**Early engagement notice – Understanding the tail of the electric vehicle transition**

**A Pre-Procurement Notice from the Climate Change Committee**

**Background**

The Climate Change Committee (CCC) is an independent, statutory body established under the Climate Change Act 2008. Our purpose is to advise the UK and devolved governments on emissions targets and to report to Parliament on progress made in reducing greenhouse gas emissions and preparing for and adapting to the impacts of climate change.

Part of the CCC’s role is to advise the Government on the appropriate level for each carbon budget – a cap on the amount of greenhouse gases emitted in the UK over a five-year period. The budgets describe the cost-effective pathway to achieving the UK’s long-term climate change objectives. They take account of economic, social and technological factors.

We are about to start our work programme for the Seventh Carbon Budget (the period from 2038-2042). As part of this we would like to explore the impacts, delivery challenges and opportunities that are likely at the tail end of the transition to electric vehicles (EVs).

**Potential project**

EV uptake has increased rapidly over recent years, and the ZEV mandate now provides a level of certainty on the minimum rate at which this can be expected to scale up through the 2020s. As EVs get closer to full market penetration, they will have to target increasing proportions of the market, including groups for whom EVs may present challenges. These could include difficulty affording possibly higher upfront costs, reliance on used car markets with more limited options, concern about suitability of charging infrastructure (e.g. in rural locations or in densely-populated areas) and scepticism more generally. The CCC is considering how to explore the impacts that these issues could have on the tail of the transition, as well as approaches that could mitigate these impacts.

We are keen to understand what impact these and other “tail effects” could have on the rate of EV adoption in the later years of the transition, beyond the 2030 end-of-sales date for new petrol and diesel vehicles. This could include consideration of:

* The proportion of drivers likely to remain unable or reluctant to switch to EVs.
* The rate at which electric vehicles will become available and affordable through used-car markets (in particular looking at access to EVs for drivers who typically buy vehicles third- or fourth-hand or later) and what factors (e.g. the relative operating costs of internal combustion engine (ICE) and electric vehicles) are likely to affect the prices of used vehicles (both electric and ICE).
* Impacts on vehicle ages and emissions if drivers choose to keep older fossil-fuelled cars.
* Cost and convenience impacts (e.g. whether/how drivers will still be able to refuel as overall demand for liquid fuels drops) for drivers who cannot afford or choose not to take up an EV.
* Whether particular regions or groups within society are likely to be particularly impacted by the above factors.

We would also like to explore the potential effectiveness of measures that could address risks posed by these issues to the pace, fairness and cost-effectiveness of the EV transition. Such measures could include:

* Targeted incentives to encourage private-owner EV adoption.
* Targeted scrappage schemes to replace or remove older vehicles.
* Schemes to retrofit existing vehicles to battery power.
* Measures to support affordability of EVs in the used-car market.
* Greater use of car clubs.

While many projections of EV uptake assume a smooth tail, in practice it may not be cost-effective for the required supporting infrastructure (refuelling stations, maintenance provision, etc.) to remain in place to support such a gradual reduction in fossil-fuelled vehicles. Therefore, it may be necessary to use measures such as those above to accelerate the final stages of the transition. We are keen for the research to explore how this might be achieved and the optimal timing for such interventions to be introduced.

This research would be used to inform updates to the CCC’s assumed pathways for EV uptake. Therefore, it will be crucial for it to assess the quantified impacts that such an approach could have on both the rates of EV uptake and the costs and cost savings that will be incurred.

We are planning to advertise a tender for this research project in September 2023, with the intention that the research should commence in January 2024 and last for around four months. A first-draft set of analytical outputs, setting out an initial assessment of the likely impact on rates of uptake of EVs, will be required by March 2024. We are inviting feedback on the idea outlined above to gauge the feasibility of undertaking credible and robust analysis within the timelines described. We are open to suggestions on the appropriate methodology for undertaking this work, and to alternative ideas on its potential outputs.

We are inviting suppliers who may be interested in this project, have ideas on how to refine or tighten its scope, or want further information to get in touch with Bianca de Farias Letti (bianca.letti@theccc.org.uk) and Eoin Devane (eoin.devane@theccc.org.uk) by 28 August 2023.