

ABERDEEN CITY COUNCIL

COMMITTEE	Zero Waste Management Sub-Committee and Council
DATE	3rd and 10th October 2012
DIRECTOR	Pete Leonard
TITLE OF REPORT	Outline Business Case for Waste Treatment Facilities
REPORT NUMBER:	ZWM/12/005 and H&E/12/070

1. PURPOSE OF REPORT

The purpose of this report is to provide members with the findings and recommendations of the Outline Business Case (OBC) that the Zero Waste Sub-Committee instructed officers to produce at the meeting held on 15 February 2012.

The OBC provides the framework for contracting new waste and recycling infrastructure that is required to reduce the increasing costs currently faced and to enable compliance with the Waste (Scotland) Regulations 2012, including the ban on landfilling biodegradable waste from 2020. The regulations implement the ambitious transformation from a throwaway society to one where the value in everything we throw away is recovered outlined in the Scottish Government's Zero Waste Plan.

2. RECOMMENDATIONS

The Zero Waste Management Sub-Committee is asked to support the proposals contained in the report, making any observations/comments for onward submission to the Council meeting on the 10th of October.

The Council on 10th October is recommended to

1. Adopt the following reference case, further defined in the OBC, as the reference for the next phase of Zero Waste Management Project:

Reference Case:

- Construct a new, local windrow composting plant delivered within Waste Management Services Contract
- Construct a new, local In-Vessel Composting plant delivered within Waste Management Services Contract

- Construct a new, local MRF (inc. glass) delivered within Waste Management Services Contract
 - Construct facilities for the interim export of waste, delivered within Waste Management Services Contract
 - Resolve site, planning and financing issues and procure a new Energy from Waste (EFW) facility in Aberdeen for delivery around 2020
2. Instruct officers to make resources available before budgets for 2013/14 are agreed to progress the Zero Waste Project, including the appointment of specialist advisors, dedicated posts (where relevant) and project team support and that the source of this finance (capital or revenue) is agreed.
 3. Instruct officers, once project management resources are in place, to open negotiation with the Waste Management Services Contractor regarding changes to the Waste Management Service Contract, with the objective of delivering more cost effective solutions for Green waste, Food Waste and recyclable materials, and interim arrangements for residual waste export as set out in the OBC;
 4. Instruct officers, once project management resources are in place, to produce a more detailed business case for a local EfW/Combined Heat and Power (CHP) plant and submit this to the appropriate committee(s) for approval; and
 5. Instruct officers, once the revised EfW business case is approved and project management resources are in place, to undertake a formal procurement for a local EfW/CHP plant for Aberdeen.

3. FINANCIAL IMPLICATIONS

The adoption of the recommendations in the OBC will have significant financial implications for the Council in the short, medium and long term:

Short Term (1-2 years).

Waste Management Services Contract Variation costs. External support costs (legal, technical and financial) will be incurred during the negotiation to vary the Contract. These have been modelled to be £40K and are anticipated to be able to be adsorbed within existing budgets in 2012/13 and 2013/4.

Investment requirements for new facilities. Immediate investment is required for the development of the Grove Nursery Recycling Centre

(currently funded through the Revenue budget with enabling works already underway) and a new North of city Recycling Centre. In addition, investment is required to support the expanded Food Waste Collection; this will be the subject of a separate Business Case to be submitted to Housing and Environment Committee in October. Approx. £3M is required for the Recycling Centres and the financial case (summarised below) identifies a mechanism for funding without adverse impact on the Capital Plan

Medium Term (1-5 years)

New procurement costs. The Reference Case identifies the need for a new procurement for residual treatment services and a provision sum of £3M has been identified in the financial model. For modelling purposes only this has been identified as a cost pressure on the revenue budget, however, other mechanisms such as capitalisation or inclusion in the debt funding package will be considered.

Investment requirements for new facilities. This phase sees the delivery of substantial infrastructure in Aberdeen. The financial case estimates that up to £16.3M will be required to construct these facilities; the mechanism to be used to fund this is provided below.

Savings against base case from change in recycling and organic services and interim management of residual waste. The implementation of new recycling and organic (food) waste services as well as the introduction of export of residual waste for incineration will reduce the cost of managing these wastes compared to the 'Do Nothing' base case. The extent of this saving will be determined following negotiation with the Waste Management Services Contractor.

Long Term (5-25 years)

Investment requirement for EfW/CHP facility. The capital cost of the EfW/CHP facility will vary greatly dependent upon type of technology and service offered by tenderers. An estimate of between £30M and £70M has been provided in the Financial Case. This scale of finance is not considered to be viable from within Council borrowing capacity and so is likely to be externally financed through the contracting process. More detail and analysis of this element will be undertaken in the proposed Business Case for EfW/CHP.

Savings from implementation of residual treatment facilities. The Economic Case, based on a series of conservative (high) cost estimates demonstrates that the Reference Case will deliver £8.527 M savings over the term of the OBC. It should be noted that this is a nominal comparison given that the Base Case is, in effect, not viable beyond 2020 when regulation will ban landfill of general waste. The key conclusion from the OBC is that a more affordable solution is available than the 'Do-Nothing' Scenario.

The following Table lays out the range of services and infrastructure to be delivered through adoption of the reference case with indicative timescale for introduction.

4. OTHER IMPLICATIONS

The adoption of the Reference Case will:

- Allow the introduction of Food Waste Collections to all households in Aberdeen by 2015
- Allow the introduction of a Co-mingled Recycling collection for all households in Aberdeen by end of 2015/16
- Increase recycling rates to a minimum of 56% by 2025
- Reduce landfill to a de minimis level (less than 5% 2015)
- Allow compliance with new regulations banning landfill of general waste after 2020
- Provide the opportunity to deliver low-carbon heat and power to businesses and housing in Aberdeen from 2020

There are implications for the existing Waste Management Services Contract. This services delivered under the contract will be substantially reconfigured; legal advice has been taken to ensure that the proposed course of action is acceptable within both the terms of the Contract and procurement regulations and mechanisms will be put in place to demonstrate Best Value is achieved.

As with any major transformation of services; there are risks associated with the implementation of the Zero Waste Project. These risks include the variability in quantity and quality of waste produced in Aberdeen over the next 25 years. This risk is reflected in the capacity of new equipment and its ability to manage the changing waste produced. The OBC assesses these risks and identifies that the Reference Case is capable of mitigating these risks providing appropriate contracting measures are taken. There are particular risks relating to the residual treatment solution; these will be further examined in the development of the Business Case for EfW/CHP.

5. BACKGROUND AND MAIN ISSUES

The Outline Business Case (OBC) document is appended to this report. The document sets out the background, current position and future options for waste processing to meet the objectives set out in the Council's Waste Strategy, to meet national legislation and mitigate future cost pressures.

5.1. Policy drivers

There are several policy drivers for change arising from a range of statutory and "aspirational" policies, directives and targets, including the following:

- EU Waste Framework Directive
- Scotland's Zero Waste Plan

- Waste (Scotland) Regulations 2012
- Aberdeen City Waste Strategy 2010-2025

Together, these point to the need for significant improvement in recycling performance, and reductions in the amount of biodegradable material going to landfill.

Local targets for Aberdeen have been based on statutory requirements and are set out in the City Waste Strategy as follows;

- Source Segregated Recycling: 45% by 2013
50% by 2020
56% by 2025
- Organic: Collections for all households by 2013
- Residual: 45% (or less) by 2020
40% by 2025
- Landfill: 5% (or less) by 2025
- Growth: Waste arisings (gross tonnage) stable by 2015

The Strategy sets out realistic objectives for waste recycling, but these do not match the national “aspirational” national target of 70% set for 2025. Experience elsewhere in Scotland, the UK and Europe in cities with similar multi-occupancy housing mixes has demonstrated that reaching such very high rates becomes progressively more difficult and disproportionately more expensive. The approach set out in the Strategy seeks to strike a balance between what is realistically achievable and affordable.

This approach may carry some risk in that a future Scottish Parliament may require and enforce high recycling rates, as has already happened in Wales and is being considered in Northern Ireland. However, informal discussions with Zero Waste Scotland (ZWS) and government representatives has suggested there are no plans to do so in Scotland, so at present the risk is considered to be low.

The Strategy identifies the desirability of developing local processing facilities in or near the City for green waste, kitchen waste and recyclables as well as the need to support extensive promotion, education and enforcement activities to ensure the ‘Reduce, Reuse, Recycle’ mindset is adopted by all across the city.

5.2 Economic Case

The economic case identifies a range of potential technical solutions to address the issues set out in the OBC:

Selection of technical options is influenced by the requirement to support the proposed new collection regime, and also mitigate the risk of contractual challenge associated with either full or partial termination of the existing Waste Management Services contract.

Potential for partnership with Aberdeenshire has been explored but there is little prospect of a shared approach being developed in the foreseeable future. ACC's Waste Management Services contract specifically excludes waste from other authority areas, and re-negotiation of the contract to include a wider catchment would almost certainly be deemed anti-competitive by the regulator, and could be forcefully terminated. Aberdeenshire have recently concluded a separate contract for residual waste that caps tonnages, and leaves no useful headroom for processing ACC material. Officers from both authorities meet regularly and continue to explore options, but no practical solution had been identified at the time of preparing this OBC.

A summary of the options considered in the long list is set out below:

Ref	Description
<u>Green Waste</u>	
G1	Merchant ¹ solution, Aberdeenshire, open windrow composting
G2	New local windrow ² composting facility, delivered by the Waste Management Services Contractor
G3	New local windrow composting facility, open market procurement
<u>Food Waste</u>	
F1	Merchant solution, Aberdeenshire, IVC ³ composting
F2	New local food IVC plant, delivered by the Waste Management Services Contractor
F3	New local food IVC plant, open market procurement
F4	Merchant solution, Perthshire, AD ⁴ plant
<u>Recyclables</u>	
RC1	Merchant solution, Central Belt, MRF inc glass
RC2	New local glass-capable MRF ⁵ , delivered by the Waste Management Services Contractor
RC3	New local glass-capable MRF, open market procurement
<u>Residual Waste</u>	
R1	Merchant solution, export of raw waste by road for processing in UK
R2	Merchant solution, export of RDF ⁶ by sea for processing in Europe
R3	New Local EfW ⁷ /CHP ⁸ plant in Aberdeen from 2020
R4	Interim export of raw waste via the Waste Management Services Contractor, then local EfW/CHP plant from 2020
R5	Interim export of RDF via the Waste Management Services Contractor, then local EfW/CHP plant from 2020

¹ Merchant solution – i.e. send material to an existing plant for processing

² Windrow – open, managed composting system

³ IVC – In-Vessel Composting. A technology for treatment of food and / or green waste

⁴ AD – Anaerobic Digestion – a technology for treatment of organic materials, including food

⁵ MRF – Materials Recovery Facility – for sorting recyclable materials

⁶ RDF – refuse-derived fuel – a treatment for residual waste as preparation for an EfW plant

⁷ EfW – Energy-from-Waste

⁸ CHP - Combined Heat and Power – Exporting heat (hot water) as well as generating electricity in EfW plant

Each option was subject to a structured technical evaluation that ranked options in terms of technical performance, deliverability, environmental impact and socio-economic factors.

Detailed cost models were used to rank each option separately. Cost models included provision for:

- changes in waste arisings and stream profile shifts (more recycling and other cost changes)
- collection, transport, processing and disposal costs
- overheads, management costs, procurement costs and income
- capital investment (where required for site acquisition & access)
- inflation and other cost pressures

The cost models do not include for capital investment in new process plant as this is assumed to be included in the all-in gate fees used to cost each process (i.e. a cost per tonne).

Costs have been projected over a 25 year period to assess the overall cost/benefit of each option based on a series of assumptions which are set out in the OBC document

5.3 Reference Case

Comparison of technical evaluation and cost ranking confirmed the following combination of technologies as the best performing and most cost effective “reference case” for the project:

- New, local windrow composting plant (option G2)
- New, local food IVC plant (option F2)
- New, local MRF (inc. glass) (option RC2)
- Interim export/processing of waste (option R4/5)
- Resolution of site / planning / financing issues prior to procurement of an Energy from Waste (EfW) facility in Aberdeen. (option R4/5)

The reference case, based on conservative assumptions, is projected to show a benefit of £8.527 M compared to a “do-nothing” option, over the 25-year period modelled.

Sensitivity tests have been carried out to assess the impact of different (and in most cases more optimistic) scenarios. In all cases examined, the reference case is preferable to the “do-nothing” option. Further details are set out in the report.

5.4 Reference Case status

It is important to note that the reference case is not meant to be prescriptive – the actual solution provided will depend on detailed negotiations with suppliers and is likely to be different particularly if a supplier is able to identify a better

and more cost-effective solution during reconfiguration of the existing Waste Management Services contract or new procurement. Although new local facilities are proposed in the reference case, negotiations may show that “merchant” solutions to be more cost effective in the short term, although these may also carry some service continuity risk.

The reference case is offered as a demonstration that a practical, deliverable and affordable solution is available, that the project is worth doing, and is preferable to the “do-nothing” option.

The cost estimates for an EfW plant (based on examples of gate fees and capital/operational expenditure from other projects) would benefit from more detailed review, particularly a more detailed construction and operational cost analysis for a specific plant located in Aberdeen. It is proposed that further work should be conducted as part of the next phase of the project to validate the business case for this waste stream before progressing to procurement of an EfW facility.

5.5 Financing

Options for financing the capital investments required are considered in the OBC. It is anticipated that revenue costs will be met from existing budgets. It is concluded that separate financial strategies should be developed for each group of project investments – those requiring capital funding within the next 1-5 years, and those requiring funding later (EfW in Aberdeen) within the next 5-10 years.

A solution for funding projects within the next 1-5 years is proposed, by using the revenue budget to support capital financing. This will require realignment of future budgets because of increased debt repayment charges.

A solution for funding EfW in Aberdeen is unlikely to be wholly financed from within Council resources (either capital allocations or borrowing capacity). The most common methods of financing similar projects elsewhere in the waste industry are contractors raising private finance for project investment and recovering their costs as part of the gate fee charged to the Council, or the Council investing or co-investing directly in the project. The former option may attract limited interest given the current reluctance of capital markets to lend; the latter may constrain the Councils’ overall capital programme, impacting on other services / projects. A more thorough review will be developed through the Business Case for EfW/CHP recommended in this report.

5.6 Commercial Issues

The Commercial Case considers the options available for delivery of the Reference Case, in particular the role of the existing Waste Management Services Contract.

The existing contract is capable of substantial variation in many respects but there is strong advice not to extend the contract as the risk of challenge is

substantial and the consequences of challenge very severe. This limitation makes delivery of major EfW infrastructure within remaining term of the Contract a very costly and unsustainable solution. In addition, the contract does not provide a simple means of termination without cost or risk of claim to the Council.

New procurement is considered in the commercial case, with the complexities of European Procurement processes resulting in slow delivery and substantial cost, especially for a multiple services contract covering all the Council's requirements.

The conclusion is that the best commercial means of delivery is for the Council to vary the existing contract for the delivery of all elements of the Reference Case except EfW and for the EfW element to be the subject of a new procurement process.

5.7 Project Governance and Management

The Council first started the Zero Waste Management project in 2011 and an established Council sub-committee, Project Board and Project Team structure was set up, working under PRINCE2 project management framework.

Support to the project is supplied by external advisors, waste services staff and in-house support services and is overseen by the Corporate Management Team and Project Management Office.

The arrangements are established and work well, and provide a good basis for managing the next stage of the project, once the OBC is approved.

5.8 Procurement Costs

Cost models include £40k for Waste Management Services contract renegotiation costs, and a further £90k in 2025 to cover open-market procurement of successor contracts, once the Waste Management Services contract concludes.

For the EfW project, £2M has been allowed in cost models for the validation and procurement phases, with an additional £1M as a Competitive Dialogue (CD) procurement cost contingency. These values are based on typical costs for similar projects of this type.

The sums are assumed to cover the cost of special appointments (p/time project manager, dedicated project support staff) and external advisors fees, but not in-house staff contributions. Funding support may be available for the technical development and procurement phases of the EfW project. Eligibility will be explored once the OBC has been approved.

5.9 Sites

A site for the MRF and at least one other treatment process (excluding EfW) is identified in the Local Development Plan at Altens and a process for identifying preferred sites for EfW is underway.

A strategy is being developed to acquire control of at least one site for EfW in attempt to mitigate the potential risks associated with planning and land acquisition costs. No sites have been allocated for EfW within the Local Development Plan.

5.10 Timing

The anticipated delivery timetable for each waste stream is set out in the summary tables below:

Green Waste, Food Waste & Recyclables

Phase	Start	Duration	Commentary
OBC Approval	Q4 2012	3 months	Zero Waste Management Sub-Committee / Council
<u>Green Waste, Food Waste</u>			
Negotiation with the Waste Management Services Contractor	Q1 2013	6 months	
Site Acquisition, Planning	Q2 2013	15 months	Site(s) required
Construction, commissioning	Q3 2014	15 months	
Operation starts	Q4 2015	-	
<u>Recyclables MRF</u>			
Negotiation with the Waste Management Services Contractor	Q1 2013	6 months	
Planning	Q3 2013	9 months	Site in ACC ownership
Construction, commissioning	Q2 2014	2 years	
Operation starts	Q2 2016	-	
<u>Interim Residual Waste Export</u>			
Negotiation with the Waste Management Services Contractor	Q1 2013	6 months	
Operation starts	Q1 2014	-	
Contract concludes	Q3 2020	-	When EfW Plant open

This is a provisional timetable and will be reviewed once negotiations with the Waste Management Services Contractor are underway, to establish a more detailed delivery programme.

Provisional EfW Timetable

Phase	Start	Duration	Commentary
OBC Approval	Q4 2012	3 months	ZWMSC / Council
<u>EfW – Phase 1</u>			
Appoint advisors (Phase 1)	Q1 2013	3 months	
Recruit team	Q1 2013	3 months	Internal
Review EfW Business Case	Q2 2013	6 months	Validate business case
Approve Business Case	Q4 2013	-	ZWMSC / Council
<u>EfW – Phase 2</u>			
Appoint Advisors (Phase 2)	Q4 2013	3 months	
Recruit enhanced team	Q4 2013	3 months	Full team
Develop project outline	Q1 2014	6 months	
Develop Documentation	Q3 2014	4 years	Developed in parallel
CD Procurement			
Site Acquisition, Planning			
Project Financing			
Contract approval, award	Q3 2018	-	ZWMSC / Council
Construction	Q3 2018	2 years	
Operation starts	Q3 2020	-	

This is a provisional timetable and will be reviewed during the next stage, once a more detailed scoping specification for the proposed EfW plant is available and initial work on site identification / options / acquisition is complete.

Development and procurement of an EfW facility will be a complex undertaking and based on the assumptions made in the OBC, 2020 is the earliest date that a new facility is likely to become operational.

6. IMPACT

This project supports the Council's Single Outcome Agreement to meet National Outcome 14 "we reduce the local and global environmental impact of our consumption and production". The project aims to deliver the waste management strategic review option of the 5 year corporate business plan.

The project identifies new solutions for the City's waste collection and treatment services and infrastructure. This will have an implications for the services provided to the public when the Reference Case is implemented. An Equality and Human Rights Impact Assessment has been undertaken as part of the options appraisal process.

7. BACKGROUND PAPERS

Appendix 1. Outline Business Case for Waste Treatment Facilities.

8. REPORT AUTHOR DETAILS

Peter Lawrence
Waste & Recycling Manager
plawrence@aberdeencity.gov.uk
01224 489331

Callum Hay
Zero Waste Project Coordinator
CaHay@aberdeencity.gov.uk
07930 509 850