Case Study

Zero Waste Scotland - Embodied Carbon in Office Equipment
The Scottish Parliament

Zero Waste Scotland has collated lifecycle carbon figures for procured items including commonly used office items (i.e. furniture and IT equipment).

The Scottish Parliament took part in a pilot to commence their journey to quantify the embodied carbon[1] associated with office equipment.

Background
To date public sector mandatory climate change reporting under the Climate Change (Scotland) Act 2009 has primarily focussed on Scope 1 and Scope 2 emissions.

The Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020 sets out that public bodies will be required to provide in their annual reports:

"Where applicable, targets for reducing indirect emissions of greenhouse gases"

This new requirement (among others) outlined in the Amendment Order 2020 will apply to reports submitted to Scottish Government in November 2022.

Scope 3 emissions typically account for the largest proportion of corporate emissions but they are complex and challenging to measure.

Zero Waste Scotland collated lifecycle carbon figures on ten common pieces of office equipment to assist organisations to get an indication of what the associated footprint of these items would be.

By quantifying the carbon emissions associated with purchases, organisations can begin to inform procurement policy, help generate and in turn utilise circular economy opportunities and change procurement choices. It may also help inform areas for action on their journey to net zero.

The best way for organisations to reduce the impact of items is to extend the lifetime of existing items by upgrading and repairing them and, when purchasing items, buy second-hand, refurbished products from accredited suppliers, instead of buying new items.
(Zero Waste Scotland 2020)

The Pilot
The Scottish Parliament holds a robust inventory of its IT equipment and office furniture. The Parliament chose selected items from the inventory to apply the approach to quantify the associated carbon emission footprint.

With the required inventory information available this was a straightforward desk exercise to apply the emission factors ($kgCO_2e$).

[1] Embodied Carbon: Emissions associated with the creation of a product, namely Green House Gas emissions arising from raw materials, energy and industrial processes used in the processing, manufacture and delivery of materials, products and components.

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- The Scottish Parliament has measured water, waste, and business travel Scope 3 emissions since 2005/06. It has more recently started to baseline Scope 3 emissions from commuter travel and energy usage from local offices.
- The opportunity to participate in this pilot exercise provided a useful first step in examining Scope 3 emissions from purchased goods and fitted well with current Scope 3 work.
- The Scottish Parliament looked at purchases over four financial years including 2020/21.

Pilot Results

In 2019/20, the estimated embodied carbon emissions associated with office equipment was 2.4% of total footprint.

(NOTE: This excludes any Covid19 related equipment that may have been purchased mid to end March 2020 when most staff were instructed to work from home).

For 2020/21, the embodied carbon emissions associated with office equipment was 12.3% of total footprint.

(NOTE: this increasing % is partly due to equipping staff to work from home, but is also due to an overall organisational decreasing carbon footprint)

Benefits & potential next steps

- This straight forward desk exercise provided good insight into the carbon emissions associated with the office equipment considered.
- The fact that existing inventory information could be used for this exercise was a huge advantage.
- Participating in the pilot has been a catalyst to explore further Scope 3 work with Procurement.
- The results will be used internally to highlight and evidence the importance of considering Scope 3 emissions further.
- The findings from this pilot will be included as part of the Annual Sustainability report.
- Working with its suppliers to identify the $kgCO_2e$ associated with the delivery of its contracts will be considered as part of the Parliament's objective to measure and reduce the carbon footprint of its purchases.
- The Parliament is keen to extend the list of items considered (e.g. printers).
- The Parliament already repairs, deep cleans and reuses furniture when possible. Having associated carbon emission information to hand will provide further evidence in promoting and implementing a more circular approach to future purchases.

The pilot was a very interesting exercise which allowed us to use already existing procurement data to easily estimate embodied carbon emissions in office equipment.

The Parliament is keen to gain a full understanding and take responsibility for all our indirect carbon emissions and will be creating a Scope 3 prioritisation strategy over the next financial year.

Maureen Lynch, Scottish Parliament

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