

ABERDEEN CITY COUNCIL

COMMITTEES	Zero Waste Management Sub-Committee
DATE	4 December 2013
DIRECTOR	Pete Leonard
TITLE OF REPORT	Energy from Waste Business Case
REPORT NUMBER:	ZWM/13/006

1. PURPOSE OF REPORT

The report presents the findings of a Business Case on the development of an Energy-from-Waste facility in Aberdeen capable of producing Heat and Power and includes an options appraisal of scenarios identified in the Business Plan. Further, the report presents recommendations on the next steps for the management of residual (general) municipal waste.

2. RECOMMENDATIONS

1. That the sub-committee agrees that the development of an Energy from Waste facility in the city remains the long-term objective for the management of residual waste and that a site or sites should be nominated for inclusion in the next Local Development Plan for an Energy from Waste Facility.
2. That the sub-committee instructs officers to pursue the nomination of a site or sites owned or controlled by the Council in the next Local Development Plan for the management of residual waste.
3. That the sub-committee instructs officers to seek partners for the future development of an Energy from Waste facility in order to obtain better value for money for the Council.
4. That the sub-committee instructs officers to engage with colleagues in Enterprise, Planning and Infrastructure to develop markets and delivery models for heat and power produced from an Energy from Waste facility and reports back to this sub-committee and Enterprise, Strategy, Planning and Infrastructure committee after the summer recess in 2014.
5. That the Sub-committee instructs officers to report back in March 2015 with a review of the Business Case.

3. FINANCIAL IMPLICATIONS

This business case addresses the delivery of services beyond 2020, a timescale that extends beyond the Council's current 5 Year Business Plan however the management of residual waste in this time frame represents significant cost risk to the Council. Post 2020, landfill of biodegradable waste will be banned resulting in higher costs of management compared to current levels.

The business case considers the costs, risks and benefits of two very different delivery models;

Refuse Derived Fuel (RDF), with low investment requirements, reduced risk in relation to the variability in waste produced for treatment but high risk in terms of security of supply and cost;

Develop an **Energy from Waste (EfW)** facility in the city, a high investment solution with low operating and cost risk, and an opportunity in relation to increasing energy revenue but greater risk on ensuring sufficient residual waste is available to run the plant efficiently.

In the context of the timeframe considered in the report (2020-2045), it should be recognized that costs quoted, whilst based upon best available data, are still estimates. As a consequence caution must be used when seeking to differentiate solutions on cost/tonne or Net Product Value (NPV) only. As a result, risk management is considered a key element in decision making, as well as the financial implications and funding strategy selected.

As identified in the Council's Strategic Infrastructure Plan, the Council has committed to fund £25.5 million of capital investment in Waste Infrastructure between 2013/14 and 2017/18, including £5 million for procurement and land acquisition costs of an EfW site. The recommendations of this report will be included in updates of the Council's 5 Year Business Plan to ensure the financial implications are captured within the Council's budgetary processes.

Future investment in Waste Infrastructure will also require to be assessed in the wider context of the affordability of the Council's Capital Programme and the funding solutions available to the Council identified in the Strategic Infrastructure Plan.

4. OTHER IMPLICATIONS

This section must include any legal, resource, personnel, property, equipment, sustainability and environmental, health and safety and/or policy implications.

Legal: no issues.

Resource: Asset Management, Finance, Planning, energy and Waste and Recycling Teams will have additional staff time actions arising from this report.

Personnel: none from this report.

Sustainability: All of the options outlined in the report will result in the diversion of general waste from landfill. The RDF option will result in additional transport of waste by road and, probably, sea to destination EfW facilities.

Health and Safety: none from this report.

Policy: none from this report.

5. BACKGROUND/MAIN ISSUES

This report completes the instruction given by the Council Meeting 10 October 2012 Recommendation 4 to produce a detailed Business Case on EfW/CHP in Aberdeen.

The Key conclusions from the business case are:

1. That an Energy from Waste (EfW) facility with capacity of approximately 100,000 tonnes per annum offers the best value for money both in cost/tonne and NPV terms post-2020 providing that the Council funds the construction of the facility.
2. That an EfW facility with capacity of approximately 100,000 tonnes per annum funded through a Public Private Partnership (PPP) model offers the next best value for money in NPV terms and after 2026 in cost/tonne terms.
3. That Refuse Derived Fuel (RDF) export is the third most cost effective solution, however, no certainty on price or market availability can be provided beyond 2025. Given this uncertainty, the Council should not consider relying on RDF export beyond 2025.
4. That an EfW facility in the region of 50,000 tonnes per annum input (suitable for Aberdeen City Council arisings only) is the highest cost solution, again with a Council funded solution being less expensive than PPP.
5. Risks apply to each solution (and are dealt with in more detail below) however, the risks associated with EfW are largely within the Council's control, in contrast the longevity and cost of a RDF solution is beyond the Council's control.
6. That no procurement should be undertaken until a site or sites have been identified in the Proposed Local Development Plan.

5.1 Business Case

The following is an extract from the Executive Summary from the Business Case and summarises the main issues and findings:

'This report has been produced for the purpose of considering whether the Council should pursue the procurement, construction and operation of a locally based thermal treatment solution for the City's waste (with or without joint working with other public authorities) or rely on third party/merchant facilities within the UK or elsewhere to treat waste in the long term.

The Council has a contract in place with SITA for management and disposal of all the collected waste. The Council contracted with SITA in 2000 for a 25 year term, the focus of which was the proposed development of recycling and energy recovery facilities at Altens. The original intention was for the facilities to be constructed to coincide with the closure of the Council's landfill in 2006. However SITA's planning application to the Council was refused and this requirement of the contract has never been fulfilled and the Council can procure its own energy from waste facility if required.

In parallel to this project the Council is undertaking contract variation negotiations with SITA to explore potential interim treatment options, focusing on SITA preparing the waste as a refuse derived fuel for export to Europe until such time as a long-term alternative option is available.

This report revisits the options appraisal process undertaken for the 2012 Outline Business Case by providing a greater level of detail on five options, and should be read in conjunction with the OBC. It tests and compares these options in terms of technical feasibility, financial appraisal and practicality for the Council. The five options are:

- **Option One (Small EfW, Council financed):** *To develop a facility on a site identified within the Council's boundary with the purpose of treating Aberdeen's residual waste arisings (assumed to be 60,000 tonnes per annum). This would include front end mechanical treatment (MT) to remove plastics and metals as preparation for an Energy from Waste (EfW) facility in line with Scottish Government requirements. The capital investment to provide this facility would be funded directly by the Council, and a partner waste contractor engaged to manage the facility's operational activities on the Council's behalf. It offers the potential benefit of renewable energy generation within the City;*
- **Option Two (Small EfW, PPP financed):** *As option 1, but assumes all capital investment for the facility is funded by the private sector under a Public-Private Partnership (PPP) arrangement. The Council pays a higher gate fee on operations under this model, as it will include recovery of capital financing costs;*
- **Option Three (Large EfW, Council financed):** *As option 1, with a larger EfW facility that is sized to take other residual waste. This other waste could be sourced from other public sector bodies or commercial and industrial wastes. With this*

option the MT facility need not be co-located with the EfW, as this could take place at the waste source, with the EfW being constructed at a suitable central site. The capital investment to provide this facility would be funded directly by the Council and a partner waste contractor engaged to manage operations;

- **Option Four (Large EfW, PPP financed):** *As option 3, but assumes all capital investment for the facility is funded by the private sector under a Public-Private Partnership (PPP) arrangement, and consequently with a higher gate fee on operations to include recovery of capital financing costs*
- **Option Five (RDF offtake):** *The Council is currently progressing an interim treatment solution comprising the preparation of waste as Refuse Derived Fuel (RDF) prior to export to European EfW facilities. This business case considers this waste treatment option also as a long term solution, assessing whether the cost of this waste management practice would provide better value for money.*

The Options Appraisal comprised mass flow modelling undertaken by AMEC, and was based on the Council's in-house waste flow model (WFM) used to inform the development of the OBC review. The model was subsequently updated with 2012 data to account for the Council's intention to move towards a full co-mingled collection for dry recyclables and the associated impact upon the remaining waste quantities available for treatment. Assumptions were made regarding waste growth rates, waste composition and the performance of mechanical treatment equipment. The recycling and composting systems are modelled to reach 54%, and additional recycling has been assumed through the mechanical treatment of the residual waste stream which meets the Council target of 56% by 2025. The tonnage of residual waste sent to thermal treatment is 38% of arisings, and therefore meets the Council target of a maximum 40% residual waste treatment capacity, and landfill is just within the maximum target of 5%.

*The required EfW facility size for Option 1 and 2 is **47,000** tonnes per year, and a similar tonnage requires RDF offtake in Option 5. For Options 3 and 4 detailed data from other potential partners has not been obtained so a generic estimate of additional residual arisings has been calculated that results in a modelled additional input of 62,000 tonnes per year, resulting in a total EfW facility size of **109,000** tonnes per year.*

Comparative reference plants are considered which indicate that for Options 1 and 2 a site of minimum 1.5 hectares, and ideally 2 hectares would be required for a traditional EfW technology, excluding the MT plant. Options 3 and 4 would require 2 to 3 hectares. An MT plant could require a further 0.5 to 1 hectare depending on whether it is co-located or not.

The timing assumptions for the options are as follows:

- Whilst SITA are contracted to provide services until 2025 the Council has option to take out residual waste at any time. Purely for the purposes of this assessment all options have been assumed to commence full operations in the year 2020, and have been assessed over a 25 year period to 2045;
- Options 1 to 4 – MT plant operational in 2015. Interim export of RDF under existing contract. New EfW procured and constructed by 2020;
- Option 5 – RDF preparation plant operational in 2015. Long term export of RDF from 2015. It is assumed that a new offtake contract would be entered into in either 2020 or 2025 on equivalent terms.

Ernst and Young was appointed by the Council to undertake financial modelling, based on the mass flow and cost assumptions provided by AMEC.

Two funding options were analysed for the EfW facility, one being based on the Authority borrowing funds itself to pay for required construction works (termed 'Authority Build'), and the other a private-public partnership (PPP), where a contractor obtains funding at commercial borrowing rates. The local authority funded options (Options 1 and 3) are based on borrowing from the Public Works Loans Board (PWLB) which is typically at lower rates than commercially available funding arrangements. Higher borrowing rates are generally associated to privately funded options as they reflect the higher level of risk the partner accepts by agreeing to provision of the funding.

The two PPP options (Options 2 and 4) were based on a generic Special Purpose Vehicle (SPV) financial model provided by Ernst & Young drawn from currently available market funding structures and terms for similar projects. The Authority Build modelling was based on the Council sourcing the funds for the initial capital investment, and the partner waste contractor applying a gate fee to recover operational costs.

The options were first analysed without the capex and opex associated with the MT plant. This is because the technical requirements, costs and impact of interim arrangements remain unclear at this time. The MT costs were separately analysed to allow them to be included as a sensitivity test.

The headline data from the financial modelling exercise is compared below (exclusive of MT costs), with the options ordered by NPV from lowest to highest. The total net present value (NPV) of each option uses a standard 3.5% discount rate.

Table 1. Costs of EfW and RDF Options

Option	Base Price £k	Net Present Value (NPV) £k	Nominal Price £/t 2020-21	Nominal Price £/t 2030-31	Nominal Price £/t 2040-41	Nominal Price £/t 2044-45
Option 3: Large EfW, Council funded	123,085	39,826	132.8	141.2	152.5	71.0
Option 4: Large EfW, PPP funded	163,771	48,170	166.1	176.1	189.2	184.3
Option 5: RDF export	196,137	52,666	147.7	194.8	260.0	271.0
Option 1: Small EfW, Council funded	198,547	62,838	187.4	207.2	231.7	135.4
Option 2: Small EfW, PPP funded	258,703	74,372	215.9	247.6	283.5	279.1

5.2 Financial Model Results (excluding pre-treatment)

Overall, the financial assessment of options indicates that a larger EFW that caters for waste from other parties (e.g. public authorities or commercial/industrial wastes) would provide the best value for money solution in the long term as it can achieve better economies of scale than a small facility sized purely for Aberdeen City Council. However this option has two key deliverability issues that need to be considered over the next year in order for it to be progressed further.

Firstly it would require a partner(s) to also commit their residual waste to a new procurement. Any joint procurement with another public authority would require detailed discussions and preparations.

Secondly at present there are no strategic sites identified or secured for locating a new Energy from Waste facility. The Local Development Plan Team has started to review the adopted Local Development Plan and work towards the publication of the next Plan, which will need to be prepared in the context of the emerging Aberdeen City and Shire Strategic Development Plan (SDP), which is scheduled for adoption in 2014 and will replace the adopted Structure Plan. It is vital that this plan identifies a site for a new EfW. Detailed site suitability assessments and spatial designs will also be required by the Council in preparation for any procurement to take account of local constraints. Seeking approval for in-principle planning use for an EfW facility would partially mitigate key planning risks.

At a local level the Council's waste strategy, published in 2010, will hold significant influence over the decision to proceed, or not, with a local solution. Many of the aims of the Council's strategy clearly places emphasis upon the importance of treating waste as close to the point of generation as possible (proximity principle) but, crucially, enjoying the potential benefits (social, economic, and environmental) that a local

solution may bring. Given the Council's requirement to demonstrate Best Value however these benefits need to be considered against ongoing budgetary pressures.

Aberdeen is considered the 'energy capital' of Europe, influenced by the Oil & Gas industry presence within the City, and as such the Council's strategy recognises that the potential for renewable energy production in the City can positively influence sustainability, environmental impact and socio-economic issues within the City. This opportunity is lost if the energy recovery benefits are realised elsewhere within the UK or Europe. A Combined Heat and Power scheme would maximise benefits to the City, and could attract additional revenues from government incentive schemes. The Council has already established a district heating network and should be well placed to exploit the benefits of a Combined Heat and Power (CHP) EfW solution, should this be proposed.

In the event that a larger EfW was not deemed deliverable either next year or at a future point during the procurement, the next preferred option is for medium term offtake of RDF. RDF export is a competitive option for the Council in the short to medium term based on current market price indications. There is however an unquantifiable risk of future increases in European EfW gate fees as more waste producers seek to access a fixed number of outlets. This may be mitigated by securing longer term offtake contracts either directly with a plant or via a broker who can regularly search for the best deal.

The long term viability of RDF export is currently unknown beyond 5-10 years and therefore the risk profile of this option is completely different to that of a domestic facility. The assumed RDF offtake price and the future inflation assumptions have a key influence on the cross over point between the options. The assumed RDF gate fee (£80/tonne in current terms) has not been subject to any formal benchmarking or negotiation with potential offtakers. Results of SITA negotiations are not expected until later in 2013 and can inform further consideration of the competitiveness of RDF offtake.

A smaller scale EfW facility would be the most expensive option, but if Authority funding was available it could become very competitive in the very long term (e.g. post 2042). This is because once the borrowing has been re-paid the facility would benefit from a step-down in the price per tonne (this applies to both Option 1 and 2). The Council would be in ownership of a strategic EfW asset which could offer a continued service at much reduced rates, in a similar way that other UK authorities are currently benefiting from operating older EfW facilities. It is worth noting that some of the RDF export prices are currently low due to the same reasons (e.g. use of older facilities where capital investment has been repaid).'

5.3 Recommendations of the Business Case

'The recommendations arising from this study are grouped under five key themes, as outlined below and further expanded in this report.

- 1. *Secure support for a Large EfW*
- 2. *Secure site for new EfW*
- 3. *Develop procurement strategy*
- 4. *Research and develop RDF contingency arrangements*
- 5. *Keep watching brief on potential changes in law and policy'*

5.4 Background to Business Case

The background for this report is that Aberdeen City Council has no waste disposal arrangements in place beyond 2020 when biodegradable waste will be banned from landfill. The Council's Waste Management Services Contract is currently being amended to provide an alternative to landfill by 2020 and potentially up to 2025 by turning general waste collected in Aberdeen in a Refuse Derived Fuel (RDF), however, no arrangements are in place beyond that point.

The Business Case has been produced by AMEC Group, a leading environmental and engineering services consultancy with wide experience of similar projects in Scotland and the rest of Europe. The Business Case includes a financial analysis undertaken by Ernst and Young, using the best available financial data and analysis tools relating to major waste management infrastructure projects.

5.5 Risk Management

Any project of this magnitude and duration will present significant risks to the Council.

As a minimum the risks associated with delivery of the project should be considered separately in respect of project risks and procurement risks, and ideally separately consider risks related to planning, legislation, market offtake, competition, timetable, and cost. Section 6 of the Business Case examines these risks in detail, however, there are three main risk profiles present in the 4 EfW options and the RDF Options.

EfW versus RDF

The following table compared the risks between EfW and RDF

Table 2. EfW v RDF Risks

Risk Area	EfW	RDF
Planning	<p>This is a major project risk, EfW projects have struggled to obtain planning permission for a wide variety of reasons.</p> <p>Mitigation: It is essential that a favourable planning environment is achieved before major investment is undertaken. The development site must have a designation in the Local Development Plan and preferably, Planning Permission in Principle before a procurement is started.</p>	<p>Minor provided a site with appropriate land use designation is utilised</p>
Technology	<p>EfW technology is complex, however, in incineration form has been in operation for decades. As a result, both construction and operation risk are relatively low. This is less certain for advanced thermal treatment methods such as gasification, pyrolysis or plasma technologies. Mitigation: adopt technologies with proven track record and strong performance guarantees.</p>	<p>RDF production is a relatively simple process with little technology risk. Complexity and cost increases when extraction of more materials, such as rigid plastics is required. EfW risk at the destination is considered low as the outlets will be existing facilities with track records in successful operation.</p>
Legislation	<p>Minor. Existing emission control limits are strict and there is little evidence that amendments will be made that will have a serious impact on the operation of or cost associated with EfW</p>	<p>Uncertain. RDF exported may be subject to stricter controls requiring more pre-treatment and extra costs. In addition, incineration tax in destination countries would increase costs. Mitigation: Transfer to contractor in return for higher gate fee (solution unlikely to be attractive to private sector).</p>
Market Offtake	<p>Electricity markets are well established. Mitigation of risk has been taken by adopting conservative income estimates</p>	<p>Markets are considered reliable for between 5 and 10 years (to 2023). There is no certainty</p>

	<p>in the Business Case. Equally, no income is accounted for from heat sales. Both approaches mean that there is 'upside' risk for EfW</p>	<p>beyond this period that either capacity will remain or costs stay within an affordable envelope. This constitutes a major risk outwith the control of the project. Mitigation: No known mitigation at this point</p>
Competition	<p>Major waste infrastructure projects attract a limited range of bidders and in effect clients face the challenge of making their project attractive to the market. Mitigation: ensure that Planning issues are minimised, project is simple and clear in its objectives and bring finance to the project.</p>	<p>As indicated above markets exist in Europe for up to 10 years, however beyond this it is uncertain whether a competitive market will exist as a result of diminishing capacity and increased demand. This will adversely impact on the cost of accessing EfW outlets. Mitigation: No known mitigation at this point</p>
Timetable	<p>An EfW project will require a minimum of 5 years from commencement of procurement to commissioning and often 7 years is more realistic. As a result, decisions on provision of capacity in 2022 should be taken in 2015 for example. Mitigation: Ensure planning designation is in place and procurement processes are streamlined to ensure completion within defined timescales. Choice of appropriate technology will ensure construction timetable is adhered to.</p>	<p>RDF can be generated relatively quickly (with 1-2 years) and markets accessed within that timeframe. Concern remains over the longevity of outlets.</p>
Cost	<p>Most risk associated with defining the cost of an EfW project is related to the procurement stage if an established technology is adopted. The EfW market capacity is relatively limited and so pricing will be dependent of</p>	<p>There is no market certainty in the cost of RDF beyond 2023, however, most observers consider that capacity will decline and market demand increase resulting in upwards</p>

	<p>the strength of the UK and European market. A range of projects are currently being delivered in England and market capacity is restricted, however by 2015, this 'deal flow' is expected to ease and better value can be anticipated. Unproven technologies will introduce significant cost risk to the project with contractors seeking to pass this risk onto clients. Once a plant is developed the ongoing cost of the project is reliable.</p> <p>Mitigation: ensure the project is simple and clear in outcomes and technology adopted is proven.</p>	<p>price pressure.</p> <p>Mitigation: No known mitigation at this point</p>
Input tonnage and characteristics	<p>EfW requires a minimum tonnage to be cost-effective. Likewise the composition of the waste input must be within the range of operation of the facility.</p> <p>Mitigation: Ensure certainty on minimum tonnages by underestimating the volume to be sent to the facility, whilst providing additional capacity to allow for waste growth. Banded pricing mechanisms can be used to manage input risk. Utilise private sector waste arisings or other fuel sources (biomass) as substitute fuel.</p>	<p>RDF is less prone to input tonnage fluctuation and shares the same risk profile on composition.</p>

Summary of RDF v EfW

There are many significant risks associated with EfW, however, these are largely within the Council's control and many can be mitigated through good planning, project scoping and choice of appropriate technology. If these matters are managed well, EfW offers significant opportunities over RDF, namely benefit for increasing energy revenues and the ability to develop a low carbon local district heating system.

RDF provides a good value short to medium term outlet with relatively few risks, however, the severity and likelihood of risks associated with market capacity and increased demand grow rapidly beyond the 10 year timeframe. As a result, when considering the long view, RDF must be considered a high-risk activity with little opportunity for the Council to mitigate these risks.

Furthermore, exporting RDF from Aberdeen eliminates any opportunities from the generation of heat and power in the city.

Small versus Larger EfW

The business case identifies that larger scale EfW is likely to be more cost-effective than small scale. There are different risks associated with the delivery of these two models.

Table 3. Small v Larger EfW

Risk	Small EfW	Larger EfW
Public acceptability	An EfW plant solely for waste produced by Aberdeen households is likely to be the most acceptable model	Any model that requires the 'import' of waste from outwith Aberdeen may attract adverse public opinion. Mitigation: Value for money and energy opportunity arguments are strong
Joint agreements	An Aberdeen only plant would not require agreement from any other body, therefore no risk applies	Obtaining an agreement with one or more public authorities for the joint development of a facility will have risk associated with it and similar projects elsewhere have struggled to overcome these issues. Mitigation: Ensure strong and clear inter-authority agreement is in place prior to procurement
Heat use	A small EfW will produce heat in quantities that would be easier to utilize within a district heating network	The increased amount of heat produced by a larger plant may be more difficult to find users for and therefore overall system efficiency will be reduced. Mitigation: Develop successful and extensive Heat and Power networks

Summary of Small versus Larger EfW

There are greater risks associated with larger EfW, however, these can be managed with good preparation and strong efforts to develop a district heating grid in Aberdeen.

Authority funded versus Public Private Partnership

The financial analysis demonstrates that utilizing local authority financing will achieve a lower cost solution, however, there will be a different risk profile with each solution. Typically, a PPP project will transfer many finance, construction and operational risks to the contractor in return for a higher cost to the client. In older PPP-style projects, this has resulted in high margins for the contractor, however, more recent contracts learn from these experiences and can demonstrate better value but a financial risk remains. There are also significant risks that are not transferred in PPP contracts, for example Change in Law. As a result, the client is still exposed to cost increases.

In contrast, with a directly funded, contracted and operated facility most of the risks will lie with Council. The impact of these risks will vary significantly depending upon a number of factors:

1. Technology Choice. Clearly, established technologies with proven track records represent the lowest risk.
2. Construction Contract and Contract Management. A contract that has detailed performance standards and a strong contract management function will present lowest risk.
3. Plant operation. There are options in relation to operation of the facility ranging from totally in-house to full 5-10 year Operation and Maintenance Contracts with some risk transfer to the operator.

There is opportunity for the Council to minimise many of the risks through the choice of appropriate technology, providing a secure planning environment for the investment and ensuring strong operation and maintenance contract control. Increasingly, authorities are moving away from a presumption towards transferring as much risk to the private sector as possible as it is recognized that better value can be achieved by adopting a managed risk approach.

The ability of the Council to finance its own solution will be dependent on wider ranging spending and investment policies and commitments and these will change over time, therefore the funding route will be determined alongside the decision to proceed with a procurement process.

5.6 Conclusions and Next Steps

The Business Case includes a range of conclusions and recommendations. The main finding of the Business Case is that larger scale EfW is likely to offer better value to the authority as early as 2020, however there are two significant barriers to progressing with this route immediately:

1. The lack of a site with appropriate planning designation, and

2. The lack of a partner or partners to provide the additional waste inputs required to achieve capacity of approximately 100,000 tonnes per annum. It will be necessary to secure long term and binding legal agreements with partner authorities before procurement of a larger plant. It is recognized that securing these agreements constitutes a substantial task in itself.

As a result the next steps need to be focused on Planning and seeking a partnership approach with other public authorities.

In addition, further work is required to assess the viability and longevity of the RDF market and whilst this will require a degree of speculation on the long term European waste market, there will be developments in the next 1-2 years that should help clarify the marketplace. For example the agreement of a contract with SITA for the production and export of RDF will provide current price certainty and allow future predictions to be made from a strong base. In addition, the likelihood that the Scottish Government will introduce controls on the extent of pre-treatment required for RDF export is likely to increase the cost of this solution.

6. IMPACT

Corporate – The timeframe considered by this report (post-2020) is beyond the end date of corporate plans or the Single Outcome Agreement but the Priority Based Budget Transformation Option HE_ES_WS2 'Review existing Waste Strategy to determine most cost effective options for diverting waste from landfill' requires a long term solution to be put in place. The development of alternatives to landfill and move to a Zero Waste City is a key action within the Smarter Environment – Natural Resources Strategic Priority of the Five Year Business Plan.

Public – The major impact from the issues considered in this report is the need for identification of a site or sites for the construction of waste treatment infrastructure, especially if an Energy from Waste facility is developed. Unusually in Europe, the public perception of EfW, especially incineration technologies, has been largely negative and there have been strong campaigns to oppose developments including in Aberdeen in 2002-2004 when a facility was proposed in the Altens area.

Concern over these facilities has been expressed in three main themes, firstly that emissions from EfW facilities may have adverse health impacts. Many studies, including those of Health Protection Scotland and the UK Health Protection Agency do not support these concerns and that risks associated with modern EfW subject to strict SEPA regulation are low and lower in scale than, for example, road traffic emissions.

The second area of concern relates to amenity impacts on local communities, whether that be visual, noise, traffic, smell or vermin.

Again, these issues can be mitigated by careful site selection and strict regulation.

The third area of concern relates to the potential for an EfW to restrict the ability to recycle all our waste and this can be managed by limiting the scale of plant chosen. The risk in this area will be limited in time when it anticipated that new EU recycling targets will be set. An EHRIA has previously been completed for the Aberdeen City Waste Strategy; the recommendations from this report are fully in line with the Strategy.

7. MANAGEMENT OF RISK

A large part of the Business Case and the Main Issues (Section 5) deals with Risk Management. There are two divergent risk profiles relating to the options set out in the business case, one for Refuse Derived Fuel and one for Energy from Waste and the options appraisal addresses the implications and management methods for each.

8. BACKGROUND PAPERS

Appendix 1. Aberdeen City Council, Energy from Waste Business Case, Technical Report, AMEC Environment and Infrastructure Ltd, November 2013

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