

Scotland's Carbon Metric – data publication

Summary

The Scottish Carbon Metric is a ground-breaking tool that measures the whole-life carbon impacts of Scotland's waste, from resource extraction and manufacturing emissions, through to waste management emissions, regardless of where in the world these impacts occur. The first estimate of Scotland's waste carbon footprint was published in 2013 by Zero Waste Scotland using household waste data published by the Scottish Environment Protection Agency (SEPA). Household waste data and the Carbon Metric have been published every year since then, but at different times, in different places, and in different online documents.



In 2018, in an effort to streamline the process, align the timing and improve the accessibility of the data, SEPA and Zero Waste Scotland worked together to publish both the household waste data and Carbon Metric at the same time, in one format, and in one online location. The solution was to incorporate the Carbon Metric into SEPA's Household Waste Discover Data tool so that the tonnage and carbon impact of different waste types and different management methods could be viewed simultaneously and interactively. In addition, by combining the data in this way, the carbon impact of waste in Scotland was incorporated in Official Statistics reporting.

"The Carbon Metric, combined with household waste data, allows us to analyse the whole-life carbon impacts of Scotland's waste in a way that's never been done before. When we started the Carbon Metric in 2013, it was a hugely ambitious project, but one which has expanded our ability to think about, and find solutions to climate change. I am delighted to see the value of the Carbon Metric recognised in its elevation to an official statistic.

"Together, Zero Waste Scotland and SEPA have integrated the Carbon Metric into existing online waste data so that its output and insights are more accessible and useful, not just to policy makers and researchers, but also to the wider public and businesses."

Michael Lenaghan, Environmental Analyst, Zero Waste Scotland

The challenges

The Carbon Metric is based on household waste data that is published annually by SEPA in September. Waste data is published nine months after the year end, e.g. 2017 waste data was published in September 2018. During this nine month lag period SEPA receives data for the preceding year and undertakes a series of data validation and verification checks. Because of this pre-publication preparatory work, it is not possible for SEPA to provide the household waste data to Zero Waste Scotland in time for them to prepare the Carbon Metric data and associated report for simultaneous publication with household waste data.

Factors used in the Carbon Metric tool are reviewed as part of a biennial improvement process and may be updated to correct modelling inaccuracies and inconsistencies, or improve the accuracy of carbon savings estimates in line with new information or research. To ensure differences and trends observed between datasets are not the result of changes in Carbon Metric factors the carbon accounting methodology requires that previous years' data are revised using the latest available factors - requiring additional staff time. In addition, if household waste is updated as part of official corrections the Carbon Metric had to be recalculated independently requiring further staff time.

The solution

Working in partnership, SEPA and Zero Waste Scotland sought to incorporate the Carbon Metric into SEPA's Household Waste Discover Data tool. Zero Waste Scotland provided SEPA with Carbon Metric factors for different waste types which SEPA incorporated into their household data analytics process. The resultant data were then presented in the Discover Data tool, which automatically calculated and presented the carbon impact of household waste from Scotland.

"Partnering with Zero Waste Scotland has enabled us to streamline the publication of Carbon Metric data alongside household waste data. Using technology to publish these data together has resulted in more efficient and timely production of the Carbon Metric whilst also providing a comprehensive presentation of household waste in an openly accessible format. I'm very proud of how the staff in both organisations have worked together on this project."

Ingrid Baber, Dataflows Unit Manager, SEPA

There then followed a period of testing, focussing on the outcomes from the tool including, for example, whether the carbon values calculated by the tool were the same as those calculated by Zero Waste Scotland. Testing proved useful, helping to identify anomalies in the data and problems in the analyses at an early stage, and giving time for corrections and improvements to be implemented.

When testing was complete and the tool was ready for publication online, final discussions between SEPA and Zero Waste Scotland agreed the content of the accompanying summary report and commentary text. As household waste data is published as an Official Statistic, the Carbon Metric is now incorporated within Official Statistic reporting.

The outcomes

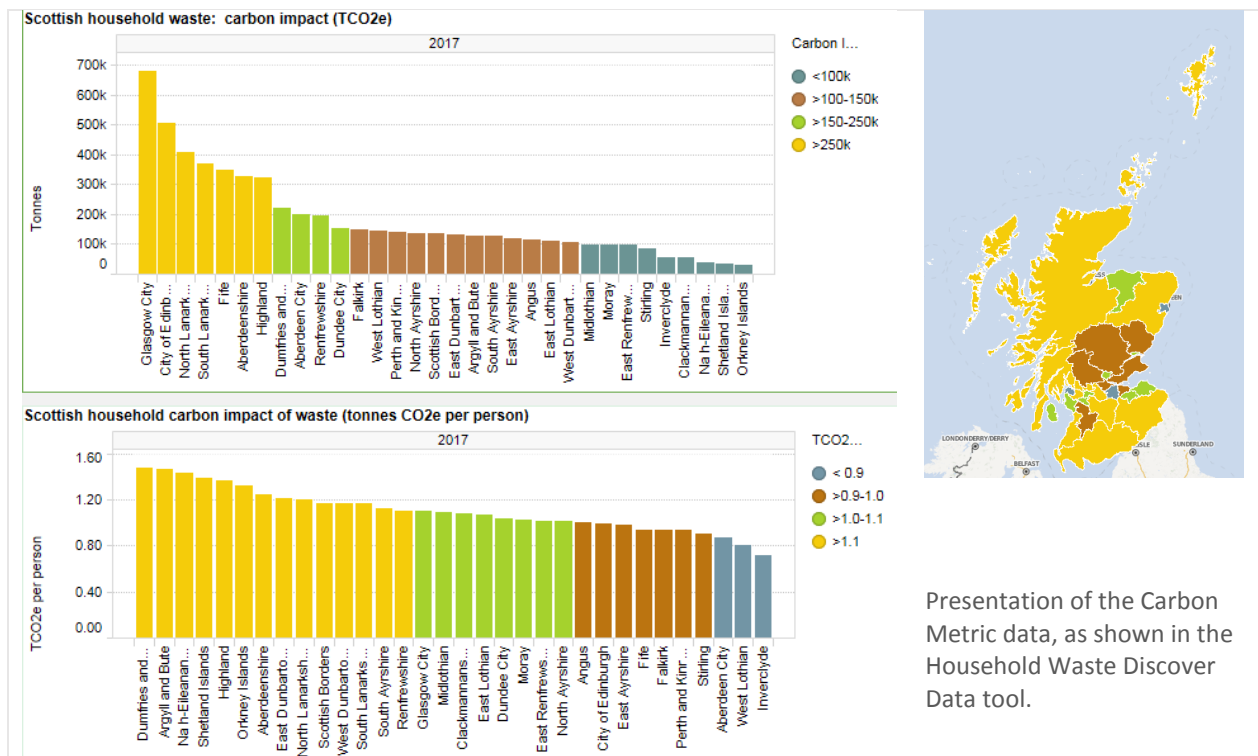
The Carbon Metric was first included in the Household Waste Discover Data tool for the 2017 calendar year dataset (published September 2018).

Updated historical carbon factors are incorporated into the tool so that the Carbon Metric data are based on the latest available factors. Integrating the data means that if the household waste data are revised, the Carbon Metric data are automatically updated. Both of these outcomes save time and minimise potential error.

Including the Carbon Metric in the Household Discover Data tool allows the carbon impact of waste to be viewed at a local authority level where previously it was reported at the Scotland level only. This allows local authorities to track the carbon impact of their waste, over time and by waste type.

Presenting household waste data and the Carbon Metric together contributes to the aims of Scotland’s waste data strategy and helps inform progress towards the Scottish Government’s Making Things Last – A Circular Economy Strategy for Scotland.

Finally, much of the Zero Waste Scotland work was undertaken by a Zero Waste Scotland intern providing a valuable opportunity to develop professional skills and experience.



Facts and figures

- Household waste data and Zero Waste Scotland Carbon Metric data are published annually.
- Household waste data and Carbon Metric data were published together for the first time in 2018.
- The Household Waste Discover Data tool now shows the carbon impact of waste in Scotland, by waste types generated and managed, and by Local Authority area.
- Carbon Metric data now forms part of Official Statistics on Scottish waste, a world first we believe!

Find out more

Carbon Metric information: www.zerowastescotland.org.uk/our-work/carbon-metric
[Accessed 21 Feb. 2019]

Household Waste Discover Data tool: www.environment.gov.scot/data/data-analysis/household-waste/ [Accessed 21 Feb. 2019]

Household waste data and commentary text: www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/household-waste-data/ [Accessed 21 Feb. 2019]

Making Things Last – A Circular Economy Strategy for Scotland:
www.gov.scot/publications/making-things-last-circular-economy-strategy-scotland/
[Accessed 21 Feb. 2019]

Official Statistics: www.gov.scot/statistics/ [Accessed 21 Feb. 2019]

Scotland's waste data strategy: www.environment.gov.scot/data/waste-data-strategy/
[Accessed 21 Feb. 2019]

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