Embodied emissions in UK industrial supply chains: A feasibility study

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# Introduction and background

The University of Leeds (UoL) has developed the UK MRIO database that is used to calculate the Consumption-based GHG emissions for the UK. This global model considers the emissions embodied in industrial supply chains, including trade in and out of the UK and is used to measure the impact of the UK’s final consumption. It is most sophisticated model in the UK to consider the impact of UK consumption irrespective of where the emissions were produced.

Recently, the UoL has published additional metrics to understand reasons for the changes seen in the consumption emissions of UK households over time. This feasibility study will assess the potential for a suite of similar metrics that track the emissions embodied in UK industrial supply chains. This will be undertaken for a small number of industrial subsectors to assess the potential value of such metrics and the feasibility of publishing them annually for the whole UK industry sector.

This proposal outlines the work programme to undertake this feasibility study.

# Work Package 1 – Method development

The UK MRIO is principally utilised in assigning emissions to final consumption in the UK. Initial work will develop, assess and refine a methodology for assigning emissions to the supply chain of UK industries. This will include options for separating supply chain emissions by GHG accounting scopes and the contributing industries (including a split between the UK and overseas). Changes in supply chain emissions over time will be decomposed into different drivers – for example, a change in overall level of purchasing of the industries, the make up of that purchasing, and the emissions intensity of supply chains.

# Work Package 2 – Reporting

A report will be produced presenting the produced metrics for a small number of industrial subsectors[[1]](#footnote-1) and assessing the feasibility to annually release similar metrics for the wider UK industrial sector. This report will include:

* The potential for the metrics to indicate areas of potential for resource efficiency, and to track improvements in resource efficiency.
* The advantages and limitations of the method. Including extensions that may overcome such limitations.
* The possibility to extend the method to related metrics and additional impacts (beyond emissions).
* The feasibility of undertaking this method annually for the full industrial sector.

The focus of this work will be the upstream emissions of the industrial sectors.

# Costings and timeline

|  |  |  |  |
| --- | --- | --- | --- |
| **Staff member** | **Days allocated** | | |
|  | *WP 1* | *WP 2* | **Total** |
| Jonathan Norman |  |  |  |
| Lena Kilian |  |  |  |
| Anne Owen |  |  |  |
| **Total** |  |  |  |

The project can be delivered for the price of £10,000 excluding VAT.

The work will be undertaken between December 2024 and March 2025. The report will be completed by the end of March 2025.

1. The proposed subsectors for initial analysis will be UK construction sectors (Construction of Buildings, Civil Engineering and Specialised Construction Activities, SIC 41, 42 and 43 respectively). This will be confirmed with DESNZ. [↑](#footnote-ref-1)