

Delivering Scotland's Circular Economy A Consultation on Proposals for a Circular Economy Bill



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About Friends of the Earth Scotland

Friends of the Earth Scotland exists to campaign, with partners here and across the globe, for a just transition to a sustainable society. We work in Scotland for socially just solutions to environmental problems and to create a green economy; we campaign to end the degradation of our environment and to create a society which cherishes and protects the natural world on which we depend; we think globally and act locally, enabling people to take individual and collective action.

We are part of Friends of the Earth International - the world's largest grassroots environmental network, uniting 75 national member groups, over 2 million members and 5,000 local activist groups around the world. We are an independent Scottish charity with a network of thousands of supporters and active local groups across Scotland. Friends of the Earth Scotland's vision is of a world where everyone can enjoy a healthy environment without exceeding their fair share of the planet's resources, now and in the future.

Friends of the Earth Scotland Response to the Scottish government's consultation on a Circular Economy Bill

Summary response

Scotland urgently needs to transform the way we consume and manage resources. **It is a matter of global justice and essential to the lives and welfare of current and future generations in Scotland and overseas.** To do this, Scotland must create a circular economy, where material consumption is reduced to sustainable levels, by 2045. The Scottish Government's leadership is critical to success. Whilst the stated ambition in this consultation is welcomed, the measures described are not nearly enough to radically change to our entire economy.

The lack of progress to improve waste management service in Scotland over the last decade is evidence that the current approach has not worked. The people of Scotland, people around the world involved in the supply of the materials for the Scottish economy and our global environment are unfairly paying the price for this failure.

Friends of the Earth Scotland believe the following five measures are critical to a developing a CE in Scotland by 2045:

1. Consumption targets

The aim of Scotland's circular economy should be to reduce material consumption to sustainable levels in a just and fair way as fast as possible and by 2045. Therefore, the headline indicator of progress towards a Circular Economy must provide an indication of what is environmentally sustainable and measure material consumption. Both carbon impacts and material consumption must reduce so two headline targets are required. These targets should be statutory and science-based.

Carbon-based consumption targets

Scotland should adopt **a greenhouse gas emissions based target to reduce Scotland's carbon footprint to zero by 2045**, with an interim target to Scotland's carbon footprint by 75% by 2030 based on 1998 levels. Without targets to guide our actions, Scotland will not achieve our climate goals, on which our future depends. This target is the minimum which the science tells us must be achieved by Scotland if we are to stay within the 1.5 degree goal of the Paris Agreement.

Material-based consumption targets

Scotland should adopt **a materials-based target to reduce Scotland's material consumption by 57% (8 tonnes per person) by 2045**, with an interim target to reduce material consumption by 30% (13 tonnes per person) by 2030 based on 2017 levels.

2. A new Circular Economy Body

A new public body is needed to advise the Scottish Government on how to transform our material consumption. This public body should be modelled on the UK Climate Change Committee: it should be independent and statutory. The body should advise the Scottish Government and report on progress. It should not be responsible for delivering CE policies as this would create a conflict of interests. Delivery should be conducted separately by the existing organisation, Zero Waste Scotland.

3. Improving waste management services

Household and business material and waste management must be completely reformed by 2045. There is no single measure which should be adopted to transform waste management services but a combination of policies, such as service standardisation and investment in reuse services, driven by a nationally co-ordinated strategy. *If* enabling powers to incentivise households are adopted, this should be cost neutral to Local Authorities and poorer households.

4. Sector Level Resource Plans

Materials are becoming scarcer and more expensive – it is a matter of national interest that our economy reduces its material demand significantly. Every sector must adopt a resource plan of material sustainability. These plans should align with the Climate Change Plan and Just Transition sector plans and indicate the reductions in impact expected for each sector over the current CE strategy plan.

5. Circular Economy plans must be just and fair

The shocking lack of consideration of a need for a just transition as part of a circular economy must be corrected. Material consumption cannot meaningfully be improved without also addressing social equality and workers' rights on a domestic and international level. The Scottish Government should collaborate with workers and Trade Union representatives, affected communities and environmental stakeholders to understand their concerns and suggestions.

Our response includes some key themes which should be prioritised in the strategic development of Scotland's Circular Economy Bill by the Scottish Government:

- The current approach is **not ambitious** enough to reduce the impact of Scotland's material consumption to sustainable level at the scale or pace required to meet climate goals. Scotland will fail to create a sustainable circular economy if it does not address the link between the unsustainable use of materials and the unchallenged paradigm of perpetual economic growth.
- There needs to be a careful balance between an **evidence-led approach** and the **urgent need for action**. A prioritisation of measures is required which accounts for related timelines, especially the Climate Change Plan Update – this is lacking in the consultation thinking presented by the Scottish Government so far.
- CE principles must be **genuinely and completely embedded** across all Scottish Government departments. Current efforts, such as in NPF4 and NSET have been tokenistic.
- Scotland's CE strategy aim must be guided by science, not business interests. Business should only advise on how to reach targets once they are set, not what the targets should be.

The rest of this consultation response answers the questions raised by the Scottish Government in its Circular Economy bill consultation.

Questionnaire response

Question 1

Do you agree there should be a duty on Scottish Ministers to publish a Circular Economy Strategy every 5 years?

- Yes
- No
- Neither agree or disagree

Question 2

Do you have any further thoughts on a statutory duty to produce a Circular Economy Strategy?

2.1 The need for a statutory CE strategy

Friends of the Earth Scotland agree there should be a statutory duty on Scottish Ministers to publish a Circular Economy Strategy every five years, with the first strategy published no later than June 2023.

A national strategy for a circular economy is essential to guide Scotland towards a sustainable future. An update every five years is appropriate.

Given the urgency of response that the climate emergency and other environmental crises demands, a CE strategy must be put in place quickly and this sense of urgency embedded throughout the strategy and all of Scotland's CE work. The first update should be produced as soon as possible and **no later than June 2023** to allow adequate time to make progress towards interim consumption targets set for 2030.

This would also give adequate time to include the CE strategy into the draft of the Scottish Government's next Climate Change Plan before it is laid before the Scottish Parliament in November 2023. It is essential that the CE strategy is included in the next Climate Change Plan. This document will set the main climate change policies and proposals for Scotland until 2040. If the circular economy strategy is not fully embedded in the CCP there is a risk that CE policies and proposals in both strategies will not be implemented as fully or successfully as they would be if they were interconnected.

The proposed CE strategy should be based on the model of the Climate Change Plan, both in terms of content and in relation to scrutiny and reporting. The Strategy must set out the policies and proposals by which Scottish Ministers intend the consumption-related emissions' targets (and other Circular Economy targets) to be met.

There should be a statutory requirement to consult widely on the draft strategy, and the final draft should be subject to Parliamentary approval. Ministers should also be required to report regularly on the implementation of the strategy, and the policies and proposals therein, along with progress towards the targets. Where progress is not 'on track' Ministers should be required to update the policies and proposals to address that insufficient progress.

2.2 Aim and content of the strategy

Friends of the Earth Scotland recommends that the aim of the Circular Economy strategy should be to ensure Scotland achieves material sustainability (in carbon and material terms) by 2045 at the latest and ensure that activity in the current year cycle is sufficient to make adequate progress towards this overall goal.

The CE strategy should be a statutory duty to ensure circular economy issues are considered of high importance by decision makers. Every policy maker, sector, business and household must learn (and be supported) to consider material consumption their choices.

The strategy should also:

- Estimate what progress will be made towards the headline consumption reduction target within the five years of the current strategy and quantitatively link this to the actions set out in the strategy e.g. show how much each sector will contribute towards meeting carbon and material reduction plans through the resource reduction plans;
- Be cross-cutting and link to significant government policies from all departments; and
- Detail required developments in monitoring and reporting framework for material consumption.

The strategy should reconsider its goal of “sustainable growth”¹ and consider the shortcomings of perpetual economic growth as the basis for a stable and flourishing society and reflect on the merits of alternatives.

Friends of the Earth Scotland recommends that the strategy should include:

- *Detailed, science-based plans on how to reduce consumption in line with the headline consumption reduction targets;*
- *Resource reduction plans for all economic sectors which estimate how much each sector will contribute towards consumption reduction targets within the five years of the plan and include priorities for each sector and how changes can be made in a just and fair;*
- *Outline the priorities for the monitoring and data strategy for the next five years; and*
- *Report on progress.*

The strategy should also link to Scotland’s wider Environmental Strategy and policy framework.

2.3 Priorities for the first CE strategy

The first circular economy strategy should be published no later than June 2023. As the first CE strategy since this consultation, this strategy will be particularly important in establishing the nature of Scotland’s CE work and framing its response.

As well as the general content for all strategies, this first strategy should establish Scotland’s immediate priorities for a circular economy. These should include:

- Establish sector level resource plans and the prioritisation of sectors which are most important to the circular economy (in general and over the period of the first strategy). These plans should include the expected carbon and material savings over the period of the strategy and which will contribute to the overall carbon and material consumption reduction targets and other supporting targets.
- Expected research, data collection and monitoring improvements for the period of the strategy and an outline of future requirements.
- The link between the circular economy programme and other key areas of government work, including: the Climate Change Plan; the Energy Strategy, and other sectoral Just Transition plans; the National Planning Framework 4; and the National Strategy for Economic transformation.
- Principles of a just transition must be considered in each of the circular economy policies which affect workers (which is likely to be all of them).

¹ Scottish Government (2022) Consultation on Proposals for a CE bill, page 8

- A plan for managing scrap steel domestically which considers how an Electric Arc Furnace could be most suitably developed in Scotland to maximise carbon reductions, material efficiency and the creation of green jobs.

2.4 Lessons from previous strategies and targets

Previous CE strategies published by the Scottish Government² have been inadequate and unrealistic, and did not address the root causes of Scotland's unsustainable material consumption, was not broad enough in scope and not ambitious enough. The lack of progress towards a circular economy since the strategy was published is evidence of its failure.

An example of how unfit the last CE strategy was can be found by exploring the main target for waste prevention, which was to reduce waste by 15% by 2025 from a 2011 baseline. There are a number of reasons why this target failed:

- It was not broad enough – material consumption rather than preventing waste should have been the overall goal of the strategy;
- The figure was based on political considerations rather than science and therefore inadequate to achieve the aims;
- The strategy did not prioritise policies which would meet this target; and
- Policies did not link quantitatively to the target.

The strategy itself states:

“The first priority in a more circular economy is to avoid unnecessary waste and use fewer resources in the first instance.”

However, the headline target did not reflect this aim because it did not measure the amount of resources in the Scottish economy or how they change over time so it cannot hope to change this. Consumption targets should be the main indicator of whether progress is being made towards a more circular economy.

Friends of the Earth Scotland recommends that the headline target of the CE strategy should reflect its aim, which should be to reduce material consumption to sustainable levels.

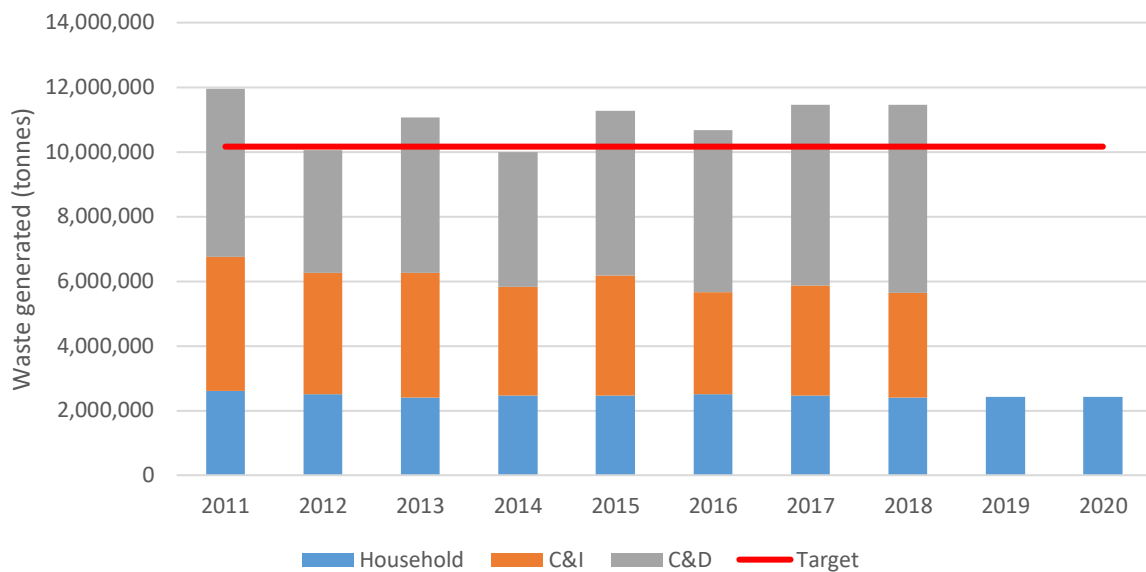
The waste prevention target was too low to achieve the material reductions required to create a circular economy. Since measurement of the target has begun, Scotland's waste has fluctuated, sometimes hitting the target but then jumping back up the following year (Figure 1). If Scotland does succeed in hitting this target in 2025 it will be within the natural annual variation expected and would not serve as an indication that any additional waste reductions had been achieved since the target was set. Setting a target is not enough to achieve its aims – we need a strategic, science-based plan for how the target will be achieved.

Friends of the Earth Scotland recommends that the quantitative link between the target and action required to meet it should be set out in the CE strategy.

² For example, Scottish Government (2016) Making Things Last
<https://www.gov.scot/publications/making-things-last-circular-economy-strategy-scotland/>

There is limited evidence that the target has encouraged waste reduction (Figure 2.1). Household and C&I waste has reduced since 2011, by 7% and 22% respectively but construction waste in 2018 was 12% higher than the baseline year.

Figure 2.1 Scottish waste generated 2011-18 (to 2020 for households)³



There are several ways to measure material consumption at a national level (material footprint and Material Flow Accounts, for example). Scotland only begun to measure its material consumption in 2021 with the publication of its first Material Flow Accounts – too late to have real influence on a 2025 target.

Friends of the Earth Scotland recommends that the future CE strategies must be science-based and monitoring plans should be developed in consideration with the timeframes of targets.

It is vital that the new strategy sets a fresh tone for Scotland’s Circular Economy plans. It should match the scale of what is required to make Scotland’s material consumption sustainable by 2045. The pace and scale of change needs to increase dramatically.

³ SEPA (2022) [2020 limited waste data tables, Table 2](#)

Question 3

Do you think we should take enabling powers to set statutory targets in relation to the circular economy?

- Yes
- No
- Neither agree or disagree

3.1 Set the targets in primary legislation

Friends of the Earth Scotland strongly recommends that carbon-based and material-based consumption targets should be set as statutory targets in the primary legislation of the Circular Economy bill.

There are two reasons to set carbon-based consumption targets as statutory targets in primary legislation. Firstly, these targets must have equal status and importance to domestic carbon reduction targets. Unless Scotland's domestic and international emissions are treated as equally important, there will be the danger that emissions are offshored rather than reduced. Policy makers must use both domestic and consumption-based carbon targets together to ensure policies result in genuine global reductions in GHG emissions at the same time as reducing domestic emissions. If carbon-based consumption targets are to have equal status to domestic carbon targets, they should be set in primary legislation, just as domestic carbon targets are in the [Climate Change \(Emissions reduction Targets\) \(Scotland\) Act 2019](#).

Secondly, we must act as fast as possible to create a circular economy. Waiting for secondary legislation, as suggested in conversations with Scottish Government Climate Change and Circular Economy officials, will lose precious time, which will make the science-based targets much harder to reach. Scotland carbon's footprint was most recently reported for the year 2018, when emissions were 70.4 MtCO₂e, which represents a 30% reduction for the 20 years from 1998 levels. That means emissions must reduce by 45% over the 12 years between 2018 and 2030 (or 3.75 MtCO₂e per year). If the current rate of progress continues by 2030, emissions will only fall by a further 19%.

Table 3.1 Scottish carbon footprint emissions and predictions 1998-2045 for a Business as Usual scenario and the science-based target scenario

Year	Business as Usual Scenario		Science-based target recommended by FoES	
	MtCO ₂ e	Reduction from 1998 level (%)	MtCO ₂ e	Reduction from 1998 level (%)
1998	101.3	0%	101.3	0%
2018	70.4	30%	70.4	30%
2030	51.9	49%	25.3	75%
2045	28.8	72%	0	100%

Friends of the Earth Scotland are extremely concerned about the timings of the Circular Economy programme in relation to the next update of the Scottish Government's Climate Change Plan (CCP) and recommend that the CE programme of work is amended and sped up so that it can be incorporated into the next CCP.

In order to maximise the chance of meeting our production and consumption emissions goals, we must begin to reduce Scotland's material consumption (both domestically and internationally) as soon as possible. The next CCP will be laid before the Scottish Parliament in November 2023, with the final plan due in statute in March 2025⁴. This CCP will cover the period from 2022 to 2040.

There will be a major risk to the success of the CCP if the Circular Economy programme, especially the carbon-based consumption targets, is not aligned with it. This will either make the CCP unworkable as a policy planning tool or mean the CE programme is not accepted as leading government policy.

A solution would be to adjust the CE programme so that it was aligned with the CCP more fully. If the Scottish Government is serious about the climate reduction aims of the CE programme, this must be done for it to have the credibility it needs to be accepted and succeed.

Whilst there may be some concerns about fixing targets in primary legislation, the benefits of setting targets as quickly as possible and extra precious years it will allow for delivering a CE by 2045 outweigh these concerns. The IPCC sanctioned science behind the need to globally reach net zero by 2050⁵ and for Scotland to minimise its impacts even sooner, by 2045⁶, are thorough. Scotland's carbon footprint dataset is based on well-established methodologies. This firm scientific basis will minimise risks that the targets will need to be changed.

⁴ As explained to Friends of the Earth Scotland and other members of Stop Climate Chaos Scotland in a meeting with members of the Scottish Government Climate Change and Circular Economy Teams on 21st July 2022.

⁵ <https://www.ipcc.ch/sr15/chapter/spm/>

⁶ <https://www.theccc.org.uk/2020/10/07/scotland-can-become-first-uk-nation-to-deliver-net-zero-roadmap/>

Question 4

Do you have any comments in relation to proposals to set statutory targets?

4.1 Comparison of target options

There are inaccuracies in the CE bill consultation document around the consideration of targets. The correct information should be used to inform decision making.

Friends of the Earth Scotland disagrees with the statement in the consultation that the three indicators listed are weight based. The Material Footprint and Carbon Footprint indicators are based in financial datasets. This is important because it means these indicators are the same as those most closely related to the aim of the circular economy: carbon and material sustainability. A key advantages of Material Flow Accounts are that they are weight-based and so well aligned with the aim of the CE.

We also disagree the Material Flow Accounts indicator is “new”. This indicator is based on the European model developed by Eurostat in 2008 and used to report MFA figures for all European Union states annually. It is a well-established, thorough model which continues to be developed and added to by Eurostat. The Scottish MFA also fulfils the Scottish Government’s stated ambition to align with Europe, as MFA reporting is a requirement⁷.

The following statement is taken from Section 3.1 of Zero Waste Scotland’s Technical Report of the MFA:

“The Scottish MFA is based on the EU-MFA approach, utilising the most reliable existing data sources and allowing consistency and comparability with EU nations”.

And

“In a similar approach to that developed by Finland and Denmark (some of the most sophisticated and detailed MFAs published to date) the Scottish MFA has extended the EU-MFA model.”

Noting the useful comparison of methods for measuring material footprints published by ONS⁸, Friends of the Earth Scotland supports the development of a consumption-reduction indicator for Scotland based on the Material Flow Accounts method.

Friends of the Earth Scotland recommends the material-based consumption target is based on the existing Material Flow Accounts dataset for Scotland, rather than any other material footprint model.

4.2 The case for carbon and material headline targets

The impacts of climate change are measured through greenhouse gas emissions. However, environmental damage occurs, not only through climate change, but through other types of impact as well, such as biodiversity loss and land-use change. Dumping plastic in the ocean, for example, may not have a big direct climate impact but it is still

⁷ Economy-wide material flow accounts (EW-MFA) are legally covered by [Regulation \(EU\) 691/2011](#) on European Environmental Economic Accounts.

⁸

<https://www.ons.gov.uk/economy/environmentalaccounts/methodologies/measuringmaterialfootprintintheuk2008to2016>

environmentally damaging. To become fully sustainable, a broader scope of environmental damage created by our consumption must be considered.

Over-consumption of materials is the cause of many types of environmental damage. Therefore, to become sustainable, Scotland must measure and reduce its material consumption, as well as climate change emissions. Friends of the Earth Scotland is calling for a reduction in both carbon and material impacts to ensure Scotland reduces its climate and broader environmental impacts simultaneously.

Friends of the Earth Scotland strongly recommends that both carbon and material-based consumption targets are used as the main indicators of progress towards a circular economy in Scotland.

The headline targets should be supported by a monitoring framework of indicators to allow holistic tracking of progress towards a circular economy.

4.3 Why does Scotland need a consumption target?

In order to meet the Paris Agreement goal of keeping temperature increases to the critical 1.5°C threshold greenhouse emissions must come down sharply over the next decade. The Scottish Parliament has passed legislation enshrining targets to reduce its domestic emissions by 75% on 1990 levels by 2030 and to net zero by 2045, however it has no such targets for its overall consumption emissions. Scotland's global greenhouse gas emissions (or 'consumption emissions') are higher than its domestic emissions ('territorial emissions'). Both have fallen over time but the gap between the two is widening. In 1998, consumption emissions were 22% higher than territorial emissions but by 2018 they were 44% higher.

The reason the gap between consumption and territorial emissions is increasing is because of a rising trend in emissions from imports. Scotland's carbon footprint can be broken down into emissions from imports, domestic production and emissions from heating and transport. At 52%, emissions from imported products and services make up a larger proportion of Scotland's carbon footprint than all domestic emissions (Figure 4.q1). Emissions from imports become increasingly significant as domestic emissions continue to fall.

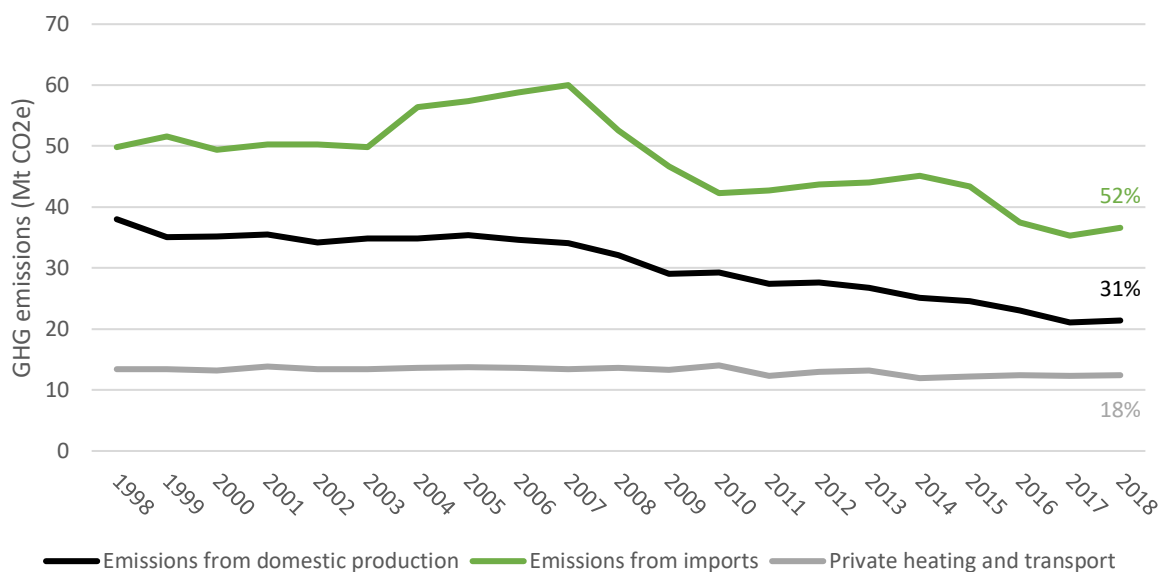


Figure 4.1 Scotland's consumption emissions shown by domestic production, imports, heating and transport⁹

Whilst these impacts are occurring outside of Scotland's geographic borders, Scottish demand for the goods and services are the driving force behind their creation. The Scottish Government has a responsibility to measure these impacts and set targets for reducing them in line with science-based evidence. Material consumption datasets are not as well established as carbon datasets. Scotland reported its material footprint for the first time last year (for the years 2011-17)¹⁰. Scotland consumed 99.8 million tonnes of materials in 2017. This figure includes both domestic and imported material consumption.

Scientific consensus suggests that people can live high quality, sustainable lives on about 8 tonnes of materials per year¹¹. The Scottish Government should legislate for targets to reduce consumption to this level, and work with stakeholders from all sectors of the economy to plan and transform each sector in line with these targets. Examples of how consuming nations can take responsibility and action to reduce their global impact are considered in the section on challenges and requirements in this paper.

4.3.1 Ignoring emissions from imports can lead to unintended consequences

The steady reduction in territorial emissions is largely due to the successful decarbonisation of the UK electricity grid. However, the focus on territorial emissions reduction can sometimes be counter-productive. For example, there was a significant fall in territorial emissions in 1992 when the steelworks mill at Ravenscraig closed. Whilst Scottish territorial emissions from steel-making have fallen to zero, this has not coincided with a drop in Scottish consumption of steel. Instead, millions of tonnes are imported, some of which comes from coal-based economies. Despite steel being responsible for about 8% of global carbon emissions, and its continued importance to the Scottish economy, the impact of Scotland's steel demand is unknown and there are no policies which aim to make Scottish steel consumption more sustainable.

These unintended consequences are most clearly seen in Scotland's plans for an energy transition from a system based on fossil fuels to one based on renewable energy. As discussed in the following section, this transition is fundamental to the success of Scotland's climate targets but efforts to reduce territorial emissions are causing environmental and social impacts abroad.

By failing to address our global consumption as we decarbonise demands Scotland risks replacing one environmental crisis with another.

4.3.2 Swapping fossil fuels for critical minerals

The transition from fossil fuels to renewables is a vital step in mitigating the climate crisis. These technologies produce energy without emitting greenhouse gases but require huge amounts of minerals to build, such as steel for foundations and rare earth metals such as neodymium for batteries.

⁹ Scottish Government (2021) <https://www.gov.scot/publications/scottish-greenhouse-gas-statistics-1990-2019/documents/>

¹⁰ ZWS (2021) Material Flow Accounts for Scotland <https://www.zerowastescotland.org.uk/research-evaluation/material-flow-accounts-mfa>

¹¹ For example: Lettenmeier et al. (2014) <https://www.mdpi.com/2079-9276/3/3/488/htm> and the UNEP-hosted International resource panel (2014) [Managing and conserving the natural resource base for sustained economic and social development](#)

These minerals are dangerous and difficult to mine and process. They are concentrated in a handful of countries, most of which have poor human rights records, and half of the world's metal mines are 20 km or less from protected areas¹². They are also carbon-intensive to extract and purify. However, none of this is considered in Scottish policy making because it happens outside of the boundaries of our climate targets. Renewable technologies may be reducing Scotland's greenhouse gas emissions but the global cost is still high. A globally sustainable and just transition to this new energy system must be found. For this to be incorporated into Scotland's environmental and climate policies we must have targets to reduce these impacts.

A great advantage of a mineral based energy system over a fossil fuel based one is that minerals can be recycled. There is already a well-established process for steel, aluminium and copper, but recycling must become a priority for minerals like cobalt, nickel and lithium to limit global demand for extraction. Scotland's Circular Economy bill is an opportunity to establish the foundations needed to transform our economy to accommodate these future needs.

The Climate Change Committee (CCC) is an independent statutory body which advises the UK and Scottish Governments on climate policy. In its sixth carbon budget report for the UK, the CCC recognised the need and capacity for the UK to reduce its import emissions, stating:

"The UK can and should aim to reduce its overseas consumption emissions as part of helping global decarbonisation."¹³

In its latest progress report to the Scottish Parliament, the CCC listed the Circular Economy bill as an opportunity to "drive the efficient use of resources in both production and consumption"¹⁴. The Circular Economy bill aims to transform Scotland's use of materials to create a sustainable, low-carbon economy. Therefore, material and carbon footprint reduction targets should be included at the heart of this bill.

4.4 What should Scotland's consumption-based targets be?

Friends of the Earth Scotland strongly recommends that the consumption-based targets for Scotland should be set as follows:

A greenhouse gas emissions based target to reduce Scotland's carbon footprint to zero by 2045 at the latest, with an interim target to Scotland's carbon footprint by 75% by 2030 at the latest based on 1998 levels.

And

A materials-based target to reduce Scotland's material footprint by 57% (8 tonnes per person) by 2045 at the latest, with an interim target to reduce material consumption by 30% (13 tonnes per person) by 2030 at the latest based on 2017 levels.

The targets should be statutory and science-based.

¹² Luckeneder et al. (2021) [Surge in global metal mining threatens vulnerable ecosystems](#)

¹³ CCC (2020) [Sixth Carbon Budget](#)

¹⁴ CCC (2019) [Progress report to Scottish Parliament](#)

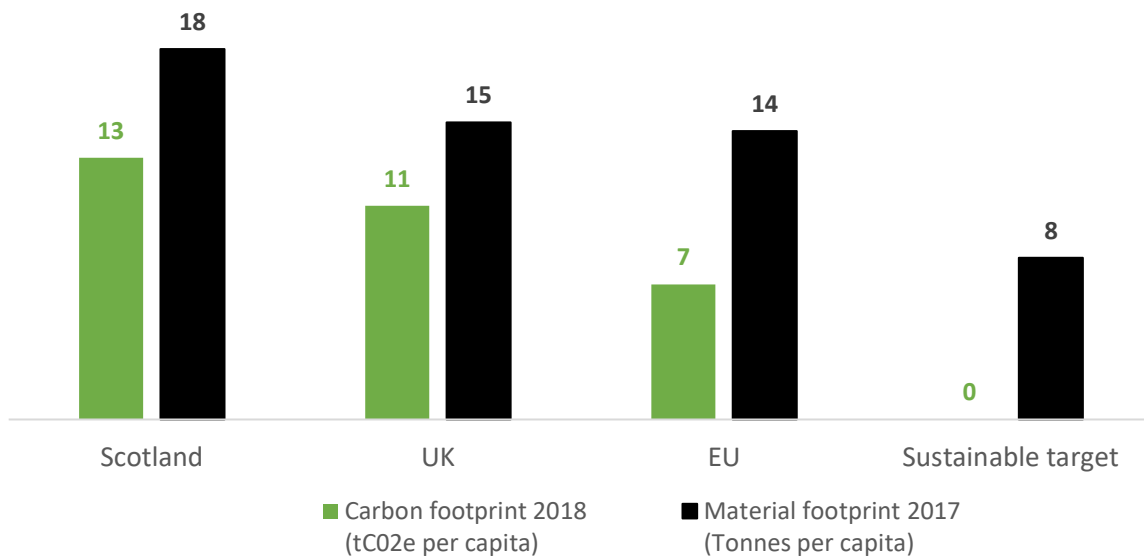


Figure 4.2 Comparison of Scotland’s material and carbon footprint to the UK¹⁵ and EU¹⁶ averages and environmentally sustainable targets

Scotland needs material and carbon consumption-based targets to reduce its global environmental impact. The targets should be statutory and science-based (meaning their ambition matches the required reductions set out by the latest scientific evidence).

The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 sets out Scotland’s enhanced decarbonisation targets (which are largely territorial but include emissions from international shipping and aviation as well). This includes an interim target to reduce emission by 75% by 2030 compared to 1990 levels and final target of net zero by 2045. Figure 4.3 below shows Scotland’s territorial and consumption-based emissions to 2018, Scotland’s existing climate targets and proposed consumption targets. This includes a 75% reduction on 1998 consumption levels by 2030 and net zero consumption emissions by 2045¹⁷.

¹⁵ ONS (2021) Material Flow Accounts and consumption emissions reports

¹⁶ Eurostat (2021) Material Flow Accounts and carbon footprint reports

¹⁷ 2045 is proposed as the target date for consumption emissions because it align with existing territorial targets and to ensure Scotland makes a fair, science-based contribution to reducing emissions which aligns with the 1.5°C goal of the Paris Agreement, which reflects its historic contribution to climate change. A baseline of 1998 is proposed as this is when consumption emission reporting began in Scotland.

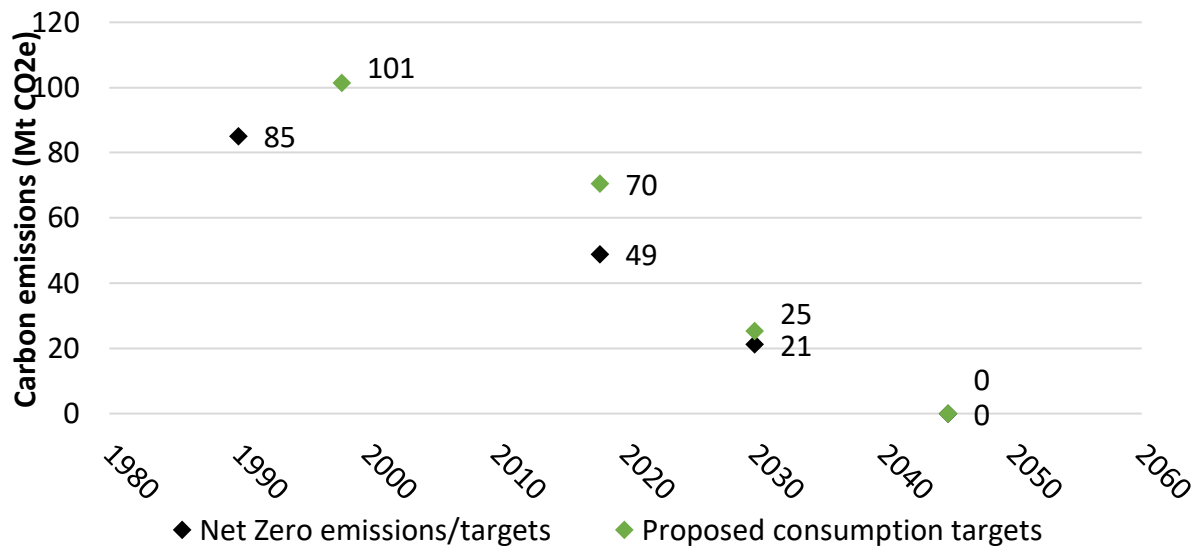


Figure 4.3 Scottish territorial and consumption reported greenhouse gas emissions (up to 2018) and targets (after 2018)

4.5 Challenges and requirements

4.5.1 Uncertainties in the data

There are uncertainties in the data, particularly around production emissions of imported goods and intra-UK trade. However, Scotland has already been reporting consumption emissions for many years so there is good technical knowledge of these issues. The Scottish Government should work with its academic partners on consumption modelling from Leeds University and other consumption experts to understand and reduce these uncertainties.

Even a high-level understanding of consumption emissions is enough to begin prioritising and targeting the main emissions sectors. Given the urgency of the climate crisis, a balance between reliable data and action is now required.

4.5.2 Consumer nations can reduce consumption emissions

A concern often cited with targeting consumption emissions is a lack of control over actions occurring in other countries. This fails to recognise the power and responsibility of the consuming nation, as these examples of ways to decrease consumption-based emissions that consuming countries can do demonstrate:

- Buy less carbon intensive goods and services e.g. red meat, air travel.
Examples of policies: taxes on flights, meat and fuel, developing strategies for sustainable supply of key materials e.g. steel.
- Switch to lower carbon alternative products like buildings made from wood, not concrete.
Examples of policies: requirements for sustainable materials to be considered in the planning framework.
- Keep products for longer, make them more durable and stimulate repair and reuse.

Examples of policies: support for reuse organisations and service business models, no VAT on repair services, laws on longer guarantee times.

- Shift consumption patterns to goods and services with lower emissions.
Examples of policies: requirements for public bodies to adopt circular economy business models for procurement, requirement to state recycled content, carbon labelling on consumer products.

4.6 International examples

Scotland should follow Sweden in setting carbon-based consumption targets and the Netherlands in setting material-based consumption targets.

The consultation states “consumption-based targets are rare”¹⁸. Whilst we note the useful research conducted by Zero Waste Scotland to improve understanding of consumption-based targets across Europe, it did not include the recent commitment from Sweden to set carbon based consumption targets¹⁹. This is worth noting, given it is the same target Friends of the Earth Scotland is recommending for Scotland.

Sweden has not let data issues hold back their commitment to reducing consumption emissions²⁰. Their consumption target will include sector level targets, designed in consultation with each sector, which will measure savings bottom-up. Overall progress will be tracked using a top-down national consumption target.

The Netherlands set a material-based target to become waste free by 2050²¹. The European Parliament voted in 2021 to create science-based binding targets for material use and consumption footprinting²². Given the urgency of the climate crisis, FoES recommends a pragmatic approach following in the footsteps of these international examples.

The Netherlands has already achieved a sustainable Raw Material Consumption rate of 7.448²³. This proves it is possible to create a materially sustainable economy, where citizens have a high quality of life.

4.7 Additional reporting requirements

The bill should introduce powers for the Government to require public bodies and all other organisations over a certain size to report on their scope 3 emissions annually.

The Bill must include a duty on public bodies to act in such a way as to contribute to the new CE targets. All funding, investment, public procurement, and policies and plans should be scrutinised against circular economy principles and material impacts, and opportunities sought to reduce such impacts.

Measures to address procurement, to ensure that all public spending aligns with the circular economy, need to be stronger and may require changes to legislation.

¹⁸ Page 14 of the CE bill consultation

¹⁹ <https://www.climatechangenews.com/2022/04/08/sweden-set-to-be-worlds-first-country-to-target-consumption-based-emission-cuts/>

²⁰ Global challenge (2022) Towards Net Zero: reducing consumption-based emissions

²¹ <https://www.government.nl/topics/circular-economy/circular-dutch-economy-by-2050>

²² <https://www.europarl.europa.eu/news/en/press-room/20210122IPR96214/meps-call-for-binding-2030-targets-for-materials-use-and-consumption-footprint>

²³ Eurostat (Raw Material Consumption (RMC) [SDG_12_21] accessed on 28th June 2022

Procurement decisions need to be based on the long term cost of the purchase, including operating and end of life costs, and carbon and material footprint considerations, as well as other criteria such as supporting local supply chains. Public bodies must be required to report on the impact of procurement including its footprints. The European Green Public Procurement Guidelines should be followed.

Data and data access are important. Data collected needs to be accessible to the public.

Question 5

Should a dedicated Circular Economy public body be established?

- Yes
- No
- Neither agree or disagree

Question 6

Please provide evidence to support your answer to question 5

A Circular Economy public body is required to advise and support progress towards consumption targets, given the technical and pioneering nature of these targets. This should include international experts on consumption emissions and material use which would ensure Scotland benefited from the broad understanding and experience available beyond its boundaries.

The Climate Change Committee has proven an effective model for challenging and progressing government on CC. A similar system would also work well for the CE.

Friends of the Earth Scotland recommend that a new, independent public body be established, will a role to advise on progress towards the Circular Economy including targets. It is important that advice and delivery functions are delivered by separate organisations to ensure accountability and reducing the possibility of a conflict of interest (between providing and delivering advice).

Question 7 If a Circular Economy public body were to be established, what statutory functions should it fulfil?

The statutory functions should include:

- Measuring progress towards a circular economy, particularly its headline consumption reduction targets;
- Advising the Scottish Government and delivery teams on priority activities and sectors for circular economy work; and
- Commissioning and/or producing progressive and leading research to support and inform the strategy direction of the circular economy.

The body should be independent of government and accountable to Ministers and the Scottish Parliament and have to meet public sector accountability requirements.

The new CE public body should not include delivery as a statutory function in addition to those listed above. To include advice and delivery functions within one body would lead to a conflict of interests. If one body is providing both advice and delivery to the Scottish Government on a policy, it may tailor the advice to the actions it would prefer to deliver.

Friends of the Earth Scotland believes that Zero Waste Scotland should not be given the role of advisory body on the Circular economy for the following reasons:

- The status of Zero Waste Scotland as a not-for-profit company limited by guarantee, regrettably reduces the transparency of the organisation and its work, despite it being partly funded by the Scottish Government²⁴;
- Zero Waste Scotland is seeking private funding to fill the £34-43m funding gap which will appear when its European Structural Funding ends at the end of 2022. This further compromises the organisation to perform an advisory role to the Scottish Government; and
- Zero Waste Scotland £34m or £43m²⁵ of European Structural Funding will end in 2022. The organisation is seeking private investment to replace this²⁶. **This would compromise the organisation's independence and create a clear conflict of interests as any advice given to the Scottish Government may seek to benefit Zero Waste Scotland's private funders.** Zero Waste Scotland has accepted large amounts of private funding in the past²⁷.
- As a key delivery partner of the Scottish Government with responsibility for delivery much of Zero Waste Plan and Making Things Last strategies and adequate

²⁴ For example: <https://www.parliament.scot/chamber-and-committees/written-questions-and-answers/question?ref=S6W-09170>

²⁵ The Scottish Government were unable to confirm if ZWS European Structural Funding was £34m (as stated by the Cabinet Secretary https://www.scottishparliament.tv/meeting/net-zero-energy-and-transport-committee-february-1-2022?clip_start=10:07:15&clip_end=10:12:58 to the Net Zero, Energy and Transport Committee earlier this year), or £43m as stated in the circular economy consultation documents (e.g. page 16 of the CE bill consultation document).

²⁶ See Michael Matheson's reply to the Net Zero Energy and transport Committee question about ZWS funding, 1st February 2022 https://www.scottishparliament.tv/meeting/net-zero-energy-and-transport-committee-february-1-2022?clip_start=10:07:15&clip_end=10:12:58

And, more recently: <https://www.parliament.scot/chamber-and-committees/written-questions-and-answers/question?ref=S6W-09483>

²⁷ For example [£180,000 from Air B&B](#), an organisation over which environmental and socially damaging concerns have been raised.

funding over the last decade, Zero Waste Scotland is partly accountable for Scotland's failure to meet national waste targets.

Friends of the Earth Scotland would support the transition of ZWS to a second public body based on delivery to improve its transparency. If resources are too limited for a second public body, then the Scottish Government should consider internalising Zero Waste Scotland into the Government. Creating a public body with delivery is well within the Scottish Government's ability, it already has several departments which include level of delivery e.g. Marine Scotland.

Question 8 Do you agree that the Scottish Government should have powers to ban the destruction of unsold durable goods?

- Yes
- No
- Neither agree or disagree

Question 9 Do you have any comments in relation to proposals to ban the destruction of unsold durable goods?

Friends of the Earth Scotland are supportive of this proposal so long as it is executed swiftly and without the unnecessary use of resources which should be made available for other more urgent matters connected to the circular economy.

A ban on the destruction of unsold goods the quickest potential way to end this damaging and unnecessary practice. Enforcement must be adequately resourced once the ban is in place. The possible need for a phased introduction should be balanced against the need for urgent action.

It is currently unclear how much carbon or materials such a ban would save. The decision on what policies should be prioritised should be made on an evidenced based basis and, in general, system change should be prioritised over bans on single items or groups of items.

Question 10**Are there particular product categories that you think should be prioritised?**

Proposals to ban the destruction of unsold goods should prioritise those with the greatest potential to create a carbon saving (and so contribute to the headline CE target), as shown in an evidence based study.

After carbon and the material impacts, other environmental and social indicators may be considered based on the product being considered and its known environmental and social impacts.

Question 11 Are there product categories that should be excluded from such a ban?

There are clearly examples of unsold items which should not be used e.g. electrical items withdrawn for safety reasons. The aim should be to recycle such products for their material value instead.

To prevent this becoming a loophole in the ban, fines should be imposed for unsold items which cannot be used.

Question 12 The previous consultation showed broad support for the proposal that Scottish Ministers should have the power to set charges for environmentally harmful items, for example single-use disposable beverage cups. Is there any new context or evidence that should be taken into account in relation to this proposal?

Friends of the Earth Scotland supports the introduction of a charge for single-use disposable cups if this is done as swiftly as possible without draining resources for other, more impactful measures.

Given the Scottish Government conducted a review on charges for single-use disposable cups that recommended charges for these items in 2019, the proposed start date for the introduction of the charging scheme seems worryingly unambitious (even allowing for pandemic related delays). We do not have time to change the economy one product at a time, particularly if it will take several years for each product to be assessed.

We note that the rise in the reusable cups market is growing and caution that this may be an example of a product where efforts to reduce consumption may result in a change in consumption patterns, rather than a reduction. Potentially, a more sustainable solution which has not been explored in the consultation is expanding the Deposit Return Scheme to include cups²⁸. *Friends of the Earth Scotland recommends that a DRS for single use cups is explored.*

It should be noted that whilst the carrier bag charge is often considered an environmental success, the evidence on which this claim is founded is ambiguous. The report²⁹ on which the charge was based showed that single use carrier bags have a much lower carbon impact than alternatives, such as bags for life. In the case of cotton bags, these products would have to be reused 131 times to have the equivalent impact to one single used plastic bag made of HDPE. If a charge for single use carrier bags led to a replacement of single use carrier bags with a high number of bags for life, it is possible that it increased, rather than reduced carbon emissions. This is an example of anti-littering policy and carbon reduction policy in conflict with each other.

Policy makers would be more likely to achieve their aims of reducing environmental impacts if they decided which environmental impacts were relevant to a particular policy and measured how these could be reduced most effectively with an evidence based approach. The final policy choices should utilise this evidence.

Friends of the Earth Scotland considers that Scotland now has enough bans which are “examples of the throwaway society”. It is time to move on from token examples, to system wide changes. Future bans and charges should be prioritised on potential reductions in environmental impacts.

²⁸ For example: <https://www.eunomia.co.uk/saving-plastic-waste-with-deposit-return-schemes/>

²⁹

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291023/scho0711buan-e-e.pdf

Question 13 Do you have any further comments on how a charge on environmentally harmful items should be implemented?

Friends of the Earth Scotland supports the proposal for the Scottish Government to take powers to introduce charges for environmentally damaging items only when an evidence based assessment of products with similar functions has shown this has the lowest environmental impact compared to alternatives. It cautions that banning items is not the simple solution it always seems.

The approach to charges and bans should use Life Cycle Thinking as a method for assessing and comparing the environmental impacts of products with similar functions. The Scottish Waste Environmental Footprint Tool (SWEFT) created by Zero Waste Scotland was developed to allow policy makers to consider the wider environmental impacts of waste. Where possible, this existing tool should be used to guide priorities for future charges and bans when a range of environmental indicators is being considered.

As well as environmental considerations, there may be social concerns that are also important for certain products being considered for charges and bans. Assessments of the societal fairness of bans and charges should always involve adequate consultation with those groups potentially affected by these changes, such as people with disabilities.

13.1 The importance of evidence based decisions on charges and bans

Lessons should be learnt on the effectiveness of bans from the Single Use Plastic charges. In 2021, academics compared single use packaging to reusable alternatives³⁰. Takeaway boxes made of polystyrene, known in the industry as ‘clamshells’, are one of the items now banned in Scotland. The study found that they were a high carbon packaging choice due to the extraction of fossil fuels required to make them. Refillable alternatives had significantly lower impacts.

However, when businesses in Scotland were asked by the Scottish Government how they planned to replace polystyrene clamshells, most pointed to single use fibre-based containers, made of material such as bagasse, a biodegradable by-product of sugar cane³¹. The life cycle analysis showed that the carbon impacts of bagasse clamshells were virtually the same as those made from polystyrene. This is because bagasse is heavier and denser, leading to higher emissions from transport and disposal.

In this case, banning a specific product means swapping one single use item for another, resulting in disruption to businesses across the country but virtually no carbon savings.

Plastic knives and forks, coffee cup stirrers and straws all have single use non-plastic alternatives. While these different materials might not have the same environmental impacts, they do still have impacts. As well as greenhouse gas emissions, biodegradable products often have high land impacts, with drastic consequences for biodiversity. Our warming world has run out of time for making such costly mistakes.

³⁰ Greenwood et al. (2021) <https://eprints.whiterose.ac.uk/173924/1/1-s2.0-S2352550921000956-main.pdf>

³¹ Scottish Government (2021) <https://www.gov.scot/publications/environmental-protection-single-use-plastic-products-scotland-regulations-2021-final-business-regulatory-impact-assessment/pages/3/>

The cheapest option will always win in an economy designed to value profit rather than people and the planet. And, in our economic system, single use is cheaper and easier than reuse. Instead, we need a system which values materials properly, where the material savings of going for reuse would make such options more attractive than throwaway items, to businesses and consumers alike.

Unfortunately, there are no quick fixes. A more fundamental transformation is required.

Bans are most likely to be effective if they are:

1. Focused on environmentally damaging items. This needs to be defined and should include but not be limited to carbon based environmental damage;
2. If all environmentally damaging items for a particular function are covered by the ban, in particular, single use alternatives;
3. If lower impact alternatives, such as reusable options, exist.

We don't have time to fix the economy one product at a time.

13.2 Working with others

The consideration of any bans or charges should include a review of the impact on workers who will be affected by any expected changes. This should include consultation with the workers themselves. Those who work in the sector are likely to have knowledge, experience and suggestions for how their work could be more sustainable.

Friends of the Earth Scotland see little evidence in the CE Bill and Route Map consultations of in-depth co-ordination with other Government departments working on retail, for example. The Scottish Government's Retail Strategy Steering Group (a group made up of representatives from trade organisations, business, academia, public sector and trade unions) includes the "impact of retail on climate change, encourage sustainable ways of working and look at ways of reducing the carbon footprint throughout stores, logistics and the supply chain"³² within its remit. This group is not mentioned in either the CE Bill or Route Map consultation.

13.3 Examples of products which require an evidence based assessment of the effectiveness of a ban or charge

Environmentally damaging products, where no single-use or equally harmful alternatives exist, are suitable for bans. Friends of the Earth Scotland believes the Scottish Government should conduct research to understand whether banning the following items would have significant environmental benefits:

Sulphur Hexafluoride (SF6) used in medium voltage operations: SF6 is used widely in the electrical industry as an insulating material from large power stations to wind turbines. It is a cheap, non-flammable synthetic gas. It also has the highest global warming potential of any known substance (23,500 GWP100³³).

SF6 is increasingly being used in offshore wind turbines despite less environmentally damaging alternatives being available. Atmospheric concentrations of SF6 have almost

³² <https://www.gov.scot/groups/retail-strategy-steering-group/>

³³ Greenhouse Gas Protocol (2016) GWP values
https://www.ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf

doubled over the last 20 years. The most common form of release is through leaks in electricity industry infrastructure. Friends of the Earth Scotland are aware of at least one substantial SF6 leak in the Scottish renewables sector in the last year.

Whilst there are few alternatives for high-voltage applications (the emphasis here should be on reducing dependence on the gas), there are tried and tested alternatives for medium-voltage applications. The only barrier is an economic one.

The EU is reviewing the use of SF6 next year.

Single use crockery in closed settings

Single use crockery and cutlery should be banned from 'closed settings' – i.e. where people consume the food and drink in a defined area. This would include sit-in cafes / canteens etc, including those that have outside seating; stadiums, festivals, airports. In such settings the use of reusable crockery / cutlery is entirely feasible.

Domestic use of artificial grass: There are several environmental concerns with its use including loss of wildlife, contaminated run off and micro-plastic pollution. Contaminants that are harmful to human health and wildlife have been found in storm water runoff from artificial turf³⁴. Artificial grass can become much hotter than natural grass on a hot day, compounding the effects of heatwaves especially in urban areas where vegetation can play a significant role in cooling surfaces. Most artificial grass cannot be recycled.

Plastic tree sapling guards: The Scottish Government should conduct a Life Cycle Analysis based analysis of the banning of plastic tree sampling guards and compare this to alternatives including: using a more natural approach to sapling protection such as using brash or scrub as a browsing deterrent; using no guards in low browsing areas and planting double the number of trees; fencing off the planting area; or using non-plastic trees guards³⁵.

Plastic period products

Alternatives to plastic period products include both single use and reusable alternatives. The Scottish Government should first conduct an evidence based review to compare the environmental, health and social impacts of different options of and systems for managing menstrual health. Sustainable, healthy and affordable options should be promoted over single use plastic and other environmentally harmful period products. People who use period products should be given information on sustainable alternatives and financially supported to make these choices. A steering group of experts including NGOs and community groups with expertise on the subject should be set up to advise on this work.

³⁴ <https://pubmed.ncbi.nlm.nih.gov/29268178/>

³⁵ <https://www.wildlifetrusts.org/blog/katie-goldsbrough/plastic-free-planting>

Question 14 The previous consultation showed broad support for the proposal that Scottish Ministers should have the power to require mandatory public reporting of unwanted surplus stock and waste. Is there any new context or evidence that should be taken into account in relation this proposal?

Friends of the Earth Scotland believes the priority should be to reduce unwanted surplus stock and business models should be changed to design out large surpluses.

It is disappointing that repair and remanufacture only get one mention in the consultation. In 2016, the Scottish Government's circular economy strategy 'Making Things Last' said, "We want to empower Scotland's repair sector to grow, both businesses and community organisations" yet very little seems to have been achieved on this and consideration should be given to how new power in the Circular Economy Bill could stimulate the repair and remanufacture sector.

Question 15 The previous consultation showed broad support for the proposal that food waste should be a priority for regulations. Is there any new context or evidence that should be taken into account in relation this proposal?

A key additional factor is the increased sense of urgency now required to reduce food waste surplus. There should be a pragmatic approach taken to ensure that the pace of change reflects the urgency of the climate emergency.

As with all transitions to a circular economy which have an impact on workers, the implementation of changes to regulations around food waste must consider the implications for workers and the need for a just transition.

Question 16 Are there other waste streams that should be prioritised?

Waste streams should be prioritised based on those waste streams with the greatest potential to create a carbon saving (and so contribute to the headline CE target), as shown in an evidence based study.

After carbon, other environmental and social indicators may be considered based on the product being considered and its known environmental and social impacts.

Question 17 The previous consultation showed broad support for the proposal that Scottish Ministers should have powers to place additional requirements on local authorities in order to increase rates and quality of household recycling. Is there any new context or evidence that should be taken into account in relation to the proposal?

17.1 Comments on the failings of the current approach to household recycling

Friends of the Earth Scotland notes that the recent poor performance of Scotland's recycling rate cannot be solely attributed to the pandemic, or even to Brexit. Whilst they will both undoubtedly had an effect, Wales experienced similar conditions and has continued to see a rise in recycling rates.

In addition, local authorities are not the only stakeholder with power to change the system and who failed to act in the interests of the people of Scotland and the environment. Local authorities were often too hasty to sign long term contracts with waste managers to incinerate waste, rather than find more sustainable solutions but central Government did not provide a clear enough national vision of what overall services were required at a local level. Zero Waste Scotland and SEPA have failed to respond to or highlight lack of progress towards waste and recycling goals.

Unfortunately, the CE Bill consultation and Route Map consultation documents continue in this vein by failing to confront the consequences of poor decision-making around Scotland's waste strategy to date. With almost no progress made over the last 10 years, Scotland has failed to meet its household recycling target and it will fail to meet its other key waste and recycling targets in 2025 based on current trends. Only passing reference to this failure is made in the Circular Economy Bill and Route Map consultation documents, which instead contain many positive statements about Scotland's progress. For example:

- Route Map consultation, Page 5: "Scotland has made significant long-term progress."
- Route Map consultation, Page 17: "Scotland has a good track-record on the circular economy"
- CE Bill consultation, Page 9: "Whilst we have already made important progress against ambitions set out in 2016 circular economy strategy Making Things Last we recognise there is still more to do"

Taking ownership of the mistakes of the past is essential to moving forward with the Circular Economy agenda. The Scottish Government, local government and partner organisations such as SEPA and ZWS must acknowledge that a new strategy should be very different from what came before, if it is to be successful.

17.2 Leadership on household recycling rates in the future

Friends of the Earth Scotland supports the proposal that Scottish Ministers should be given powers to place additional requirements on local authorities in order to increase rates and quality of household recycling.

However, we note that the Scottish Government and Zero Waste Scotland bear much of the responsibility for the failure of Scotland to meet its recycling rate targets. Therefore, it is vital that the way the Scottish Government and Zero Waste Scotland approach recycling targets much also change.

This should include:

- A willingness to confront the mistakes of the past household recycling strategies objectively and to learn from them;
- A stronger evidence based approach to policy decisions which links policy decisions and actions to the contribution these will make to meeting targets;
- A more co-ordinated national framework around circular economy activity;
- A commitment to increase investment in services beyond current funds. Scotland should aim for a similar level of investment in recycling as the per head investment Wales has made in their recycling system; and
- A complete commitment to enforcing the newly established ban on new incineration plants. Acceptance of planning permission for new plants, such as the waste plastic to hydrogen plant currently being considered by the Scottish Government, will fatally undermine the Energy from Waste Notification Direction.

The Scottish Government should be more supportive of local authorities to adapt their services. This should include more national direction of actions. Those areas with rural and island communities must be supported appropriately. Areas with tenement properties and communal services must also have their unique needs considered. This must constantly be balanced against the urgent need for change.

17.3 Just transition implications

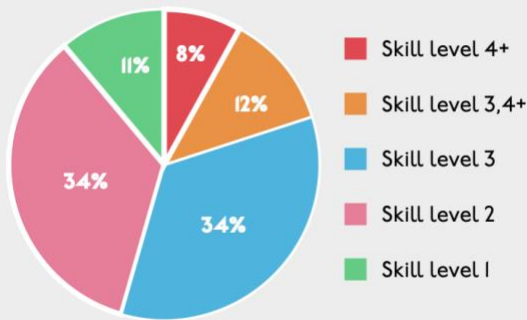
The policies and proposals being considered to improve household reuse and recycling will have profound implications for the waste sector. *Friends of the Earth Scotland recommends that waste sector workers and their trade unions should be included and consulted on in the planning and implementation process.*

Waste will be one of the sectors most profoundly affected by the transition to a circular economy. Recycling and reuse offer much greater job opportunities than landfill and incineration but the Scottish Government must still do all that it can to ensure the transition process is fair and just. A just transition for waste workers should be a high priority for the Scottish Government's Circular Economy strategy. Friends of the Earth Scotland supported the recent waste worker strikes in Glasgow for an offer that matched their "key worker" status³⁶. Workers wanted proper funding to ensure their work waste safe and clean, as well as a fair pay rise.

A [recent report by ReLondon](#) found that "preventing 10,000 tonnes of waste bound for incineration would lead to the loss of 1 incineration job and the creation of 386 jobs in circular business". The report found that there was a skills gap in core and enabling circular economy jobs at skill level 2 and above were needed to support the development of London's circular economy (see below).

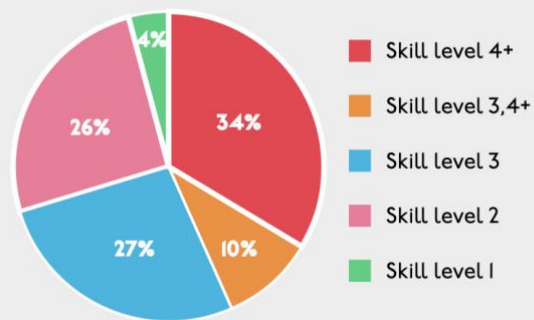
³⁶ <https://foe.scot/support-the-cop26-strikes-they-show-us-the-power-we-need-to-tackle-climate-change/>

Figure 8. Estimated additional core circular skills needed by 2030



Source: Valpak analysis based on ONS Annual Population survey and BRES data, 2019

Figure 9. Estimated additional enabling circular skills needed by 2030



Source: Valpak analysis based on ONS Annual Population survey and BRES data, 2019

Figure 17.1 Circular skill requirements for London by 2030, taken from ReLondon (2022) [The Circular economy at work](#)

In interviews with businesses transitioning to circular business models the need for employees to have a baseline understanding of the circular economy and knowledge of how to build a business case for circular business models was emphasised. Businesses also talked about a lack of repair skills available in the UK, resulting in the need to outsource. In contrast to the linear economy, a key theme from conversations (particularly in the transition phase) was the need for a collaborative approach, with systems thinking as a cornerstone.

Question 18 The previous consultation showed broad support for the principle that there should be greater consistency in household recycling collections. Is there any new context or evidence that should be taken into account?

Friends of the Earth Scotland strongly support the proposal to improve consistency of recycling service to create a clear and comprehensive service which prioritises those waste streams with the greatest carbon saving potential.

This is one of the first proposals which should be enacted in the range of measures around waste management which are adopted as part of the Route Map. Without clear, consistent and comprehensive services households cannot be asked to change their behaviour.

The Scottish Government should learn from the Welsh Government who have placed the need for greater consistency and investment at the heart of they plan to improve Wales' recycling services.

Question 19

The previous consultation showed broad support for the principle of moving away from the current voluntary approach to Scotland's Household Recycling Charter towards a more mandated approach, whereby implementation of the Charter and its supporting Code of Practice becomes a statutory obligation. Is there any new context or evidence that should be taken into account?

Friends of the Earth Scotland supports the adoption of a mandatory Household Recycling Charter and Code of Practice.

We agree that system changes for collections must incorporate the changes which EPR and DRS will bring to our waste streams. Much of the details of these schemes, particularly DRS, are already known so it is possible to start designing collection systems around their parameters immediately.

Funds collected from EPR and DRS should be invested in reuse and recycling services in Scotland through local authorities.

Again, the transition of waste sector workers to new roles will have to be considered and integrated into any planned changes to recycling services. This is a notable gap in the Circular Economy Bill consultation.

Question 20 Do you agree that Scottish Ministers should have the power to introduce statutory recycling targets for local authorities?

- Yes
- No
- Neither agree or disagree

Question 21 If you agree with Q.20, do you agree that Scottish Ministers should have the power to introduce and set financial incentives for local authorities to meet these targets, or penalties should these targets not be met?

- Yes
- No
- Neither agree or disagree

Question 22 Please explain your answer

22.1 Structure of recycling targets

If individual targets are set for local authorities, these should add up to a national target of no less than 70% (carbon or weight based) recycling by 2030. It should also be recognised that setting different targets will mean a huge commitment of resources to set up, report on and monitor.

The Scottish Government should work with individual local authorities to create plans of actions to allow them to best meet these national targets. **The presence of existing waste management contracts which include agreements to incinerate waste should not be used as a reason for a local authority to have a lower recycling rate target.** However, support should be considered to help local authorities locked into long term incineration contracts to leave these as early as possible. Financial support for ending contracts early should be considered if this is judged to be in the national interests and support better alignment with climate and material goals.

Whilst such a proposal would require further consultation there is a need to act as soon as possible. Friends of the Earth Scotland urge the Scottish Government to do everything possible to ensure statutory recycling targets are set up as soon as possible. Local authorities should be given adequate resources to provide the services needed to meet recycling targets.

In addition, it should be noted that setting targets are only the first step in reducing environmental impact. The much more challenging second step is to take effective action to meet those targets. Scotland's past waste management policies show the danger of setting targets without due consideration of how to meet them.

22.2 Recycling targets should be carbon-based

Scotland's recycling targets should be carbon-based. Carbon-based targets are more likely to result in meaningful environmental benefits than weight-based targets. Zero Waste Scotland's Carbon Metric for Waste should be used as the basis for measuring the carbon impact of recycling. This tool is already well established and should continue to be updated, peer reviewed and published annually.

Friends of the Earth Scotland recommends that carbon-based recycling targets of 70% should be set for household waste for 2030.

22.3 Financial incentives

Friends of the Earth Scotland supports the introduction of financial incentives for local authorities to meet these targets, so long as they are given the required resources to meet them.

The Scottish Government should explore the Welsh model to build constructively on those briefly outlined in the CE bill consultation.

22.4 Reuse targets

Scotland currently has no reuse target but does have a clear recycling target. This has resulted in poor prioritisation of reuse investment and systems change compared to recycling³⁷ and other activities lower down the waste hierarchy.

We note that £20.3m of the £70m recycling target has already been spent but that very little of this has gone to programmes that include reuse. Reuse must be separated from and prioritised over recycling as it offers great environment and social benefits to managing waste.

Clear and ambitious reuse targets are necessary to support prioritising reuse over recycling, in line with the principles of the waste hierarchy. These reuse targets should be mandated at a national level and reported alongside existing recycling targets for local authorities. Where possible Local Authorities should partner with existing third-sector organisations who have been leading in relation to reuse in Scotland.

The household reuse targets should be separate from recycling targets. They should be carbon-based, if possible, to match the recycling targets and ensure the problems of weight-based recycling targets are not repeated for reuse targets.

There is an urgent need for research to establish the best way to measure and report on reuse and preparation for reuse targets. Since such targets are being used successfully elsewhere in Europe, we believe lessons can be learnt and adapted for use in Scotland.

The WRAP Benefits of Reuse reports include a standardised methodology for measuring and reporting reuse which could be used as a basis for carbon-based reuse targets (or weight-based ones if necessary). It could also be used to report on social benefits of reuse including expected job numbers associated with reuse. These reports were written when Zero Waste Scotland was a part of WRAP and the organisation should still have access to the reports and underlying tools and models. These should be updated and published by Zero Waste Scotland as soon as possible.

Once set, we need a clear process to monitor and report actual progress against targets on a local authority and national level and act when progress is insufficient. It should be noted that targets by themselves do not deliver change, they need to be supported by investment and other policy actions

³⁷ For example, in Scotland as well as recycling targets and reporting, we have a recycling charter, recycling centres and a recycling infrastructure fund.

Question 23 The previous consultation showed broad agreement that householders' existing obligations are not sufficient. Is there any new context or evidence that should be taken into account?

Householders cannot be held accountable when the system is so inefficient. We need products which can be recycled and the means to recycle them before we increase the obligations of households.

Friends of the Earth Scotland agrees that a review of waste and recycling service charging should be conducted. This should include:

- *a comparison to alternative approaches;*
- *consideration of the social impacts and how these can be shared equitably between households;*
- *consideration of how the scheme can be made cost neutral for poorer households and the impacts of significantly higher charges for wealthier households;*
- *whether the scheme should be cost neutral for local authorities;*
- *the impact on waste sector workers; and*
- *the appropriate timing of an introduction of a charging service for households in relation to the implementation of other Route Map policies and their potential impacts on the household waste stream.*

23.1 Pay As You Throw (PAYT): Opportunities and Challenges for Scotland

In this section of our response, Friends of the Earth Scotland sets out a summary of Pay As You Throw (PAYT) schemes adopted internationally, including challenges and best practice. Based on these examples and circular economy proposals for Scotland, the applicability of PAYT in Scotland is assessed. This includes principles to address equity and social justice within a PAYT scheme and interventions to prevent discriminatory recycling practice.

International PAYT Practices

E-Reader Household Collections (Weight-based pricing)

Probishtip, Macedonia & Aschaffenburg, Germany

The municipality of Probishtip and county of Aschaffenburg provide hospitality and households with waste bins fitted with electric chips. At collection, waste collection trucks (fitted with reading devices) read bin chips and log data relevant to the user (address, waste type, waste amount, bin ID). Data is sent to a central database which then allocates waste bills to households or hospitality sites.

Successes:

- **Reduction in residual waste** and increased waste diversion rate.
 - o In its first 3 years, the Aschaffenburg PAYT scheme reduced residual waste 115kg per capita per year (the scheme was implemented in 1997). From 1995-2000, residual waste in Aschaffenburg reduced by 71% whilst the average German residual waste amount declined by only 19%.
- Increase in waste separation has led to **increased organic waste collection** (and organic manure production).
- **Increase in citizen participation** and recycling awareness due to billing process.
- **Lower waste service costs** due to reduced waste collection.
 - o In Aschaffenburg in 2013, the unrecovered costs were 44.5 EUR per capita. This was low in comparison to other German cities (some cities had over

100 EUR per capita in unrecovered costs). This indicates other German cities in 2013 were required to charge residents a higher annual waste fee.

- **Lower household waste costs**, due to a decrease in incineration costs for residual waste.
- Buildings that previously used **communal containers** are able to participate as households are now assigned an individual container.
 - o In Aschaffenburg, high-rise buildings in dense urban areas can choose between large bins for the whole building or individual bins for each household.

Challenges:

- Analysis has shown residual waste to decrease but **total waste generated does not decrease**. PAYT is therefore not performing as a waste prevention scheme but only as waste diversion. Other policy measures are required for waste prevention (e.g. awareness raising or repair initiatives).
 - o Between 1995 and 2013, Aschaffenburg's residual waste reduced by 110kg; owed in part to the PAYT scheme but supplemented by awareness raising and improved recycling infrastructure. However, total waste (including collected recyclables) remained around 400kg of waste per capita per year.
- Risk of **illegal dumping** (or fly-tipping) in neighbouring municipalities without PAYT systems.^{38 39}

Treviso, Italy

Treviso's PAYT scheme has been estimated to increase waste separation rates by 17%. Much like Probishtip and Aschaffenburg, Treviso use electronic devices on bins to register waste and bill each household. Fees are calculated with a 60% weighting on the number of people in a household and a 40% weighting on the weight of waste collected. Discounts are applied where a household compost its green cuttings.

Successes:

- **Increased sorted waste** (and diversion) by 14.1% per capita from 1999-2008.
- **Lower household waste costs** (in comparison to previous door-to-door waste collection fees).
- Waste service split the city into 3 areas according to their urban characteristics (e.g. building type, container space) to **tailor the service**. These categories are used to allocate the delivery of household bins and collection frequency.
- **A communications campaign** increased awareness and incentive; educating the public on the new PAYT collection system. In its early phases, the city arranged meetings to provide residents a platform to raise concerns and ask questions.
- **A co-ordinated PAYT system with neighbouring municipalities** prevents residents fly-tipping in nearby areas where PAYT collection is not in place.⁴⁰

Challenges:

³⁸ https://eprints.ugd.edu.mk/28800/1/Hadzi-Nikolova2021_Article_BiowasteManagementAndCircularE.pdf

³⁹ <https://www.mdpi.com/2079-9276/6/1/8>

⁴⁰ <https://greenbestpractice.jrc.ec.europa.eu/node/158>

- Resulted in **illegal dumping** in adjacent towns with communal street bins. However, there remains little empirical data to quantify the prevalence of littering due to difficulties measuring this.⁴¹

Bag Purchases (Volume-based pricing)

Guernsey

Guernsey's residents are required to purchase stickers to organise their waste for collection; orange stickers are purchased for bags over 50 litres and green stickers for bags up to 90 litres. The cost of stickers increases with the volume of the bag, meaning residents pay for their waste in advance of waste collection (at point of sticker purchase). Stickers are to be placed on black bin bags and can be purchased online and from a variety of retail locations. Bags without purchased stickers will not be collected and recorded; continuous avoidance of paying fees can result in a penalty of £40 per bag (£60 after 14 days).⁴²

Successes:

- From 2017 – 2019, **household residual waste** has dropped by over 50% (from 13,00 to 6,000 tonnes) and total waste (including recycling) has fallen by around 11%.
 - o It should be noted the largest reductions occurred in 2018 following improvements to collection for food waste and glass. The PAYT scheme was then implemented in 2019 and contributed to waste reductions, albeit smaller decreases.⁴³
- Sticker system is **effective and accessible for dense urban areas** and tenement buildings with **communal bins**.
- Volume-based pricing means there are **minimal changes to the waste management infrastructure** (i.e. no special equipment is required to scan electronic chips or weigh bags during collection).
- Volume-based scheme gives **households freedom** to choose collection frequency.

Challenges:

- **Volume-based pricing** (in advance of collection) means households may squeeze more into their bags or containers. As such it has been argued to be less effective than weight-based schemes for waste reduction.⁴⁴ Although there is no available data to exhibit the frequency of this.
- **Volume-based pricing** means that bags too heavy to lift by workers will be left during collection. This results in residents paying for their waste in advance, only for it not to be collected.

Limited Household Collection

Pembrokeshire, Wales

Pembrokeshire council deliver 52 residual waste bags to households every year and limits collection per household to three bags of residual waste every two weeks.

41

https://onlinelibrary.wiley.com/doi/full/10.1111/sjoe.12122?casa_token=XEp7I9UWE0oAAAAA:z8c6OueJRzpK0tBBzkAISlfzhmwKnPol-wwB2XQxC7nB8ubp1sBMs2BDrDjMBzO7D2SH4zi07ZaSxoc

42 <https://www.gov.gg/PayAsYouThrow>

43 <https://www.gov.gg/article/177823/Household-recycling-of-73-may-put-island-on-top-of-the-world>

44

https://www.sciencedirect.com/science/article/pii/S0956053X09003766?casa_token=SiCg1XazkiEAAAAA:SK0SEfJTKNZINUq1uGHs3vsAAiXubpEuFDyxrmWg3si928-2bdpc5g0qRQ786xN5EeaToKBP

This system is not a traditional PAYT scheme as waste is not charged per collection but is absorbed within a higher council tax rate (which funds an improved recycling infrastructure to help households reduce residual waste). However, it does offer a useful example of an alternative recycling incentive system. Penalties are applied where households repeatedly leave more than 3 bags for collection.

Successes:

- **Exceptions are provided for larger families** (one or two extra bags per collection) and during the Christmas period (one extra bag per household).
- Residual waste bags are made from **recycled plastic**.

Challenges:

- **Difficulties tracking household waste** (and adherence to 3 bag limit) in areas with communal collection points.⁴⁵
- As a new system, implemented in 2019, there is no available data to exhibit the scheme's effectiveness for waste reduction.

Lessons for a Scottish PAYT System

The Scottish Government's Route Map consultation includes a proposal for a review of PAYT (although the term "waste and recycling charging" is used). In addition, Proposal 9 of the CE Bill consultation proposes increasing household recycling obligations using policies such as fines implemented in England. In contrast to the cost-based model of fines for enforcing recycling measures, PAYT measures may encourage household participation and obligation in recycling by making the cost of residual waste more visible (and possibly reducing it). The following section provides an assessment of how a Scottish PAYT system may directly learn from international best practice and how a PAYT scheme may align with the Scottish Government's circular economy proposals.

Fees

- Alternative recycling incentive schemes implemented in the UK offer rewards (vouchers or refunds) to encourage users to recycle. However, these schemes have been found to be most successful amongst people with a pre-existing awareness of recycling. The use of fees within PAYT schemes are effective across groups with varying levels of recycling awareness.⁴⁶
- Cost-benefit analysis of the social cost of PAYT schemes in Switzerland found that the system reduced social costs for households. Much like Italy and Macedonia, Swiss municipalities of Bellinzona and Caslano display lower collection costs due to a reduced quantity of residual waste⁴⁷. Similar cost-benefit analysis must be undertaken in Scotland to ensure overall costs to households will also be reduced.
- One crucial difference to highlight in Scotland's waste system is the absence of a designated waste collection fee, with households contributing to waste services via council tax. The implementation of a PAYT system will therefore present a separate cost to household bills (i.e. not embedded within council tax bills). As such, public communications and outreach must ensure the public are aware this will not bear an additional overall cost for effective participation. If households understand PAYT to present an additional household cost - particularly during a cost-of-living crisis - this

⁴⁵ <https://www.pembrokeshire.gov.uk/kerbside-collection/faqs-residual-non-recyclable-waste-collections>

⁴⁶ <https://www.mdpi.com/2079-9276/6/1/8>

⁴⁷ https://www.jstor.org/stable/pdf/enviassepolimana.16.1.02.pdf?acceptTC=true&coverpage=false&addFooter=false&casa_token=wsh5rMgMldoAAAAA:2puGnNMBfbGPkccMXONQkc9r546MBG3lc_D4omx0OU-6evyID2MHvb1tr_PMNPG_i5gOzAKtox6zm4FZEQUj0YHOnqmU91_MmllYcD5SCAxx-b68Bio

will may inhibit public support for the scheme. This exemplifies the importance of undertaking cost-benefit analysis to ensure lower household cost and communicating the results with Scotland to incentivise participation.

- Some international PAYT systems charge for both residual waste and recycling collection (although recycling fees are discounted) to encourage lower consumption and overall waste production. However, researchers and practitioners advise that charging for recycling collection presents a barrier to PAYT success, deterring waste diversion and separation.⁴⁸ Scottish households are currently charged for garden waste and the uplift of large recyclable items, likely acting as a disincentive to recycling.

Recycling Infrastructure

- An effective and accessible recycling infrastructure is required for a successful PAYT system in Scotland; to support recycling participation, increase waste separation and reduce household waste costs.
- Scholars and practitioners have stressed that PAYT should not be a single policy measure and must be applied alongside a range of waste policy measures (e.g. EPR and educational campaigns).⁴⁹ The case of Achauffenburg, Germany displays PAYT as a high-functioning waste diversion scheme but does not encourage waste prevention, requiring additional measures to reduce consumption and increase re-use.

Communal Bins

- Bin containers with e-readers in Macedonia, Italy and Germany present a challenge for dense urban areas in Scotland such as tenements with communal waste disposal areas.

Transparency & Communication

- The most successful PAYT schemes in EU are weight-based charges for residual waste and provided regular contact between users and authorities to monitor success and access.⁵⁰ For example, Treviso's outreach efforts and community forums worked to encourage well-informed participation in the PAYT system.

Monitoring

- The central database options utilised in Macedonia, Italy and Germany provide high quality waste data to be utilised for monitoring and evaluating purposes. For example, the identification of the lowest participating regions within PAYT schemes will allow authorities to explore appropriate interventions to increase access across Scotland.

Principles for a Fair and Just PAYT System

Having established the applicability of a PAYT scheme within Scotland's waste management system, this section sets out options for addressing and preventing inequalities within a PAYT system.

Fair Fees

- PAYT schemes present a significant risk of penalising low-income households and risk of fly-tipping in areas where fees are too high.
- The execution of fair fees may be implemented via:

⁴⁸ https://www.acrplus.org/images/technical-reports/ACR_2016_PAYT_Executive_Summary.pdf

⁴⁹ https://www.acrplus.org/images/technical-reports/ACR_2016_PAYT_Executive_Summary.pdf

⁵⁰ https://www.acrplus.org/images/technical-reports/ACR_2016_PAYT_Executive_Summary.pdf

1. Discounts for low-income households, elderly people, and large families.
 - For example, Dubuque's (Iowa) PAYT scheme offers discounts to lower-income families and the elderly (65+). Based on household income eligibility, a household may qualify for a 50% discount from their monthly fee.
 - This monthly discount is possible as their PAYT system charges a flat monthly fee for a 35-gallon waste container. There are different subscription options that allow homes to pay extra for a larger size container.⁵¹
 - This discount is simple to implement, and discrete, as it is applied to an existing monthly fee. Assessing eligibility and issuing discounts may be more difficult with volume-based systems (such as Guernsey) as residents would be required to prove their household income when purchasing bin bags. Public consultation would likely be required to survey how low-income and elderly households would prefer to apply for discounts.
 2. Climate Assembly UK have previously suggested PAYT fees should be calculated according to household income or tax band.⁵²
 3. Regular feedback from the data collected from the system which adjusts payments to even out distribution of costs between households.
- The 'polluter pays' principle of PAYT systems premises equality. However, this must not be limited to the individual or household level. The implementation of PAYT systems must be met with targeted measures for corporations and Extended Producer Responsibility (EPR) schemes. For example, Proposal 6 of the Scottish Circular Economy Bill includes mandatory reporting of waste and surplus for businesses. This should be extended to include statutory recycling targets for businesses to ensure waste costs are not exclusively targeted to households.

Recycling Access

- PAYT schemes must be implemented alongside accessible and efficient recycling infrastructure within cities and across rural areas. Regions with less access to recycling infrastructure, such as island communities, must not face disproportionate costs due to inaccessible recycling collection.
 - For example, the rural town of Puigpunyet, Mallorca faces long distances to access treatment/recycling facilities. Door-to-door collections were increased to improve accessibility and found that paper/cardboard collection increased by 166%, whilst glass collection increased by 155%.⁵³
- Analysis of EU PAYT systems has found door-to-door collection of residual waste and recycling can improve accessibility and equity.⁵⁴
- There are examples of successfully incorporated communal properties into PAYT schemes.
- Rural areas in particular may suffer from inaccessible recycling due to transport costs or capacity constraints. This presents a risk of higher landfill waste and disproportionate rural costs. A successful PAYT scheme must ensure rural recycling collection to be equal to urban areas.

Monitoring & Evaluation

⁵¹ <https://www.cityofdubuque.org/503/Trash-Collection>

⁵² <https://www.climateassembly.uk/report/read/what-we-buy.html#what-we-buy>

⁵³ https://blacksea-cbc.net/wp-content/uploads/2021/02/BSB1138_APRA_Guide-to-EU-Experience-and-Best-Waste-Separation_Recycling-Practices-in-Rural-Areas_EN.pdf

⁵⁴ https://www.acrplus.org/images/technical-reports/ACR_2016_PAYT_Executive_Summary.pdf

- PAYT programmes should implement monitoring and evaluation to monitor social implications, specifically the cost distribution for households across regions and communities.
- To ensure PAYT processes and outcomes remain fair and just, monitoring and evaluation may be integrated with the National Just Transition Outcomes. The outcomes with particular relevance to maintaining equity within a PAYT system include:
 - ‘2) Jobs, skills and education: equip people with the skills, education and retraining required to support retention and creation of access to green, fair and high-value work; upskilling for waste collection workers and fair wages to reflect the upskilled work. Also includes improving working conditions and safety for workers.’; and
 - ‘3) Fair distribution of costs and benefits: address existing economic and social inequality by sharing the benefits of climate action widely, while ensuring that the costs are distributed on the basis of ability to pay.’⁵⁵
- Monitoring these outcomes would ensure job security is maintained for workers during the transition to a PAYT system (including sufficient upskilling, decent wages and safety conditions) and collection fees do not present a disproportionate burden to vulnerable groups.

⁵⁵ <https://www.gov.scot/publications/transition-fairer-greener-scotland/>

Question 24 Do you agree with the principle that local authorities should have more powers to enforce recycling requirements?

- Yes
- No
- Neither agree or disagree

Question 25 Please add any additional comments

As with all proposals and policies in the CE bill and route map, the prioritisation of each policy should be considered in the context of what environmental impacts are expected to be reduced by the introduction and implementation of the policy.

Before household charges are considered, Scotland's waste collection and management services must be sufficiently improved and standardised. Then, the Scottish Government should consider whether additional policies, such as household charging, are required. Any further consideration on such policies should include how social impacts can be shared equitably between households and how to make charging schemes cost neutral for poorer households.

See answer to question 23 above for more considerations on this subject.

Question 26 Are there further powers, if any, for Scottish Ministers, and/or local authorities, that should be considered in order to incentivise positive household behaviours, to support waste reduction and increased recycling in Scotland?

See answer to question 23 above for more details on Friends of the Earth Scotland's views on this subject.

Question 27 Are there any other legislative measures that you consider Scottish Government should take to strengthen recycling and reuse at a household level, helping accelerate the rate and quality of household recycling in Scotland?

- Yes
- No
- Neither agree or disagree

Question 28 Please add any additional comments

28.1 The material impacts of transport policies

Friends of the Earth Scotland recommends that transport is considered as a priority sector for a resource reduction plan as part of the CE strategy.

To create a circular economy in Scotland, we must consider the material efficiency of our transport system. The transformation of our transport network from a fossil-based system to a low carbon one requires many materials, some of which are carbon-intensive to extract (e.g. Lithium and Zinc). Critical minerals are often difficult and dangerous to mine and there are security concerns around their supply. The environmental and social impact of extracting and using these materials can be minimised if Scotland's transport policies do not use more than necessary. This is not a consideration in current transport policies. We do not know whether there are enough materials to meet Scotland's transport policies or what the environmental and social costs of this may be⁵⁶. Without an understanding of our current impacts we cannot hope to reduce them.

An assessment of the raw materials required for low carbon technologies by McKinsey showed that electric vehicles will require large amounts of many different types of critical materials⁵⁷.

STPR2 recently committed to "continued and increased investment in strengthening of the trunk road and motorway network", amounting to close to £1bn/year. This spend leads to - among other negative outcomes - more car use, more emissions, more fossil fuel infrastructure, more driveways and parking spaces. There are material impacts of these disastrous policy decisions.

Through the 2020s, as petrol and diesel use reduces and demand for associated infrastructure such as petrol stations and car parks decrease, the Government must provide a materially efficient transition. For example, which petrol stations can be repurposed as electric vehicle charging stations, and if not, what materials in an inactive petrol station could be reused? The change in private car fuel sources must be rapid, but steps can be taken now to plan ahead.

28.2 The material impacts of household transport

There are three million fossil fuel cars in Scotland, representing a huge amount of metals, plastic and other unrecoverable, un-reusable materials. These cannot be changed to three million electric vehicles. There is not the money, or time, nor resources to accommodate a like-for-like change from fossil fuel car to EV.

At a household level, we must begin to see cars as a communal tool, particularly in urban areas, rather than privately owned products. Private cars are in use 4.4% of the time, representing hugely inefficient costs and use of space. Car club models should be considered as natural extensions of the tool library model and the considerations of material efficiency incorporated into the business model. The potential material reduction of encouraging households to switch from private ownership to communal tools should be prioritised in household waste policies.

⁵⁶ There has been some research into specific issues, such as the ZWS (2021) [The future of electric vehicle batteries in Scotland](#)

⁵⁷ <https://www.mckinsey.com/industries/metals-and-mining/our-insights/the-raw-materials-challenge-how-the-metals-and-mining-sector-will-be-at-the-core-of-enabling-the-energy-transition>

Question 29 Do you agree with the principle of Scottish Ministers, and local authorities if appropriate, taking on the necessary powers to explore and trial commercial waste zoning approaches in Scotland?

- Yes
- No
- Neither agree or disagree

Question 30 Please add any additional comments:

Friends of the Earth Scotland supports transparent and unbiased research into the effectiveness of commercial waste zoning in Scotland by 2024 which includes an assessment of the impact on waste sector workers.

A pilot programme is an effective way to measure the potential success of such a scheme and can be designed to test key parameters and uncertainties. This will give valuable insight into how such measures can be best applied to Scotland. There is great potential for commercial waste zoning to reduce traffic congestion, reduce air pollution and carbon impacts and improve services through standardisation.

Ensuring that competition is not unhealthily reduced should be a key concern of the research and pilot phase. The research should also consider how to ensure that waste zoning does not lead to enshrining the right of private companies to provide a public service.

Commercial waste zoning will have implications for waste workers involved in current operations, who should be consulted on as part of the research and pilot process.

Question 31 The previous consultation showed broad support for the proposal that Scottish Ministers should have the powers to introduce a new fixed penalty regime for littering from vehicles. Is there any new context or evidence that needs to be taken into account?

We welcome a fixed penalty regime for littering from vehicles.

Question 32 The previous consultation showed broad support for the principle that the registered keeper of a vehicle bears primary responsibility for offences such as littering from or in relation to their vehicle (for example by passengers or people using that vehicle at that time). Is there any new context or evidence that needs to be taken into account?

No comment.

Question 33 The previous consultation showed broad support for the principle that enforcement authorities should be given powers to seize vehicles linked to waste crime. Is there any new context or evidence that should be taken into account?

No comment.

Question 34 Taking into account the accompanying EQIA, are there any additional likely impacts the proposals contained in this consultation may have on particular groups of people, with reference to the 'protected characteristics' listed above?

No comment.

Question 35 Taking into account the accompanying BRIA, do you think that the proposals contained in this consultation are likely to increase or reduce the costs and burdens placed on any business or sector?

No comment.

Question 36 Taking into account the accompanying CRWIA, do you think that the proposals contained in this consultation are likely to have an impact on children's rights and wellbeing?

No comment.

Question 37 Taking into account the accompanying ICIA, do you think that the proposals contained in this consultation are likely to influence an island community significantly differently from its effect on other communities in Scotland?

No Comment.

Question 38 Taking into account the accompanying Fairer Scotland Assessment summary template, do you think that the proposals contained in this consultation are likely to have an impact in relation to the Fairer Scotland Duty?

No comment.

Question 39 Do you think that the proposals contained in this consultation are likely to have an impact on the environment?

The impacts proposed should be assessed using a life cycle thinking approach to understand if they will have a net saving or impact on the environment (primarily concerning a climate impact but also for other indicators, which are less well reported). The environmental analysis of these proposals should also be assessed against possible alternatives to ensure the scenarios with the greatest environmental and social benefits are prioritised.

Friends of the Earth Scotland consider that some of the proposals in the Circular Economy bill consultation and Route Map consultation are likely to save carbon compared with a business as usual approach. There are also proposals which are likely to have only marginal environmental benefits (for example, bans on single use plastics which lead to a switch to non-plastic single use products rather than reusable alternatives).

However, without an evidence based assessment, environmental benefits of proposals should not be assumed and there is no way of prioritising resources and efforts based on those plans most likely to contribute the most towards Scotland's climate goals.

Question 40 Do you have any other comments that you would like to make, relevant to the subject of this consultation, that you have not covered in your answers to other questions?

40.1 The need for joined up government

As noted by the consultation document, setting CE objectives within the wider strategic framework is vital to meet ambitions. This is not yet happening. Some examples of key Government strategies and plans which have failed to include CE thinking sufficiently are:

- Scotland's [National Strategy for Economic Transformation](#) only mentions the circular economy in passing and without any evidence this concept or material sustainability has been embedded in the Scottish Government mainstream economic thinking.
- NPF4 is an opportunity to ensure the planning system in Scotland supports the embedding of principles of material efficiency across all developments. Project and design processes for the whole lifecycle of a building or other construction which prioritise high rates of recycling, reuse and repair, are required to ensure that our rural, urban and coastal communities are clean and free of waste⁵⁸.
- The Scottish Government's latest [Climate Change Plan Update](#) confines thinking on the circular economy to the chapter on waste. The CCP emissions reporting for waste does not even include all emissions which could be expected to fall under this sector: energy from waste is reported under the energy sector. As noted by the Scottish Government's independent review on incineration: "This obscures the true contribution of incineration to Scotland's GHG emissions. If policy and technology choices are made on this basis, those choices may not in fact be the right ones."

To ensure material sustainability is considered in all Scottish policies the following steps should be taken:

- Those working directly on CE within the Scottish Government should produce guidance for other departments and Directorates on how they should consider material sustainability. These should be tailored to the needs of each department;
- Include a requirement to consider material impacts in all Business Regulatory Impact Assessments conducted by the Scottish Government;
- A material sustainability strategy should be incorporated into the Scottish Government's own Environmental Management System and procurement guidelines as soon as possible.

One of the biggest gaps in the Circular Economy Bill consultation and Route Map Consultation is the lack of consideration of the need to link this work to **just transition** (see section 14.3 of this response for further consideration on how the circular economy and just transition should be linked together). The consultation on the CE bill does not use the phrase once. The Climate Change Act sets out the importance of taking action which aligns with several Just Transition Principles.

"Section 35C of the Climate Change (Scotland) Act 2009 Just transition principles

- (1) In this Act, the "just transition principles" are the importance of taking action to reduce net Scottish emissions of greenhouse gases in a way which—

⁵⁸ Friends of the Earth Scotland's NPF4 response (2022) <https://foe.scot/resource/npf4-consultation-response/>

- (a) supports environmentally and socially sustainable jobs,
- (b) supports low-carbon investment and infrastructure,
- (c) develops and maintains social consensus through engagement with workers, trade unions, communities, non-governmental organisations, representatives of the interests of business and industry and such other persons as the Scottish Ministers consider appropriate,
- (d) creates decent, fair and high-value work in a way which does not negatively affect the current workforce and overall economy,
- (e) contributes to resource efficient and sustainable economic approaches which help to address inequality and poverty”.

Friends of the Earth Scotland strongly recommend that the Circular Economy bill and strategy should properly embed just transition thinking throughout the Scottish Government’s plans for a circular economy and consider the implications for Just Transition Principles, and that sectoral Just Transition plans embed Circular Economy thinking.

40.1.2 Align CE work timings to the CCP

The CCP will be laid before the Scottish Parliament in November 2023. By this point, the Circular Economy Route Map will have been finalised and the Circular Economy Bill is expected to be in the final stages of the Parliamentary process. This means there is ample time to ensure the requirements of the CE bill and Route Map are embedded within the CCP. It is imperative that they are as the next CCP will set Scotland’s pathway to 2040. This will be a critical time period for creating a circular economy and if the two strategies are not aligned, it is likely that both will be less effective than they could be and need to be.

Friends of the Earth Scotland strongly recommend that the Route Map and Circular Economy Bill are embedded in the Scottish Government Climate Change Plans.

The climate impact of key circular economy policies and the carbon-based consumption targets should be set out in the Climate Change Plan.

Embedding carbon-based consumption targets in the Climate Change Plan may require amending the Climate Change (Scotland) Act 2009.

40.1.3 Current consumption emissions reporting requirements have not been enough to create the change needed

This importance of carbon-based consumption reporting is recognised by s.35(18) of the Climate Change (Scotland) Act 2009, as amended, which requires that the Climate Change Plan:

“must also set out the Scottish Ministers’ proposals and policies for taking, or supporting, action to reduce emissions of greenhouse gases (whether in Scotland or elsewhere) which are produced by or otherwise associated with the consumption and use of goods and services in Scotland.”

Despite these requirements, there has been no focus on consumption-based emissions by policy makers in Scotland. It is clear that stronger incentives are needed if these

emissions are to get the attention needed. Creating statutory carbon-based consumption targets is the obvious and necessary next step in this process.

40.2 Route Map consultation response comments

Friends of the Earth Scotland have also responded to the Route Map consultation. Within that consultation response are many suggestions for wider considerations which must be accounted for in the creation of a circular economy in Scotland. Rather than replicate these points here, we ask that you refer to the following sections in the Friends of the Earth Scotland Route Map response for details:

- Waste exports (section 14.2)
- Just Transition (section 14.3)
- Global transition (section 14.4)
- Steel (section 14.5)