**DfT PRIOR INFORMATION NOTICE AND MARKET ENGAGEMENT ACTIVITY – 01/08/2024**

**MARITIME MODELLING**

The Maritime, Aviation and Appraisal Modelling team within the Department for Transport (DfT) is looking to inform the potential procurement of the following;

1. **Inland waterways and leisure craft data**: identifying and scoping data sources, including identifying gaps and coverage of the data.
2. **Methodology to produce emissions estimates:** reviewing the previous NAEI methodology and developing options for methodological approaches and assumptions that can be used to produce new emissions estimates for the vessel types in this sector using the identified data sources.

We are publishing this Prior Information Notice (PIN) seeking feedback from suppliers to establish the current capabilities, capacities, and appetite of the market in relation to these two workstreams.

**BACKGROUND**

The Department for Transport (DfT) recently developed a Maritime Emissions Model (MEM) using data collected from Automatic Identification System (AIS) transponders. The model is comprised of two elements: base year emissions estimates (2019 base year) and a forecasting model. The model produces estimates and forecasts out to 2050 for a range of greenhouse gas (GHG) and air pollutant emissions (including CO2, CH4, N2O, SO2, NOX, and PM). The results also include fuel use for both conventional and alternative fuels, the uptake of abatement options to reduce emissions, and the resulting additional costs to businesses from the various emissions abatement options. While the model covers most vessel types, inland waterways and leisure craft are excluded. Vessels in this category are not required to carry an Automatic Identification System (AIS) transponder and therefore are not captured in the database that was used to develop the DfT Maritime Emissions model.

According to the UK National Atmospheric and Environmental Inventory (NAEI), inland waterways and leisure craft accounted for 1.0MtCO2e of GHG emissions on a tank-to-wake basis in 2019. As part of our continuous improvement of the model, we are looking to increase the scope of the model by including the inland waterways and leisure craft sector.

**POTENTIAL PROCUREMENT**

It is anticipated that the potential procurement will cover the following two workstreams;

1. **Inland waterways and leisure craft data**

The vessels that would be in scope include:

* Sailing Boats with auxiliary engines
* Motorboats / Workboats (e.g. dredgers, canal, service, tourist, river boats):
  + recreational craft operating on inland waterways
  + recreational craft operating on coastal waterways
  + workboats.
* Personal watercraft i.e. jet ski; and
* Inland goods carrying vessels.
* Any other vessels that may not be covered by AIS.

Where possible, a detailed dataset that includes, but is not limited to:

1. Activity data for the vessels.
2. Vessel types.
3. Technical data including the specifications of the vessels such as size, engine type, age of the vessels etc.

While the current model uses 2019 as a base year, we are interested in more recent data for multiple years, this will facilitate future model updates and validation exercises. Therefore, we would like to know what data is available and for which years it is available. The NAEI commissioned a study which engaged with different stakeholders to gather data on the sector[[1]](#footnote-2), we believe this study would be a good starting point to build on when considering how to gather additional or more recent data.

We anticipate the work could involve:

* A literature review to understand the landscape of this sector.
* Engaging with organisations who might hold data on sector, such as ship records and activity, and ascertaining whether they would be able to share this data with DfT.
* Data collection including assessing the coverage, size, and quality of the available data.
* Identifying what gaps remain and proposing options for filling those gaps (e.g. surveys or infilling analysis).

1. **Methodology to produce emissions estimates.**

The MEM developed by DfT excludes inland waterways and leisure crafts. We would like to increase the scope for the model so that we can produce estimates and forecasts for this sector. We are seeking insights on potential improvements to the current methodology implemented by the NAEI in their report[[2]](#footnote-3) and what those improvements could look like.

The approaches could be categorised into different tiers depending on factors such as:

1. data limitations and assumptions
2. complexity of the methodology
3. time required to implement each methodology.
4. quality and coverage of the results.

Given that the data for the vessels in scope of this PIN is not collected using AIS, we expect divergences from the data currently being used in the MEM. However, since we intend to use the data in the same MEM, we would like the final data gathered during the project to be compatible with what we are currently using. At a high level, for the current base year estimates, we have activity categorised by location, ship type and route for individual ships. We are willing to share the metadata of the input data used in the model.

We anticipate the work could involve:

* A literature review on the state of the art of estimating maritime emissions.
* Stakeholder engagement to develop possible assumptions to fill the potential data gaps.
* Exploratory analysis using a sample of data.
* Emissions estimates for inland waterways and leisure crafts and other vessels that might not be included in AIS data.

**Next Steps**

This PIN aims to:

1. Explore the market composition of suppliers in this sector, who they work with and their capabilities to deliver on this project.
2. Determine if there is sufficient interest in carrying out this type of work.
3. Insights on what the total cost for the project might be.

**Suppliers with the expertise and capacity to provide advice and solutions relevant to this requirement are invited to respond by completing the Supplier Questionnaire below and email to** [**MaritimeForecasts@dft.gov.uk**](mailto:MaritimeForecasts@dft.gov.uk) **by 31 August 2024.**

Following the collation of all responses, the DfT may host a market event or publish a further to request additional information from all respondents directly.

Please note, the DfT reserves the right not to run a procurement related to this PIN or any future events.

**Supplier questionnaire**

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| **Contracting Authority Contact Details.**  Organisation name: Department for Transport, Aviation Maritime and Boards Analysis, Maritime and Aviation Modelling Team  Point of contact name: Hazvinei Tamuka Moyo  Point of contact email: [hazvinei.tamukamoyo@dft.gov.uk](mailto:hazvinei.tamukamoyo@dft.gov.uk) |
| **Supplier Contact Details**  Organisation name:  Point of contact name:  Point of contact email: |
| **Please provide any feedback or input into Workstream 1** - Inland waterways and leisure craft data |
| **Please provide any feedback or input into Workstream 2** - Methodology to produce emissions estimates |
| **Skills/ Capability**  Please provide details on whether your organisation has the skills/capability to deliver on either or both workstreams. |
| **Capacity**  What capacity do you have to bid for either or both workstreams? May you also provide details of a suitable timeline to work on the project? |
| **Cost**  Please provide a cost estimate for the project. |
| **Delivery Method**  We are considering whether to run separate procurements or combine the two areas of work and award as one contract. Please provide feedback and your preference on this, such as the potential benefits, risks, constraints, creating a consortium, the use of sub-contractors etc. |
| **General Feedback**  Please provide any other feedback or comments that may be helpful for this potential procurement. |

1. [Report: Greenhouse Gas Emissions from Inland Waterways and Recreational Craft in the UK - NAEI, UK (beis.gov.uk)](https://naei.beis.gov.uk/reports/reports?report_id=663) [↑](#footnote-ref-2)
2. <https://uk-air.defra.gov.uk/reports/cat09/2304171441_ukghgi-90-21_Main_Issue1.pdf> [↑](#footnote-ref-3)