

**TRANSPORT AND WORKS ACT 1992 (“TWA”): THE PROPOSED CAMBRIDGE
COUNTY COUNCIL AND GREATER CAMBRIDGE PARTNERSHIP CAMBOURNE TO
CAMBRIDGE ORDER**

Commencing 16th September 2025

Summary Proof of Evidence on
Claimed Carbon Benefits for CtoC Scheme

Prof. Louise Hirst, Professor of Materials Physics, University of Cambridge

On behalf of
Cambridge Past, Present & Future and Coton Parish Council
(OBJ-251)

1. Witness background and qualifications

- 1.1 My name is Louise C. Hirst. I am Professor of Materials Physics jointly in the Department of Physics and the Department of Materials Science and Metallurgy at the University of Cambridge. I provide the following evidence in a personal capacity on a voluntary basis, as one who is concerned with climate change and the need for accurate, reliable evidence to guide decision making in the development of net zero policy.
- 1.2 I have a BSc, MSc and PhD in Physics from Imperial College London and I am an expert in photovoltaic technologies; however, no specialist scientific or technical knowledge or qualifications are required to understand the evidence presented.

2. Scope of Evidence

My evidence is structured as follows:

3. Appendices
4. Relevance of carbon calculations to the proposed scheme
5. Forecasting proportions of car kilometres by fuel type
6. Post-2050 assumption
7. Outdated forecast
8. Conclusion

4. Relevance of carbon calculations to the proposed scheme

- 4.1 A stated goal of the CtoC busway is to “...to assist in the moving to a low carbon economy” [CD1-04, para 4.2.4]. This is echoed in the Applicant’s Statement of Case [CD23-01, para 9.16.13] that the scheme will “support reductions in greenhouse gas emissions”. This claim is based on the CO₂ emission calculations provided in the Applicant’s Environmental Statement which indicate modest net savings of 5,020 tCO₂e over the 60-year assessment period. My evidence highlights critical issues with the calculations underlying this assessment

5. Forecasting proportions of car kilometres by fuel type

- 5.1 The CO₂ emission calculations presented in the Environmental Statement have two critical issues which lead to an inaccurate forecast of proportion of car kilometres by fuel type (electric v petrol or diesel) and in turn inflate calculations of carbon savings.

- 5.2 The first issue is the use of a constant proportion of car kilometres by fuel type post-2050. The second is the use of an outdated forecast of proportion of car kilometres by fuel type. I deal with each of these issues in turn.

6. Post-2050 assumption

- 6.1 Technical Report 6 Greenhouse Gases [CD1-11.06, para 3.2.13] specifies that end-user vehicle emissions were quantified for the Environmental Statement [CD1-10.01] using TAG data from May 2022.
- 6.2 A key limitation of this data is that there are no values forecast post 2050 but rather “*values are assumed to be constant post 2050*”. This constant value assumes that ~56% of car kilometres will be petrol or diesel in 2085; equal to the May 2022 TAG data.
- 6.3 The government has made a commitment that no new petrol or diesel cars will be sold after 2030. As such, it is implausible that 55 years after this ban comes into effect that ~56% of car kilometres will still come from this vehicle type and so the assumption of constant values post 2050 is not valid.

7. Outdated forecast

- 7.1 The TAG data included used by the Applicant has changed substantially since May 2022 including a much faster electric vehicle uptake. This means that the rate of carbon recovery will be significantly slower than assumed in the Environmental Statement.
- 7.2 Given the updated data, it would be reasonable to assume the CtoC busway will have negligible CO₂e savings post-2050 and even would increase primarily due to asphalt resurfacing in year forty. This brings net CO₂ emissions by the end of the assessment period to significantly greater than 17,980 tCO₂ and so the CtoC scheme is a substantial net CO₂ emitter in conflict with its stated aims.
- 7.3 The Environmental Statement also describes potential -47,040 tCO₂e benefits arising from “progressive work by the city council to deter car use”. However, the evidence for how this will occur is not readily identifiable.

8. Conclusion

- 8.1 Reducing carbon emissions is a stated aim of the CtoC scheme however, the carbon calculations used have two main issues in terms of the Post-2050 assumption and outdated forecasts. On review of the data, my evidence shows that the CtoC is a substantial net CO₂ emitter in conflict with its stated aims.