

## **Zero Waste: Midlothian and City of Edinburgh Councils Commencement of Procurement**

**Report by: John Blair, Director, Corporate Resources**

### **1 Purpose of Report**

This report sets out the background to the Zero Waste Project and the impact of the Scottish Government's recently published Zero Waste Plan.

It also sets out the recommendations from the business case approved by Council September 2009, which has been reviewed in light of the Government's new Zero Waste Plan and the Council's ongoing Waste Management Service Review. These factors have resulted in more certainty of the level of waste to be recycled and the volume of residual waste which will remain for treatment.

Taking full account of the new policy context, the revised business case considers options for the procurement of food and residual waste treatment, including affordability and timing considerations.

This report also seeks approval for the proposed approach to procurement, contract management and site issues.

### **2 Background**

#### **2.1 Project History**

The Zero Waste Project is a joint enterprise with City of Edinburgh Council to procure facilities for the treatment of residual waste. The waste treatment plant, by using a number of technologies, will allow Midlothian Council to further increase the amount of residual waste material that can be recycled and achieve Scottish Government environmental targets.

The project was last considered by the Council on 22 September 2009 when the Project Initiation Document (PID), including the governance arrangements and procurement budget of £3.8 million, was authorised. Approval was also given for the purchase of a project site at Millerhill. Formal commencement of the procurement process of the project was placed on hold by the Project Board to await publication of Scotland's Zero Waste Plan which was published on 9 June 2010.

The Business Case has now been updated to ensure that all new legislative and waste policy developments and changes in the financial environment have been reflected.

The site at Millerhill has now been purchased jointly with the City of Edinburgh Council. An application for planning permission in principle

for waste treatment facilities will be lodged later this year on the completion of an Environmental Impact Assessment and the consultation process. It is anticipated that a decision will be made before the procurement of residual waste treatment commences, which will increase market confidence.

A joint project with City of Edinburgh Council allows the Council to benefit from the considerable economies of scale that Edinburgh's tonnage brings to the project by lowering the anticipated gate fee.

## **2.2 Scottish Government Zero Waste Plan**

The Scottish Government's revised National Waste Strategy, the Zero Waste Plan, was published in June 2010. This plan outlines a number of new key policy areas of particular significance to this project:

- Require the introduction of separate food waste collections by 2013
- Ban recyclable waste from landfill from 2015 and
- Ban biodegradable waste from landfill from 2017
- Target of reducing landfilling of waste to 5% by 2025

## **2.3 Tonnage managed by Midlothian Council**

Midlothian Council managed 49,900 tonnes of waste in 2009/10 (48,200 tonnes of Municipal Solid Waste (MSW) and 1,600 tonnes of Industrial Waste).

It is expected that, due to changing demographics in terms of house numbers, and the reduction in the amount of waste generated per household, that the total waste managed by Midlothian Council will drop to 47,000 tonnes of waste by 2017/18 (45,400 tonnes of MSW and 1,600 tonnes of industrial waste). This is expected to rise to 53,200 tonnes by 2041/42 based on house growth projections.

The recycling rate for Midlothian Council in 2009/10 was 41.2% of MSW. Through the implementation of the proposed new measures outlined in the Service Review Council Report, this is expected to rise to more than 52% of all waste being recycled by 2012/13. One of the new measures is a separate Food Waste collection which is anticipated to result in 4,200 tonnes of food waste which will require treatment.

The remaining residual element of 22,200 tonnes of waste (47.3% of all waste) in 2017/18 – the proposed date of implementation of the landfill ban – would require pre-treatment prior to disposal to landfill, rising to 25,000 tonnes by 2041/42, based on current projections.

## **2.4 Waste Treatment Capacity**

A final review and assessment has now been completed by the Project Team and considered by the Project Board.

The Scottish Government's intention to mandate Councils to introduce separate collections of food waste by 2013 and send only inert or pre-treated waste to landfill from 2017 provides an added imperative to the Zero Waste Project business case and effectively rules out the 'do nothing' option.

The landfill ban will apply to all commercial and industrial waste as well as municipal waste and similar bans are under active consideration in England and Wales. The cumulative impact will be an increase in demand for waste treatment capacity which cannot be met by existing facilities.

It would therefore be prudent to commence the procurement process at an early date to reduce the risk of increased costs as a result of a limited number of technologies and technology suppliers – all of whom have to source and import materials from abroad – as recently experienced in Germany.

## **2.5 Project Scope**

The original scope of the project, as set out in the approved PID, was essentially residual waste treatment only. However, in the earlier stages of the Project it was recognised that there was the potential for food waste treatment to be included. Following publication of the new Zero Waste Plan, the collection and treatment of food waste is to be made mandatory and is in line with the Council's Environmental Policies. It is therefore intended to expand the scope of the Zero Waste Project to include for the treatment of food waste.

The proposed scope for the Zero Waste Project will complement the waste reduction and source segregated recycling activities of the Councils by dealing only with the food waste collected and the residual waste left after maximum practicable efforts by the residents and businesses to present material for recycling. The Zero Waste Project will also ensure additional recycling from the remaining waste where practicable.

The Waste Management Service Review, brought before the Council on 15<sup>th</sup> September 2010, outlined initial proposals to introduce a food waste collection for all households in October 2011. The Director, Corporate Resources intends to bring forward a further report to a special Council meeting in November on the detailed operational aspects of introducing further recycling schemes in Midlothian.

## **2.6 Option Appraisal**

A detailed options appraisal was carried out by the Project Team to determine the best approach to procurement. To assist in this appraisal a reference case was developed with an annual tonnage capacity of:

- 30,000 for anaerobic digestion (AD) of food waste
- 200,000 for mechanical biological treatment (MBT) of residual waste

- 100,000 for energy from waste (EfW) from fuel prepared by the MBT process.

These tonnages are based on the projected residual waste and the different waste streams that make up the combined total waste collected by Midlothian and City of Edinburgh Councils, plus additional capacity to allow flexibility in the contract between the Councils and the Waste Treatment Plant operator.

Using this reference model five different options were assessed against set criteria, as detailed in Appendix 1.

This option appraisal concluded that separate procurements for Food and Residual Waste Treatment was the preferable solution, which would deliver a food waste treatment facility in financial year 2013/14 and a residual waste treatment facility in financial year 2017/18.

Until the landfill ban is in place it is unlikely that there is a commercially sound case for treating residual waste before financial year 2017/18. It is also likely in the early years of the project that the gate fee for residual treatment facilities will be greater than that of landfill. Given the severe financial pressures on the Councils in the early years, it is proposed that residual waste treatment is operational by financial year 2017/18 to coincide with the introduction of the landfill ban. In procurement terms however, it will still be possible to consider earlier commencement dates but only where this provides value for money and is affordable e.g. if bidders propose gate fees for the waste treatment plant that are less than the cost of landfill.

Currently, there is very limited food treatment capacity operational in Scotland and there is substantial risk in relying in the long term on market led facilities when there will be increasing demand and the Councils will have little control. The Project Team concludes that procuring food waste treatment and residual waste treatment separately with the Millerhill site as the preferred location is likely to provide a value for money solution for both Councils. This is particularly related to the need to secure treatment facilities for food waste treatment earlier than residual treatment. The earliest possible start date for food waste treatment facilities is anticipated to be financial year 2013/14, which is consistent with the Zero Waste Plan mandatory requirements.

## **2.7 Procurement Issues**

### Delivery Model

Having assessed a number of different contract options, the Project Team has identified the Design, Build, Finance and Operate (DBFO) option as most likely to provide the best overall value to the Council for both the Residual Waste Treatment and Food Waste Treatment procurements.

While a DBFO contract is currently viewed as the preferred way forward, there will still be an opportunity during the procurement

process to consider an injection of capital from public sources if it could be demonstrated that this provided added value to the Councils whilst at the same time not adversely impacting on the overall risk of the project to the Council.

If the option to finance the project fully (either prior to, or following, the construction phase) from the Council's General Services Capital Plan resulted in no need for third party finance then the Design and Build (DB) and Design, Build and Operate (DBO) models would be reassessed. However, this would need to be considered in the context of the other issues which have reduced the current scoring for these solutions.

Appendix 2 provides greater detail on the options considered and the assessment criteria used.

### Interface with Council Team

The Project Team are working closely with the Council's Waste Management Service to ensure a joined up approach (e.g. use of common assumptions on waste flows). A planned start in the commencement of procurement of the residual waste treatment facility until spring 2011 will allow for greater clarity on the operational requirements and proposed recycling levels. This will help the Zero Waste Project ensure that facilities are sized accordingly to receive the food and residual waste remaining.

By adopting a flexible, non-prescriptive approach to technology, bidders will have the opportunity to consider all options on a commercial basis and put forward the most cost-effective solutions.

### Site Access

To reduce Project risks and provide greater certainty of a 2013/14 start date for food treatment, it is proposed that the Zero Waste Project Team bring forward a costed proposal to the Councils to commence planning, design and construction of the necessary new site access.

### Governance Arrangements

The Councils have already agreed governance arrangements for the procurement stages. A Lead Authority approach is recommended for Contract Management Stage and a Joint Working Agreement (JWA) is being produced on that basis. As soon as the Councils' Legal Officers have finalised the proposed JWA, a further report will be prepared for Council proposing the Lead Authority approach.

### Market Interest

To date there has been strong market interest in this high value contract and Scotland's Zero Waste Plan has now provided greater policy clarity. An early procurement following the publication of the Zero Waste Plan will be seen widely as a very positive move by the potential bidders.

### **3 Report Implications**

#### **3.1 Resource**

The project team has provided the Council with project specific costs to allow the Council to assess the likely cost of the project. This assessment will take into account full systems costs and interfaces with waste collection services.

##### **Capital Costs**

There is very limited capacity in Scotland for food and residual waste treatment. Provision of Millerhill as a preferred site for facilities is considered as the most effective way to open up the procurements to suppliers that do not have their own sites in the area and so reduce the risk of reliance on merchant facilities longer than necessary.

In January 2010 Midlothian Council and City of Edinburgh Council jointly purchased a site at Millerhill. To improve access to the site to a standard acceptable to allow for vehicular movements to and from the new treatment facilities, detailed proposals to upgrade the road network from the north of the site to the Fort Kinnaird retail park will be brought forward in the near future.

At this early stage, it is estimated that this will cost £1.9m in total over financial years 2011/12 and 2012/13, which at an anticipated split of 80/20 will require £0.38 million funding from Midlothian Council's General Services Capital Plan. Further information will be presented to Council following the detailed costing exercise to be undertaken by the Zero Waste Project Team.

##### **Revenue Costs**

###### **Development Phase**

The Council previously approved a Project Development Budget of £3.8 million on 22 September 2009. The budget was designed to cover the costs of a residual waste procurement.

Despite slippage due to the publication of the Scottish Government's Zero Waste Plan, and the recommendation to procure Food Waste treatment facilities alongside a Residual Waste treatment facility, the Zero Waste Project Team are expected to manage the total cost for both procurements within this original £3.8 million budget.

###### **Contract Phase – Residual Waste**

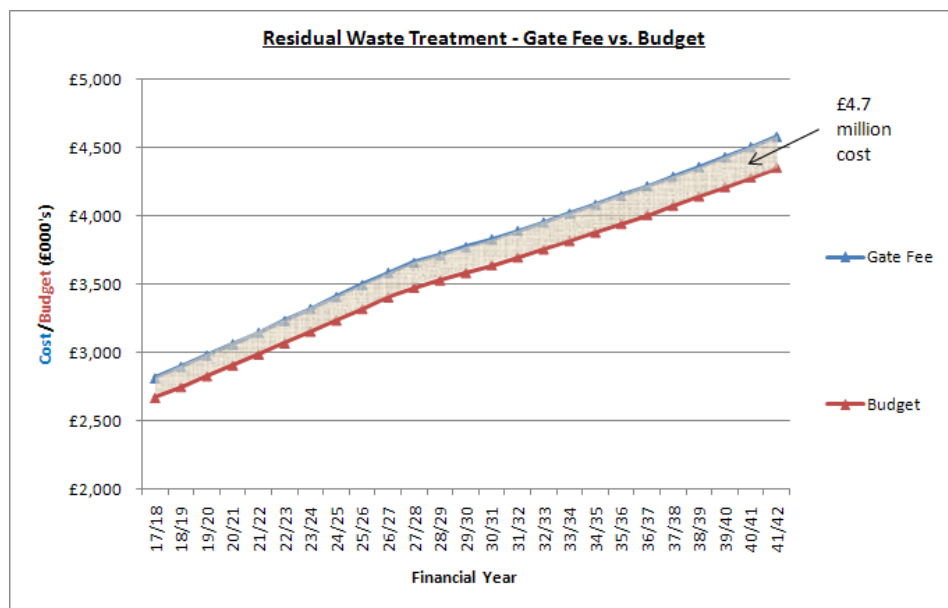
The previously modelled assumption that a landfill ban would not be in place in 2017/18 would have resulted in an estimated cost of residual waste disposal for Midlothian Council of £2.669 million in 2017/18. At projected rates of inflation, the cost of disposal over the 25 years to 2041/42 would total £100.9 million.

However, direct disposal to landfill will no longer be an option as a result of Scottish Government policy which bans direct disposal to landfill, instead driving investment in pre-treatment through a residual treatment facility.

To consider the likely gate fee price for a residual waste treatment facility at Millerhill in 2017/18, Ernst & Young have carried out a benchmarking exercise which provides information on Gate Fees for other residual waste treatment projects in the UK.

An analysis of this indicates that for residual treatment projects which are comparable in size and technology mix to the Zero Waste Project, the estimated treatment cost for the Council's residual waste is £2.814 million in 2017/18, and £93.4 million in total over 25 years.

The recommended solution will result in an initial net cost of £146,000 in 2017/18. Profiled over 25 years, this will result in a total additional cost to the Council of £4.7 million, as shown in the shaded area of the graph below:-



This cost pressure could be mitigated through the Zero Waste Project Team utilising the competitive procurement process to drive down the gate fee price to provide both Midlothian and City of Edinburgh Councils with a more economically advantageous solution. Options to reduce the cost to the Councils include the injection of public funds to finance the asset, or allowing bidders to treat residual waste from other Local Authorities. For this reason the OJEU Notice will include reference to waste from third parties including other named local authorities who have expressed an interest in using the facility.

### Contract Phase – Food Waste

It is anticipated that the gate fee for a food waste treatment facility will be delivered within the same cost envelope as the assumptions used in

the initial Waste Service Review modelling, previously reported to the Council Seminar on 15<sup>th</sup> September 2010.

As indicated in Section 2.5, the Director, Corporate Resources will prepare a further report to a special Council meeting on the detailed operational aspects of increasing recycling in due course.

### **3.2 Risk**

Failure to secure treatment outlets for food and residual waste would prevent the Council from achieving the vision of towards a Zero Waste Midlothian (as approved by the Cabinet on 17 June 2008) and meeting recycling/landfill targets outlined in the Zero Waste Plan.

Delaying procurement with the introduction of landfill bans will result in unprecedented demand for treatment capacity, with a limited number of technology suppliers and therefore a high risk of increased costs.

Estimates have been made on the economic value for both inputs and outputs from these facilities. It should be noted that price variations and changes in available markets could impact on the estimated costs.

The project development budget was initially set at £3.8 million to cover the cost of residual procurement. This included a contingency provision. As a result of the publication of the Zero Waste Plan, the subsequent delay to the procurement process and the recommendation to procure a Food Waste treatment facility in addition, but separate to, the Residual Waste treatment facility, there is a possible risk that, whilst the project team will manage the development costs for both procurements as far as possible within the original £3.8 million envelope, development costs may rise above this figure. Midlothian Council's share of any cost increase – based on the previously agreed mechanism – would be 30%.

The Director, Corporate Resources as a member of the Project Board will specifically arrange for robust monitoring of the Project Development Costs.

### **3.3 Policy**

#### **Strategy**

This project will allow the Council to further achieve its key aims of “reducing the environmental impact of waste” and “moving towards a zero waste society” as approved by the Cabinet on 17 June 2008.

It will also fulfil the requirements of the Scottish Government's Zero Waste Plan and associated recycling/landfill diversion targets.

#### **Consultation**

Five community events have been held, four in Danderhall and one in Dalkeith, regarding the proposal to utilise the site at Millerhill for a waste

treatment facility. A website and email address has also been established to allow residents to contribute to this process.

The Scottish Waste Aware Group, now part of Zero Waste Scotland, carried out an extensive attitude survey of both Edinburgh and Midlothian residents. The views of the Project's Advisers and Scottish Futures Trust have been taken into account.

The planning process will allow residents to have the opportunity to contribute to decisions on the location of proposed treatment facilities.

### **Equalities**

This report is not proposing significant changes to services and therefore has not been assessed for equalities impact.

### **Sustainability**

The Zero Waste Project has positive environmental benefits as outlined in moving towards the more sustainable management of waste, the reduction of waste disposed of to landfill, the capture of additional recyclables and the capture and supply of renewable energy.

The proposed phasing of procurements and operation of treatment facilities has additional environmental benefits in that it ensures that the maximum effort is focussed on waste reduction and recycling initially, prior to sizing of residual treatment facilities.

## **4 Summary**

The Councils will require dedicated treatment facilities as soon as possible to service their long term requirement to separately collect food waste. Residual treatment facilities are required by 2017 in time to comply with the landfill ban.

In line with the Scottish Government's new Zero Waste Plan and taking account of resource availability (i.e. one team delivering two procurements by competitive dialogue) and the need for early delivery of food treatment facilities, it is proposed to stage the commencement of two separate procurements. This timing will also ensure a complementary interface with the Waste Management Service Review.

The procurement process to be carried out by the Zero Waste Project Team will maintain close liaison with the Council's Waste Management department to reduce interface risks. The successful contractor(s) under the Zero Waste Project will be required to treat the waste delivered and achieve additional recycling levels to assist the Councils meet the Scottish Government's recycling targets.

## **5 Recommendations**

It is recommended that the Council:-

- a) Approve the revised scope of Zero Waste: Midlothian and Edinburgh to include treatment of food waste;
- b) Approve that two separate procurements be advanced commencing with Food Waste Treatment in October 2010 and Residual Waste in Spring 2011;
- c) Approve a Lead Authority approach to Contract Management;
- d) That £0.38 million is allocated in the Council's General Services Capital Plan for Midlothian Council's share of the access road works to the Millerhill site;
- e) Note the Director, Corporate Resources intention to provide a detailed operational report to a special meeting of Council in November following the September Seminar on waste management.

**Date: 26 October 2010**

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**Background Papers:**

## Appendix 1 – Options Appraisal

A detailed options appraisal was carried out by the Project Team to determine the best approach to procurement. To assist in this appraisal a reference case was developed with an annual tonnage capacity of:-

- 30,000 for anaerobic digestion (AD) of food waste
- 200,000 for mechanical biological treatment (MBT) of residual waste
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These tonnages are based on the projected residual waste and the different waste streams that make up the combined total waste collected by Midlothian and City of Edinburgh Councils, plus additional capacity to allow flexibility in the contract between the Councils and the Waste Treatment Plant operator.

Using this reference model five different options were assessed against set criteria, as detailed below:-

- Timing/Delivery
- Difficulty to procure
- Market Interest
- Impact of Existing Landfill Contracts
- Risk of Reliance on Merchant
- Exposure to Risk
- Meeting Zero Waste Plan Requirements

A maximum score of up to five points was given to each options under each criteria. The five options were as follows:

- Option 1 - To procure food and residual treatment together with both facilities operational by 2016/17 or earlier (1 procurement);
- Option 2 To procure food and residual treatment together but with phased implementation meaning food waste facilities operational by 2013/14 and residual treatment by 2017/18;
- Option 3 Same as Option 2 but 2 separate procurements;
- Option 4 To procure a residual project only, with facilities operational from 2017/18 with a series of short term contracts for food treatment;
- Option 5 To procure food and residual treatment together with both facilities operational from 2017/18.

In developing the options appraisal and assessment criteria the Project Team factored in the following factors:

- The earliest a Waste Treatment Plan could be built and operational at Millerhill is 2015

- The Zero Waste Plan timescales for reducing landfill, in particular the 2017 date after which no recyclable or biodegradable waste can be sent to landfill
- The different levels of complexity involved in procuring food waste treatment and residual waste treatment and the impact that this has on the procurement timescales. In short, because of the limited solutions available for food waste treatment the procurement process is likely to be significantly shorter. There are more options and solutions available for residual waste treatment and the competitive dialogue process is likely to be more protracted.

The results of the assessment out of a total of 35 points were as follows:

<b>Option</b>	<b>Total Points</b>
Option 1	25
Option 2	24
Option 3	29
Option 4	26
Option 5	26

Option 3, procuring residual waste treatment and food waste treatment separately where food waste treatment is available as soon as possible and residual treatment by 2017/18, scored marginally best overall. The principal benefits are that the different waste treatments can be delivered to coincide with Council priorities and the National Zero Waste Targets. It was considered by the Project Team that this reduced risk outweighed the benefits of any long-term savings that could be realised by combining both treatment streams in one contract. Option 3 also reduces the significant risks of relying on limited treatment capacity elsewhere for food waste.

## Appendix 2: Options Considered and Assessment Criteria Used

The following contract options were identified as being appropriate for comparison:

- Private sector designs and builds with the Councils paying for the asset on completion then operating the facility (DB);
- Private sector designs, builds then operates under a long term contract, with the Councils paying for the asset on completion and for the services as provided (DBO);
- Private sector designs, builds, finances (using corporate or third party finance) and operates under a long term contract with the Councils paying for the services and finance on a monthly basis following completion of the asset (DBFO);
- Councils pay a gate fee for spare capacity in merchant plant(s) on a short term contract (circa 5 years).

These options were then assessed against a list of criteria in a similar manner to the procurement options assessment. Totals were out of 500 with the higher scores representing favoured options.

### Food Waste Options

Criteria	Weightings	DB	DBO	DBFO	Merchant
Time to Procure	15	45	45	30	60
Capital Impacts	15	15	15	75	75
Revenue Impacts/Transport	15	45	45	60	75
Contractual arrangement/ Operational Control	15	75	45	60	15
ZWP Policy Compliance	10	50	50	50	30
Community Benefits/Economic Regeneration	9	45	45	45	9
Risk Transfer	6	6	12	30	18
Site Usage/Asset Reversion/Condition on Expiry	6	18	30	30	6
Cost to Procurement/ Complexity	3	12	6	9	15
Market Capacity and Competition	3	12	6	12	6
Flexibility to Accommodate and Costs of Change	3	9	12	15	3
<b>Totals</b>	<b>100</b>	<b>332</b>	<b>311</b>	<b>416</b>	<b>312</b>

### Residual Waste Options

Criteria	Weightings	DB	DBO	DBFO	Merchant
Time to Procure	15	60	45	30	60
Capital Impacts	15	15	15	75	45
Revenue Impacts/Transport	15	45	45	60	75
Contractual Arrangement/ Operational Control	15	75	45	60	15
ZWP Policy Compliance	10	50	50	50	30
Community Benefits/Economic Regeneration	9	45	45	45	9
Risk Transfer	6	6	12	30	18
Site Usage/Asset Reversion/Condition on Expiry	6	12	24	24	6
Cost to Procurement/Complexity	3	12	6	9	15
Market Capacity and Competition	3	12	6	15	3
Flexibility to Accommodate and Costs of Change	3	9	12	15	3
<b>Totals</b>	<b>100</b>	<b>341</b>	<b>305</b>	<b>413</b>	<b>279</b>

As can be seen from the tables:

- Merchant capacity scored comparatively poorly, mainly due to the lack of Council ownership/control of the facilities, the lack of future consented sites of sufficient capacity in the area and the loss of opportunity for community benefit/economic regeneration. It was considered that merchant facilities afford Councils limited control over proximity, technology or specification exposing them to greater risks;
- DB and DBO also scored comparatively poorly, mainly due to the high capital impact in both cases;
- A further factor contributing to the lower score for the DB option was risk transfer as once the facility is complete, the Councils will be responsible for operation, maintenance and defects once the liability period of the DB contractor expires;
- Further factors contributing to the lower score for the DBO option were risk transfer (as there is no third party funder carrying out due diligence or incentivising compliant performance), contractual arrangements (as standard form waste contract is based on a full DBFO option) and procurement complexity (as DBO is not a commonly used solution, and may involve the entering into by the Councils of two separate contracts with two entities);
- As the Councils have an identified need on a continuing ongoing basis this lends itself to DBFO, which scored best in comparison to other contract options for both long-term food and residual waste treatment;