

1- FOREWORD BY COUNCILLOR NEIL COONEY

I am pleased to present this revised Aberdeen City Waste Strategy (ACWS) for our city. This document demonstrates our long term plans to reduce the social, economic and environmental consequences of waste. As a city we understand the benefits when we reduce, reuse and recycle our finite resources and these principles underlie the plans within this document. All of the materials in our waste containers can offer significant value to our homes and our businesses; we recognise the opportunities available to us when we recover these resources for our benefits - moving from a history of costly and damaging landfill to a future of sustainable resources and energy.

Your Council is making widespread improvements in our waste and recycling facilities. Households across Aberdeen will benefit from improved Household Waste Recycling Centres (HWRC) offering convenient collections for a wide range of materials. A new mixed recycling service will be introduced to all households across the city allowing us to recycle a wider range of materials. We will enjoy compost, developed in our city using our own garden and food waste. As we move away from the costs and dangers of landfill, we intend to use non-recyclable materials as a fuel source within our own Energy from Waste (EfW) facility, helping many of the 30,000 residents struggling to heat their homes in a climate of rising fuel and heating costs. Our plans underline one simple principle; that our waste is no longer a problem, it is a resource.

I am proud to support this ACWS. Implementing these proposals will make Aberdeen a zero waste city, providing long term social, economic and environmental benefits to us all. I look forward to enjoying the new and improved recycling services detailed throughout these plans. The themes outlined in our strategy - and the improvements they will deliver - are the right choice for our residents, our schools and our business community, allowing Aberdeen to thrive and be an example to other Local Authorities (LA) across Scotland and Europe.



Neil Cooney

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2. CONSULTATION

An initial consultation on the key themes of the ACWS was undertaken in early 2009. The results of this consultation were then built into the development of the draft ACWS which was submitted to, and approved, by the Housing and Environment Committee in November 2009.

Following the approval, the draft ACWS was published for public consultation during December 2009. The main means of communication was electronic - either by direct e-mailing to established stakeholders or via the Aberdeen City Council (ACC) website - where an online consultation opportunity was established. A small number of hard copy versions of the strategy were printed and distributed where requested. Presentations were also made to community groups and professional bodies in Aberdeen during the consultation period.

The consultation closed on 25 February 2010, although late responses were received and considered up to 5 March 2010. Respondents ranged from individuals to community groups to government bodies, such as the Scottish Environment Protection Agency (SEPA).

Several helpful suggestions and comments were received through the consultation; these have been incorporated into the final strategy and reviewed further as part of this revision. Many respondents wish to see more effective communication regarding the need to reduce, reuse and recycle. No respondents stated opposition to the potential for EfW facilities in Aberdeen; responses in relation to this were confined to the need for careful site selection, appropriate capacity and the need to ensure value is gained through Combined Heat and Power (CHP) use.

As part of revising this ACWS a full Strategic Environmental Assessment (SEA) was not deemed necessary. The overall content reflects the key themes as before but incorporates the requirements of the Zero Waste Plan (ZWP) and future measures to establish a Waste Prevention Plan (WPP).

Stakeholder engagement is a continual process. This activity is undertaken through the work of our Recycling Officers and the waste strategy team. Raising awareness of the importance of the waste hierarchy and our need to attain the strict targets set by Zero Waste Scotland (ZWS) is essential in order for Aberdeen to improve its waste performance.

3. THE IMPORTANT BITS

Our ACWS details our plans to manage waste until 2025. It introduces the next generation of waste infrastructure and recycling services which will meet the needs of our city.

Key elements of this strategy are based upon:

- Closed loop circular economy
- Waste is a resource not a problem
- The proximity principle
- Equality of service provision
- The waste hierarchy
- Precautionary principle
- Pragmatic and value for money
- Contributions to wider Council policies

The ACWS has been designed to ensure Aberdeen works towards meeting national and international legislative targets:

Target 1 Waste growth will be eliminated by 2015.

Target 2 We will work towards the targets set in the Scottish Government's Zero Waste Plan 2010:

- 50% of household waste to be recycled by 2015
- 60% of household waste to be recycled by 2020
- 70% of all waste to be recycled by 2025

Reflecting the densely urban nature of our city, the following targets are have been set for Aberdeen City:

- 50% of household waste to be recycled through source separation by 2020
- 56% of household waste to be recycled through source separation by 2025
- Further recycling can be achieved by processing mixed waste

Target 3 Introduce an organic waste collection for all households by 2016

Target 4 Develop facilities within the Aberdeen area to recover our resources.

- Develop a wider range of modern HWRC designed to cater to high traffic levels and collect a wider range of recyclable materials.
- Develop a mixed recycling (also known as co-mingled) Materials Recycling Facility (MRF)
- Develop organic waste treatment facilities in Aberdeen
- Develop facilities to produce Refuse Derived Fuel (RDF)
- Develop residual treatment capacity in Aberdeen by using non-recycled waste to generate heat and power.

Target 5 No more than 5% of household waste should be landfilled by 2025.

Key deliverables:

- Minimise waste production
- Minimise landfill
- Maximise recycling/organic waste treatment
- Recover value from other wastes
- Local solutions where possible

4. SETTING THE SCENE

4.1 What is the purpose of the ACWS?

The purpose of our ACWS is to provide a statement on the future requirements for waste management policy, infrastructure and services for the city. It provides a clear set of themes, goals and objectives that move waste management in the city from a disposal-based approach to a system that reflects the waste hierarchy, treats waste as a resource and something that has value if handled correctly. There is a particular emphasis on setting out a clear framework for those elements of the waste hierarchy that ACC can most directly affect, namely the collection, treatment and disposal of waste produced in the city.

4.2 How has the ACWS developed?

ACC has had an ACWS for many years and it has been updated as regulation and community expectations have changed.

A series of key themes were developed through public consultation in early 2009 in response to changing national waste and recycling policy. These key themes continue to underpin the WS. In 2009, a draft ACWS was published for consultation. The views expressed in this consultation were considered and reflected in the ACWS adopted in April 2010.

4.3 Why review the ACWS?

Waste management and strategic direction has evolved over the years. There has been a series of major policy changes in Scotland, the UK and Europe. Most recently, the agreement of EU Directive 2008/98/EC on Waste (The Waste Framework Directive – WFD) and the development of the Scottish Government's (SG) ZWP which have enshrined high recycling rates and the need for efficient use of energy generated from waste into our guiding policies.

In February 2013, ACC adopted a new Waste Infrastructure Plan and has allocated up to £28 million of investment for implementation of new waste services and construction of new infrastructure. These facilities will assist our transition from being landfill dependent to becoming a more closed loop economy. Many of these changes were anticipated in the 2010 Strategy. As a result, this revision of the ACWS is evolutionary and is focussed on taking into consideration the implications of these changes and embedding them into our own policies and procedures. This will ensure focus is maintained on achieving zero waste to landfill, whilst balancing the needs of the residents and the on-going pressures placed upon us to make financial efficiencies.

4.4 What does the ACWS include?

Our ACWS identifies arrangements for the sustainable management of household waste controlled by ACC. It provides a framework for addressing waste prevention, reuse, recycling and recovery in line with the waste hierarchy; covering collection, treatment and disposal. In addition, it considers the management of waste produced from industry, commerce, construction and demolition with particular emphasis on the scale of other waste sources

and their growing influence. The ACWS also identifies the planning system as a major means of achieving infrastructure delivery for all wastes produced in the city.

4.5 Strategic Environmental Assessment

A SEA was produced alongside the development of our 2010 ACWS. The initial scoping of the SEA was completed in summer 2009, the findings of which informed both the ACWS development and the production of the Environmental Report (ER). A draft ER was available for public consultation between 16 December 2009 and 22 February 2010 with the final version completed in April 2010. A Screening Report (SR) was completed in September 2013 and confirmed that the amendments made within this revision did not warrant a new SEA.

4.6 What has already been achieved?

ACC has come a long way since recycling first started to emerge in the late 1990s and early 2000s. The recycling rate for ACC was approximately 4% in 2000/01, there were very few Recycling Points (RP), HWRC were essentially 'dumps' for bulky waste, no material was collected for composting and a single paper salvage recycling scheme was in operation in parts of the city. ACC disposed of 119,068 tonnes of household waste to landfill in the same year.

With the emergence of European legislation and increased environmental awareness, the situation in Scotland and the UK as a whole, began to change. RPs and kerbside collection services started to appear and soon it became a standard service for many. Those without such facilities started to expect them and pressure was placed on LA to provide or expand recycling collections. The positive shift in attitudes both from the public and its representatives has created numerous challenges and has had a huge impact on the way we as a nation view our waste and how we should deal with it.

4.7 Waste production and performance in Aberdeen

In 2013 Aberdeen produced 10,9429.51 tonnes of household waste. Of this waste, 71,326.08 (65.2%) tonnes was landfilled, and 38,103.43 tonnes (34.8%) was recycled and composted.

There is also a significant amount of commercial and industrial waste produced in and around the Aberdeen area. This waste also has an impact on the environment through its production, recycling and disposal.

The tables indicate that waste produced from households comprises a relatively small percentage - compared to waste produced in Scotland overall. To have a real impact, it is critical that any strategy takes into account management of other streams and not just those wastes produced through households.

Table 1 – Waste arisings for X - Data for source of waste in Scotland

Household	333,257
Commercial	632,760
Industrial	357,419
Construction and Demolition	1,262,695
	2,586,131
Household	2,936,258
Commercial	5,467,654
Industrial	2,340,844
Construction and Demolition	8,633,219
	19,377,974

Significant improvements in Aberdeen recycling performance can be attributed to the introduction of kerbside collections in 2004, introduction of garden waste collections in 2002 and this service being expanded to include food waste in 2009. Continued development of HWRCs, new bring facilities, both public and private and the increase in waste types accepted have also helped. The figure will continue to rise as a result of service expansions covering food waste to all residents and the proposals to implement mixed recycling to all.

Table 2 – ACC performance – Information from SITA UK

Year	Household waste arisings (tonnes)	Household waste recycled / composted (tonnes)	Household waste recycled / composted (%)	Household waste incinerated (tonnes)	Household waste incinerated (%)	Household waste landfilled (tonnes)	Household waste landfilled (%)
2013	109,429	38,103	34.8	-	0.0	71,326	65.2
2012	97,242	36,242	37.3	12	0.0	60,988	62.7
2011	97,184	34,662	35.7	0	0.0	62,522	64.3

It is clear that some progress has been made; Aberdeen is currently the best performing city for recycling within Scotland but we must do more to meet national targets and reduce our landfill costs.

4.8 Current recycling facilities in Aberdeen

ACC currently operates a fortnightly, kerbside collection of dry recycling from over 75,000 properties; approximately 70% of households in the city. Those eligible for the service use a box and bag system to recycle: paper, cardboard, glass bottles and jars, food and drinks cans, foil, aerosols and plastic bottles. It is envisaged that this service will be replaced over the next few years by a wheeled bin service accommodating mixed recycling including glass.

There is also a fortnightly, kerbside collection of food and garden waste for over 51,000 properties; 47% of households in the city. Food waste collections have expanded to serve multi-occupancy dwellings comprising: multi-storeys, tenements, courtyard developments and social housing. This is part of a phased expansion of this service across the city. We expect to complete the roll-out of on-street communal food waste bins by the end of 2015.

For those properties where ACC is unable to offer a kerbside collection there is a range of other recycling opportunities available. On-street paper recycling bins located alongside general refuse bins are now available in the following locations:

- Urquhart Road
- Rosemount
- Ashvale
- Torry
- Powis
- Ferryhill

ACC also operates a network of 4 HWRC, 46 public RPs and 106 private RPs. Communal facilities have also been introduced to several developments: sheltered, council, private and social housing areas. We are expanding our network and in January 2014 opened a new HWRC at Grove Nursery, Hazlehead. Further investment in bring facilities is planned, with development scheduled for the next few years aligning with the introduction of mixed recycling collections. Further information on this is referred to in section 7.

Our HWRCs continue to offer a wide range of options for recycling including: aerosols, batteries, cardboard, foil, food and drinks cans, garden waste, glass, paper, plastic, scrap metal, tetrapak, textiles, Waste Electrical and Electronic (WEEE) appliances and wood.

4.9 Current waste prevention initiatives

ACC actively participates in many national waste prevention campaigns co-ordinated by groups such as Zero Waste Scotland. These include the "Love Food Hate Waste" (LFHW) campaign aimed at the prevention of food waste, and the "European Week for Waste Reduction" (EWWR).

Promotion of reuse networks is undertaken through local charitable organisations and ventures across the city. ACC work in partnership with these organisations to develop focussed messaging on waste prevention. These types of partnerships are essential and it is envisaged that reuse containers will be a familiar site at our HWRC.

Aberdeen Forward, a partner of ACC, help to spread waste messages wider through their network of volunteers and community advocates - engaging with city residents about reducing and recycling food waste, composting, the Creative Waste Exchange (CWE) and the Grampian Real Nappy Project.

All of these schemes aim to cut the amount of waste going to landfill and, in the case of the CWE, provide low cost materials to community groups and schools.

Our Waste Aware Team actively promotes all of these services and provides advice on how to reduce, reuse and recycle waste. The team gives talks to schools, community groups, residents' associations and hold information stalls in a variety of locations across the city.

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5. THE CHALLENGES

5.1 Why are we changing our waste services?

ACC is working hard to reduce the inequalities in service provision across the city. Presently residents living with suburban areas receive a better recycling service than those residents living within multi-occupancy dwellings such as multi-storeys, tenements, courtyard developments and social housing. These dwelling types pose challenges in the way waste is collected in terms of space within households, manual handling, where facilities can go and how the waste is actually collected. The current kerbside collection services in parts of the city cannot be replicated in these areas and the preferred collection method is communal on-street recycling facilities.

When trying to address these inequalities and implement service changes we will always act in a way that produces the best outcomes for Aberdeen; delivering results that offer value for money, social justice and environmental benefits. Our work is shaped by a range of organisations and institutions. Our ACWS is influenced by a range of factors:

Regulatory issues

We must work toward achieving ambitious statutory obligations. The SG introduced the WSR which directs the aspirations of our service.

We are required to offer all households access to a recycling service, collecting a minimum of paper, plastics, metals and glass. We need to increase our recycling to reach new targets issued in the ZWP for recycling and composting household waste: 50% by 2015, 60% by 2020 and 70% by 2025. Our mixed recycling collection service, facilitated by our MRF, will allow us to collect a range of materials and to offer high quality resources to our re-processors.

Biodegradable materials will be **banned** from landfill from 1st January 2021; this encompasses all types of biodegradable material. All households must be offered a separate food waste collection service to eliminate household biodegradable material going to landfill by 2016. Businesses that generate over 50kg of waste per week must also recycle their food waste by January 2014 and for those creating between 5kg and 50kg a separate food waste collection is required by January 2016.

The WFD requires member states to recycle or compost 50% of municipal waste by 2020. As of November 2013, this Directive is currently under review by the European Commission (EC) and more demanding targets may arise.

Financial

The cost of disposing of our waste has almost trebled since 2000. Disposing of one tonne of waste has increased from £53.52 in 2000 to £133.52 in 2013. ACC landfilled 71326.08 tonnes in 2013 Landfill Tax is a levy paid on each tonne of waste we send to landfill. The tax is a powerful tool to divert valuable resources from landfill and to encourage greater recycling. ACC was taxed £72 per tonne of waste sent to landfill in 2012/13, resulting in a £5.5million burden upon our budgets. Landfill tax will rise to £80 per tonne in April 2014; presenting an anticipated cost of £6million to our city in 2014/15. Our operational costs, including fuel and

labour, continue to rise. The costs for collecting and disposing of waste in our expanding city surpassed £19.9million in 2012/2013.

Against this background of increasing cost pressures, LAs across the country are experiencing reduced income from central government and Council tax. In Aberdeen, this challenge is being met through a Priority Based Budgeting (PBB) approach that projects income and costs over a five-year period. All departments have to identify ways to improve efficiency and tailor services to ACC income and our service must play its part in this process.

Internal policy drivers

ACC has set challenging policies to reduce our internal waste and recover resources where possible. These include:

- Single Outcome Agreement – aspires for Aberdeen to be an “energy efficient city with low levels of pollution and waste”.
- Aberdeen City and Shire Strategic Development Plan – ACC and Aberdeenshire Council illustrate a commitment to work together to landfill no more than 54,000 tonnes of biodegradable waste by 2020
- Our Environmental Management Statement Policy commits ACC to reduce, reuse and recycle waste where possible.

Energy drivers

- The SG’s Renewables Action Plan promotes the benefits of EfW toward energy targets.
- Scotland’s Renewable Heat Strategy 2008 recommended that biodegradable waste to landfill be prohibited in order to promote its use for energy production. This endorses the Scottish Government’s position on preventing combustion of any form of waste without recovery of heat via CHP or district heating to local properties. This was incorporated and approved through the WSR.

Carbon reduction targets

Carbon Management Programme: ACC has a responsibility to reduce carbon emissions from our city activities. The Carbon Management Plan (CMP) requires us to reduce our emissions by 23% for 2015 and 42% by 2020; that is 27,000 tonnes by 2015 and 49,000 tonnes by 2020 based upon 2008/09 emissions. Carbon emissions from the landfilling of our waste are the second largest contributor to ACC carbon emission, contributing 26,148 tonnes of carbon in 2012/13. This is complemented by the Climate Change (Scotland) Act 2009 whereby Scotland should reduce overall emissions of greenhouse gases (GHG) by *at least* 80% by 2050. The Climate Change (Scotland) Act 2009 requires ACC:

- to contribute to delivery of the Act's emissions reduction targets;
- to deliver any statutory adaptation programme; and
- to act in a way that it considers most sustainable.

Deliverability, practicality and cost

In addition to the regulatory and policy environment within which our ACWS has been developed, there are other significant drivers that require consideration. These drivers are less tangible than specific legislation or targets but have a very important impact on the ability to deliver the outcomes outlined in our ACWS.

Our ACWS sets the framework within which solutions for waste management will be determined with consideration to:

- Behavioural change drivers (for example, working with residents to promote recycling and making clear the cost of not recycling our resources);
- The variable socio-economic and living conditions of householders and how these impact on residents buying habits and how you manage your waste; and
- The cost across the range of waste management systems.

It is inevitable that further drivers will come into play during the life of this ACWS. Wherever possible anticipated changes have been included and on-going engagement with residents provides an invaluable opportunity to identify and resolve new challenges – and to grasp new opportunities.

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6. IN RESPONDING TO THE CHALLENGES

There are many drivers influencing waste management policy. It is important to understand how these are interpreted and implemented. Future changes to policy can then be seen in the context of these principles.

6.1 Waste is a resource not a problem

In an environment where raw materials are becoming increasingly scarce and more expensive, where significant energy and environmental impact has been invested in the production of the goods we discard, simply disposing of these materials to landfill is a significant lost opportunity.

The linear 'take, make, and dispose' model relies on large quantities of easily accessible resources and energy. This approach is increasingly unfit for how we manage waste and resources today. The Ellen McArthur Foundation describes a **closed loop economy** as an industrial economy that is restorative by intention; aims to rely on renewable energy; minimises, tracks, and hopefully eliminates the use of toxic chemicals; and eradicates waste through careful design. The term goes beyond the mechanics of production and consumption of goods and services.

A complementary theme to regarding waste as a resource is the principle of designing a waste management system that generates value from all our waste. This theme applies across many sectors of waste production.

Value can be defined in economic, resource use and environmental terms. Where the financial cost of recovering a material is lower than that of disposing it, value can be generated for our community. In resource use terms, value can be defined as deriving a product from waste that is at least as useful as its 'natural' counterpart, thereby displacing the use of virgin resources. Environmental value can be achieved in two ways. Firstly, through either the reuse or recycling of a material such that the energy use embedded in the production of the material is greater than the energy used to prepare for reuse or recycle the material. Secondly, the generation of EfW displaces the use of fossil fuels.

In simple terms, value can be derived in two forms – as a material resource (for example, recycling) or an energy resource. It is logical that Aberdeen develop solutions that lead to the value embedded in the resource being enjoyed by the city.

6.2 Principles in practice

When human activities lead to unacceptable harm that is scientifically plausible but uncertain, actions should be taken to avoid or diminish that harm. This approach is known as the **precautionary principle**. Not producing waste in the first instance is the key to sustainable waste management, whereby prevention is better than cure. The concept of not producing the waste initially aligns with the methodology of the precautionary principle. ACC raises awareness about waste prevention through its on-going campaigns. These are important but have limited impact when compared to international regulations setting standards for products and sale of goods. Through intelligent product design the waste

produced at each stage of a product's lifecycle can be reduced or eliminated. ACC should therefore use its influence at national and international level to shape the development of policy and economic instruments that reduce waste at source.

Ensuring that the city benefits from the value embedded in waste is complementary with the **proximity principle**, whereby waste should be treated as close to the point of generation as possible. There are a number of strands supporting this principle:

- Collective responsibility. Anyone that produces waste should take responsibility for dealing with the consequences of waste production.
- Environmental sustainability. Minimising unnecessary transport and landfill emissions.
- Economic value. Value is lost through transportation (for example fuel costs or inability to benefit from heat recovered through EFW).

ACC actively encourages the implementation of the **waste hierarchy**, a classification system of waste management options that are in order of environmental impact. The presumption is that waste and resource management practices should progressively move up the hierarchy.

In March 2010 ACC approved the Carbon Management Plan 2010-2015. This commits us to deliver carbon targets of:

- 23% reduction in CO2 emissions by 2015 (based on 2008/09 emission levels);
- 42% reduction in CO2 emissions by 2020 (based on 2008/09 emission levels).

Around 28% of ACC carbon dioxide emissions relate directly to waste going to landfill, with a further 5% associated with fleet movements; of which a proportion will be attributed to refuse collection.

Adopting and implementing these principles in waste services in light of the requirement to provide an effective service at lower cost is difficult. Consideration has to be given to the achievability of the idea, practicability and cost.

6.3 Goals, objectives, actions and targets

The main goals, objectives, actions and targets of the ACWS are detailed in table 3 below. The goals outline broad, generic longer term actions; whilst objectives look at these in more detail over a mid to short term period; with targets providing more clarity on timeframes and levels to be achieved.

Table 3 – ACWS Goals, objectives, actions and targets

Goal	Objective	Actions	Target
<p>Minimise waste production – an underpinning priority to reduce to reduce the amount of waste produced by the city.</p>	<p>Reduce the amount of waste produced per person within the city by actively promoting waste prevention, reduction and reuse activities.</p>	<p>Promote 10 awareness raising campaigns per year.</p> <p>Waste growth will be eliminated by 2015.</p>	<p>Waste growth to be eliminated by 2015</p>
	<p>Reduce the amount of waste produced within the city by actively promoting producer responsibility schemes.</p>	<p>Promote 3 producer responsibility schemes per year.</p>	
	<p>Facilitate, promote and encourage partnerships that will reduce the amount of waste sent to landfill.</p>	<p>Develop a pilot reuse scheme at one HWRC by 2015, which if successful, is rolled out wider.</p> <p>Formulate a reuse map of the city by 2014.</p>	
<p>Minimise landfill - landfill is the waste management option of last resort and is only appropriate for a very small proportion of the waste stream.</p>	<p>Drive the management of waste up the waste hierarchy.</p>	<p>Development of alternatives to landfill including the construction of a CHP plant in Aberdeen using non-recyclable waste as a fuel.</p> <p>In the interim convert non-recyclable waste into a fuel for use in energy from waste facilities outwith Aberdeen.</p>	<p>No more than 5% of household waste to be landfilled by 2025</p> <p>Scottish Government Zero Waste Plan recycling targets: 50% by 2015, 60% by 2020 and 70% by 2025.</p> <p>Introduce an organic waste collection for all households by 2016</p> <p>Develop facilities within Aberdeen to recover our resources.</p>
<p>Maximise</p>	<p>Maximise value through</p>	<p>Introduce easy to use</p>	<p>Scottish</p>

recycling/organic waste treatment.	recycling.	recycling services to all households by 2016. Develop a mixed recycling MRF by 2016 that produces high quality recyclables.	Government Zero Waste Plan recycling targets: 50% by 2015, 60% by 2020 and 70% by 2025.
	Expand organic waste collection services citywide.	All households to receive food waste collections by 2016.	Introduce an organic waste collection for all households by 2016
	Expand range of materials for recycling.	Undertake a Waste Composition Analysis (WCA) to identify materials that are not accepted by our current recycling services. We will then seek to develop partnerships and find new end markets to utilise these resources.	Develop facilities within Aberdeen to recover our resources.
Recover value from other wastes.	Any remaining waste should be treated in accordance with best value and sustainability considerations.	Development of localised waste recovery facilities, including EfW and RDF. Develop partnerships to facilitate the expansion of the district heating facilities by 2025.	Develop facilities within Aberdeen to recover our resources. No more than 5% of household waste to be landfilled by 2025
Local solutions where possible.	Minimise the city's environmental impact in line with the principles of proximity, self sufficiency and polluter pays. Ensure transport of waste is minimised. Work locally to promote, develop and stimulate sustainable recycling and composting initiatives consistent with green procurement codes.	Develop a wider range of modern HWRCs designed to cater to high traffic levels and achieve high recycling performance by 2020. Deliver all facilities under the umbrella of Aberdeen Recycling and Energy (ARE) by 2025.	Develop facilities within Aberdeen to recover our resources.

It is hoped that by offering improved waste services we will enhance the quality of life in Aberdeen by protecting communities from adverse impacts and encouraging individuals to take responsibility for their waste and the way it's dealt with.

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7. DELIVERING THE WASTE STRATEGY

Waste and resource management is a rapidly changing policy area and drivers will change during the life of our ACWS. The progress of this document will be reviewed on a regular basis to ensure it continues to be fit-for-purpose. This is the first review since 2010.

ACC is in a position to direct and influence the delivery of our ACWS in partnership with future contractors, other public authorities and government policy makers. We can influence investment and renegotiate external contracts to suit the city's long term strategic needs. By virtue of the wide variety of stakeholders involved in the waste sector, identifying responsible bodies for the delivery of specific actions can be more problematic.

7.1 Household waste

7.1.1 Resources for delivery

The cost of waste management is one of the fastest growing elements of ACC's budget. Investment is required to slow down and reverse the current cost pressures. ACC has committed £28 million for the development of new infrastructure and recycling services that will minimise the major cost pressure – landfilling of waste. Further significant investment will be required to develop an EfW facility in the city capable of generating heat and power from non-recycled waste. ACC will continue to secure additional funding sources for example from Government, the private sector and other alternative outlets.

7.1.2 Key priorities

Over recent years there have been significant improvements in recycling and composting performance but much remains to be done to become a Zero Waste City. The key priorities of ACC are as follows, with the preferred actions detailed in table 4 and the accompanying information boxes.

- to introduce new recycling collection arrangements and expand collection of recyclables to the whole city;
- to increase the range of recyclables collected to include plastic pots, tubs and trays and waxed beverage containers;
- to provide food waste collections to all households;
- and to construct an EfW facility generating heat and power from non-recycled waste.

Table 4 – Key priorities

Preferred action	Why this is needed	Refer to box:
Additional bring sites	Parts of our city are without a local HWRC meaning many residents cannot recycle a wide range of materials. This limits the ability of residents to recycle their waste; which could result in material going to landfill that could otherwise be recycled. This increases our costs of managing waste.	1
Mixed recycling collections	A mixed (or co-mingled) recycling service allows residents to put all recyclable materials into one container. Our current box and bag system is no longer fit for purpose; residents need more space in a container that is protected from the weather. Residents in flats are unlikely to have any recycling service – those who can recycle receive a minimal collection. This will significantly increase our recycling rates and will drastically reduce our landfill costs.	2
Materials Recycling Facility (MRF)	The MRF will sort out mixed recycling into individual waste streams. It will separate out each individual material; paper, cardboard, tins, cans and glass by colour. The materials will then be packaged for delivery to our waste processors.	3
In-vessel Composting (IVC)	The garden and food waste will be taken to our own IVC. An IVC is an enclosed container where on-site staff control the heat and oxygen content within. This encourages the food and garden waste to break down into a PAS100, British Soil Association (BSA), and approved compost for our households, horticulture and public parks.	4
Refuse Derived Fuel (RDF)	Bio-degradable waste – which makes up the bulk of our black bin waste – will be banned from landfill by 2020. The waste that is left in our black bins will be treated and prepared into a fuel. This fuel can be used to generate energy in facilities in either the UK or Europe. The production of refuse derived fuel is our preferred option until we open our own energy from waste plant. This will remove the need for ACC to landfill almost all of our household waste.	5
Energy from Waste (EfW)	We need an EfW plant. This will allow us to generate heat and power from our black bin waste. This will allow our city to benefit from heat and power produced from our waste resources; helping to tackle fuel poverty issues in our area, cutting our landfill costs and offering a sustainable energy resource.	6

Info box 1 - **Additional recycling facilities**

Our HWRCs allow residents to recycle a wide range of materials across the city. The centres are currently stretched to capacity and struggle to cope with the level of visitors using the sites. The network of HWRCs and RPs will be expanded, beginning with the opening of Grove Nursery in early 2014. A replacement to the Scotstown Road HWRC in the Bridge of Don area is urgently required and consideration should be given to improving or replacing the East Tullos HWRC.

As our kerbside service continues to offer more residents a convenient means of recycling at home, we will investigate opportunities for residents and visitors to recycle “on-the-go”. We will seek funding to install non-intrusive recycling facilities in the city centre and areas of high footfall – such as shopping vicinities and recreational hubs. This will allow residents to recycle materials outwith the home, allowing ACC to recover valuable resources whilst reinforcing the message of recycling your waste.

Info box 2 - **Mixed recycling collections**

We intend to offer residents a new and improved recycling service. A mixed recycling collection will allow residents to recycle all their materials together in one container. For properties served with our box and bag, these will be replaced with a new wheeled bin providing residents with three times as much recycling capacity. For residents served with on-street bins, these will be accompanied by bins that accept all our recyclable materials. This will allow ACC to provide near doorstep collection of recyclables for all city households. Our mixed recycling service will allow residents to recycle more materials in a much more convenient service especially for those residents in flatted properties. We will also increase the range of materials we can collect using this service and hope that residents will soon be able to recycle rigid plastics and other materials.

During the life of the ACWS, markets for additional recycling streams may develop and ACC will endeavour to take advantage of opportunities to increase the range of materials collected from households.

Info box 3 – **Materials Recycling Facility**

ACC will develop a MRF. Using a range of mechanical and optical sorting technologies, a MRF is used to separate mixed recycling into each recycling stream to a standard that allows re-processors to produce high quality products from our recycling. This facility will allow us to offer an easier to use recycling collection service across the city which will significantly increase participation and our overall recycling rate. Building an MRF will also create local jobs and provide the opportunity for complementary businesses to develop processing materials produced here in Aberdeen.

Info box 4 – **In-vessel Composting**

An IVC is an enclosed container for treating garden and food waste. On-site staff control the oxygen and heat within the IVC to encourage the breakdown of our materials into a valuable

compost resource. This compost can be used across the city in our gardens and public spaces; enriching our green areas using our own resources.

Info box 5 – **Refuse Derived Fuel**

RDF makes a resource from the materials left over in our waste stream that cannot be recycled. This waste is treated and formed into a fuel. The fuel is then transported and used in EfW plants to in the UK or Europe to create heat and electricity for local homes and businesses. Exporting our valuable RDF is a temporary measure until we have our own EfW plant.

Info box 6 – **Energy from Waste**

In accordance with the proximity principle waste should be managed as close to where it is produced as possible. To achieve this Aberdeen will build its own EfW facility. This will allow us to generate heat and electricity using the waste that cannot be reused or recycled. Our EfW facility will generate a much valued sustainable resource; heating and powering our local homes and businesses at a time when volatile energy prices continue to rise. The EfW facility will drastically reduce our landfill costs with little or no household waste ever being buried or causing a detrimental effect upon our local environment.

Any further improvement will need to be focused on achieving additional behavioural change. In future we will also open up opportunities to move waste management up the hierarchy, for example by further increasing the range of materials collected for recycling.

7.2 Communication

A major factor affecting the successful diversion of waste from landfill and making waste a resource will be the level of awareness of householders of the costs and benefits of their waste management behaviour. This applies at two levels, firstly the purchasing and disposal habits of householders which determine the form that waste is presented for treatment. Secondly, the awareness that infrastructure for handling and treating waste is required within the city and that this will inevitably lead to challenging land-use decisions.

Education and awareness-raising are essential activities to improve waste management behaviours. For example, effective communication on waste prevention will affect consumer behaviour and reduce unnecessary waste production.

In line with the waste hierarchy, ACC is encouraging residents to reduce, reuse and recycle their waste. Waste and Recycling Services (WRS) works with residents and community groups across the city, promoting the value in materials, which should be reused or recycled rather than disposed in landfill. Improvements to our recycling rates and reductions in our overall volumes of waste will only be achieved through extensive engagement with members of the public, business community and policy-making bodies.

Aberdeen City Council Waste Aware Team

Our team of experienced Recycling Officers encourage residents, school pupils and community groups to reduce, reuse and recycle their waste. The team are available to visit your community to:

- Attend community events including festivals, International Markets or local supermarkets to promote local services and take queries from residents; hosting a variety of workshops with residents and children.
- Deliver presentations and discussions to promote the recycling and reuse services offered across Aberdeen. These can be targeted to specialist groups such as Rotary Clubs, Scouts, ethnic minority groups etc.
- Discuss the ACWS including upcoming service and infrastructure improvements, answering resident queries and resolving problems.
- Developing a range of targeted awareness campaigns, working with our local Universities and Colleges to increase awareness amongst students and the wider communities.
- Introduce new recycling services across the city such as WEEE recycling at Morrisons King Street and Sainsbury's Berryden and on-street paper recycling bins throughout Powis.
- Work with charities and reuse organisations across Aberdeen to promote their services and to direct residents to donate or purchase items.
- Monitor problematic areas which are reported to our team i.e. overflowing bins. Conducting surveys with residents to explore any issues or opportunities for attention.
- Promote volunteering opportunities across Aberdeen to encourage others to reduce, reuse and recycle their waste.

Please contact the Waste Aware Team on 08456 08 09 19, via email at wasteaware@aberdeencity.gov.uk or via Facebook at www.facebook.com/wasteawareaberdeen

7.2.1 Engagement and consultation

We will seek opportunities to engage with individuals and community groups to identify ways to maximise benefit from, and minimise impact of, changes required to waste infrastructure and services. WRS have engaged in extensive networking campaigns with Community Councils, business groups and at public events. We will continue to engage and will host public discussions across the city to discuss the proposed improvements with stakeholders.

7.2.2 Influencing policy development

Many of the drivers affecting waste management arise from outwith Aberdeen. ACC has an important role to play in influencing regional, national and international policy making. The

interests of Aberdeen must be promoted to ensure that policy is developed that meets our needs and enables change.

7.2.3 Waste prevention

Waste prevention is the most important step in waste management, appearing at the top of the waste hierarchy. Preventing waste reduces energy use and resource depletion. Greater consideration of the materials we buy and waste can allow each of us to save money whilst helping to reduce our environmental footprint.

There are two main activity streams required by the city to achieve waste prevention.

1. Influence national and international policy and regulation to minimise waste production. ACC has led the way in Scotland by lobbying the SG to introduce a beverage container deposit/return scheme thereby reducing material use and attaching a value to waste. By identifying the value of the container to the person discarding it, behavioural change is much more likely to be achieved. In 2013, The SG demonstrated their on-going commitment to the scheme, by further expanding the deposit/return pilot throughout Scotland.

In addition, through the Convention of Scottish Local Authorities (COSLA) and other representative bodies, ACC actively influences the development of Scottish, UK and European legislation. We welcome all opportunities to contribute to waste prevention policies relevant to Scotland and we are currently contributing toward National WPP and European Union (EU) Directives.

2. Communication and awareness raising will continue to be an important strand of work and we will continue to work with ZWS to deliver information at a local level.

7.2.4 Reuse

By reusing our waste we can eliminate the need for costly collections and disposal treatments. We can further reduce our impact upon our world by being more aware of the value in our products and the potential lifespan these can have. We will continue to support reuse projects within the city and will seek out new opportunities to expand these initiatives.

7.2.5 Recycling

The next step in the waste hierarchy is to recycle and compost waste. ACC will work to reduce the amount of waste sent to landfill by maximising recycling and composting.

Cost effective and widespread collection of dry recyclables is an important step towards embedding recycling as a core activity for the residents of Aberdeen. By reducing the net cost of collection and management of recyclate, the financial case for more recycling is easier to make. By increasing participation in recycling activity, the costs of collection are further reduced as the operation becomes more efficient. Details of how this will be achieved are provided in section 7.1.2.

7.2.8 Disposal

Landfill is an undesirable activity producing adverse environmental and social consequences from the emission of methane gas (with a greenhouse gas effect 23 times greater than carbon dioxide), the potential for leachate run-off, contamination of soils and groundwater and reduced potential for future more beneficial land-use. The WSR also ban the landfill of biodegradable municipal waste from landfill by 2020 meaning that valuable resources that can be turned back into new products or used as a fuel to heat homes will not be dumped in the ground.

No further landfill sites are proposed in Aberdeen. Short to medium term landfill requirements will be fulfilled through the export of waste elsewhere in Scotland. It is imperative that alternatives to landfill are developed by ACC as soon as possible.

Any decision on the methods used to treat residual waste will be determined by a Best Available Technique (BAT) analysis as shaped by the overarching goals of the waste strategy. Options considered will include generation of CHP from waste and should take account of SEPA's Thermal Treatment of Waste Guidelines 2014. Land-use planning considerations for the delivery of such treatment facilities are considered within section 7.7. Any facility that is developed will comply with the EU Waste Incineration Directive.

Combined Heat and Power

“CHP is the simultaneous generation of usable heat and power (usually electricity) in a single process. CHP is a highly efficient way to use both fossil and renewable fuels and can therefore make a significant contribution to the UK's sustainable energy goals, bringing environmental, economic, social and energy security benefits.”²⁶

In terms of waste treatment technologies, CHP can be achieved either through combustion of waste or for organic wastes, biological treatment.

7.2.9 Internal waste management

To ensure a sustainable approach to managing waste from our own premises and service operations ACC has adopted an Internal Waste Minimisation Policy. This covers the strategic internal waste management goals which are to:

- Work to the principles of the waste hierarchy, to reduce the volume of ACC waste to landfill and ensure a reduction in resultant emissions from the disposal and treatment of waste.

- Make best use of resources and ensure efficiency and compliance of waste operations.
- Build improved awareness and understanding of the benefits of waste minimisation.

7.3 Other waste streams

ACC does not have responsibility for the management of waste that is not household waste or business waste it collects but, as has been demonstrated elsewhere in the waste strategy, these wastes account for a large proportion of all waste produced in Aberdeen.

This ACWS seeks to ensure that measures are put in place to allow the development of more sustainable solutions for all waste management in the city. ACC will seek opportunities to work with business waste organisations such as the Business Environment Partnership (BEP) and the National Industrial Symbiosis Programme (NISP) to encourage and facilitate more beneficial waste management outcomes for the commercial and industrial sector.

A large proportion of adverse environmental impacts from wastes arise from the commercial and industrial sector where wastes are similar in nature to household wastes. Large proportions of commercial waste arisings are either paper/card products or organic waste from restaurant/catering establishments. ACC will facilitate increased collection of these segregated wastes by seeking to develop additional capacity in its proposed recycling, organic and residual waste treatment facilities in the city. By so doing, local outlets for these materials can be developed at competitive market rates. The spatial planning system should also facilitate the development of treatment infrastructure for commercial and industrial wastes.

Waste from construction and demolition activity produces approximately half of all wastes in Scotland with reduced amounts being disposed of to landfill in recent years.

ACC promotes improved waste management within this sector. Our Sustainable Building Code requires all developments to be covered by a Site Waste Management Plan (SWMP) that seeks to identify opportunities for recycling and landfill diversion. The revised WFD identifies a target of 70% recycling for construction and demolition by 2020. ACC will work with the sector to achieve this target.

We will continue to lobby for the adoption of challenging waste prevention and recycling targets in future developments through intelligent design standards, good operational management practices and, where appropriate, through the planning control system.

7.5 Business waste collection services

ACC provides a business waste collection service. This service includes collections of mixed recycling with additional separate collections of paper/cardboard and glass bottles where applicable. A commercial food waste collection to enable food producers to comply with the upcoming regulations has also been introduced.

In April 2013, ACC adopted a charging mechanism that favours recycling over general waste collection. We will continue to pursue methods that encourage the adoption of the principles of the waste hierarchy within commerce and industry.

7.6 Community/charities

ACC has a wide range of relationships with community and third sector organisations, most notably a longstanding relationship with Aberdeen Forward delivering waste and sustainability related projects.

We understand and encourage the importance of our resources by promoting opportunities to reuse our belongings. We continue to seek any opportunities to work with local charities and reuse organisations including Instant Neighbour, Somebody Cares, the New Hope Trust and high-street charity organisations. Working with the third sector organisations we have introduced new services to residents including textile banks and have brought Aberdeen's charities and schools together in partnership for a well received Green Santa Christmas campaign.

ACC recognises that these organisations have an important role to play both in managing waste and raising awareness. We will seek to work in partnership with organisations such as Aberdeen Forward and the Community Food Initiative North East (CFINE) on developing innovative new services and awareness campaigns across Aberdeen. Collaboration with external bodies is pivotal to our success and we welcome invitations from other organisations or interest groups with whom we can develop new projects.

Such relationships are to be valued and continued where resources allow. ACC remains open to new opportunities to develop waste management projects that move waste up the hierarchy.

We will introduce reuse facilities at our HWRC. These will allow residents to donate goods for reuse by social enterprises and charities. We intend to create a pilot re-use project in 2014. This will be rolled out to additional HWRCs if proven successful.

7.7 Planning

ACC has a statutory duty to develop land-use management plans and is the Planning Authority determining planning applications within the city boundary. As such, ACC has an important role to play in facilitating the provision of waste management infrastructure. Council Officers in WRS work closely with developers and Planning Officers to ensure that new developments are designed to accommodate recycling facilities. As the city continues to expand at a rapid rate, WRS will continue to influence the planning process. We will provide comment on all planning applications to ensure residential developments have sufficient waste and recycling collection facilities. Our improved Supplementary Planning Guidelines advise developers on vehicle access and container needs. We are an important contributor to development masterplan discussions for large projects, such as Countesswells' 3000 properties. We will continue to work with developers to influence the design of new developments to deliver convenient, simple and future-proof facilities for all residents.

7.7.1 Aberdeen City and Shire Structure Plan

The Structure Plan identifies the need for Supplementary Planning Guidance (SPG) on the location of regionally important waste infrastructure. It is important that this is developed in the near term. Location criteria for siting of waste infrastructure must take into account the opportunity to utilise heat generated from EfW facilities if this is identified as BAT.

7.7.2 Aberdeen City Local Development Plan (LDP)

The Aberdeen City LDP process identified waste management as one of the main issues for the new Plan. In particular, there is a need for the LDP to specify suitable sites for the development of waste and recycling infrastructure such as energy from waste facilities, in-vessel composting and HWRC. WRS will work closely with planning colleagues and other stakeholders to ensure that planning policies and the LDP actively contributes to the delivery of essential infrastructure.

The LDP also ensures that suitable waste storage facilities are included in all developments and that these facilities allow for recycling storage in addition to residual waste. SPG has been developed specifying the scale, type and location of waste storage facilities. Our SPG advises developers, architects and planners to:

- Ensure adequate space for shared or individual waste and recycling collection containers without jeopardising the aesthetic values of the community.
- We promote underground containers or communal facilities throughout developments to reduce the number of bins on pavements, improve the value of communities and to deter fly-tipping. Underground or communal containers reduce the need for frequent visits by several collection vehicles.
- We ensure safe and sufficient access throughout the development for our collection vehicles without risk to vehicles or pedestrians.

ACC developed a Sustainable Building Code in 2008 for its own developments and this code includes requirements for sustainable waste management. The LDP should include similar requirements for all developments.

7.7.3 Aberdeen Strategic Infrastructure Plan

The Strategic Infrastructure Plan evaluates the investment needed by ACC and SG to attract investment and employment to the city. The plan has explored our current stock of infrastructure serving the city and identified potential barriers to further growth. The plan identifies waste management as a key area for investment. The council has committed £28 million to the development of a new collection depot, introduction of the new mixed recycling collection service and waste treatment technologies including IVC.

8. GLOSSARY

ACC	Aberdeen City Council: the local government authority with the responsibility for delivering the waste strategy.
ACWS	Aberdeen City Waste Strategy
ARE	Aberdeen Recycling and Energy; the umbrella brand which encompasses the infrastructure and upcoming changes to waste and recycling services. ARE will feature heavily in marketing material and stakeholder engagement exercises.
BAT	Best Available Technique a term applied with regulations on limiting pollutant discharges with regard to an abatement strategy. BAT takes into account the balance between the costs and environmental benefits.
BEP	Business Environment Partnership is a government funded consultancy service advising local businesses on how to achieve efficiencies and improve environmental performance
Carbon footprint	A measure of the total amount of carbon dioxide and methane emissions of a defined population, system or activity, considering all relevant sources, sinks and storage within the spatial and temporal boundary of the population, system or activity of interest.
CFINE	Community Food Initiative North East. A local charity and partner of Aberdeen City Council. CFINE work to promote employment and volunteering opportunities whilst encouraging healthy eating and smarter shopping and cooking behaviours to minimise food waste.
CHP	Combined Heat and Power is the generation of both heat and electricity.
CMP	Carbon Management Plan is Aberdeen City Councils strategy to reduce our carbon emissions by 23% by 2015 and 42% by 2020.
Closed loop	This is where the waste product, or by-product, in producing one item is used as a source in the production of another item. A closed loop system utilises the waste from one process as a valuable resource for another process.
Co-mingled	The collection of various recyclable materials in one container. Paper, plastic bottles, metals and mixed glass will all be collected together in the same container in our co-mingled service. Co-mingled and <i>mixed recycling</i> are alternative terms for the mixing of recyclable materials.
Communal	Communal containers are shared facilities for communities to recycle or dispose of their resources.

Compost	Compost is the end product of organic materials that have decomposed to form a fertilising material for the growth of new organic materials
COSLA	Convention of Scottish Local Authorities. COSLA and Aberdeen City Council work together to shape national policy, resolve legislative concerns and to lobby central government.
EC	European Commission is the executive of the European Union with responsibility for approving and delivering legislation.
EfW	Energy from Waste is the generation of electricity from the treatment of residual waste. Several technologies are available for converting waste to electricity.
EU	European Union. The economic and political union of member states across Europe. The EU is responsible for a range of environmental targets and other legislation which ACC must adhere to.
EWWR	European Week for Waste Reduction is a week of EU wide campaigns to promote waste awareness and to encourage sustainable behaviours among residents.
GHG	Green House Gas emission are toxins that absorb and emit radiation within our atmosphere. GHS's are the cause of global warming in reflecting heat back to the earths surface. The main GHG's are carbon dioxide, methane and nitrous oxide.
Household waste	Any waste produced from a domestic dwelling
HWRC	Household Waste Recycling Centres are communal recycling centres that allow residents to recycle a wider range of materials than the kerbside service, communal on-street containers or recycling points. Examples of other materials include wood, rubble, fluorescent bulbs, chemicals and electrical items.
IVC	In-vessel Composting is the controlled decomposition of organic material. Oxygen and heat content within an enclosed container is carefully controlled to encourage the breakdown of materials resulting in an end product of compost.
LA	Local Authority is the local government body responsible for the running of the communities within their boundaries.
Landfill	The disposal option of last resort. Landfill is where materials are buried underground to decompose over time. Landfill is Aberdeen city councils second largest contributor of carbon dioxide emissions.
LDP	Local Development Plan is the economic and strategic vision of a local authority to encourage development and investment across the city. The

	LDP stipulates geographical areas of the city to be used for specific purposes such as for employment facilities, residential developments and waste management infrastructure.
LFHW	Love Food Hate Waste is a campaign to raise awareness about food waste issues and steps you can take to reduce your food waste
Mixed recycling	Also known as co-mingling, whereby all recyclable waste is collected within the same container and segregated away from the point where it was produced
MRF	Materials Recycling Facility is a complex wherein mixed recyclable materials (such as paper, metals, glass) can be separated mechanically for transport to re-processors.
NISP	National Industrial Symbiosis Programme
On-street	Where kerbside boxes and bags are not available, on-street containers are the larger communal bins.
PBB	Priority Based Budgeting is the principle of seeking savings across council budgets due to pressing financial constraints. As an authority we must prioritise our spending to deliver needed services in a cost effective way.
Precautionary principle	The notion that any outcome of a decision should eliminate any concern of negative impact of a social, economic , environmental or other nature.
Proximity principle	Waste and resources should be handled and reprocessed as close to the source as possible. Aberdeen City Council should manage our waste locally – where facilities allow – to not burden other communities or authorities with our waste.
Recycling	Recycling is the action wherein a by product or unwanted material is altered or treated to form a new product for use.
RDF	Refuse Derived Fuel is where waste materials with calorific value are shredded and pelletized to form a feed source for use in energy from waste plants.
RP	Recycling Point is a public recycling area where paper/cardboard, metals, plastics, glass and – dependant upon area – other materials such as textiles, electrical items and batteries or bulbs can be recycled.
SEA	Strategic Environmental Assessment is a decision making tool used to identify all social, economic and environmental issues expected from a plan or programme.
SEPA	Scottish Environment Protection Agency is the organisation responsible for regulating and enforcing the protection of Scotland’s environment.

SG	Scottish Government is the national, central, government for Scotland.
Stakeholder engagement	Stakeholder engagement is the consultation and working partnership that will develop between Aberdeen City Council and any other party with an interest in delivering the waste strategy. Stakeholders can include, but is not limited to, residents, charities, environmental organisations and commercial organisations.
SWMP	Site Waste Management Plan is required for all development work across Aberdeen. They stipulate how a construction company intends to reuse and minimise on-site waste.
WCA	Waste Composition Analysis is the separation of waste materials from residential containers into separate streams. The analysis explores the content of bins to highlight materials that can or cannot be recycled. A local authority can then develop awareness materials to encourage greater recycling of accepted materials, or we can explore new contractors to collect new materials which are dominant or valuable within our bins.
WEEE	Waste Electrical and Electronic Equipment are any electrical items with a plug which are no longer needed. WEEE can continue to work or it can be beyond repair. WEEE includes any electrical items such as televisions, kettles, toasters etc.
WFD	Waste Framework Directive is an EU initiated directive which defines the point where refuse becomes waste. It also sets recycling targets (below the Scottish Government targets) and introduces the waste hierarchy.
WRS	Waste and Recycling Service
ZWP	Zero Waste Plan is the Scottish Governments ambitious plan for minimising waste and increasing recycling. The plan sets the recycling targets which Aberdeen City Council should aspire to achieve.
ZWS	Zero Waste Scotland is the body tasked by the Scottish Government to disperse funding packages to local authorities and assists in delivering and promoting support programmes and awareness initiatives.

APPENDIX 1.

Drivers for Change

1. Regulatory Issues

1.1 Waste Framework Directive

The Waste Framework Directive was introduced by the EU in November 2008. The directive enshrined the concept of the “waste hierarchy”, moving the focus from disposal of waste to reducing, reusing and recycling.

The Waste Framework Directive highlights the importance of the Proximity Principle - dealing with waste as close to its source as possible - and the use of BPEO analysis for waste management.

The Directive sets a significant target for recycling of 50% by 2020, this has been interpreted by the UK and Scottish Governments to include organic waste treatment as well as ‘dry’ recycling materials such as paper and glass.

The Directive also promotes ‘measures to promote high quality recycling and, to this end, shall set up separate collections of waste where technically, environmentally and economically practicable and appropriate to meet the necessary quality standards for the relevant recycling sectors’ by 2015. The UK government has interpreted this to mean that commingled collections remain viable beyond 2015 where it is not practicable to provide separate collections.

1.2 Climate Change

The Scottish Government passed the Climate Change (Scotland) Act 2009 which created the statutory framework for reductions in greenhouse gas emissions. The Act sets an interim reduction of 42% by 2020 and an 80% reduction target by 2050.

It has been calculated that waste is the second largest climate change contributor from the activities of Aberdeen City Council, largely a result of extensive use of landfill: approximately 28% of the Council’s greenhouse gas emissions arise from waste management. Carbon emissions from landfill fell from 45,207 tonnes in 2008/09 to 26,148 tonnes in 2012/2013. The impact of waste from the wider economy is significantly lower with waste contributing an estimated 4% of Scotland’s greenhouse gas emissions with a 68% decrease in emissions between 1990 and 2010.

As signatory to Scotland’s Climate Change Declaration 2008, Aberdeen City Council recognises that “Climate change is occurring and human activities are having a significant and potentially dangerous influence” and that “We all in Scotland have duties and responsibilities to take action to both mitigate and adapt to climate change, and to promote the sustainable development and well-being of our local communities”. Through Scotland’s Climate Change Declaration, Aberdeen City Council is committed to: reduce its greenhouse gas emissions from its services and estate, take action to reduce emissions from the Local Authority area and produce an annual statement of plans, activities and achievements.

Primary sources of climate impact from waste management are transport and emissions from waste treatment or disposal. Disposal in particular is harmful where methane gas is emitted. BPEO analysis tools take these climate change impacts into account.

1.3 The Eco-design Directive for Energy-using Products (2005/32/EC)³⁷

This Directive, adopted in 2005, came into force in August 2007 and places obligations on producers to design low energy products and to phase out less energy efficient technologies. The most well known example to date is the phasing out of incandescent light bulbs. Further expansion of Eco-design is anticipated in the future with the emphasis on the minimum use of materials in products, the reduction in the hazardous content of products and design with recycling/reuse in mind.

1.4 Voluntary Agreements

1.4.1 The Courtauld Commitment (2005)

The Courtauld Commitment is a UK level voluntary agreement between the government and the major grocery retailers in the country. The main aims of the agreement are to:

- design out packaging waste growth by 2008 (achieved)
- To deliver absolute reductions in packaging waste by 2010
- To help reduce the amount of food the nation's householders throw away by 155,000 tonnes by 2010, against a 2008 baseline.

This Commitment will have a major impact on the ability of householders to reduce their waste and help the UK's waste prevention efforts. The Scottish Government has introduced a bill to levy a charge of 5p on each plastic bag sold beyond October 2014.

1.4.2 BREEAM³⁹

The BREEAM environmental assessment method for buildings has also had an influence on waste issues. One of the assessment criteria is to show that recycled material has been used in the construction or redevelopment. This has increased demand for recycled or reusable materials from the construction industry.

1.5 Producer Responsibility Regulations.

The End of Life Vehicle Directive⁴⁰ and the Waste Electrical and Electronic Equipment Regulations are the first major examples of Producer Responsibility legislation. Both place obligations on producers to recover and recycle proportions of the products sold within Europe.

2. Financial Drivers

2.1 Landfill Tax

Landfill Tax is a fiscal penalty paid on waste sent to landfill; its purpose is to discourage this method of disposal.

There is an escalator in operation for active wastes sent to landfill, which increases the tax each April. At present the Landfill Tax is £48 per tonne and will rise by £8 every April until 2014/15 when it will reach £80 per tonne.

The landfill tax adds a significant cost onto the disposal of waste at landfill. In 2007/08 for example, Aberdeen City Council landfilled 107,658 tonnes of waste at £32 per tonne - a total of £3.4 million in Landfill Tax.: this will increase to approximately £5.4 million in 2013/14 unless changes are made.

3. National and Local Policies

3.1 National Waste Strategy – Zero Waste Plan⁴⁴

In September 2009 the Scottish Government produced a draft Zero Waste Plan for consultation with the final version published in 2010. The Plan outlines the Government's vision for waste management and how we can all play our part in reducing the amount of waste we produce, reusing valuable resources and increasing recycling levels to help Scotland become a Zero Waste Society. It also sets more aspirational recycling targets as well as a limit on the percentage of waste that can be landfilled or treated through Energy from Waste (EfW) facilities.

The new waste targets for all wastes (municipal and non-municipal) are:

- By 2025 not more than 5% landfilled.
- Year Recycling/composting rate
 - 2013 50% (Household waste)
 - 2020 60% (Household waste)
 - 2025 70% (All wastes)

The Plan states that 80% of the recycling/composting should be achieved by source segregated collections, for 2025 this equates to 56% of all waste will managed through source segregated recycling and composting (including anaerobic digestion of source segregated organics).

Current municipal EfW limit:

From 2008 Not more than 25% EfW

The Zero Waste Plan does not include the introduction of powers to allow for direct and variable charging of householders for waste collection and disposal. This does not provide for the demonstrably most effective tool for changing householder behaviour and calls into question the deliverability of high levels of source segregation of waste.

Importantly, this plan also takes into account waste created from commercial, industrial, construction and demolition practises as well as households and incorporates them into the plan.

3.2 National Planning Framework (Scotland)

The National Planning Framework (Scotland) was developed “to guide the spatial development of Scotland to 2025”. It emphasises the need for a strategic approach to development of infrastructure and although the guidance it provides is not binding, it should be taken into consideration throughout the planning process.

In terms of waste, the framework recognises that the siting of facilities will need to take the proximity principle into account as well as the available transport networks and operational landfill sites. The framework suggests that local authorities will need to work together to achieve economies of scale, avoid duplication and to ensure that facilities are located in the optimal location. It also suggests that treatment plants and transfer stations should be developed on industrial sites and that facilities “should be linked to landfill sites in a ‘hub and spoke’ arrangement, where possible by rail.” The framework states that no more than 25% of municipal waste should be treated through energy from waste.

3.3 Aberdeen City and Shire Structure Plan and North East Area Waste Plan

There are regional policies that effect how waste is dealt with in Aberdeen, including the Aberdeen City and Shire Structure Plan and the North East Area Waste Plan (AWP).

The aim of the Structure Plan is “to set a clear direction for the future development of the North East towards which the public and private sectors can work to deliver” the vision. This document has recently been approved by the Scottish Government and adopted by the two Councils.

The Structure Plan covers waste management under the Sustainable Development and Climate Change chapter. The Plan clearly states that we must change the way we manage our waste to ensure that we are adhering to the waste hierarchy, proximity principle and that our measures are both efficient and environmentally friendly. To do this, the Plan states that we must take “account of how we manage waste at the earliest stages in the development proposals and providing new infrastructure to meet the targets”.

For the Aberdeen City and Shire area, the Structure Plan sets a target that we will not landfill more than 54,000 tonnes of BMW by 2020.

The North East Area Waste Plan was published in March 2003 in response to the National Waste Strategy. It takes into account, the waste hierarchy, the proximity principle, and BPEO.

The key elements of the Plan include:

- 86% of households to be offered a segregated collection of recyclate with a view to achieving 23-25% abstraction by 2020.

- 54% of households to be offered a segregated collection of green waste with a view to achieving at least 105 abstraction by 2020.

- Develop a Materials Recycling Facility.

- Develop an Energy from Waste plant for Aberdeen City's residual waste

- Improve composting capacity in the area.

Neither of the major infrastructure elements in the Plan have been developed and the rationale underpinning the Area Waste Plan is no longer relevant calling into question its future role.

3.4 Aberdeen City Council Supplementary Planning Guidelines

The Planning Guidelines clearly show developers and planners our needs in the design stages of residential developments. The guidelines give a clear preference for underground bins or communal containers to minimise the bins left on the street, causing aesthetic issues and litter problems. The plans ensure that every resident in a new development has a convenient refuse, recycling and food waste service. The guidelines ensure that our vehicles can access the developments in a safe manner.

4 Energy-related Drivers

4.1 The Scottish Government's Renewables Action Plan, June 2009

The Scottish Government's Renewables Action Plan, June 2009 identifies bioenergy as an important source of renewable energy and that Energy from Waste can contribute to energy targets, now and in the long term. This is also highlighted by the national Planning Policy⁵¹. The Renewables Action Plan also set an ambition for a substantial increase in the uptake of heat from a range of bioenergy sources across the domestic, commercial and industrial sectors.

4.2 Scotland's Renewable Heat Strategy: Recommendations to Scottish Ministers,

Renewable Heat Group Report 2008⁵²

The Renewable Energy Development Scotland Renewable Heat Group was established by the Scottish Government in 2006 to help inform the content of a Renewable Heat Strategy for Scotland. One of the recommendations in the report relates to heat from waste biomass:

That the Scottish Government:

- charges SEPA to prohibit the dumping of waste biomass from industrial and commercial processes to landfill in order to promote its use for energy production.
- puts in place a policy to prevent the combustion of any form of waste without the recovery of heat, via Combined Heat and Power and/or district heating, and ensures that the regulatory and planning powers necessary to enforce this are adequate.

Municipal Waste contains a high proportion of biomass, typically 63%.

4.3 Local/Regional Economic and Energy Drivers

For decades the Aberdeen city economy has been dominated by energy: the exploitation of oil and gas for energy generation has been responsible for sustained economic growth and the establishment of Aberdeen as a global leader in energy services.

In recent years, Aberdeen City Council has recognised the economic opportunity and environmental sustainability of expanding this expertise into developing renewable energy infrastructure and knowledge base. The Aberdeen Renewable Energy Group which seeks to position the region as a renewable centre of excellence through initiating and delivering key renewable projects and the production of the Energetica concept by Aberdeen City and Shire Economic Futures are significant indicators that energy, especially in the form of renewable or low carbon heat and power, continues to be at the heart of the city's development.

Aberdeen City Council is leading the way in developing decentralised energy infrastructure through the provision of heat and power to social housing and public buildings. Four combined heat and power nodes have been established at Torry, Hazlehead, Stockethill and Seaton, currently fired by natural gas. The Seaton facility is capable of being converted to use biomass in the form of wood waste pellets and also have a network extension to public facilities by Aberdeen beach. Cost effective delivery of decentralised energy brings benefits to users and provide more sustainable solutions, reducing the carbon impact of the city. The city is seeking more opportunities to develop decentralised energy solutions with renewable or low carbon energy sources preferred.