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Energy Saving Trust submission: Electric vehicles: developing the market

Energy Saving Trust is pleased to submit evidence as part of the Business, Energy and Industrial Strategy (BEIS) select committee's inquiry into electric vehicles.

Energy Saving Trust is the leading, impartial sustainable energy organisation. We work on behalf of governments and businesses across the UK providing services in the area of data, assurance, grant and loan administration, consumer engagement and advice.

On transport, the Energy Saving Trust is funded by the Department of Transport (DfT) and the Office for Low Emission Vehicles (OLEV) to provide a range of services to help organisations reduce their transport fuel spend and emissions. We also undertake work with a wide range of private sector organisations and have recently been working with Uber, Heathrow Airport, the British Vehicle Rental and Leasing Association (BVRLA) and the Fraunhofer Institute (Europe's largest applied-research organisation), helping develop research and strategies for sustainable transport. We are the leading independent organisation supporting the uptake of ultra-low emission vehicles (ULEVs) amongst fleets and work across the sector to promote the acceleration of plug in vehicle sales.

In Scotland the Energy Saving Trust is a principal delivery partner of the Scottish Government for home energy. We run comprehensive local and national advice and support programmes. On behalf of Transport Scotland (an agency of Scottish Government) the Energy Saving Trust administers an Ultra Low Emission Vehicle (ULEV) interest free loan scheme.

For BEIS the Energy Saving Trust delivers the telephone-based Energy Saving Advice Service in England and Wales. We also undertake other research and awareness-raising work for the department on a project-by-project basis. Prior to the coalition government, for over 15 years, the Energy Saving Trust ran national energy advice services as a grant-funded organisation.

Public engagement on energy is at the heart of our work. In total each year the Energy Saving Trust handles just under half a million energy efficiency advice calls on behalf of UK and Scottish governments. Energy Saving Trust has a unique relationship with the public around energy saving and renewable energy and our response reflects that.

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Introduction

Due to the Energy Saving Trust's experience working in both the public and private sector we believe that we have a number of useful insights in relation to the development of the electric vehicle (EV) market and we have provided detailed responses to the Committee's questions below. We would particularly highlight our response to question three. From our role operating the ULEV interest free loan scheme on behalf of Transport Scotland, we believe that Government should examine the scheme's successes and explore how it could be applied to the English and Welsh context to support the uptake of ULEVs.

1. What are the key barriers to development of the UK's electric vehicle market?

Through our work we have identified a number of barriers that are holding back the EV market in the UK, as listed below. Throughout this response we then discuss potential solutions to overcome them.

The choice of vehicles

Although growing, the choice of EVs remains relatively limited. There is a range of small and medium cars available (e.g. Renault Zoe, Nissan Leaf) however there is a notable lack of choice for cars which are popular with families and operated by fleets. This means that a large part of the market is underserved.

These factors will raise challenges in London when private hire vehicles licensed for the first time are required to be zero emission capable by 2023 as there is a lack of suitable vehicle options for this market, particularly where Multi-Purpose Vehicles (MPVs, "people carriers") are concerned. Our work with operators in this industry has found an enthusiasm for their adoption however, indicating a demand for the vehicles once available.

The same is true for company car fleets however the primary barrier for this sector appears to be the range capability of EVs. As with private hire operators there is a willingness to adopt EVs however the opportunities to use EVs in a company car fleet are limited by range capabilities. The recent popularity of Plug-in Hybrid Electric Vehicles (PHEVs) in the fleet market demonstrates that the current suite of incentives will work once practical, desirable products become available.

The limited choice of vehicles and their range capabilities is difficult to address as the EV market is global and is therefore determined by global trends. A range of vehicles, marketed aggressively from volume manufacturers such as Ford, GM, VAG and PSA, is yet to materialise. That being said, all manufacturers have stated their intentions to join the market in the next few years and this will undoubtedly result in increased interest and uptake. While the UK market does not represent a large enough market to drive change on its own, a useful first step may be to steer the EV grant away from high-end vehicles in favour of midscale vehicles. This is explored further in response to question three.

Charging infrastructure

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As the committee will be aware and as explored in response to question four, a general lack of charging infrastructure, in particular rapid charging points, remains a barrier to the development of the EV market. This is well recognised by most in Government and industry. The challenge is that the business model for charge points is unclear. Potential investors fear that rapid charge points risk becoming redundant once the EV market develops and home, work and destination charging become the norm.

In addition, a lot of attention has been afforded to installing connected/smart rapid charge points (for instance in the Vehicle Technology and Aviation Bill) however there are questions about whether this is the best option due to the sheer number of charge points that need to be installed and the cost implications.

These issues are explored in response to question four.

Local authority capacity

Local authorities (LAs) play a vital role in deploying rapid charge point infrastructure however often lack the capacity and expertise to do so. This is especially true with the cuts in local authority budgets that have occurred over the past few years. Having the right expertise in-house or that can be easily accessed externally is an important part of ensuring that charging infrastructure meets local needs across the country.

Second hand market and the grey fleet

Policy, research, pilot projects and official information and guidance have tended to focus on new vehicles bought for wholly private or wholly business use. This neglects two important parts of the market that need to be developed to help make EVs mainstream.

A second hand market for EVs is emerging and should be encouraged as it offers a lower cost option for consumers to purchase EVs. A strong used car market is essential for the stability of residual values, leading to a reduction in leasing costs for new vehicles and providing the confidence for manufacturers to increase sales volumes. We think that information and guidance on second hand EVs has an important role to play in developing the market. Whilst there is a range of information online from various sources it tends to be dispersed and varying in depth, quality and reliability. The 'Go Ultra Low' website (run by industry) provides useful information on EVs but it focuses on new vehicles: there is a noticeable lack of information on second hand vehicles, there is currently no guidance that consumers can access to help with their decision-making.

In addition to the second hand market, grey fleet – private vehicles which are used for business travel – is an important but often overlooked part of transport policy. Generally, employees are reimbursed on a pence per mile basis for using their private vehicle on business journeys. Research the Energy Saving Trust undertook on behalf of BVRLA¹ found that in total 12bn miles are driven each year in grey fleet vehicles, emitting 3.5million tonnes of CO₂. There are an estimated 14 million

¹ <http://www.bvrla.co.uk/research/article/getting-grips-grey-fleet>

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grey fleet vehicles on UK roads. Of this total, 11.8 million are associated with the private sector and 2.2 million from the public sector. The grey fleet poses a particular challenge as grey fleet vehicles tend to be older and more polluting: 8.2 years old compared to a UK average of 7.9. In the public sector the grey fleet plays an important role: 1.5bn miles per annum are driven in grey fleet vehicles in the public sector at a cost of £786m. Due to the size of the grey fleet, ensuring that organisations are aware of these issues will be important for the development of the EV market.

2. Does the Government's Industrial Strategy sufficiently address the challenges and opportunities for electric vehicles?

The fact that EVs feature so prominently in the Industrial Strategy is welcome however the bulk of funding commitments and legislative changes relevant to EVs were laid out prior to, or alongside, the strategy. For instance, the Vehicle Technology and Aviation Bill provides useful legislative foundations, addressing the issue of insurance for driverless vehicles and exploring the information provision, compatibility and accessibility of charging points, amongst other things. These developments signal that the UK is open and willing to put in place support and legislation which encourages the adoption of ULEVs at scale. This is important to demonstrate to vehicle manufacturers and installers of charging infrastructure that the UK market is a great place to manufacture and sell their products and services. The Industrial Strategy is useful in that it reinforces this message and provides continuity to previous commitments and policies.

As well as grants, in-use incentives and a consistent policy framework are very important, as recognised in OLEV's 2013 strategy document: "One of Government's key roles is to maintain a consistent policy framework that targets the barriers to adoption and hastens the normalisation of ULEV technology"². Sudden changes to fuel and electricity prices or transport taxes could affect the market negatively. A positive environment including reduced company car tax, capital allowances and discounts on access fees (London congestion charge, ULEZ, CAZs, etc.) all make the operation of ULEVs attractive to business and private users irrespective of access to purchase grants.

3. What support for purchase costs should the Government provide after 2018, in response to the changing costs of electric vehicles?

As referenced in our response to question one, we believe that the plug-in grant should be steered away from supporting high-end electric vehicles. As the plug-in grant is currently set up, ULEVs are divided into three categories on the basis of their CO₂ emissions and their zero emission range:

- Category 1 - CO₂ emissions of less than 50g/km and a zero emission range of at least 70 miles

² p10 'Driving the Future Today: A strategy for ultra low emission vehicles in the UK' – OLEV, 2013: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239317/ultra-low-emission-vehicle-strategy.pdf

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- Category 2 - CO2 emissions of less than 50g/km and a zero emission range between 10 and 69 miles
- Category 3 - CO2 emissions of 50 to 75g/km and a zero emission range of at least 20 miles

Category two and three vehicles costing more than £60,000 are currently excluded from the grant whereas category one vehicles are eligible for the grant regardless of their price. Extending a price limit to category one vehicles may be useful. Whilst high-end products may persuade those with influence on company policies of the benefits of EVs, as there is a limited pot, focussing on those least able to afford a premium is sensible. Furthermore, the additionality of providing a £4,500 grant on vehicles that cost over £60,000 is questionable.

Transport Scotland's loan scheme

Beyond this, we believe that the Government should consider adopting a scheme similar to Transport Scotland's interest free low carbon transport loan scheme (which is operated by Energy Saving Trust). For background, in order to meet the Scottish Government's ambition of decarbonising road transport in Scotland by 2050, Transport Scotland (an agency of Scottish Government) supports the purchase of low and ultra-low emission vehicles in Scotland through an interest free loan scheme funded by Transport Scotland and operated by Energy Saving Trust. Energy Saving Trust offers three types of unsecured interest free low carbon transport loans with repayment terms of up to 6 years:

- Interest free loans for consumers resident in Scotland of up to £35,000 to cover the cost of purchasing a new ultra-low emission vehicle (ULEV) – specifically plug-in electric vehicles, plug-in hybrid electric vehicles and a range extended electric vehicles eligible for the OLEV plug-in car grant
- Interest free loans for businesses located in Scotland of up to £100,000 to cover the cost of purchasing a new ULEV (up to £35,000 for each ULEV purchased), vehicle efficiency devices such as telematics systems, video and tele-conferencing facilities that reduce the need to travel and cycle facilities that support sustainable and active travel
- Interest free loans of up to £100,000 for Hackney cabs owners and operators to replace existing cabs that are more than 8 years old with new, lower emission Euro 6 Hackney cabs (due to be replaced ULEV Hackney cabs when they become commercially available).

Energy Saving Trust has offered interest free low carbon loans for businesses since 2011, loans for replacement Hackney cabs since 2013, and loans for consumers since 2015. Loan provision will continue until at least March 2020, and will be reviewed on a yearly basis to ensure it is proportionate to the level of demand.

These interest free loans are funded through a combination of grant funding provided by Transport Scotland and UK Treasury Financial Transactions funding allocated to EST via Transport Scotland.

The Scottish loan works alongside the OLEV grant: it is available for vehicles of all sizes and cost.

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Impact of Scottish Loan schemes

Demand for interest free low carbon transport loans has grown steadily since they were first offered to businesses in 2011, with Energy Saving Trust paying out over £7.4m in loans in financial year 2017-18, funding 248 low and ultra-low emission vehicles for businesses and consumers.

Evaluation of consumer loan recipients undertaken in 2016 found that in all cases the ULEV purchased with the loan replaced an existing internal combustion engine vehicle. When asked about the influence of the loan upon their purchase, 35% of respondents reported that they would not have purchased a ULEV without the loan, 29% would have purchased a ULEV, but less quickly, demonstrating the loan played an important role influencing the decision of loan recipients to purchase an EV. As consumer loan recipients put it in their own words:

- *“I would have just kept the car I previously had due to the financial side of purchasing an EV.”*
- *“It would not have been affordable without the loan. I am unsure what vehicle I would have purchased.”*
- *“I would have continued driving my previous car. The loan was the incentive to push me off the diving board.”*

The loan played a similar role in influencing the uptake of ULEVs amongst business recipients with 33% reporting that would not have purchased an EV without the loan and 13% reporting that would have purchased a ULEV, but less quickly. As business loan recipients put it in their own words:

- *“We would have purchased a vehicle similar to our previous one. We would not be able to finance the electric vehicle without the loan.”*
- *“EST was the decision maker for the company to buy an electric vehicle. We would have just purchased a non-electric vehicle if we did not hear about EST.”*

As such we believe that the UK Government should examine the successes of Transport Scotland’s interest free low carbon transport loan scheme and explore how it could be applied to the English and Welsh context to support the uptake of ULEVs. Unlike with OLEV grants which we believe should be capped based on vehicle price, Energy Saving Trust believes that the loan should not be capped. This is because, with loans, car buyers are investing the full cost of the vehicle and it is important to encourage uptake among luxury car buyers who can set the trend for the wider market. Energy Saving Trust would be happy to be involved in this looking at how the loan scheme could be replicated in England and Wales and share our insights of the scheme.

4. How best can the Government ensure that there is consistent provision of charging infrastructure across the country?

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At the moment one of the most pressing needs is to deliver rapid charging points to build consumer confidence and this should be the main focus for the time being. In time the need for home charging points will outstrip this as the EV market grows, vehicle range increases further and consumers become more familiar with the technology. It is expected that once the market is established, the bulk of charging will take place at home, as such off street home charging will be important but in many built up residential areas on-street charge points will also be vital.

As referenced above, LAs play an important role in rolling out charging infrastructure, both in terms of rapid charging points and on-street charging for home charging. Due to budgetary cuts over the past few years, LAs often lack capacity in this area. Building up capacity and expertise in local authorities will therefore be an essential part of ensuring that there is consistent provision of charging infrastructure across the country.

As referenced in response to question one, installing connected/smart rapid charge points is seen as a key challenge. An option that could be explored instead is to install less sophisticated charge points but have “smart” vehicles capable of communication with owners’ service provider (which could be their domestic electricity supplier) and enabling the payment for charging to be made to the owner of the charge point and electricity provider.

Changes in local legislation can help improve investor confidence. The licencing changes for the London Hackney trade (requiring the licencing of zero emission hackney carriages when licenced for the first time from January 2018) will provide charge point network operators with a customer base. This will then give the operators the confidence to invest in a network of rapid charge points to service the new fleet. The subsequent changes to private hire licencing which follows, further demonstrates a commitment by London to ensure a viable market can be maintained.

5. Is the Government's road transport decarbonisation strategy sufficiently flexible to adapt to potentially disruptive market trends such as driverless cars? How might these impact requirements for, and use of, charging infrastructure?

There is a long term target for nearly all cars and vans to be ultra-low emission by 2050, this will require all new vehicle sales to be ultra-low emission vehicles by 2040. Much of the Government’s plans on disruptive transport technologies are contained in the Vehicle Technology and Aviation Bill 2016-17 which is currently making its way through the House. Addressing legal issues related to driverless cars/autonomous vehicles is an important part of the Bill. A shift towards autonomous vehicles would represent a modal change in the way people and goods are moved around that could potentially deliver significant benefits.

As the Committee will be aware, interest in Mobility as a service (MaaS) and driverless cars is growing, as is awareness among policy makers and the general public. The Transport Systems Catapult defines MaaS as “using a digital interface to source and manage the provision of a transport

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related service(s) which meets the mobility requirements of a customer”³. In concrete terms MaaS can involve paying a monthly or annual subscription to access (a range of different) mobility services as needed, as opposed to owning a vehicle that might spend a lot of time sitting idle (for more information see the Transport Systems Catapult 2016 report). Both MaaS and driverless car developments will have an impact on the location of charging infrastructure, likely to be similar to the requirements of the taxi and private hire industries (i.e. rapid charge points at strategic locations to ensure adequate coverage for their fleets). This will require charging hubs that enable the rapid turnaround of vehicles in urban locations and at each end of partially predictable longer journeys. It is considered that the strategy could adapt to these changes as charging infrastructure is generally developed at a local level.

³ ‘Mobility as a service: exploring the opportunity for mobility as a service in the UK’ Transport Systems Catapult, 2016: https://ts.catapult.org.uk/wp-content/uploads/2016/07/Mobility-as-a-Service_Exploring-the-Opportunity-for-MaaS-in-the-UK-Web.pdf