

**WASTE STRATEGY**

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**1.0 EXECUTIVE SUMMARY**

1.1 The purpose of this report is to highlight the changes required to Argyll and Bute Councils Waste Strategy. This report defines the issues facing Waste Disposal and the necessity for a change in the strategy. The report details options that have the potential to resolve the issues in a cost effective manner.

1.2 Argyll and Bute Council is both a waste collection and waste disposal authority. Waste collection is carried out by Council staff with assistance from third sector organisations who have responsibility for some recycled materials. Waste disposal is carried out by using three separate models across the Council:

- Island sites which are operated directly by the Council;
- A 25 year PPP contract covering the mainland excluding Helensburgh and Lomond, this contract runs until 2026;
- Helensburgh and Lomond where waste is collected and disposed of at third party sites out-with Argyll and Bute.

Detail of our Waste locations can be found in Figure 1 below:  
Figure 1.



- 1.3 There are 4 major issues arising over the next 8 years that will impact on both cost and processing methodology with regard to all three disposal models. These changes are summarised below:
- The Biodegradable Municipal Waste (BMW) Ban - January 2021
  - The end of the Waste PPP (with Renewi) contract ending in 2026
  - The introduction of the Deposit Return Scheme for single use plastics
  - The potential requirement for Food Waste collection to be implemented in Oban as a result of its re-classification from rural to urban area.
- 1.4 The Waste Strategy will provide a holistic solution centred framework to ensure that high quality, compliant, cost effective and affordable waste services are delivered across Argyll and Bute. The Strategy will provide solutions to the four large structural issues (as noted in section 1.3) but will also look at aspects of the operation where efficiencies and improvements can be made for the benefit of our service users and the Council.
- 1.5 The Environment, Development and Infrastructure Committee are recommended to:
- The Committee notes the changes, technical impact and agrees to endorse the work being progressed towards a long term waste strategy;
  - Approve the objectives of the waste strategy set out in paragraph 4.3;
  - Endorse the two shortlisted biodegradable municipal waste ban options and provide consent for a continued feasibility assessment of the outline options set out in section 4.9 ;
  - Endorse a request for an Islands Impact Assessment of the Waste Scotland regulations (2012) under the terms of the Islands Act (2018) to explore:
    - The potential for additional financial support to ensure compliance with the Landfill ban and to support Zero Waste initiatives on the Islands.
    - To seek island derogation from the Landfill ban if no additional funding support is available.
- 1.6 This report contains high level details of the two preferred technical options for the biodegradable municipal waste ban. Details of technical options that have been discounted from consideration have also been included in this report. It is recommended that the report and the two technical options receive the endorsement of the EDI committee.

- Conversion of Existing Mechanical Biological Treatment plants to In Vessel Composting Facilities/Refuse Derived Fuel Production Facilities
- Scottish Government brokered Refuse Derived Fuel solution.

With this endorsement an outline cost and tested model of each technical option will be prepared forming the basis of an options appraisal report which is a key part of the draft Waste Strategy. This draft Waste Strategy will then be put forward for the approval of elected members. Once approved by members the Draft Waste strategy will be released for public consultation.

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**WASTE STRATEGY**

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**2.0 Introduction**

- 2.1 This report details the current position relating to waste collection and waste disposal. The report considers the financial, contractual and legislative implications regarding waste and outlines the approach to developing a new waste strategy and options appraisal of compliant waste solutions are put in place.
- 2.2 The measures outlined in the Waste Strategy will support Zero Waste Scotland's approach to reduction, reuse and recycling of materials. It will be used as a tool to lobby central government for the necessary funding to enable this approach to be taken across all of Argyll and Bute including our remote, rural and island areas. At the heart of this approach are the key principles of waste management outlined in the Waste Hierarchy see Figure 2 on page 5.
- The "waste hierarchy" ranks waste management options according to what is best for the environment.
  - It gives top priority to preventing waste in the first place. When waste is created, it gives priority to preparing it for re-use, then recycling, then recovery, and last of all disposal (e.g. landfill).
  - Although the hierarchy holds true in general terms, there will be certain wastes for which the waste management options are limited or for which the 'Best Practicable Environmental Option' (i.e. the option causing least environmental impact) lies towards the bottom of the hierarchy. In deciding what the most appropriate disposal route is, both environmental and economic costs and benefits need to be considered. This decision should be reached taking into account all the costs and impacts associated with waste disposal, including those associated with the movement of waste.
  - Wherever possible the Proximity Principle should be applied. This recognises that transporting waste has environmental, social and economic costs so as a general rule, waste should be dealt with as near to the place of production as possible. This has the added benefit of raising awareness about waste and encouraging ownership of the problem at the local level.

Figure 2 Waste Hierarchy.



### 3.0 RECOMMENDATIONS

3.1 The Environment, Development and Infrastructure Committee are recommended to:

- The Committee notes the changes, technical impact and agrees to endorse the work being progressed towards a long term waste strategy;
- Approve the objectives of the waste strategy set out in paragraph 4.3;
- Endorse the two shortlisted biodegradable municipal waste ban options and provide consent for a continued feasibility assessment of the outline options set out in section 4.9 ;
- Endorse a request for an Islands Impact Assessment of the Waste Scotland regulations (2012) under the terms of the Islands Act (2018) to explore:
  - The potential for additional financial support to ensure compliance with the Landfill ban and to support Zero Waste initiatives on the Islands.
  - To seek island derogation from the Landfill ban if no additional funding support is available.

### 4.0 DETAIL

#### Current Arrangements

4.1 Waste disposal is carried out by using three separate models across the council area:

- Island sites which are operated directly by the Council;
- A 25 year PPP contract covering the mainland excluding

Helensburgh and Lomond. This contract runs until 2026;

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

4.1.2 There are four structural issues that will impact on how waste services are delivered and managed:

- As a result of the Waste (Scotland) Regulations 2012 the Council is obliged to implement a ban on Biodegradable Municipal Waste (BMW) going to landfill, from January 2021;
- The end of the PPP contract in 2026 and planning for a future service;
- The further imposition of additional national recycling initiatives such as the proposed, 'Deposit Return Scheme' in Scotland.
- The risk of Oban being declared an Urban area as a result of an increase in population resulting in food waste collections having to be put in place. This is already the case in Helensburgh.

4.1.3 Solutions to all of the structural issues facing Waste Disposal in Argyll and Bute are predicated on the basic principle that how waste is disposed of is inseparably linked to how waste is collected. For example a disposal method that treats only Food and Garden waste will rely on a Food and Garden Waste collection. All of the proposed solutions in this report have been prepared with this crucial detail in mind.

### **What is driving the change?**

4.2 A holistic waste strategy is needed in order to resolve issues arising from the four challenges. The Strategy will provide a planned framework for reforming services, and will look to mitigate the financial and environmental impact of any change. It will also ensure that ABC will continue to deliver its statutory obligations relating to Waste in full compliance with the legislation and environmental standards. The measures outlined in the waste strategy will support the Scottish Government and Zero Waste Scotland's circular economy and waste reduction objectives as laid out in:

- The Scottish Government's Zero Waste Plan;
- The Waste (Scotland) 2012 Regulations;
- 'Making things last: Consultation on Creating a More Circular Economy in Scotland'.

4.2.2 Based on information from SEPA and the Scottish Government they have intimated that it is unlikely that the any rural or island areas across Scotland would receive derogation (a relaxation of the regulations) from the terms of the ban.

However, if derogation for Island and Rural communities is granted, due consideration would be given to suitable disposal methodologies. As derogation from the ban for Island communities is unlikely we would in the first instance adopt the approach seeking additional funding resources to help us resource a ban compliant solution for the islands and mitigate the potential impacts of the ban

4.2.3 The Scottish Government's Zero Waste Plan includes the following key targets:

- 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 to go to landfill.

4.2.4 The Waste (Scotland) 2012 Regulations focus on delivering the following main objectives:

- The provision of local authority recycling services to domestic properties (free of charge) and businesses (chargeable);
- The separate collection of recyclables;
- Food waste collections to domestic properties and businesses (currently only Helensburgh, derogation exists for rural areas) ;
- High quality recycle producing closed loop recycling;
- Restrictions on inputs to Waste to Energy (WtE) Facilities and Landfill bans (BMW ban, 2021).

4.2.5 In the summer of 2015, The Scottish Government produced 'Making things last: Consultation on Creating a More Circular Economy in Scotland'.

The consultation had many intentions including a proposal to "Review the rural exemption for food waste in the Waste (Scotland) Regulations 2012 in partnership with local government as part of the process to support the proposed Household Recycling Charter, as well as businesses and the waste management sector."

4.2.6 The Scottish Government has a strong desire that food waste collections should be available to households throughout Scotland although COSLA is strongly highlighting the potential cost implications if this requirement is extended to rural areas. In addition the risk of a rural areas reclassification from rural to urban as a result of a growth in population or a reassessment of the requirements may necessitate the introduction of a food waste collection service in Oban.

The costs for the introduction and operation of a food waste collection service in Oban has been modelled as an additional cost of around £190k in the first year falling to around £160k per annum thereafter. If a food waste collection was to be

rolled out across Argyll and Bute there would be an additional annual revenue cost of £1.09m and an additional capital cost of £227k. There is no budget provision to support this additional work stream and should there be a requirement to roll out additional food waste collections there would be a budget demand pressure.

- 4.2.7 It should be noted that the BMW ban will be in force across the entirety of Scotland including all island and rural areas. Argyll and Bute Council, Comhairle Nan Eilean Siar and Highland Council have sought clarification on this from the Scottish Government. To date the Scottish Government have been unable to indicate if a derogation from the ban is likely. However, as a result of the Islands Act (2018) coming into force we are able to request that the Scottish Government retrospectively review the impact of the Waste Scotland regulations (2012) on our island operation, in particular the BMW ban.
- 4.2.8 Non-Compliance with the BMW ban i.e. continuing to Landfill BMW both at our own sites on the Islands and at Renewi's sites is not an option. Non-compliance would result in the Council being prosecuted and receiving significant financial penalties. The Council's ability to manage its statutory duties in relation to waste would be called in to question. A likely reaction to non-compliance would see the Council prosecuted by the regulator and face further legal challenge and potential punitive action from the Scottish Government. The resultant effects of non-compliance would range from reputational damage with the public and the Scottish Government to fines and other sanctions.

### **What will the new Waste Strategy do?**

4.3 The Waste Strategy will:

- Be aligned with Scottish and UK Government Zero Waste and Circular Economy Objectives;
- Detail cost effective solutions for the future disposal of BMW across the Council's area;
- Produce an education plan to promote redistribution and re-use rather than disposal;
- Explore schemes for further redistribution and re-use rather than disposal;
- Clearly state the PPP contract closedown process and any associated impacts;
- Include a detailed plan agreed between all Council services to reduce waste produced by Council departments and operations;
- Detail costed options for the provisioning of services in the former PPP area; taking into account the views of all stakeholders;
- Detail the impact and implementation process for new recycling initiatives



such as the 'Deposit Return Scheme';

- Outline measures to reduce the environmental impact of waste across Argyll and Bute;
- Provide clear guidance and procedures for engagement with management of third sector bodies currently and/ or willing to become involved in the processing of waste locally;
- Incorporate a detailed waste model used for projecting future costs;
- Outline the process of review for all financial modelling in relation to waste;
- Identify opportunities for offsetting of costs through the commercial exploitation of waste;
- Contain an asset plan covering the future operation at all landfill and Council Amenity sites including capping and restoration up to 2026.

### **Argyll and Bute Waste Statistics**

- 4.4 In financial year 2016/17 Argyll and Bute Council sent approximately 32,200 tonnes of Residual Waste containing biodegradable municipal waste (BMW) to landfill, details of the amounts in each area are noted below:
- 17,500 tonnes in the PPP area;
  - 3420 tonnes on Islands;
  - 11,300 tonnes Helensburgh and Lomond.

For further information on current recycling/composting/recovery rates please see Appendix 1 for further information.

### **The Composition of our Waste:**

- 4.4.2 In late 2014, the Council (using mainly grant funding from Zero Waste Scotland) appointed Albion Environmental to carry out a waste composition analysis of its general waste (residual) in both the Renewi and islands areas (the grant funding did not extend to cover 3 areas). An analysis was carried out in Dunoon over a 2 week period and on Islay over a 1 week period. The report Identified that an average of 42% of our residual waste could be reduced if recycling was fully utilised. The report also identified that an average of 30% of the residual waste is made up of food waste. For further information and analysis please see Appendix 1.
- 4.4.3 As part of the strategy a new composition analysis will take place in the same areas. This will provide fresh data that takes in to account changes in the operation since 2014.

## Financial Modelling and Current Costs

- 4.5 Financial modelling is a planning and prediction tool used in the identification and quantification of potential cost pressures and impacts as a result of any potential changes to how waste services are delivered in Argyll and Bute.
- 4.5.2 A financial model covering a 25 year period, 2015 -16 to 2039 - 40 has been developed for waste management. The model incorporates the PPP contract with Renewi which ends on 3 September 2026.
- 4.5.3 As part of the Waste strategy review, we are expanding the model using updated measured figures to allow us to cost potential options for the service going forward. This model will be used to test out the financial viability and impact of any solutions that are being taken forward as part of the strategy.
- 4.5.4 A robust process for the review and updating of the waste finance model has been agreed internally between Strategic Finance, Waste Disposal and Internal Audit.
- 4.5.5 The current Total Waste budget for financial year 17/18 is approximately £13.5m.
- 4.5.6 The main factors that will influence the revised model are:
- Profile of contract variation repayment from Renewi;
  - Contractual Payments to Renewi are index linked @ 0.85 of Retail Prices Index;
  - Landfill tax;
  - The effects of the BMW ban in both the short and long term;
  - The implications of the Deposit Return Scheme on recycle volumes;
  - Our obligations for the Capping and restoration and aftercare of island sites;
  - Waste volume based on estimated 2018-19 tonnage levels, future changes in volume can be factored into the model allowing the model to be used to identify issues with any proposed changes in the operation;
  - Sale of recycle based on 2017-18 prices. Future price changes can be reflected in the model allowing for the development of contingency plans and better financial forecasting;
  - Inflation applied only to employee costs, electricity, non-domestic rates, landfill tax and Renewi payments per budget outlook;

4.5.7 If the Council does not address the current and imminent issues and continues the service delivery on the current basis; the overall forecasted position for the 25 years will be an annual deficit rising to the end of the period amounting to £9.286m, as displayed in Figure 5 below and presented previously in the March 2016 EDI report.



## Targets and Dates

4.6 Key Dates for the delivery of the waste strategy are as follows:

August 2018	Blackhill transfer station feasibility study begins;
September 2018	Members Development Presentation
September 2018	EDI report approval;
September 2018	Meeting with Scottish Government on BMW options;
November 2018	Blackhill transfer station feasibility report
November 2018	Submission of the 1 <sup>st</sup> Draft Waste Strategy and options appraisal document for internal approval;
November 2018	Members Development Presentation
December 2018	Approval of Draft Waste Strategy for Public Consultation;
January 2019	Release of the Draft Waste Strategy for Public Consultation
February, March 2019	Inclusion of responses to the consultation
April, June 2019	Preparation of Final Waste Strategy
June 2018	Members Development Presentation

June 2019	Submission of Final Waste Strategy;
July 2019, February 2020	Implementation Phase;
July 2020	Scottish Government Deposit Return Scheme role out Target Date
January 2021	BMW Ban comes into force
May 2024	PPP contact intentions reporting deadline
May 2026	PPP contract end date

## Technology Options:

### Outline of available technologies

4.7 Technologies 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)

For further information on the composting process please see Appendix 2.

The two preferred technical options are detailed in section 4.9.

4.7.2 In addition to the 2 proposed technical solutions to the BMW ban we would look to strengthening existing partnerships with the third sector while continuing to build new partnerships with other groups working on diversion from landfill. This community diversion is not a standalone solution but could provide an important community resource that would divert waste out of our processing system.

Community diversion takes place currently with furniture and other items being diverted from landfill. There is however opportunity through partnership between local businesses, the third sector and the Council to build a shared infrastructure for the diversion of BMW from landfill through reuse/ redistribution. The waste strategy will place the Council in the role of facilitator and broker of community led solutions, not as a primary funder.

Options to be considered:

- Community composting hubs - Partnering with community gardening groups

and environmental charities;

- Constitute a community BMW working group to take the lead on the development of surplus food redistribution utilising open access online mapping tools in partnership with businesses and the 3<sup>rd</sup> sector;
- Development and implementation of a food waste reduction and redistribution training programme with Zero Waste Scotland for all business and groups in Argyll and Bute;
- Pursuit of Zero Waste Town accreditation for the major population centres.

### **Technologies we are ruling out and why**

4.8 Building and operating our own large scale WtE plants in Argyll and Bute were considered as an option. However, both methodologies Anaerobic Digestion (AD) and a Refuse Derived Fuel (RDF) incineration plant would be impractical due to the comparatively low level of feedstock produced in Argyll and Bute and would have to rely on the importing of feedstock to make the WtE process economically and practically viable. For further information on WtE processes please see Appendix 3.

4.8.2 For further information on why operating out own WtE facilities are not considered a viable solution please see Appendix 4.

### **Technologies we will consider and why.**

4.9 This section contains details on the two preferred technical options relating to the BMW ban. Upon endorsement from EDI officers will consider and take forward the feasibility assessment of the options.

### **Scottish Government brokered WtE solution**

4.9.2 The Scottish Government has identified that a large number of local authorities will face difficulty in identifying and implementing a compliant disposal solution for their BMW in advance of the 2021 ban. The Scottish Government estimate that nationally in Scotland there is will be a processing shortfall of BMW of around 1m tonnes in the first year of the ban. It is estimated that this shortfall will drop by 500k tonnes in 2022. In response to this issue being raised by both COSLA and SEPA the Scottish government approached the waste disposal industry to broker a potential solution. Details of the RDF incineration process are featured in Appendix 3.

4.9.3 Avondale Environmental Ltd was identified as the provider of such a solution. Avondale currently operate the largest private landfill site in Scotland and take waste from several local authorities in the Central belt. In 2013 they began construction of the largest RDF producing waste disposal site in Scotland adjacent to their landfill operation, the plant became operational in 2016. The

facility was mothballed as it was not commercially viable at the time. However, with the BMW ban imminent Avondale felt that there was opportunity to re-activate the plant and begin disposal operations once again, the plant is now fully operational.

- 4.9.4 Scottish Government procurement has brokered a 7 year deal that is open to all Scottish local authorities on a first come first served basis. The commercial terms of the deal are subject to a non-disclosure agreement which prevents publication of any such details. However in summary, if the Council were to sign up with Avondale we would require to transport all or some of Argyll and Bute's residual waste to their plant.

On delivery to the plant, the material would be sifted and converted in to RDF which in turn would be sold to WtE providers. The plant is able to produce 200k tonnes of refuse derived fuel each year using residual waste, this could easily absorb all of Argyll and Bute's residual waste and would have the effect of purchasing an "off the rack" fully BMW ban compliant solution.

- 4.9.5 The brokered solution would not require an investment in RDF production facilities within Argyll and Bute and therefore does not rely on having significant economies of scale in feedstock as this risk would be absorbed by Avondale. In addition this would require no change in the existing residual waste collection methods already in use.
- 4.9.6 Currently Perth and Kinross and Falkirk councils have signed up to the Scottish government brokered solution. This site is situated on the east coast which would make transporting waste from Argyll and Bute logistically challenging and expensive.
- 4.9.7 Further details on the elements to consider on the Scottish Government Brokered solution can be found in Appendix 5

### **Conversion of Existing MBT plants to IVC/RDF producing plants**

- 4.9.8 Working with our existing waste PPP partner Renewi we have formed an officer joint working group to explore the potential for a technical solution to the BMW ban that would make use of current disposal facilities at Dalinlongart, Moleigh and Lingerton. To date officers have explored various options such as anaerobic digestion and the construction of a WtE incineration plant. However, these options were found to be impractical as laid out in 4.8.
- 4.9.9 A proposal was put forward by Renewi's technical experts to convert the existing mechanical biological treatment (MBT) plants into IVC plants. Renewi estimate that this could extract 40% of the biodegradable element from the residual waste.
- The 40% of waste extracted would be treated through the IVC process and rendered inert enough (AT4 standard) to be landfilled under the terms of the BMW ban.
  - The remaining 60% of the residual waste would either be baled or

compressed in to briquettes of RDF. The RDF produced would then in turn be stored in a secure warehouse and then sold on the open market to either domestic or foreign WtE operators.

4.9.10 Further Details on the elements to consider on the Conversion of Existing MBT plants to IVC/RDF producing plants solution can be found in Appendix 5.

### **Helensburgh and Lomond**

4.9.11 Regardless of whatever option is chosen, a transfer station will be required to service Helensburgh and Lomond. This transfer station would enable us to transport our waste both residual and co-mingled recyclate further into central belt freeing us up to seek the cheapest/ best price for the processing of our waste. This proposal was put forward and agreed as part of the 2017 budget decision and around £90k has been earmarked for this purpose.

### **Islands**

4.9.12 Argyll and Bute Council currently operate two combined civic amenity and landfill sites in the Islands area:

- Gartbreck on Islay – with capacity beyond the 2021 date of the BMW ban;
- Glengorm on Mull – with capacity until 2019.

4.9.13 The Council are also responsible for decommissioned landfill operations on Tiree, Coll and Colonsay. These sites are operated as civic amenity sites with the waste arisings transferred to the mainland for disposal.

4.9.14 With the BMW coming into force in 2021 landfill operations on Islay and Mull will come to an end and transfer site operations put in place.

- This change will require capital investment utilising funds which are already earmarked for capping and restoration around £1.4m.
- Currently BMW and other residual waste produced on Islay and Mull is landfilled on the islands. Residual and BMW from Jura and Iona is landfilled on Islay and Mull respectively. 3420 tonnes of residual waste containing BMW is predicted per annum for both Islay and Mull.
- Currently co-mingled recyclate from bring sites, households and the civic amenity sites is sorted, baled and taken off the Islands for sale at market regularly.
- Waste electrical and electronic equipment (WEEE) waste, glass waste and scrap metal waste are also taken off the islands regularly. Waste from these streams are valuable commodities and through their sale a percentage of the haulage costs are recouped.

4.9.15 Estimated haulage including ferry costs for non-residual waste including BMW for Mull, Islay and Tiree for 2018/19 is approximately £170k as detailed in Figure 6.

Figure 6.

Estimated Island Haulage Contract Cost	
Island	Est. Cost
Islay	£82,320
Mull	£54,316
Tiree	£31,560
<b>Total</b>	<b>£168,196</b>

4.9.16 In order to comply with the BMW ban, 3420 tonnes of residual waste containing BMW would have to be collected and then transferred to the mainland via haulier and ferry/ commercial cargo vessel.

The BMW would then be taken to the mainland for disposal at:

- A Waste Disposal facility in mainland Argyll operated by Renewi (formerly Shanks) - Extracting the BMW element and disposing of it through Composting, processing the remaining residual in refuse derived fuel (RDF) for sale on the market.
- Another 3<sup>rd</sup> party disposal facility producing RDF in the Central belt;

4.9.17 Any technical disposal solution we adopt must tie up with a compatible collection methodology. Due consideration will be given to how we collect waste, what containers we use and what vehicle we use to collect the material. The optimum waste strategy may require a change to waste collection services.

#### **How will we appraise the options:**

4.9.18 Once this report is endorsed an options appraisal document will be drafted and costed BMW ban compliant solutions will be prepared for submission and approval at an appropriate future committee.

This options appraisal document will include:

- Detailed technical operating models and diagrams;
- A full comparative costing of each option factoring in cost over life span;
- Detailed impact assessment of each technical solution on waste collection operations.

#### **How we will consult**

4.9.19 A draft of the waste strategy detailing a final option appraisal will be prepared for approval by members and then released for public consultation early in 2019. Further information on the public consultation process will be included in the next committee report.



Key Stakeholders that will be invited to comment include:

- Renewi
- Third Sector Partner organisations
- Scottish Government
- SEPA
- Zero Waste Scotland
- Caledonian MacBrayne
- Other waste service providers
- Neighboring local authorities

## **Next Steps**

4.10 Following the endorsement of this report, the options appraisal document will be prepared and presented to EDI for a decision on the preferred solutions to the BMW ban. The results of this appraisal will be combined with the other measures and will form the basis of the waste strategy document.

4.10.2 The draft waste strategy including the waste asset plan and revised waste financial model will be prepared for approval by EDI in December prior to releasing the draft strategy for public consultation.

## **5.0 CONCLUSION**

5.1 The Council faces the challenges of delivering statutory waste services with limited resource over a huge geographical area in a constantly evolving regulatory landscape.

5.2 The development and implementation of a holistic waste strategy is the only option capable of resolving these issues and preventing both non-compliance, retaining control of spending and preventing increasing costs.

## **6.0 IMPLICATIONS**

6.1 Policy

The Waste Strategy will support the stated outcomes in the Argyll and Bute Outcome Improvement Plan by enhancing and developing community led and developed Waste Solutions. By adopting the approach that Waste is a strategic resource that can be utilised within the communities producing it the environmental and economic benefits of local solutions can be maximized.

The Waste strategy is also clearly linked to outcomes of the Corporate Plan:

Our Approach (Section 2.2):

- The Waste Strategy will identify the most efficient way to deliver waste services across the Council area.
- It will explore opportunities for commercial exploitation of waste
- It will support existing relationships with 3<sup>rd</sup> sector partners and develop frameworks for future involvement.

#### Getting it Right (Section 3.0)

- The Waste Strategy will ensure that we have compliant systems for the processing of waste.
- Best Value and effective management of Council resources is built in to the options appraisal process of the Waste Strategy.

#### Measuring our Success (section 4.0)

- The Waste Strategy and its proposed solutions will be subject to regular reporting and the Council's Performance Improvement Framework.

#### 6.2 Financial

This report and its appendices highlight financial pressures in future years as a result of major service changes over the next 10 years.

#### 6.3 Legal

Various - detailed in the report.

#### 6.4 HR

Potential future impact on staff numbers/ deployment.

#### 6.5 Equalities/Fairer Scotland Duty

The Waste Strategy seeks to provide a framework in order to ensure an equitable service to all residents and businesses across ABC. As part of requirements under the Fairer Scotland Duty this report and its outcome were assessed through an Equalities Impact Assessment. At every reporting stage of the production of the Waste Strategy a Full Equalities and Socio-Economic Impact Assessment will be carried out.

#### 6.6 Risk

Financial Risks have been identified in the report and have been included in the Risk Register.

#### 6.7 Customer Service

Various Contractual and Legal obligations.

**Executive Director of Pippa Milne**

**Policy Lead Cllr Roddy McCuish**

[Insert date report prepared]

**For further information contact:**

Peter Leckie 0154 660 4509

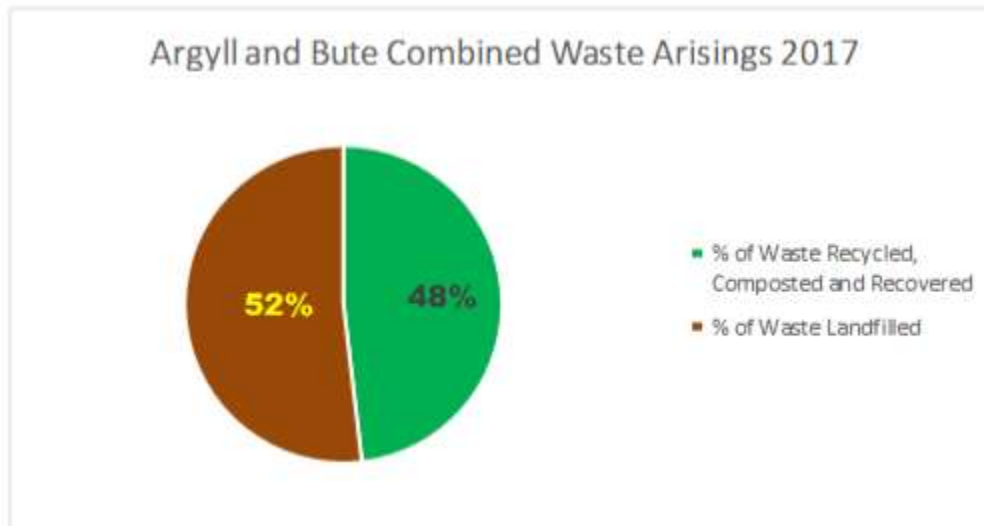
John Blake 0154 660 4546

## APPENDICES

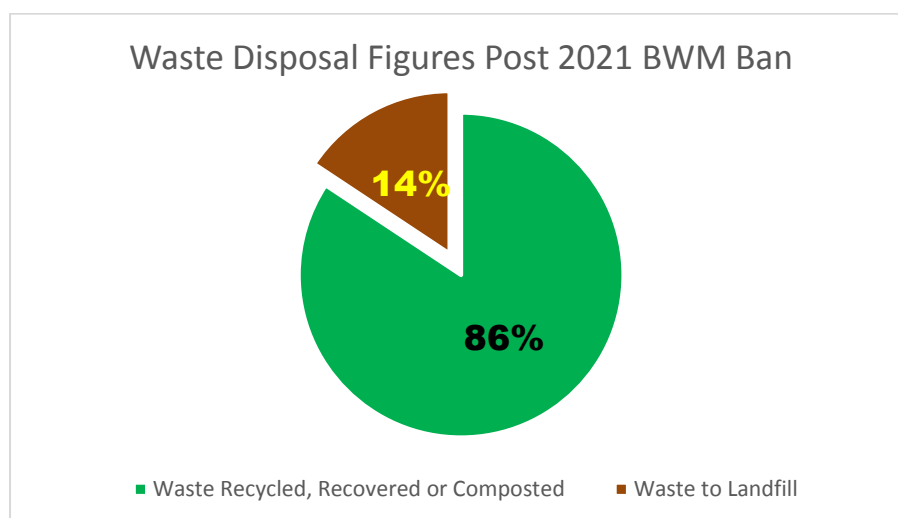
### Appendix 1

#### Recycle, Recovery, Composting Rates

In 2017 48% of Waste in Argyll and Bute was Recycled, Composted or Recovered; as detailed below.



Using current Waste figures as a baseline we are able to predict what the likely level of Landfill will be in 2021 after the BWM ban comes into force. Assuming full compliance with the terms of the ban, 86% of our Waste will have to be recovered, recycled or composted.



## **Results of the 2014 Composition Study**

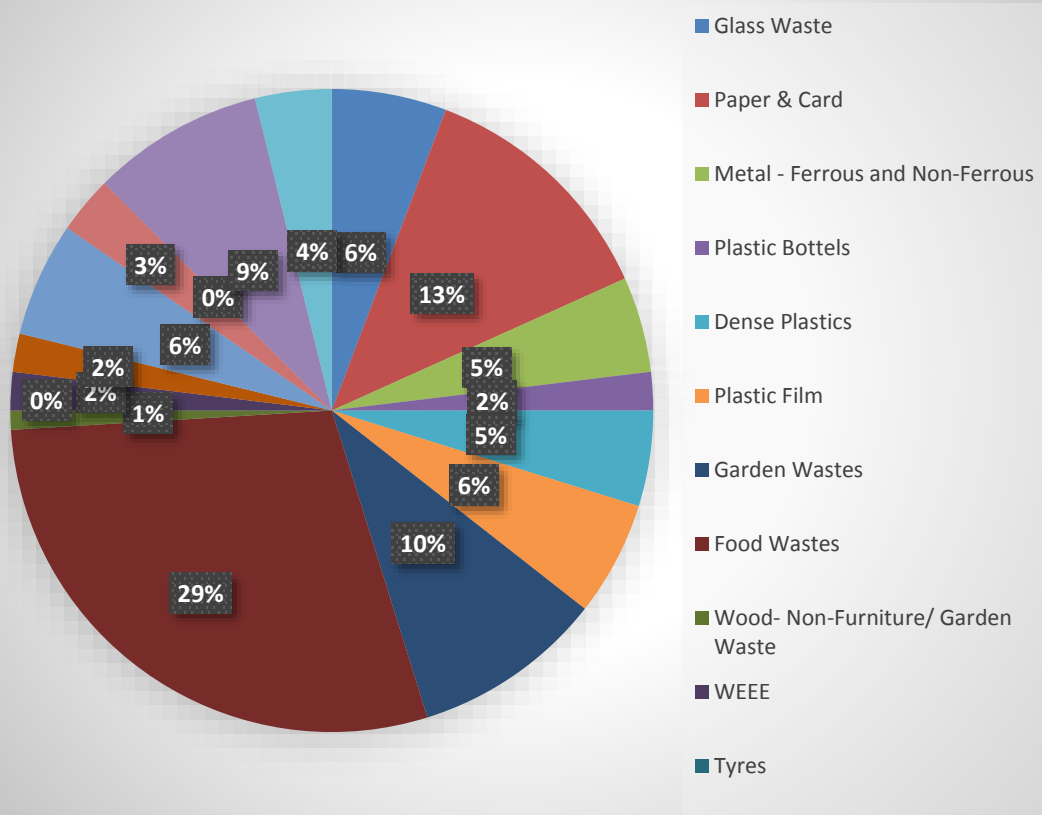
### **Dunoon (PPP Area)**

- The contents of the green residual waste bin could potentially be reduced by 49% if all recycling options were utilised;
- Food waste accounted for 28% of the green residual waste bin;
- Changing green bin collections from weekly to fortnightly could provide a significant reduction in the amount of materials disposed (this change was made in Cowal during spring 2015 with a further change to 3 weekly).

### **Islay (Islands Area)**

- The contents of the green waste residual waste could be potentially reduced by 36% if all recycling options were utilised and through residents composting;
- Food waste accounted for 32% of the green residual waste bin;
- Efforts could be made to increase public awareness about what materials could be diverted from the green bin to the blue bin and recycling sacks;
- Results indicated that there was the potential to double the materials in the recycling sack and in the blue bin by almost 20%.

## Combined Waste Composition



	Waste Stream	Dunoon %	Islay %	Combined %
1	Glass Waste	7	5	6
2	Paper & Card	14	11	13
3	Metal - Ferrous and Non-Ferrous	5	5	5
4	Plastic Bottles	2	1	2
5	Dense Plastics	5	4	5
6	Plastic Film	5	6	6
7	Garden Wastes	15	5	10
8	Food Wastes	28	32	30
9	Wood- Non-Furniture/ Garden Waste	1	0	1
10	WEEE	2	1	2
11	Tyres	0	0	0
12	Miscellaneous Combustible	2	1	2
13	Textiles & Footwear	4	7	6
14	Miscellaneous Non-Combustible	1	5	3
15	Hazardous Waste	0	0	0
16	Healthcare Waste	9	9	9
17	Fines	1	7	4

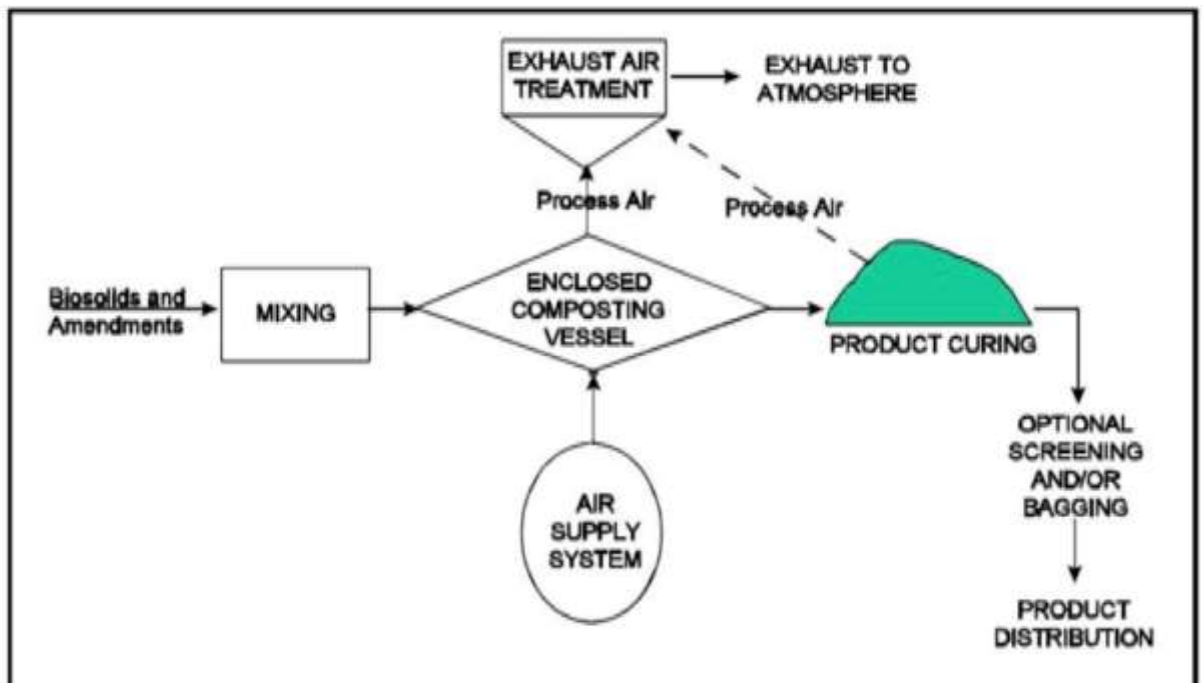
## Appendix 2

### IVC: What is in-vessel composting?

In-vessel composting (IVC) can be used to treat food and garden waste mixtures. These systems ensure that composting takes place in an enclosed environment, with accurate temperature control and monitoring.

There are many different systems these include:

- Containers
- Silos
- Agitated bays
- Tunnels
- Rotating drums
- Enclosed halls.



In vessel composting has three stages before the compost is screened for use.

Stage 1:

- The food waste, which comes primarily from local authority waste collections, either separate or already mixed with garden waste, as well as commercial and industrial sources, is delivered to an enclosed reception area.
- Firstly, any contamination such as plastic bags or metal cans are removed before it is shredded to a uniform size and loaded into what is known as the first 'barrier', which will be a bay/ tunnel etc. depending on the system used.
- All the material delivered to a facility, plus the first barrier stage, is considered a 'dirty area' under Animal by Product Regulations. The regulations ensure

that strict procedures are in place to prevent cross-contamination of 'clean areas' (where product is processed and stored) from 'dirty areas'.

- The composting process is kick-started by naturally occurring micro-organisms already in the waste. They break down the material, releasing the nutrients and in doing so they increase the temperature to the 60 to 70°C needed to kill pathogens and weed seeds, and meet the regulations for processing animal by product material.

#### Stage 2:

- Stage two normally lasts between seven days and three weeks. The material is transferred to the second 'barrier', where the composting process continues.
- Processing in two stages ensures that all parts of the composting mass reaches the required temperature. The oxygen level, moisture and temperature are carefully monitored and controlled during both composting stages to ensure the material is fully sanitised.

#### Stage 3:

- Once the sanitisation process is complete the compost is left to mature in an open windrow or an enclosed area for approximately 10-14 weeks to ensure stabilisation.

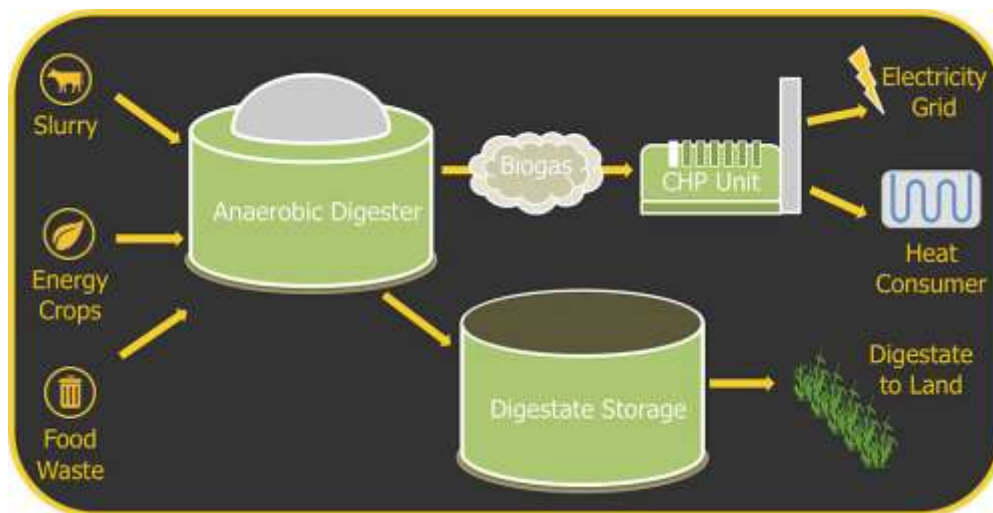
Screening usually takes place pre or post maturation, to produce a range of product grades suitable for various end uses such as soil conditioning. The compost can be used in a range of places including:

- In gardens
- On brownfield sites
- Landscaping
- Agriculture

The processing of all Animal by-products, including municipal kitchen waste, must comply with the Animal by product regulations. These were introduced in 2003 to ensure that all meat and other products of animal origin (including catering waste from domestic kitchens) meet the treatment standard required to guarantee the protection of the environment and human health.

### Appendix 3

AD is a treatment applied to organic waste. It is a series of biological processes in which microorganisms break down food waste, manure etc. in the absence of oxygen. The process results in the production of biogas, a methane-rich gas, which once it has been cleaned is used either in a power generation unit or a combined heating power unit within the site. The by-product of AD is fertilizer used in the enrichment of soil for farming and land management. This process is shown below:



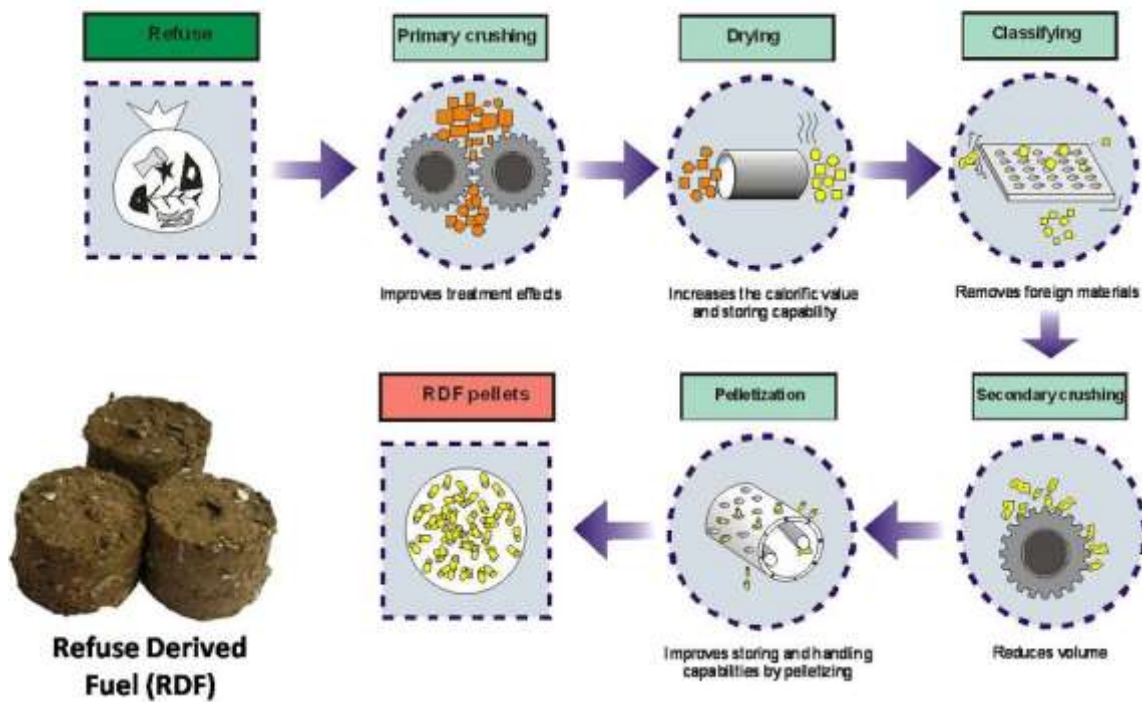
RDF is produced from domestic and business waste, which includes biodegradable material as well as plastics. Non-combustible materials such as glass and metals are removed and the residual material is then shredded.

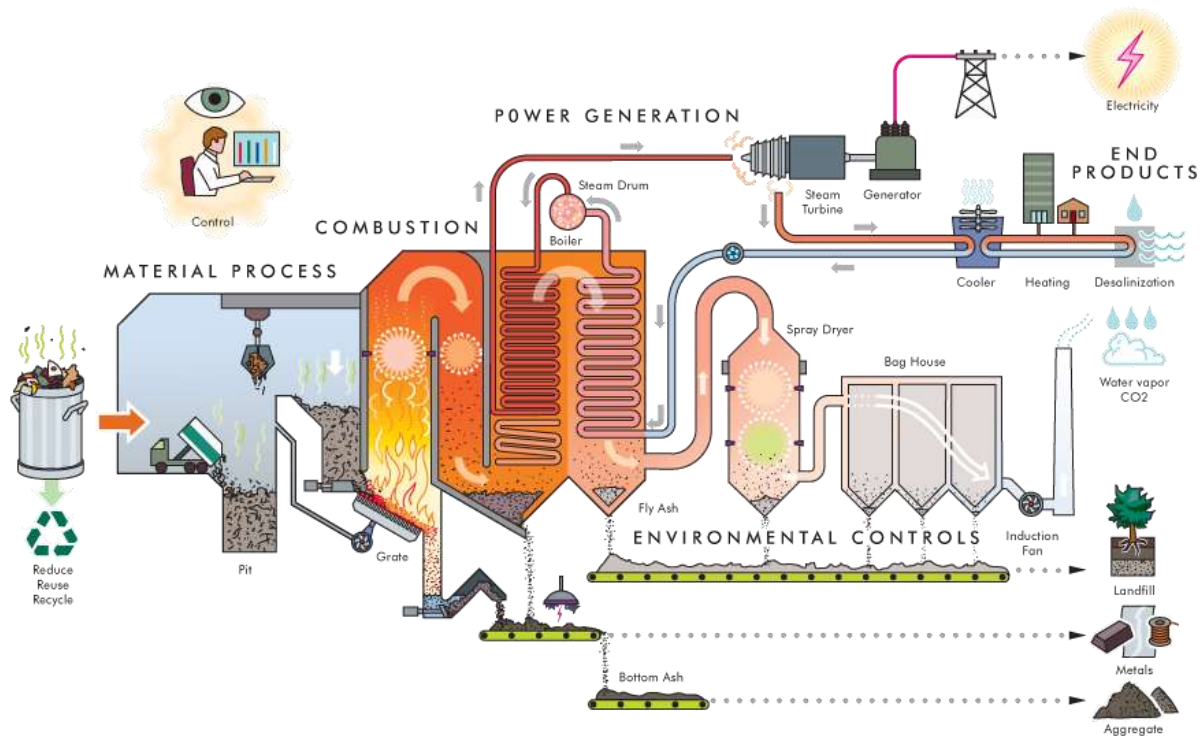
RDF is used to generate energy at WtE incineration plants. Many of them in Europe where they produce electricity and hot water for communal heating systems, there are increasing numbers of future WtE plants using RDF as a feedstock planned across Scotland and the UK. Details of the RDF production



and the incineration process are shown below:

## Refuse Derived Fuel (RDF) Process Flow Plan





## Appendix 4

### WtE Feasability Analysis

For building and operating our own WtE to be considered a viable solution there are several key aspects that would have to be considered:

- High Construction Costs - ranging from £2.5m for a small 1Mw Plant to £25m for a larger facility;
- Long payback periods depending on the size of the facility;
- Location of the facility and associated environmental and public concerns;
- The recruitment and training of skilled staff to operate and administer the plant;
- Development of a logistics operation to transport BMW and other feedstock to the WtE Plant, and to take away the digestate/ fertiliser by product;
- High operating/maintenance cost;
- Continuous supply of feedstock, necessitating the import of feedstock from other areas;
- Any WtE plant must meet Designated Network Operator (DNO) Generation

Standards to be connected to the grid;

- Access to market for the sale of digestate/ fertiliser by product;
- Eligibility to government environmental schemes such as the Feed-in Tariff and the Non-Domestic Renewable Heating Initiative;
- The need for robust business continuity measures.

The Council does not have the financial resources to deliver any of the identified proposals without borrowing.

A partnership approach was also considered between the DNO, local businesses and the community in order to develop the chosen proposals from the feasibility stage through construction into operation. However, this would be extremely difficult and costly to implement and would leave open questions of ownership, liability and benefit. In addition the current PPP provider would need to be brought on board to develop this proposal. This would require significant negotiation and either a side agreement or contract variation. Renewi have already indicated that the PPP funders are likely to view any Argyll and Bute operated WtE solution as a high risk commercial non-viable option.

## **Appendix 5**

### **Things to consider:**

#### **Scottish Government brokered RDF solution:**

The model detailed by Avondale has 3 issues, the impacts from which will be modeled and considered as part of the options appraisal process:

- Logistics - Transport of the Waste is not included in the deal. The cost to transport all of Argyll and Bute's waste to the disposal plant would be considerable and would have to be borne solely by the Council, unless additional financial support was received from the Scottish Government to offset this.
- PPP Contract commitments-
  - If this approach was to be identified as the preferred solution a contract variation with all parties' (including the PPP funders) agreement would be required prior to implementation. It should be noted that the last contract variation to deliver in co-mingled recycling cost approximately £250k, took two years to introduce and was a considerably less complex issue with less risk.
  - Existing Facilities at Lingerton and Dalinlongart would switch to waste transfer stations. Conversion works and decommissioning of the MBT

equipment would be required before any transfer operation could take place.

### **Cost**

- There would be additional resources needed to overcome contractual issues with Renewi both in terms of finance and staff resource, there may also be a rise in operational costs.
  - If the Scottish government brokered RDF solution is adopted it might become necessary to buy ourselves out of the contract with Renewi. This would cost around £2m and would also see a stop on further PPP support funding from the Scottish Government.
  - Haulage Contracts or a Council waste haulage fleet would need to be put in place. Currently the Council does not have any large haulage vehicles or qualified operators. To create this service would take significant investment and require an ongoing commitment of at least seven years of continuing operating costs.
  - Island ferry and haulage costs- transiting Waste from all of the inhabited islands to Avondale for conversion to RDF would cost around £200k per annum. This service would also rely on Caledonian MacBrayne being able to accommodate around 280 additional trips of a large haulage vehicles in the already stretched fleet.
  - It is unlikely that adopting this approach would save the Council any money when compared to current landfill tax costs.

### **Conversion of Existing MBT plants to IVC/RDF producing plants**

There are also several issues that must be considered as part of the options appraisal process. These issues can split down into 2 areas - cost and contractual implications:

#### **Cost**

- The conversion costs of switching the operation from MBT IVC has been estimated by Renewi to be around £1.5m. This does not include the construction of one or more storage facilities for the produced RDF which we conservatively estimate to be between £500k and £1m.
- The operating costs of the IVC/ RDF facilities are as yet unknown. There is a working assumption on the part of Renewi that there would be no significant increase in operating costs versus the current model, however; this is as yet untested.
- Similarly to the proposed Avondale solution there would be the additional cost of transiting residual waste from our Island sites for disposal at the proposed IVC/ RDF facilities. However we would also have to include additional costs

such as planning and licence changes of our facilities in order to legally accept waste from our Islands. There is no facility to accept waste from our Island sites under our current licence and planning agreement.

### **Contractual options**

- A change of operation of this scale would necessitate a variation of the agreement. This would be extremely difficult to achieve as it not likely to be looked on favorably by the PPP contract funders.
- 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. This would in effect reduce the cost liability for Renewi significantly. However, at the BMW ban working group (May 18) it was agreed between Renewi and Council officers that an equitable solution to the void space issue favoring neither party should be sought as part of ongoing negotiations.
- If the Council were to pursue this option it might become necessary to buy ourselves out of the contract with Renewi. This would cost around £2m and would also see a halt on further PPP support funding from the Scottish Government.
- The PPP contract will be coming to an end in 2026. Provision for this contract end date and the future of the operation needs to be built in to any agreement with Renewi on the adoption of this proposed solution. The waste strategy will provide a framework for process of costing and evaluating any future tenders to carry out the IVC/ MBT operation both external and internal with the Council absorbing the operation.