# Environmental Audit Committee

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Rt Hon Kwasi Kwarteng MP
Secretary of State for Business, Energy and Industrial Strategy

*By email only*

16 July 2021

Dear Secretary of State,

**Technological Innovations and Climate Change inquiry: UK Supply Chain for Battery Electric Vehicles**

The Environmental Audit Committee is holding an ongoing inquiry into *Technological Innovations and Climate Change*. In the current phase of that inquiry, the Committee has been examining issues concerned with the UK supply chain for battery electric vehicles. The call for evidence was launched in May 2021 and 16 written submissions were received, including one from your Department.[1] On 16th June we held an oral evidence session, during which we heard from stakeholders in the electric vehicle industry.[2]

The importance of this issue cannot be understated, following the Government's announcement in November 2020 that the sale of petrol and diesel cars and vans will end in 2030.[3]

As a result of the evidence the Committee has assessed to date, we are firmly of the view that the UK has a golden opportunity to attract factories manufacturing electric vehicle batteries (gigafactories). Britishvolt—who gave evidence at the hearing—has already announced it will open a gigafactory in Blyth. Shortly after the evidence session took place, Nissan and its battery supplier Envision AESC announced their intention to expand electric vehicle and battery production at their Sunderland site.[4] A proposal for a gigafactory in the West Midlands has also been submitted for outline planning approval.[5]

Stellantis has announced electric vehicles will be manufactured for Vauxhall, Opel, Peugeot and Citroën at its Ellesmere Port plant.[6] However, we note that Vauxhall is not currently planning to use batteries manufactured in the UK, and will instead establish a facility to assemble battery components.

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[1] The responses to the call for evidence have been published on the Committee's website: https://committees.parliament.uk/work/1223/technological-innovations-and-climate-change-supply-chain-for-battery-electric-vehicles/publications/written-evidence/.

[2] The transcript of the hearing has been published on the Committee's website: https://committees.parliament.uk/work/1223/technological-innovations-and-climate-change-supply-chain-for-battery-electric-vehicles/publications/.

[3] DfT/OLEV/BEIS, 18 November 2020. Government takes historic step towards net-zero with end of sale of new petrol and diesel cars by 2030.

[4] BBC, 1 July 2021, Nissan announces major UK electric car expansion.

[5] BBC, 15 July 2021, Plans submitted for electric battery 'gigafactory' in Coventry

[6] Stellantis, 6 July 2021, Ellesmere Port will support sustainable mobility through the production of an all-electric vehicle, starting in 2022.

We have heard that, owing to financial and practical considerations, electric vehicle manufacturers would ideally like gigafactories to be as close as possible to vehicle manufacturing plants. If gigafactory operators are inclined to site their plants in the UK, car manufacturers will no doubt follow suit, with corrresponding benefits for the wider automotive sector in this country. As you will no doubt be aware, there are also significant opportunities for the UK to develop global leadership in many aspects of electric vehicle technology.

The UK is currently in a global race to secure battery manufacturing capacity. Commenting on the recent announcement by Nissan, you said you believed this would lead to a "domino effect" and that other manufacturers would follow. In our view, there are several areas in which concerted government action is required now in order to ensure that the benefits described above are realised. We outline these areas below.

***Industrial strategy***

The decision to end the sale of new petrol and diesel fuelled cars and vans by 2030 sends a significant and welcome signal to the market. Meeting this deadline will be an important step in ensuring the UK reaches net zero by 2050.

We have heard that 2030 is not, in fact, the critical deadline for the UK automotive industry.[7] Under the rules of origin contained in the UK-EU Trade and Co-operation Agreement (TCA),[8] after 1st January 2027, a specific proportion of each battery electric vehicle (BEV) must be made in the UK or EU, in order to qualify for a zero tariff under the Agreement. The proportions vary according to the component, but, in essence, after that date more than half of any BEV must be made in the UK or EU to avoid the imposition of a 10 per cent tariff.

Any BEV manufacturer who wishes to sell into the EU must have their gigafactory up and running and its supply chain in place by 2027. Given that 80 per cent of cars currently made in the UK are exported, 55 per cent of them to the EU,[9] this is clearly a key consideration for any electric vehicle manufacturer deciding where to site their operations.

The challenging nature of this schedule is exacerbated by the additional gigafactory capacity required. The announcements by Britishvolt[10] and Nissan[11] amount to around 55GWh of battery production capacity. The Faraday Institution has estimated that the UK needs to secure 140GWh of production capacity.[12] While the UK has made a good start recently, there remains more to do in a short period of time.

Gigafactories are at the vanguard of technology. They are also very large, each one directly employing thousands of people. They must adhere to rigorous standards on safety and environmental impact. The typical cost to build a gigafactory is estimated to be between £2 billion and £4 billion, a significant sum for any enterprise. It has been estimated that state

[7] Q1, HC 77, 16 June 2021.
[8] UK-EU Trade and Co-operation Agreement, 24 December 2020.
[9] Q1, HC 77, 16 June 2021.
[10] Reuters, 29 June 2021, British auto industry says Gigafactories needed to save jobs.
[11]. Electrive.com, 1 July 2021, Nissan confirms Sunderland battery plant & new BEV model.
[12] Faraday Institution, March 2020, UK electric vehicle and battery production potential to 2040.

incentives offered to gigafactory operators to offset this cost are currently around £750 million per plant.[13]

In the UK, the total amount currently available is £500 million over the course of the present Parliament.[14] If the UK is to attract a further 85GWh of battery manufacturing capacity—approximately four or five gigafactories—the Committee is firmly of the view that it must be in a position to compete effectively. The amount available through the Automotive Transformation Fund (ATF) to support the battery electric vehicle supply chain appears insufficient to make the UK a global competitor in this field.

**The Committee would be grateful if you would:**

- **confirm that the Government's plans in respect of UK-based gigafactories, and associated supply chains for battery electric vehicles, have taken adequate account of all appropriate rules of origin provisions of the UK-EU Trade and Cooperation Agreement;**
- **review the adequacy of the current package to support the sector and incentivise the establishment of gigafactories in the UK; and**
- **set out the further steps the Government plans to take to attract gigafactories and develop associated technologies in the UK.**

***Research and development***

Evidence to the Committee emphasised the importance to the BEV sector of research and development. Much of the focus of this research is on batteries, but we heard that research is also needed into other aspects of BEV technology: for example, aerodynamics, power electronics, motors and drives. These advanced technologies include areas in which the UK is at the forefront of research, such as solid-state batteries, sodium-ion batteries and some types of magnet used in motors. Research administration in the UK is of the highest standard, but concern was expressed about the funding timelines. Battery research projects require long-term funding, of the order of 5 to 10 years. Long-term funding is currently available in grants from UK Research and Innovation (UKRI), and will be available from the forthcoming Advanced Research and Invention Agency (ARIA). Other significant institutions in the sector—such as Innovate UK, the Advanced Propulsion Centre and the Faraday Institution—are working to shorter term funding cycles and are not in a position to develop the longer term research and development programmes the sector requires.[15]

**The Committee considers that appropriate support for research and development in this field is critical. We trust that the issue will be fully addressed in the forthcoming UK Innovation Strategy.**

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[13] Q4, HC 77, 16 June 2021.
[14] Gov.uk, 18 November 2020, *Ten point plan for a green industrial revolution*, p.14.
[15] Q17, HC 77, 16 June 2021.

***Responsible sourcing of materials***

We heard evidence about the particular importance to the BEV supply chain of critical raw materials: materials such as lithium, cobalt and graphite that are both economically important and at risk of supply interruption. The extraction of these minerals is often carried out without regard for human rights or environmental protection.

- Up to 70 per cent of global cobalt supply is mined in the Democratic Republic of Congo (DRC). Many of the groups backing cobalt mining in the DRC are armed militias, which take advantage of child labour and unsafe working conditions to finance local conflicts.[16]
- In South America, methods of lithium extraction have been criticised for pollution and landscape degradation[17]
- The concentrated activity around rare earth extraction and refining in China has similarly been criticised for its negative environmental impact.

The immediate challenge facing all responsible nations is the ethical and sustainable sourcing for critical raw materials.

The UK has some lithium reserves in Cornwall, and we hope that domestic gigafactories will take full advantage of these once extraction begins. Overall, the BEV sector in the UK will benefit from a clear strategy to secure sufficicient sources of critical materials in a responsible manner. Witnesses highlighted the opportunity to work with allies and partners to support sustainable extraction and to develop and assess intelligence and monitoring of raw materials flows and sustainability.[18]

One obstacle that is specific to the UK is that it does not have a critical raw materials strategy. Adopting such a strategy  to cover the supply and processing of critical raw materials, including options for strengthening UK processing capacity, would aid the UK in competing with the EU, the US, Japan and China, all of which have critical raw materials strategies. The development of a UK strategy would allow the Government to assess the status of all critical raw materials required in UK industry—including the likelihood of supply disruption and the potential for re-use and recycling—and act accordingly. This would be to the advantage of all technology-based industries, not just battery electric vehicles.

A comprehensive strategy to build on and expand the UK mineral processing industry would help meet your Department's stated objective:

> "Government investment seeks to maximise on this opportunity by targeting strategically important parts of the EV supply chain and **focusing on where the UK has an existing comparative advantage or where there is potential to grow**"[19] [emphasis added].

**The Committee considers that the adoption of a critical raw materials strategy for the UK merits serious consideration. We would be grateful if you would indicate what consideration is being given to the development of such a strategy, and how the Government proposes to address the supply and sustainability issues involved in the BEV supply chain.**

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[16] Protection Approaches, HC 77, BEV0006.
[17] Harvard International Review, 15 January 2020, https://hir.harvard.edu/lithium-triangle/.
[18] Q23, HC 77, 16 June 2021.
[19] BEIS, HC 77, BEV0005.

***Recycling***

Current legislation[20] in the UK and EU requires that a certain proportion by weight of any battery be recycled. It does not discriminate in terms of which materials should be recycled. There are at present no recycling facilities for lithium-ion batteries in the UK, so the manufacturer must pay for them to be shipped to the EU or elsewhere for recycling.[21] The UK now has an opportunity to diverge from the EU approach, but there are a number of complex issues to consider.

In the EU, the proposed Batteries Regulation[22] will increase the proportion of a battery that must be recycled and will require that, where critical materials are present, a specific proportion of each must be recycled. The draft Regulation also mandates that, for some materials in new batteries, a certain proportion must originate from recycled material.

Witnesses to the Committee considered whether and how the UK should respond. Most witnesses felt that the UK should match or even exceed the Batteries Regulation. Doing otherwise, it was argued, would create problems for vehicle manufacturers who wish to sell into the EU. Strengthened legislation could potentially provide an additional source of materials for battery production, helping to sidestep the issues of ethics and sustainability of supply accompanying the sourcing of critical raw materials referred to above.[23]

The Committee also heard that some measures in the proposed EU Regulation are at the limit of what is technically possible,[24] and so the UK would be better served by considering each measure on its merits and acting accordingly.[25] One witness argued that that legislation should not be used to drive the market.[26]

**The Committee would be grateful for an indication as to whether your Department plans to review the legislation on battery production presently in the UK's retained EU law, in the light of the EU's legislative proposals and their potential impact on the manufacture, supply and disposal of electric vehicle batteries in the UK.[27]**

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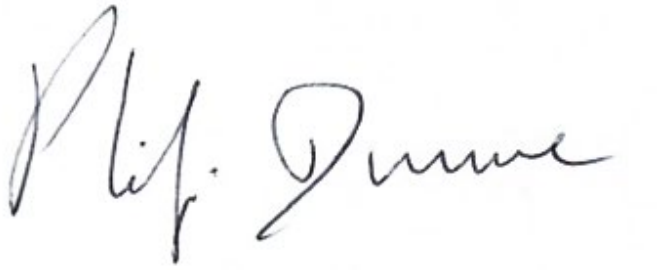
[20] Legislation.gov.uk, Waste Batteries and Accumulators Regulations 2009.
[21] Q26, HC 77, 16 June 2021.
[22] ec.europa.eu, Batteries and accumulators.
[23] Q26, HC 77, 16 June 2021.
[24] Q26, HC 77, 16 June 2021.
[25] Johnson Matthey, BEV0011; Q53, HC 77, 16 June 2021.
[26] Q48, HC 77, 16 June 2021.
[27] Q27, HC 77, 16 June 2021.

I would be grateful for a response by 6th September. This letter will be published on the Committee's website, and I expect the Committee will also wish to publish your response.

I am copying this letter to Darren Jones MP, Chairman of the Business, Energy and Industrial Strategy Committee, to Huw Merriman MP, Chairman of the Transport Committee and to Rt Hon Greg Clark MP, Chairman of the Science and Technology Committee.

Yours sincerely,



**Philip Dunne MP**
**Chairman of the Environmental Audit Committee**