



Subject:	More Circularity Less Carbon Report
Date:	7 th March 2023
Reporting Officer:	Cathy Matthews Director City & Neighbourhood Services
Contact Officer:	Brendan Murray Waste Manager

Restricted Reports	
Is this report restricted?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
If Yes, when will the report become unrestricted?	
After Committee Decision	<input type="checkbox"/>
After Council Decision	<input type="checkbox"/>
Some time in the future	<input type="checkbox"/>
Never	<input type="checkbox"/>

Call-in	
Is the decision eligible for Call-in?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

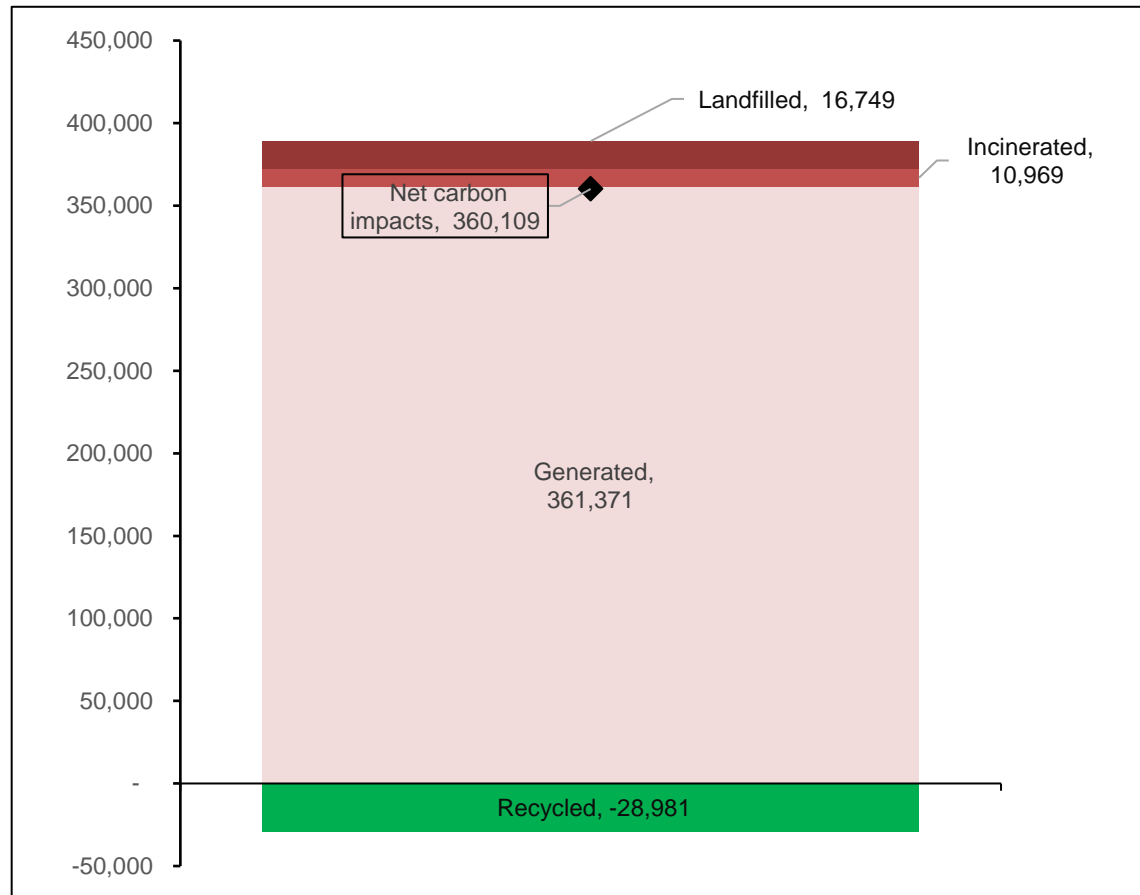
1.0	Purpose of Report or Summary of main Issues
1.1	To present the "More Circularity Less Carbon" report for Belfast City Council's waste management activities.
2.0	Recommendations
2.1	The Committee is asked to: <ul style="list-style-type: none">Note the contents of the report and it is envisaged that the key findings and recommendations will be integrated into the next Council waste plan and contribute to the Council's climate change actions.

3.0	Main report
	<p data-bbox="244 159 419 192">Background</p> <p data-bbox="108 259 1455 495">3.1 The ‘More Circularity, Less Carbon’ (MCLC) campaign was launched by the Association of Cities and Regions Plus (ACR+) in November 2019, to help its members in addressing the carbon footprint of their waste. ACR+ has partnered with its constituent member Zero Waste Scotland to assess how individual territories can reduce the carbon impact of municipal waste by 25% by 2025.</p> <p data-bbox="108 562 1455 846">3.2 Zero Waste Scotland’s Carbon Metric International (CMI) tool, enables cities or regions to measure the carbon impact of their municipal waste, take effective actions to reduce it, and track their progress towards the 2025 target. Belfast is one of the ACR+ members which benefited from this project and received support to use the CMI to quantify the whole-life carbon impacts of its household waste. The results are summarised in the attached report (Appendix 1 – The Carbon Footprint of Waste - Belfast), which has three main objectives:</p> <ul data-bbox="293 913 1455 1106" style="list-style-type: none"> • Provide a detailed breakdown of waste carbon impacts by materials and management/treatment process; • Enable Belfast to establish its 2025 waste carbon reduction target; • Assess several carbon reduction scenarios that can help Belfast achieve its target. <p data-bbox="108 1173 1455 1408">3.3 The Carbon Metric provides policymakers and stakeholders with an alternative to weight-based waste measurement, allowing them to identify and focus specifically on those waste materials with the highest carbon impacts and greatest potential carbon savings. The whole-life carbon impacts of household waste in Belfast were quantified in the report and based on 2020 data.</p> <p data-bbox="244 1476 424 1509">Key findings</p> <p data-bbox="108 1576 1455 1659">3.4 The carbon impacts of household waste in Belfast in 2020 were approximately 360,000 tonnes of carbon dioxide equivalent (tCO₂eq.), or 1.05 tCO₂eq./capita.</p> <p data-bbox="108 1727 1455 2123">3.5 The graphic below shows that the carbon saved through recycling was slightly more than the carbon impacts of landfilling and incineration, meaning Belfast’s household waste management activity is net carbon negative. However, whenever the embodied carbon impacts of the waste material (i.e. the emissions generated by the extraction of resources, production, manufacturing, etc. of the corresponding products, labelled as “Generated”) are considered this tips the scales into a carbon positive picture. These “generated” emissions are always the highest contributor to the net carbon impacts of waste, which is why waste prevention, in accordance with the waste hierarchy, offers the greatest carbon savings.</p>

Accounting for the full lifecycle impacts, Belfast's waste carbon intensity is 2.4 tCO₂eq./tonne of waste collected

3.6

Breakdown of whole-life carbon impacts of waste by stage (tCO₂eq).



3.7

The different materials purchased, consumed and collected as waste have different impacts in terms of CO₂e emissions. The following graphic shows the amount of waste collected by each waste category¹ and their associated carbon impacts. This highlights the importance of having a range of metrics available to decision makers tackling this issue, rather than solely relying upon the weight-based metric.

3.8

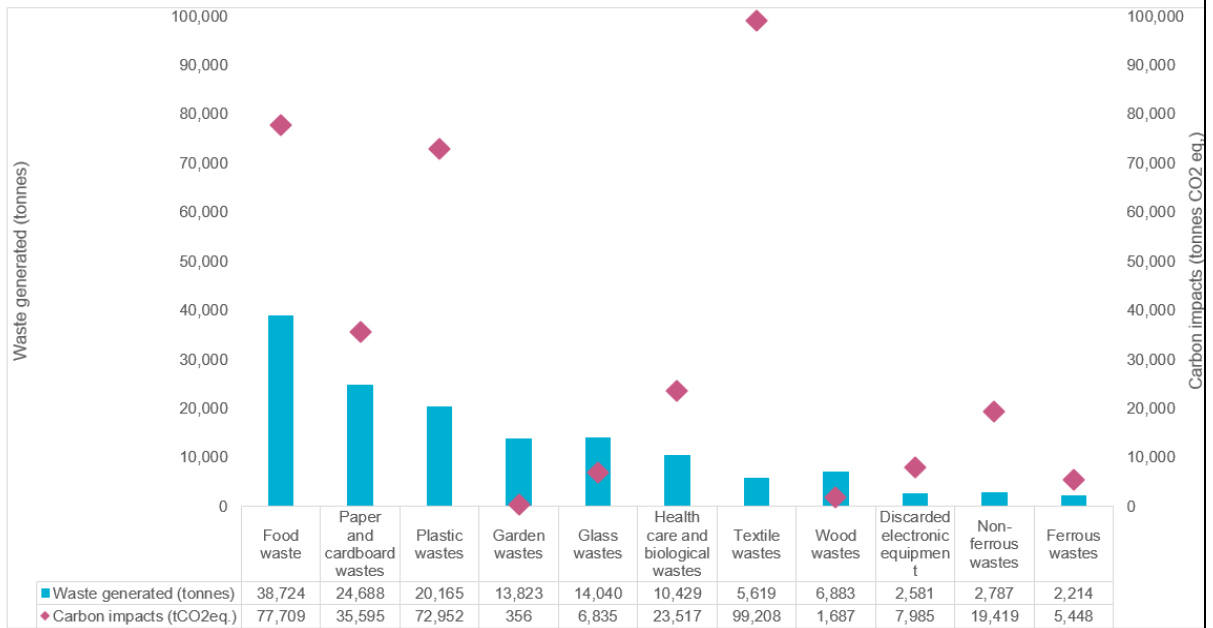
Textiles, plastic and food wastes are the most carbon-intensive fractions. It is interesting to highlight the importance of textile waste when it comes to carbon emissions, when the associated tonnages are relatively low. Textile production is hugely intensive in terms of carbon footprint and environmental impact. It is estimated that the fashion industry is responsible for 10% of global carbon emissions – more than international flights and maritime shipping combined.²

¹ Each category does not refer to waste tonnages in a single stream (e.g. "garden waste collected in civic amenity sites"), but rather to the total waste fraction that encompassed in multiple waste streams (e.g. garden waste collected in civic amenity sites, garden waste collected door-to-door, and garden waste improperly discarded in residual waste)

² EPRS (2017) UN (2018)

3.9

Weight vs carbon impacts of key wate categories in Belfast



Scenarios

3.10

In relation to its waste activities, in order to achieve a 25% reduction in CO2e emissions by 2025, the Council must reduce its waste carbon impacts by 90,025 tCO₂e, to a total of 275,075 tCO₂e. Given that most of the carbon impact is associated with the production of the item in the first place, various waste reduction scenarios are presented in the report to achieve this challenging goal with the spotlight on textiles, food, plastics, paper/cardboard wastes.

3.11

The report also outlines a number of scenarios which involve improved recycling. Increasing the recycling rate of plastics has the largest impact in terms of emissions reduction relative to business as usual. Increasing the recycling rates of paper, glass, and food can also help to reduce carbon emissions, but compared to the waste reduction scenario analysis, it is not as effective. It is important to note that the scenarios are indicative only, they do not reflect what may be achievable in an urban environment.

3.12

The report notes that further benefits could be achieved depending on the recycling routes used for the different materials. The impact of food waste recycling also depends on whether energy or fuel is produced, and on the bio-based products generated (soil conditioner, bio fertilisers, etc.). Therefore, in addition to increasing capture rate, exploring other treatment routes may bring further benefits.

3.13

During the compilation of the report where local data was unavailable, generic UK or European wide processes have been used to estimate life-cycle impacts. It should also be

	<p>noted that the data may have been impacted by the covid pandemic and its influence on waste management operations during this period. In general, this seemed to depress recycling figures across the board.</p> <p>Conclusions</p>
3.14	The 2020 carbon impacts of Local Authority Collected Municipal Waste in Belfast are assessed by the International Carbon Metric at 360,000 tonnes of carbon dioxide equivalent (t CO ₂ eq.), or 1.05 tonnes CO ₂ eq./capita.
3.15	To achieve a 25% reduction by 2025 as part of the ACR+ 'More Circularity Less Carbon' campaign, Belfast must reduce its waste carbon impacts by approximately 90,000 tCO ₂ eq, to a total of 270,000 tCO ₂ eq.
3.16	Prevention and re-use activities represent the main potential for reduction of carbon within waste management activities. In terms of levers to drive the prevention strand, much of this lies with central government policy which needs to create the environment to bring about the desired behavioural change. The Council can support any new policy direction through communications and collaboration with stakeholders such as the social enterprise and community organisations which currently make up the foundation blocks of the repair and re-use sector.
3.17	Further carbon savings can be achieved by capturing more materials for recycling instead of waste to energy (incineration) and landfilling. This is particularly the case for increased recycling of plastic (capture rate and quality of sorted plastic) although this may be more challenging for the Council when the Deposit Return Scheme is launched in 2025.
3.18	The Council must ensure that waste prevention, re-use and repair activities feature more prominently in the next waste plan which will be developed following completion of the DAERA waste strategy, due December 2023.
	<u>Financial & Resource Implications</u>
3.19	There are no financial or resource implications associated with this report.
	<u>Equality or Good Relations Implications and Rural Needs Assessment</u>
3.20	There are no good relations or rural needs associated with this report.
4.0	Appendices – Documents Attached
	Appendix 1 - More Circularity Less Carbon Report (2022).