

Environmental Management System (EMS) Report Q1 2021/22¹

Purpose

- This paper provides:
 - A brief commentary on carbon implications of a partial return to Zero Waste Scotland offices.
 - An overview of Zero Waste Scotland's environmental impacts in Q1 of 2021/2022; and
 - A progress update on the Zero Waste Scotland net zero plan

Executive Summary

- Total emissions for Q1 FY 2021/22 are 8.9 tCO₂e across all measured sources.
- This figure is a 56% reduction on Q1 last year.²
- Travel emissions have remained at zero in Q1 for the past two years.
- Electricity accounted for 4.7 tCO₂e, representing a 16% saving on last year's emissions
- Heating emissions were zero within the homes of colleague, and 0.74 tCO₂ within office space
- Food waste and non-food waste were estimated to have decreased by 5% and 6% respectively versus totals from last year.
- Water emissions decreased by 5% on the total from FY 2020/21, to 0.07 tCO₂e
- In many instances, reductions are due to a combination of a decrease in staff role, and decarbonisation of services and supply chains.

Foreword on homeworking and a partial return to offices.

The same issues around data collection that have prevailed throughout homeworking, still exist. This report combines historic data with estimates and third-party methodology to accurately assess the carbon emissions of the business in Q1 of FY 2021/22. This report considers the following emissions sources:

- Energy
- Water and waste
- Travel
- The purchasing of equipment³

¹ This report is prepared by Fraser Millar and reviewed by Susan Evans

² Including equipment purchases, which averaged at 13.25 tCO₂e in FY 2020/21

³ This is a new addition to reporting and will be included within every quarterly and annual report going forward. Equipment emissions are limited to most IT and facilitates purchases, but with some omissions where requisite LCA data is not available.

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In the coming months, Zero Waste Scotland office-space is scheduled to reopen. With around 80% of colleagues opting to remain home-based (according to latest figures), the carbon implications of operating under home-working and office working simultaneously may be significant.

Under the new blended format, corporate travel and commuting emissions will again be occurring. Energy, water and waste emissions will be occurring within over one hundred home-offices, as well as within central office space.

Aside from making data collection for future EMS reports more onerous, continuous close monitoring of this blended format will be necessary to ensure material emissions rebound does not occur. The refocussing of the net zero plan (Appendix 1), seeks to address areas of the business with greatest potential for emissions rebound.

The organisation's overall environmental impacts

- **Summary**

- Total measured climate change impacts, expressed in carbon dioxide equivalent, in Q1 of FY 2021/2022 were 8.9 tonnes of CO₂ eq; *56% less than the figure for last year.*
- This significant reduction in emissions is due to multiple factors, including a 6% decrease in the staff role, significant grid decarbonisation in the past 12 months and far less new equipment being purchased this year, compared with last.
- The same methodology has been applied for this FY, as was used in FY 2020/21 to estimate utilities and waste. Consequently, there is minimal difference between the two years across these emissions sources.

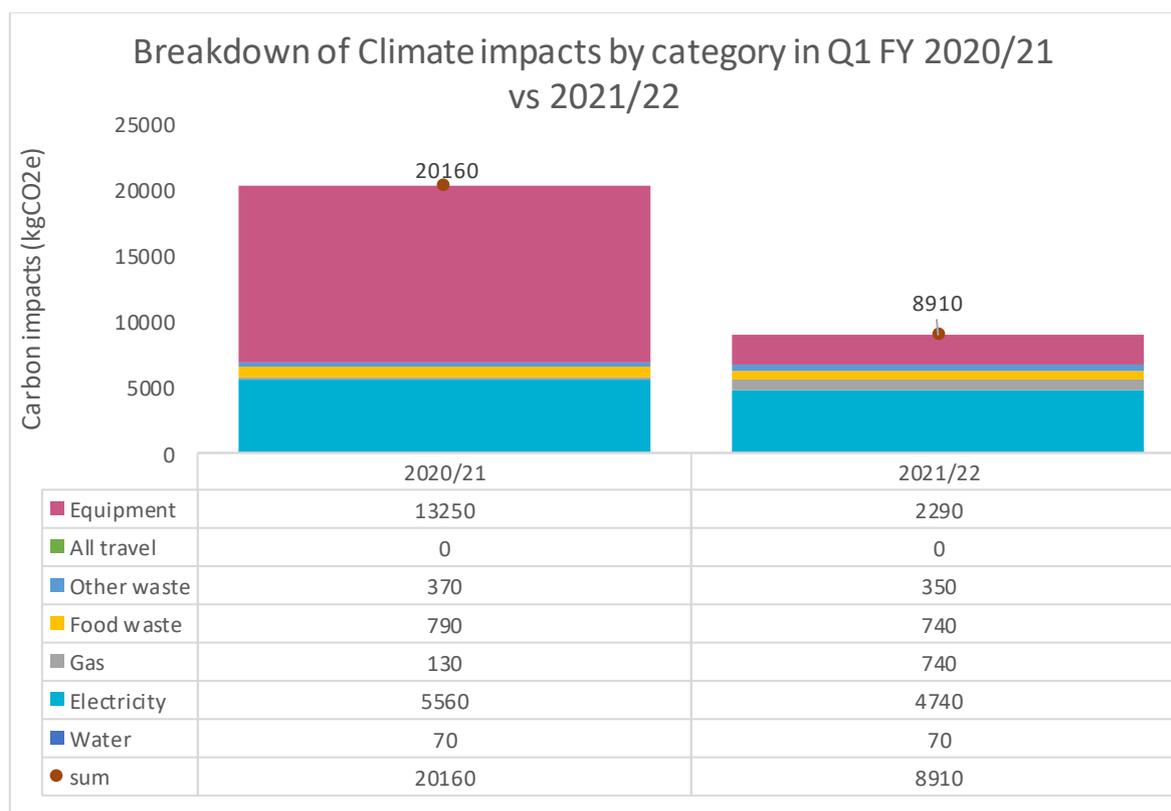


Figure 1 Breakdown of total climate change impacts by category for Q1 in 2020/21 and 2021/22

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- **Corporate travel and commuting impacts**

- Corporate travel and commuting impacts were again zero through Q1 of the current financial year. This is on a par with the previous year, in which no travel was undertaken.
- It is anticipated that, upon the planned return to the office, that travel emissions will rise again; however this rebound may be limited by the ~80% of colleagues who have thus far opted to remain home-based.
- For those colleagues who are now home-based, travel to the office will no longer be classed as commuting, but rather falls within the scope of corporate travel, which is governed by the forthcoming update to the Zero Waste Scotland corporate travel policy.
- The policy seeks to prioritise 'digital by default', and active travel options where possible, whilst disincentivising carbon-intensive travel via private vehicle or air.

- **Office Impacts**

Electricity

- Using available data, estimates show that *electricity emissions across the business amounted to 4.7 tonnes CO₂e in Q1, down 16%; from 5.6 tonnes the previous year.*
- This decrease is due to a 6% decrease in staff levels from last financial year, as well as a 9% decarbonisation of the electrical grid compared with 2020 levels.
- When office space reopens, a substantial rise in electrical emissions is not anticipated, as the same volume of equipment is being powered, along with the same demand on servers.

Heating (gas equivalent)

- *Gas equivalent emissions were considered to be zero (0 tCO₂e) within the homes of colleagues during Q1.* This is in line with UK Government guidance on established heating and non-heating periods throughout the year.
- *Residual office gas emissions accounted for 0.74 tCO₂e in Q1, up from 0.13 tonnes last year⁴.* this is a substantial percentage increase, however, is the result of the district heating operator not routinely supplying heat to office space in the immediate aftermath of lockdown in Q1 last year.
- *Heat is called to the offices as required, to ensure protection of pipes and fabric.* The average temperature in April 2021 was 7°C, 2 degrees colder than last year. This required additional heating to be supplied to office space to guard against effects of cold.

⁴ The Q1 report from FY 2020/21 will show gas equivalent as being zero across the business. This is because, at time of writing, the district heating supplier was not supplying heat to the building on a regular basis.

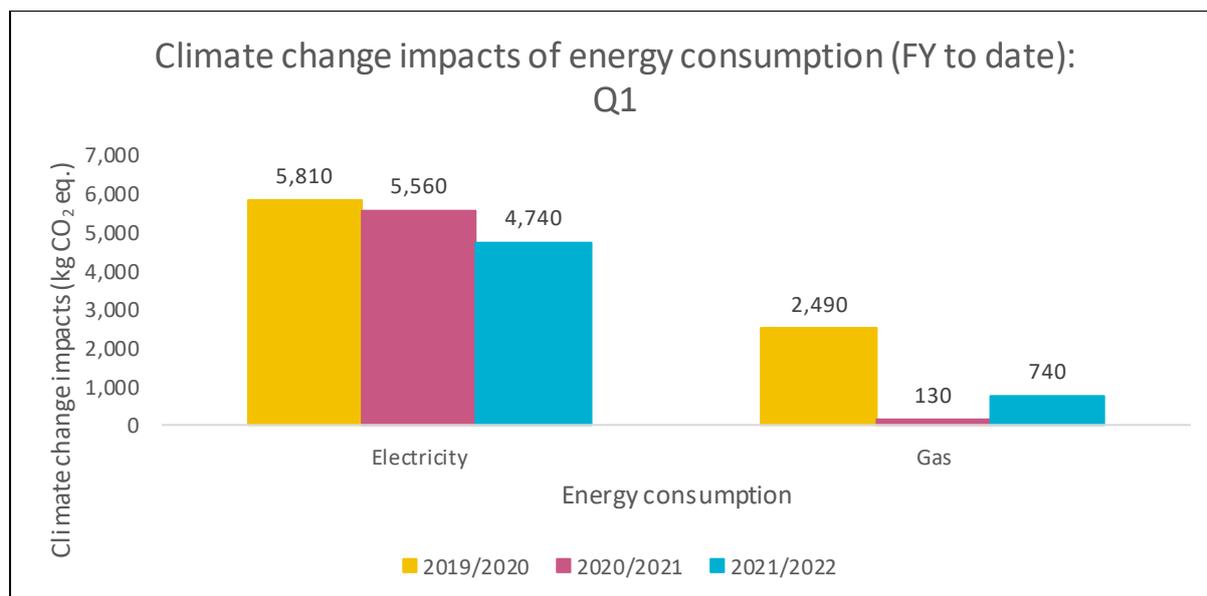


Figure 2 Climate change impacts of energy consumption in Q1

- **Resource loss and waste management**

- *Food waste impacts is estimated to have decreased by 6% versus last year. Non-food waste is estimated to have decreased by 5%. These figures are based on previous totals multiplied by current staff role, and do not account for waste saving initiatives or reduction measures.*
- *Water emission have decreased by 5% against the previous financial year; down from 74 to 70 kgCO₂e; or 0.07 tCO₂e⁵ – a very small proportion of our overall emissions.*
- *Impacts for the same period last year can be seen in Figure 3 (below) and detail the combined impact across waste generation and water usage to be ~1.1 tonne CO₂e for the quarter, representing a relatively minor contribution to ZWS carbon output.*

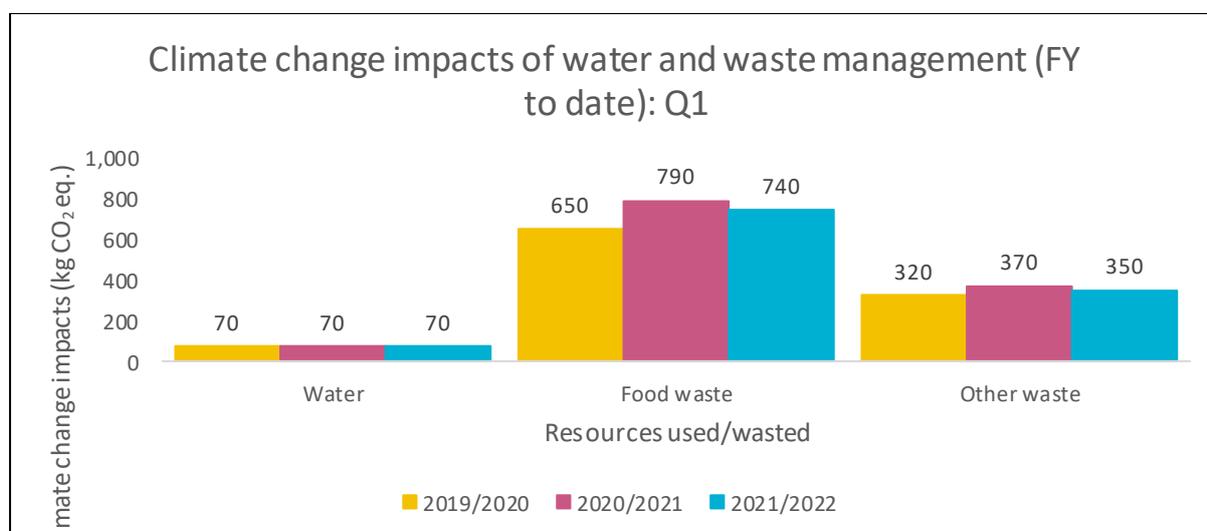


Figure 3 Climate change impacts of water and waste management in Q1.

⁵ Figure 3 uses rounded data, and so appears to show water use as being equal across the last three FY, when in fact there are minor variations between years.

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- Paper use and purchase of goods

Printing

- Printing and paper use are estimated to remain at zero. This is due to there being minimal need for the printing of documents within home-offices.
- When office-space reopens, there will be substantial rebound in this area as colleagues will again have ready access to printers.
- To ensure printing is accurately accounted for, simple surveys may be used in future for colleagues who may be printing whilst home-based.

Equipment purchases

- Zero Waste Scotland now accounts for equipment purchases within its carbon footprint ⁶
- Using an in-house methodology, it has been possible to derive carbon values for commonly procured office items, in order to account for them within EMS reporting.
- Analysis shows that *in Q1 of FY 2021/22, Zero Waste Scotland equipment purchases accounted for 2.3 tCO₂e, an 83% reduction on Q1 last year.*
- Redeployment of existing equipment assets saved over 300 kgCO₂e in Q1.

Item	Emissions for 1 unit (kgCO ₂ e)	Quantity purchased in Q1	resulting emissions (kgCO ₂ e)
Laptop	175	0	0
Office chair	74	1	74
Mobile phone	48	0	0
Laptop stand	4.1	2	8.2
Mouse	7.4	3	22.2
Keyboard	30	7	210
CPU	227	0	0
Desk	78	2	156
Monitor	360	5	1800
Laptop charger	4.6	1	4.6
Chair cushion	3.4	2	6.8
Mousepad	0.6	1	0.6
Keyboard rest	1.4	0	0
Assorted cabling	0.54	7	3.78
Footrest (plastic)	8.2	0	0
total		31	2.29 tCO ₂ e

Figure 4 Equipment purchases and embodied carbon – Q1 FY 2021/22.

⁶ Most IT and facilities purchases. There are items within the equipment inventory for which there is (to this point) no established carbon factor.

Appendix 1: Net Zero update

Completed actions are not included within the appendix, as these are available via previous updates. Please also note that the net zero plan document itself is due to be updated later in the financial year, in order to reflect several fundamental changes to the emissions profile of the business.

Impact Area	Actions	Status	Details
Corp. Travel	Cap and reduce flight miles by 20% per annum until 22/23.	On-track	During the pandemic, flight mileage dropped to zero. Whilst some rebound in flight mileage is expected, this measure is currently very much on-track, and likely to over-achieve in its goal.
Corp. Travel	Cap and reduce private vehicle miles by 50% per annum until 22/23	On-track	Working in tandem with the forthcoming update to the travel hierarchy, colleagues will be guided towards more sustainable methods of attendance in all practical circumstances.
Corp. Travel	Rewrite travel policy	On-going	The travel policy update is currently going through the staff forum for feedback and review. The Policy will guide all colleagues towards making sustainable travel choices, and reducing instances of ah-hoc, carbon intensive travel
Procurement	Establish system for measuring catering and contract impacts.	On track	A contractor emissions tool has been developed and is due to be placed online this FY, with implementation in 22/23, allowing the business to baseline and track contractor impacts.
Office impacts	Move 60% of servers to cloud-based platform	On-track	The switch-over is on-going and on-track, due for completion in FY 2022/23.
Commuting	Encourage greater commuting by train	On-track	A number of concepts have been explored in relation to this measure, some of which may be implemented when the final total of office-based staff is confirmed.
Commuting	Revise and relaunch the commuting survey	On-going	Commuting survey has been completely overhauled, and will be housed within the Zero Waste Scotland home page for use by the business and other agencies. Due for issuing after return to the office.
Pensions	Ensure pension plan reflects our climate commitment and organisation values.	On-going	Current pension provider has provided step by step guidance for colleagues wishing to switch over to ESG pension. A fossil free fund is forthcoming in Q2 of FY with desirable sustainability criteria. When available, colleagues will be provided with the necessary info that will allow them to switch over.
IT-use	Account for emissions arising from use of IT equipment	On-going	IT are currently working on integrating Microsoft Analytics into existing servers use, in order to monitor email, search engine and video conferencing emissions.
Procurement	Change process to focus more on sustainability	On-going	The Green Team is currently working with procurement to require prospective contractors to supply additional information relating to their own sustainability credentials, and how these align with the aims of Zero Waste Scotland.
Engagement	Ensure other organisations are equipped to reduce their carbon impacts.	On-going	This significant workstream has many distinct elements, but primarily relates to providing third-party methodologies that allow stakeholders to account for previously unknown emissions sources. PID approval has been obtained to switch the commuting, contractor and equipment calculation tools into a free-to-use, online format, due for completion by year-end.
Homeworking	Ensure staff have access to energy savings resources at home	On-going	Zero Waste Scotland EMS training has been overhauled to include this data and is due to be shared with all staff in the coming weeks,