A Draft Circular Economy Strategy for Scotland

October 2025

Scottish Government
Riaghaltas na h-Alba

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Executive Summary

The Scottish Government is committed to moving from a linear "take, make and dispose" economic model to a circular economy where materials and goods are valued and kept in use for as long as possible.

In line with the First Minister's priorities of growing the economy and tackling climate change, there is increasing evidence that transitioning to a more circular economy can drive sustainable growth, increase supply-chain resilience, create jobs and encourage innovation while tackling the twin crises of climate change and biodiversity loss.[1]

To be successful in driving that change we need to embrace the opportunities that embedding circular thinking can bring. A circular economy does not stand apart from the wider economy: we need to work with businesses, charities, the public sector and a broad coalition of stakeholders to make our whole economy circular and bring jobs and opportunities for the people of Scotland.

Scotland's economy is part of the global system of trade and industry. Working with the other nations of the UK and drawing on developments from the EU and globally will also be vital to ensure Scotland is best placed to take advantage of the benefits a more circular economy can bring.

Vision and Outcomes

This draft circular economy strategy sets out the rationale and benefits of a more circular economy within the wider economic framework and describes our overall vision to 2045 (below) and the outcomes that we are working towards.

"By 2045 Scotland will be a net zero and nature positive nation helped directly by the significant progress in transitioning towards a circular economy.

Scotland will have a thriving economy that meets societal needs and is based on circular economy principles, and we will have reduced the negative global impact of our production and consumption.

People, businesses and the public sector will have the skills and knowledge to benefit from opportunities arising from a circular economy and these will be fairly distributed across society"

[1] Building a more productive and resilient UK through circularity

These outcomes are based around four themes:

- **economy** – maximising economic value, security of supply chains and innovation.
- **environment** – sustainable resource use and environmental impacts.
- **international** – environmental and social costs on global communities of consumption in Scotland.
- **social** – benefits to communities, fairness and behaviour change.

Policy Mechanisms

Delivering change across policy areas is fundamental to the transition to a more circular economy. Building on our recent Circular Economy and Waste Route Map, the policy levers we are using to create a circular economy are:

- Business support
- Behaviour change
- Place-based approaches
- Procurement
- Skills and education
- Circular economy data
- Policy alignment and systems thinking

Priority Sectors

We have identified five priority sectors for action, set out below based on their potential contribution to reaching net zero, to reduce consumption and whole-life carbon, to maximise value and on their wider environmental impacts.

- The Built Environment
- Net Zero Energy Infrastructure
- Textiles
- Transport
- The Food System

Product Stewardship

Alongside these sectors, we also want to focus on tackling specific products based on their environmental and economic impact. Working with the other nations in the UK we will continue to prioritise waste electrical and electronic equipment (WEEE), batteries, end-of-life vehicles (ELVs) and end-of-life fishing gear. In addition, we will prioritise

textiles (clothing), mattresses and at least one other product following further assessment. The products selected so far have been chosen due to their high carbon impact, associated local authority management costs, and their potential social benefit if reused.

Monitoring and Indicator Framework

This draft strategy also sets out our first national-level monitoring and indicator framework specifically for the circular economy. It sets out how we will measure high level progress, taking into account a wide range of factors and influences.

1. Introduction - the benefit of change

A circular economy drives sustainable growth, competitiveness, innovation and jobs, and is vital to achieving our climate and environmental goals.

The Scottish Government is committed to delivering a circular approach to our economy, where we move from a "take, make and dispose" model to one where we value the materials we use. Economic models based on ever-increasing resource extraction and high carbon intensity are simply not sustainable. That is why embedding circularity within our economy is essential to ensure resilience and sustainability.

A more circular economy brings benefits at all levels (see figure 1). At a national level it can increase the resilience of our supply chains, promote innovation, create jobs, drive skills development, and ensure the country is well positioned to take advantage of key global macro-economic trends over the coming decades.

A circular economy benefits individual businesses by increasing efficiency, reducing costs, providing resilience to commodity price fluctuations, and responding to consumer demand. It strengthens communities by providing local employment opportunities, skills development and lower cost options to access the goods we need.

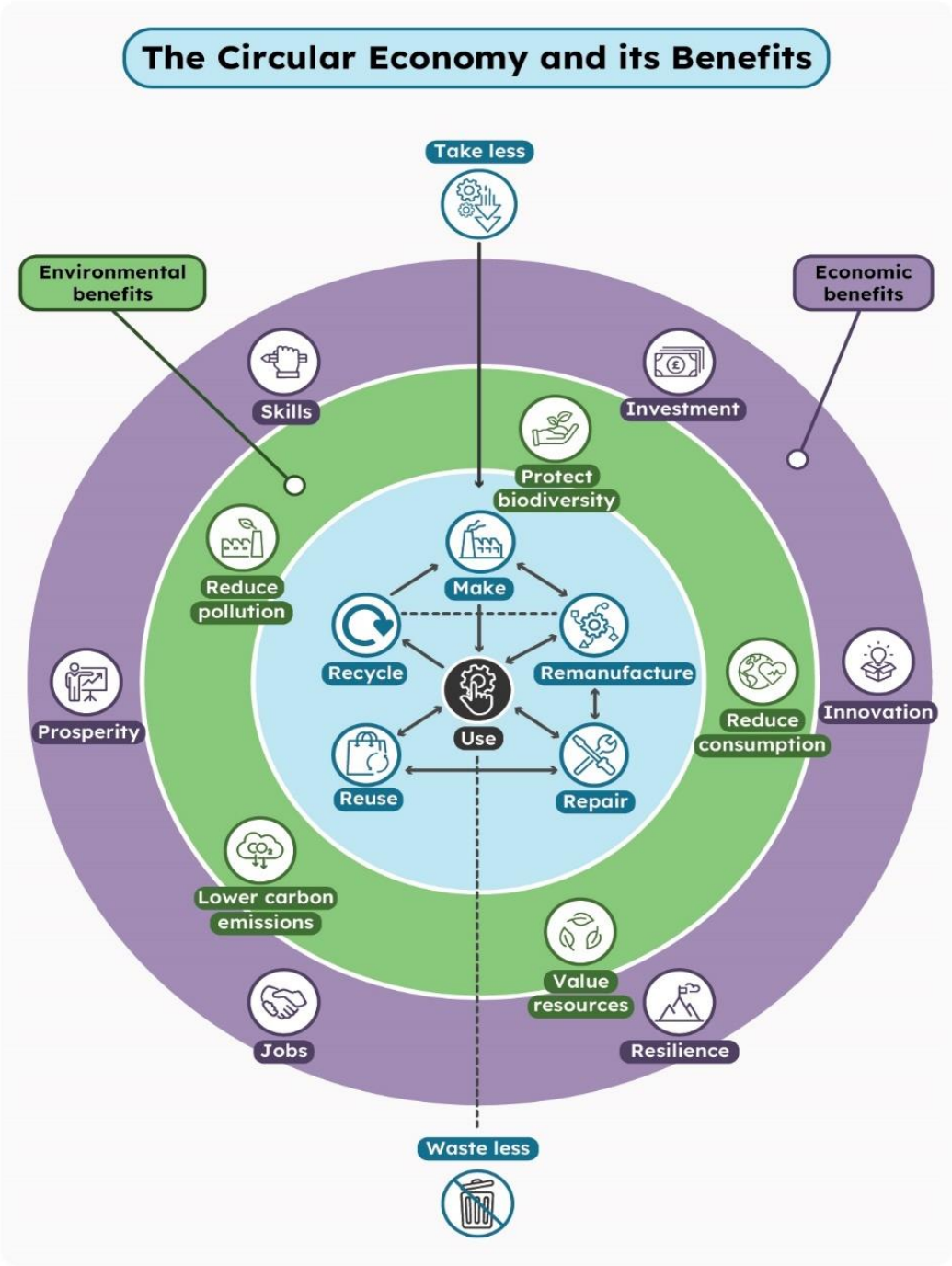
It is also fundamental to tackling climate change and other global challenges like biodiversity loss, waste, and pollution, by decoupling economic activity from the consumption of finite resources. Such a shift requires systemic change, where economic growth goes hand-in-hand with sustainable resource management.

For a circular economy to work effectively it needs to drive economic growth while aligning with the 'waste hierarchy'[2]: the order of preferences for action to reduce and manage waste. A circular economy should always endeavour to keep materials in use as high up the waste hierarchy and for as long as possible.

Further detail on the development of the strategy is included at Appendix 1.

[2] scotlands-circular-economy-waste-route-map-2030.pdf (see figure 1)

Figure 1: A Circular Economy



2. Vision and Outcomes

The vision and outcomes below are designed to provide clarity on the change we need to deliver a circular economy, and how that change will be demonstrated. The chapter on the Monitoring and Indicator Framework sets out how we will measure our progress towards achieving the outcomes, which will be delivered through the plans and priorities set out in the rest of the document and will build on the commitments already made in the Circular Economy and Waste Route Map.[3]

2.1 Our Vision

By 2045 Scotland will be a net zero and nature positive nation helped directly by the significant progress in transitioning towards a circular economy.

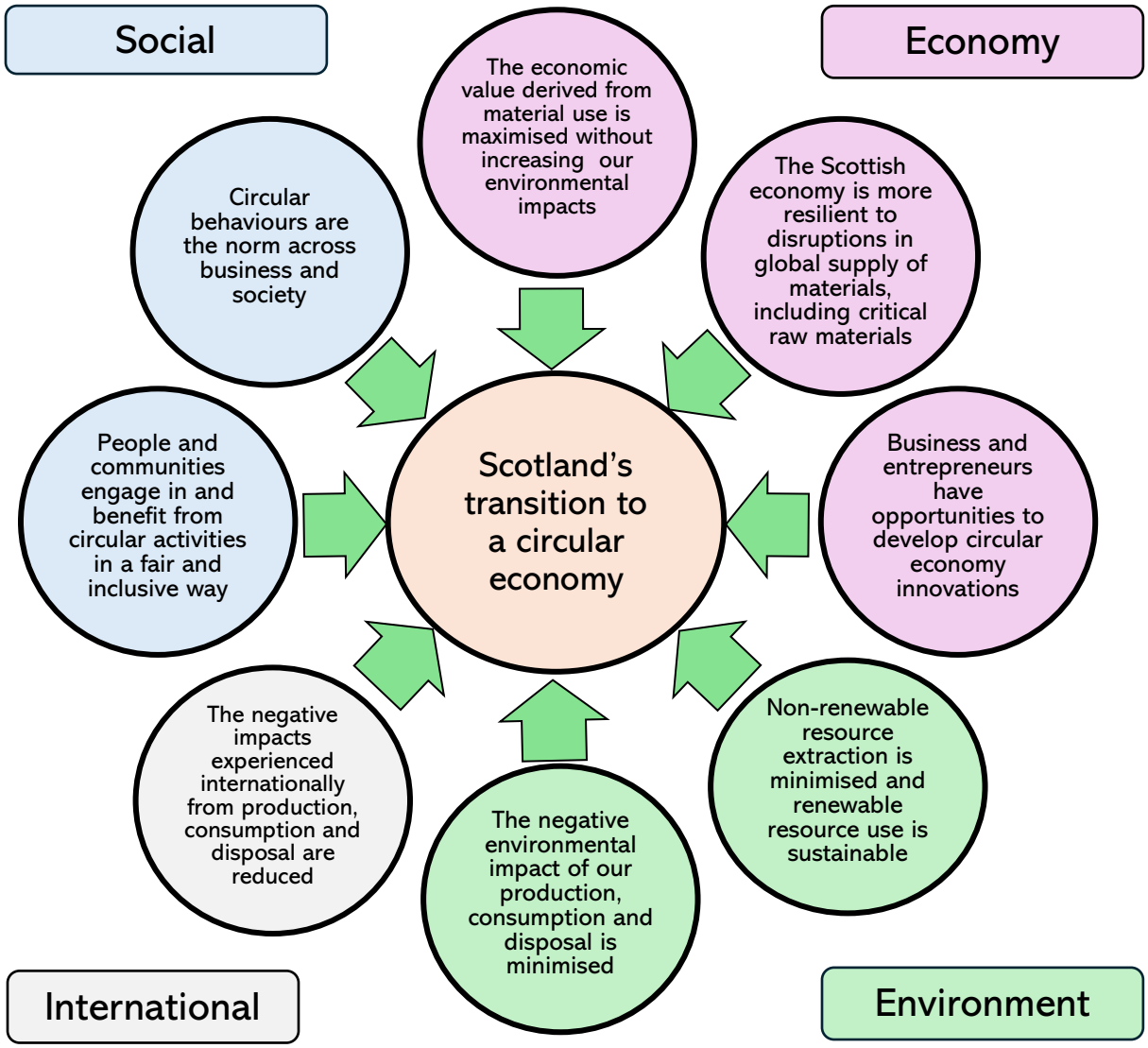
Scotland will have a thriving economy that meets societal needs and is based on circular economy principles, and we will have reduced the negative global impact of our production and consumption.

People, businesses and the public sector will have the skills and knowledge to benefit from opportunities arising from a circular economy and these will be fairly distributed across society.

The vision connects the circular economy to the wider policy landscape, such as the Circular Economy (Scotland) Act 2024, the Environment Strategy, the Scottish Biodiversity Strategy, the Climate Change Plan, Scotland's National Strategy for Economic Transformation and captures the economic, environmental, international and social impacts that a circular economy brings.

[3] scotlands-circular-economy-waste-route-map-2030.pdf

2.2 Our Outcomes



Economy

We will have a circular economy that drives innovation, investment, and the creation of new business models and jobs. Companies adopt circular approaches and benefit from lower costs, higher productivity, efficient production, and stronger customer relationships. Our economy is both sustainable and beneficial to people, communities and the environment.

New value is created from materials that would previously have been considered waste, replacing the need for new material and creating new jobs.

We will have reduced our dependency on raw materials, minimising global supply chain shocks and reducing our exposure to resource scarcity, particularly for critical raw materials.

Environment

We will have reduced demand for virgin materials, limiting the impact of resource extraction on natural capital in Scotland and overseas, and helping to tackle the climate and nature emergencies.

We will recognise and value the importance of renewable and non-renewable resources and have minimised our impact across the supply chain, from production, consumption and disposal of goods and materials.

Where resource extraction is still required, we will do so in the most circular way possible.

International

We will take responsibility for our ecological and social impact, recognising that our supply chains span the globe. While Scotland is a relatively small part of the global market, we play our part in reducing the negative impacts, for example, of mining and deforestation, the export of waste, and the leakage of harmful material into the environment and oceans.

Social

Our circular economy will be fair, inclusive and built on just transition principles. It strengthens our communities by providing local and sustainable employment, access to lower cost goods, and cleaner, healthier communities with less litter. Increased reuse

and repair strengthens local supply chains, lowers costs for households and improves local skills development. Reduced littering improves the local environment for everyone to enjoy. Our social outcomes seek to capture the need for behaviour change across business, the public sector, charities, communities and householders - promoting sustainable choices that enable a transition towards a more sustainable and resource-efficient economy.

3. Policy Mechanisms

Developing a circular economy requires action across multiple policy areas to deliver systemic change to how we produce, use and consume goods and materials. This section sets out the policy mechanisms we are using to take us there, building on the Circular Economy and Waste Route Map actions.

Delivering change across policy areas is fundamental to the transition to a more circular economy. Building on our recent Circular Economy and Waste Route Map, the policy mechanisms we are using to create a circular economy are:

3.1 Business Support

Priority: Support to business to increase circular practices and business models

Influencing business behaviours, models and practices is vital. Zero Waste Scotland will launch a new Business Information Hub by March 2026 to be the home of guidance, best practice and tools. Zero Waste Scotland's business support services will continue to provide targeted support to the business community and work with strategic partners to build capacity.

Our enterprise agencies - Scottish Enterprise (SE), Highlands and Islands Enterprise (HIE), and South of Scotland Enterprise (SOSE) - will continue to provide targeted support to help companies identify and capitalise on circular economy opportunities.

3.2 Behaviour Change

Priority: Empower consumers and organisations to adopt circular behaviours

Behaviour change underpins progress across all areas of this draft strategy and delivery of our Circular Economy and Waste Route Map. Evidence shows that many people want to reduce the carbon impact of the products that they buy but can struggle to move beyond low-impact changes.[4]

In order to adopt circular economy lifestyles and actions, people must have the capability, opportunity and motivation to act. To enable these changes and address the barriers to action, the Scottish Government takes a systems thinking approach. This

[4] Consumer perceptions of and engagement with the transition to net zero HTML | Consumer Scotland

often involves an array of different interventions and policies – including regulation, infrastructure, and communications, for example – with the intent of changing the wider system, at all levels

While we all need to make changes, these changes must be supported by an enabling environment. Our Strategic Research Programme for waste and the circular economy[5] will build our evidence base and inform the development of behaviour change approaches across policies, for the private, public and charity sectors including the development of sector roadmaps to support this change.

3.3 Place-based Approaches

Priority: Expand a place-based approach to the circular economy

A place-based approach to the circular economy recognises that the circumstances of communities in Scotland, of course, differ from place to place, and require local solutions. We will build on the place-based approach taken by Zero Waste Scotland, for example through its European-funded programme with regional Chambers of Commerce[6] as well as its work to embed the Place Standard[7] into its activities, and its partnerships with HIE and SOSE.

We will continue to embed circular economy principles with local transformation programmes such as Project Willow at Grangemouth, an initiative shaping a low-carbon future for one of Scotland's most important industrial clusters that includes industrial biotechnology, sustainable feedstocks, and closed-loop manufacturing systems.[8]

3.4 Procurement

Priority: Promote circular purchasing through procurement practices

Procurement is a high-value and high-volume activity within the public sector which spends more than £16 billion each year on buying goods, services and works. We will embed circularity into public sector procurement processes, helping to shift markets and

[5] Strategic Research Programme 2022 to 2027

[6] Circular Glasgow; Circular Edinburgh | Edinburgh Chamber of Commerce; The Circular Tayside Initiative; Turning 'waste into wealth' with launch of Circular North-east.

[7] Place Standard tool | Our Place

[8] Other examples include the Energy Transition Zone in Aberdeen, the Arrol Gibb Innovation Campus, and the Advanced Manufacturing Innovation District Scotland (AMIDS).

mindsets, and build long term value chains that prioritise reuse, repair, and reduced material consumption, alongside an ongoing focus on human rights.

This includes considering new regulations to require purchasing goods with recycled content, recycled or reused products or future recyclable products. We will also develop guidance on enabling a circular approach to elements of facilities management in the public estate, for example lighting where products are retained, reused and remanufactured, extending their lifecycle. This also promotes energy efficiency, reducing both operational and lifecycle carbon.

We will continue to work with the UK Government on reserved issues including opportunities for proportionate due diligence measures which can be a key mechanism for improving supply chain sustainability but are largely reserved. We will also continue to work with the UK Government on its development of a National Baseline Assessment on the UN Guiding Principles on Business and Human Rights, which will inform the UK Government's approach to business and human rights abuses at home and abroad.

3.5 Skills and Education

Priority: Increase uptake of circular practices through improved skills and education

Skills and education are vital to increasing the uptake of circular practices. This is part of a wider shift needed for Scotland's just transition to a net zero, nature positive, circular economy that brings with it the opportunity for new and innovative green jobs.

We will work across government and with relevant stakeholders to ensure circular skills are embedded within the programme of reform for our education and skills system. This reform will make the system more agile and responsive to our strategic skills needs, including those in sectors important to economic growth. It will help drive work with education and training providers, as well as with industry and employers, to support the green and circular skills needed by our workforce and economy both now and in the future.

Estimates of jobs relating to the circular economy vary depending on the methodology used with the recent State of the Circular Economy report identifying 4.4% of jobs as connected to the circular economy, whilst previous work identified 8.1% of jobs as connected to the circular economy[9]. To maximise these, we need a greater

[9] The Future of Work | Zero Waste Scotland

understanding of the landscape in relation to provision of training, and gaps that may exist in terms of available training. As part of the monitoring and indicator framework, Zero Waste Scotland is developing a Circular Jobs Tracker that will be published by March 2026 and give greater insight into the opportunities available and being realised.

3.6 Circular Economy Data

Priority: Improve circular economy data availability, quality, and granularity

Robust, transparent, and accessible data is essential to enable and scale the circular economy, and to monitor our progress. The packaging Extended Producer Responsibility (pEPR) scheme and the forthcoming UK-wide Digital Waste Tracking service will drive improved data availability. We will also identify key evidence gaps and areas for collaboration through the UK-wide Circular Economy Analytical Group.

Scotland generated 9.55 million tonnes of waste in 2023, a reduction of around 20% since 2011, of which 86% was managed in Scotland. Material reprocessing is a cornerstone of Scotland's transition to a circular economy and converting these waste materials into valuable new resources at their end of life not only opens up new economic opportunities but underpins our transition to net zero. The recently published Waste Reprocessing Infrastructure in Scotland Report summarises the current, planned and proposed waste reprocessing infrastructure across Scotland, the key policies in place to support the material value chain, and the main barriers and opportunities for its future development.

We will also work with other nations in the UK to understand how data developments at EU level might be applied in Scotland. This includes the Ecodesign for Sustainable Products Regulation[10] which requires products to feature a Digital Product Passport to provide comprehensive information about each product's origin, materials, environmental impact and disposal recommendations.

3.7 Policy alignment and systems thinking

Priority: Integrate circular economy principles across policy

A circular economy cuts across numerous Scottish Government policy ambitions and is embedded within the National Strategy for Economic Transformation, the Green

[10] Regulation - EU - 2024/1781 - EN - EUR-Lex

Industrial Strategy, National Planning Framework 4, and the Onshore Wind Sector Deal for Scotland.[11]

Circular principles also inform the National Manufacturing Institute in Scotland (NMIS)[12] - an industry-led research and development group with a mission to make Scotland a global leader in advanced, sustainable manufacturing. NMIS has received £75m investment from the Scottish Government and its agencies.

More widely, Zero Waste Scotland has developed working partnerships, including with the Economic Development Association Scotland, to explore the role of circularity in economic policy and strategy.[13]

By building on these links and continuing to develop future partnerships we will ensure better integration of circular economy principles, build stronger ownership, increase policy coherence, and maximise co-benefits.

A more circular economy cannot be achieved through isolated activities, and we need to take a systems-based approach that considers all elements of a system. Given the complexity and numerous factors that influence the production, design and flow of goods and materials, this approach is needed to both model and understand issues that impact the supply chain and it underpins the development of the roadmaps covered under the priority sectors section that follows.

[11] Home | National Manufacturing Institute Scotland (NMIS)
[12] Home | National Manufacturing Institute Scotland (NMIS)
[13] 'Time to rewire Scotland's economy to drive sustainable, circular economic growth' - The Economic Development Association Scotland (EDAS)

4. Priority Sectors

We have identified five priority sectors, which will be the focus of our policy development. This is based on international evidence, a wide range of data sources and the criteria in the Circular Economy (Scotland) Act 2024. The plans and priorities for these sectors are set out in this section and build on the positive actions already set out in the Circular Economy and Waste Route Map. The five sectors are -

1. The Built Environment
2. Net Zero Energy Infrastructure
3. Textiles
4. Transport
5. The Food System

Roadmaps

For four of the priority sectors, we will work in partnership with stakeholders to develop roadmaps to improve circularity. Transport, as it is a key sector within the forthcoming Climate Change Plan, will not have a separate roadmap but will involve close working with the sector and stakeholders. Roadmaps will identify sector-specific conditions, barriers, and opportunities to accelerate circularity. They will also outline interventions to influence the baseline economic conditions, provide additional incentives, and/or remove barriers for greater adoption of circular economy practices.

Our aim is to complete these roadmaps within a year of the final strategy publication and deliver interventions over a 5-year period. Roadmap development will be led by Zero Waste Scotland, who will identify those best placed to deliver the interventions.

4.1 The Built Environment

The built environment encompasses the human-made physical surroundings where people live, work, and interact. It plays a pivotal role in shaping social, economic and environmental outcomes. As one of the largest consumers of resources and contributors to waste, the construction sector is particularly critical in shaping a resource-efficient future.

A more circular economy provides new opportunities for the sector, with the potential to source goods and services closer to home and reduce reliance on global supply chains, reducing emissions and opening up jobs and opportunities for people in Scotland.

Priority: Work with the sector to develop a roadmap

Adoption of low carbon materials and circular economy practices can face barriers such as lack of confidence, less established supply chains and higher prices. Roadmap development for this sector will focus on the conditions needed for businesses to adopt a greater range of circular economy practices and unlock economic opportunities.

Priority: Promote the adoption of lifecycle assessments for buildings

Embodied carbon is the total greenhouse gas (GHG) emissions generated to produce a built asset, including emissions that result from raw material extraction, product manufacture, transportation, construction, use and maintenance, and end-of-life (demolition). For new buildings, this can account for as much as 70% of a building's total carbon emissions over its lifecycle.[14]

We are aiming to reduce embodied carbon in the built environment through:

- the investment hierarchy in the Infrastructure Investment Plan,[15] which promotes maximising the useful life of existing assets, or repurposing or co-locating existing assets, before creating new buildings;
- National Planning Framework 4, which requires development proposals to be "*sited and designed to minimise lifecycle greenhouse gas emissions as far as possible*", which can encourage use of low carbon materials;
- planning guidance, which supports consideration of embodied carbon by promoting ways to assess whole life carbon impacts;[16]
- the net zero public sector building standard,[17] which helps public bodies meet their net zero commitments.

Priority: Increase the reuse of construction materials

The sector has made good progress to reduce waste and increase recycling rates[18] but there is a need to promote activity further up the waste hierarchy.

[14] Quoted in Microsoft Word - ARMILA_ZWS_RegulatingEC_version1.1_23052022

[15] A National Mission With Local Impact: Infrastructure Investment Plan for Scotland 2021-22 to 2025-26

[16] NPF4 planning guidance: policy 2 - climate mitigation and adaptation - gov.scot. This highlights the use of standards such as PAS2080.

[17] Net Zero Standard

[18] In 2023, construction and demolition waste in Scotland was 4.3 million tonnes, down from 5.8 million tonnes in 2018; the construction and demolition recycling rate was 90.1% .

Our priority is to deliver the Circular Economy and Waste Route Map circular construction actions, including the European CirCoFin project,[19] which is developing plans for a regional reuse hub for construction materials and a national roll out plan to maximise coverage. The project will also include consideration of the role of these hubs in reprocessing and recertifying products and materials, addressing some of the barriers to availability of materials.

4.2 Net Zero Energy Infrastructure

Net Zero Energy Infrastructure is the physical and technical/digital facilities that underpin the energy sector's transition to net zero. Embedding circular economy practices within the energy transition will reduce emissions associated with infrastructure design and deployment, enhance the strength of local supply chains; and reduce dependence on international supply chains for the supply of essential materials such as critical raw materials. In line with the Green Industrial Strategy, there are also significant economic opportunities associated with capturing the value of resources from decommissioned oil and gas facilities as well as wind turbines.[20] For example, refurbishment and reuse options could generate significantly more revenue than traditional recycling or disposal: potentially £230,000 cost recovery for a 3MW turbine through the reuse of components[21].

Priority: Work with the relevant sectors to develop a roadmap for increasing circularity in net zero energy infrastructure

Companies operating in both the operation of energy sector assets and their supply chains are already doing considerable work to further the adoption of circular economy practices. Roadmap development for this sector will build on this work and address the underlying conditions that impact business decisions about circularity, leveraging industry expertise to adopt new business models and unlock investment.

[19] Circular Construction Hub aims to increase reuse of building materials and drive investment in Scotland | Zero Waste Scotland

[20] For example, industry has supported ReBlade in Dumfries, the UK's first dedicate wind turbine decommissioning service as part of the Onshore Wind Sector Deal.

[21] The future of onshore wind decommissioning in Scotland | Zero Waste Scotland

Priority: Maximise the role of circularity for critical raw materials in Scotland

There is growing demand for the critical raw materials required to support our energy transition which is putting pressure on supply. Scaling up the circular economy is one way to support economic and supply chain resilience. This is a significant opportunity for Scotland, as highlighted in the Waste Reprocessing Infrastructure in Scotland report.

We will commission research to better understand Scotland's exposure to supply chain risks for renewable and net zero technologies. This will evaluate the critical raw materials value chain and identify areas of comparative advantage that can support national and regional net zero ambitions by promoting new business opportunities to keep valuable materials in use for as long as possible.

4.3 Textiles

Textiles are part of a complex, global supply chain which places increasing pressure on both resource production and end-of-life management.[22]

Imported textiles, particularly those related to fast-fashion, can be of poor quality, which limits reuse and recycling options. While there have been long-established international routes for the UK's used textiles, for example export to Africa, these are now often at capacity, leaving little option other than to dispose of textiles as waste. This brings additional disposal costs and loss of potential value, as well as harmful conditions to communities internationally if waste is exported.

Textiles are a global commodity and gaining circularity across this sector will require embracing circular economy practices across all actors in the supply chain, through to citizens and eventual end of life material capture instead of waste management.

Textiles also feature within the product stewardship section.

[22] European Parliament (2020). The impact of textile production and waste on the environment (infographics). [online] Europarl.europa.eu. [Accessed 03 Feb. 2025]. Omondi, F (2024). Fast fashion, slow poison: new report exposes toxic impact of global textile waste in Ghana. [online] Greenpeace Africa. [Accessed 30 Jan. 2025]

Priority: Work with the sector to develop a roadmap

The aim of a roadmap for textiles is to build an economic system that is designed for reuse and repair, and enables industry to identify mechanisms for growth without environmental, social or economic harm.

Priority: Align with the EU strategy for sustainable and circular textiles, where appropriate

The EU's textiles strategy[23] includes increasing the repairability of textiles by embedding the 'right to repair', setting eco-design and durability standards, introducing minimum recycled content standards, developing digital product passports to provide clear information and transparency, and restricting the exports of textile waste. From July 2026, the EU's Ecodesign for Sustainable Products Regulation will introduce a direct ban on the destruction of textiles and footwear by manufacturers, importers and distributors.

We will seek alignment with the EU where it makes sense to do so, including developing a producer responsibility approach to textiles (see product stewardship section) and measures to address the disposal of unsold consumer goods (which could include textiles) as set out in the Circular Economy and Waste Route Map. We will work with the other governments in the UK to develop a coordinated approach where appropriate.

Priority: Improve management of post-consumer textiles

Textiles are not currently collected at the kerbside by any local authority in Scotland. We have consulted on whether to make kerbside collection of textiles a mandatory service and are currently considering the responses.[24]

We will use the results of the consultation to consider whether changes to the way textiles are handled would be desirable and practical and to inform the development of the new household recycling Code of Practice, a priority action within our Circular Economy and Waste Route Map. We will also consider measures that support actions higher up the waste hierarchy to improve overall management of post-consumer textiles.

[23] Textiles strategy - European Commission

[24] 3. Introduction - Strengthening approach to household recycling collection services - gov.scot

Priority: Support sustainable alternatives to fast-fashion

Behaviour change is an important part of countering the unsustainable way we consume textiles. We will continue to support work by Zero Waste Scotland to raise awareness about the environmental impact of textile waste, and to encourage and promote textile repair.[25]

We will also consider the contribution of Scotland's rural economy to sustainable clothing materials, such as hemp or wool.

4.4 Transport

Transport underpins all aspects of our everyday lives, from where we work, to the goods and services we consume. Transport is Scotland's largest source of net emissions, and requires significant quantities of carbon intensive and critical raw materials.

Transport is a key sectoral focus in Scotland's Climate Change Plan. Reducing emissions will require a shift in technology towards electric vehicles, and behaviour changes towards more sustainable travel choices. For that underlying shift in technology to be sustainable, we need to ensure that the principles of circularity are embedded in this transition.

Currently, most critical materials required for electric vehicles (EVs) are imported from virgin sources abroad. With international demand for these materials growing, retaining and recycling these materials will increase the resilience of supply chains and help to reduce the negative impact extraction can have on communities at home and abroad.

Priority: Improve circularity of passenger and light goods vehicles

Improving circularity in the transport sector requires change to vehicle design, maintenance and treatment at end of life. The EU has proposed new regulations to improve vehicle circularity including design and treatment of end-of life vehicles.[26] We will look to align with such regulations where we can, which will require working on a

[25] Over 4 in 5 clothing repairs displace new purchases, not only reducing environmental impacts but saving consumers money (Displacement Rates Untangled | WRAP - The Waste and Resources Action Programme).
[26] Directive 2005/64/EC of the European Parliament and of the Council of 26 October 2005 on the type-approval of motor vehicles with regard to their reusability, recyclability and recoverability and amending Council Directive 70/156/EEC

four-nations basis to ensure a joined-up approach. We will also work with the UK Government on reserved policies such as waste shipment regulations (which could encourage domestic recycling of materials from end-of-life vehicles that are currently exported).

Priority: Increase EV battery repurposing, recycling and material reprocessing

Batteries contain numerous critical raw materials that can be recycled at the end of their life.

However, improper storage and disposal of batteries can also have damaging environmental impacts and the battery reprocessing sector faces various challenges, including high energy and insurance costs, and fires at battery storage facilities.

In 2023, the EU's Batteries Regulation (EUBR) came into force,[27] setting out requirements for eco-design, such as minimum recycled content and end-of-life management. Digital passports for EV batteries will make it easier for consumers to choose more sustainable products and for recyclers to treat waste batteries and recover materials.

We will continue to work with the other countries in the UK to update relevant batteries regulations, seeking to align with the EUBR where appropriate. This will improve the eco-design of batteries, help create market demand for secondary EV battery inputs, and increase second battery use in ways that are safe and appropriate in workplaces and for consumers.

4.5 The Food System

Access to safe, healthy food contributes to Scotland's food security and is essential to support and protect Scotland's population, as well as being central to Scotland's high performing food and drink economy. However, food and drink supply chains also generate significant amounts of waste and environmental impacts.

Priority: work with the bioeconomy sector to develop a roadmap

The bioeconomy sector has potential to create significant and sustainable economic

[27] Batteries are currently regulated in Scotland under the Waste Batteries and Accumulators Regulations 2009 and the Batteries and Accumulators (Placing on the Market) Regulations 2008. Since these regulations came into force, lithium-ion batteries have become increasingly common, including for use in EVs.

growth.[28] It is a highly innovative sector, creating new products ranging from new sources of omega-3 from wastewater from distilleries to building insulation from local hemp crops. Roadmap development for this sector will aim to maximise the value derived from our biological resources and greater adoption of circular economy practices.

Priority: Improve circularity across the supply chain

Circularity is recognised in our Good Food Nation Plan[29], the Agricultural Reform Programme, Local Food Strategy,[30] and delivery of our marine food production strategies.[31] Existing actions include:

- ClimateXChange research[32] into the actions farmers and crofters can take to support a more circular agricultural sector.
- Part-funding of WRAP's UK Food and Drink Pact,[33] which is engaging in collaborative action across the entire UK food chain to deliver farm-to-fork reductions in food waste, greenhouse gas emissions, and water stress.
- Investment via the Marine Fund Scotland to help deliver innovative circular economy approaches.
- Advice to businesses to cut waste and save money through Zero Waste Scotland's Food Waste Reduction Business Support Service.[34]

[28] Scotland's National Plan for Industrial Biotechnology sets a target of £1.2 billion in associated turnover and 4,000 direct employees by the end of 2025.
[29] Part Three: Working Towards a Good Food Nation - National Good Food Nation Plan - gov.scot
[30] Local Food Strategy
[31] Blue Economy Strategy: A Blue Economy Vision for Scotland - gov.scot;Sea food Trade Strategy: Seafood strategy - gov.scot; Vision for Sustainable Aquaculture: Vision for sustainable aquaculture - gov.scot

[32] Project-specification-Circular-economy-opportunities-in-Scottish-farming-–-an-evidence-review.pdf
[33] UK Food and Drink Pact | WRAP - The Waste and Resources Action Programme
[34] Food Waste Reduction Business Support | Zero Waste Scotland

Priority: Develop an intervention plan to guide long-term work on household food waste reduction behaviour

Given the importance of behaviour change to tackling food waste, we are working with partners to review evidence and develop a behaviour change intervention plan by 2026/27 to help inform long-term household food waste reduction action.[35]

Priority: Explore improvements to food waste collection systems

In 2022 around 80% of Scotland's households had access to food waste collection services. We recently consulted on the approach to the existing rural food waste exemption, which enables local authorities not to collect food waste from some rural locations if it is inefficient to do so, to assess whether it should be updated in order to expand access to food waste collections.[36]

We are also assessing wider household recycling services in Scotland, including food waste collections and other organic waste, as we develop the new household recycling Code of Practice for Scotland.

Priority: Develop effective options with stakeholders to support food waste reduction by businesses

Food waste and surplus reporting reveals the size of the issue within businesses and encourages behaviour and operational change to reduce costs. Reporting also increases transparency by providing up-to-date information on the amount of food waste produced and where potential new business opportunities could occur.

As set out in the Circular Economy and Waste Route Map, we will develop effective options to implement mandatory reporting for food waste and surplus by businesses from 2025/26. This includes UK-wide engagement to explore opportunities for alignment, helping to ensure considerations are given to the different needs of large, medium and small businesses operating in Scotland and across the UK.

[35] This is a priority action in the Circular Economy and Waste Route Map; it will take an evidence-based approach, looking across decision making stages to ensure we are encouraging action and promoting new habits in the right areas

[36] 3. Introduction - Strengthening approach to household recycling collection services - gov.scot

5. Product Stewardship

Priority: Adopt an evidenced-based prioritisation approach to product stewardship

Product stewardship is an approach that means whoever designs, produces, sells or uses a product takes responsibility for minimising its environmental impact, based on the polluter pays principle. Product stewardship measures can be targeted across the whole supply chain, including producer responsibility, takeback schemes, product standards and recyclability requirements, or support for reusable or refillable products.

Our existing priorities for product stewardship are packaging, electronics, batteries, vehicles and end-of-life fishing gear. These products are subject to existing UK wide producer responsibility schemes, which we are working on a Four Nations basis to reform.

In partnership with the other governments of the UK we have been working on strengthening product stewardship measures for these products. This includes additional measures to support packaging reuse and refill, including the potential for alignment with the EU Packaging and Packaging Waste Regulation.[37]

We will adopt an evidenced-based approach to prioritising additional products over the next five years. Zero Waste Scotland are conducting research to underpin this approach based on environmental and economic impact. We anticipate that clothing, mattresses, and at least one other product will be prioritised for further action. We will bring forward a product stewardship plan in 2026 that sets out policy actions, based on principles of alignment with the EU where appropriate, ongoing collaboration across the UK, working with businesses to support innovation and additional voluntary measures, and ensuring end of life products are managed in accordance with the waste hierarchy.

[37] Regulation (EU) 2025/40 of the European Parliament and of the Council of 19 December 2024 on packaging and packaging waste, amending Regulation (EU) 2019/1020 and Directive (EU) 2019/908 and repealing Directive 94/62/EC (Regulation - EU - 2025/40 - EN - EUR-Lex).

6. Circular Economy Monitoring and Indicator Framework

Background

The circular economy monitoring and indicator framework (CEMIF) attaches indicators to each of the draft strategy's outcomes, to provide a high-level overview of Scotland's progress towards a more circular economy. This is the first national-level indicator framework specifically developed for the circular economy in Scotland. The proposed circular economy indicator framework is presented in Figure 3.

The framework will be the starting point for development of future circular economy targets, which will be developed by 2027. Not every indicator will be suitable for targets, given data limitations and the extent to which Scottish Government policy can influence certain outcomes. A separate development and consultation process will be conducted for circular economy targets following the publication of the final framework.

Development of the Framework

Over 170 potential Circular Economy (CE) indicators were identified with potential for application within a Scottish CE indicator framework. Each indicator was linked to one or more relevant circular economy outcomes. A set of indicator selection criteria was developed and applied to this long list reducing this list to 25 (see appendix 3).

Datasets

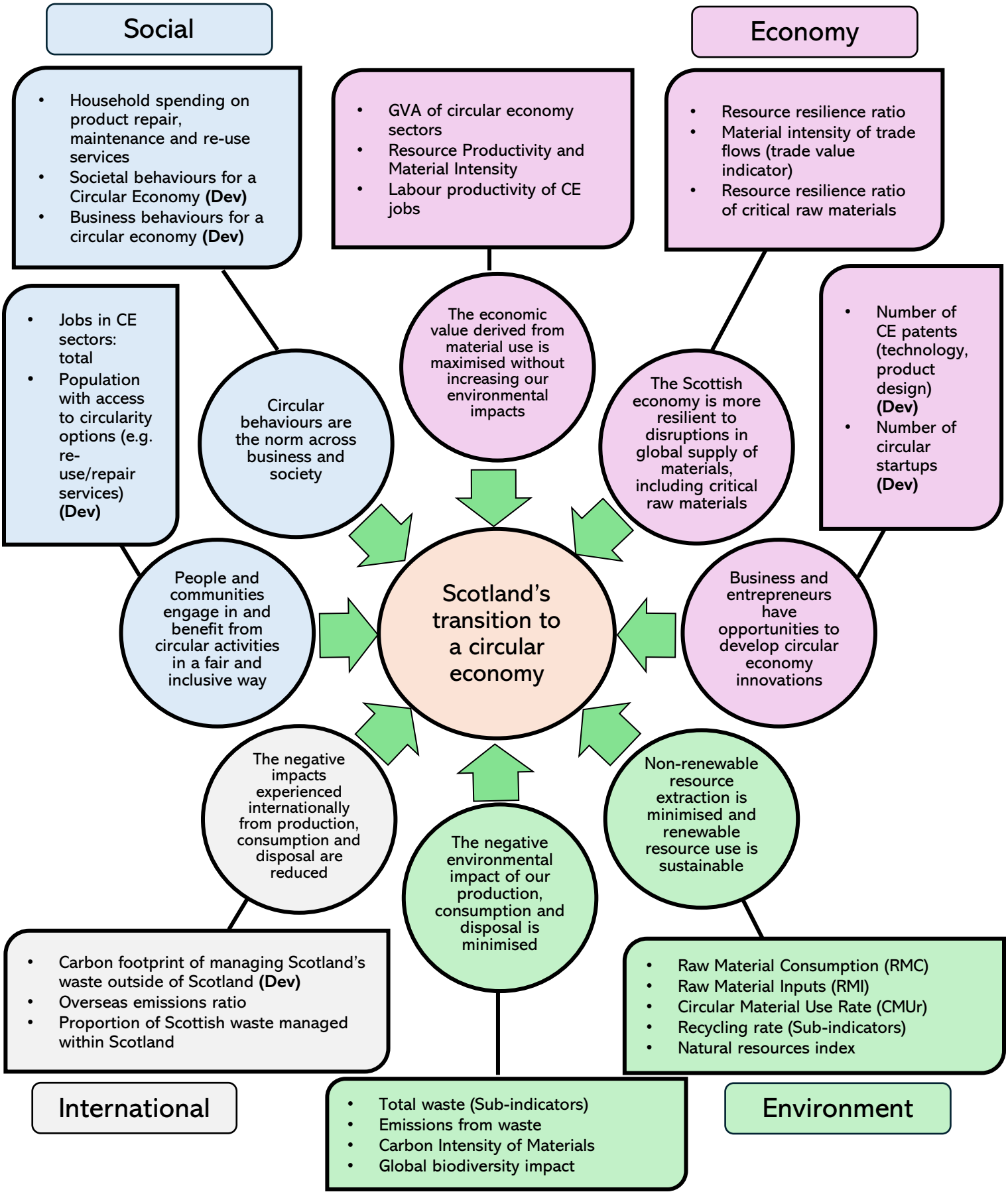
The datasets used for each indicator are set out in appendix 2. Several are based on data sources that are still under development or under review. As data is limited for measuring certain circular economy outcomes, several new indicators are proposed which require further development. As a result, the final format of some indicators will be subject to further development of the evidence base.

Reporting against the Strategy

Section 5 of the Circular Economy (Scotland) Act 2024[38] requires that Scottish Ministers must report on progress delivering this strategy as soon as practicable after the end of each reporting period (i.e. 2.5 years following the publication of the strategy). Progress on delivery will be monitored through standard Scottish Government programme management arrangements, as well as the monitoring framework.

[38] Circular Economy (Scotland) Act 2024

Figure 3. Indicator Framework Linked to Circular Economy for Scotland (Dev = Requires Development)



Appendix 1: Development of this draft strategy

Background

Scotland's first Circular Economy Strategy 'Making Things Last' was published in 2016. Since then there has been a lot of progress. The amount of Scottish waste going to landfill has more than halved over the past decade, 62% of our waste is recycled and Scotland has cut waste by 20% since 2011. When it comes to reuse, since 2022 the number of active projects in the Share and Repair Network run by Circular Communities Scotland has grown from 22 to 83, a growth rate of 277%.[39]

Despite this improvement, we recognise there is much more to do to achieve a circular economy. In 2024 we published the Circular Economy and Waste Route Map to 2030.[40] This sets out the actions we need to take to deliver sustainable use of our resources and progress a circular economy in Scotland by 2030. It recognises that this is a shared challenge that requires system-wide transformation, and we will be working closely with local government, householders and the business community to ensure the approach has collaboration and co-design at its heart.

The Route Map is complemented by provisions in the Circular Economy (Scotland) Act 2024[41] ("the CE Act"). The CE Act establishes the legislative framework to support Scotland's transition to a zero waste and circular economy including requiring that Scottish Ministers prepare a circular economy strategy.

This draft strategy has been prepared in line with section 1 of the CE Act which requires that the strategy must set out 'objectives relating to developing a circular economy strategy', plans for meeting those objectives (including priorities for action), and arrangements for monitoring progress towards those objectives. The objectives are reflected in the draft strategy's vision and outcomes. The draft strategy then sets out a range of plans and priorities to deliver change across a range of policy mechanisms, priority sectors and specific products. Arrangements for monitoring progress are set out in the Circular Economy Monitoring and Indicator Framework section.

Section 2 of the CE Act requires that Scottish Ministers must publish a strategy and consult with a range of stakeholders including public sector, private sector, charitable and international organisations. Section 3 of the CE Act requires that the final published strategy should also be laid before the Scottish Parliament. Section 4 of the Act requires

[39] Share & Repair Network Impact Report – The Share & Repair Network
[40] Supporting documents - Scotland's circular economy and waste route map to 2030 - gov.scot
[41] Circular Economy (Scotland) Act 2024

that the Scottish Ministers must keep the strategy under review and must revise it within 5 years after publication of the last strategy. Section 5 requires that Scottish Ministers must report on progress as soon as practicable after the end of each reporting period of the strategy (meaning 2.5 years following the publication of the strategy).

Vision and Outcomes

This is the first draft circular economy strategy prepared under the CE Act. It sets out our broad approach to make the transformation we need to see, recognising that doing so requires systemic change informed by evidence. It also recognises that circular economy policy does not sit alone and touches on almost all aspects of our lives.

It builds on the foundations laid by the Route Map but takes a longer lens to 2045 in line with our Net Zero goals and places the circular economy within the broader economic context. It sits alongside other related activity such as our National Litter and Flytipping Strategy,[42] which not only looks to improve the environmental quality of our communities but also capture additional material that would otherwise be lost to the economy.

In line with section 1 of the CE Act, in developing the strategy Scottish Ministers have had regard to the desirability of the economy being one in which:

(a) 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,
(b) the delivery of services is designed so as to reduce the consumption and whole life-cycle carbon emissions of goods, products and materials,
(c) goods, products and materials are kept in use for as long as possible to reduce their consumption, their whole life-cycle carbon emissions and their impacts on the environment,
(d) the maximum value is extracted from goods, products and materials by the persons using them,
(e) goods, products and materials are recovered or, where appropriate, regenerated at the end of their useful life,
(f) waste is managed in Scotland if it is appropriate to do so,
(g) due diligence in relation to environmental protection and human rights is exercised in supply chains.

[42] National Litter and Flytipping Strategy - gov.scot

The outcomes selected are covered in the themes identified below:

Economy Outcomes

- Circular economy sectors in Scotland generated an estimated £7.11 billion in Gross Value Added (GVA), representing 4.7% of total GVA[43].
- Jobs linked to circular economy activities in 2021 represented 4.4% of total Scottish employment.
- A more circular economy could create 470,000 jobs and add £25bn to UK GDP by 2035.[44]

A more circular economy is an economic opportunity that can drive innovation, investment, and the creation of new business models. Companies adopting circular approaches can benefit from cost savings, higher productivity, efficient production, innovation, stronger customer relationships and create jobs.

A circular approach can increase the value from final goods by extending their lifetime and creating new opportunities, for example through repair, remanufacture and servicing opportunities.[45] More widely it benefits the economy by bringing new value from materials that would have previously been considered waste, which can also help replace the need for new material, including that imported from abroad.

Reducing our dependency on raw materials can protect growth by reducing the economic security risks associated with linear supply chains, such as global supply chain shocks, and reduce exposure to resource scarcity, particularly for critical raw materials where global demand is growing.

It is important that both businesses and communities have the skills and abilities and business support in place to benefit from more circular practices. The importance of a circular economy as an economic driver is captured in the National Strategy for Economic Transformation (NSET),[46] which recognises that better integration of circular economy policies is essential to supporting Scotland's ambition to lead in sustainable innovation and inclusive growth and build a more resilient economy for all. Similarly, the Green Industrial Strategy[47] and Onshore Wind Sector Deal for Scotland[48] highlight the

[43] State of the Circular Economy Report | Zero Waste Scotland
[44] Building a more productive and resilient UK through circularity
[45] Remanufacturing study | Zero Waste Scotland
[46] Scotland's National Strategy for Economic Transformation - gov.scot
[47] Green industrial strategy - gov.scot
[48] Supporting documents - Onshore wind sector deal - gov.scot

desire to position Scotland as a leader in material circularity of wind turbines and components.

Our economy outcomes place the circular economy within that broader policy goal of building an economy that is both sustainable and beneficial to people and communities.

Environment Outcomes

- 90% of global diversity loss and water stress is caused by extraction and processing of products.[49]
- Around four-fifths of our carbon footprint in Scotland comes from products and services we manufacture, use and throw away.
- In Scotland, the average material footprint per person is 21.7 tonnes per year, well above the global average (11.9 tonnes).[50]
- Globally we have consumed over half a trillion tonnes of materials – nearly as much as the entirety of the twentieth century – in just the last 6 years.[51]

The Scottish Government recognises that we are in climate and nature emergencies. Reducing demand for virgin material limits the impact of resource extraction on natural capital, which provides a range of valuable ecosystem services such as water purification or soil provisioning. Given Scotland's reliance on imports, those impacts on ecosystems are often particularly keenly felt overseas. A more circular economy is an important mechanism for addressing these pressures.

Building a more circular economy is critical to meeting our 2045 net zero emissions goal, and reducing Scotland's overall carbon footprint:

1. For territorial emissions, it cuts the waste we dispose of here in Scotland through more sustainable resource management (e.g. reusing and recycling more), and supports other sectors to reduce their territorial emissions through more circular approaches.
2. It tackles the wider lifecycle emissions associated with resource use and waste (e.g. the carbon impact of waste produced at all stages, from production, transportation, to disposal).
3. It helps us take responsibility for Scotland's larger global carbon footprint associated with the goods and services we import (see international outcome below).

[49] Assessing Global Resource Use: A systems approach to resource efficiency and pollution reduction
[50] Material Flow Accounts (MFA) | Zero Waste Scotland
[51] Global Circularity Gap Report: CGR 2024

Our environment outcomes focus on minimising resource extraction and environmental impacts of our consumption and use of materials. They recognise the importance of renewable and non-renewable resources as well as the need to minimise impact across the supply chain from the production, consumption and disposal of goods and materials.

It should be recognised however that in some cases, for example critical materials, some extraction may be required to meet increasing demand as supply from the circular economy may be insufficient. While there will always be a need for goods and materials, these should be produced and used in the most circular way possible.

International Outcomes

- Scotland's ecological footprint – the area of land and sea around the world needed to produce the goods and services we consume – exceeds the area in Scotland capable of supplying these demands by around one quarter.

The system for production of our products and materials involves supply chains that span the globe. While Scotland is a relatively small part of the global market, we have a responsibility to reduce our ecological and social impacts, for example the potential negative impacts of mining and deforestation on communities, the export of waste and the leakage of harmful material into the environment and oceans.

This responsibility is recognised in the draft Environment Strategy,[52] which has an outcome that 'Scotland's global environmental impact is sustainable'; and our next Climate Change Plan, for the period 2026-2040, will set out our approach to delivering on Scotland's net zero targets and recognise the impact of consumption that is not captured within territorial emissions.

Our international outcome aims to capture the range of impacts from across the supply chain.

Social Outcomes

- Since 2022 the number of active projects in the Share and Repair Network run by Circular Communities Scotland has grown from 22 to 83, a growth rate of 277%.[53]

[52] Draft Environment Strategy - Scottish Government consultations - Citizen Space
[53] Share & Repair Network Impact Report – The Share & Repair Network

In line with just transition principles, a circular economy must be designed and delivered in a fair, inclusive way.[54]

A circular economy provides opportunities to strengthen our communities by providing local and sustainable employment opportunities and access to lower cost goods. For example, increasing opportunities for reuse and repair can shorten and strengthen supply chains, potentially provide lower cost options for householders through mechanisms such as sharing libraries, and teach skills through repair cafes. It can also address some of the environmental blights on communities through reduced littering.

In these ways a more circular economy contributes strongly to community wealth building, which seeks to enable local communities to have a greater stake in, access to, and benefit from the wealth our economy generates. This is at the heart of place-based thinking, with the potential to create jobs, reduce supply chains and strengthen local and regional economies as part of a just transition.

Our social outcomes seek to capture the need for behaviour change across business, communities and householders. Promoting and facilitating easier access to sustainable choices will make it possible to transition towards a more sustainable and resource-efficient economy.

Priority Sectors

Under the CE Act, in considering the priorities for action set out in this circular economy strategy the Scottish Ministers must have particular regard to sectors and systems most likely to contribute to developing a circular economy with reference to the following criteria:

> (a) achieving the net-zero emissions target set out in section A1 of the Climate Change (Scotland) Act 2009;
> (b) reducing the consumption and whole life-cycle carbon emissions of goods, products and materials;
> (c) maximising the value of the circular economy in Scotland;
> (d) considering the wider environmental impact of particular sectors and system.

Having considered analysis by Zero Waste Scotland, the Scottish Ministers are of the view that the sectors set out in relevant section are those most likely to contribute to developing a circular economy in Scotland and we therefore consider these to be priority sectors. In its analysis, Zero Waste Scotland drew on international evidence, such as the European circular economy platform, to highlight how other countries

[54] The just transition principles are set out in section 35c of the Climate Change (Scotland) Act 2009.

identify key sectors. It also used its own research and modelling, including the Scottish Waste Environmental Footprint Tool,[55] as well as Material Flows Accounts,[56] Scotland's Carbon Footprint,[57] Energy Materials Mapping,[58] and research on embodied carbon[59] to identify sectors with the highest environmental impact, before applying criteria in the CE Act to identify potential priority sectors for developing a circular economy. Some key statistics linked to the five sectors are set out below.

The Built Environment:

- Construction accounted for £9.3 billion of GVA in 2022, 7.4% of Scotland's total GVA, and had a turnover of £24 billion (8.3% of Scotland's total).
- Over 140,000 people are employed in the sector.
- The built environment and construction sector currently accounts for around 40% of our emissions in Scotland[60].
- Construction and demolition accounts for up to half of all waste produced in Scotland.

Net Zero Energy Infrastructure:

- Decommissioning of turbines in Scotland between 2021 and 2050 could result in up to 1.46 million tonnes of material becoming available[61].
- Refurbishment and reuse options could generate significantly more revenue than traditional recycling or disposal: potentially £230,000 cost recovery for a 3MW turbine through the reuse of components[62].

Textiles:

- In 2023, Scottish household textile waste made up 4% of arisings but accounted for 19% of carbon impacts of household waste[63].
- The Scottish textiles sector had an estimated turnover of £818.8 million and 8,100 jobs in 2022[64].

[55] Scottish Waste Environmental Footprint Tool (SWEFT)
[56] Material Flow Accounts (MFA) | Zero Waste Scotland
[57] The Carbon Footprint of Scotland's Household Waste
[58] Energy Materials Mapping
[59] embodied carbon
[60] Just Transition – Built Environment and Construction – A Discussion Paper,
[61] The future of onshore wind decommissioning in Scotland
[62] The future of onshore wind decommissioning in Scotland | Zero Waste Scotland
[63] Scottish Waste Environmental Footprint Tool (SWEFT)
[64] The Scottish Government (2022). Economic Transformation: industry leadership groups and sector groups – evidence.

Transport:

- Transport is Scotland's largest emitting sector, accounting for 33.2% of emissions in 2023[65].
- Estimates suggest that by 2030 there will be 10 million electric vehicles in the UK, with each battery containing on average 185kg of minerals[66].
- Scotland currently exports approximately 78% of existing battery waste for reprocessing elsewhere.

The Food System:

- The Scottish food and drink industry contributes £5.3 billion to our economy in GVA and £7.5 billion in Scottish exports[67].
- The sector employs 123,000 people across fishing, farming, aquaculture and manufacturing – providing high-value employment in rural areas.
- In 2021, householders contributed around 60% of Scotland's food waste (2.3 million tonnes CO2eq.); and business and non-business organisations contributed around 40% (2.5 million tonnes of CO2eq.)[68].

Links to other strategies

The forthcoming Climate Change Plan, Environment Strategy and broader economic policy are also directly relevant and have informed this draft strategy, with a view to achieving consistency, so far as practicable, between the objectives and plans in this draft strategy and those other policy areas. To be successful we also need to embed circular economy principles across government as well as in business practices, community wellbeing and consumer behaviour.

Separately from this draft strategy we will also be developing a plan for residual waste to ensure the best environmental outcome for unavoidable and unrecyclable waste.

We are also engaging with Defra on the development of its Circular Economy Strategy for England as well as the other devolved governments.

[65] Chapter 13 - Environment | Transport Scotland
[66] Visualizing the Key Minerals in an EV Battery
[67] Industry statistics - gov.scot
[68] 3 Progress and Lessons Learned - Food waste: review of 2019 waste reduction action plan - gov.scot

Appendix 2: Circular Economy Indicators list including definitions and data sources

Outcome 1: Non-renewable resource extraction is minimised and renewable resource use is sustainable

Indicator	Definition	Data source
Raw Material Consumption (RMC)	The total tonnage of materials extracted globally to fulfil the final consumption in a given country (also referred to as 'material footprint'). Calculated by taking the materials being extracted in Scotland, adding what is imported into Scotland and the materials used to create those imports, and then subtracting the materials exported from Scotland and the materials used to create those exports. Currently reported on a per capita basis based on the MFA (RMC per capita).	Material Flow Accounts
Raw Material Inputs (RMI)	The total tonnage of materials extracted globally to produce the goods which are available for use in production and consumption activities of the economy in a given country. Calculated by taking the materials being extracted from the environment within a nation's borders and adding the materials that are being imported as well as the materials used to create those imports.	Material Flow Accounts
Circular Material Use Rate (CMUr/'Circularity Gap')	Measures the proportion of secondary material inputs (materials sourced from reuse and recycling rather than being extracted as new raw materials) out of our total material inputs. This indicator reflects how much of Scotland's material needs are met by secondary (recycled/re-used) materials versus primary (virgin) materials. ***Sub-indicator**: EU formulation of CMUr*	Material Flow Accounts Circular material use rate (cei_srm030)
Recycling rate of all waste excluding major mineral waste	The percentage of total non-mineral waste that is recycled. Major mineral waste is excluded to avoid trends in ordinary waste generation being difficult to identify due to the potential for massive fluctuations in mineral extraction wastes. ***Sub-indicator:** Recycling rate by source* ***Sub-indicator:** Household recycling by material type*	SEPA Waste data for Scotland
Natural resources index: energy and mineral resources/ depletion ratios	Natural resource depletion refers to the decrease in the quantity of a natural resource stock due to extraction rates exceeding regeneration or replacement.	Material Flow Accounts

Outcome 2: The negative environmental impact of our production, consumption and disposal will is minimised

Indicator	Definition	Data source
Total waste generation in Scotland	Measures the total amount of waste produced in a given area or system. This includes waste generation in absolute terms. ***Sub-indicator:*** *Waste generation by source* ***Sub-indicator:*** *Household waste by material type*	SEPA Waste from All Sources
Emissions from waste management/ waste sector	Total (or proportion of) greenhouse gas (GHG) emissions that come from waste processing and management (content and format of this indicator to be agreed/under development).	Leeds Carbon Footprint, NAEI
Carbon Intensity of Materials	GHG emissions associated with RMI (including the emissions associated with the consumption of Scotland's exports) divided by RMI. This indicator indicates whether or not a nation is consuming more sustainable alternatives, independent of trends in overall GHG impact. ***Sub-indicator:*** *Total emissions associated with RMI (Including GHGs resulting from the consumption of Scotland's exports).*	Material Flow Accounts
Global biodiversity impact	Measures the effect of our resource use on biodiversity both within a country (domestically) and in other regions (abroad). It assesses changes to ecosystems, species populations, and genetic diversity, often considering factors like habitat loss, species extinction rates, or ecosystem service degradation.	Material Flow Accounts

Outcome 3: The economic value derived from material use is maximised without increasing our environmental impacts

Indicator	Definition	Data source
Gross value added of circular economy sectors: % contribution to GVA and change over time	Measures the proportion of gross value added (GVA) attributed to the sectors classified as part of the Circular Economy (CE). The CE sectors are defined as the 5-digit SIC codes identified as being inherently circular activities - such as waste management activities focused on producing secondary materials, reuse activities, repair activities and material harvesting activities.	Circular Jobs Tracker; Scottish IO Tables
Resource Productivity and Material Intensity (GDP/RMI and RMI/GDP)	GDP divided by RMI and vice versa. This indicator provides insights into the extent to which economic growth is decoupling from the consumption of natural resources over time. ***Sub-Indicator*** *(for comparison): Resource productivity calculated with DMC (Domestic Material Consumption) in the denominator.* DMC represents the amount of primary raw materials directly consumed by an economy (domestic extraction plus imports minus exports).	Material Flow Accounts
Labour productivity of CE jobs	Measures the economic output per hour worked within the CE sectors, based on GVA generated by FTE employees (37.5 hrs per week) in CE jobs over time.	Circular Jobs Tracker

Outcome 4: The Scottish economy is more resilient to disruptions in the global supply of materials, including the supply of critical raw materials

Indicator	Definition	Data source
Resource resilience ratio (RME Imports/RMI)	Raw Material Equivalent (RME) of imports divided by RMI. The Raw Material Equivalent of Imports are the direct weight of imports plus the amount of materials required to create those imports; therefore, this indicator represents how dependent the country is on resources sourced from abroad.	Material Flow Accounts
Material intensity of trade flows (trade value indicator)	Measures the direct amount of materials associated with a nation's trade flows relative to the total value of imports and exports.	Material Flow Accounts
Resource Resilience Ratio of Critical Raw Materials	The Raw Material Equivalent (RME) of imports of Critical Raw Materials (CRMs) divided by the total Raw Material Inputs of CRMs to the Scottish Economy. This represents the total tonnage of CRMs that are imported or are used in the supply chains of imports, divided by the total tonnage of CRMs that are used as inputs to the Scottish Economy (including the CRM's used for exports or the overseas supply chains associated with imports). This indicator represents how dependent the country is on CRMs sourced from abroad.	Material Flow Accounts

Outcome 5: Business and entrepreneurs have opportunities to develop circular economy innovations

Indicator	Definition	Data source
Number of CE patents (technology, product design)	Measures the total number of patents granted for technologies and product designs that are associated with the Circular Economy (CE). This includes innovations in areas such as resource efficiency, waste reduction and recycling, re-use and repair models, and the development of sustainable materials/secondary raw materials or processes.	One IPO database[69] **(Development required)**
Number of circular startups	Measures the total number of new businesses established within defined CE sectors. This includes startups focused on circular practices such as recycling, waste reduction, product life extension, and resource efficiency. The business behaviours indicator will also attempt to assess uptake of CE activities/business models across the wider economy.	Data sources to be confirmed **(Development required)**

[69] IPO: patent data - GOV.UK

Outcome 6: The negative impacts experienced internationally as a result of our production, consumption and disposal are reduced

Indicator	Definition	Data source
Carbon footprint of managing Scotland's waste outside of Scotland	GHG emissions associated with managing Scotland's waste outside of Scotland (Content and format of this indicator to be agreed/currently under development).	Date sources to be confirmed **(Development required)**
Overseas emissions ratio	Emissions from RME imports plus the emissions associated with the consumption of Scottish exports/input-based GHG emissions plus the emissions associated with the consumption of Scottish exports.	MFA or Leeds Carbon Footprint
Proportion of Scottish waste managed within Scotland	Measures the proportion of total Scottish waste (waste produced in Scotland) that is managed within Scotland, including recycling, recovery, and disposal, out of the total Scottish waste managed both within Scotland and outside of Scotland.	SEPA[70]

Outcome 7: People and communities engage in and benefit from circular activities in a fair and inclusive way.

Indicator	Definition	Data source
Jobs in CE sectors: total	Measures the total number of jobs in sectors classified as part of the Circular Economy. The CE sectors are defined as the 5-digit SIC codes identified as being inherently circular activities.	Circular Jobs Tracker
Population with access to circularity options (e.g. re-use and repair services)	Measures the proportion of the population that has reasonable access to services supporting Circular Economy (CE) activities, such as repair, re-use, rental, and sharing services (e.g. sharing libraries). Direct link between this and consumer behaviours indicator.	**(Development required)**

[70] waste-from-all-sources-data-tables-2022.xlsx

Outcome 8: Circular behaviours are the norm across business and society

Indicator	Definition	Data source
Household spending on product repair, maintenance and re-use services.	Measures the total household expenditure on services related to the repair and maintenance of products, such as electronics, appliances, vehicles, and furniture. Intention to include an additional parallel indicator on re-use service transactions, including spending on second hand goods. This indicator provides insights into consumer engagement with CE practices.	Scottish Supply-Use Tables **(Development required)**
Societal behaviours for a Circular Economy	Measures public understanding and attitudes toward the circular economy and uptake of circular behaviours in society. Requires development (underway) but may include sub indicators such as: understanding and attitudes towards CE/CE policy; consumption/ purchasing behaviours; re-use, repair and recycling behaviours; volunteering in CE activities/services; and level of CE skills/education.	**(Development required)**
Business behaviours for a circular economy	Measures how businesses adopt circular practices. Requires development (underway) but may include sub-indicators such as: investment in CE activities/technologies; sustainable sourcing/ procurement; development/adoption of circular business models (e.g. including rental/sharing/leasing etc.) across Scottish businesses; development of circular action plans; CE training interventions.	**(Development required)**

Appendix 3: Indicator selection process and criteria Monitoring and Indicator Framework Development Process

As a starting point, a broad range of Circular Economy (CE) indicators with potential for application within a Scottish CE indicator framework were identified. This 'long list' was collated based on reviewing CE indicators from existing Scottish Government frameworks including:

- The Environment Strategy for Scotland: vision and outcomes[71]
- The Climate Change Plan 2018-2032 – update[72]
- National Performance Framework[73]
- Scotland's Natural Capital Index[74]
- Wellbeing economy monitor[75]

Indicators were also collated from frameworks used internationally by the Organisation for Economic Co-operation and Development (OECD),[76] Eurostat CE Monitoring Framework,[77] the United Nations Economic Commission for Europe (UNECE),[78] Platform for Accelerating the Circular Economy (PACE)[79] and individual countries. In total, over 170 potential indicators were identified and collated in an initial long list as the basis for selecting the most relevant indicators for application in a Scottish context. Each indicator was linked to one or more relevant circular economy outcomes.

Following the long listing stage, a set of indicator selection criteria (appendix 3) was developed and applied to the long list. Each indicator was given a rating of "Low," "Moderate," or "High" for each criterion. The criteria were:

1. data availability;
2. relevance to CE outcomes;
3. distinctiveness;
4. validity;
5. timescales/sensitivity; and
6. understanding.

[71] The Environment Strategy for Scotland: vision and outcomes
[72] Securing a green recovery on a path to net zero: climate change plan 2018-2032 – update
[73] National Performance Framework
[74] Scotland's Natural Capital Asset Index
[75] Wellbeing economy monitor
[76] OECD Monitoring Progress Towards a Resource-Efficient and Circular Economy (2024)
[77] Monitoring framework - Circular economy - Eurostat
[78] UN ECE Guidelines for Measuring Circular Economy (Part A: Conceptual Framework, Indicators and Measurement Framework)
[79] Platform for Accelerating the Circular Economy – Circular Indicators for Governments (2021)

The development of the indicator framework was led by a delivery team which included staff from Scottish Government policy (Circular Economy), Rural and Environment Science and Analytical Services (RESAS) division, and Zero Waste Scotland. A Working Group was also established, with representatives from various Scottish Government policy teams, analytical teams, Zero Waste Scotland, NatureScot, and Scottish Environment Protection Agency (SEPA). The Delivery Team reported to, and obtained feedback from, the Working Group at key stages, to facilitate communication between key stakeholders across the Scottish Government and relevant public bodies. The Delivery Team also reported to the Scottish Circular Economy and Resources Programme Board.

Further internal engagement has also been undertaken with a broader set of policy teams, public bodies and key stakeholders (e.g. SEPA), on the proposed indicators. A UK-wide Analytical Group has also been established to ensure coherence and facilitate knowledge sharing and joint working on circular economy where appropriate. In addition, a workshop was held with relevant academics and non-governmental organisations in July 2025 to obtain initial feedback on the draft framework.

Indicator Selection Criteria - Stage 1

Selection Criterion (Stage 1)	High	Medium	Low
Data availability - the extent to which data for the indicator is readily available and accessible for use by wide range of stakeholders. This criterion also considers practicality of obtaining and working with the data - i.e. the extent to which an indicator can be measured in a cost-effective and practical manner.	Data at required frequency is available for Scotland/UK and other countries and no significant resources are required to obtain it. High degree of cost-efficiency (e.g. regular data collection mechanisms are in place or can be developed with reasonable costs).	There are some gaps in data (e.g. in terms of frequency or geographical coverage thus not allowing for international comparisons) but that data is still readily available. Not unreasonable costs and a moderate effort required to put in place appropriate data collection mechanisms.	Data is not available or there are significant time or geographical coverage gaps in the data. Disproportionately high costs and other practical barriers.
Relevance to CE Outcome(s) - the extent to which there is a clear relationship between an indicator and CE Outcome(s).	Indicator is completely relevant with a clear, unambiguous relationship to CE Outcome(s).	Indicator is broadly relevant and acceptable but lacks direct relationship to CE Outcome(s) in some ways.	Insufficient relationship between CE Outcome(s) and the indicator.
Distinctiveness - the extent to which an indicator measures something already captured under other indicator(s).	Indicator is completely distinctive and it doesn't measure anything already captured under other indicator(s).	Broad overlap between the indicator and other indicator(s) in the list but there are clear differences when it comes to details of what they measure.	Indicator is a duplicate or a near-duplicate and it is not clear how the indicator would enhance the monitoring of CE Outcome(s).

Stage 2

Selection Criterion Stage 2	High	Medium	Low
Validity - the extent to which an indicator measures what it is supposed to measure.	The indicator is robust and statistically validated, based on agreed definitions, classifications, standards and best practices, and methodology behind it is well-documented.	Gaps in any of these features but a broadly acceptable standard.	The indicator is generally poor, ambiguous and of limited robustness.
Timescales/sensitivity - the extent to which an indicator is sensitive enough to detect changes over time, particular in relation to the lifespan of the CEMIF.	Indicator is responsive to changes over time, in particular to relevant policy interventions.	Would expect the indicator to reflect changes to a reasonable extent but they may take longer time to manifest themselves or may be influenced by a wide number of factors beyond CE.	Would anticipate to see little to no change in the indicators within the timeframe of the CEMIF.
Understanding - the extent to which an indicator is easy to understand for policy-makers, the general public and other stakeholders**.**	Indicator is straightforward, unambiguous and easy to understand for non-technical audiences.	Includes an acceptable degree of complexity.	A generally poor and ambiguous or overly complex indicator that is likely to be hard for policy-makers and general public to understand.

Next steps: How you can get involved

Responding to this consultation
Please respond to this consultation using the Scottish Government's consultation hub, Citizen Space. Access and respond to this consultation online at https://consult.gov.scot/environment-forestry/draft-circular-economy-strategy/. You can save and return your responses while the consultation is still open. Please ensure that consultation responses are submitted before the closing date.

If you are unable to respond using our consultation hub, please complete and send the Respondent Information Form to:

Circular Economy Strategy Unit
Scottish Government
Area 3-H (South)
Victoria Quay
Leith, EH6 6QQ

Handling your response
If you respond using the consultation hub, you will be directed to the About You page before submitting your response. Please indicate how you wish your response to be handled and, in particular, whether you are content for your response to published. If you ask for your response not to be published, we will regard it as confidential, and we will treat it accordingly.

All respondents should be aware that the Scottish Government is subject to the provisions of the Freedom of Information (Scotland) Act 2002 and would therefore have to consider any request made to it under that Act for information relating to responses made to this consultation exercise.

If you are unable to respond via Citizen Space, please complete and return the Respondent Information Form provided alongside this document.

To find out how we handle your personal data you can view the privacy policy here: Privacy - gov.scot (www.gov.scot)

Next steps in the process
Where respondents have given permission for their response to be made public, and after we have checked that they contain no potentially defamatory material, responses will be made available to the public at Citizen Space. If you use the consultation hub to respond, you will receive a copy of your response via email.

Following the closing date, all responses will be analysed and considered along with any other available evidence to help us. Responses will be published where we have been given permission to do so. An analysis report will also be made available.

Comments and complaints
If you have any comments about how this consultation exercise has been conducted, please send them to the contact address above or email above

circulareconomy@gov.scot

Scottish Government consultation process
Consultation is an essential part of the policymaking process. It gives us the opportunity to consider your opinion and expertise on a proposed area of work.

You can find all our consultations online: Citizen Space. Each consultation details the issues under consideration, as well as a way for you to give us your views, either online, by email or by post at the relevant addresses above.

Responses will be analysed and used as part of the decision-making process, along with a range of other available information and evidence. We will publish a report of this analysis for every consultation. Depending on the nature of the consultation exercise the responses received may:

- indicate the need for policy development or review
- inform the development of a particular policy
- help decisions to be made between alternative policy proposals
- be used to finalise legislation before it is implemented

While details of particular circumstances described in a response to a consultation exercise may usefully inform the policy process, consultation exercises cannot address individual concerns and comments, which should be directed to the relevant public body.

Consultation questions

Vision and Outcomes
Question 1: To what extent do you agree with the vision and outcomes for the strategy?
[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / Not answered]

Question 2: Do you have any comments on the vision?
Question 3: Do you have any comments on the outcomes?

Policy Mechanisms
Question 4: To what extent do you agree with the policy mechanisms identified?
[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / Not answered]

Question 5: Do you have any comments on the policy mechanisms identified?
Question 6: Do you have any comments on the associated plans and priorities?

Priority Sectors
Question 7: To what extent do you agree with the priority sectors identified?
[Strongly agree / Agree / Neither agree nor disagree / Disagree / Strongly disagree / Not answered]

Question 8: Do you have any comments on the priority sectors identified?
Question 8a: Do you have any comments on the plans and priorities for the built environment?
Question 8b: Do you have any comments on the plans and priorities for the Net Zero Energy Infrastructure?
Question 8c: Do you have any comments on the plans and priorities for textiles?
Question 8d: Do you have any comments on the plans and priorities for the transport?
Question 8e: Do you have any comments on the plans and priorities for the food system?

Product Stewardship
Question 9: Do you have any comments on the proposed approach to product stewardship?

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?

- No
- 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)

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”?
Question 10b: 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”?

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”?

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”?

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”?

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”?

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”?

Question 10h: Do you have any comments in relation to the indicators proposed for outcome “Circular behaviours are the norm across business and society”?

Impact Assessments

We are committed to assessing the impact of proposals. Alongside this draft circular economy strategy, we have published a series of assessments of the potential impacts on equality, socio-economic considerations, island communities, business and regulation, and the environment. This is in accordance with our legislative requirements and, importantly, to inform the final policy development process. High-level partial and screening impact assessments have been developed to accompany this consultation.

The publication of the strategy itself will not result in direct impacts. However, it is expected that, depending on the design, specific priorities may have an impact if

they are introduced. We aim to use this consultation process to highlight potential overarching impacts for sectors or themes. The feedback we receive will be used to update the high-level impact assessments accompanying this consultation. We will also incorporate feedback to inform future impact assessments for specific priorities, as required.

Question 11: Please provide any further information or evidence that should be considered in the accompanying Equalities Impact Assessment.
Question 12: Please provide any further information or evidence that should be considered in the accompanying Fairer Scotland Assessment.
Question 13: Please provide any further information or evidence that should be considered in the accompanying Island Communities Impact Assessment.
Question 14: Please provide any further information or evidence that should be considered in the accompanying Business and Regulatory Impact Assessment.
Question 15: Please provide any further information or evidence that should be considered in the accompanying Consumer Duty Impact Assessment.
Question 16: Please provide any further information or evidence that should be considered in the Child Rights and Wellbeing Impact Assessment.

Strategic Environmental Assessment (SEA)

The Environmental Assessment (Scotland) Act 2005 requires those plans, programmes and strategies that are likely to have a significant impact on the environment to be assessed and measures to avoid, prevent or reduce adverse effects are sought, where possible, prior to implementation.

The responses received to this consultation, and the findings of the SEA, will inform the final strategy and will be reflected upon in the Post Adoption Statement. Scottish Government will also monitor the implementation and environmental effects resulting from implementing the strategy. This will be considered further as part of our development of the associated monitoring and indicator framework.

The SEA Environmental Report is being consulted on alongside the draft Circular Economy Strategy. Use this SEA Environmental report link to read the report and send consultation response by Tuesday 13 January 2026.

Question 17: Do you have any views on whether there are likely to be any positive or negative environmental impacts from the draft Environment Strategy that have not been identified in the Strategic Environmental Assessment?

Scottish Government
Riaghaltas na h-Alba

This publication is available at **www.gov.scot**

Any enquiries regarding this publication should be sent to us at

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