

Electric Vehicle Charging Infrastructure

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Introduction

- 1.1 The *National Planning Policy Framework (NPPF)* supports the move to a low carbon future and advises that local planning authorities (LPAs) should plan for ways to reduce greenhouse gas (GHG) emissions.
- 1.2 The introduction of the Climate Change Act in 2008 signified a long-term commitment from the UK government to reduce GHG emissions by at least 80% from 1990 levels by 2050.
- 1.3 The UK was one of 13 international members of the Zero Emission Vehicle (ZEV) Alliance to sign a commitment to promote cleaner motoring and slash transport emissions. It includes an agreement to make all passenger vehicle sales zero emission vehicles by 2050¹.
- 1.4 Road transport contributes about 20% of overall UK CO₂ emissions. Electric vehicles (EVs) are considered a technologically effective means of reducing carbon emissions from the road transport sector and helping to meet the carbon reduction targets set to mitigate climate change.
- 1.5 Committee on Climate Change (CCC) found that the UK needs 60% of new cars and vans to be electric by 2030 to meet the 2050 climate change targets. The figure is currently at less than 1% (in 2014) and is only assumed to rise to 8% by 2020².
- 1.6 Decarbonisation of the road transport sector is therefore an essential area of policy focus. However there are aspects which can hinder the successful uptake of EVs. One of these aspects that LPAs can assist in mitigating is through the provision of EV charging infrastructure.

Purpose

- 1.7 Industry, governments and early adopters have succeeded in demonstrating that electric cars can deliver the practicality, sustainability, safety and affordability characteristics expected from them, but the EV market still requires policy support to achieve widespread adoption and deployment.
- 1.8 Development which is granted planning permission could provide the opportunity for EV charging infrastructure to be installed to encourage the use of EVs.
- 1.9 The purpose of this briefing paper is to consider how LPAs can promote the use of EVs through incorporating EV charging infrastructure in new development which in turn assists in mitigating climate change.

¹ Gov.uk: <https://www.gov.uk/government/news/uk-government-pledges-bold-ambition-for-electric-cars>

² Element Energy and ICCT for the CCC (2015). Quantifying the impact of real-world driving on total CO₂ emissions from UK cars and vans: <https://www.theccc.org.uk/wp-content/uploads/2015/09/Impact-of-real-world-driving-emissions-for-UK-cars-and-vans.pdf>

Electric Vehicle Use

- 1.10 The global electric car stock reached 1.26 million in 2015, 100 times more than in 2010. New registrations of electric cars increased by 70% between 2014 and 2015, with over 550,000 vehicles being sold worldwide in 2015.
- 1.11 A possible 45% reduction in emissions from surface transport is reported to be achievable by 2030 by the Committee on Climate Change (CCC) through the widespread development and deployment of electric cars and vans.
- 1.12 Research has predicted that the use of EVs is set to rise steadily over the coming years. Element Energy, of behalf of CCC, have used a high uptake pathway model to consider the potential future changes to the car market. The model assumes that the level of EV awareness will reach 100% by 2021, it then considers the outlook of supply and the main factors for vehicle purchase in order to identify if people are likely to buy EVs given the current state of the market and if not, what the barriers are and how they can be overcome. The model found that awareness and acceptance of EVs grows as EV performance improves and through wider exposure of EVs. It is predicted that there could be a 16% share in new vehicle sales in 2020 for EVs increasing to a 60% share by 2030. Figure 1 below shows the split between plug-in hybrid electric vehicles (PHEV) and battery electric vehicles (BEV) and details the high uptake targets for 2020 and 2030 which would correspond to 0.27 million and 2.1 million EV annual sales respectively.

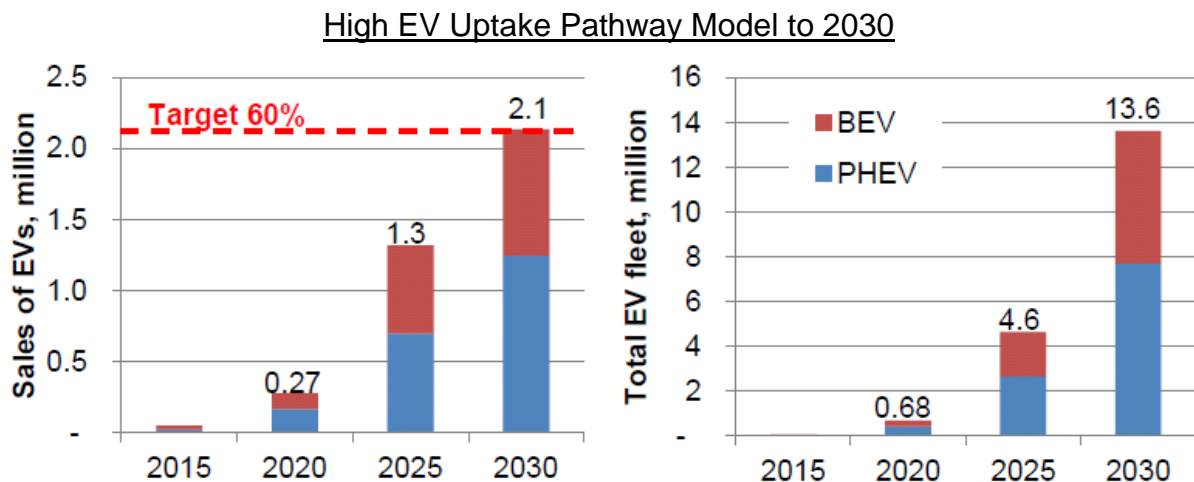


Figure 1: High EV uptake pathway model targets: annual sales (left) and resulting EV fleet (right), millions vehicles (cars and vans)³

- 1.13 In order for the predictions detailed in Figure 1 above to be realised, a number of action targets must be met. One of these targets which LPAs can affect is through the provision of EV charging infrastructure. Work commissioned by the CCC identified that the charging infrastructure strategy needed to deliver a high

³ Element Energy for the CCC (2013). Pathways to high penetration of electric vehicles: https://www.theccc.org.uk/wp-content/uploads/2013/12/CCC-EV-pathways_FINAL-REPORT_17-12-13-Final.pdf

uptake of EVs is based on high levels of overnight (mainly off-street) charging complemented by a national network of rapid charging points for day charging⁴.

- 1.14 If Basildon Council can promote the provision of EV charging infrastructure through its Local Plan policies then it will be supporting the high EV uptake proposed and subsequently helping to reduce emissions which enables the Council to further positively contribute to the climate change targets and improve air quality in the area.

Existing Electric Vehicle Charging Infrastructure

- 1.15 There are currently three public locations and six business locations for EV charging located within the Basildon Borough⁵, it is not possible to identify how many households have private EV charging points at their homes as this information is not recorded.
- 1.16 Extensive research (both in UK and other countries) shows that home-based overnight charging is the charging option preferred by drivers and policy makers and day charging at the workplace is the second preferred charging location⁶.

Policy Opportunities

- 1.17 There are a number of countries that have shown significant commitment to EVs. The government in Japan is investing heavily in supporting infrastructure and in France the public sector is adopting EVs in significant numbers and planning laws require charge facilities in new buildings.
- 1.18 Currently in the UK, it is Permitted Development⁷ to install EV charging points in most locations, however there is opportunity for the use of planning applications to include conditions to ensure EV infrastructure is included as part of new developments. This could mean the mandatory installation of EV charging points for new buildings (as proposed in France) or parking spaces in new residential developments to be available for EVs. These options could be used to send clear signals to the market to encourage further EV uptake resulting in reduced emissions and improved air quality.
- 1.19 It should be noted that whilst there are no regulations prohibiting the use of standard (non-dedicated) domestic 3-pin 13A sockets for EV charging, EV owners are encouraged to install dedicated EV chargers whenever possible.

⁴ Ibid.

⁵ Zap Map: <https://www.zap-map.com/live/>

⁶ Element Energy for the CCC (2013). Pathways to high penetration of electric vehicles: https://www.theccc.org.uk/wp-content/uploads/2013/12/CCC-EV-pathways_FINAL-REPORT_17-12-13-Final.pdf

⁷ Planning Portal: https://www.planningportal.co.uk/directory_record/610/si_2011_2056_-_the_town_and_country_planning_general_permitted_development_amendment_england_order_2011

Recommendation

- 1.20 A number of planning authorities across the country, including the Greater London Authority, Stratford-on-Avon District Council, Birmingham City Council and Brighton and Hove City Council, have supported the uptake of EV and incorporated policies into their Local Plans to ensure the necessary charging infrastructure is provided.
- 1.21 In line with the London Plan and other authorities, it seems best practice to promote the use of EVs through providing electrical charging point infrastructure in new developments as part of parking provision requirements. It is therefore suggested that the following policy be included within Basildon's Local Plan:

Basildon Council is supportive of an uptake in low emission and electric vehicles. In order to ensure that all new developments are equipped with the necessary infrastructure, new developments will be expected to include, where practical, appropriate provision for electric car charging points. Electric vehicle parking should be counted as part of the total parking provision, and bays should be clearly marked.

- a. Residential developments (excluding use class C1 hotels and C2 residential institutions) require 1 passive charging point per unit (dwelling with dedicated parking) or where off-plot or communal parking is provided 50% of space should have active charging points.
- b. Non-residential developments, use class C2 residential institutions and proposals for stand-alone car parks, should include active provision for electric car charging points of 1 charging point or 10% of all new parking spaces, whichever is greater.
- c. Use class C1 Hotels should include active provision for electric car charging points of 30% of all new parking spaces.

In cases where charging points, including infrastructure to enable retrofitting, cannot be provided within the development site, developer contributions may be sought to enable those facilities to be suitably provided in other locations including public car parks or on-street parking spaces.

Conclusion

- 1.22 As detailed above, the uptake of EVs is set to rise and it is necessary for LPAs to support the reduction of carbon emissions where possible.
- 1.23 By applying the installation of EV charging point infrastructure in new developments through a Local Plan policy, Basildon Borough Council can minimise one of the barriers to EV uptake and thus assist in mitigating the impacts of climate change through reducing transport associated carbon emissions. This will also have positive benefits for local air quality.