

Zero Waste Fife

Resource Strategy & Action Plan 2018 - 2028



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FOREWORD

I am pleased to present the new 10 year Zero Waste Fife – Resources Strategy and Action Plan.

Since 2008, Fife Council has made significant and meaningful progress towards its vision of Zero Waste to landfill. In 2016, over 59% of waste was diverted from landfill (55% was recycled), which is the highest level ever achieved. The new Resources Strategy outlines the next steps that need to be taken on the journey towards that vision.

There are new and major challenges that will have to be addressed. In 2021, landfilling biodegradable household waste will be banned by law. By 2025, only 5% of all waste will be allowed to be landfilled, together with meeting a 70% recycling target. The shift in culture, behaviour change and changes in the infrastructure, which will be required to meet these challenges, cannot be overstated. Every Fife Council service and every Fife Community will have to understand the challenge and the solutions, if they are to rise to meet it and contribute towards the changes, which will have to be made.

Individually, we need to be aware of the high levels of resources, which we use in everyday life at home, at work or in school. Recent media coverage has shown to us all the devastating impact that a high level of resource consumption, combined with the irresponsible disposal of waste, can have on the environment. Preventing waste being produced in the first place must be the first priority and, towards that end, embracing the concepts of a circular economy, to make sure resources are kept in circulation for as long as possible, together with high levels of reuse, repair and recycling, will be key tools.

Finally, on behalf of everyone in Fife, I want to say ‘Thank you’ to the Council’s Officers, who have developed the Strategy and Action Plan and to everyone who contributed to it through the workshops, which have been held over the last few months. The passion, concern and creative thought, which has been shown, as we look towards making Fife a more sustainable place, gives me real cause to be confident about Fife’s ability to tackle the challenges, which lie ahead.



Ross J Vettrano OBE

Convenor of the Environment, Protective Services and Community Safety Committee
Fife Council

1. INTRODUCTION

This Zero Waste Fife - Resources Strategy sets out the strategic direction for waste and resource management within the Council's control for the next 10 years. The accompanying action plan details the actions required to deliver the objectives of the main strategy.

The purpose of this Zero Waste Fife - Resources Strategy and Action Plan is to:

- Align Fife Council's policies and practices with those set out in the national Circular Economy Strategy "Making Things Last" (February 2016).
- Set policies and actions, which fulfil the Council's commitment to the national Household Recycling Charter (July 2016).
- Establish how the Council will tackle new challenges arising from the Waste (Scotland) Regulations 2012 ban on the landfilling of biological municipal waste.
- Ensure the objectives of the new strategy link with the Plan for Fife (2017 Local Outcome Improvement Plan) aiming to put communities at the heart of delivering a Fairer Fife to grow jobs in the green economy, achieve 60% recycling rates and meet the challenges of climate change.

The next sections set out the background to the strategy including the history of the previous Zero Waste Fife Plans, performance to date and the scope of the strategy. The key legal drivers shaping the Resources Strategy from European Union to local level along with financial drivers are also explained.

The strategy focuses on the main challenges ahead on the path to zero waste and delivery of a circular economy and sets out objectives and actions to address these. These challenges have been identified into 6 key themes:

1. Preventing waste
2. Minimising the environmental impacts of waste including climate change
3. Engaging and communicating with householders and other stakeholders
4. Optimising services and infrastructure for the future
5. Maximising economic benefit on the way to zero waste and a circular economy
6. Managing non-recyclable waste

The final section of the strategy outlines how progress on its implementation will be monitored and actions updated. It also sets the process and timescale for strategy review to ensure it remains aligned with local and national policy.

The development of the new strategy and action plan included a Strategic Environmental Assessment of the proposed strategy and its impacts, culminating in the publishing of an Environmental Report. Feedback from the consultation and recommendations from the Environmental Report have been incorporated into the final strategy where possible.

Wider stakeholder engagement and consultation was carried out to support the preparation of the strategy and action plan in addition to the consultation carried out as part of the Strategic Environmental Assessment process.

2. EXECUTIVE SUMMARY

2.1. Background

This new Zero Waste Fife - Resources Strategy and Action Plan replaces the previous Zero Waste Strategy and Zero Waste Plans for Fife.

The need for a new strategy has come from a number of factors: the Circular Economy Strategy published by the Scottish Government in 2016, meeting the requirements of the national Household Recycling Charter, and upcoming challenges from the Waste (Scotland) Regulations 2012.

2.2. Performance to date

Currently Fife is in the top 10 ten best performing Scottish councils for recycling with a rate of 54.7% for 2016, well above the Scottish average of 45.2%. However the increase in recycling rate has levelled off over the last 6 years.

Upward trends in household and population numbers will make halting growth in the amount of waste being produced challenging over the next 10 years.

Internal waste composition analysis has shown:

- a considerable amount (over 50%) of material being put into blue landfill bins should be recycled or composted;
- work is required to improve the quality of recycling and to make sure the range of materials collected in the various recycling bins are aligned to national policy; and
- further work is required to identify the composition of waste being landfilled from Household Waste Recycling Centres in anticipation of the 2021 landfill ban.

2.3. Scope of the new Zero Waste Fife - Resources Strategy and action plan for Fife

The strategy covers all waste collected and produced by the Council and its arms-length external organisation Fife Resource Solutions.

It sets out objectives and actions to move the Council to the vision of zero waste and a circular economy society over the next 10 years.

It will be used to guide future decision making by the Council and as such its delivery will require engagement of all key stakeholders including: Council services, Community Planning partners, the Scottish Government, Zero Waste Scotland, community organisations, businesses and householders.

Challenges are anticipated on the journey to achieving the vision of zero waste and a circular economy society over the next 10 years. Accommodating budget constraints, market fluctuations, increasing costs associated with transport and waste disposal, while ensuring that householders and businesses continue to receive quality and efficient services regardless of their location, will present significant challenges.

2.4. Main themes addressed by the strategy

The policy objectives for each of the six main themes identified in the introduction are set out below. These will be used to set the strategic direction.

The actions underlying these objectives and detailed information around the themes and objectives is included in the main body of the strategy.

Preventing Waste

- 1) Champion waste minimisation within the community thereby reducing costs to the Council, households and the business sector and limiting environmental impact.
- 2) Work with the Scottish Government and Zero Waste Scotland and waste producers to reduce the amount of waste created.
- 3) Encourage the development of waste prevention legislation.

Minimising the environmental impacts of waste including climate change

- 1) Minimise environmental and climatic impact from waste management activities.
- 2) Improve decision making by using the carbon metric, waste hierarchy and other relevant carbon accounting tools.

Engaging and communicating with householders and other stakeholders

- 1) Council policies, strategies and plans will embrace national zero waste and circular economy policy.
- 2) The Council will follow the national standards for community engagement in delivery of the objectives of the strategy.

Optimising services and infrastructure for the future

- 1) Ensure the Council's waste management services and infrastructure is fit to meet future legislative and policy requirements and best value.
- 2) Maximise the capture rate, quality and value of material collected and treated in line with the waste hierarchy.

Maximising economic benefit on the way to zero waste and circular economy

- 1) Maximise the economic benefit from zero waste and circular economy by ensuring waste is reused, recycled and composted in a manner to achieve highest value.
- 2) Maximise economic benefit from the Council procurement processes.
- 3) Encourage investment on circular economy and other zero waste opportunities and business in the Council area.

Managing non-recyclable waste

- 1) Minimise the amount of non-recyclable waste requiring treatment.
- 2) Develop a policy to reduce the impact of the Councils legacy waste sites where practicable and feasible.
- 3) Agree strategy for residual waste treatment post 2020.

2.5. Targets

All of the targets set nationally and at European Union level are outlined in section 4 of the strategy. The ones set by the Scottish Government are:

- 60% recycling and composting (household waste) by 2020
- 70% recycling and composting (all waste) by 2025
- Maximum of 5% of waste to landfill by 2025
- 15% waste reduction (against 2011 levels) by 2025
- 33% food waste reduction (against 2013 level) by 2025

3. BACKGROUND

3.1. Zero Waste Strategy 2008-2018

Fife first committed to the principle of zero waste to landfill in 2008, this led to the development of Fife's Zero Waste Plan: Towards Zero Waste which was approved in 2010. This set out the aim of becoming the leading green council with an objective of landfilling zero municipal solid waste by 2020. It established interim targets and measures to achieve them including the provision of improved recycling and composting services; improved capture rates of materials for which recycling collections are provided; treatment of organic waste to produce renewable fuel and the treatment of unsorted municipal solid waste.

In 2011 the Zero Waste Plan was superseded by a new strategy that addressed the obligations and opportunities presented by the Waste (Scotland) Regulations 2012. It outlined further improvements to the kerbside recycling service, and treating unsorted waste to recover accessible recyclate and energy. Additional efforts focused on the development of new business avenues for Fife's two landfill sites to maintain income levels, and the potential development of an arms-length organisation to develop and operate waste treatment infrastructure on behalf of the Council.

A further revision of the Zero Waste Strategy in 2015, took account of developments in household waste recycling and the development of waste management infrastructure (anaerobic digestion facility for the treatment of organic waste). It also took account of the Scottish Government recycling targets and the implementation of the biodegradable municipal waste landfill ban in 2021.

This development of the strategy progresses the zero waste theme established in 2008 and looks to evolve the approach further to embrace the principles of circular economy.

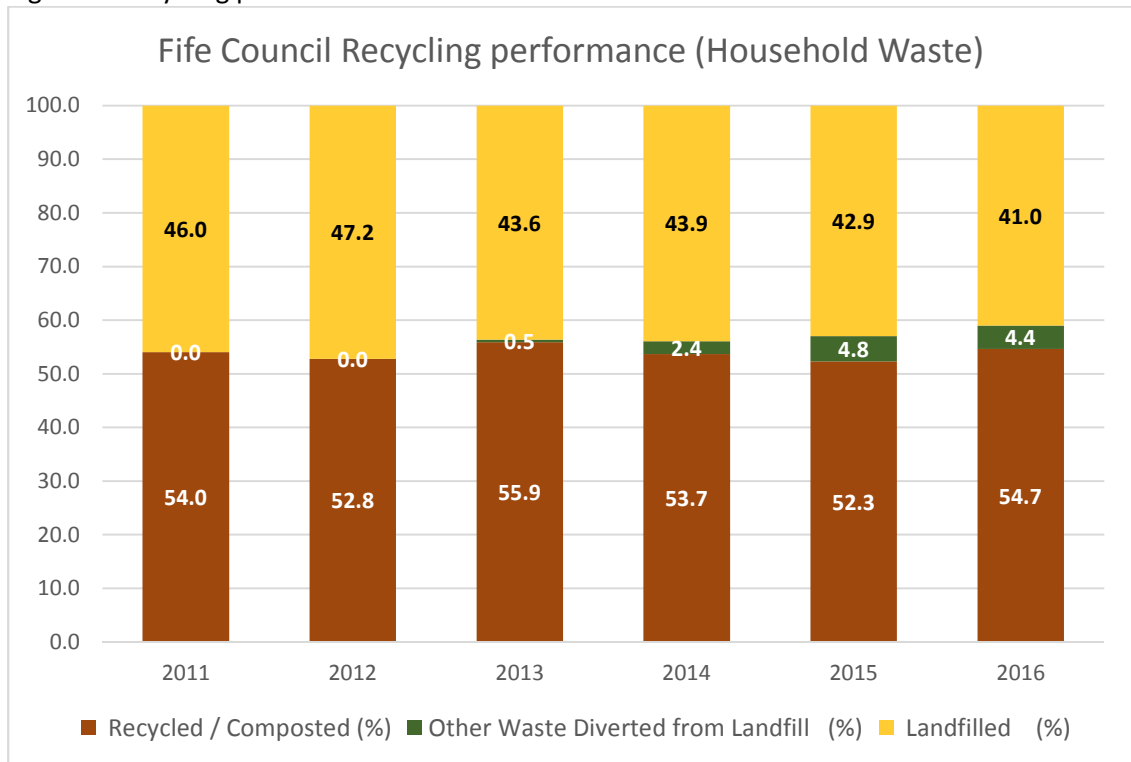
3.2. Performance to date

In 2016 Fife achieved a recycling and composting rate of 54.7% for household waste¹, putting it in the top 10 councils in Scotland for performance, well above the Scottish average of 45.2%. A further 4.5% was diverted from landfill through delivery of wood to a local biomass plant for fuel in energy generation, and from household waste being processed into refuse derived fuel for export to Scandinavia for use in heat and power plants. This, combined with the recycling rate, resulted in over 59% of Fife's household waste being diverted from landfill.

Utilising SEPA data, Figure 1 shows the long term trend in performance for the Council since 2011. In 2011 the national measurement for recycling and composting changed to household waste only. It also changed from financial year reporting to calendar years. In order to avoid confusion only figures from this date forward are outlined in this section.

¹ <https://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/household-waste-data/>

Figure 1. Recycling performance 2011 - 2016



The amount of waste diverted from landfill in Fife has increased from 54% - 59% from 2011 to 2016. Recycling rates have not increased significantly during this time. Changes in the end destination of some materials from recycling into fuelling energy generation has meant a slight decrease in the recycling rate over to diversion. Since 2014 no major recycling initiatives have been rolled out that would have a significant impact on recycling rates. It should be noted that Fife Council was one of only 9 local authorities to achieve the 50% Household Waste Recycling target by 2013.

Fife has continued to support national waste prevention initiatives such as Love Food Hate Waste, and local initiatives like the Fife Real Nappy Library in a bid to support reduction in waste production. However total waste arisings are affected by a number of factors such as changes in population, numbers of households and the wider economic landscape.

Figure 2 shows the total household waste arisings (in tonnes) for Fife over the same six year period. Waste arisings in Fife has decreased by over 12% since 2011. In 2016 the amount of waste produced per head of population in Fife was 507kg per year.

Figure 2. Household Waste Arisings (Fife)

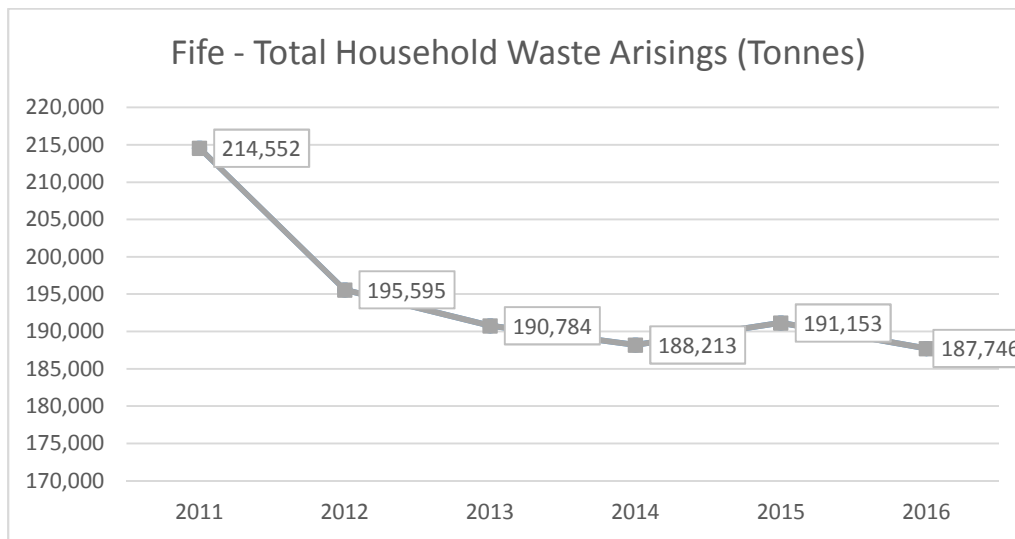
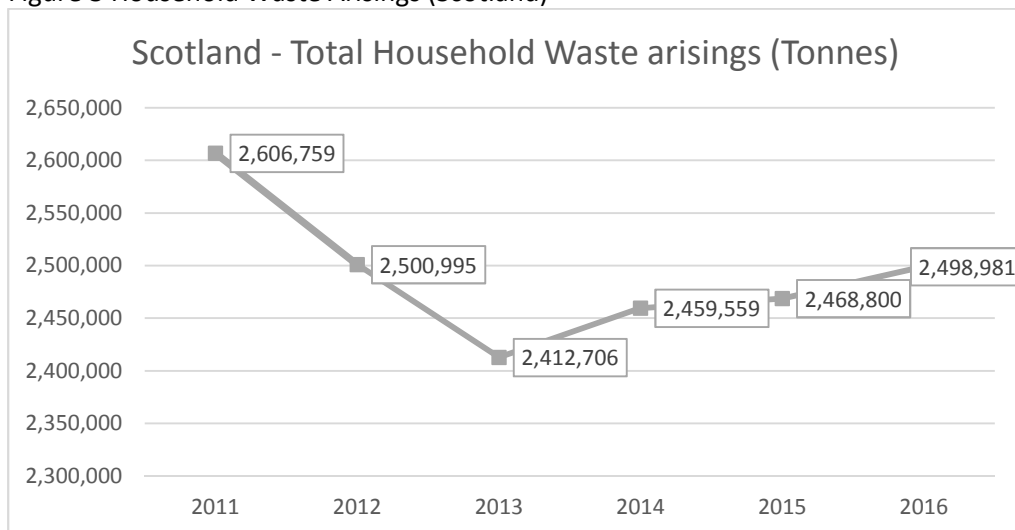


Figure 3 shows the total household waste arisings in Scotland from 2011 - 2016. Since 2013 there has been a slight year on year increase in waste arising across Scotland.

Figure 3 Household Waste Arisings (Scotland)²

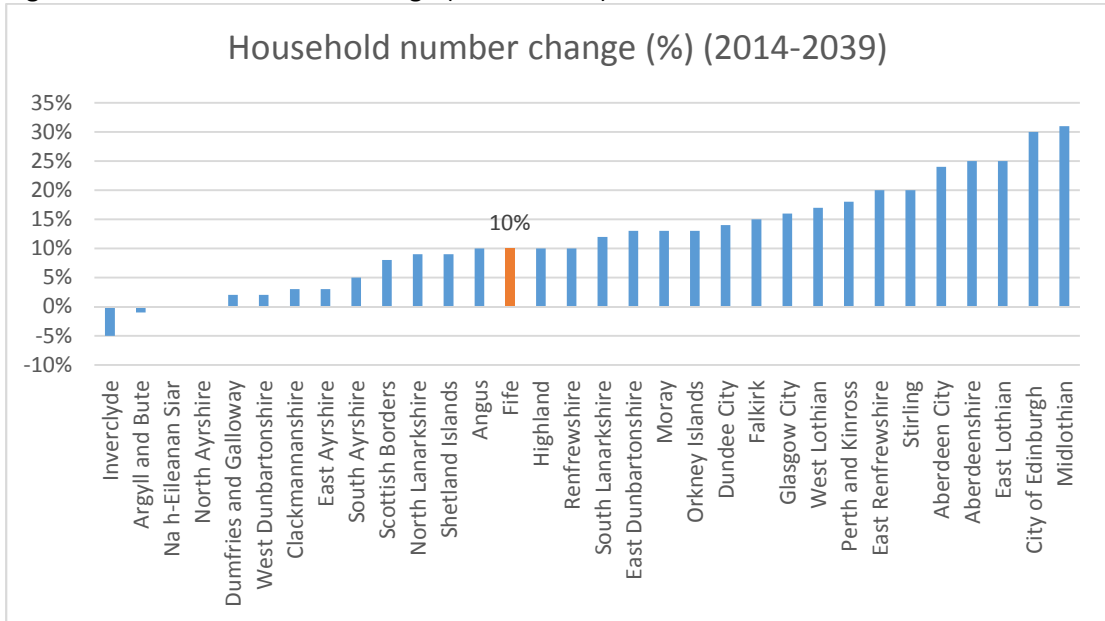


The number of households in Fife are predicted to increase by 10% over the next 25 years³, from 163,958 in 2014 to 180,896 in 2039 (174,579 in 2026). Figure 4 illustrates this in comparison to the other Scottish Local Authorities. The growth is generally driven by more adults living alone – this can be seen particularly in the older population.

² <https://www.environment.gov.scot/data-analysis-applications/household-waste/>

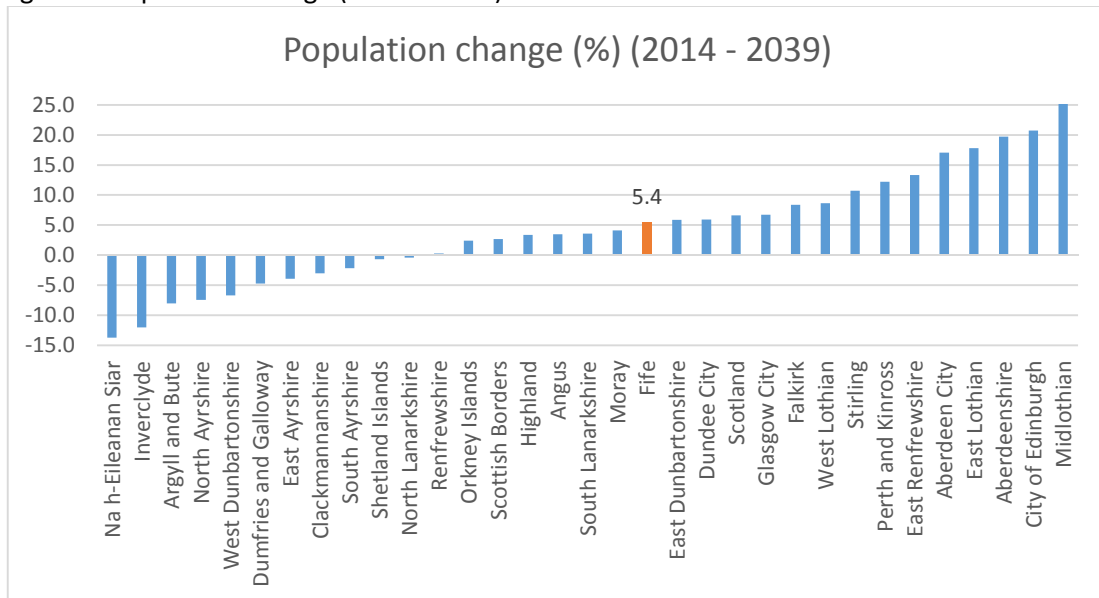
³ www.nrscotland.gov.uk/files//statistics/household-projections/2014-based/2014-based-household-projections.pdf

Figure 4. Household number change (2014 – 2039)



The most recent population projections using 2014 National Records of Scotland data⁴ are that the population of Fife will increase by 5.4% between 2014 and 2039 from 367,250 to 386,963. (2026 – 378,720)

Figure 5. Population change (2014 – 2039)



Rising population numbers and household growth will make halting the growth in the amount of waste produced challenging in the coming years. For this reason measuring future performance in terms of kilograms of waste produced per household or head of population alongside the total volume of waste would help identify where positive action has been taken to reduce the amount of waste produced at household or individual level.

⁴ www.nrscotland.gov.uk/files//statistics/population-projections/2014-based-euro-var/pop-proj-scot-areas-14-corrected.pdf

3.3. Waste Composition

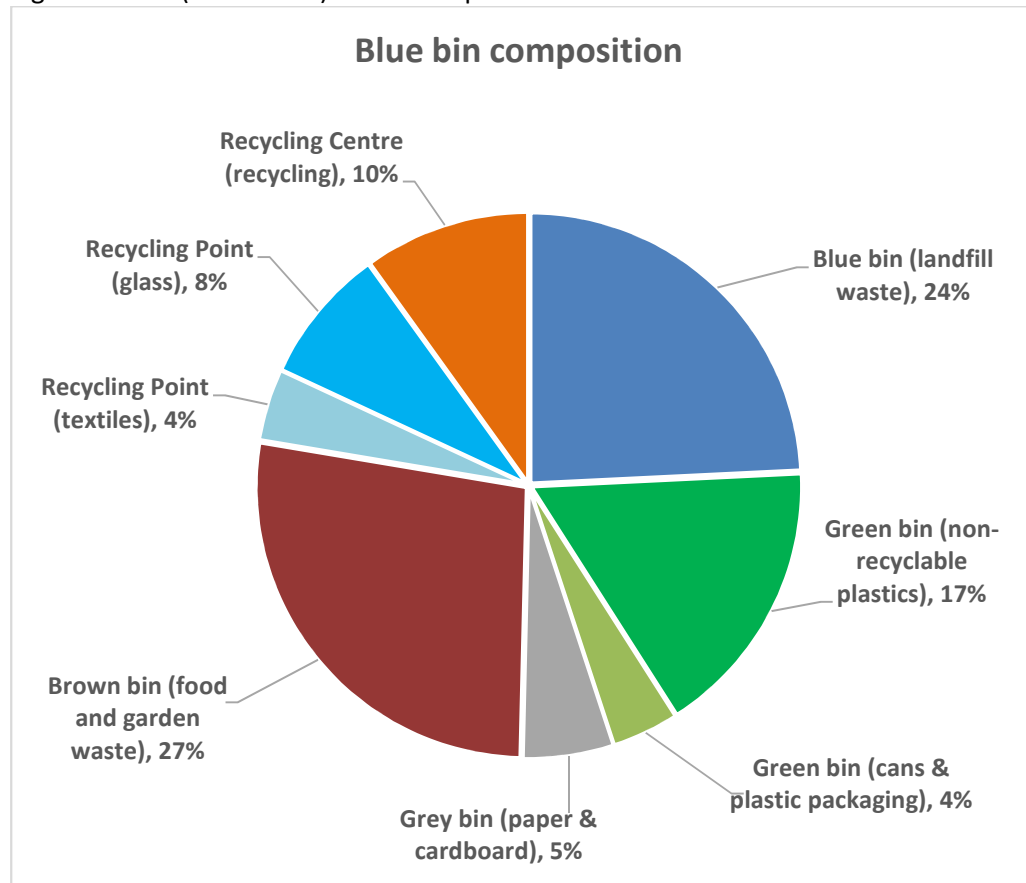
Periodic analysis of the contents of kerbside landfill and recycling bins has been undertaken for the Council. This analysis helps establish what materials are being recycled, what are not, and can help in targeting communications and potential changes to waste and recycling services to improve the amount and quality of recycling collected.

3.3.1. Kerbside landfill bins

Analysis carried out on the household landfill bins shows that households still place a lot of recyclable waste in landfill bins. For instance over 27% of the weight of landfill bins is made up of food and garden waste despite a recycling service being provided for these materials.

59% of items placed in the landfill bins should and could be recycled in other kerbside bins or at Fife's network of recycling points and centres. In 2016 this amounted to over 28,000 tonnes being landfilled rather than recycled, at considerable cost.

Figure 6. Blue (Landfill bin) waste composition



It is clear from this that more needs to be done to ensure recyclable and compostable material is separately collected for onward processing.

3.3.2. Kerbside recycling bins

Findings from analysis of kerbside recycling bins shows the range of material being placed in each of the different recycling bins.

As with landfill bin analysis this has shown that there is work to be done to ensure the correct range of items are being placed into the recycling bins to provide recycling of the highest quality and maximise income from it, reducing Council costs.

In 2016 over 529 tonnes (3.5%) of material was rejected from paper and cardboard bins and 3,400 tonnes from food and garden waste bins, all of which was landfilled rather than recycled.

Changes in recycling markets and national policy have identified that there are materials currently being collected in kerbside recycling bins that either need moving to other recycling bins or unfortunately to the landfill bin instead.

Cartons (for example tetrapaks) which are currently collected in the grey (paper and cardboard) bin will have to be moved to being collected in the green (cans and plastics) bins to meet the requirements of the national Household Recycling Charter.

Similarly plastic carrier bags, films and polystyrene which are currently accepted in green (cans and plastics) bins will need to be redirected to landfill bins due to the Recycling Charter and a current lack of markets for their recycling. These materials make up between 15-25% of green bin content by weight.

It is clear that, in order to achieve quality improvements and meet policy requirements, changes will need made to collection systems and extensive engagement and awareness raising will be required.

3.3.3. Recycling Centres

In 2016 over 80,000 tonnes of Fife's waste was handled at Fife's Household Waste Recycling Centres. While over 64% of this material was recycled, over 28,000 tonnes was disposed of to landfill.

Further work including waste composition analysis is required to determine the nature of the material being landfilled in order to identify alternative options to ensure Fife meets future legal requirements and limit financial and environmental impacts.

3.4. Scope of strategy & plan

The Zero Waste Fife - Resources Strategy and Action Plan will look to address all waste arisings in the region rather than simply household waste. This will however be limited by the information available on the industrial and commercial sectors. All waste collected by the Council and its arms-length external organisation Fife Resource Solutions on its behalf will fall within scope of the strategy. This will include any waste that the Council itself generates.

The strategy will be used to guide future decision making by the Council, mapping out the way forward to:

- achieve national recycling and composting targets
- control future waste arisings and growth
- potential partnership arrangements, economic or community benefits
- determine the way forward for residual waste treatment procurement
- determine future resource implications for waste management
- determine gaps in infrastructure

The action plan that accompanies the strategy will identify the actions necessary for the Council to move towards its vision of a zero waste and circular economy society over the next 10 years.

The successful delivery of the strategy will require involvement, engagement and consultation across all sectors. This includes support from other services within the Council, Community planning partners, Scottish Government, Zero Waste Scotland, the community sector, businesses and householders.

4. KEY DRIVERS

4.1. European context

The United Kingdom as a Member state of the European Union, transposes European Union Directives into Law. There are several directives that relate to waste and resources. These include:

4.1.1. The Waste Framework Directive

In December 2008 the revised Waste Framework Directive 2008/98/EC came into force. This provides the overarching structure for waste policy and legislation across European Union member states. It introduced the first European Union wide recycling targets. By 2020 Member States must:

- Reuse or recycle 50% of household waste
- Reuse, recycle or recover 70% of non-hazardous construction and demolition waste.
- Produce a Waste Prevention Plan and to have a National Waste Management Plan in place.

Scotland's Zero Waste Plan sets the national policy structure to implement the Directive in Scotland. Making Things Last; A Circular Economy Strategy for Scotland, produced in 2016 acts as the Waste Prevention Plan.

The Directive lays out some simple waste management principles but states that all Member States must apply the waste management hierarchy⁵. This is shown in figure 7:

⁵ European Commission (2017), Directive 2008/98/EC on waste (Waste Framework Directive), <http://ec.europa.eu/environment/waste/framework/>

Figure 7. Waste management hierarchy



4.1.2. The Landfill Directive

The Landfill Directive (199/31/EC) requires a progressive reduction in the landfilling of biodegradable municipal waste and the pre-treatment of wastes before landfilling, in order to reduce waste volume and minimise the environmental impact of disposal. The Landfill Directive sets targets and timescales for reducing the amount of biodegradable municipal waste sent to landfill. By 2020 the United Kingdom must reduce the amount of biodegradable municipal waste landfilled to 35% of the amount of this type of waste produced in 1995.

4.1.3. Other targeted directives

The European Union has adopted a Circular Economy Package that includes revised legislative proposals on waste. It sets clear targets for reduction of waste and establishes an ambitious long-term path for waste management and recycling. Some key elements of the revised waste proposals include:

- A common European Union target for recycling 65% of municipal waste by 2030
- A common European Union target for recycling 75% of packaging waste by 2030
- A binding landfill target to reduce landfill to maximum of 10% of municipal waste by 2030
- A ban on landfilling of separately collected waste
- Promotion of economic instruments to discourage landfilling

In January 2018 a new set of measures were announced which included a European Strategy for Plastic in a Circular Economy. This strategy which is currently being consulted on, aims to change the way plastics and plastic products are designed, produced, used and recycled. It includes:

- the requirement that by 2030 all plastic packaging should be recyclable
- the need for specific measures, which could include legislative instruments to reduce the impact of single use plastics.

There are a range of European Directives that target particular materials and will place obligations on the producers of those materials. Producer Responsibility schemes, such as those for End of Life Vehicles, Waste Electrical & Electronic Equipment and

Batteries, will all impact in some way upon the Council's waste management activities and increasingly on the activities of manufacturers in the area.

4.2. National Context

4.2.1. Scotland Zero Waste Plan

The Zero Waste Plan for Scotland was published in June 2010 outlining the Scottish Governments vision for a Zero Waste Society. This describes a Scotland where all waste is seen as a resource; waste is minimised; valuable resources are not disposed of in landfills, and most waste is sorted, leaving only limited amounts to be treated.⁶ The Zero Waste Plan sets out a range of measures including:

- Landfill bans for specific waste types therefore reducing greenhouse gas emissions and capturing the value from these resources
- Separate collections of specific waste types, including food, to avoid contaminating other materials, increasing reuse and recycling opportunities and contributing to renewable energy targets
- Two targets that will apply to **all** waste: 70% recycling target, and maximum 5% sent to landfill, both by 2025
- Encouraging local authorities and the resource management sector to establish good practice commitments and work together to create consistent waste management services, benefitting businesses and the public.

4.2.2. Waste (Scotland) Regulations 2012

The Waste (Scotland) Regulations 2012 have three key action points:⁷

- The Scottish Government will introduce progressive bans on the types of materials that may be disposed of in landfill, and associated support measures, to ensure that no resources with a value for reuse or recycling are sent to landfill by 2020
- To support the introduction of landfill bans, the Scottish Government will introduce regulations to drive separate collection and treatment of a range of resources in order to maximise their reuse and recycling value, and generate market supply
- The Scottish Government will introduce regulatory measures to support the delivery of landfill bans, by ensuring energy from waste treatment is only used to recover value from resources that cannot offer greater environmental and economic benefits through reuse or recycling.

4.2.3. Climate Change (Scotland) Act 2009

Waste issues are a significant element of the Climate Change Act. Over the last ten years there have been major reductions in carbon emissions from the waste sector due to the reduced landfilling of biodegradable waste. Continued improvement to

⁶ Scottish Government (2017), Scotland's Zero Waste Plan, <http://www.gov.scot/Topics/Environment/waste-and-pollution/Waste-1/wastestrategy>

⁷ Scottish Parliament Information Centre (2012), The Waste (Scotland) Regulations 2012, http://www.parliament.scot/ResearchBriefingsAndFactsheets/S4/SB_12-18.pdf

reduce emissions will be more challenging as landfill becomes a smaller element of the solution to waste.

Section 5 of Chapter 5 of the Act contains provisions which enable Scottish Ministers to make regulations relating to the acquisition of accurate information about waste, and the promotion of waste reduction and recycling by different methods. There are a range of other provisions including targets for the reduction of packaging, and for the introduction of Deposit and Return Schemes, as well as charges for the supply of carrier bags.

Section 44 of the Act places three climate change duties on public bodies in Scotland and contains powers to enable Scottish Ministers to create further duties. The current duties require that a public body must act:

- in the way best calculated to contribute to the emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programme; and
- in a way that it considers most sustainable.

4.2.4. Circular Economy Strategy

Making Things Last, A Circular Economy Strategy for Scotland was launched in 2016. It sets out priorities for moving towards a more circular economy – keeping products and materials in high value states for as long as possible. The circular economy will benefit:

- The environment - by cutting waste and carbon emissions
- The economy – by improving productivity and opening up new markets
- Communities – more, lower cost options to access goods

Three of the key elements contained within the Circular Economy Strategy are:

- The reform of current Producer Responsibility systems into a more comprehensive single framework that drives increased choices for reuse, repair and remanufacture.
- The setting of a food waste reduction target of 33% by 2025.
- The introduction of the National Recycling Charter aimed at ensuring consistent high quality recycling services across Scotland.

4.2.5. Targets

There are a range of targets that result from the European Union directives, Zero Waste Plan and Circular Economy Strategy. These are outlined in table 1 below.

Table 1. National & European Union Targets

Target	Percentage	Target Date	Originates
Waste reduction (against 2011)	7%	2017	Scottish Government
Recycling & Composting (household waste)	60%	2020	Scottish Government
Waste reduction (against 2011)	15%	2025	Scottish Government
<5% of waste landfilled	5%	2025	Scottish Government
Recycling & Composting (all waste)	70%	2025	Scottish Government
Food waste reduction (against 2013)	33%	2025	Scottish Government
Recycling & preparing for reuse (Household waste)	50%	2020	European Union
Limit on biodegradable municipal waste landfilled (of 1995 amounts generated)	35%	2020	European Union
Construction & Demolition (Recycling & Reuse)	70%	2020	European Union

4.2.6. Recycling Charter and Code of Practice

The National Recycling Charter and associated Code of Practice is a joint venture between the Scottish Government and Local Authorities. It was launched in 2016 and some of the high level commitments include:

- To improve household waste and recycling services to maximise the capture of, and improve the quality of, resources from the waste stream, recognising the variations in household types and geography to endeavour that services meet the needs of all citizens.
- To encourage citizens to participate in recycling and reuse services to ensure that they are fully utilised.
- To operate services so that staff are safe, competent and treated fairly with the skills required to deliver effective and efficient resource management on behalf of communities.
- To develop, agree, implement and review a Code of Practice that enshrines the current best practice to deliver cost effective and high-performing recycling services and tell all citizens and community partners about both this charter and the code of practice.

4.3. Local Context

It is the responsibility of Fife Council and its delegated officers to implement measures that will contribute to National and European targets. The targets are more challenging than those faced before whilst financial pressures lead to a policy to deliver more for less. This sometimes leads to conflicting priorities.

4.3.1. Political manifesto priorities

In May 2017, the joint Fife Council Administration launched its draft programme as part of its power sharing agreement⁸. For the environment sector it outlines 12 key areas including:

- Increasing recycling rates to 60%
- Review bin collection/recycling with a view to introducing more locally appropriate arrangements not one-size fits all and rule out 4-weekly blue bin collection as a pan-Fife option.
- Retain all current recycling centres and develop proposals for a Deposit and Return Scheme for high quality materials.
- Meet the government's recycling targets and work to ensure that food and other biodegradable waste is processed effectively
- Meet obligations for carbon reduction

4.3.2. 60% recycling target

The joint Administration's programme outlines a 60% recycling target for household waste. This is in line with national policy of 60% by 2020. This Zero Waste Fife - Resources Strategy and Action Plan will consider the period until 2028 therefore whilst it is recognised that a local target of 60% is provided, the strategy will also need to take cognisance of the 70% recycling target by 2025 set by the Scottish Government.

A 60% recycling target will be extremely challenging for the Council to meet without a significant shift in operation of services. The majority of high impact changes have already been introduced and this strategy identifies potential measures that will enable us to meet this target.

4.3.3. Deposit and Return

Deposit and Return looks at increasing recycling and reducing litter by attaching a value to everyday items such as packaging similar to the carrier bag levy. The scheme is currently being investigated nationally by Zero Waste Scotland to identify an operating model for future implementation.

At this stage little is known about how this national system would work, although other countries use reverse vending to achieve this aim. It is not yet known the impact that deposit return would have in terms of infrastructure requirements or on recycling and waste volumes.

Fife Council are actively supporting the development of the national system.

4.4. Financial and other drivers

The waste industry is under increasing financial pressures in order to deliver its services. As Local Authority budgets become restricted, the ability to invest in infrastructure, services and

⁸ Fife Council (2017), Draft Programme for Administration May 2017, <https://www.fifedirect.org.uk/publications/index.cfm?fuseaction=publication.pop&pubid=0D130ECF-C1BF-64DC-A62E7732A556E2FB>

communications is reduced which can have a direct impact on delivering targets. There are also significant financial drivers outwith the control of the Local Authority that impact on the ability to deliver services.

4.4.1. Financial pressures

Fife Council suggests that by 2021 there will be a cumulative budget gap of £67 million⁹. The budget outlines four main ways to close this budget gap which include introducing efficiency savings, reducing services, increasing fees and charges, and increasing council tax.

Landfill tax is a significant challenge for the Council with costs increasing annually. In 2017 it cost £86.10 per tonne to dispose of landfill waste costing the Council just under £9million. The landfill ban in 2020 will make the disposal of waste significantly more financially challenging. Market research indicates that the cost to dispose of non-recyclable waste post 2020 will be approximately £135 per tonne.

4.4.2. Global markets

Recycling is a global market and a large proportion of material collected within the United Kingdom is ultimately processed abroad. As a result the price received for recyclable material and its available outlets are largely affected by the markets globally. As more recycling is collected, it places pressure on the available outlets and supply and demand dictates that processors can specify the quality of products they accept. This places a financial burden on a local authority as the collection systems need to ensure an input of high quality materials, or a lower or negative value for the material being collected. This also needs to be supported with robust communications to explain the quality expectations to householders. This all results in additional financial pressure that will only increase as the Circular Economy model expands and quality becomes key.

4.5. Tools for the Council to support a circular economy

The challenges above are many but Fife has been a leader in sustainable waste management for a number of years and strives to ensure this continues. The Council has a range of tools to meet the new challenges, many of which it has already adopted. These include:

- Waste collection services offered to householders and businesses.
- Education and awareness activities for householders, businesses, schools and the Council's staff.
- Minimising Council produced waste and managing what is produced in line with best practice.
- Using regulatory power in an enforcement role and to reinforce the 'polluter pays' principle to achieve compliance with its waste and recycling services.
- Embedding zero waste and circular economy policy into Council activities in including procurement.

⁹ Fife Council, Revenue Budget 2018-21, http://publications.fifedirect.org.uk/c64_AgendaPapers220218.pdf

- Planning policy – encouraging new investment in the area which provides the correct mix of new resource management infrastructure.
- Attracting grant funding – targeting funding support for zero waste and circular economy projects and embedding appropriate criteria in all grant funding.
- The new Plan for Fife (Local Outcome Improvement Plan) – supports the development of the green economy, achievement of recycling rates and tackles climate change.
- Partnership working with other Councils, the third sector and business to create opportunities with environmental benefits around waste management.

4.6. Fife Resource Solutions

In addition to the tools outlined in section 4.5 above, Fife Council took the innovative step in 2014 of creating its own arms-length resource management company, Fife Resource Solutions. Building on the Council's experiences in delivering improved recycling Fife Resource Solutions was established to deliver cost effective services, while remaining flexible enough to respond to future challenges and market opportunities.

Through Fife Resource Solutions the Councils strategic vision is to ensure Fife has the infrastructure to be the resource hub for Scotland with the objectives to:

- Deliver cost effective services to address resource challenges
- Provide high quality services to all commercial and domestic clients
- Provide reliable services by expanding the Fife Resource Solutions business base, growing existing services and establishing innovative solutions to resource challenges faced by the public and private sectors.

5. MAIN THEMES ADDRESSED BY THE STRATEGY

5.1. Waste prevention

Waste prevention not only conserves natural resources but would save society money in disposal and handling costs. Householders and communities can save by buying only what they need.

With significant increases in household and population numbers predicted over the next 25 years, it will be challenging to continue the current trend of no growth in household waste generation in Fife.

The Scottish Government met its initial target of stabilising waste growth by 2010. There are however future targets in this area to be met: 7% waste reduction by 2017¹⁰ (on 2011 levels) and 15% by 2025. In addition to this is the food waste reduction target of 33% by 2025. In order to make reducing waste production a focus for Fife, consideration should be given to setting a waste reduction target based, both on waste per household (as this is the area the Council has direct control of) and an overall tonnage figure.

Historically the Council has supported waste prevention through its support of national prevention initiatives such as Love Food Hate Waste, home composting and mail preference (junk mail). In addition, support has also been given to local initiatives such as the Fife Real Nappy Library. There

¹⁰ The results on progress in meeting this target have not yet been published

are a wide range of very successful local community organisations operating across Fife delivering waste prevention projects, communication campaigns and training. Going forward the support for existing and new waste prevention initiatives at local and national level will continue.

Producer Responsibility legislation will play an important role in waste prevention. There are already Producer Responsibility schemes in place for batteries, waste electrical equipment and packaging, which are driving higher levels of waste reduction, reuse and repair in these sectors. Fife can support this through the encouragement of local businesses to participate in these schemes and by supporting the further rollout and reform of Extended Producer Responsibility to other materials such as tyres and mattresses.

Objective(s)	<ol style="list-style-type: none"> 1. Champion waste minimisation within the community thereby reducing costs to the Council, households and the business sector and limiting environmental impact. 2. Work with the Scottish Government and Zero Waste Scotland and waste producers to reduce the amount of waste created. 3. Encourage the development of waste prevention legislation.
Actions	<ol style="list-style-type: none"> 1. Set a waste reduction target (total and per household) of 15% of 2011 levels by 2025. 2. Consider the setting of reuse targets – in consultation with national bodies and reuse organisations. 3. Support greater levels of reuse through the design of the Councils waste management services progressed through the development of a reuse action plan to identify how, when and where this will be done. 4. Support the expansion and reform of Extended Producer Responsibility across Scotland. 5. Exert influence on suppliers and external stakeholders to adopt waste reduction targets and circular economy principles for example through procurement frameworks and planning guidance. 6. Improved signposting for local businesses to Resource Efficient Scotland through the Council waste services, business support and regulatory functions to assist them in reducing the amount of waste they generate and comply with requirements of the Waste (Scotland) Regulations 7. Design and procure waste collection services to adhere to waste hierarchy guidance, to ensure high quality closed loop recycling where possible.

5.2. Minimising environmental impact (Climate Change)

Creation and management of waste is a major contributor to climate change.

The release of methane (a greenhouse gas 24 times more potent than carbon dioxide) from landfill sites is a major contributor to climate change. Across Scotland the carbon impact of waste from landfill emissions has decreased by 26%¹¹ since 2011. This has been achieved through increased levels of recycling and composting, treatment of non-recyclable waste and waste prevention. It is

¹¹ The carbon Footprint of Scotland’s Waste, ZWS, Sept 2017 <http://www.zerowastescotland.org.uk/research-evidence/2014-15-carbon-metric-summary-report>

expected to be reduced further with the upcoming ban on landfill of biodegradable organic waste from 2021.

Currently waste reporting in Scotland is still focussed on the weight of material collected, however there is a need to move to a system where performance focusses more on the climate change impact of wastes. One method of doing this is to use the Carbon Metric¹² which looks at the whole life carbon impact of waste – through its production, distribution and disposal, recycling or reuse. This would encourage the recycling and reuse of materials with high embedded carbon.

Household waste only makes up 25% of waste produced by weight in Scotland. However, it contributes over 57% of total waste carbon emissions. This is predominantly due to the makeup of household waste – it has higher levels of the top most carbon intensive wastes. Highest is food waste followed by textiles and metal wastes (ferrous and non-ferrous). It would make sense to focus efforts on capturing high levels of these types of waste.

In addition emissions from transport and collection of waste will need to be controlled through the efficient design of recycling and waste services and procurement of efficient or alternative fuel vehicles. In addition, consideration of the location of any processing or disposal facilities to limit transport will also have to be made. This will allow the Council to comply with the public duty under the Climate Change (Scotland) Act 2009.

Minimising the distance waste and recycling is transported for processing or treatment, through support for the development of local and national (Scotland wide) waste management solutions would also contribute to minimising the climatic impact from waste management activities.

Objective(s)	<ol style="list-style-type: none"> 1. Minimise the environmental & climatic impact from waste management activities. 2. Improve decision making by using the carbon metric, waste hierarchy and other relevant carbon accounting tools.
Actions	<ol style="list-style-type: none"> 1. Encourage measures for recycling and reuse of material with high embedded carbon impact. 2. Design and implement Council related services to minimise carbon emissions. 3. Ensure the procurement of efficient / alternative fuel vehicles.

5.3. Engagement & Communication

The new strategy promotes a further step change to the existing drive towards Zero Waste. It introduces the concept of a circular economy and a move away from seeing material as waste and instead as a “resource”. Engagement and communication will be key to identifying opportunities and generating ideas and buy in for services. If we want to deliver on the objectives then ensuring communities and businesses are engaged and communicated with during the development and delivery of the strategy will be essential.

Leading by example

The Council cannot expect householders, communities and business to commit to zero waste and the circular economy without the Council leading the way. High levels of reuse, recycling and waste prevention must be demonstrated across all areas of the Council itself. It is also obligated

¹² Developed by Zero waste Scotland

under Waste (Scotland) Regulations 2012 to separate waste it produces. The engagement and communication of this will not only generate buy in and understanding from Council employees but will support the engagement and awareness in a much wider audience from supplier, partners and the community.

Connecting to other plans & strategies

This strategy connects with the Council's corporate planning framework including relevant strategies, policies and plans on: Local Development, Planning, Local Outcome Improvement, Litter Prevention, Procurement, Economic Development and Climate Change. It also connects with the national Zero Waste Plan and Making things last: A Circular Economy Strategy for Scotland. Incorporation of zero waste and circular economy policies and within other services plans will improve mainstreaming and communicating the Councils approach to resource management across its services.

Community Engagement

Community engagement will lie at the heart of successful delivery of the objectives of this new strategy. The National Standards for Community Engagement set out good practice principles that organisations can follow to help them deliver effective community engagement.

It is proposed that the engagement and communication around the new strategy and its associated actions and projects follow these principles.

Support to local community

Local authorities can support local communities to take action through helping to fund or source funding and providing advice and guidance. While restrictions on public expenditure has reduced the ability to fund initiatives, the Council, through its arms-length organisation Fife Resource Solutions that operates both Fife's landfill sites, contributes the maximum amount to the Scottish Landfill Communities Fund. A proportion of the landfill tax paid is refunded to support community projects administered by approved bodies including the Fife Environment Trust. Projects have to fall into a number of categories and this can include community recycling or reuse initiatives.

Post 2025, when only 5% of waste arisings will be allowed to landfill it could be that funding available through this scheme will be drastically reduced. Other European countries have taxes on other waste treatments such as energy from waste as well as on landfill. It is considered a means of encouraging waste prevention, reuse and recycling ahead of energy recovery.

Innovation

In the delivery of this Zero Waste Fife - Resources Strategy and Action Plan, the Council also needs to identify new and innovative ways of engaging and communicating. Some of the examples that have worked well in other areas are use of community champions to empower communities, and the development and delivery of awareness messaging via new or emerging platforms such as social media and online video sharing sites. Fife already has a network of charity, volunteer and social enterprises across Fife delivering communication and training programmes around waste and how to link up with these groups will be included in the engagement strategy.

Objective(s)	<ol style="list-style-type: none"> 1. Council policies, strategies and plans will embrace national zero waste and circular economy policy. 2. The Council will follow the National Standards for Community Engagement in delivery of the objectives of the Resources Strategy.
Actions	<ol style="list-style-type: none"> 1. Develop a Resources Engagement and Communications Strategy to outline how and when it will engage with the community, businesses and within the Council itself. 2. Ensure that circular economy, and waste hierarchy principles are embedded within Council strategies, plans & policies. 3. Update Scottish Planning Guidance relating to waste storage. 4. Maintain high levels of awareness about zero waste and the circular economy amongst businesses, householders and schools through a wider range of electronic media, face to face and other innovative approaches.

5.4. Service & infrastructure improvement

In order to ensure the waste management services and infrastructure under its control remains fit for purpose, meets legal and policy requirements and demonstrates best practice, the Council will need to ensure they are reviewed over the coming years. This will not only allow for services to be redesigned but also identify where there are gaps and for the consideration of alternative delivery models.

Household kerbside collection services

Work will be required to ensure collection services provided from people's homes meet the requirements of the Household Recycling Charter and take account of the impact of other national initiatives such as the development of a Deposit and Return System. Changes to the global recycling markets will also necessitate a focus on how services can be delivered to increase quality and reduce contamination within all bins including the landfill bins. There will also be the need to improve the capture rates for key materials such as food waste which not only has a high carbon emission but is subject to a reduction target of 33% by 2025. Table 2 provides a summary of the factors influencing the Council's collection services.

Table 2. Factors impacting on collection services

Drivers for change	Impact on kerbside services
Development of the national Deposit Return System	<ul style="list-style-type: none"> • Potential to reduce the volume of high value plastic bottles & cans in the services provided by the Council.
Change in recycle markets	<ul style="list-style-type: none"> • Contamination of all recycling bins will need to be minimised to ensure recycle is of the quality required by the markets. • The range of materials collected in each of the recycling bins will need to be reviewed in line with market requirements. There are currently no markets for the recycling of plastic carrier bags and other plastic films which are accepted in Fife's green bins.
Waste Scotland Regulations – Biodegradable waste landfill ban from 2021.	<ul style="list-style-type: none"> • Focus on maximising the usage and quality of material collected via kerbside recycling bins.

Drivers for change	Impact on kerbside services
Zero Waste Plan Targets	<ul style="list-style-type: none"> Recyclable material incorrectly placed in the blue (landfill) bins will need to be reduced to minimise the amount of material needing treatment.
Household Recycling Charter Implementation	<ul style="list-style-type: none"> Ensure the mix of materials in the recycling bins align with the charter specifications. Need to align polices on capacity and dealing with contamination with the charter and code of practice. Consider options for provision of kerbside recycling to locations in Fife that currently do not have access to them namely; rural properties, town centres and other hard to access areas. Carry out regular communication on the services we provide.
Best value	<ul style="list-style-type: none"> Greater use of intervention / education efforts and (where necessary) enforcement powers will be required to reduce the cost of recyclate lost in non-recyclable waste collections. Periodic review of services to ensure they remain fit for purpose and meet legal requirements.
Public Engagement	<ul style="list-style-type: none"> It is fundamental that people are aware and engaged to ensure high participation in services and high quality recycling.

Household Waste Recycling Centres

Fife operates 11 staffed Household Waste Recycling Centres across Fife which handle over 80,000 tonnes of material of which over 64% is recycled. However over 28,000 tonnes still goes to landfill.

In anticipation of the landfill ban in 2021 there is a need to gather more information on the makeup of the waste that is disposed of to landfill from these sites. National research has shown that a large amount of bulky waste is handled by these sites including furniture, mattresses, carpets and other larger household items. Ensuring that the reuse, recycling of these materials and identifying alternative sources of treatment should this not be appropriate will be important going forward.

Recycling centres contribute up to 25% of the overall residual waste that is sent to landfill in Fife. The focus for many years has been on developing kerbside services to improve the recycling performance. Reviewing how these facilities accept and process landfill waste will be a key element of meeting legislative targets.

With the move to a circular economy it's important to identify any opportunities for the recycling centres to support activities higher up the waste hierarchy, such as reuse.

Table 3. Factors impacting on Household Waste Recycling Centres

Drivers for change	Impact on Household Waste Recycling Centres
Duty of Care – Environmental Protection Act 1990	<ul style="list-style-type: none"> Need to ensure that commercial users of the sites are adhering to duty of care responsibility.

Drivers for change	Impact on Household Waste Recycling Centres
Waste Scotland Regulations – Biodegradable waste landfill ban from 2021. 5% Limit on landfill by 2025	<ul style="list-style-type: none"> • Increase the levels of recycling and re-use on the sites to limit the amount of materials needing treatment. • Focus on maximising the usage and quality of material collected at the sites. • Investigate options to control unsorted waste going to landfill.
Recycling Charter Implementation	<ul style="list-style-type: none"> • Provide a facility for householders to dispose of extra waste.
Best value	<ul style="list-style-type: none"> • Operate services so that cost recovery is achieved from commercial use of the sites. • Periodic review of sites to ensure they are fit for purpose and meet legal obligations.

Recycling Point Network

Fife has an extensive network of approximately 300 recycling points across Fife. The recycling point network was rolled out prior to the existence of the extensive kerbside recycling collections now offered across Fife. As with the other services offered it will be important to ensure this network is reviewed to ensure it still remains fit for purpose, meets legal requirements and provides value for money.

There may be opportunities such as the move towards the collection of a different range of materials at the sites. Consideration also needs to be given on the coverage for materials where a kerbside collection is not provided and for those areas where recycling points act as an alternative to doorstep collections.

Table 4. Factors impacting on Recycling Points

Drivers for change	Impact on recycling points
Development of the national Deposit Return System	<ul style="list-style-type: none"> • Could impact on the volume of plastics and cans collected at the points which will impact on servicing requirements. • Could allow for development of alternative materials at the sites.
Change in recycle markets	<ul style="list-style-type: none"> • Requirement to ensure high quality material is collected at the sites.
Waste Scotland Regulations – Biodegradable waste landfill ban from 2021. 5% Limit on landfill by 2025 Zero Waste Plan Targets	<ul style="list-style-type: none"> • Challenge around quality when facilities are unstaffed and unlocked. • Key facility in the collection of glass – contributing to a glass capture rate of over 60%. • Consider the challenge of fly tipping at recycling points, mainly bagged household waste.
Recycling Charter Implementation	<ul style="list-style-type: none"> • Ensure glass bank provision complies with the charter in terms of volume and distance (as no kerbside service is provided). • Ensure adequate provision for those areas with types of properties not covered by kerbside service.

Drivers for change	Impact on recycling points
	<ul style="list-style-type: none"> Review coverage of other charter materials to see if over / under capacity provided (for example paper & cardboard).
Best value	<ul style="list-style-type: none"> Review usage and fullness of sites to ensure service is demonstrating value for money.

Other resource management infrastructure

In addition to provision of collection and bring site services Fife Resource Solutions on behalf of Fife Council also operate and manage a number of other waste resource management sites in Fife.

Fife Resource Solutions manage the two Fife Council landfill sites; Lochhead located to the north of Dunfermline, and Lower Melville Wood close to Ladybank. These sites have evolved into resource recovery facilities with a number of different waste and energy management activities taking place in addition to the landfill operations. Planning for the end of life of these sites, and in light of the upcoming landfill ban and target of only 5% of waste to landfill by 2025 will impact on the operation of these facilities. This will also provide challenges for the future in terms of replacing the income these sites generate and to identify alternative disposal options for the non-recyclable material they currently handle.

Some of the other activities operated out of the sites include:

a. Anaerobic Digestion Plant

Fife Resource Solutions operate an Anaerobic Digestion facility at the Lochhead Landfill site. Over 35,000 tonnes of food and garden waste are processed to produce energy and heat and a Publically Available Specification 100 accredited output material. Ensuring high quality output and certification for Farm Assurance and Publically Available Specification standards with regards to physical contamination and quality of feedstock when it arrives at the plant will need addressing in the coming years to meet legal requirements and limit financial pressures.

b. Refuse Derived Fuel Production

At the Lower Melville Wood Landfill site waste from household and commercial sources is processed into refuse derived fuel for export to Scandinavia to be used to generate heat and power. Consideration will need to be given to any potential financial impacts of the United Kingdom leaving the European Union with regards to policy and exchange rates.

Business collections

The Waste (Scotland) Regulations put requirements on businesses to separate and recycle set key materials namely plastics, glass, metal, paper and cardboard. Food businesses that generate over 5kg per week also need to take steps to ensure it is collected separately (there are currently exemptions to this for rural locations). These requirements also apply to waste created by the Council.

The Council will continue to provide commercial waste services that comply with legislation and duty of care and maximise the reclamation of recyclable material from the waste collected. Fife Resource Solutions will ensure that all businesses within Fife have access to a high quality

commercial waste management service which will reduce nuisance fly-tipping and other negative impacts.

The Council's duty of care team provide support in the awareness raising and enforcement of these regulations within Fife. Signposting businesses to national initiatives that can provide help such as Resource Efficient Scotland.

Future infrastructure requirement

A key concern for future new infrastructure is the location and type generated by the demands of the zero waste and circular economy. While there will be a need to look at residual (non-recyclable) waste treatment, this should not be at the detriment of those facilities that support reuse, repair, manufacturing and reprocessing, high quality sorting and recycling / composting infrastructure.

Objective(s)	<ol style="list-style-type: none"> 1. Ensure the Council's waste management services and infrastructure is fit to meet future legislative and policy requirements and best value. 2. Maximise the capture rate, quality and value of material collected and treated in line with the waste hierarchy.
Actions	<ol style="list-style-type: none"> 1. Conduct periodic reviews of recycling service and infrastructure to ensure they remain fit for purpose, provide best value and meet the requirements of legislation and policy including the Recycling Charter. 2. Development of a transition plan to identify what is required to move Fife to a Household Recycling Charter compliant service. 3. Development of a customer charter. 4. To incentivise communities, investigate the potential to return to the community, in some part, some of future savings achieved from increased participation and reduced contamination following major service changes. 5. Input into national policies and developments such as Deposit and Return.

5.5. Maximising economic benefit on the way to zero waste and a circular economy

A traditional linear economy is where items are - made, used, and then disposed of. In a circular economy items are designed and manufactured to keep resources in use for as long as possible, extract the maximum value from them whilst in use, then recover and regenerate products and materials at the end of each service life.

By its very nature a circular economy has maximising economic benefit at its core. Through the support of high quality recycling and reuse, and by encouraging the development of new and innovative business ideas for example around the theme of prolonging the life of goods or through new repair or remanufacture ideas.

In Fife we can support this by reducing the amount of non-recyclable low value waste and increasing the amount of high quality recycling and reuse that takes place in the region.

Financial benefit can be gained through working in partnership with neighbouring authorities, community organisations, planning partners, colleges and universities, and national bodies such

as Zero Waste Scotland. This has been integrated in the development of this Zero Waste Fife - Resources Strategy and should be delivered through its implementation.

It is anticipated that the move towards zero waste and a circular economy will give rise to opportunities through additional employment opportunities if new infrastructure or businesses in this area are attracted to Fife.

The strategy will look to identify where realising economic benefit within the circular economy and zero waste context link in with the themes and priorities of other Council strategies and plans. For instance the innovation and enterprise priority action of Fife’s Economic Strategy, and the Thriving Places theme of the new Plan for Fife.

The Council can use its own purchasing power to influence the practice of its suppliers. Schemes like the Scottish Welfare Fund Consortium which Fife was the first local authority to sign up to not only supported local reuse organisations by providing a market for re-usable goods, but also increased the number of people that could be supported by the funding available.

Objective(s)	<ol style="list-style-type: none"> 1. Maximise the economic benefit from zero waste and the circular economy by ensuring waste is reused, recycled and composted in a manner to achieve highest value. 2. Maximise economic benefit from the Council procurement processes. 3. Encourage investment on circular economy and other zero waste opportunities and business in the Council area.
Actions	<ol style="list-style-type: none"> 1. Identify opportunities for partnership working with other local authorities and organisations around the delivery of services, procurement and funding applications. 2. Provide guidance and support for the Council’s commercial collection customers to help in meeting the Waste Scotland Regulations requirements. 3. Support partners such as Business Gateway in attracting developments within the zero waste and circular economy fields to Fife. 4. Identify circular economy and zero waste links within the delivery of the priorities of other Council plans and strategies.

5.6. Management of non-recyclable (residual) waste

Historically non-recyclable (residual) waste in Fife has been landfilled, however the restrictions placed by the Waste Scotland Regulations and Scotland’s Zero Waste Plan will require residual waste be treated to extract maximum value from it.

In 2016 over 41% of household waste generated in Fife was landfilled. The 2025 Scottish Government target of 5% of all waste to landfill presents a significant challenge to all Local Authorities with regards to how it manages non-recyclable waste after this date. There is an accompanying recycling target of 70% for all waste by 2025 however based on current waste arisings per capita and 2026 predicted population numbers this would still mean that:

- 70% Recycling / Composting – 152,070 tonnes per annum.
- 30% Non-recyclable waste treatment – 65,172 tonnes per annum
- 5% landfill of residual materials (after treatment) – 10,000 tonnes per annum.

Negotiations are currently ongoing with Local Authorities and the Scottish Government regarding the implications of the landfill ban post 2020. It is estimated that there is currently a national capacity gap of between 400,000 and 1.5 million tonnes of treatment capacity in Scotland. This could be problematic for Fife accessing Energy from Waste facilities following the implementation of the landfill ban.

Fife Resource Solutions are currently investigating the Council's options regarding short term residual waste solutions such as expanding the Refuse Derived Fuel facility or entering into a short term contract for Energy from Waste capacity. As a capacity gap has been identified at a national level, market demand dictates that as 1 January 2021 gets closer, the cost of disposal will increase, possibly significantly.

Fife Resource Solutions will investigate opportunities with regard to longer term treatment of waste. This could include outsourcing residual waste treatment to a private contractor via a long term contract or potentially invest in our own Energy from Waste infrastructure within Fife. The long term strategy needs to be developed and agreed as a matter of urgency.

Objective(s)	<ol style="list-style-type: none"> 1. Minimise the amount of non-recyclable waste requiring treatment. 2. Develop a policy to reduce the impact of the Councils legacy waste sites where practicable and feasible. 3. Agree the strategy for residual waste treatment post 2020.
Actions	<ol style="list-style-type: none"> 1. Development of a residual waste strategy & plan for post 2020. 2. Progress with procurement of short and long term residual waste treatment solutions. 3. Examine all Council controlled non-recyclable waste streams to assess opportunities for maximising the value and opportunities from them.

6. MONITORING AND REVIEW

6.1 Monitoring

A range of key outcome measures will be developed as a consequence of establishing the strategy. These are likely to focus on key performance measures such as climate change impact, waste reduction, recycling, composting and waste diversion rates, the provision of appropriate infrastructure and economic benefit achievement.

Progress on the implementation of the strategy and its actions will be reported annually to the relevant Council committee and posted on the Fife Council website.

Governance of the strategy will be aligned with that of the new Local Outcome Improvement Plan "A Plan for Fife" when it is set.

6.2 Review

The strategy will set the focus and direction of waste management activities in Fife for the coming 10 years. An interim review of the strategy will be carried out in 2022 (mid-way through the 10 year period). The strategy may also be reviewed if there are material changes made to national policy or legislation.

The results of any review and changes made as a result will be put to the relevant Council committee for approval.

7. GLOSSARY

Glossary of common terms

Anaerobic Digestion – processes by which microorganisms breakdown organic material (for example food and garden waste) in the absence of oxygen to produce biogas and compost.

Biodegradable Municipal Waste - any municipal waste that is capable of undergoing aerobic or anaerobic decomposition, such as food and garden waste, and paper and card.

Circular Economy - A circular economy is one in which resources are kept in use for as long as possible, the maximum value is extracted from them whilst they are in use, then recover and regenerate products and materials at the end of each service life.

Deposit and Return Schemes – Systems where a surcharge is paid on an item when it is bought (for example beverage cans and bottles) which is then refunded to the purchaser when it is returned to the retailer / producer.

Energy from Waste - a term that is used to describe various technologies that convert waste into usable forms of energy such as heat, fuels and electricity.

Extended Producer Responsibility – Is a concept where manufacturers and importers of products bear a significant degree of responsibility for the environmental impacts of their products throughout their lifecycle. It includes their design, the materials they are made from, and from their use and disposal.

Non-Recyclable Waste – Material that is currently not recyclable or compostable and therefore is sent to landfill or a residual waste treatment process.


Waste arisings – the total amount of waste produced including any which goes on to be reused, recycled or composted.

8. APPENDICES


Appendix 1 – Draft Action plan

In the table below

- **Short-term** means within a year
- **Medium-term** means within 3 years
- **Long-term** means more than 3 years
- **Ongoing** means existing action ongoing

 = low priority

 = medium priority

 = high priority

Priority was scored taking into account landfill diversion, resource implications and statutory requirements

Action	Sub actions	Action summary	Priority	Timescale
Monitor and contribute to national policy & developments	Extended producer responsibility	Support participation in Fife and further rollout and reform of the existing system.	Medium	Medium-term
	National Deposit Return System	Support development of a national system and identify impacts and opportunities for Fife.	Medium	Short-term
Residual Waste management	Contribute to national engagement and implement policy	National policy yet to be determined.	Low	Short-term
	Development of a plan for the post 2020 landfill ban.	Development of alternative residual waste treatment options for after the landfill ban.	High	Short-term

Action	Sub actions	Action summary	Priority	Timescale
	Research & expansion of Refuse Derived Fuel markets and facilities	To review the current Refuse Derived Fuel processing carried out at the Lower Melville Wood site.	Low	Medium-term
	Ongoing maintenance of landfill infrastructure	Both while the sites are active and in preparation for and during closure.	Low	Ongoing
	Investigate opportunities for processing fly-tipped waste	Currently all material is landfilled. Consider options higher up the waste hierarchy.	Low	Medium-term
Provision of commercial services	Provision of commercial services	Continue to provide commercial services to local businesses to improve environmental performance and legislative compliance.	Medium	Ongoing
Compliance with the National Recycling Charter & Code of Practice	Development of a transition plan	To identify what is required to implement a Household Recycling Charter compliant service.	Medium	Short-term
	Implement consistent contamination approach	Implementation of the national traffic light contamination model.	Medium	Medium-term
	Review of waste & recycling policies	To ensure they are all consistent and enforced. Will include the development of a customer charter.	Medium	Medium-term
	Re-alignment of materials collected in bins	To comply with the core material requirements of the charter and achieve high value and meet the requirements of the markets.	Medium	Short-term
	Consider options for the provision of recycling facilities for areas not on kerbside collection systems	Consider options for areas that cannot accommodate the standard recycling service such as town centres, hard to access or flatted properties.	Medium	Medium-term
	Identify and carryout Health and Safety and skills training	Ensure training in Health and Safety and skills for waste operatives is consistent with the requirements under the recycling charter and code of practice.	Low	Ongoing

Action	Sub actions	Action summary	Priority	Timescale
	Review and re-design of services to be compliant with the charter	Look at changes required to services in order to be complaint with the charter. This will include bring sites such as recycling points and kerbside services.	Medium	Medium-term
	Infrastructure & strategy of anaerobic digestion facility	Consider improvements or changes that need made to inputs or operations to maximise the quality and amount of output from the anaerobic digestion plant.	High	Medium-term
	Achieve carbon reductions through service delivery measures	Efficient routing, vehicle technology and ultra-low emission vehicles.	Medium	Long term
Development of communication and engagement strategy and plans	Develop and update annual communication strategy & plan	Development of an annual strategy and accompanying plans to identify how and when stakeholders will be engaged on waste related issues. In addition to the overall strategy separate plans will be prepared for individual projects as required. Some of the areas to be covered are outlined in the subsection column.	Medium	Short-term (then ongoing)
	Procurement		Low	Medium-term
	Planning & development		Low	Medium-term
	Enforcement		Low	Medium-term
	National initiatives		Low	Ongoing
	Communities		Low	Medium-term
	Project related communications		Medium	Ongoing
	Internal - Fife Council		Low	Medium-term
	Business		Low	Ongoing
Internal Fife Council Resource Management	Procurement	Work with the procurement service to identify opportunities to minimise waste generation and promote the circular economy	Medium	Medium-term
	Other Fife Council offices & buildings	Work with the Facilities Management service to improve waste management within Fife Council buildings and to increase participation in the circular economy by keeping high value items in circulation for as long as possible.	Medium	Medium-term

Action	Sub actions	Action summary	Priority	Timescale
	Supporting other Fife Council Services	Improve waste management within Fife Council services (specifically ones that may operate out with Council buildings).	Medium	Long-term
Increasing Reuse in Fife	Develop a reuse action plan	Develop a reuse plan to identify and co-ordinate reuse activities within Fife. This will include maximising the reuse of Waste Electrical and Electronic Equipment, textiles and other bulky items. It will also look to identify actions to support the development of partnerships with third sector organisations that promote or carryout reuse activities within Fife.	Medium	Medium-term
Waste Prevention	Support national waste reduction targets by 2025 and associated national and local waste prevention initiatives	Work with the Scottish Government, Zero Waste Scotland and waste producers to reduce the amount of waste created. Support for national waste prevention campaigns such as Love Food Hate Waste and local community initiatives.	Medium	Medium-term
Provision of best value household services	Household Waste Recycling Centre provision	Conduct reviews of recycling services and infrastructure to ensure it remains fit for purpose, provides best value and meets the requirements of legislation and policy.	High	Ongoing
	Household kerbside service		High	Ongoing
	Recycling Point network		High	Ongoing
	Other waste management infrastructure (including transfer stations)		High	Ongoing