

**WILTSHIRE COUNCIL CABINET  
20 OCTOBER 2009**

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**SWINDON BOROUGH COUNCIL AND WILTSHIRE COUNCIL  
MUNICIPAL WASTE DISPOSAL PROJECT**

**Purpose of Report**

1. To update Members on progress made towards dealing with the increasing costs of waste disposal, due to Landfill Tax and the Landfill Allowance Trading Scheme (LATS).
2. To update Members on the progress with and conclusions of the Outline Business Case (OBC) which has been developed over the past 12 months to determine the best way to deliver the long term waste strategy of both councils.
3. To recommend that Members endorse the conclusions of the OBC.
4. To recommend to Members that the relevant officers be given delegated powers to prepare tender documents to procure a joint waste treatment solution.
5. To note that officers are continuing discussions with neighbouring authorities.

**Background**

6. The 1993 EU Landfill Directive requires progressively diminishing limits on the landfill of biodegradable municipal waste (BMW). Historically the UK has had a high dependence on landfill and was granted a four-year derogation to meet the targets imposed by the Directive namely:
  - By 2010 to reduce BMW to 75% of that produced in 1995
  - By 2013 to reduce BMW to 50% of that produced in 1995
  - By 2020 to reduce BMW to 35% of that produced in 1995
7. Other EU Member States have invested heavily in non-landfill processes and capacity (such as recycling and incineration) and are now meeting landfill targets without the four-year derogation granted to the UK. Failure by the UK to meet the Directive brings the prospect of EU fines in the scheme years set out in paragraph 6 above.
8. In addition, under the Landfill Allowance Trading Scheme (LATS), Waste Disposal Authorities have been advised of potentially heavy financial penalties (identified by Defra at £150 per tonne) if they landfill BMW in any one year in excess of the allowances they hold. Defra has advised that authorities that exceed their allowances will also be fined a proportion of the EU fines incurred by central government if the UK targets are exceeded.
9. Local Authorities pay Landfill Tax on every tonne of waste disposed of to landfill. The current rate for 2009/10 is £40 per tonne and is set to rise to £72 per tonne by 2013/14 which highlights the Government's intention to use Landfill Tax as an instrument to divert waste from landfill.

10. In the National Waste Strategy for England 2007 the Government set out that landfill should be the option of last resort for waste. In September 2009 Defra published research that will help inform possible future proposals to ban some materials from landfill in England. In light of this a public consultation will be held in the next few months on these proposed changes. The timing of any ban has not yet been decided.
11. In October 2008 a jointly prepared paper was presented to the Wiltshire Implementation Executive and Swindon Borough Council Cabinet. The paper outlined the background to the Landfill Allowance Trading Scheme (LATS) and the significant implications of LATS for the two councils as summarised above.
12. Both councils approved the recommendations in the paper which are summarised below:
  - To note the future financial risks which the Landfill Allowance Trading Scheme represents for their respective authority;
  - To note the risk which the lack of certainty on waste disposal arrangements beyond June 2016 represents for their respective authority;
  - To approve the appointment of specialist consultants to develop a joint Outline Business Case to procure a waste disposal solution for all of Swindon Borough Council's residual municipal waste and the residual municipal waste from mainly the North of Wiltshire County Council's administrative area;
  - To approve the allocation of £50,000 per Council for the preparation of the Outline Business Case and approve the allocation of £100,000 per Council for the preparation of tender documentation during 2009-10.
13. Over the last 12 months Wiltshire Council and Swindon Borough Council have continued to work together to develop an OBC for a joint procurement project for the management of residual municipal waste. This work is now substantially complete.

## **Main Considerations for the Councils**

### **Preparation of the Outline Business Case (OBC)**

14. The OBC has been prepared using the Defra template (Waste Infrastructure Delivery Programme: outline business case template for applications for Private Finance Initiative (PFI) credits). The councils are aware that at this time PFI credits are not available but have decided to adopt the principles of this template as an example of good practice.
15. Although the Defra template has been broadly adopted an OBC has been produced to match the specific needs of both councils. In the event that future PFI credits become available the OBC would require amendment to satisfy the Defra requirements, should the councils decide to bid for credits.
16. The project delivery team comprises officers from both councils with knowledge and experience of the following professional services:
  - waste management
  - waste planning
  - procurement
  - legal
  - finance
  - risk management.

17. Although the majority of the OBC has been prepared by in-house staff, external technical, financial and legal advisors were also employed where specialist input was required.

### **Structure and Overview of the Outline Business Case (OBC)**

18. The councils' main objective in preparing the OBC has been to establish whether there is a suitable technology or type of technology and a suitable site within North Wiltshire or Swindon that would enable the councils to achieve their waste management objectives and provide them with a solution that gives them value for money. Having established the type of technology and that there are potential sites the most cost effective capital and operational costs for the life of the facility have been determined. A copy of the OBC is available in the Members Room.
19. The OBC contains background information about both councils, their waste strategies and performance data including past and predicted waste growth and rates of recycling. Other waste diversion strategies affecting future waste treatment needs are also outlined. These include Wiltshire Council's contract with Hills Waste Solutions Ltd for delivery of 50,000 tonnes per annum of residual waste to the Lakeside energy from waste plant and their proposed contract for delivery of 60,000 tonnes per annum of residual waste to a mechanical biological treatment plant (MBT) to be constructed at Westbury. The document also sets out assumptions about the quantities of waste that will need to be treated by both councils by 2035.
20. The councils' strategic approach to planning policy for waste management which reflects the Wiltshire and Swindon Waste Core Strategy Development Plan Document (DPD) is also set out in the OBC. A number of sites are identified with the potential to accommodate a waste treatment facility, see **Appendix 1**.
21. Sections of the document focus on the potential technology solutions, the advantages and disadvantages of each and their ability to treat the type and quantity of waste that the councils predict will be generated by 2035. A shortlist of potential solutions has been developed and a reference solution chosen which is compared to the "do nothing option".
22. Financing options are also discussed in the document and an assessment is included of the advantages and disadvantages of each.
23. Project governance and risk management are covered in the OBC as well as procurement options and potential timescales for completion of the project. The importance of communication is recognised and a planned communication strategy for the project is set out.

### **Technologies Assessed**

24. The councils' technology advisors initially identified a wide range of waste treatment solutions utilising a variety of technologies listed below.
- a) Do nothing – continue to landfill waste without further treatment
  - b) Large scale incineration plant
  - c) Small scale combustion (SSC) plant
  - d) Stand alone advanced thermal treatment (ATT) plant
  - e) Produce a solid recovered fuel (SRF) for use by third parties
  - f) Produce a SRF treated by a dedicated SSC plant
  - g) Produce a SRF treated by a dedicated ATT plant
  - h) Produce a bio-stabilised output to be disposed of to landfill
  - i) Produce a partially bio-stabilised output to be disposed of to landfill
  - j) Produce compost like output (CLO) for use on contaminated land
  - k) Focus on biogas.

See **Appendix 2** for an explanation of the technologies.

25. The solutions set out in paragraph 24 were assessed against the following criteria:

- Potential to meet LATs targets
- Potential to meet landfill diversion targets
- Technology risks (there are systems with a strong track record available)
- Commercial risks (there are no significant issues in managing process outputs)
- Counterparty risks (ability of a technology partner to provide a guarantee)<sup>1</sup>
- High probability of attracting funding
- Low likelihood of public opposition and planning delays

A table summarising the evaluation is set out in **Appendix 3**.

26. On completion of the evaluation the following technologies were selected for more detailed analysis:

- a) Do nothing - continue to landfill without further treatment;
- b) Standalone large scale incineration
- c) Standalone small scale combustion (SSC) plant,
- d) Standalone advanced thermal treatment (ATT) in the form of gasification;
- e) Make a solid recovered fuel (SRF) for third-party usage;
- f) Make a SRF and process it in a dedicated on-site or offsite small scale combustion (SSC) plant;
- g) Make a SRF and process it in a dedicated on-site or offsite ATT plant.

27. The technology solutions identified as h) to k) in paragraph 24 were not selected for more detailed analysis because there are significant concerns over their ability to enable the councils to achieve their diversion targets. There are also technical and financial concerns over the treatment of the residues that these technology solutions would generate. Technology solutions b), c) d) f) and g) should enable the councils to achieve their targets but obtaining planning permission for such solutions may prove challenging.

28. Six potential waste quantity models were established, the details of which are set out in **Appendix 4**. The waste growth model which was developed to enable selection of an anticipated solution is based on both councils' assumptions about waste growth, 50,000 tonnes per annum of waste being delivered to the Lakeside energy from waste plant and 60,000 tonnes per annum being delivered to a mechanical biological treatment (MBT) plant at Westbury with the SRF produced being treated under that contract.

29. Assuming that the councils' objective is that a minimum amount of waste will be delivered to landfill from 2016 (Swindon Borough Council's aim being zero landfill), the quantity of waste to be managed through this joint project is forecast to be 90,000 tonnes per annum at 2030.

30. The detailed analysis which was carried out demonstrated that only three technical solutions are viable for managing this quantity of waste. These are:

- Small scale combustion (SSC)
- Advanced thermal treatment (ATT)
- Production of a solid recovered fuel (SRF) for delivery to an end market.

31. Once a final decision has been reached regarding the Westbury MBT project it may be necessary to undertake further modelling, funded by Wiltshire Council, if an additional 60,000 tpa of waste is to be delivered under this project.

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<sup>1</sup> There are very few standalone providers of ATT plants that are able to provide a full performance guarantee for a £50m plant compared to established providers of large scale incinerators.

## **Economic Cost Appraisal**

32. Further to the identification of the three technical solutions referred to in paragraph 30 above, the economic cost of each solution was examined and expressed in Net Present Costs (NPC) terms<sup>2</sup>. The NPC appraisal takes into account the direct costs associated with each solution, including capital costs, operating costs, third party income and the costs associated with the disposal of process residues. At this stage, in accordance with the requirements of the Defra OBC template and HM Treasury Green book, financing costs do not form part of the economic appraisal on the basis that the analysis is independent of the preferred procurement or funding strategy. For comparison purposes, the NPC of the do nothing option is also shown below.
33. In order to model the do nothing option it was necessary to agree a projection of costs for landfilling which comprises four elements: landfill gate fee, haulage fee, Landfill Tax and cost increases after 2016. The following assumptions were used for modelling costs from 2016 (ie following the termination of existing landfill contracts):
- Landfill gate fee at 2016 - £40 per tonne (escalating at 3% per annum thereafter)
  - Haulage fee at 2016 - £20 per tonne (escalating at 2.5% per annum thereafter)
  - Landfill Tax - £72 per tonne at 2013/14
  - Landfill Tax escalator - £3 per tonne per year from 2014.

### **Net Present Costs - (1 April 2010 – 31 March 2040)**

Technical	Summary of facilities	Description	Net Present Cost (£'m)
SSC	Single facility 90k tonnes pa Electricity generation 431kWh per tonne (no ROC <sup>3</sup> entitlement)	Small scale combustion as a complete solution	153.5
ATT	Single facility 90k tonnes pa Electricity generation 517kWh per tonne (20% efficiency; 50% ROC entitlement)	Advanced thermal technology as a complete solution	142.0
SRF to Market	Single facility 90k tonnes pa SRF off-take cost £40 per tonne	Solid recovered fuel with a market required	168.8
Do Nothing	No direct procurement of new facilities	Assumes that residual waste is disposed of to landfill	195.6

(Source: Ernst & Young)

34. There are a number of risks with adopting cost assumptions for landfill which are any lower than those set out in paragraph 33 above. There is growing uncertainty about the local supply of landfill in the longer term. Public acceptance and the increasing costs of engineering and managing such sites may result in a reduction in major new planning

<sup>2</sup> The Net Present Cost was calculated as at 1 April 2009 using the HM Treasury discount rate of 6.0875%

<sup>3</sup> ROC refers to Renewable Obligations Certificates. These are certificates issued to an accredited generator for eligible renewable electricity generated within the United Kingdom and supplied to customers within the United Kingdom by a licensed electricity supplier. One ROC is issued for each megawatt hour (MWh) of eligible renewable output generated. These certificates can then be sold to energy suppliers.

applications by landfill companies. Other projects have assumed that landfill costs will rise steeply from current levels, due to increasing environmental pressures, carbon reduction and carbon trading, LATS and further restrictions on materials that can be landfilled, leading to increased pre-treatment costs. Therefore the assumptions probably represent the lowest possible costs for the do nothing option. In addition the councils have not yet identified any landfill capacity within one days haulage distance of the councils' areas. Reliance on the availability of affordable landfill capacity would be a high risk strategy.

35. The results of the economic appraisal indicate that all of the technical solutions perform better in NPC terms than the Do Nothing option whereby the councils continue to rely on landfill for the management and disposal of residual MSW. The analysis indicates that the option of producing a SRF and delivering it to an end market has the highest estimated NPC of the three technical solutions. It should be noted that there are significant risks associated with the SRF to market solution in terms of the availability of market outlets for the SRF and cost thereof. For example, should the cost of SRF disposal increase from the base case assumption of £40p/t to £80p/t (estimated cost of thermal treatment) the NPC would increase by approximately 10% to £185.3m.
36. The technical solution that demonstrates the lowest NPC terms is ATT. During the appraisal of the technical solutions one of the risks identified with the ATT solution is the absence of a long term track record in relation to plant performance when compared to conventional thermal treatment and whether this may impact upon the certainty of electricity income which subsidises the cost of the solution. As a precautionary measure a sensitivity analysis was undertaken in regard to the efficiency of ATT to ascertain how a less efficient ATT option compares to the other options. The analysis resulted in an increase in the NPC of ATT from £142m to £163.8m. This makes the estimated NPC of ATT 6.7% more than SSC, but still less than that of the SRF to market and do nothing options.
37. The result of the economic appraisal demonstrates that the ATT and SSC technology options perform better in NPC terms than both the do nothing (continuing to landfill) and SRF to market options.

### **Financial Cost Appraisal**

38. The economic analysis examined the underlying costs of each solution irrespective of the procurement route or funding approach adopted. The ATT, SSC and SRF to market options all require capital investment resulting in borrowing costs being incurred funded either by the private sector or public sector borrowing. As such, a shadow tariff financial model was developed by the financial advisors to estimate the total projected costs of the technical solutions to the councils, taking into account the cost of borrowing.
39. For the purpose of the OBC, and in accordance with the Defra template OBC, the solutions were based on a design, build, finance and operate (DBFO) contract similar to that used for PFI contracts where the investment comprises a combination of third party debt and equity. The financial assumptions take into account the impact on lending terms of the current economic situation and are based on a combination of information available from recently closed deals and term sheets submitted by funders on other recent waste treatment projects reaching the latter stages of procurement.
40. The estimated costs represent the equivalent of an all inclusive gate fee where the contractor is responsible for receiving and treating the waste. The gate fee also includes the costs associated with landfilling process residues. The underlying capital cost and operating cost assumptions were provided by the councils' technology advisors. The estimated costs of each technology option were based on an average waste treatment capacity of 90,000 tonnes per annum commencing 1<sup>st</sup> April 2015. The projected treatment capacity is based on the forecast waste arising in 2035 and assumes both councils are seeking to maximise landfill diversion. The results of the

financial analysis and estimated costs of each solution over a 25 year period commencing on 1st April 2015 (programmed service commencement date) are shown below.

### Estimated Project Costs - (1 April 2015 – 31 March 2040)

Technology	Summary of facilities	Description	Nominal Cost (£'m)
SSC	Single facility 90k tonnes pa Electricity generation 431kWh per tonne (no ROCentitlement)	Small scale combustion as a complete solution	445
ATT	Single facility 90k tonnes pa Electricity generation 517kWh per tonne (20% efficiency; 50% ROC entitlement)	Advanced thermal technology as a complete solution	431
SRF to market	Single facility 90k tonnes pa SRF off-take cost £40 per tonne	Solid recovered fuel with a market required	452
Do nothing	No direct procurement of new facilities	Assumes that residual waste is disposed of to landfill	456

41. The results of the financial modelling support the economic appraisal in that the three technical solutions perform better in terms of estimated total cost than the do nothing option (continuing to landfill residual MSW). In addition, the SRF to market option has the highest estimated cost of the three technical solutions.
42. The costs of the do nothing option are lower in the earlier years of the contract period than those of the technology based options. For example, the estimated cost of the do nothing option in 2016 is £10.8m compared to a cost of £13.8m for SSC. These equate to gate fees of £138 per tonne for landfill and £176 per tonne for SSC and are the costs that the councils would pay at the time. The costs of landfill then increase at a faster rate than those of the technology based options and during the 25 year period are higher overall as set out in the above table. The implication of this for both councils is that budgets would need to be increased in the short to medium term at a higher rate for adoption of a technology based option than they would for the do nothing option. This difference in costs is based on the assumptions that the councils will have access to landfill capacity, that Landfill Tax has not accelerated at a higher rate than modelled and that the councils do not incur LATs penalties.
43. Sensitivity analysis was also undertaken on the ATT and SRF to market solutions similar to that performed as part of the economic appraisal in order to examine the robustness of the estimated financial costs of the technical solutions. This demonstrates that the estimated cost of the SRF to market option would increase to £504m in the event that the SRF disposal cost rises to £80 p/t from £40 p/t. The estimated cost of the ATT solution would rise to £502m based on a worse case scenario whereby the plant achieves 10% efficiency (in terms of electricity generation) and not 20% as expected.

44. The financial analysis shows that the ATT and SSC technology options perform better in terms of estimated project costs than both the do nothing option (continuing to landfill) and SRF to market option. The costs of all four options appear relatively close and, based on the sensitivity analyses described in paragraph 43 above, it appears that there is a risk that an ATT or SRF to market option could cost more than a landfill based solution. However this needs to be considered within the context that the costs for the do nothing option are the best that could be achieved if indeed this option could be delivered at all. The costs for ATT and the SRF to market solution arising from the sensitivity analyses are likely to be worst case scenarios. There is more certainty about the costs of a technology based solution which is more likely to be future proof when compared to a landfill based solution. In addition the commercial terms relating to the cost of borrowing the capital for a technology based solution are likely to improve as the economic climate improves and the technologies establish more robust track records offering opportunities for the project costs to be further reduced.

### **Bankability Aspects**

45. In carrying out the appraisal of the short-listed options the councils also considered the likely procurement and funding implications for different technology options. The availability of private finance for different technologies is significantly affected by the following factors:
- Robustness and security of financial projections (capital costs, operating and maintenance costs, and revenues);
  - The degree to which the technology is proven in the market place and has a track record in terms of its use at a similar scale and for a similar purpose;
  - Performance risks associated with the technology and whether it will be reliable in terms of delivery; and
  - Whether there are a number of different suppliers or the technology is a novel solution reliant on one supplier or an economically insignificant supply chain.
46. Thermal treatment technologies are wide-ranging and have varying track records of delivering secure and reliable services over a typical life of a public private partnership (PPP) contract. SSC has reference projects in the UK and is able to demonstrate a proven track record of attracting funding. ATT is less proven than SSC or conventional energy from waste at this scale in the UK. However, this technology is currently being considered on a number of PPP and PFI procurements some of which are at the latter stages of the process and, as such, have been subject to funders due diligence. It is anticipated that the technology will be financed by banks on these projects over the next 6 to 12 months.

### **Financial Conclusions**

47. The options appraisal process identified that a thermal treatment solution is better placed to deliver the councils' requirements in terms of the economic appraisal and in terms of estimated project cost. However, it did not clearly identify a single thermal treatment technology that was superior to the other thermal treatment technologies evaluated.
48. The process has therefore not been used to pre-determine a preferred solution for the councils. The selection of the technology will be subject to the outcome of the proposed procurement process.

## Apportionment of Project Costs

49. The apportionment of project costs between the councils and a comparison with the do nothing position is summarised in the table below. As an example, the costs have been allocated on the basis of the residual MSW tonnage contributed by each council. Based on the waste flow model developed by the councils, the proportion of residual tonnage over the period from April 2016 to 30 March 2040 is 91:9 for Swindon and Wiltshire respectively. The apportionment of project costs remains subject to agreement between the councils and proposals will be brought to the councils' respective cabinets in April 2010.

### Project costs by Council

	Swindon Borough Council	Wiltshire Council	Total
	£m	£m	£m
Project cost	375	37	412
Landfill costs	30	3	33
<b>Total cost</b>	<b>405</b>	<b>40</b>	<b>445</b>
Do nothing	<b>415</b>	<b>41</b>	<b>456</b>
Difference	<b>10</b>	<b>1</b>	<b>11</b>

  

<b>Total Residual Waste</b>	2,020,000	200,000	2,220,00
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50. A comparison with the costs of the do nothing option split by council indicates that the cost of a technology based solution is the lowest option for each council although this is more pronounced for Swindon Borough Council which has a significantly higher proportion of residual MSW to dispose of during the contract term than Wiltshire Council.

## Planning Considerations

51. The Governments approach to planning for sustainable development and climate change is set out in Planning Policy Statement 1 (PPS1) and its supplement on climate change. This represents a significant change in the way the built environment is managed by fully integrating climate change considerations into the planning system. Therefore key issues such as waste management must be considered holistically in the move towards sustainable communities and addressing climate change.
52. The PPS1 supplement on climate change states that development applications should be able to demonstrate that a site is suitable in terms of use of decentralised energy and infrastructure, and in contributing to energy supply. It is acknowledged that utilising waste as an energy and heat resource can play a key role in achieving the aims of PPS1 and help facilitate more sustainable forms of development.
53. The councils' strategic approach to planning policy for waste management is set out within the Wiltshire and Swindon Waste Core Strategy Development Plan Document (DPD). This document provides the cornerstone of local waste planning policy and was adopted by both councils in July 2009. As the key strategic DPD it will influence the preparation and delivery of all other waste planning policies and proposals.
54. The councils are in the process of preparing the Waste Site Allocations DPD which will be produced in accordance with the strategic direction of the Waste Core Strategy and will provide specific detail, relating to each identified site.

55. The Waste Site Allocations Issues & Options Report contained a number of sites that on initial appraisal were considered suitable by officers for waste treatment facilities subject to further detailed investigation.
56. Three of these sites, Waterside Park, Groundwell Industrial Estate, and Chapel Farm, Swindon are currently in Swindon Borough Council's ownership. Therefore securing a site for development may not prove to be a significant risk to fulfilling the objectives of this project. However if the most sustainable site was deemed to be a site in private ownership, then negotiations would need to be undertaken immediately to secure a suitable (ie. affordable) development option. This course of action certainly has the potential to represent a high risk to the project.
57. The majority of the sites in the Waste Sites Allocations Issues & Options Report are suitably sized for the treatment technologies being considered.

### **Project Governance & Risk**

58. The two councils have signed a Memorandum of Understanding (MoU) which defines and regulates how the authorities will work together to achieve the aims and objectives for the production of the OBC and development of the tender documentation.
59. If the councils enter into a joint procurement a more formal inter-authority agreement (IAA) will be required. This will need to be developed ahead of the commencement of the procurement stage of the project.
60. Given the size and the long-term nature of the project there is a need to ensure strong and consistent governance. The councils recognise that a major procurement project such as this requires a knowledgeable, experienced and dedicated team with a range of specialist skills.
61. Advice on best practice governance arrangements and structures is available from Defra and the councils plan to adopt an approach based on this. The project team will need to be strengthened for the procurement stage of the project and proposals will be developed during October 2009.
62. Both councils use a similar approach for the effective management of risk and this has been jointly adopted for the project. The councils have identified and considered the risks associated with the project and have established a risk register which contains all the foreseeable key risks. Risks have been considered in relation to the timing and probability of their occurrence and potential impact. An associated risk rating is ascribed to each risk, which is updated monthly by the risk owners. A copy of the summary risk register showing all the high level risks is attached at **Appendix 5**.

### **Other Key Issues**

#### **Procurement**

63. The procurement project will be undertaken in accordance with Statutory Instrument 2006 No 5 "The Public Contracts Regulations 2006" (which implements the EU Procurement Directives).
64. The councils will follow the competitive dialogue (CD) procedure for this procurement process. The project delivery timetable will be developed in accordance with programme guidance from WIDP, Local Partnerships (formally 4ps and PUK) and the Office of Government Commerce (OGC).
65. The progress that the councils have made in preparing the waste site allocations Development Plan Document (DPD) should mean that a potential developer would be able to secure the necessary planning consents to ensure the successful delivery of this project.

66. A timetable for the procurement process is shown in **Appendix 6**. Programme risks and corresponding mitigation measures have been identified and incorporated into the detailed programme. The projected operational commencement date of the facility is 2016 and is considered to be realistic.

### **Sustainability**

67. The councils acknowledge the importance of utilising waste as a resource and will demonstrate a preference for proposals that will lead to renewable energy production to meet local, regional and national targets for renewable energy and carbon dioxide emission reduction.
68. The LATs scheme and Landfill Tax are intended by Government to fundamentally change the way that municipal waste is managed in order to reduce greenhouse gas emissions. Other initiatives, such as Carbon Trading, targets for carbon reduction and Renewable Obligations Certificates (ROCs), address a wider agenda, but also encourage diversion of waste from landfill, to less environmentally harmful processes.
69. The Environment Agency provides a tool for assessing environmental impact, including carbon savings calculations (Waste and Resources Assessment Tool for the Environment - WRATE). A preliminary WRATE analysis has been undertaken using up to date information about the composition of each councils waste. Further work on the model in the coming weeks will enable tenders to be evaluated against these environmental criteria.

### **Joint Working**

70. Expressions of interest have been made by two neighbouring councils, regarding the potential and benefits of a joint procurement for processing residual waste. The current relationship between Wiltshire and Swindon could therefore expand to include other authorities, subject to this being in the best interest of a wider partnership. Any authority wanting to work with us would have to carry out the type of detailed work that the councils have already completed in preparing the OBC in order that all authorities concerned could take a properly informed decision on expanding the current partnership.
71. The addition of new partners would affect this project in two key ways. Firstly the available tonnage for treatment would increase, which would be likely to alter the choice and size of the chosen treatment solution. This would be beneficial in terms of economies of scale and affordability but might introduce further risks regarding the timetable for delivery of the project and the ability to obtain planning permission for a technology based solution. A broader partnership is likely to require stronger, more stringent governance arrangements.

### **Findings of the OBC**

72. Arising from this OBC are several key conclusions:
- The councils are at risk of exposure to increasing landfill charges and landfill tax in the short term and potential LATs penalties in the longer term.
  - A robust analysis of technology options has been undertaken based on the councils' growth and recycling assumptions.
  - Three technology solutions have been chosen which match the councils' criteria.
  - The three selected technology solutions and the do nothing option have been subject to a rigorous economic and financial appraisal.
  - The do nothing option will not meet the councils' medium and long term strategic targets or requirements to divert waste from landfill.
  - All options entail higher costs of residual waste management than are currently incurred by the councils with the do nothing option entailing the highest costs.

- A thermal treatment solution is therefore better placed to deliver the councils' long term residual waste treatment requirements.
- Selection of a single technology or preferred solution will be subject to the outcome of the proposed procurement process.
- A waste treatment facility funded through private financing will provide value for money for the councils based on a qualitative evaluation using the HM Treasury Value for Money Assessment.
- The estimated project cost of the solution has been assessed as approximately £445 million over the life of the project.
- Over the life of the project a thermal treatment solution will be approximately £11m cheaper than the do nothing option.
- Taking account of potential LATs penalties at £150 tonne the saving could increase to £62m.
- The preferred procurement route for the thermal treatment solution is the competitive dialogue process.

### **Environmental Impact of the Proposal**

73. The implications are set out in paragraphs 67 to 69 above.

### **Equalities Impact of the Proposal**

74. There are no known implications at this stage.

### **Risk Assessment and Options Considered**

75. The OBC considers in detail a number of solutions and compares the solution costs with those of the do nothing option. The financial modelling in the OBC suggests that the do nothing option is the most expensive course of action. Failure to procure and deliver the residual waste treatment solution could result in additional costs being incurred by both councils in excess of those presented in the OBC. These could arise because it is not possible to predict with any degree of certainty the long term costs of landfilling whereas a technology based solution would provide a proven disposal route for a known cost.
76. Landfill Tax is now subject to an £8 per year escalator until it reaches £72 in 2013/14. Beyond that date, the councils face the risk of further escalation to bring the tax up to the level applied in some EU countries. The government is also continuing discussions about banning more materials from landfill.
77. The Government might change its current approach to the Landfill Allowance Trading Scheme thereby affecting the financial risks that both councils face. The modelling does not include any assumptions about potential application of fines under LATs.
78. Projections of waste growth and assumptions about LATs fines and landfill tax costs are based purely on current information. The situation beyond 2013/14, although unclear, may be more stringent and is likely to result in an upward, rather than a downward, trend in costs of landfilling waste.

### **Financial Implications**

79. The financial implications of the proposed solution are addressed within the body of the report and have been prepared by advisors under the scrutiny of the project team's financial representatives.
80. The costs of producing tender documentation, including the use of advisors have been estimated at £200,000 to be shared equally between the councils. This funding has already been allocated to the project by both councils.

81. The costs of the procurement exercise are difficult to quantify with certainty but based on other similar projects, have been estimated at up to £3m over the next 3 years. Funding for this will need to be incorporated into both councils' medium term financial plans from 2010/11 onwards. Officers will work on this cost estimate including cost sharing arrangements between the councils over the coming weeks and incorporate appropriate amounts into the councils proposed budgets for consideration during their budget processes.
82. As the costs of waste treatment are higher in earlier years than those of the do nothing option both councils will need to plan for higher increases in their waste disposal budgets between now and 2015/16. Various options exist for achieving this and proposals will be developed by both councils for consideration within the processes for approving their medium term financial plans and possibly the 2010/11 budget.
83. A further report seeking a decision to invite tenders and commence dialogue on solution delivery will be brought to the councils' respective cabinets in April 2010. Subject to the outcome of discussions with neighbouring councils, this report will also recommend whether the project should be expanded to a wider partnership.

### **Legal Implications**

84. The preparation of the OBC has been undertaken with the assistance and support of the councils' legal teams. In addition the councils' legal advisors Eversheds provided input and feedback on legal and procurement issues set out in the OBC.
85. The current Memorandum of Understanding (MoU) between the two councils will not be suitable for the next stage of the project and more stringent joint working arrangements will be necessary. Advice from Defra is that an administrative collaboration in the form of a joint committee with an inter-authority agreement would be a suitable arrangement for the two councils.

### **Reason for Proposal**

86. To meet the requirements of the Landfill Directive minimising the councils' exposure to fines and the impact of increasing Landfill Tax costs, and to contribute to the achievement of the councils' climate change and sustainability objectives by utilising waste as a resource.

### **Proposal**

87. That Cabinet:
- (i) Endorse the findings of the OBC.
  - (ii) Note the risks associated with the do nothing option for Wiltshire council.
  - (iii) Agree that the Project Board prepare tender documents to procure the provision of a residual waste treatment solution in line with the conclusions of the OBC under the competitive dialogue procurement route.
  - (iv) Delegate authority to the Director of Transport, Environment and Leisure to continue discussions with neighbouring councils.
  - (v) Note the timescales and costs associated with the preparation of tender documentation during 2009-10.

**TRACY CARTER**

Service Director Operations  
Wiltshire Council

**JACKIE MOYLES**

Head of Streetsmart  
Swindon Borough Council

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**The following unpublished documents have been relied on in the preparation of this Report:**

Options for Treating Residual Municipal Solid Waste – Juniper Consultancy Services Ltd  
July 2009  
Financial analysis and modelling - Ernst & Young LLP

## Potential Sites

Site Name	Site Area	Planning Status	Site Ownership
Parkgate Farm, Purton	23 ha (includes areas of previous landfill)	Included within the Waste Site Allocations Issues and Options Report	Private ownership
Land East of Current Household Recycling Centre (HRC) / Waste Transfer Station (WTS), Stanton St Quintin	3 ha	Included within the Waste Site Allocations Issues and Options Report	Private Ownership
Studley Grange Waste Management Facility, Wootton Bassett	50 ha (includes areas of previous landfill)	Included within the Waste Site Allocations Issues and Options Report	Private Ownership
Waterside Park, Swindon	8.2 ha	Included within the Waste Site Allocations Issues and Options Report	Swindon Borough Council
Land within Groundwell Ind Est, Swindon	9.3 ha	Included within the Waste Site Allocations Issues and Options Report	Swindon Borough Council
Chapel Farm, Swindon	Area A: 10.5 ha (identified for landfill extension)  Area B: 3.4 ha	Site operators have requested the site be appraised for treatment uses. This will be undertaken for the production of the Waste Site Allocations Submission Draft.	Swindon Borough Council.

**Technologies****Incineration**

Incineration is thermal treatment on a large scale which destroys the biodegradable element of the waste and can generate heat and/or power in the process. There is a residual hazardous waste in the form of fly ash which needs to be landfilled and non-hazardous bottom ash which can be used in the manufacture of products for use in construction. This technology has an established track record both in the UK and worldwide.

**Small Scale Combustion (SSC)**

Incineration technologies have been optimised by some developers to be commercially viable at small to medium scale. The operating principles of small scale combustion are fundamentally the same as those for mass burn incineration but on a smaller scale.

**Advanced Thermal Treatment (ATT)**

ATT covers a range of leading edge thermal treatment processes. The gasification process has been proven in Japan and is being used commercially in almost 100 plants in that country. ATT processes attract Renewable Obligation Certificates (ROCs) for the renewable element of the electricity which they produce which can strengthen the business case for a project.

**Making a Solid Recovered Fuel (SRF)**

This is a process to convert heterogeneous residual MSW into a fairly homogeneous output (the fuel) that can be used beneficially for its energy value. The fuel would normally be created using an MBT or MHT process.

**Mechanical Biological Treatment (MBT)**

This is a two stage process. The mechanical stage sorts the waste and recovers additional recyclable material and the biological stage utilises the biological activity of the waste to drive off moisture, at the same time reducing the biodegradability of waste. Depending on the composition of the input waste the output can be a fuel or a compost like output for use in land remediation.

**Mechanical Heat Treatment (MHT)**

The first stage of the process is similar to MBT but the second stage utilises thermal drying to produce a fuel. There is little, if any, reduction in biodegradability in the MHT process.

**Bio-Stabilisation**

This is a process that significantly reduces the biological fraction of waste but does not extend to turning the waste into a marketable product. The bio-stabilised output is landfilled.

**Biogas**

A number of processes such as anaerobic digestion break down the bio-degradable portion of waste, using the various types of bacteria present in the waste and, as a result, generate a gas rich in methane, which is known as biogas. The gas can be used to produce electricity and heat.

## Preliminary Evaluation of Options

Waste Management OPTIONS	Do Nothing	Large Scale Incineration	Small Scale Combustion (SSC)	Standalone ATT	Make SRF for use Elsewhere	SRF+SSC	SRF+ATT	Bio-stabilised Output to landfill	Partial Bio- Stabilisation to Landfill	CLO for use on Contaminated Land	Focus on Biogas
Key Waste Goals	A	B	C	D	E	F	G	H	I	J	K
<b>Ability to achieve Landfill Diversion</b>											
Potential to meet LATS targets	✗	✓	✓	✓	✓	✓	✓	✓	●	●	●
Potential to meet diversion targets	✗	✓	✓	✓	✓	✓	✓	✗	✗	●	✗
<b>Risk Profile</b>											
Technology risks: systems with a strong track record are available	NA	✓	✓	●	✓	●	●	✓	✓	✓	●
Commercial risks: no significant issues in managing outputs	✗	✓	✓	✓	✗	✓	✓	✗	✗	✗	●
Counterparty risks/ process guarantees	NA	✓	✓	●	●	●	●	✓	✓	●	✓
<b>Deliverability</b>											
High probability of being 'bankable'	✗	✓	✓	●	●	●	✗	●	●	✗	●
Low likelihood of public opposition and planning delays	NA	✗	✗	✗	✓	✗	✗	✓	✓	✓	●

The tick ✓ is a positive indication and where it is used it signifies that that aspect of the option is likely to be evaluated favourably in any subsequent procurement.

The circle ● is used to denote that there is a more marginal situation (e.g. limited track record, contractual complexities or subject to specific technology selection).

The cross ✗ represents known negative issues (e.g. lack of reference plants, substantial contractual issues, or failure to meet landfill targets under 'normal' operating assumptions).

### LATS Compliant Scenarios

Three scenarios where the requirement is for adequate residual waste capacity to enable the councils to just meet their Landfill Directive requirements for the diversion of BMW waste through to 2035.	
Scenario A	Assuming that 50,000 tpa of waste is sent to Lakeside Energy from Waste Ltd ("Lakeside") and 60,000 tpa is sent to a Mechanical Biological Treatment (MBT) Plant at Westbury ("Westbury MBT") with the Solid Recovered Fuel (SRF) being thermally processed under the MBT contract.
Scenario B	Assuming that 50,000 tpa is sent to Lakeside and 60,000 tpa is sent to Westbury MBT but with the Solid Recovered Fuel (SRF) being landfilled.
Scenario C	Assuming that 50,000 tpa is sent to Lakeside and the remainder of Wiltshire Council's residual waste is managed under the proposed joint contract.

### Minimal Waste to Landfill Scenarios

Three scenarios where the requirement is for adequate residual waste capacity through to 2035 such that from 2016 only the reject fraction or ash from a residual waste treatment option shall be permitted to be landfilled.	
Scenario A*	Assuming that 50,000 tpa of waste is sent to Lakeside Energy from Waste Ltd ("Lakeside") and 60,000 tpa is sent to a Mechanical Biological Treatment (MBT) Plant at Westbury ("Westbury MBT") with the Solid Recovered Fuel (SRF) being thermally processed under the MBT contract.
Scenario B*	Assuming that 50,000 tpa is sent to Lakeside and 60,000 tpa is sent to Westbury MBT but with the Solid Recovered Fuel (SRF) being managed under the proposed joint contract.
Scenario D	Assuming that 50,000 tpa is sent to Lakeside only and the remainder of Wiltshire Council's residual waste is managed under the proposed joint contract.

## SUMMARY RISK REGISTER

Ref	Risk	Key reason for Risk	Key Impacts	Lead Risk Owner	Risk Owner(s)	Date of assessment	I	L	x	RR	Mitigation action	Owner of Action	Direction of travel	I	L	x	TR	Review Date
STR1	Impact from competitors and other bodies within geographical area	Competitive market Timing	Limited or no market response.	BOARD	PROC	Apr-09	4	3	12	High	Soft market testing. Publish PIN.	PROC	↓	4	2	8	Medium	Nov-09
STR3	Timescales for delivery	2016 contract dates. LATS.	Cost	BOARD	BOARD	Apr-09	4	3	12	High	Plan & monitor regularly	PM	→	4	3	12	High	Monthly
STR4	Impact and future increases in Landfill Tax	Landfill tax escalator	Cost	BOARD	FIN	Apr-09	3	4	12	High	Increase recycling & waste diversion	TECH	→	3	4	12	High	Quarterly
STR5	Impact on the scheme due to current economic climate for funding project build	Economic downturn. Lack of funding	No funding or supplier	BOARD	FIN	Apr-09	4	4	16	High	Robust solution. Clear evaluation.	FIN / PROC	↓	4	3	12	High	Quarterly
STR11	Impact due to legislative changes	EU changes.	Viability of solution.	BOARD	TECH	Apr-09	4	3	12	High	Consultation response. Monitor EU & Defra activity.	TECH	→	4	3	12	High	Quarterly
STR12	Impact of differing waste strategies	Each council may have differing waste strategies that cannot be fully aligned or when combined limit options.	Reduced choice of options. Delays & aborted work.	BOARD	BOARD	May-09	4	3	12	High	Fully understand strategies & potential impacts before options appraisal.	TECH	↓	3	2	6	Medium	Oct-09
STR13	Impact of doing nothing	Do nothing option may seem acceptable in the short term	No landfill capacity in SBC beyond 2016. Significant medium and long term costs.	BOARD	BOARD	Oct 09	4	4	16	High	Clear Cabinet report together with member engagement to ensure that long term risks and the need to act now is fully understood.	BOARD	↓	4	3	12	High	Nov 09
TECH10	Uncertainty of composition. Potential for change over long contract period, due to action by LAs or social changes.	Treatment solution not best suited to input waste.	Lack of or problems with treatment of waste.	TECH	TECH	Apr-09	4	3	12	High	Regular waste surveys	TECH	↓	4	2	8	Medium	Oct-09

Ref	Risk	Key reason for Risk	Key Impacts	Lead Risk Owner	Risk Owner(s)	Date of assessment	I	L	x	RR	Mitigation action	Owner of Action	Direction of travel	I	L	x	TR	Review Date
TECH11	Early years waste tonnage too small for certain technology solutions.	Balance between bankability and process capacity up to the design horizon.	Redundant plant capacity.	TECH	TECH	Aug-09	4	3	12	High	Develop modular technology solution.	TECH	↓	4	2	8	Medium	Nov-09
FIN1	Affordability and funding options Revenue / Capital	Current poor economic climate and reduced funding sources	Can't implement solution	FIN	FIN	Apr-09	4	4	16	High	Political engagement to ensure allocation in MTFP. Defra engagement (quantitative easing?).	BOARD	↓	4	3	12	High	Oct-09
PLAN2B	Identification of appropriate sites - privately owned land	Land may not be available.	Can not deliver a suitable site.	PLAN	PLAN	Apr-09	4	4	16	High	Early and effective negotiation with the land owners of suitable sites	PLAN	↓	4	3	12	High	Autumn 2009
PLAN3	Land earmarked is recognised within the development plan	The inclusion of the site within a Development Plan increases the likelihood that planning permission will be granted.	Planning permission may be more difficult to obtain.	PLAN	PLAN	Apr-09	4	3	12	High	Timely delivery of the Waste Site Allocations DPD Submission Draft.	PLAN	↓	4	2	8	Medium	Autumn 2009
PLAN6	Planning application detailed, timely and valid	Essential for the delivery of the project.	Delay may lead to impacts upon the Councils' LATS targets	PLAN	PLAN	Apr-09	4	3	12	High	Close liaison with successful tenderer, the planning department and stakeholders	Project Team	↓	4	2	8	Medium	Weekly
PLAN7	Engagement and support from external bodies (Environment Agency etc )	Support from external bodies will lead to a greater chance of planning permission being granted.	Opposition from external bodies may lead to an increased difficulty in gaining planning permission.	PLAN	PLAN	Apr-09	4	3	12	High	Early and effective consultation with key stakeholders.	Project Team	↓	4	2	8	Medium	Monthly
LEG7	Availability of site	Potential uncertainty around ownership & challenges to ownership.	Costs (i.e. appeals and litigation).	LEGAL	PLAN	May-09	4	3	12	High	Cover off ownership issues (title checks).	PLAN	↓	4	2	8	Medium	

Ref	Risk	Key reason for Risk	Key Impacts	Lead Risk Owner	Risk Owner(s)	Date of assessment	I	L	x	RR	Mitigation action	Owner of Action	Direction of travel	I	L	x	TR	Review Date
PART1	Political engagement, agreement and direction	Accountability and political buy-in required. Potential change in direction.	Aborted work. Project delay & linked costs.	BOARD	BOARD	May-09	4	3	12	High	Engage members before completion of the OBC.	BOARD	↓	4	2	8	Medium	Oct-09

## Outline Procurement Programme

Activity	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	Q4 2012	Q1 2013	Q2 2013	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
Planning and pre preparation																											
OJEU Notice to short listing																											
Selection of bidders and preparation for the dialogue stage																											
Competitive dialogue																											
Preliminary Planning Process																											
Submission of final tenders and bid evaluation																											
Bid clarification																											
Preferred bidder to contract close																											
Planning Process																											
Construction																											
Commissioning																											
Commence Operation																											