

## **SSEN response to Bright Blue's Call for Evidence: Maturing the market for ultra-low emission vehicles**

### **Summary**

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Scottish and Southern Electricity Networks (SSEN) Distribution delivers electricity to over 8 million people in 3.8 million homes and businesses in central southern England and the north of Scotland. As part of SSE group, we made a £7.7bn contribution to the UK economy in 2019/20 and are a Living Wage and Fair Tax Mark accredited FTSE100 company.

SSE has committed to invest in its network infrastructure and flexibility to support 10 million electric vehicles (EVs) on GB roads by 2030. To lead by example, SSE committed to decarbonise its own fleet of 3500 vehicles by joining the Climate Group's EV100 campaign in July 2019.

We welcome Bright Blue's call for evidence into maturing the market for ultra-low emission vehicles. It follows the publication of SSE's [Greenprint](#), published in May 2020, and SSEN's [Accelerating a Green Recovery](#), published in July 2020. These documents set out how the UK can build back better, greener and fairer, with the latter focussed on the role of EVs in securing this transition.

SSEN strongly supports the UK:

- bringing forward the ban on the sale of new diesel and petrol vehicles to 2030;
- building the world's most extensive EV charging network, through area wide tenders, to secure universal service provision;
- empowering local communities in this transition through Local Area Energy Plans (LAEPS);
- establishing a suitable mechanism for anticipatory investment in the electricity networks to support the cost-effective net zero transition for UK households; and
- committing to the decarbonisation of corporate fleets by 2030.

### **How important is fully electrifying private transport to achieving net-zero by 2050?**

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As surface transport is accountable for 24% of UK carbon emissions, extensive electrification of private transport is fundamental to achieving net zero. While UK CO<sub>2</sub> emissions have declined by 41% since 1990,<sup>1</sup> this has largely been achieved through the decarbonisation of generation.

National Grid's 2020 Future Energy Scenarios report sets out a range of different, credible ways the UK can decarbonise its energy system. In each proposed scenario that the UK meets its net zero target, at least 60% of all road transport is electrified.<sup>2</sup> While there will likely be a role for hydrogen or bioresources for Heavy Good Vehicles (HGVs), the improvement in choice, cost, range and wider benefits make the switch to EVs the most attractive and pragmatic route for decarbonising private transport.

Electrifying private transport will deliver significant societal benefits outside of achieving net-zero. EVs unlock the ability to engage with the electricity system and access payment through vehicle-to-grid

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<sup>1</sup> BEIS (2020) – Provisional UK GHG emissions national statistics 2019

<sup>2</sup> National Grid (2020) – ESO Future Energy Scenarios

technology. The shift will improve poor air quality, which brings with it a total social cost of £22.6bn a year.<sup>3</sup> Importantly EVs will reach cost parity with petrol and diesel by 2024, without subsidy, and if the current plug-in grant is maintained parity could be reached as early as 2021.<sup>4</sup>

Action is required to ensure public charge points are available, so the benefits can be realised as soon as possible. This can be secured through area-wide tendering of charge points, a policy intervention we propose in the answer to the next question.

### **What types of policy interventions are required to catalyse the EV market?**

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The UK Government has shown commendable leadership in legislating for a net zero 2050 target. The following proposals will put the UK at the forefront of the transition to EVs and accelerate both a green recovery and progress toward the net zero target.

- **End the sale of new petrol and diesel cars from 2030**

Stimulating market demand through phasing out petrol and diesel vehicles at an earlier date will provide the leadership the decarbonisation challenge demands. It will provide the market signals to automotive manufacturers to bring new, electric models to market faster and spur engagement by local communities and businesses to work together to meet the target.

The UK Government made a welcome announcement earlier this year that this target would be brought forward from 2040 to 2035. SSEN strongly supports this being brought forward to 2030. Even with the most extensive EV charging infrastructure in the world and with auto manufacturers scaling up EV production globally, there will also be a need to stimulate consumer demand- there is a role for incentives, but bolder regulation will also be needed.

- **Build the world's most extensive EV charging network by 2025, through area-wide tenders, to deliver universal service provision**

The UK should seek to deploy the most extensive EV charging network in the world by 2025. To encourage international competition for this title, the UK should develop a range of metrics to measure this.

SSEN views that a lack of access to EV charging infrastructure at appropriate speeds at home, in transit and at destination will present a barrier to EV uptake and hinder transport decarbonisation.<sup>5</sup>

To accelerate the rollout of EV infrastructure the UK should encourage competitive tendering of an area-wide network of EV charge points, leveraging investment to deliver a universal service provision across the country.

Tendering for an area-wide network of EV charge points will complement the rollout of ultra-rapid and ensure gaps on the secondary network are plugged. Grouping EV charge points under a single tender will allow lower deployment costs by pooling demand risk across a larger number of sites. It will avoid duplication of activity and associated cost, ensure interoperability and enable wider geographic coverage by grouping less and more-economic charging sites together. This will reduce range anxiety for drivers, whilst securing wider societal benefit for remote communities.

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<sup>3</sup> Royal College of Physicians (2017) - Lancet Countdown 2017 Report: Briefing for UK Policymakers

<sup>4</sup> Deloitte (2019) - New market. New entrants. New challenges

<sup>5</sup> PWC (2019) – Consumer research in Rapid Charging, commissioned by National Grid

These tenders should be coordinated between DNOs and local bodies, and access to EV charging infrastructure recognised as a universal service to support social equity in access to EVs, in a cost-effective manner. In England, whilst 78% of owner occupier households have access to off-street parking and will be able to access low cost EV charging with time of use tariffs at home, this only includes 48% of the private-rented sector and just 25% of local authority housing.

To reduce the costs of deployment, Government should seek to introduce de-risking mechanisms to reduce the cost of capital for EV charge point deployment. Currently EV charge points expect a return of 15-20%<sup>6</sup> due to uncertainty over demand, and this compares to expected returns other low carbon infrastructure of 5-10%. An example of where de-risking mechanism has significantly reduced the costs of deployment is offshore wind, and this could be achieved on EV charge points too.

As an example of the importance of de-risking investments, reducing the cost of capital on a £1bn capital investment from 15% to 5% would save £1bn in financing costs over years. Put another way, a £1bn capital investment at 15% capital cost would cost the same as £1.7bn at 5%.

De-risking demand could be achieved through pooling demand risk through facilitating tenders for area-wide network of charge points based on local EV charging infrastructure plans outlined in a LAEP, ensuring geographic coverage for uneconomic sites and interoperability. A single area-wide tender in the Netherlands deployed 20,000 public EV charge points in 3 of the 12 provinces in the Netherlands covering 3.2m people (as a comparison, the UK has 32,500 today for 66m people)<sup>7</sup>.

- **Empower local communities through Local Area Energy Plans (LAEPs)**

Network operators, local authorities and communities must work closely together to ensure a clear understanding of what local areas require to meet their climate change ambitions and how those requirements can be met.

A ‘bottom-up’ approach to local network development should be adopted by putting in place Local Area Energy Plans (LAEPs). These plans are codeveloped by network companies and local bodies with input from key stakeholders, including transport groups, consumer bodies and network users to collect data and evidence of need. This process can help build a locally driven and endorsed energy plan that reflects local needs and informs the efficient and long-term development of the distribution system.

LAEPs can deliver efficient investment in EV infrastructure through identifying where there is need, and developing robust, data-driven evidence for rolling out charge points. Government and Ofgem should ensure LAEPs have a clear role in the next price control for distribution networks (RIIOED2, 2023-2028) to complement the roll-out of ultra-rapid charge points.

The UK Government is doing some excellent work on Project Rapid, ensuring ultra-rapid charging facilities will be available at Motorway Services Areas (MSAs) on the Strategic Road Network (SRN) in England. To ensure there is a coherent approach for drivers across Great Britain, Project Rapid should be coordinated with the Devolved Administrations.

Whilst Project Rapid provides a positive top-down approach for deploying EV charging infrastructure, to ensure an extensive charging network a bottom-up approach will also be required and ensure a universal service. To deliver this, local bodies in coordination with electricity distribution network

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<sup>6</sup> PWC (2018) – Powering Ahead! Making sense of business models in electric vehicle charging

<sup>7</sup> Total (2020) – Total will install and operate up to 20,000 new EV charging points for ‘Metropolitan Region Amsterdam Electric’

operators, transport authorities, local communities and other stakeholders should be empowered to deliver bottom-up local EV charging infrastructure plans as part of LAEP inclusion within RII0-ED2. To help deploy EV charging infrastructure as part of a green recovery, LAEP trials could be supported in the upcoming Autumn Budget.

- **Commit to full decarbonisation of cars and vans in corporate fleets by 2030**

Fleet currently account for over 5 million vehicles in the UK. Legislating to decarbonise and electrify this stock offers the opportunity to accelerate the adoption of EVs. Cornwall Insight and PWC found 56% of new vehicles purchased are intended to be fleet vehicles:

“Given fleets purchase most new vehicles and their vehicles typically have a life cycle of two to four years, these will subsequently help create a large private second-hand market. It is estimated that the vehicle rental and leasing industry sell 1.5million used vehicles annually to the second-hand market.”<sup>8</sup>

The UK should commit to the full decarbonisation of cars and vans in corporate fleets by 2030 ahead of COP26 and encourage other countries and companies to commit to this target. SSE operates the seventh largest fleet in the UK, and the largest in Scotland, and has committed to decarbonise 3500 vehicles as a signatory to the Climate Group’s EV100 campaign. It has undertaken this commitment despite its operations covering electricity networks and onshore wind farms in the north of Scotland, one of the most remote and challenging areas in the UK

However, whilst it is a challenge, it is achievable. Corporate fleets operating in less remote areas should be able to achieve full decarbonisation of its car and van fleet by 2030. The more corporate fleets that commit to full decarbonisation, the easier and more cost effective it will become through the shared use of EV charging infrastructure, while stimulating the EV market in the UK making them cheaper and easier to procure in the medium term.

There are issues to address for all drivers to make the switch to an EV, but there are currently issues specific to corporate fleets. These include greater needs for charging in transit, operating on the edges of urban areas where public EV charging may be lacking, and there are short-term issues with the procurement of electric vans due to limitation in the supply chain currently.

#### **What are the policy recommendations that would help mature the EV market?**

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To mature the EV market the UK Government should work to ensure barriers to adoption are removed, and opportunities spread fairly. This can be achieved through the area-wide tender process, as set out in our response to the previous question. The Government should be seeking ways to deliver the transition in a cost-effective manner and as quickly as possible.

- **Establish a mechanism for anticipatory investment in electricity networks to support the cost-effective net zero transition for UK households**

Ensuring that electricity network infrastructure is prepared to accommodate a significant increase in EVs is critical to maturing the EV market. Electricity networks should be empowered to increase capacity with a view to supporting a mature EV market.

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<sup>8</sup> Cornwall Insight (2020) - Leading the Charge

Strategic investment will avoid the unnecessary disruption of roads and pavements being dug up multiple times in advance of 2050 and supports a cost-effective net zero transition. The Committee on Climate Change (CCC) expects this to double demand on the network capacity by 2050.

Vivid Economics estimates network investment cost could reach up to £81bn by 2035, £34bn of which is unnecessary expenditure that could be avoided through strategic investment, and the CCC called increasing grid capacity to avoid having to upgrade again prior to 2050 as, “essential”.<sup>9</sup>

The CCC has demonstrated that the cost of upgrading distribution network capacity is relatively insensitive to the size of the capacity increase, provided it is well-managed, as most of the cost is in the civil works rather than the equipment (e.g. larger cables). It is essential, therefore, that when grid capacity is increased, this is to a sufficient level to avoid having to upgrade the capacity again prior to 2050. A relatively large expansion in capacity is likely to have low regrets, 'future-proofing' the network to enable greater electrification if necessary and/or enabling demand to respond more readily to variations in low-carbon electricity supply.

Government and Ofgem should ensure an appropriate mechanism that enables anticipatory investment aligned with the UK's net zero ambitions, is included in the next price control for distribution networks (RIIOED2,2023-2028).

- **Maximise the 'smart' capabilities of the electricity network through Vehicle-to-Grid technology**

Customer participation and engagement will be critical to the success of the transition to EVs, as proactive consumers will be able to use their vehicles to help balance the grid and keep network costs lower for everyone.

However, the opportunities that households and businesses could access are not yet widely understood. An incentivisation scheme is needed which can drive interest, uptake and engagement, offering subsidies to participants with a clear end date. This additional incentive will increase interest in EVs and the additional ways in which they can work for their owners. Once successfully trialled, the opportunities of V2G technology will be available to all EV owners, broadening out the benefits of ownership to the wider public.

The incentivisation scheme should encourage V2G participation, and in emergency scenarios allow the curtailment of EV charging to protect the wider integrity of the network. This should proceed based on customer consent, with a clear understanding as to when these powers could be used, and only as a last resort. The Government and regulator should work with industry to set out clear standards covering when domestic EV charging can be managed to support wider system security.

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<sup>9</sup> Vivid Economics (2019) - Accelerated electrification and the GB electricity system