Argyll and Bute Waste Strategy

Contents

Glossary of Terms

Anaerobic digestion: A biological process where biodegradable waste, such as food waste, is encouraged to break down, in the absence of oxygen, in an enclosed vessel. This produces carbon dioxide, methane (which can be used as a fuel to generate renewable energy) and solids/liquors known as digestate which can be used as fertiliser.

Waste Transfer Site: A facility used primarily for the storage of recyclate. If required,

well as other recyclables, free of charge. Traders can dispose of recycling at CA sites if they have purchased a permit.

Landfill sites: Any areas of land in which waste is deposited. Landfill sites are often located in disused mines or quarries. In areas where they are limited or no ready-made voids, the practice of land raising is sometimes carried out, where waste is deposited above ground and the landscape is contoured around it.

Low-participating and non-participating households: Any household that does not, or seldom recycles.

Municipal Waste: Includes household waste and any other wastes collected by a Waste Collection Authority (WCA), in this case the Council

WCA: A Local Authority charged with the collection of waste from each household in its area on a regular basis. They can also collect, if requested, commercial and industrial wastes from the private sector for a fee.

Participation Monitoring: Collecting information to measure the public use of a new kerbside recycling scheme and the effect of communication activities so that the Council can identify and engage with low or non-participating households.

Pollution: The introduction of contaminants into the natural environment that have adverse effects on the environment

Recycling: Involves the reprocessing of wastes, either into the same product or a different one. Many non-hazardous industrial wastes such as paper, glass, cardboard, plastics and scrap metals can be recycled. Special wastes such as solvents can also be recycled by specialist companies, or by specialist in-house equipment.

Reduction: Minimising the amount of material that enters the waste stream through actions such as reuse, cutting down packaging and composting.

Reprocessor: A business that carries out one or more activities of recovery or recycling.

Residual waste: Term used for waste that remains after recycling or composting material has been removed from the waste stream. Also known as refuse.

Reuse: Using a product again for the same or different use

Commercial Waste: Waste produced by any premises which are used wholly or mainly for trade, business, sport recreation or entertainment, excluding household and industrial waste.

Industrial waste: Waste from any factory and from any premises occupied by an industry (excluding mines and quarries).

Treatment: Physical, thermal, chemical or biological processes, including sorting, that change the characteristics of the waste in order to reduce its volume or hazardous nature, facilitate its handling or enhance recovery.

Waste Electrical and Electronic Equipment (WEEE): Describes discarded electrical or electronic devices. The definition includes used electronics which are destined for reuse, resale, salvage, recycling, or disposal.

Waste hierarchy: Sets out the order in which options for waste management should be considered based on environmental impact. It is a useful framework that has become a cornerstone of sustainable waste management.

Zero waste: Zero Waste is a goal that is ethical, economical, and efficient and visionary, to guide people in changing their lifestyles and practices to emulate sustainable natural cycles, where all discarded materials are designed to become resources for others to use. Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them. Implementing Zero Waste will eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health.'

Executive Summary

Argyll and Bute Council is responsible for collecting and then disposing of household waste on behalf of its customers across the Council area. In order to provide this vital service across a large and diverse geographic area, a variety of models are in place, which balance local circumstances and needs against the Council's wider obligation to provide best value for the public purse.

The Council empties all household waste bins for Argyll and Bute's 47,000 households, as well as most of the recycling bins. In some areas, we have partnerships in place with local social enterprises who provide recycling collection services on our behalf.

Once the waste is collected, there are different models for its disposal:

- Islands (Tiree; Islay; Jura; Mull; Iona; Coll; and adjacent small isles) – The Council owns and operates its own waste disposal sites on our main islands;
- Mainland and other islands (excluding Helensburgh and Lomond) – On the mainland we have a contract in place with Renewi (formerly known as Shanks) who provide waste disposal services on our behalf. This contract runs until 2026;
- Helensburgh and Lomond – The waste from this area is disposed of at private sites out with Argyll and Bute

There are three major changes on the horizon which will fundamentally change how the council delivers waste services in Argyll and Bute. To manage this change a new Waste Strategy is needed.

Ban on biodegradable municipal waste (BMW) – the Scottish Government is introducing a ban on BMW waste going to landfill. This means that all biodegradable waste (such as food waste, garden waste, paper and cardboard) cannot be disposed of in landfill. Currently landfill is th l5L0.615 j0.6.615 j0.6.61e3mBl5L0.615 jny-m bomhe ed oa(nd)5

Deposit return scheme for drinks containers – The Scottish Government announced in 2017 that it would be looking to introduce a Deposit Return Scheme for Scotland. This proposal has gone out to public consultation, and at present we are awaiting clarity on the timescale for implementation. It is too early to say what the implications of this might be for the council, however it is likely that the scheme could result in a diversion of some recyclate away from kerbside recyclate into the scheme.

With these changes in mind, we need a waste strategy that provides a framework which will allow the council to continue to provide high quality and cost effective waste services on behalf of the people of Argyll and Bute. It is the agreed policy of the council that a goal of the strategy is to focus on complying with the new requirements being introduced by the Scottish Government. As well as looking at solutions to the coming challenges, the strategy identifies at how the council can support the people of Argyll and Bute to Reduce, Reuse and Recycle their waste.

To provide additional context, the Scottish Government's Zero Waste Plan includes the following targets, which increase national recycling targets in stages:

- 50% recycling/composting from households in 2013;
- 60% recycling/composting from households in 2020;
- 70% recycling/composting from households in 2025, and no more than 5% of all waste going to landfill.

Argyll and Bute's overall recycling figure for 2018 was 48.1%. This is up on previous years, and can mainly be attributed to the change to three-weekly bin collections as well as changing national attitudes to recycling.

The main objectives of the Waste (Scotland) Regulations 2012, provide the main legislative context for the delivery of the Council's current waste services:

- The provision of local authority recycling services to domestic properties (free of charge) and businesses (chargeable);
- The separate collection of recyclables;
- Food waste collection to domestic properties (although there is a rural exemption for this);
- Landfill bans by 2021.

National targets are important, but so are the unique issues faced by Argyll and Bute Council, this document looks to provide options that allow the council to comply with regulations and mitigate and increase in costs.

The Scottish Government has preferred collection and treatment technologies detailed in the form of the Household Recycling Charter. For residents this includes weekly food waste collections, weekly recycling collections through a kerbside sort collection (putting recycling in variety of containers and sorting it at the kerbside as opposed to putting it all in one container and sorting it at a recycling facility, which is known as co-mingled collections), and a residual waste collection to suit local needs.

Argyll and Bute has not signed up to the Scottish Household Recycling Charter it is not financially possible to provide this level of service within the council's current financial

constraints, bearing in mind the diversity and size of the council area.

The Waste Strategy details how waste will be disposed of in Argyll and Bute. In particular, this document:

- is a policy which sets key objectives and overall approaches for the reduction of waste across the area;
- Takes into account other upcoming changes such as the introduction of a Deposit Return Scheme for Scotland.

The primary policy objectives of the document include:

- to work with both residents and visitors to the area to raise awareness of the importance of recycling, reducing waste and preventing it in the first place;
- to increase public confidence in the Council's waste services by making high quality information on the recycling process available;
- annual publication and promotions of details on the councils waste performance;
- to enable the Council to meet its current and future statutory requirements;
- to provide a high quality and cost effective recycling service for the Council's customers, both residents and businesses.

There are several potential technical solutions to ensure that the councils waste disposal service complies with these new requirements. The options for each of the current waste disposal model areas are summarised below full details of the solutions including high level cost assessments can be found in the Waste Strategy Action Plan:

Islands (Tiree; Islay; Jura; Mull; Iona; Coll; and Adjacent Small Isles) Model

Develop waste transfer operations at our island landfill sites. This would be a step-change from the current model where household waste is landfilled and recyclable material is transferred off the islands for recovery via Energy from Waste (EfW). The creation of waste transfer stations would allow the Council to store and bulk transfer recyclable material efficiently.

Helensburgh and Lomond

Procure access to a waste transfer site linked to a long-term residual waste recovery contract;

Mainland and Other Islands (Excluding Helensburgh and Lomond)

a) Evaluate the possibility of converting the existing treatment and landfill facilities to new facilities which will be able to process the residual waste in such a way as to make up to 40% of it inert, with the remainder of the waste processed at Energy from Waste facilities;

Waste Policy – Reduce, Reuse, Recycle

- Active promotion of local reuse charities and groups;
- Guidance on beach cleans and marine litter;
- Publication of the council's annual waste performance information.

The council will work with Zero Waste Scotland to improve our waste guidance material. Using Zero Waste Scotland's resources and promotional materials the council will tap into national campaigns promoting Reduction, Reuse and Recycling. Where possible the council will make use of open source/free to use tools to develop

Service	Annual Waste Budget 2019-20
Recycling	769,639
Waste Collection	2,269,295
Waste Disposal Islands, Helensburgh & Lomond	2,743,667
Waste Disposal PPP	7,924,431
Waste Management	121,413
Grand Total	**13,828,445**

Other than the sites operated by Renewi there are no major waste disposal facilities in Argyll and Bute. The majority of alternative disposal sites are located in the Central Belt. These are relatively easily accessible from Helensburgh and Lomond, but are challenging to access from other areas of Argyll and Bute. These alternative sites are

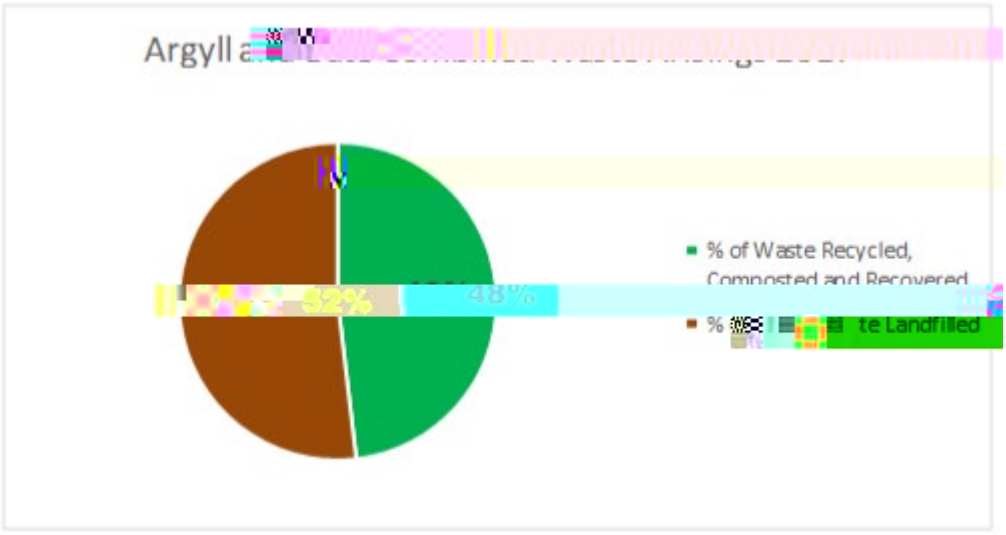
Islands (Tiree; Islay; Jura; Mull; Iona; Coll; and adjacent small isles) – 3,420 tonnes

Mainland and other island areas– 17,500 tonnes

Helensburgh and Lomond – 11,300 tonnes

48.1% of total waste in Argyll and Bute was recycled or recovered last year, or 29,902.47 tonnes. There are variances in recycling/recovery performance between all three models as a result of treatment and disposal facilities available in each area. The percentage of waste Recycled, recovered or composted in each of the model areas are as follows:

- Island Model – 33.6%
- Mainland and other island areas - 53.8%
- Helensburgh and Lomond - 40.8%



Using current waste figures as a baseline, it is possible to predict the level of remaining waste after the BMW landfill ban comes into effect. This modelling shows that, assuming mechanisms are put in place to meet the terms of the ban, Argyll and Bute will send 14% of its waste (non-BMW) to landfill.

In late 2014, the Council received funding from Zero Waste Scotland to carry out a composition analysis in two areas – Dunoon and Islay. This exercise showed that an

and the areas each distinctive in their geography and how Waste in particular residual waste is disposed of. This section will put forward the Technical/Contractual options, highlighting the Cost/Benefit and Risks/Opportunities of each option and the timescale required to deliver it ahead of the ban and any aspects of a proposal that requires Scottish Government support.

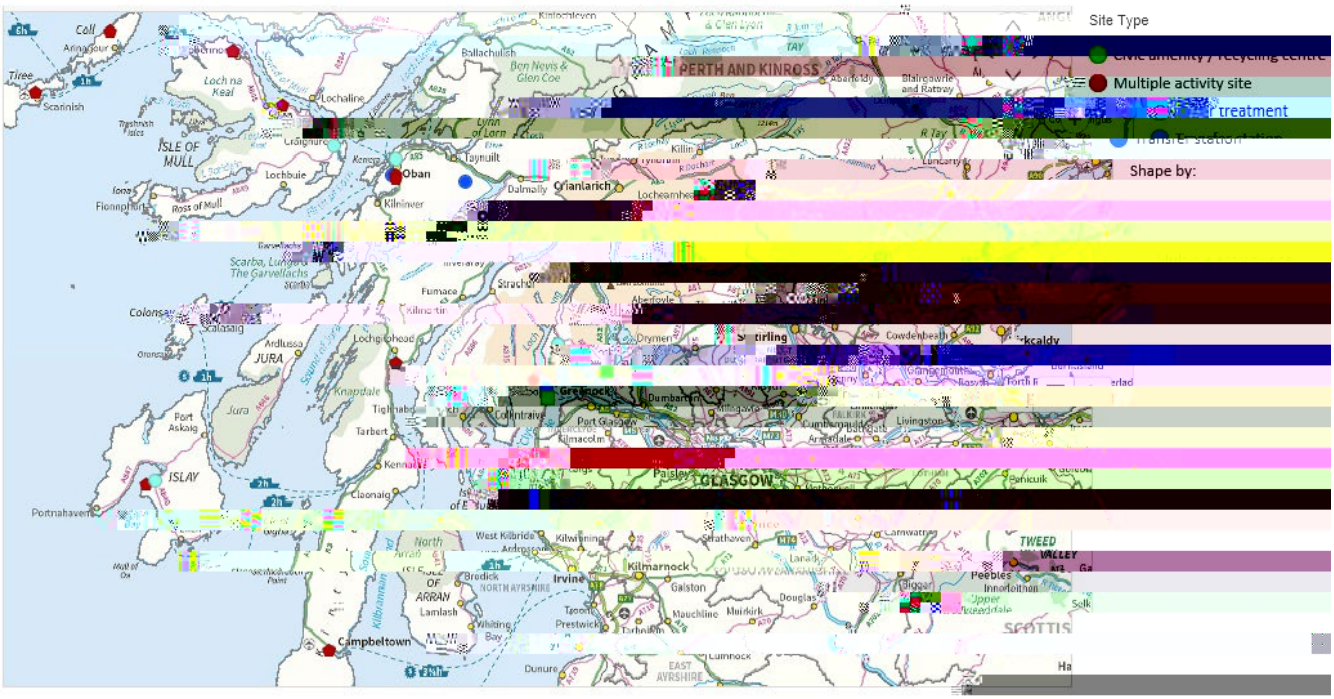
The three distinct waste models and the current Waste disposal methodologies are detailed below and feature a map of all Active Waste facilities in the Council area (Table 5):

- Island (Mull, Islay, Tiree) Landfill/Civic Amenity sites which are operated directly by the Council;

- Helensburgh and Lomond where waste is collected and disposed of at third party sites out-with Argyll and Bute.

- A 25 year PPP contract covering the mainland Argyll and the Island of Bute, excluding Helensburgh and Lomond. This contract runs until 2026;

Argyll and Bute Waste Facility Map



Current Scottish Government BMW ban position and Local Government response

As a result of measures in the Waste (Scotland) Regulations 2012 every local authority in Scotland is obliged to implement a ban on Biodegradable Municipal Waste (BMW) going to landfill from January 2021.

SEPA and the Scottish Government have made it clear that the ban of BMW waste going to landfill will be implemented across all of Scotland with no derogation planned for rural areas including the islands

SEPA and the Scottish Government publically remain committed to the terms of the ban, including its start date. However, Local Authorities across Scotland and the Private Sector continue to lobby the SG in relation to which materials should be included in the BMW ban and on the start date of January 2021.

Biodegradable municipal waste is defined by Regulation 11(3) of the Landfill (Scotland) Regulations 2003 (as amended) as “municipal waste that is also biodegradable”.

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- Phased Landfill Derogations to allow for authorities to access to Waste to Energy treatment options;

- Exemption of some (bulky) waste from the BMW ban;

- Landfill Trading Scheme (Similar to the Renewable Obligation Certificate Scheme) extending beyond the ban start date allowing Local Authorities struggling to have compliant solutions ready for the ban, to continue landfilling for a limited period;

- Preferably total or phased Landfill derogation for rural areas;

- Preferably total or phased Landfill derogation for Island communities.

The Scottish Government response to these proposals asserted that the terms of the ban are fixed and not likely to change. However, that they would consider and work with Local Authorities/COSLA on practical options that would ensure compliance with the ban. It was agreed that a new joint COSLA/Scottish Government working group on the BMW ban would be setup to identify/develop potential solutions. The first meeting of this group is due to take place early in 2019.

The Scottish Government also stressed that working with the Scotland Excel they had provided a brokered solution that is open to any Local Authority. The brokered solution is for disposal only and does not include a haulage element and relies on the export of waste as Refuse Derived Fuel to Europe.

The Scottish Government and SEPA has however conceded that they would look again with COSLA Waste Managers at the Bulky Waste element to see if the current approach is appropriate. It has been proposed that a Bulky Waste code of practice be developed by Local Authorities that would ensure that non-biodegradable bulky waste is separated out at Civic Amenity sites. SEPA have also made it clear that biodegsed sra (ri.9 (ni)5.9(nl)1 (bTw 26.57 0 Td( )2.88 (of)-

- Maintain Island Landfill Sites to support ban exempt material disposal but develop Waste Transfer to allow for residual waste transfer and recovery at EfW facilities;

- Construction of local EfW facilities.

new requirement without the need for the costly construction of new facilities. The cost for conversion of the sites is being developed and will be put forward as part of the works approval process in line with governance procedures. Capital funding has been secured for these works from existing funds set aside for capping and restoration works at our Island sites.

Switching to a transfer operation the Islands' residual waste would bring in an additional haulage and recovery gate fee cost for disposal via EfW. These additional costs would be offset against the saving made in Landfill tax currently sitting at £88.95/tonne. A full breakdown of the costs of the Transfer operation can be found in Appendix 1.

A long term (10 year+) EfW contract in order to secure best value by preventing

- **Cost,** the Capital investment required to make the change and the ongoing Revenue cost impact once the change is live;

- **Deliverability,** how likely is it that the solution will be ready in time for ban.

The options evaluated in the options appraisal for a BMW ban compliant Residual Waste solution for Helensburgh and Lomond:

- Tender of a EfW disposal contract for Helensburgh and Lomond's residual Waste, supported by the construction of a Waste Transfer Site at either Blackhill CA site or Depot in Helensburgh;

- Direct appointment of the incumbent residual waste contractor;

- Carryout a joint procurement with neighbouring local authorities of residual waste disposal services including access to waste transfer facilities.

The option to construct and operate a Waste Transfer Site at either of the Blackhill sites would require a significant upfront capital investment. Argyll and Bute Taking on the operation of a waste transfer station in Helensburgh would require an uplift in revenue funding to meet the additional requirements of staffing the site and carrying out the operation. This increase in costs would not be offset by any potential saving in vehicle running costs. As a result of the financial burden of constructing and operating this option it is not considered cost effective to pursue this option further. In addition to cost there are also issues around securing planning and regulatory consent for a CA at the proposed locations due to their location and existing design.

The option that offers best total value for money overur8(t)-3 (her)2 (o29.51 -1.bur)-3 o1l229.

The period of this contract will be for ten years with a five year option to extend. This period was agreed following market research and the need for companies to have contract security to offset major investment in waste infrastructure over a period of time. Shorter contracts are not cost effective as we would likely have to pay a premium on price to ensure that the contract would be sufficiently attractive for a provider to invest in the service.

- The procurement does not impact on staffing numbers and would likely see a reduction in overtime. There would also be no impact on kerbside, civic amenity or bring site waste collection frequency;

- By putting in place a combined contract of significant scale we will be able to secure an attractive price/tonne over the total (potential 15 years) of the contract. If we were to approach the market as a single authority with a small tonnage we would not be able to achieve as low a price/tonne.

  We have considered the procurement methodology to be adopted for this procurement and have agreed with the other two authorities that an open tender is most effective and timeous procurement route. We are in a position pending the approval of elected members and signoff of a "Minute of Agreement" that we could go live with the tender, and receive returns and carryout an evaluation with a view to appoint a contractor in Summer of 2019. Interim service arrangements to ensure that Residual Waste obligations are still met will put into place to tie in with the end of the current contract.

Mainland and other islands BMW options

Technologies and processes and systems that could ensure compliance with the ban can be broken down into two categories:

- Waste to Energy (WtE) – Using the waste as feedstock in the generation of heat/ electricity producing an inert by product. Including:
  - Refuse Derived Fuel (RDF) for supply to WtE plant
  - Anaerobic Digestion (AD)

- Composting - Compost is organic matter that has been decomposed in a process called composting. This process recycles various organic materials - otherwise regarded as waste products - and produces a soil conditioner (the compost). Including:
  - Community Composting (small scale In Vessel Composting)
  - In Vessel Composting (IVC)

In both technical options the logistics around the transfer of waste and/or RDF, is a key part of the cost of any solution. Waste Transfer Reception and temporary storage of waste material which is then bulked and transported to a disposal sites remains essential to the process.

with the inclusion of evaluation against contract impact and risk. Taken in their entirety the evaluation are intended to evaluate the cost/benefit of each option.

An option that has be excluded from further consideration is building and operating our own large scale EfW plants in Argyll and Bute were considered as an option. However, both EfW methodologies of Anaerobic Digestion (AD) and a Refuse Derived Fuel (RDF) incineration plants would be impractical due to the

- There would be the additional cost of transiting residual waste to our sites for disposal at the proposed EfW facilities. Additionally costs for planning and licence changes at facilities would have to be included.

- 40% of the Waste would be extracted and rendered inert. This inert composted element would then be landfilled. This would require maintaining 40% of the existing/planned landfill capacity to meet this requirement.

- The landfill tax for landfilling inert material is currently £2.80/tonne but this is likely to rise however this is a reduction from the current rate for non-inert material of £98.95/tonne.

- 60% of the residual waste would be converted to RDF. This would then be transferred to either facilities in the central belt or in England or Europe for disposal. The gate fee, storage and haulage costs would have to be borne by ABC on top of the costs of the IVC system.

  A change of operation of this scale would necessitate a variation of the agreement. Previous variations have been extremely difficult and costly to achieve as any change has to meet with the approval PPP contract funders. A diagram of the structure of the PPP contract can be found in Appendix two of this document.

  There is continued risk of contractual liabilities particularly in relation to the end of contract landfill void space requirements. Depending on what option is pursued the amount of void space required will reduce. Currently under the contract Renewi are obliged to provide the Council with sufficient pre-prepared landfill void space for future needs beyond the contract end date. Und the agreement Renewi takes on all of the cost for these works. If the need for this requirement was no longer required then it would in effect reduce the cost liability for Renewi significantly. However, at the BMW ban working group it was agreed between Renewi and Council officers that an equitable solution to the void space issue favouring neither party should be sought as part of ongoing negotiations.

  If the Council were to pursue this option it might become necessary to buy the senior debt in the contract with Renewi. This cost is significant and would also see a halt on further PPP support funding from the Scottish Government. Buying out the contract would prevent the involvement of the external PPP contract funders. Buying out the senior debt would also reduce the current Unitary Charge paid to Renewi under the contract, the structure of the PPP contract with details of the funders can be found in appendix 1.

In addition to the issues surrounding both cost and contractual impacts, the technical efficacy of the proposed IVC system will need to be established prior to commitment of both parties to the MBT to IVC conversion.

The testing is focused on establishing if the biodegradable element of the residual waste extracted meets the AT4 respiration standard and is therefore inert enough to be landfilled under the terms of the landfill ban. The cost of the proposed testing is dependent on how much test material can be landfilled as inert material and ranges between £70k and £150k. Prior to any testing approval would be sought from committee. Testing could be potentially funded from funds earmarked for Helensburgh Transfer Station costs that are no longer required. The timescale for the delivery of the testing and analysis of the results assuming an approval will report back by the end of September 19. This is timed with the production of the final waste strategy.

Assuming that the feasibility study was part of the go/no decision, the new changes could be in place within 10-12 months of an instruction to proceed (assuming the permitting process would be twin tracked with construction). Typical duration for the work are as follows:

- Feasibility study and report-3 months
- Planning permission and permitting- 8 months
- Outline design & contractor procurement-3 months
- Detailed design and mobilisation- 3 months
- Site works- 4 months

Option Two: Total Transfer Solution

The proposed IVC solution would extract a limited amount of waste (40%) with the remainder having to transfer for disposal as RDF. The costs for the IVC extraction and landfill would have to be borne along with the haulage cost for the transfer of the waste going as RDF (60%)

It may be more cost effective to improve the network of waste transfer stations by converting the two Landfill sites operated by Renewi. All of the waste So ( )-5 (of)-3 2 (ou)4n.1

- As with the IVC solution, there is a cost for the EfW disposal gate fee. Unlike the IVC solution 100% of the residual waste be transferred to either facilities in the central belt or in England or Europe for disposal. The haulage and recovery costs from all of the sites to EfW plants would be significant. However haulage costs would be offset against the former operating costs of Landfill including the tax element of around £3m/annum.

- Further savings as a result of the reduced requirement for future Landfill capacity and in turn future aftercare and monitoring costs.

  The contractual implications of moving to a to a Total Transfer option are similar to that of the IVC/MBT conversion. Both options feature a significant change in waste disposal operation and require significant capital investment. Therefore a contract variation and potential buy out of the senior debt may still be required.

Scottish Deposit Return Scheme

In September 2017, the Cabinet Secretary for Environment, Climate Change and Land Reform, Roseanna Cunningham MSP, announced the introduction of a Scottish Deposit Return Scheme (DRS). Zero Waste Scotland has been commissioned by the Scottish Government to develop one or more prototype systems which have been put forward for public consultation with returns due

- *increase the quantity of target materials captured for recycling;*
- *improve the quality of material captured, to allow for higher value recycling;*
- *encourage wider behaviour change in the use of materials;*
- *deliver maximum economic and societal benefit for Scotland*."

  Omitted from the description is a significant part of the brief that was given to Zero Waste Scotland from the Scottish Government that the DRS should not impact on existing local authority DMR operations. Though there is no direct impact on service such as a reduction of kerbside collections being mandated as part of the scheme there will be various other direct effects of it running in parallel to existing local authority DMR collections. It is expected that the quality of the materials left in the kerbside collection will be poor and therefore not able to attract a high price and not go towards offsetting the cost of collection.

  The biggest issue with the DRS is the lack of certainty on the specific elements of the scheme and its operating model and how it will achieve the stated aims of the scheme. What is known is that the scheme will cover all of Scotland. It should be noted that a separate UK Deposit Return Schemes has been proposed. Currently there are no plans to create a single UK wide deposit scheme. However, it is understood that the Scottish Government will engage with other administrations to look at cross compatibility of schemes.

  The consultation document on the DRS produced by ZWS has four operating models listed with different variables applied detailing the estimated impact of each model on the Scottish economy. The variables in the proposed consultation models include what materials would be accepted under the scheme but also how the materials would be collected. The question on how the materials would be collected is critical to the costs and benefits secured under the scheme. The options for the models are:

- Option 1: Take back to designated drop-off points, which would involve containers being taken back to a number of large, dedicated locations rather than smaller return points in shops and public places. Materials included: Cans, Glass, Plastic bottles excluding milk and dairy products.
  Net benefit to the economy over 25 years: £494m, per annum; £617k

- Option 2 Take back to dedicated drop-off points and some shops, similar to example 1 but with the inclusion of Reverse Vending Machines at some retailers. Materials included: Cans, Glass, Plastic bottles including milk and dairy products, Cartons and single use Cups.
  Net benefit to the economy over 25 years: £352m, per annum; £440k

- Option 3: Take back to any place of purchase. Reliant on Reverse Vending Machines being placed in all participant retailers. Materials included: Cans, Glass, Plastic bottles excluding milk and dairy products.
  Net benefit to the economy over 25 years: £745m, per NPV annum; £992k

- Option 4: Take back to any place of purchase. The crucial difference between examples 3 and 4 is that the latter includes more materials within its scope and can therefore maximise its NPV. However it remains reliant on Reverse Vending Machines being placed in all participant retailers. Materials included: Cans, Glass, Plastic bottles including milk and dairy products, Cartons and

businesses are already stretched by having large overhead costs in their supply chain and operations.

There is a real risk that the DRS will be another cost with limited benefit to these