Circular Economy Strategy

Net Zero Aberdeen

1. Purpose

1.1 How is the Circular Economy strategy relevant to Net Zero Aberdeen?

This circular economy involves rethinking how we do things, how we value resources and integrating this into how we design, manufacture, consume and dispose of products and materials. It is a model for systemic change that will benefit the local economy, help to drive social change, as well as significantly contributing to delivery of net zero ambitions.

Aberdeen's growing waste infrastructure is helping improve the way we manage waste. However, to deliver net zero there is a need to think much more widely about how we manage resources. We need to look at ways to avoid and reduce levels of waste generated and find better ways to reuse, remanufacture and finally recycle the waste we do produce.

Aberdeen's northeast location means it is dependent of the movement of a wide range of goods and products and often reliant on long global supply chains, which can be vulnerable to disruption. A circular economy offers a solution to this threat through creation of local solutions for products and materials such as remanufacturing, repair and re-use. As well as encouraging innovation and presenting new business opportunities, this creates jobs and boosts the local economy.

But it is not just the business sector that can benefit, circular economy can support a fairer more just society. Moving to sharing, leasing and reuse models can give people access to a wider range of goods that would otherwise not have been affordable.

2. Context

2.1 What is the context for the Circular Economy theme[1]

Currently, four fifths (or 80%) of Scotland's carbon footprint is generated by the vast amount of goods and materials that we produce, consume and throw away often after just one use. We import roughly half of these products and materials from countries overseas, where the impact on biodiversity, habitat and water security can be significant.

In 2021, Zero Waste Scotland developed a landmark report, The Scottish Material Flow Accounts (MFA). The report reveals the size of Scotland's material footprint for the first time. The study found that Scotland's Raw Material Consumption amounted to 100 Mt of materials, which equates to 18.4 tonnes per person. This is 38% higher

[1] https://www.environment.gov.scot/data/waste-data-strategy/

than the global average and more than twice as high as the level many experts suggest is sustainable (8 tonnes per person per year).

Analysis showed that the difference is linked to population and climate. Scotland's lower population density means more materials are required per person for civic amenities including roads, bridges and public buildings. The colder climate means there is more demand for heating fuels.

Scotland has a material-intensive economy, we use far too much 'stuff' (from domestically extracted materials like oil and gas, wood, crops to exports such as steel, laptops, clothes, fruit and veg) and that is contributing to the climate crisis. The more materials we extract and use, the more damage we do to the climate and to nature. Put simply, our material consumption in Scotland is the single-greatest driver of climate change, and nearly all other environmental problems.

We can't run an economy without resources, so we need to find ways of making better use of them. The key to this is the circular economy. We can reduce our material consumption, minimise our environmental and social impacts without affecting our standard of living.

In domestic household waste, Aberdeen continues to lead the way among Scottish Cities recycling 49.9% of its waste as compared to Edinburgh with 38.6%, Glasgow with 24.7% and Dundee with 38.4%. It also remains above the Scottish average at of the cites domestic waste was not recycled and when we move into commercial waste the picture becomes more difficult to decipher.

Aberdeen's recycling rate dropped to 45.6% in 2020 (National recycling rates also dropped). Overall, more household waste was produced and proportionately less recycled. This is thought to be due to various changes caused by the COVID-19 pandemic, including:

1. Increase in people working at home or furloughed, displacing commercial waste produced in workplaces
2. Increased volume of household waste due to increased home deliveries
3. Less opportunity for recycling; on initial lockdown, the frequency of some waste collections reduced whilst councils transitioned to new ways of working to enable physical distancing of crews, alongside a period of closure of Household Waste and Recycling Centres

Commercial wates figures are not available at a local or city level making tackling these waste challenges significantly more difficult.

While to tackle this problem effectively more information on commercial waste is necessary, the challenge is still clear from the local and national figures.

2.2 Key Challenges for the Circular Economy

How do we…

1. **Engage meaningfully** with residents, businesses and waste operators in a more successful way which is outcome focused.
2. **Reduce consumption** levels across all sectors.

3. **Minimise waste** levels being created across all sectors.
4. **Influence product lifespan** for goods we purchase.
5. **Recycle to reduce landfill** and avoid wasting valuable resources.
6. **Design for re-use and recycling** in all products sold.
7. **Recycle locally** without shipping nationally or internationally (proximity principle).
8. **Generate energy from waste** or anaerobic digestion from non-recyclable material
9. **Extract heat** from our wastewater.
10. **Support circular economy** to grow its full potential.

2.3 What is already happening

Recent and ongoing developments such as the Mixed Recycling Centre, the Energy from Waste plant at Altens and the new anaerobic digestion plan at The Exhibition and Conference Arena (TECA) will all make a significant difference to our waste streams. The principles of circular construction are well established. In developing the infrastructure for the Seagreen wind farm, Montrose Port Authority repurposed a 50m communications mast and two-storey office building, previously used in Aberdeen's oil and gas supply chain sector.

3. Strategic drivers

UK	EU (Circular Economy) Directive
Scotland	The Environmental Protection (Single-use Plastic Products) (Scotland) Regulations 2021 – comes into force June 2022
	Food Waste Reduction Action Plan – published 2019
	Consultation: Circular Economy: Proposals for Legislation on Scotland's Circular Economy Bill (2019). Not yet presented to Parliament.
	Making Things Last Strategy 2016
	Scotland's Zero Waste Plan 2010 The Circularity Gap report – to follow in 2022
Aberdeen	Waste Strategy (2014-2025)

4. Approach

4.1 Overview

Strategic Aim: We will identify, promote and develop circular economy models that can maximise the value of products and materials, to reduce carbon emissions and support economic resilience.

Key Outcomes	Strategic objectives	Measures
Job creation and enhanced business resilience	Exploring new business and behaviour models	No. of businesses reached

A reduction in emissions from the whole life cycle of products	Designing for a circular economy	No. of developments adopting circular economy principles
	Making things last	No. of citizen reuse and repair facilities
	Maximising use of assets	No. assets repurposed to
Materials are recovered and regenerated	Avoiding waste	Total household waste generated
	Recycling at end of life/maximising value from waste	Tonnes of waste recycled (household)

4.2 About the approach

The circular economy represents a fundamental shift in the way that we manufacture, use and view materials and products. In simple terms it means 'making things last'. It can be summed up in five key 'R's, in priority order - reduce, reuse, repair, remake and finally recycle. So, while recycling absolutely has a part to play, the most valuable action we can take is to reduce consumption and production. In doing so, we can encourage innovation; contribute to new business opportunities; save natural resources and enable wider community access to goods and materials.

Designing for a circular economy

Designing out waste, looking at the life cycle impacts of products, including end of life and seeking to maximise the durability of products, identifying ways valuable materials can be reused and shared.

- Engage with stakeholders in construction, including consideration of potential to for materials exchange and ways to integrate principles of circular construction into the design and development of local projects.
- Make a net zero/ circular construction commitment to integrate principles of circular construction into the design and development of major local developments.
- Apply circular economy principles to the energy transition.
- Link decommissioning activity and reuse in construction.
- Explore opportunities for research, learning, application of circular economy in local further education institutes.

Exploring new business and behaviour models

Promote and support new thinking about the use of goods and services leading to new business models, supporting and creating jobs and diversification. A sharing economy reduces resource use and consumption but also supports equality, by giving access to items that might be needed on an ad hoc basis but can't necessarily be afforded.

- Support small businesses to explore new circular economy business models.
- Building opportunities for growth of Aberdeen sharing economy and engage with nation-wide sharing networks. For example, tool sharing, leasing of electronic devices, bikes, furniture etc.
- Explore local digital opportunities and solutions to use technology to support and drive a circular economy, for example, local materials exchange platforms. This can work at a city level, within sectors, or with a consumer focus

Making things last

Mapping out, raising awareness and supporting growth of infrastructure and services for city reuse. Building business and community capability in repair.

- Develop city infrastructure and services for repair, to support citizens with keeping goods in working order.
- Encourage the mainstreaming of reuse, building on Aberdeen's well-established reuse sector.
- Encourage a growth of repair and reuse in the commercial sector. Mapping out and raising awareness of city reuse and repair facilities.
- Examine opportunities to build capability in repair, supporting citizens to keep goods in working order for longer.
- Explore the potential to establish a "reuse quarter", or similar, which could support wider city regeneration, as well as provide new jobs.
- Support behaviour change to encourage greater levels of reuse by consumers.

Maximising use of assets

Imaginative use of underutilised buildings and spaces in Aberdeen to support the circular economy; while at the same time wider city regeneration.

- Explore opportunities to use available assets to promote reuse and repair such as repair cafes or reuse hubs. Use space to promote citizen and business innovation and shared space for creative activity or learning.

Avoiding waste

Encouraging avoidance of waste in the first instance

- Encourage a reduction in the use of single use items, raise awareness.
- Promote a reduction in food waste in the hospitality and food service sector; ensuring edible surplus food in the area is collected and redistributed.
- Support and encourage local events to minimise waste.
- Promote food waste reduction with households/consumers. Encourage participation in food waste recycling collections and alternative mechanisms for dealing with food waste e.g., on-site digesters and composting.
- Promote and support growth of the number of shops and businesses that are active in reuse, such as 'refilleries'.

- Engage with the construction sector to explore opportunities to avoid waste; embedding circular principles in design to robust site waste management plans.

Recycling at end of life/maximising value from waste

Reuse is encouraged, though where not possible, raising awareness of and examining current and emerging opportunities for city recycling can keep valuable materials in circulation and help reduce the depletion of natural resources.

- Establish a resource management group to look at waste arising across the region; end points, challenging wastes and opportunities for local recycling.
- Raise awareness of recycling opportunities within the city.
- Encouraging business use of recycled materials in the production of products.

5. Risks for this theme

Political – when addressing circular economy there are national and global dimensions in relation to the production and consumption of goods and supply chains that will not be possible to influence at city level. Quality standards around circular economy are needed to support wider uptake. National action is needed to develop wider reuse and redistribution networks.

Social / Citizen – need for skills development in repair and engagement in circular economy options and business models.

Legal – proposals by Scottish Government for a Circular Economy Bill.

Economic / Financial – need for funding and investment to support circular economy. The development of circular business models, such as leasing and modular components cannot be addressed at city level alone.

6. Theme synergies

Mobility	Links to shared & leased vehicle access i.e. Co-wheels and bike repair / hire. Repair for low carbon vehicles. Solutions to maximise value from end-of-life fossil fuel vehicles.
Buildings & Heat	Incorporating circular principles into construction and retrofit and re-use of waste heat from industrial / commercial processes.
Energy Supply	Extend the lifecycle of products in the energy sector and find routes to maximise value from associated assets at end of life.
Natural Environment	Support natural systems through reduced raw material extraction. Maximise value from natural products, e.g. forestry.
Empowerment	Links to shared & leased vehicle access. Awareness of the impacts of products and services and how to make smarter choices. Upskilling to embed circularity at design stage.