variation on this theme which has sometimes been suggested is to allow a private cable to be laid through a duct or a channel across the footway, thereby avoiding the trip-hazard issue; here the risk is of uncertain electrical safety, because the Council would be at risk if it sanctioned untested electrical equipment across its highway, with the risk of electrocution, especially in wet weather.

- **Lamp column chargers:** Some Councils have installed on-street EVCP on existing or sometimes where necessary all-new lamp columns. The challenge here is competition for kerb-side space to access a charger not already in use, or blocked by another parked vehicle that may not even be using the charging facility. Clearly lamp columns are generally spaced in accordance with the appropriate lighting design standards, and this means there will never be a lamp column adjacent to possible parking spot in any given street. There is potential for some neighbourly friction, and there is also a certain risk of trailing cables proving hazardous.
- **Kerb-side chargers:** Broadly similar to the concept of lamp column chargers, some suppliers have created kerb-side charging bollards. There is clearly scope for more of these to be installed than with lamp column chargers, but the costs remain considerable and some designs appear likely to be trip hazards in themselves.
- **Dedicated parking bays intended solely for electric vehicles:** There are challenges in providing dedicated EVCP parking bays within typical high street and residential parking schemes, where parking capacity may already be at a premium; empty bays will be viewed critically by other stakeholders. Over time this will become a moot point as more vehicles become hybrid or electric. Practical considerations include the implications of taking on-street parking away from neighbouring residents that own an ICE car, or indeed rivals for the same limited on-street charging facilities.

These points show that delivering on-street EVCP in a safe, equally accessible and financially viable manner is a challenge at present.

Another funding scheme in place is the Workplace Charging Scheme, a voucher-based scheme that also provides support towards the up-front costs of the purchase and installation of EVCPs, for eligible businesses, charities and public sector organisations.

Wireless, or inductive, charging could offer an alternative to conventional EVCPs. By implementing this technology in suitable locations, vehicles could be charged during their usual use (i.e. stationary at traffic lights), minimising downtime whilst concurrently enabling the use of smaller batteries and overcoming range anxiety. However, this technology is still relatively immature commercially.

EVs: Batteries or Hydrogen

The power for EVs is stored in large, rechargeable batteries. Hydrogen fuel cell vehicles meanwhile convert hydrogen gas to electricity, with a battery used to store surplus energy or

supplement the power during periods of high demand. Hydrogen fuel cell cars were first introduced by Toyota in 2014 and a number of major manufacturers are continuing to invest in the technology including Hyundai and BMW. Although traditional battery EVs are expected to become the dominant type of EV in the UK, it has been predicted that the UK grid may struggle to support the EV overhaul and hydrogen could play a vital role in reaching net zero emissions by 2050.

The only tailpipe emissions from hydrogen fuel cell vehicles are water since the by-products of the chemical reaction which powers the hydrogen fuel cell are just heat and water. The electricity generated either powers the car directly, or charges a battery which stores the energy until it's needed. This battery is significantly smaller and lighter than the battery of a traditional EV.

The hydrogen fuel is stored in a high-pressure tank and can be refilled in much the same method and time as petrol and diesel. However, the biggest issue with hydrogen fuel is the lack of infrastructure in the form of filling stations; Hydrogen fuelling stations are expensive to build, but the Government and the EU are backing a drive to increase the number available.

Local Context

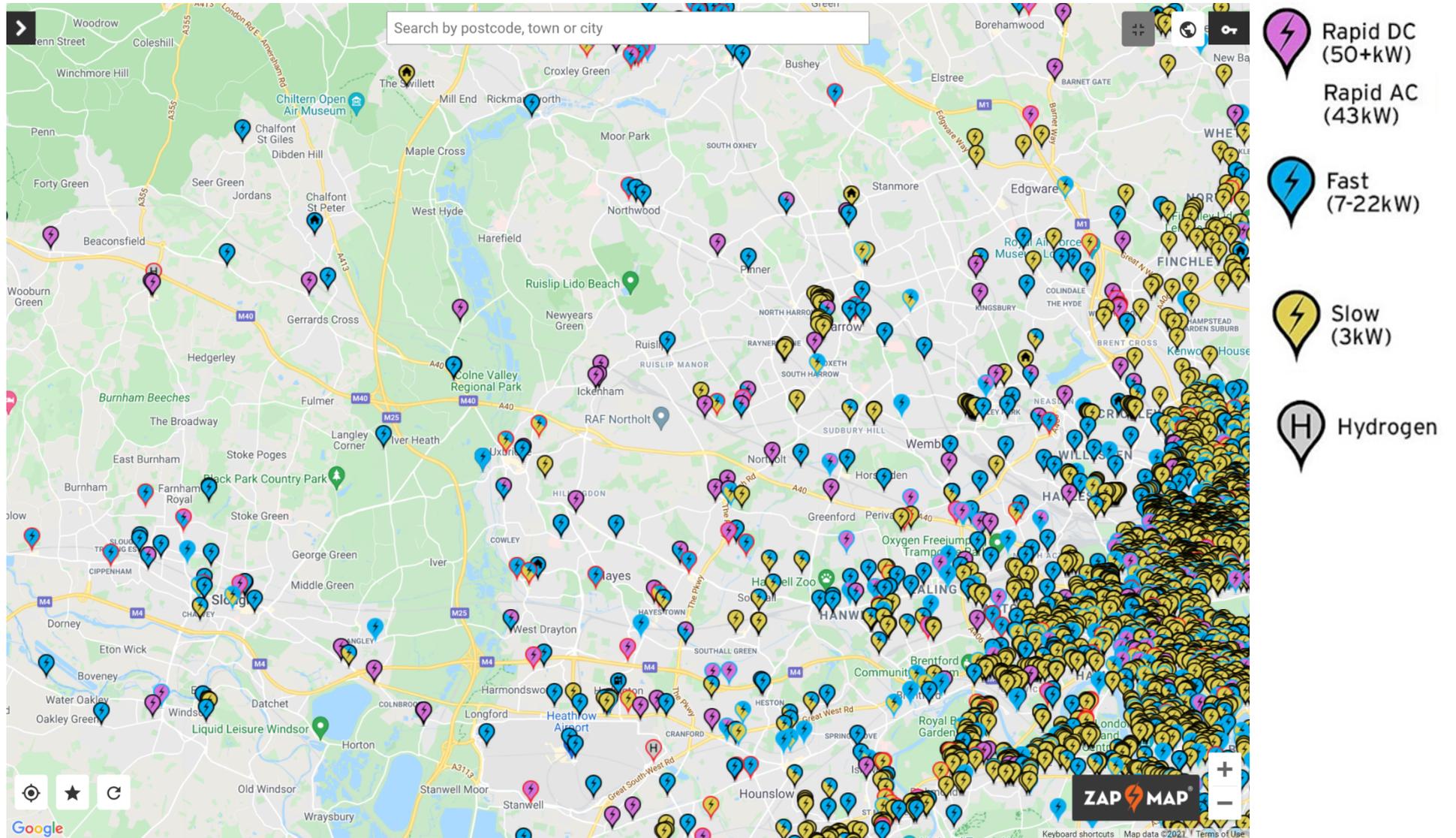
According to 'On Street Charging' Hillingdon currently has a fleet of circa 1,069 battery electric vehicles. Data from the EV charging platform, Zap Map, shows that Hillingdon is in the top 20% nationally for the number of EV charging devices per 100,000 of the population at 64.4 devices per 100,000. Local comparisons are listed below:

Number of EV charging devices per 100,000 of the population (Department for Transport and Zap Map, July 2021):

- **Hillingdon – 64.4**
- Harrow – 19.4
- Ealing – 78.2
- Hounslow - 98.6
- Brent – 61.9
- Buckinghamshire – 28.5
- Slough – 45.5
- Three Rivers – 62.8

EVCP provision in the Borough as a whole is made up of a mixture of public and semi-private provision; by way of example there is provision of accessible EVCP points in some of the larger supermarkets such as the ASDA store in Millington Road, Hayes (19 charge points on the BP Pulse network), and there are six electric car charging points (connectors) available at Hillingdon Fire Station and there is a growing number of other sites. From the point of view of the end user, information about EVCP sites tends to be obtained using convenient searchable map-based phone apps such as Zap Map.

Map of publicly accessible EVCPs in Hillingdon and the surrounding areas (Zap Map):



What is still relatively new technology, albeit evolving rapidly, provides many challenges in terms of the necessary support infrastructure. Whilst investment is clearly needed, it needs to be carefully focused, aided with the right partnerships and in a manner which allows room for the development of all the equipment – vehicles and charging infrastructure – so that they can evolve in tandem and not leave key stakeholders, the Council in particular, owners of equipment which is no longer fit for purpose after significant capital investment has been made. The rise in demand for EVs and associated infrastructure is inevitable and as with almost any area where the technology involved is developing at a rapid pace, it is important to avoid on the one hand being left behind but on the other being left with an expensive legacy of rapidly outdated infrastructure.

The Local Government Association has stated that they “...do not anticipate that councils either want, or need, to become the long-term default provider for electric vehicle chargepoints. For the transition [from ICE to EVs] to be successful, the chargepoint market will have to strengthen. This is the only way we will reach the level of coverage envisioned by the Governments 2018 Road to Zero strategy. However, many councils are already showing that they have a role to play in catalysing this market and helping in its early stages.

Implications on related Council policies

A key role of Select Committees is to make recommendations on service changes and improvements to the Cabinet who are responsible for the Council’s policy and direction.

The transition to Electric Vehicles is an area of policy currently under development by Cabinet Members and Council officers. The Committee’s review, and findings thereof, will form an important part in guiding this policy development.

How this report benefits Hillingdon residents

Select Committees directly engage residents in shaping policy and recommendations to seek improvements to the way the Council provides services to residents.

Financial Implications

There are no direct financial implications associated with this report.

Legal Implications

None.

BACKGROUND PAPERS

NIL.

