UK Transmission Operator Carbon Product Calculator

In the coming years, the UK's energy landscape will change significantly in order to facilitate low carbon generation, energy and transport electrification and the wider transition towards a net zero economy.

As the UK's three electricity transmission operators, *National Grid, Scottish and SSEN Transmission* & *SP Energy Networks* all have a vital role to play in meeting the UK's net zero challenge through developing and maintaining the critical infrastructure needed to enable a decarbonised energy network.

National Grid, SSEN Transmission and SP Energy Networks have formed the ***UK Reduction of Capital Carbon in Infrastructure: Transmission (ROCCIT)*** *group*, with a principle aim of promoting an industry wide, consistent approach to reducing whole life carbon for the infrastructure projects we design and build.

An important consideration is the carbon emissions associated with the electrical equipment we purchase and install. We therefore request that suppliers of electrical equipment fill out the carbon product calculator as part of future frameworks or tenders.

Every effort should be used to provide accurate and justifiable data. Data should follow the hierarchy outlined below.

1. Measured Data
2. Average / typical data
3. Estimated data

Table 1.1 (Sources A1-2) - Manufacture of the Product: Materials and transport

<u>Materials</u>
This section calculates the embodied carbon associated with the materials used in the manufacture of the product. Materials should be input in kg. The accuracy of the material weights is largely down to supplier discretion. It would be preferrable if these came from measured data, but if this does not exist, estimates are sufficient. Embodied carbon is calculated from the weights of individual materials and carbon factors associated with these materials. If embodied carbon factors can be obtained from specific suppliers (e.g. direct from the steel manufacturer), this should be used. If embodied carbon of materials cannot be obtained from suppliers, generic values can be populated - either using the drop down menu, or by inputting manually using factors from other databases like the ICE.

<u>Transport</u>
This section calculates carbon emissions associated with transporting materials to the manufacturing site. Please include an estimation of transport distance and the mode transport for materials which

are used in the manufacture of the product (from source to manufacturing plant). If the distance from source to manufacturing plant is known, this should be inputted. If distances are not known, a suitable generic values can be used:

- Global Supply (200km by road, 10,000km by sea)
- Continental Supply (1500km by road)
- National Supply (300km by road)
- Local Supply (50km by road)

Table 1.2 (Source A3) - Manufacture of the Product: Energy

This section calculates the carbon emissions associated with the energy use to manufacture the product. Please include an estimation of energy used to make the product. Please include all heat and electricity used as far as possible that are likely to contribute >5% of the manufacture of an individual product. Suppliers should add in specific emissions factors for the energy supplied to the manufacturing plant if this is known. If not, the most appropriate factors should be selected from the drop down menu.

Table 1.3 (Source A4) - Delivery to Site

This section calculates the carbon emissions associated with transporting the finished product to site. Please input all legs (parts of the journey) and modes.

If distances are not known, a suitable generic values can be used:

- Global Supply (200km by road, 10,000km by sea)
- Continental Supply (1500km by road)
- National Supply (300km by road)
- Local Supply (50km by road)

Table 2 (Source B8) - In use emissions

This section calculates the emissions associated with operating the product.

Insulating Gas
The carbon dioxide equivalent of the insulating gas should be calculated based on guaranteed insulating gas leakage during normal operation. The global warming potential of the gas should be added in addition to total gas bank and the design leakage rate.

Losses
The carbon emissions associated with energy used to operate the product should be calculated by including the typical average energy consumption of the product. Please add in MWh.

Direction of Travel

Presently, this is principally a data collection exercise and this carbon product calculator will not necessarily be used to differentiate suppliers as part of a tendering process. However, it is expected that suppliers will provide accurate data as a minimum requirement. We will continue to collaborate and review our approach to our supply chain and the impact our electrical equipment has on our carbon footprint and will continue to communicate our approach to carbon management throughout the supply chain.

Further Information

The Supply Chain Sustainability School is a free online resource which our supply chain can use to upskill. You will find valuable learning materials on Life Cycle Assessments, PAS 2080 Carbon Management, calculating carbon emissions and setting carbon reduction targets.