

**QUESTIONS RAISED AT 6TH ANNUAL ELECTRIC VEHICLE EVENT 2020
WITH THEIR ANSWERS**

Scottish Government

1. Statistics on provision of electric vehicle charging infrastructure show huge variations between local authorities. City of Edinburgh Council, where I live, is amongst the worst performing in Scotland. Is there a need for the Scottish Government through Transport Scotland to take a more interventionist approach and set national targets for EV charging stations in the same way it does in other areas such as housing?

Statistics on provision of electric vehicle charging infrastructure show huge variations between local authorities. The Department for Transport undertook analysis in July 2020 using Zap-Map data, which was summarised at the Local Authority level and is available at the following link - <http://maps.dft.gov.uk/ev-charging-map/>. Based on the available information there are in the region of 113 publicly available EV chargers in the City of Edinburgh Council area, 43 of which are directly hosted by the local authority and registered to the ChargePlace Scotland network. This equates to approximately 21.52 chargers per 100,000 population.

Additionally there are privately installed charge points but we do not collate data on these although the details are available on Zap-Map, website available here - <https://www.zap-map.com>.

Grant funding is provided to all local authorities to expand EV charging infrastructure based on a funding model agreed with COSLA which takes into account population size and prevalence of existing infrastructure. It is up to each individual local authority to develop their publicly available EV charging network to meet the specific needs of their area. As such, there will inevitably be variation between local authority areas throughout Scotland. Since 2012, Transport Scotland has provided in the region of £855k to the City of Edinburgh Council to expand EV charging infrastructure in their area. Transport Scotland continues to work with local authorities, including the City of Edinburgh Council, on improving and enhancing EV charging infrastructure.

Transport Scotland's Switched on Towns and Cities Challenge Fund has awarded Edinburgh City Council with approximately £2.3 million to install 66 electric vehicle charge points across 13 different sites, the project is due to complete over the next year. These sites include charging hubs to serve the public, taxis and private hire vehicles within the City Centre, fast charge points within Residential areas, primarily where there is high density tenement housing, and slow chargers primarily for the use of commuters and visitors at Edinburgh's three main Park and Ride sites.

2. Do SG have any ambitions to accelerate any part of the path to net zero? As you say Covid has shown what can be achieved with focus. Build on this and bring as much as possible forward.

Ministers will be updating their Climate Change Plan shortly and will set out in that their approach to meeting our climate change targets.

3. What is Scot Govts' ambitions over other supporting other sustainable fuel types i.e. hydrogen/LPG in addition to EV - what does the future look like and should we be committing to all types when building in infrastructure?

The Scottish Government's ambition is to provide the appropriate support and environment for the transport sector to help deliver our commitment to Scotland becoming carbon net-zero by 2045. Our stated position is to be technology agnostic in this area and it is clear that a range of technology options and wider changes will be required to succeed in this decarbonisation. Different sub-sectors within transport require different solutions – for cars and light vans, battery EVs seem to deliver effectively for zero emission alternatives, whilst in other sectors, it is less clear and infrastructure needs will emerge as technologies mature. Hydrogen in particular looks very promising for some applications and where we have seen, or will soon see, deployments of hydrogen vehicles around Scotland – including projects in Aberdeen, Dundee, Glasgow and Orkney – appropriate infrastructure is created in parallel.

4. Anyone going round Scotland can see that there are far too many cars on our roads. Why has the government decided to spend a huge amount of public funds on dualling the A9 which will simply add to carbon emissions by encouraging cars to drive faster between Perth and Inverness? For many years to come, most of the vehicles using the A9 will be petrol vehicles.

The Scottish Government is committed to tackling climate change. As part of this commitment we are implementing a new National Transport Strategy (NTS) which focusses on cutting carbon emissions across all modes of transport. It is fully acknowledged that the transport sector is the biggest emitter of greenhouse gases and that reducing emissions from all parts of the transport system is essential for meeting our ambitions.

The Scottish Government is also phasing out the need to purchase a petrol or diesel powered car or van by 2032, a full three years ahead of the UK. A sustainable, low carbon transport network brings many additional benefits to communities and businesses.

Individual transport projects should not be assessed in isolation but against the context of these policies. The Scottish Government needs to balance the extensive changes required to meet a target of net-zero greenhouse gas emissions with its duty to ensure that Scotland has a high quality transport system. As part of its current programme of infrastructure improvements the Scottish Government is committed to dualling the A9 between Perth and Inverness to make journeys safer, reduce driver frustration and promote sustainable economic growth.

5. There's been an increase in EV market share, but are there any stats on the consumer type? Is it mostly business customers? Are there any stats on this?

Department for Transport (DfT) or Society of Motor Manufacturers & Traders should be able to provide stats.

6. Does the Minister believe that further actions are required to influence public attitudes to the transition to EVs and if so, what plans are afoot to do this?

EVs have an important role to play in the transition to ultra-low emission vehicles (ULEVs) and in order to realise their potential, education is key to helping change attitudes. The

Scottish Government is currently developing a Climate Change awareness campaign which is expected to be launched in the first quarter of 2021, and will incorporate an EV “myth busting” aspect in order to increase public awareness and demonstrate that EVs are already out there and are a viable option for many people. We have also created a new website called [Net Zero Nation](#) and will be uploading new content to it, including information about EVs, over the coming months.

Government also has to encourage and incentivise to help make alternatives a realistic option, therefore the Scottish Government is continuing to invest in the infrastructure through continued development of the ChargePlace Scotland (CPS) network, and providing funding to support the installation of domestic charge points to make recharging as convenient as possible. In addition, the Energy Saving Trust is managing the SG funded Low Carbon Transport loan scheme which is available for the purchase of EVs, electric mopeds and motorcycles (new and used), as well as e-bikes and e-cargo bikes.

7. Are the 50kw rapid chargers currently being installed in Scotland at risk of being superseded by, for example, 350kw ultra-rapid chargers that are already being installed by commercial operators?

A variety of electric vehicle charge points and power outputs are useful when ensuring charging provision. A 50kw rapid charger, can be used by many electric vehicles past and present. It is great to see commercial operators installing ultra-rapid chargers, as this offers greater choice and diversity of charging options for electric vehicle users.

8. I think electrification of domestic space heating is essential but the incentives are not yet there. When do you think UK/Scottish Governments will commit to taxing domestic gas over renewable electricity?

The taxation of gas for heating is a matter reserved for UK Government. It is perhaps worth noting that HM Treasury has committed to the review into funding the transition to a net zero greenhouse gas economy. We expect this to consider a range of issues related to how the transition to net zero will be funded, where the costs will fall, and what policy levers could be used to align incentives with the transition. We expect HMT to publish their interim report shortly, and the final Review is due in the spring. Further details can be accessed at: <https://www.gov.uk/government/publications/net-zero-review-terms-of-reference/hm-treasurys-review-into-funding-the-transition-to-a-net-zero-greenhouse-gas-economy-terms-of-reference>

9. Can bus and coach funding at least for cities, look to EV conversion rather than alternate burning options?

Buses have an important role to play in our ambition to reach net zero and improve air quality in our towns and cities. Encouraging more people to travel by bus will reduce congestion, improve air quality and lower carbon emissions. While travel by bus only makes up 5% of Scotland’s total carbon emissions (in 2019) our net zero ambitions will require the fleet to transition towards zero emission.

In August 2020 the Scottish Government opened the Scottish Ultra Low Emission Bus scheme which has (as of September) awarded funding to support the purchase of 41 ultra-low emission vehicles and their enabling infrastructure (such as chargers). In addition the Scottish

Government will, in conjunction with industry, establish a bus decarbonisation taskforce to develop a pathway towards decarbonisation.

Scottish Power

10. Could you say how efficient heat pumps are please - how many kWh of heat do you get out for each one put on?

In heat pumps, we hear a lot about Coefficient of Performance (CoP) of about 3 or 4, or even higher. This means that for every 1 unit of electricity put into the heat pump, we're getting the equivalent of 3 or 4 units of heat out. This is what makes heat pumps so efficient in the overall discussion about energy supply and use.

Energy Saving Trust

11. Turn-around time on second-hand vehicle loans is going to be key for dealerships. I know they are keen to participate, but they need to be certain of timescales to ensure they facilitate sales. Can you detail timescales for loan approval and payment.

Our application processing time is 10 working days. However, we are fully aware that timescales are an issue, so for the Used EV Loan customers are able to get a loan offer prior to actually identifying the specific car they are looking to purchase. This should mean they can secure the loan at the start of their journey and know that once they have found the car they want, it's just a case of claiming the funds. On this point, the payment process can take up to 10 working days but we are doing our best to bring this down and have brought in additional staff to help.

Dundee

12. Dundee is clearly leading the way in Scotland but why are we seeing so much variation in performance between Scottish local authorities when it comes to provision of EV charging infrastructure? For example Leith in Edinburgh has 6 charge points to serve a population of 50,000 people.

The electrification of Scotland is very much a partnership between the Scottish Government and Local Authorities.

In Dundee we have had a programme that dates back nearly a decade so have had opportunities to receive funding from lots of sources and take a very strategic overview working with public and private partners.

The strategy for the city & region reflects the aspects of an Urban Travel to Work area within a city with low levels of car ownership historically due to socio-economic reasons. Much of the charging infrastructure reflects the service vehicles that are part of the council fleet, taxi fleets and delivery fleets as well as for commuters.

Each area needs to look at their individual opportunities and constraints, for example in Dundee we have public land and municipal car parks that could be used for charging, not all areas have the land available.

Ultimately, to replace all ICE vehicles with EVs would not be a solution but to have multimodal opportunities for citizens is much more likely to be a long term solution.

If areas do feel that they do not have charging that befits then I would urge them to contact their elected representatives to ask for the strategic plan for the area.

Norway

12. Incredible to compare Scotland's NTS objective to "promote cleaner, greener choices" with Norway's objective-led commitment and clear incentives to drivers. But it took 10 years before OEMs delivered sufficient choice and tech to the market. Question: how did the Norwegian power grid cope? If we did the same in Scotland, would our power grid cope?

I don't know that much about the Scottish grid, but if all personal cars in Norway become electric, this will increase electricity demand with 5 percent.

Most EV users in Norway do most of their charging at home, but fast charging is an important supplement.

EVs are treated as any other use of electricity, and the utilities mostly report that EV charging is not a huge issue for the grid. At some locations the cost of supplying enough power for DCFC can be high, but this is very dependent on the location (and it's more difficult for larger stations than smaller stations).

Also, EV charging at home is probably the easiest load to shift to off peak times in the grid, and we already see services offering to schedule EV charging to times with low electricity prices (for instance tibber.no (in Norwegian only) or <https://jedlix.com/> (a quite similar service). There is not that much to save on this, as the electricity price in Norway is quite stable through day and night.

However, we see that EVs can contribute to grid balancing, with quite simple price signals. It is one of few usages of electricity where smart grid technology is already implemented.

13. What is the expected life of an electric car battery? What are the key issues with battery technology?

We expect the battery to last for the life-time of the car. The battery could possibly also have a 2nd life, after the car is scrapped.

Some key issues are: Mining for cobalt, energy use during battery production, the rapid price decline and energy density, recycling.

Connected Kerb

14. The National Infrastructure Commission made the follow recommendation in July 2018: The Commission recommends that government should place a requirement on local authorities to work with charge point providers to allocate 5 per cent of their parking spaces (including on-street) by 2020 and 20 per cent by 2025 which may be converted to electric vehicle charge points. Are any local authorities in Scotland on track to meet this target?

Considerable progress has been made over the last few years but it would be difficult to say at this time how achievable the 2025 target may be in Scotland. Many local authorities have made huge strides though.

15. Is Inductive Charging, with its (decreasing, but never eliminatable) losses a sensible option when we are trying to conserve energy? Especially with variable power levels.

Efficiencies are now at a level where energy losses should not be a real concern. The challenge now is OEM uptake for the technology.

16. Where are the manufacturing facilities for the connected kerb units?
In England and we'd like to eventually manufacturer in Scotland as well, should volumes make it feasible.

17. Will charger availability and dynamic pricing information be disseminated to 3rd parties/aggregators of charge info e.g. zapmap from your installations?

Yes, that should be feasible.

18. How do you get funding for the initial infrastructure underground, ahead of any revenue from the above ground charging points?

Every project is different in this regard, so it would be pretty project-specific. Often clients see the value in installing enabling infrastructure at the outset of a project, rather than further civils works down the line. Would be keen to discuss our varied models should there be further interest.