

Dear \*\*\*\*\*

## Lower Thames Crossing Carbon Assessment Assumptions

Thank you for your information request dated 06/10/2022 regarding Lower Thames Crossing Carbon Assessment Assumptions. We have dealt with your request under the provisions of the Environmental Information Regulations 2004.

This is because the information requested concerns measures and activities affecting or likely to affect elements of the environment or affect factors such as noise, pollution discharges and other releases into the environment.

You asked -

*Dear National Highways Limited,*

*Please provide the assumption used to generate the operational carbon estimates in the following documents*

*<https://nationalhighways.co.uk/media/f3zh5yke/lower-thames-crossing-carbon-forecast-july-2022.pdf>*

*this should include the vehicle KM and carbon efficiency values used in each case for each year from 2027 to 2087 by vehicle class.*

*Yours faithfully,*

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*Please use this email address for all replies to this request:*

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*National Highways Limited / General enquiries: 0300 123 5000 / National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF / <https://nationalhighways.co.uk> / [info@nationalhighways.co.uk](mailto:info@nationalhighways.co.uk)*

*Registered in England and Wales no 9346363 / Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ*

*Consider the environment. Please don't print this e-mail unless you really need to.*

I can confirm that we hold the information you have requested.

## Information provided

The carbon forecasts presented in the Lower Thames Crossing Carbon Forecast document dated July 2022 were based on the forecast traffic flows available at the time of the assessment. The traffic flows were derived from the Project's transport model – the Lower Thames Area model (LTAM). The LTAM is a strategic transport model which has been built to forecast the change in traffic as a result of the Project across a wide area of the existing & new network. Its outputs, for the opening year and design year (fifteen years after opening) are used as the basis for the traffic and environmental forecasts for the Project. More details about how the LTAM has been built, and what it forecasts can be found in Chapter 4 of the Operations Update, published at the Community Impacts Consultation in summer 2021, which is available here: <https://ltcconsultation.highwaysengland.co.uk/wp-content/uploads/2021/07/Operations-update.pdf>

These calculations were undertaken following the guidance in the Department for Transport (DfT) Transport Analysis Guidance (TAG) Unit A3 - Environmental Impact Appraisal. The traffic data from the LTAM was used as the basis of the calculations. The traffic data for the opening and design year for with and without Lower Thames Crossing were input into National Highways Speed Band Emission Factor tool (a tool to calculate carbon emissions for operational, construction and maintenance activities undertaken on behalf of National Highways). This tool contains vehicle emission factors for carbon dioxide for both Light Duty Vehicles (LDVs) and Heavy Duty Vehicles (HDVs) for each year between 2016 and 2050. The emission factors within this tool are based on the emission factors within the [Defra issued Emission Factor Toolkit \(EFT\) version 11](#).

The assumptions within the calculations in terms of carbon efficiency and vehicle class are based on the forecasts built into EFTv11. EFTv11 contains forecasts dependent on road types (e.g. Urban and Motorway) of the vehicle types including, fuel type (Petrol, diesel, hybrid), euro class and vehicle class (cars, vans, artic, ridged, buses/coaches etc) for each year up to 2050. The tool also contains the assumption on percentage of electric vehicles in the fleet and provides both tailpipe CO<sub>2</sub> emissions and non-exhaust component i.e. emissions associated with the charging of batteries. The EFT emission factors for CO<sub>2</sub> are derived from data published by the [Department for Transport \(DfT\) in 2009](#). EFT combines these emission factors with information on fleet composition for different road types, derived mainly from the [National Atmospheric Emissions Inventory](#).

The total CO<sub>2</sub> emissions in tonnes per year on each of the approximately 20,000 links within the LTAM were calculated, which requires inputting traffic model link (road) length, vehicle flows for LDVs and HDVs, and traffic speeds. The emissions on each traffic link were multiplied by the link length to calculate the emissions per link. These link emissions were then aggregated over all links in the LTAM network to calculate the total

CO<sub>2</sub> emissions in tonnes per year. The emissions calculation therefore accounts for the distance travelled by vehicles across the network. The emissions were calculated for the opening year and design year with the traffic flows that represent a scenario with the Project and a scenario where the Project has not been constructed. Interpolation of total emissions was undertaken between the opening year and design year. The design year traffic data with 2050 emissions were assumed to be constant for the rest of the TAG appraisal period i.e. to 2088.

If you are not satisfied with your response you may ask for an internal review within 40 working days of receiving the response, by replying to this email. You can learn more about the internal review process at [https://nationalhighways.co.uk/media/a14hbrhu/foi\\_eir\\_complaints\\_process.pdf](https://nationalhighways.co.uk/media/a14hbrhu/foi_eir_complaints_process.pdf).

If you are not content with the outcome of the internal review, you have the right to apply directly to the Information Commissioner for a decision. The Information Commissioner can be contacted at <https://ico.org.uk/make-a-complaint/> or via the address below -

Information Commissioner's Office

Wycliffe House

Water Lane

Wilmslow

Cheshire

SK9 5AF

Please remember to quote reference number **FOI/4284** in any future communications about this response.

Kind regards

Lower Thames Crossing Correspondence Team

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