NLWA original response returned 23.12.09

Second iteration returned 5.1.10. Revisions in blue.

Third iteration returned 8.1.10. Revisions in red.

Document closed on 25/01/10 by [redacted]

Technical Clarifications				
No.	**Ref**	**Issue**	**Response**	**WIDP response**
1	2.2.1.7	Please provide a reference (chapter, page no).to the London Plan that takes a 'specific view' of new and emerging technologies.....	Within the current London Plan, Policy 4A.21 Waste strategic policy and targets makes specific mention of the dealing of waste by other means, "with a declining reliance on landfill and an increasing use of new and emerging technologies". Further, Section 4.62 of the London Plan states that "other forms of energy recovery such as new and emerging advanced conversion technologies should be considered in preference to conventional incineration". Within the Consultation Draft Replacement London Plan, paragraph 5.81 states that "the Mayor wants to develop a minimum greenhouse gas performance for technologies recovering energy from non-recyclable waste. All waste treatment technologies will need to meet this level, or demonstrate they can practically meet it in the future in order to gain Mayoral support. This would for example, tend to rule out new mass burn incineration facilities of mixed waste generating electricity only, but would also combustion of biomass waste where both heat and power generated are used." On this basis, we consider that the development of an EfW (CHP) utilising SRF in North London would be supported by the Mayor. This is evidence by the attached letter of the 9th December from the Mayor as attached at appendix A.	Does this mean that it will be equally difficult to develop efw/srf/chp option in NL – compared to ATT? CLOSED

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<td>Support for decentralised energy systems within the London Plan is further reinforced by para 5.9, consultation draft London Plan: 'including the use of low carbon and renewable energy and the greater utilisation of energy generated from waste'. In particular the consultation draft Plan refers to waste as a valuable resource and draft Policy 5.5 identifies an expectation that '25% of the heat and power used in London to be generated through the use of localised decentralised energy systems by 2025', with the supporting text identifying that use of energy from waste is supported. Therefore, the Authority has strong reason to believe that the GLA will support the utilisation of energy from waste where they form an integral part of a wider development that provides demand for heat (e.g. major housing or mixed use development proposals).</td>
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<td>2</td>
<td>Fig 2.8</td>
<td>Can you please provide the tabulated data used to construct the figure.</td>
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<table>
<tr><th>Total residual waste remaining and Recycling</th><th></th></tr>
<tr><td>Paper & card</td><td>24.80%</td></tr>
<tr><td>Plastic film</td><td>3.10%</td></tr>
<tr><td>Dense plastic</td><td>4.75%</td></tr>
<tr><td>Textiles</td><td>2.30%</td></tr>
<tr><td>Other combustibles</td><td>12.45%</td></tr>
<tr><td>Glass</td><td>6.24%</td></tr>
<tr><td>Other non-combustibles</td><td>5.52%</td></tr>
<tr><td>Organics</td><td>33.19%</td></tr>
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<td>Can you please state what percentage of the organic waste you expect to capture through food waste collections? What have you assumed to be the biogas generation rate for your clean AD and the dirty AD (from MBT)?

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<tr><td>Fe metal</td><td>3.88%</td></tr>
<tr><td>Non-fe metal</td><td>0.83%</td></tr>
<tr><td>Fines</td><td>2.94%</td></tr>
<tr><td>Total</td><td>100%</td></tr>
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The totals capture of organic material through source segregated streams is estimated to be in the region of 49%.

Electricity generation form MBT-AD is 75KWh per tonne input.

Electricity generation from AD is 100KWh per tonne input.
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<td>3</td>
<td>Page 77</td>
<td>What is the material extracted from pre-processing that makes up the 3 to 5 % towards recycling? What are the assumed input waste compositions and capture rates that support this level of recovery?</td>
<td>The level of recycling from the MBT facility has risen partly due to less material being separated out at the kerbside and thus more potential recyclables reaching the MBT facility and due to a further review of the proposed technologies and their likely performance. The level of material potentially recycled from MBT’s varies greatly according to the feedstock and the technology type. Recycling levels in the region of 4-12% (by weight) of input waste have been seen in the market but guaranteed performance will always be at the lower end, with higher recycling levels being dependant on more unreliable market outlets. For removal of metals and a grit/glass fraction we have used a figure of 6% (of input waste) (~3% contribution to NLWA National Indicators), the exact split of material has not been analysed as the modelling has only used headline figures</td>
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4	4.5 1st bullet	'EfW may be more acceptable to planning authorities outside North London' – can you please provide evidence of which planning authorities would find it acceptable to receive SRF from NL? - Link to your potential sites for SRF combustion.	It should be noted that the Authority is not stating that planning authorities outside London would find it acceptable to receive SRF from NLWA. The Authority is making the point that in areas outside London, it is aware that some Authorities do not object to EfW waste management solutions. Examples include Northamptonshire and Milton Keynes, whom are procuring waste management services on this basis. However, the Authority is mindful that EfW waste management solutions have the propensity to generate significant levels of objection. The Authority believes there may be existing facilities that might consider acquiring SRF from NLWA. For example large scale industrial users may acquire the fuel for existing operations. This is a practical consideration that the Authority has to take into account, in light of the fact that there may not be demand within London for the fuel that will be created by the waste management facilities, or that the demand may not be on stream at the point at which SRF is created. To avoid landfilling SRF the Authority must look at alternative demand for SRF, even if it is located outside of London. In terms of evaluation weightings, the Authority has assigned equal values of 40% to the Financial and Technology criteria. In terms of the Technology sub-criteria weightings, these look at carbon and other environmental issues (such as climate change, human health, air quality, etc), along with energy efficiency and fuel flexibility. As such the CHP component is not directly assessed but rather the overall effectiveness of the fuel	It is also the case then that the srf could go to an efw plant (without chp) if that was the lowest cost option? What weightings are you giving to chp outcomes as measured by the environmental assessment criteria of your evaluation? CLOSED

			use solution. On this basis, the Authority acknowledges that the SRF produced could go to an EfW facility (without CHP) if this is provides the best overall outcome under the evaluation framework.	
5	4.5 3rd bullet	Where is the evidence for this – what are the comparative range of cost/performance?	The level of recycling from the MBT facility has risen partly due to less material being separated out at the kerbside and thus more potential recyclables reaching the MBT facility and due to a further review of the proposed technologies and their likely performance. The level of material potentially recycled from MBT's varies greatly according to the feedstock and the technology type. Recycling levels in the region of 4-12% (by weight) of input waste have been seen in the market. For removal of metals and a grit/glass fraction we have used a prudent figure of 6% (of input waste) (~3% contribution to NLWA National Indicators), the exact split of material has not been analysed as the modelling has only used headline figures. Cost improvements will be made through: • Increase recycling; • Reduced landfill tax • Savings on landfill gate fee, landfill tax and landfill transportation costs In addition, the Authority is working with London Remade to explore outlet for such fractions and fines and aggregates.	CLOSED
6	4.5 4th	Please quantify/justify the contribution	The OBC models 3% NI contribution through the MBT	

	bullet	to recycling.	which is a prudent assumption based on the range of recycling outputs available through MBT and recycling rates achieved with current market technology as discussed in the response above.	
7	4.9, p99	Some potential fuel users prefer a high CV fuel but you will re-blend lower CV material (digestate) with the high CV fraction. Where will this re-blending occur – at the site of the fuel producer or user?	The re-blending of the fuel will occur on the production side i.e. by the Waste Service Contractor. It is recognised that the addition of digestate may lower the overall CV of the SRF but this is seen as a balancing issue for the achievement of ROCs, technology flexibility and the minimisation of landfill requirements. Because the fuel specification will include a permissible moisture content, digestate which is blended into the SRF will need to be dried prior to blending. This will serve to reduce the specific gravity of the digestate to a level comparable to that of the high calorific material, thereby reducing the likelihood of settlement. However, should any settlement of the SRF occur during transportation, the feeding mechanism would be expected rectify the settlement. This is because, the fuel use facility(ies) will be required to have fuel storage bunkers, which are typically used as part of automated or semi-automated feed systems to mix input materials prior feeding them into a boiler.	The srf will surely separate out (due to differing bulk densities) if transported to long distance user – who will bear this interface risk? CLOSED
8	4.10, 5th para	MRF – is this a MRF for co-mingled material? If so where is the reference MRF that demonstrates achievement of 5% rejection rate?	The OBC considers the Greenstar Aldridge plant as a reference MRF which currently achieve a 5% rejection rate. Please see link to associated WRAP case study: http://www.wrap.org.uk/downloads/WRAP_case_study_-_Greenstar_Environmental_Ltd_MRF.a4754911.8060.pdf	Closed

			It is expected that by the time the new MRF is in place the technology will have advanced further and the extensive education programme will also reduce the contaminations levels. Consequently a 5% or lower level of rejects is considered achievable.	
9	4.12.1	Recycling contribution is assumed to be 3% - as opposed to 3 to 5 or 3 to 6% elsewhere – what have you assumed in you massflow model for the reference project?	The level of recycling from the MBT facility has risen partly due to less material being separated out at the kerbside and thus more potential recyclables reaching the MBT facility and due to a further review of the proposed technologies and their likely performance. The level of material potentially recycled from MBT's varies greatly according to the feedstock and the technology type. Recycling levels in the region of 4-12% (by weight) of input waste have been seen in the market but guaranteed performance will always be at the lower end, with higher recycling levels being dependant on more unreliable market outlets. For removal of metals and a grit/glass fraction we have used a figure of 6% (of input waste) (~3% contribution to NLWA National Indicators), the exact split of material has not been analysed as the modelling has only used headline figures. Notwithstanding this, the Authority is seeking to increase diversion and is working with London Remade to explore outlet for such fractions and fines and aggregates.	CLOSED
10		Re. Re-blending MBT digestate with high CV fraction – please let me have your assumed tonnage and CV for digestate and for the high CV fraction.	SRF is modelled at 120,000 tonnes of high CV fraction and 200,000 of digestate. Overall CV is assumed to be in the region of 13MJ/kg. This will be highly dependent upon the final moisture content of the fuel.	What are your assumed CV's for the high and low fractions? CLOSED

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<td>The following gives information received from the Authority's technical advisers:

<table>
<tr><th>Output</th><th>NCV</th><th>Hasse</th><th>Enpure</th></tr>
<tr><td>Hi Grade SRF</td><td>MJ/kg</td><td>11 - 15 (>=15)</td><td>>=15</td></tr>
<tr><td>Digestate Fuel Fibre</td><td>MJ/kg</td><td>10 - 12</td><td>5 - 7</td></tr>
<tr><td>Mixed to Grate</td><td>MJ/kg</td><td>16.4</td><td>11.6</td></tr>
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Taking this information into account, the Authority has chosen to take an average position of 13MJ/kg as the calorific value for the blended fuel.</td>
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<td>What have you assumed for the annual cost of determining biomass content for the purposes of ROC income? Is this included in the fuel use contract?</td>
<td>No SRF testing costs have been assumed within the financial modelling.

The most recent relevant document in relation to SRF testing protocols is 'BS EN 15442 Solid Recovered Fuels – methods for sampling'. This document is currently a draft and is yet to be converted into a British Standard. Taking the minimum sampling requirement of 1 sample per 1,500 tonnes, this would amount to 214 samples for 320ktpa of SRF. Based on industry information, testing costs are estimated to be in the order of £650 per sample which would introduce an annual testing cost of £140,000. Over life of the contract this would increase the real cost by around £3.5M and the nominal cost by £5.5M. This additional cost is comfortably within the affordability envelope.</td>
<td>Closed</td>
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<td>For what period is it envisaged that the new MBT plant and existing efw plant at Edmonton will operate together? What will be the typical total tonnage input to the site to serve these facilities and how does this compare with the current total tonnage input to the site?</td>
<td>The MBT / AD facility is expected to come on-line in April 2016. As such the facility would operate in conjunction with the existing EfW facility for a period of 3.5 - 4 years as the EfW facility is expected to cease operations in 2020.

In 2008, the actual tonnage accepted at the Edmonton facility was 925ktpa tonnes comprised of material to the</td>
<td>Can you please provide a breakdown of the figures by facility?

What are the traffic movements associated with the period 2016-</td>
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			EfW, IVC and bulky waste facilities. Between 2016 and 2020, this would rise to 1,210ktpa but would fall to 700ktpa when the EfW is decommissioned in 2020. **Tonnage Inputs** 2016: MBT Edmonton 322,662; Edmonton AD 78,043; Edmonton IVC 30,000; Edmonton EfW 505,000; Edmonton Bulky 275,096; TOTAL 1,210,801 2017: MBT Edmonton 312,136; Edmonton AD 86,112; Edmonton IVC 30,000; Edmonton EfW 505,000; Edmonton Bulky 274,014; TOTAL 1,207,261 2018: MBT Edmonton 307,385; Edmonton AD 89,981; Edmonton IVC 30,000; Edmonton EfW 505,000; Edmonton Bulky 272,942; TOTAL 1,205,307 2019: MBT Edmonton 302,877; Edmonton AD 93,863; Edmonton IVC 30,000; Edmonton EfW 505,000; Edmonton Bulky 271,880; TOTAL 1,203,620 2020: MBT Edmonton 298,581; Edmonton AD 97,613; Edmonton IVC 30,000; Edmonton EfW 505,000; Edmonton Bulky 270,830; TOTAL 1,202,024 2021: MBT Edmonton 298,581; Edmonton AD 97,613; Edmonton IVC 30,000; Edmonton EfW -; Edmonton Bulky 270,830; TOTAL 697,024 In the period 2016-2020 the new facilities at the Edmonton site would accept main waste and the incinerator would be utilised to dispose of commercial waste. As indicated in the previous response in 2008 the site accepted 925ktpa, and this is estimated to increase to 1210ktpa for a limited period. Therefore the site would accept approximately 30% additional waste, before reducing to approximately 700ktpa in 2021. In terms of vehicle movements there will be an increase in the number of deliveries for a four year period to 2020. If it is assumed that the additional 285ktpa of commercial waste is delivered by a combination of 10t RCV and 20t bulk loads (50% for each and assuming 286 working days) this would result in an additional 75 deliveries per day resulting in a total of 150 additional trips (in and out) per day. The A406 (which provides access to the site) is a part of the strategic road network. When compared to current vehicle movements on the A406 the Authority believes	2020 and what are the planning implications of the increase in traffic movements? CLOSED

			that the additional traffic associated with the additional commercial waste should not preclude development of the site. Furthermore, the commercial waste is already being treated or disposed of elsewhere in London meaning that the vehicle trips are already on the road network, although not necessarily in the vicinity of the Edmonton site.	
13		What is footprint of the proposed MBT plant at Edmonton? What is the current foot of the efw plant? If the answers to these questions is illustrated on a site plan for Edmonton within the OBC please provide a reference to it.	See Appendix II of the OBC for footprint details.	Closed
14	4.4.1	Please provide the advisors full appraisal report(s) for the refreshed options appraisal referred to.	A full refreshed technical options appraisal was not carried out as the latest OBC is a refinement relating primarily to the acquisition of the Edmonton site and the latest tonnage information. In all other respects the outcomes of the initial options appraisal provided in Appendix E of the OBC remain valid. However, a series of high level test were applied to the updated options with the principle tests being planning deliverability and technical feasibility. These tests were designed to assess whether the outcomes of the original Technical Options Appraisal remained valid. Most of the options relating to new or replacement EfW facilities carry an unacceptable planning risk and as a result are not seen as deliverable by the Authority. A full planning report by the Authority's planning adviser is attached (Technical Clarifications 23.12.09 – Annex 1).	Closed

			Whilst internal refurbishment of the EfW facility is technically possible, it considered by the Authority as being technically very difficult due to the associated engineering requirements. In addition in the full cash flow concession period modelling of scenarios, high level consideration of landfill fees and impact on the EfW gate fee of each scenario was considered.	
15		Is there an updated WRATE/SPC assessment of the refreshed options?	As detailed above, a full refreshed technical options appraisal was not carried out as the latest OBC is a refinement relating primarily to the acquisition of the Edmonton site and the latest tonnage information. In all other respects the outcomes of the initial options appraisal remain valid. The Authority is prepared to consider undertaking an additional WRATE analysis and the Shadow Price of Carbon calculation if considered necessary by WIDP. A WRATE assessment relating to an EfW solution is being undertaken and should follow by the 8th January.	Can you please confirm if you are undertaking a WRATE assessment of the efw option only (Edmonton replacement) and updating the SPC calculation accordingly? CLOSED
16	4.4.2.3	Where is the advisors report detailing the cost assessment referred to?	This is only a high level assessment of the implications associated with the EfW gate fee and landfill costs, with a full commercial and financial assessment presented in Section 8, along with Appendices M, N and O.	Closed
17		Please confirm the assumed gate fee for SRF use – previously this was stated to be £81.38/t (April 2008 base).	In the first year of operations (year ending 31 March 2018) the effective SRF facility gate fee is approximately £120 / tonne before PFI revenue support and £76 / tonne, taking	Closed

			the Fuel Use Contract RSG into account. Due to the basis of derivation (which should be noted is based on a notional allocation of unitary charge back to specific infrastructure components), the effective gate fee varies over time. The maximum for the SRF facility is £130/tonne, before and £83 / tonne, after RSG is taken into account. It should be noted that these values are now quoted in April 2009 prices, reflecting the price updating exercise undertaken as part of the OBC resubmission.	
18		Please confirm the assumed gate fee for residual waste treatment by MBT – previously this was stated to be £75/t (April 2008 base).	In the first year of operations (year ending 31 March 2017) the effective MBT facility gate fee is approximately £78 / tonne before PFI revenue support and £60 / tonne, taking the notional MBT element of the Waste Services Contract RSG into account. Due to the basis of derivation (which should be noted is based on a notional allocation of unitary charge back to specific infrastructure components), the effective gate fee varies over time. The maximum for the MBT facility is £86/tonne, before and £66 / tonne after RSG is taken into account. It should be noted that these values are now quoted in April 2009 prices, reflecting the price updating exercise undertaken as part of the OBC resubmission.	Closed
19		What have you assumed would be the gate fee for a straight replacement of the Edmonton efw plant (Sc b(3)a)?	In real terms i.e. 1st April 2009 the gate fee is assumed at £82.03. In nominal terms this would be £87.40 for the year commencing 1st April 2017 when the EfW is modelled to	

			come on line.	
20		What is your assessment/view of the maximum operational life of the existing efw facility?	Operational until 2020	Closed
21		How is the gate fee of £100/t for use of existing efw post 2014 determined?	By 2012/13, the landfill tax rate will have risen to £72/t. The 2009 WRAP report on facility gate fees states that landfill fees to range between £8-£42 per tonne, with a median of £24. Given the distance from North London to suitable landfills, it is reasonable to assume that the gate fee would be higher than the median figure. Therefore, combining landfill tax and a gate fee of £28/t would provide a reasonable benchmark for setting the EfW gate fee. Through LWL, and also advisers experience on similar facilities in the UK and on the continent, the Authority is privy to actual operational costs associated with EfW facilities and feel that the above assumptions are prudent. The present gate fee is in the order of £78.19 for third party customers depending upon the negotiated contract. Because the facility would be "on-sold" to the successful contractor to operate on a commercial basis, it has been assumed that a gate fee (tracking commercial landfill rates) would apply to all customers i.e. £100/t post 2014. The £100/tonne figure underpins the financial model relating to the share sale of LWL. Any assumed reduction on the gate fee price post 2014 would reduce the sale income and is broadly neutral in cost terms.	What is the current gate fee into Edmonton – why will it be any different post 2014 given that you have now acquired Edmonton? CLOSED