Friends of the Earth Scotland
RESPONSE TO THE SCOTTISH GOVERNMENT DRAFT CIRCULAR ECONOMY STRATEGY
January 2026

Summary
The Scottish Government's draft circular economy strategy is unfit for purpose and, without fundamental changes, is likely to lead to significant harms to people or nature. This strategy is such a backwards step for Scotland it is likely to cause harm by undoing the small amount of progress already made and failing to make significant progress towards a circular economy (for example by allowing incineration expansion to out compete recycling opportunities and allowing plastic production to continue unabated). Our response explains our concerns with the draft strategy and suggests improvements which will benefit people and nature. We urge the Scottish Government most seriously, and in the interests of the people of Scotland, to revise this strategy as set out in our response.

The goal of the strategy should be to create a circular economy in Scotland by 2045, which aligns with net zero goals and puts people and nature before GDP growth. The wrong goal and the **lack of quantified commitment to a goal to reduce material use and the environmental impact associated with it** are the most glaring gaps in the strategy. Without carbon and material-based consumption reduction targets, Scotland cannot hope to create a circular economy. Goals are needed to ensure policies which can meet the stated goals are adopted and timely prioritised and progress is being made. It is impossible to tell if the policies set out in this strategy will achieve the stated goal. Full carbon-based consumption measures are not included in the indicator and monitoring framework, and the strategy continually shies away from a commitment to reduce material consumption.

Embedded throughout the draft strategy is **the assumption that economic (GDP) growth is compatible (and leads to) a sustainable future.** The introduction starts by saying: "A circular economy drives sustainable growth". This is not accurate. Firstly, we live on a finite planet and growth of GDP cannot continue forever – there are not enough materials. Secondly, linear economies have evolved to serve growth-based models, and a circular economy cannot hope to achieve the same levels of general growth as a linear one. *A genuine circular economy should aim to reduce material consumption, not increase GDP.*

This strategy will be obsolete by 2027
The CE law requires the Scottish Government to develop a strategy within two years of the introduction August 2024, when the law was enacted. The strategy must "have regard to the circular economy targets" from section 1(7) of the same law. However, the Scottish Government does not plan to develop targets until 2027 (as stated in the draft CE strategy). As soon as that happens, this CE strategy will be obsolete because it does not relate to those targets (the units and goals of which are unknown). All the policies proposed in this CE strategy lack quantified benefits such as the change in climate emissions that each policy could deliver. It is impossible to know how much they will contribute towards targets. Therefore, as soon as the targets are set, a new CE strategy will be needed to meet them.

Whilst this approach is extremely flawed, the urgency of the humanitarian and environmental crises we face demand that not a moment is wasted. Therefore, this strategy must be updated so that it can become a bridge to a future target-driven plan for a circular economy in Scotland. The potential material and carbon savings of all the proposed policies should be estimated, within the limits of data available now and gaps identified. Without such quantification, the strategy is empty words, and effective prioritisation is impossible.

The draft CE strategy should be viewed in this context: *that without substantial adjustment to understand the impact of proposed policies, the whole document will be meaningless by 2027.*

De-emphasising growth of GDP does not mean the people of Scotland have to make do with a lower quality of life; through strategic planning, the Scottish Government has a chance to put society and the environment before corporate profit and to correct rising inequality by redistributing resources more fairly. If the final strategy continues to suggest that the primary aim of a circular economy is to support GDP growth, it will fail in its social and environmental aims.

We urge the Scottish Government to fundamentally rewrite the draft strategy to include:

- A goal to create a circular economy in Scotland by 2045 aligned to net zero aims and which puts people and nature before GDP growth. At its core, the strategy must make a **commitment to reduce consumption of materials and their carbon impacts.**
- Policies which reduce material consumption and so achieve the vision of the strategy.
- Businesses being held to account for the harms of their material use by **introducing guidance on corporate responsibility** and **an ambitious EPR programme** as soon as possible.
- Promises to reduce international impacts beyond tokenism and focus on **reducing serious and extensive human rights and environmental harms** in supply chains.
- New priority areas on **plastics, chemicals and electricals**. There must be plans for action at a systemic level and as high up the waste hierarchy as possible, such **as investment in reuse**, EPR and enforcing and expanding bans on single use items. These materials demand special consideration in the strategy because of the scale of harm associated with their use.
- We urge the Scottish Government to **prioritise an EPR programme over product stewardship** because the clearer, more regulatory approach of EPR is found internationally to be more effective at incentivising producers to reduce waste and redesign products.
- **System change plans to replace the behavioural change plans**. Asking people to change is unfair and ineffective when the system around them is broken.

The summary table below shows how the outcomes should be revised (see response to Q10 for full table, including suggested indicators).

Summary Table 1. Comparison of the original outcomes for the Circular Economy Strategy for Scotland and Friends of the Earth Scotland's suggested outcomes

Original outcome	FOES suggested outcome
The economic value derived from material use is maximised without increasing our environmental impacts.	The economic value derived from material use is maximised and environmental impact minimised.
The Scottish economy is more resilient to disruptions in global supply of materials, including critical raw materials.	Scotland uses less materials, including transition minerals, which makes it more resilient to disruptions in global supply of materials.
Business and entrepreneurs have opportunities to develop circular economy innovations	Businesses are required to use materials responsibly in Scotland and their supply chains.
Non-renewable resource extraction is minimised, and renewable resource use is sustainable	Non-renewable resource extraction is reduced in line with net zero aims for 2045, and renewable resource use is sustainable and just.
The negative environmental impact of our production, consumption and disposal is minimised	The environmental damage of Scotland's production, consumption and disposal is brought within planetary limits.

The negative impacts experienced internationally from production, consumption and disposal are reduced	The human rights and environmental damage experienced internationally from Scottish production, consumption and disposal are minimised.
People and communities engage in and benefit from circular activities in a fair and inclusive way	People and communities engage in and benefit from circular plans and activities in a fair and inclusive way.
Circular behaviours are the norm across business and society	Circular systems are the norm across business and society.

Vision and Outcomes
Question 1
To what extent do you agree with the vision and outcomes for the strategy?
Strongly disagree

Question 2
Do you have any comments on the vision?
<u>The vision must include a strong and precise goal on consumption reduction</u>
The vision is not strong or precise enough. The strategy, like the CE (Scotland) Act fails to define what a circular economy is. It is necessary that this is clear so that everyone understands what is being aimed for. Friends of the Earth Scotland defines a circular economy as one where the production, use and disposal of materials, goods and products are fair and sustainable.

The vision should include a goal for Scotland to have sustainable levels of material use by 2045. Based on scientific evidence, this should be:
By 2045, Scotland's use of materials will be reduced to sustainable levels. This means reducing our material footprint to 8 tonnes per person per year and our carbon footprint to net zero by 2045.[1]

The CE (Scotland) Act does not include specific targets; however, the Act does require that targets are set and that these should relate to the CE Strategy. They must also relate to the production, use and disposal of goods, products and materials to reduce their consumption and whole life cycle carbon emissions. It is therefore appropriate that **the CE strategy should embed references to consumption reduction measures throughout, including in the vision, outcomes and monitoring and indicator framework.**

<u>Why are consumption reduction commitments important?</u>
Friends of the Earth Scotland believes that the main circular economy targets for Scotland should be material and carbon-based consumption reduction targets. This is the best way of meeting the requirements of the CE Act. **86% of respondents to the Scottish Government's consultation on the circular economy bill, and the Net Zero, Energy and Transport Committee during its scrutiny of the bill, supported the introduction of consumption reduction targets.**

Friends of the Earth Scotland's response[2] to the consultation on the Circular Economy Bill includes many of the key arguments on why this specific consumption reduction goal should be at the heart of Scotland's circular economy vision. These arguments are still relevant today to the CE strategy. These include, but are not limited to:

- The Scottish Government has enough control (and more control than any other government) over Scotland's consumption emissions to set a goal to reduce them. The most effective way to

[1] FOES (2022) The-case-for-consumption-based-targets.pdf
[2] FOES (2023) Circular-Economy-Bill-written-evidence-Aug-234.pdf

reduce consumption emissions is demand reduction. Devolved power to implement a range of policies which will affect consumption including extended producer responsibility, reuse investment, bans on harmful products and improving and extending public services which replace private models.

- *Reporting* consumption emissions isn't enough to reduce them to sustainable levels[3].
- The increasing gap in carbon accounting between territorial and consumption-based emissions weaken Scotland's existing climate mitigation efforts (also known as 'offshoring emissions').
- Scottish demand for resources and products creates serious and extensive impacts globally.
- Lack of consideration of materials in policy making risks failure of those policies being successful (if you literally don't have the materials to build the products and infrastructure you need, your policies won't happen).

The CE (Scotland) Act requires the CE strategy to consider how the "processes for the production and distribution of goods, products and materials are designed so as to reduce their consumption and their whole life-cycle carbon emissions". The vision in the CE draft strategy only states: "we will have reduced the negative global impact of our production and consumption". It does not explicitly mention reducing consumption or whole life cycle carbon emissions, so **the draft vision is not meeting the requirements of the Act.**

Carbon and material-based commitments are both needed

To align meaningfully with Scotland's Climate Change Plan, the consumption reduction target needs to be based in the same units, meaning it must be measured in greenhouse gas emissions (CO2e).

Climate change is not the only ecological crisis that we face – there are many, from biodiversity loss to soil erosion. These crises share a common underlying cause – overconsumption of the Earth's natural resources. In Scotland, we consumed over 100 million tonnes of materials in 2018 alone and globally, material consumption exceeded sustainable limits decades ago. A material footprint target which aims to reduce resource consumption will act as a general target for supporting progress towards wider global ecological sustainability.

A vision more focused on meeting the needs of people

The vision should focus much more on meeting the needs of people and nature. Simply stating that Scotland will have 'a thriving economy that meets societal needs' is not clear enough. **Scotland needs an economic system which ends the injustices of the throwaway society so that people buy fewer products which last for longer, the use of single use products is minimised and there is less rubbish, litter and pollution.**

The vision must include a statement on the need for a future where businesses act responsibly: *'Businesses take responsibility for the damage that their products do to both people and nature. As the financial burden of clean-up moves from the public to the private sector, councils will have more money to spend on vital public services. Private ownership models are replaced with more public services which are accessible to everyone.*

Many people are employed in jobs which involve repair, refurbishment and reprocessing skills and these jobs are embedded into local communities across Scotland.'

The vision must also be more ambitious for the Scottish Government circular economy aims at an international level: the products we buy in Scotland should not harm people and nature in other countries.

[3] SG (2024) Scotland's Carbon Footprint

On **critical raw materials**, we strongly urge the Scottish Government to reframe its strategy around a narrative which focuses on people and nature rather than national security. A security focused strategy can limit people's access to materials[4].

On **incineration**, all forms of Energy from Waste (e.g. incineration with energy recovery) should be considered a 'leakage' from the circular economy rather than simply the lowest tier of the circular economy. It is a form of disposal and burning potential resources means that they can never be used again. Both landfill and incineration are harmful to circular economy efforts, as they establish and maintain the linear economy system of 'take, make, dispose'. The recent review by Environmental Standards Scotland[5] is the latest warning to the Scottish Government that their approach to incineration is not working and the risk of overcapacity is increasing.

The Scottish Government's draft Climate Change Plan set out its intention to mitigate incineration emissions with carbon capture and storage (CCS). CCS is a dangerous distraction and an expensive and unrealistic plan to mitigate incineration emissions. No new incinerators are expected to be built in Scotland beyond 2027. CCS will not be ready by this time so the only option would be to be retrofit the technology to incinerators. Retrofitting CCS to incineration plans has not been attempted anywhere in the world. It is too expensive, geographically difficult and unproven to be worthy of investment. Instead, the Scottish Government should be investing resources and funds higher up the waste hierarchy, especially reuse and repair.

Water impacts are not considered in the circular economy strategy, but they can be a significant harm for many of the key products being considered within the strategy e.g. textiles, critical minerals and food supply chains. Impacts are well documented and significant, including loss of community access to water, pollution, destruction of floodplains, unsafe working conditions and long-term ecosystem degradation.[6] Scotland can reduce its part in these impacts through demand management and circular economy solutions to minimise resource use.

Question 3

Do you have any comments on the outcomes?

Environmental outcome 1: Non-renewable resource extraction is minimised and renewable resource use is sustainable.

There is overwhelming scientific evidence that fossil fuel extraction must be phased out completely to combat climate breakdown properly[7]. As stated in the draft CE strategy, Scotland has international responsibilities and the CE strategy outcomes should reflect this. There is also growing evidence of the human, as well as environmental harm caused through renewable supply chains[8].

It is not possible to end fossil fuel use in Scotland within the timespan of this strategy. But significant progress can and must be made towards this goal. The strategy should quantify what is meant by 'minimised' in this outcome as soon as possible.

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[4] Franks et al (2025) 'How the rush for critical minerals is neglecting human needs' Nature Vol 647

[5] Incineration Capacity Investigation - Informal Resolution Report - Environmental Standards Scotland

[6] Research & Reports — Water Witness | Tackling The Global Water Crisis - UK Registered Charity Based In Edinburgh, Scotland | Non-Profit Organisation Working In Africa - Ethiopia, Malawi & Tanzania

[7] The evidence is clear: the time for action is now. We can halve emissions by 2030. — IPCC

[8] Example of human and environmental impact of renewable supply chains linked to Scotland: Amazonian leaders call on Scottish Parliament to end illegal logging links with wind farm - Friends of the Earth Scotland
Also, Friends of the Earth Scotland's reports "Unearthing Injustice" and "Rethinking Our Resources" detail many examples of the human rights and environmental harms linked to renewable supply chains

So, the outcome should be amended to: *Non-renewable resource extraction is* ***reduced in line with net zero aims for 2045,*** *and renewable resource use is sustainable* ***and just****.*

Environmental outcome 2: The negative environmental impacts of our production, consumption and disposal is minimised.

This outcome should be more precise and reflect the multiple environmental crises that our material consumption is linked to.

This outcome should be amended to: *The* ***environmental damage*** *of* ***Scotland's*** *production, consumption and disposal is* ***brought within planetary limits.***

International outcome 1: The negative impacts experienced internationally from production, consumption and disposal are reduced.
As above, this outcome should be more specific than 'negative impacts' and name them as human rights and environmental damage. These impacts are serious and extensive and it is not possible to create a better future for Scotland without addressing our role in causing them.

People in Scotland care about these issues. The Scottish Climate Survey found that almost three-quarters of those surveyed (72%) feel climate change is an immediate and urgent problem[9]. Four in five UK adults support new laws to tackle environmental harm and human rights abuses in company supply chains[10].

The CE (Scotland) Act requires that the strategy has regard to the desirability of the economy being one in which 'due diligence in relation to environmental protection and human rights is exercised in supply chains'. This has not been considered at all in the strategy and is a major omission.

The Scottish Government should work with global south experts to understand what would constitute 'significant reductions' in damage.

This outcome should be amended to: *The* ***human rights and environmental damage*** *experienced internationally from* ***Scottish*** *production, consumption and disposal are significantly reduced.*

Social outcome 1: People and communities engage in and benefit from circular activities in a fair and inclusive way.
We support this outcome but would add that it is important that people are engaged in circular plans form the start of their development. So, this outcome should be amended to: *People and communities engage in and benefit from circular* ***plans and*** *activities in a fair and inclusive way.*

Social outcome 2: Circular behaviours are the norm across business and society.
We believe a systems change approach, rather than a behavioural change approach is needed to successfully create a circular economy society. The problems of a throwaway society are not caused by individuals and focusing on changing people's behaviour will not fix the system. Telling people to choose products with less packaging, for example, will only make a difference if there are affordable product choices with less packaging available. Consumers don't control this; producers and retailers of products do.

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[9] Views on climate crisis - gov.scot
[10] Press release: Four in five UK adults support new laws to tackle environmental harm and human rights abuses in company supply chains • Corporate Justice Coalition

In fact, behaviour change tactics can deepen social inequalities rather than improve them, making it harder to reach the overall goal being aimed for. For example, telling people to recycle more when the proper services aren't available to everyone can create confusion, an undeserved sense of guilt and a breakdown of trust in services, leading to less recycling activity happening, not more.

This outcome should be changed to: *Circular **systems** are the norm across business and society.*

Economy outcome 1: The economic value derived from material use is maximised without increasing our environmental impact.
Firstly, this outcome, which aims only not to *increase* environmental impact is inconsistent with the environmental and international outcomes to 'minimise' and 'reduce' these impacts.

This outcome relates to the false idea, embedded throughout this strategy, that perpetual GDP growth is possible and desirable. There is much evidence to show that, beyond a level reached long ago in Scotland and other developed economies, GDP growth is not linked to social improvements.[11]

It is highly misleading to state in the CE strategy that *"A circular economy drives sustainable growth"*. Whilst the circular economy can create new activities and jobs, it is not possible for circular economy strategies to grow national GDP more than a linear economy approach which uses more materials, creates more waste and is designed to increase GDP growth as much as possible.

The Scottish Government must be honest in its approach and choose between GDP growth and a future which cares for people and nature. It is not possible to do both. **A CE strategy that calls for GDP growth and sustainability can never successfully achieve both these goals.**

Friends of the Earth Scotland encourages the Scottish Government to prioritise an economy that works for people. At the moment, single use and low-quality products are adding to the cost-of-living crisis as people have to spend more money buying the things they need.

This outcome should be changed to: **"The economic value derived from material use is maximised and environmental impact minimised."**

Economic outcome 2: The Scottish economy is more resilient to disruptions in global supply of materials, including critical raw materials.
This outcome and its resulting indicators could encourage domestic extraction rather than reducing overall material use. The best way for Scotland to become more resilient to disruptions (and reduce social and environmental impacts) is to use less material overall.

This outcome should not be framed around security of supply. Narrative of material supply which are centred around security lead to competition and conflict. Rather than following other nations, such as the USA and UK, we encourage the Scottish Government to show leadership towards an approach to these materials which priorities minimising demand for those minerals and tackling widespread injustices across transition mineral supply chains instead of grabbing as much of these materials for ourselves as we can.

Rather than referring to "critical raw materials", this outcome should more explicitly focus on those materials required for the energy transition, known as "transition minerals". Analysis has shown that over half of minerals designated as 'critical' by the UK play 'no major role' in the green transition, and that the

[11] FOES (2025) GN/GS report

often-harmful mining of these resources is being driven in a large way by militarisation[12]. **To avoid contradiction with the environmental and international outcomes, this outcome must be rephrased.**

This outcome should be replaced with: ***Scotland uses less materials, including transition minerals***, ***which makes it more resilient to disruptions in global supply of materials.***

Economic outcome 3: Business and entrepreneurs have opportunities to develop circular economy innovations.
Whilst innovation and new businesses will be part of a thriving circular economy, this is not as urgent as the need to hold existing businesses to account for their damaging use of materials. The scale of the harm caused by businesses is vast and growing. It is an existential threat to people and nature. Therefore, a more relevant priority for the Government would be to regulate and legislate the expectation that businesses will adopt circular practices and take responsibility for the whole life cycle of the commodities which they produce and sell. This will enable us to hold businesses to account for their harmful practices.

This outcome should be replaced with: ***Businesses are required to use materials responsibly***.

Question 4
To what extent do you agree with the policy mechanisms identified?
Strongly disagree

Policy Mechanisms

Question 5
Do you have any comments on the policy mechanisms identified?

Taken on its own terms, the main problem here is that none of the policy mechanisms include timescales or an estimation of the impact they are expected to have. Without such basic levels of quantification and targets based on them, this strategy is meaningless. The policy mechanisms should each include timescales for implementation and an estimate of the contribution that each one will make to achieving the vision.

However, the glaring weakness of the strategy is that there is no evidence at all that the measures proposed can achieve the objectives and vision of the strategy. The creation of a circular economy will require that every sector and every producer will develop ways through which it can take responsibility for maximising the lives of their products, the levels of reuse and recycling and the sustainability of their ultimate disposal. The responsibilities of designers and retailers will change enormously. Major changes like this in almost all economic sectors will require investment in new systems and in some cases divestment from existing ways of working.

Many companies with vested interests in the linear model of production and consumption will fight to avoid these changes. While some companies will voluntarily move in the direction of a circular economy the overall driver of this change will be the public sector. New powers of economic planning and regulation will be needed. Nothing in this strategy suggests that the Scottish Government has grasped the scope and scale of these changes. The array of policy mechanisms in the strategy correspond to business-as-usual and their inadequacy makes a mockery of the vision and even the concept of circular economy.

[12] Over half of minerals designated as 'critical' by UK play 'no major role' in green transition, new report says - Global Justice Now Global Justice Now

Business support

Business support and 'influencing business behaviour' do not go far enough to meeting the government's responsibility to hold corporate power in check.

This policy mechanism should be changed to 'Enforcing responsible business practices' and the priority should be to introduce human rights and environmental due diligence guidance for businesses operating in Scotland by 2030.

Behaviour change

As stated in our response to Question 3, and commenting on social outcome 2, a behaviour change programme will not have a significant impact because it is the system that is broken, not the people that use it.

This policy mechanism should be changed to 'System change' and the priority changed to developing and implementing an ambitious and responsible Extended Producer Responsibility programme by 2030.

Place-based approaches

It is unclear what this policy mechanism relates to. Whilst it is important to listen to local people and the circumstances which make each circular economy project unique, a lack of national guidance has created a failing waste management system, unfit for purpose in Scotland. The Scottish Government must recognise that, sometimes, national guidance is needed so that Scotland doesn't, for example, end up with incinerators being built within 20 miles of each other (as in Aberdeen and Inverurie).

Friends of the Earth Scotland is strongly opposed to Project Willow. It is an unjust, expensive, unproven and socially and environmentally harmful idea. Chemical recycling creates a toxic burden on local people and nature[13].

Procurement

Friends of the Earth Scotland support policy mechanisms to encourage circular public procurement approaches. Public service providers must be given the proper financial resources and support to make changes in ways which will benefit both people and nature.

The priority should be to introduce human rights and environmental due diligence standards for public sector organisations operating in Scotland by 2030. The Scottish Government should commit to supporting public sector organisations to make the necessary changes. The Scottish Government's due diligence guidance should be based on the UN Guiding Principles on Business and Human Rights. Ensuring that Scottish Government standards are informed by the UK Government's approach does not stop it from developing its own standards in tandem.

Skills and education

Friends of the Earth Scotland support policy mechanisms focused on skills and education **but only if it is embedded in just transition principles** (aligning with the CE (Scotland) Act requirements). Priority areas for initial focus should be gaps in steel processing and reuse and repair.

This policy mechanism should explicitly mention jobs, as well as skills and education. Many jobs will have to change as the economy transforms and it should be a priority for Government that people, their families and communities, are protected throughout this process. Affected workers should have a clear offer of support, skills training and, where necessary, alternative employment.

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[13] zwe_jointpaper_UnderstandingEnvironmentalImpactsofCR_en.pdf
And briefing layout and NRDC: Recycling Lies - "Chemical Recycling" of Plastic Is Just Greenwashing Incineration (PDF)

The transition to a circular economy should be a participatory process in which workers affected can co-create the changes needed. This includes consulting with workers on the education and skills gaps needed to be filled to fulfil the circular economy vision.

Where public policy is driving employment change, through for example legislation, regulation, licensing, grant support, investment or procurement, it should ensure that jobs created are secure and well-paid. Training programmes should be put in place so that the right workers have the right skills and they should incorporate programmes which extend opportunities to groups which are under-represented in well-paid occupations or sectors.

This policy mechanism should be changed to 'Jobs, skills and education' and the priority changed to 'increase uptake of circular practices through improved jobs, skills and education following just transition principles'.

Circular Economy Data

Friends of the Earth Scotland supports this policy mechanism and priority.

The CE strategy should include commitments to collecting and improving data on specific waste streams so that material flows of key materials, such as plastic, food and electrical items can be regularly assessed. In particular, the CE strategy should include plans to collect data on the production, consumption and disposal of plastic in Scotland.

We also suggest that a priority research topic for the future should be the health benefits of transitioning to a circular economy. There is almost no consideration of the impact of the materials we use on our health in circular economy policy making in Scotland[14]. This is despite the mounting evidence of the harm that some materials, such as plastics, can do to our health. We urge the Scottish Government to follow the EU and take a precautionary approach to public health, especially around plastic.

Policy alignment and systems thinking

Friends of the Earth Scotland supports this policy mechanism and priority. Please note our commentary on:

- The National Strategy for Economic Transformation[15]
- The Green Industrial Strategy
- The National Planning Framework 4
- The Climate Change Plan 2026-2040

We also urge the Scottish Government consider how to best align its circular economy plans with the UK Government and the EU.

On working with the UK Government, whilst we support alignment and the Scottish Government feeding into UK policy where there are limits to devolved powers, we also caution that working together should not be used as an excuse to delay or limit progress within Scotland where devolved powers allow. circular economy plans have suffered greatly because of the internal Markets Act. The Scottish Government should not be afraid to introduce devolved policies which test the limits of the IMA but which sit with historic devolved responsibilities of power, such as waste. Without such tests, it is not possible to know the exact boundaries of devolution and this may result in the loss of power to Scotland.

[14] Written question and answer: S6W-41153 | Scottish Parliament Website
[15] Also Experts back call to transform Scotland's economy - Friends of the Earth Scotland

The Scottish Government should start by implementing the ban on disposal of unsold goods in the Circular Economy (Scotland) Act. The Act was passed in 2024, three years after the Internal Market Act, with the consent of both UK and Scottish Government lawyers. Whilst this policy could have implications for businesses operating across the UK, it is an excellent opportunity for other nations to follow Scotland's lead in banning this environmentally harmful practice.

A new policy mechanism should be added to this list:
Extended Producer Responsibility Programme
"Priority: Develop and start EPR schemes for at least five environmentally significant product categories within five years of the CE strategy being published"

The Scottish Government should create an ambitious and comprehensive EPR programme for Scotland. In the first five years, the Scottish Government should aim to create EPRs for at least five product categories. Product categories linked to significant environmental harm should be prioritised.

The Scottish Government should revert to a specific focus on EPR, rather than product stewardship in general. EPR is a mandatory form of product stewardship that makes producers responsible for post-consumer waste, while product stewardship is a broader approach, often involving voluntary measures that shares responsibility for a product's lifecycle among all stakeholders, including producers, retailers, and consumers.

Canada has experimented with both EPR and product stewardship models for decades. The country is now actively moving its product stewardship programmes to full EPR models in recognition that these more effectively incentivise producers to reduce waste and redesign products[16].

A product stewardship approach risks overly complicating and slowing down the process of reducing the impact of some of the most difficult to manage product categories. The scale and urgency of the Scottish Government's policies must match the impact that these companies and their products are having on society, and so the Scottish Government should make immediate use of its EPR powers.

EPR product categories should be chosen based on the environmental and social impact of the products and the waste they generate. We agree that textiles should be the priority for the first EPR, which should be developed as soon as possible. Following this, the next EPRs could include: vapes, mattresses, toys, DIY and leisure equipment, car seats, wind turbine blades and fishing gear.

The conflict of interests of businesses around EPR should be recognised. They should only be allowed to advise on the practicalities and logistics of the EPR programme, not on whether the EPR programme itself is needed or not.

Another new policy mechanism should be added to this list:

Invest in and support accessible reuse programmes
Reuse is often overlooked but is the key to reducing consumption of many types of products. The goal should be that everyone in Scotland has access to high quality reuse services. It should be as easy to reuse something as it is to buy new. Reuse targets are essential.

This requires substantial, long-term investment in reuse, especially for the third sector as initiatives like repair cafes, reuse hubs and charity shops have many social benefits.

[16] Overview of extended producer responsibility in Canada - Canada.ca

Implementing the unsold goods regulations through the powers created in the Circular Economy (Scotland) Act are important too. Data reporting should be improved as the regulations are introduced to understand better unsold goods (quantity and quality of unsold stock including excess, faulty and returned items) alongside new data on refurbished/repaired items, sold/donated for resale, recycled, disposed and exported figures.

Question 6
Do you have any comments on the associated plans and priorities?
See answer to Question 5 above.

Priority Sectors

Question 7
To what extent do you agree with the priority sectors identified?
Disagree

Question 8
Do you have any comments on the priority sectors identified?
A purely sectoral approach, which lacks material specific measures is dangerous. It could lead to the failure to adopt economy-wide measures. All sectors much take action to achieve a circular economy in Scotland.

Friends of the Earth Scotland supports the inclusion of the priority sectors identified (although we would rename these priorities areas as some of them are not actually sectors) and would add three more:

- Plastics
- Chemicals, and
- Electricals.

We recognise that the Scottish Government has decided to take a sector-based approach to its Circular Economy plans but we consider this to be insufficient to meet the threats from over consumption that are facing humanity. The main way that most people in Scotland interact with materials is as materials, not as a sector. **We strongly urge the Scottish Government to take an approach which combines a sector and material-based approach.**

In particular, plastics and chemicals must be included in its CE strategy as the scale of the harms associated with these materials demands special consideration. If material consumption was reduced but everything was made of plastic, we would be replacing one bad approach with another. Plastic is a highly problematic material for which there are no safe or sustainable waste management options (including recycling). It is much more difficult to create a circular textiles sector, for example, if you do not have a plan to reduce plastic (as plastic based textiles cannot be easily or safely recycled). There is nothing to guard against this happening in the Scottish Government's current approach.

A priority area on plastics
It is deeply shocking and concerning that the Scottish Government have published a draft circular economy strategy which fails to mention plastics even once. We note that the forthcoming UK Circular Economy strategy will include 'chemicals and plastics' as a cross-cutting theme[17].

[17] Environment secretary to vow to 'end throwaway culture' - letsrecycle.com

Earlier this year, a petition to the Scottish Parliament with over 32,000 signatures called for a ban on all non-essential single-use plastics. This petition was not taken forwards based on the understanding that 'the Scottish Government, in producing and delivering the [circular economy] strategy, will be able to meet the petitioner's general asks'[18]. Both the people of Scotland and the Scottish Parliament expected the matter of plastic to be addressed in this strategy, which the Scottish Government has utterly failed to do.

Scotland has a plastics sector which is in desperate need of government steer to align it to circular economy principles in a just way, and which is being ignored by this strategy:

- In December 2025, a UK Government £150m funding packaging to perpetuate plastics production at Grangemouth rather than supporting the development of circular job opportunities in the area.
- In November 2025, it emerged that 400 jobs are at risk when ExxonMobil announced its plans to close the plastic plant at Mossmorran[19]
- In April 2023 the Yes Recycling plastics recycling plant (co-funded with government money) went into administration only seven months after it opened[20].
- Plastics production at Grangemouth has resulted in significant, long term nurdle pollution across the Firth of Forth, impacting both wildlife and communities[21].
- Export of waste plastic from Scotland has more than doubled in 10 years from 2014 to 2023 (34,476 tonnes to 77,508 tonnes)[22].

The plastics crisis is global in nature but many of the impacts are felt on a national level and require national action to solve. In addition, Scottish failures[23] to manage plastic waste has proven it to be one of the most challenging materials to manage. It is essential to include **specific actions, timelines and policy recommendations** to drive more sustainable use of plastic in Scotland within the circular economy strategy. This must be recognised in the Scottish Circular Economy Strategy, just as it is in the UK circular economy plans.

The plastics crisis is damaging the planet and our health, and these impacts will worsen if production continues to increase. Plastic production is expected to triple by 2060[24]. In Scotland, much of the plastic we use is unnecessary, designed for single use and often not even recyclable. People see the impact of plastic litter and thrown away products in their daily lives and support for change is high[25].

Measures in place today, such as recycling and selective product bans, have proven insufficient in addressing the plastic crisis. Solutions must address the root cause of the crisis – how plastics are produced and sold. Only governments can hold producers and retailers to account for the harm created by their plastic products. Many of the actions required to achieve this can and must be taken at a devolved level.

Since the passing of Scotland's Circular Economy Law a year ago, the only significant change in circular economy policy has been a backwards step to postpone indefinitely a 25p charge on disposable cups.

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[18] Official Report
[19] ExxonMobil to close Mossmorran plastics plant with 400 jobs at risk | STV News
[20] Glenrothes recycling plant in administration months after opening - BBC News
[21] Nurdles: The tiny pellets polluting Scotland - Friends of the Earth Scotland
[22] Waste data for Scotland | Scottish Environment Protection Agency (SEPA)
[23] Such as Glenrothes recycling plant in administration months after opening - BBC News
[24] Global plastic waste set to almost triple by 2060, says OECD | OECD
[25] 88% of Scottish adults concerned about plastic pollution - Friends of the Earth Scotland

We do not have time to fix the economy one product at a time. The Scottish Government must step up action to reduce the impacts of plastic and protect the people of Scotland from its harms.

The new priority area on plastics in the CE strategy must include:

- Measuring and reducing how much plastic is produced in Scotland, how much is consumed and what happens to waste plastic.
- Enforcing and expanding the single use plastics bans.
- Conducting research on the impacts of chemicals in plastic on people and nature, including health costs, and recommendations on how to reduce these impacts.
- Banning the burning of plastic in incinerators.
- Enforce bans on exporting plastic waste.
- Improve recycling data reporting to understand how much plastic is sent to recycling, how much is actually recycled (and where and how) and what happens to the rest.
- Invest in affordable, reusable alternatives to plastic-based systems such as packaging.

Friends of the Earth Scotland endorses the response from Fidra on evidence around plastic and chemical pollution and the changes which must be adopted into the circular economy strategy to mitigate this pollution. We note that, on plastics, the Frida response concludes: "If the petrochemicals sector is not addressed, Scotland is at risk of developing an unsafe pseudo circular economy that produces pollution alongside harmful products and harmful secondary materials." Such a future must be avoided to protect the people of Scotland.

A priority area on chemicals

The Circular Economy (Scotland) Act requires the Ministers to have regard to the importance of consumer and workplace safety. The presence of harmful chemicals in many of the products we use, from furniture to plastics and electronics, shows that it is not possible to create a safe circular economy without considering chemicals[26]. People in Scotland are exposed to harmful chemicals, such as microplastics and PFAS in single use plastics and furniture, in the products they buy.

By reducing the need for new products, a true circular economy can be part of the answer to minimising harmful chemical exposure. However, unless the chemicals within products are considered, Scotland's recycling efforts could be compromised by creating toxic recycling loops.

The necessary regulatory controls sit with the UK Government but there is much that the Scottish Government can do to limit the impact of chemical production and harm by adapting its circular economy policies. Ensuring that recycling efforts consider chemical safety is key, as is safeguarding workers and consumers at high risk of exposure. We need more research to understand these risks and the cost of inaction fully. National targets to limit plastics and harmful chemicals are needed and introducing guidance that matches EU standards on safe use and reuse of materials is essential.

A priority area on electrical products

Every mobile phone and laptop is powered by precious materials such as lithium, cobalt and copper. Inadequate waste management systems means that these materials are often thrown away rather than being reused or recycled. Less than 1% of lithium is recycled, despite it being required for electric vehicles.

The disposable vape ban has not been enough to stop the rise in vapes (as reusable models are very similar to disposable ones) and all the problems associated with them, including the use of precious materials in a disposable manner and the chaos involved in managing the waste from these products. A new approach is required.

[26] Safe and Circular: How Controls on Chemicals Enable a Circular Economy - Fidra

Circular economy solutions to electrical products must be considered as a priority sector to ensure the best policy solutions are found.

Question 8a

Do you have any comments on the plans and priorities for the built environment?

In the spirit of just transition, we strongly encourage the Scottish Government to develop this road map in dialogue with communities, workers and environmental groups as well as the business sector. The priority should be amended to: "Work with communities, workers, environmental groups and the sector to develop a roadmap in 2026".

The road map should prioritise and encourage the refurbishment of existing buildings, which has greater environmental savings than reuse of materials and recycling.

Question 8b

Do you have any comments on the plans and priorities for the net zero energy infrastructure?

Human rights and environmental due diligence must be front and centre of this roadmap

Given the inclusion of an international outcome, it is surprising and regrettable that the global impacts of the energy infrastructure required to meet the energy transition are not considered here. The international harms of material extraction and production for the energy transition are well documented and increasing[27]. The Environmental Justice Atlas lists 834 reported cases on injustices linked to mineral ores and building materials extraction[28], an increase from 705 cases in 2023. There are documented cases of serious and extensive breaches of human rights and environmental harms in supply chains linked to Scotland[29].

Four out of five adults in the UK support new laws to tackle environmental harm and human rights abuses in company supply chains[30]. Whilst such legislation must happen at a UK level, this shows that people want those in power to act on these issues.

Friends of the Earth Scotland urges the Scottish Government, in the strongest possible way, to embed consideration of international impacts throughout its energy infrastructure plans. Without such a commitment, Scotland risks replacing one socially and environmentally destructive, unjust and unsustainable system with another. *What is the point of an energy transition if it comes at the cost of the lives of those in the global south?*

The energy infrastructure roadmap must start from the principle that the human rights and environmental harms caused by the energy infrastructure supply chain are intolerable to Scotland.

Take a more inclusive approach to the roadmap development

We strongly encourage the Scottish Government to develop this roadmap in dialogue with communities, workers and environmental groups as well as the business sector. The priority should be amended to: *"Work with communities, workers, environmental and international groups and relevant sectors to develop a road map for increasing circularity in net zero energy infrastructure in 2026".*

As domestic activities to extract transition minerals escalate, the Scottish Government must do more to listen to and support communities affected by these activities. Research by Friends of the Earth Scotland

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[27] For example "Does Anyone Care?" - Climate Rights International and financing-critical-minerals-but-failing-critical-safeguards_ffi-report.pdf and International Perspectives on Raw Materials Reduction in Europe and Germany - PowerShift

[28] Ej Atlas

[29] Unearthing Injustice: A global approach to transition materials - Friends of the Earth Scotland

[30] Press release: Four in five UK adults support new laws to tackle environmental harm and human rights abuses in company supply chains • Corporate Justice Coalition

and Edinburgh University has shown that these communities are already feeling isolated, exploited and let down by companies and policy makers[31].

An example of the current unjust way that Scotland's energy transition is proceeding is happening in Aberdeen around local opposition to the Energy Transition Zone.[32]

More research is needed

A priority for this area is to understand what transition minerals are needed and how much. Transition minerals and other critical raw materials should be considered individually, not as a group. Each material supply chain is different and the challenges and CE solutions to one material will not be the same for another. A detailed analysis is needed to understand how much of Scotland's net zero demand for those transition minerals needed to meet climate goals can be met by circular economy strategies.

Only transition minerals should be considered, not those used for military purposes.

The UK has a critical mineral strategy but Scotland does not. 19 materials are lists as critical in the UK strategy.

Question 8c

Do you have any comments on the plans and priorities for textiles?

As above, we strongly encourage the Scottish Government to develop this roadmap in dialogue with communities, workers, environmental groups and international organisations. The circular economy strategy must take a just transition approach and this cannot be done if only business is involved.

We urge the Scottish Government to consider the growing body of evidence of social and environmental harms linked to the textile sector internationally.[33] This evidence should drive circular economy plans for textiles in Scotland to ensure that any changes improve the lives of people involved in textiles supply chains internationally and reduce the burden on heavily damaged ecosystems. For example, we strongly advise the Government to prioritise the development of an EPR programme for textiles, rather than taking a product stewardship approach, which is likely to be slower and less effective. Investment in third sector reuse and repair for textiles is also necessary.

Friends of the Earth strongly supports the urgent development of an EPR programme for textiles in Scotland, not product stewardship. Action enforced by clear, urgent regulation is needed now, not plans for voluntary measures.

We also support the development of regulations on the disposal of unsold goods as soon as possible, which should be as broad as possible, including textiles and many other products. This should be a separate priority in this section of the strategy: *"Priority: Develop regulations on disposal of unsold goods by 2028."* The wasteful practice of sending new products to disposal must be stopped as soon as possible.

Another priority should be to work with the reuse sector that manages much of Scotland's second-hand clothing and footwear to support and improve their services.

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[31] Communities and transition mineral mining in Scotland - Friends of the Earth Scotland

[32] Campaigners raise 'serious questions' about direction of £500million Just Transition Fund - Friends of the Earth Scotland

[33] For example, Extraction Fashion by War on Want (2025) and Spinning Greenwash: How the fashion industry's shift to recycled polyester is worsening microplastic pollution by Changing Markets (2025)

Question 8d

Do you have any comments on the plans and priorities for transport?

The material demands of our transport system are unknown. There is a risk that transport plans cannot be fulfilled because of material shortages. There are also opportunities to create more circular systems for transport options in Scotland which must be realised to reduce our demand for transition minerals.

Research is needed to understand the material demands of transport plans in Scotland. Each transition mineral, from lithium to nickel and cobalt, have unique supply issues. They should each be considered separately. It is particularly important to understand any conflict between energy and transport use and use for military purposes. A recent report by Global Justice Now[34] found that over half of minerals designated as 'critical' by the UK play 'no major role' in the green transition, and that the often-harmful mining of these resources is being driven in a large way by militarisation.

Risks to transport plans related to lithium supply

Lithium is most commonly used in rechargeable batteries in electric vehicles. In 2022, Scotland consumed an estimated 142 tonnes of lithium. The bulk of this consumption, 82%, went towards private cars. Demand for lithium is growing rapidly and is expected to increase by 13 – 51 times from 2020 to 2040, depending on how rapidly decarbonisation takes place. The current global recycling rate for lithium is just 1%.

The UK's critical mineral strategy anticipates huge increases in the UK's mineral demands, including an 11 times increase in lithium demand by 2035. Such plans go far beyond the UK's fair (or realistic) share of this material[35]. Mining affected communities in Chile, Peru, Indonesia, South Africa and the North of Ireland have condemned this approach[36].

Lithium supplied to Scotland can be traced back to the main global producers: Australia and Chile[37] where there is evidence of corruption, worker exploitation and mines depleting water sources for Indigenous communities and wildlife.

Mining is associated with conflict because exploitation of mineral resources impacts upon nearby communities. It is an extremely energy intensive process and generates large amounts of toxic waste.

Given Scotland's lithium demand comes mostly from electric vehicles, there must be a shift in how we get around. We simply cannot replace all our current petrol and diesel cars with electric cars like for like – we need cheaper, more reliable, cleaner, public transport, so we don't need as many cars overall.

Replacing Scotland's 2.5 million fossil fuel cars and 4,400 buses, like for like, would require 20,200 tonnes of lithium in total. If the proportion of journeys in Scotland taken by bus increased to 30% (which would bring the proportion of journeys made by public transport in Scotland up to the levels we see in London today) lithium requirements would be 13,800 tonnes (32% less).

Improving circularity of EV vehicle materials is useful but a much greater impact can be made from a system change from private to public travel. The CE strategy must recognise this.

Lithium is just one example of a transition mineral which requires careful consideration to manage fairly and sustainably. The Scottish Government must consider the supply chain challenges and Scottish

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[34] Material realities: Who needs 'critical minerals' and at whose expense? - Global Justice Now Global Justice Now

[35] Critical_point_securing_the_raw_materials_needed_for_the_UKs_green_transition2.pdf

[36] Mining affected communities speak out against the UK Government's new Critical Minerals Strategy - London Mining Network

[37] Unearthing Injustice: A global approach to transition materials - Friends of the Earth Scotland

needs for each of these minerals individually. Grouping transition minerals together is unhelpful as each supply chain faces unique challenges and opportunities.

Question 8e
Do you have any comments on the plans and priorities for the food system?
The priority here should be on system change, rather than behaviour change. Reducing food waste and improving food waste collections are vital.

Despite Scotland throwing away one million tonnes of food waste a year and levels increasing by 5% between 2013 and 2021, when the target was a 33% reduction, there is no mention of a food waste target in the circular economy strategy. Food waste is a key driver of climate emissions. None of the 'actions' listed in the plan, which focus on reporting and research, will directly deliver changes in food waste. It is not possible to understand what the Scottish Government's goals around food waste reduction are or how they are going to achieve them with this plan.

Soils are part of a circular, not linear, system and are fundamental to our ability to produce food. They should be seen as a public resource. The production, consumption and export of food is also a hugely important part of Scotland's economy. We endorse the response from the Scottish Food Coalition on soils and nitrogen.

Friends of the Earth Scotland endorses the response from Fidra on the need to phase out Scotland's agricultural use of sewage sludge and invest in alternative outlets and resource recovery technology to manage sewage sludge safely. We also endorse their response around the risks of PFAS in the food system created by pesticides and food packaging. To ensure food, food systems and food contact materials support a safe and sustainable circular economy, steps must be taken to prevent contamination from harmful chemicals, such as PFAS, at source.

Product Stewardship

Question 9
Do you have any comments on the proposed approach to product stewardship?
Product stewardship, as a complex and voluntary mechanism, is a poor substitute for an extensive, clear and urgently implemented Scottish Extended Producer Responsibility (EPR) programme. The Scottish Government should focus on delivering a programme of EPR schemes, utilising the powers it already has and responding with appropriate urgency to the need to reduce consumption. This must be done as soon as possible. The Scottish Government has powers to develop and deliver EPR schemes under the UK Environment Act. The Internal Markets Act should not be used as an excuse not to act within Scotland's devolved powers.

The priority should be revised to: "*Develop a EPR programme for five key product categories within 5 years of the CE strategy being published".*

Businesses have a conflict of interests around EPR development. They should only be allowed to advise on the practicalities and logistics of the EPR programme, not on whether the EPR programme itself is needed or not.

Circular Economy Monitoring and Indicator Framework

Question 10
Are there any changes or additions that you would like to suggest in relation to the Circular Economy Monitoring and Indicator Framework to ensure it is fit for purpose?

☐ Yes

If yes, please specify below in relation to the framework as a whole and under the relevant outcome sub-questions below if in relation to specific indicators/outcomes.
Friends of the Earth Scotland suggests the list of indicators in the table below should be used in the CE strategy. There is some overlap of the indicators in our list where outcomes relate to each other. The two indicators which should be used as statutory targets should be Scotland's carbon footprint (CO2e) and raw material consumption or RMC (tonnes of materials used).

Where possible we have suggested the goal for each indicator, although often a lack of published baseline data means it is not currently possible to suggest suitable goals for all indicators.

Table 1. Comparison of the original outcomes for the Circular Economy Strategy for Scotland and Friends of the Earth Scotland's suggested outcomes and indicators

Original outcome	FOES suggested outcome	FOES suggested indicator(s)
The economic value derived from material use is maximised without increasing our environmental impacts.	The economic value derived from material use is maximised and environmental impact minimised.	• Proportion (%) GDP related to circular economy activities (split by waste hierarchy level as defined in section 1(4) of the CE (Scotland) Act) * • Carbon footprint of Scotland (tCO2e) reduced to net zero by 2045 • Raw Material Consumption (RMC) of Scotland (Tonnes) reduced to 8t per person by 2045
The Scottish economy is more resilient to disruptions in global supply of materials, including critical raw materials.	Scotland uses less materials, including transition minerals, which makes it more resilient to disruptions in global supply of materials.	• Raw Material Consumption (RMC) of Scotland (Tonnes) reduced to 8t per person by 2045 • By 2045, Scotland's transition mineral use for each transition mineral is reduced by X% compared to 2025 levels through demand reduction and recycling measures (each identified transition mineral should have its reduction level set at an appropriate level for that material)* • Transition mineral index including amount used, expected demand change to 2045, supply chain understanding and reuse and recycling rate for each material on index *
Business and entrepreneurs have opportunities to develop circular economy innovations	Businesses are required to use materials responsibly in Scotland and their supply chains.	Proportion (%) of businesses adopting and implementing Scottish Government guidance on human rights and environmental due diligence *
Non-renewable resource extraction is minimised, and renewable resource use is sustainable	Non-renewable resource extraction is reduced in line with net zero aims for 2045, and renewable resource use is sustainable and just.	• Carbon footprint of Scotland (tCO2e) reduced to net zero by 2045 • Raw Material Consumption (RMC) of Scotland (Tonnes) reduced to 8t per person by 2045

		• Separate reuse and recycling weights and rates (tonnes and %) * • Sub-indictors on social benefits of reuse* • Proportion (%) of public organisations adopting and implementing Scottish Government standards on human rights and environmental due diligence and number of businesses adopting and implementing similar guidance *
The negative environmental impact of our production, consumption and disposal is minimised	The environmental damage of Scotland's production, consumption and disposal is brought within planetary limits.	• Carbon footprint of Scotland (tCO2e) reduced to net zero by 2045 • Raw Material Consumption (RMC) of Scotland (t) reduced to 8t per person by 2045 • Production, consumption and disposal (including export) of plastics, electronics and textiles used in Scotland (Tonnes) *
The negative impacts experienced internationally from production, consumption and disposal are reduced	The human rights and environmental damage experienced internationally from Scottish production, consumption and disposal are significantly reduced.	• Proportion of public organisations adopting and implementing Scottish Government standards on human rights and environmental due diligence and the number of businesses adopting and implementing similar guidance * • Amount and proportion of waste exported (Tonnes and %) *
People and communities engage in and benefit from circular activities in a fair and inclusive way	People and communities engage in and benefit from circular plans and activities in a fair and inclusive way.	• Proportion of people in Scotland with access to reuse and repair services (%) * • Number of CE jobs and voluntary positions (No. FTE) * • Ratio of women to men in CE positions (both paid and unpaid), should be 50:50 by 2045
Circular behaviours are the norm across business and society	Circular systems are the norm across business and society.	• Carbon footprint of Scotland (tCO2e) reduced to net zero by 2045 • Raw Material Consumption (RMC) of Scotland (Tonnes) reduced to 8t per person by 2045 • Separate reuse and recycling rates (%) * • Amount and proportion of waste exported (Tonnes and %) * • Amount and proportion of unsold goods sent to disposal, recycle and reuse (Tonnes and %) *

***** Where possible we have suggested the goal for each indicator. The direction and scale of change required should be set in the strategy, creating more certainty and legitimacy. However, a lack of published baseline data means it is not possible to suggest suitable goals for many of the indicators in this table. Where indicator goals cannot be set yet, this is marked with an asterisk. Given the urgent need for action, there must be a balance between data and action, which is regularly assessed.

Question 10a

Do you have any comments in relation to the indicators proposed for outcome "The economic value derived from material use is maximised without increasing our environmental impacts"?

This outcome should be revised to *"The economic value derived from material use is maximised and environmental impact minimised."* and the indicators changed to reflect this (see our answer to Q3 of the consultation for more details on the need to measure and reduce material and carbon impacts of resource consumption).

It is important to have an outcome and indicators which relate most directly to people and communities in Scotland. This will ensure policies link more to the people they are aiming to help. The high cost of materials and wasteful nature of products contributes to the cost-of-living crisis so this indicator can be used to reduce the cost burden on people, particularly those who are most marginalised due, for example, to race, class, disability and sex.

GVA of circular economy sectors should not be an indicator as it is likely to incentivise increased use of materials and waste. The more materials the 'circular economy sectors' use and waste they generate, the greater their GVA will be.

GVA does not distinguish between desirable and undesirable economic activity. Zero Waste Scotland's report 'the state of the circular economy' does not separate recycling and reuse economic impact which means CE activities with greater potential benefits could be overlooked for larger but lower impact activities.

Instead, the proportion of GDP (or GVA) related to CE activities, split by the waste hierarchy levels as defined in section 1(4) of the CE (Scotland) Act should be used as an indicator (these are: waste prevention, preparing for reuse, recycling, recovery and disposal). This will show what proportion of the economy is related to CE activity. It can be increased without leading to increases in material use or waste.

Resource productivity and material intensity should not be measured. There is overwhelming scientific evidence, in some cases going back many decades, showing that efficiency gains lead to increased consumption across many different products, from coal to steel[38]. Productivity measures could drive increase of material consumption, the very opposite of what needs to happen.

There is also substantial evidence for the rebound effect, where gains in one area are compromised by loses in another. One study estimated that UK households experience a rebound effect of 34%[39]. We would encourage the Scottish Government to consider including a "rebound effect factor" on any productivity indicator, to ensure this effect is included in any analysis (as the UK Government do with their climate analysis which indicates a rebound effect around EV vehicle usage[40]).

Labour productivity of CE sectors should not be measured. It fails to capture unpaid work or the quality of jobs (this should be carefully considered, given worker wellbeing is cited as a major cause of falling productivity across the UK). Instead, the number of CE jobs and voluntary positions should be measured and ways to measure the quality of jobs devised.

Question 10b

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[38] For example Guest post: Why 'rebound effects' may cut energy savings in half - Carbon Brief and The rebound effect of material and energy efficiency for the EU and its major trading partners - ScienceDirect

[39] Missing carbon reductions? Exploring rebound and backfire effects in UK households - ScienceDirect

[40] The Seventh Carbon Budget

Do you have any comments in relation to the indicators proposed for outcome "The Scottish economy is more resilient to disruptions in global supply of materials, including critical raw materials"?

This outcome should be amended to: ***Scotland uses less materials, including transition minerals, which makes it more resilient to disruptions in global supply of materials.***

The Scottish Government should use 'Raw material Consumption (RMC) of Scotland (Tonnes) reduced to 8t per person by 2045' to measure its material footprint. This is the most direct, complete and scientifically sound way to measure how much materials Scotland is using. Material specific indicators will be needed to support the top-level RMC indicator, including indicators for each transition mineral and problem materials such as plastic.

The Scottish Government should create a transition mineral strategy which lists the transition minerals required to meet its energy and transport plans. It should estimate the amount of these materials needed and measure the supply of these materials over time. It should measure both the domestic (and UK) supply and make efforts to understand where these materials are coming from, globally. It should measure the reuse and recycling rate for each transition mineral.

- **Resource resilience ratios should not be used.** It will encourage unnecessary exploitation of Scottish resources without social and environmental safeguards.
- **Material intensity of trade flows should not be used.** This is unnecessary, overly complicated and too inaccurate to be useful as an indicator.
- **Resource resilience ratio of critical raw materials should not be used.** Reducing 'critical raw materials' to a single value is meaningless. Each material has unique supply chain challenges and circular economy opportunities. Only transition minerals should be considered, not those used for military purposes. Minerals required for military purposes must be minimised and should not be prioritised over legitimate transition mineral demand.

Question 10c
Do you have any comments in relation to the indicators proposed for outcome "Business and entrepreneurs have opportunities to develop circular economy innovations"?
This outcome should be changed to: "Businesses are required to use materials responsibly." The indicator should be measuring the number of businesses adopting and implementing Scottish Government guidance on human rights and environmental due diligence.

Question 10d
Do you have any comments in relation to the indicators proposed for outcome "Non-renewable resource extraction is minimised and renewable resource use is sustainable"?

This outcome should be changed to: "Non-renewable resource extraction is reduced in line with net zero aims for 2045, and renewable resource use is sustainable and just."

The indicators should be:
- Raw Material Consumption of fossil fuels
- Carbon footprint
- Total waste arisings
- Reuse and recycling rates (total and household). This should include a sub-indicator which measures the amount sent to recycling and actual amount recycled.
- Number of public organisations adopting and implementing Scottish Government standards on human rights and environmental due diligence and number of businesses adopting and implementing similar guidance.

Question 10e

Do you have any comments in relation to the indicators proposed for outcome "The negative environmental impact of our production, consumption and disposal is minimised"?

This outcome should be changed to: "The environmental damage of our production, consumption and disposal is brought within planetary limits."

The indicators should be changed to:

- Carbon footprint of materials (tCO2e)
- Raw Material Consumption (RMC) (tonnes)
- Total waste arisings (tonnes)
- Production, consumption and disposal (including export) of plastics, electronics and textiles used in Scotland (tonnes)

Question 10f

Do you have any comments in relation to the indicators proposed for outcome "The negative impacts experienced internationally from production, consumption and disposal are reduced"?

This outcome should be changed to: "The human rights and environmental damage experienced internationally from production, consumption and disposal linked to Scotland are reduced."

The indicators should be changed to:

- Number of public organisations adopting and implementing Scottish Government standards on human rights and environmental due diligence and the number of businesses adopting and implementing similar guidance.
- Amount of waste exported (with sub-indicators for plastics, textiles and electricals)

Of the proposed indicators:

- The carbon footprint of managing Scotland's waste outside of Scotland would be a useful sub-indicator of the carbon footprint target. On its own, this indicator is not enough to drive meaningful change in material consumption and impact levels.
- Overseas emissions ratio – this could be a sub-indicator of the carbon footprint target but does not give enough information to be useful as a standalone indicator.
- Proportion of Scottish waste managed within Scotland. This should be revised to the total amount of Scottish waste managed within Scotland and added to with a related indicator which measures the total amount of Scottish waste managed outside Scotland (including the country/region of final destination and management type).

Question 10g

Do you have any comments in relation to the indicators proposed for outcome "People and communities engage in and benefit from circular activities in a fair and inclusive way"?

This outcome should be amended to: "People and communities engage in and benefit from circular plans and activities in a fair and inclusive way."

The indicators should be changed to:

- Number of people and communities engaging with Zero Waste Scotland. As well as working with businesses, Zero Waste Scotland should be engaging directly with people and communities more, to ensure that it understands and incorporate their views into its work to support the development of a circular economy in Scotland.
- Population with good access to reuse and repair services.

- Number of CE jobs and voluntary positions. It is important that non-paid contributions to the CE are recognised.
- Ratio of men to women in CE positions (paid and unpaid). Only 25% of CE jobs are held by women[41]. Many of the voluntary roles in the CE are done by women. CE jobs should be equally accessible to women and men.

Question 10h
Do you have any comments in relation to the indicators proposed for outcome "Circular behaviours are the norm across business and society"?
This outcome should be changed to: "Circular systems are the norm across business and society."

The indicators should be changed to:
- Carbon footprint
- Raw Material Consumption (RMC)
- Reuse and recycling rates.

Question 11
Please provide any further information or evidence that should be considered in the accompanying Equalities Impact Assessment
No comment

Question 12
Please provide any further information or evidence that should be considered in the accompanying Fairer Scotland Assessment
No comment

Question 13
Please provide any further information or evidence that should be considered in the accompanying Island Communities Impact Assessment
No comment

Question 14
Please provide any further information or evidence that should be considered in the accompanying Business and Regulatory Impact Assessment
No comment

Question 15
Please provide any further information or evidence that should be considered in the accompanying Consumer Duty Impact Assessment
No comment

Question 16
Please provide any further information or evidence that should be considered in the Child Rights and Wellbeing Impact Assessment
No comment

[41] Women and the circular economy: Is the circular economy prejudiced? | WRAP - The Waste and Resources Action Programme

Question 17

Do you have any views on whether there are likely to be any positive or negative environmental impacts from the draft Strategy that have not been identified in the Strategic Environmental Assessment?

Unless the Circular Economy Strategy is fundamentally changed to prioritise care of people and nature over GDP growth, it is likely to fail to stop, and could even contribute towards, significant environmental harms by contributing to the climate crisis and pollution levels. For example, support for businesses without holding them to account for selling harmful and wasteful products could increase the problems of our throwaway society.

Absolute decoupling of resource use and GDP growth is not possible, particularly for high-income countries like Scotland[42]. To base Scotland's Circular Economy Strategy on the idea that both GDP growth and sustainability are possible is incorrect and, ultimately, will not succeed.

It is possible for circular economy measures in Scotland to have a significant positive social and environmental impact, but only if people and nature are prioritised.

[42] Is Green Growth Possible?: New Political Economy: Vol 25, No 4 and Is green growth happening? An empirical analysis of achieved versus Paris-compliant CO2–GDP decoupling in high-income countries - The Lancet Planetary Health and Decoupling-Debunked.pdf