

**PROJECT TRANSFORM Waste OBC**  
**OBC Optimism Bias**

<b>Construction</b>	EfW CHP	[spare]	[spare]	Total	Upper Band	Mitigation	Upper Band After Mitigation
Capex %age	100.0%	0.0%	0.0%	100.0%			
Standard Buildings	30.0%	0.0%	0.0%	30.0%	24.0%	28.0%	6.7%
Non Standard Buildings	0.0%	0.0%	0.0%	0.0%	51.0%	25.9%	13.2%
Standard Civil Engineering	0.0%	0.0%	0.0%	0.0%	44.0%	27.9%	12.3%
Non Standard Civil Engineering	70.0%	0.0%	0.0%	70.0%	66.0%	28.3%	18.7%
Equipment	0.0%	0.0%	0.0%	0.0%	200.0%	24.9%	49.8%

**Capex Split**

<b>180,090,865</b>	EfW CHP	[spare]	[spare]	Total	Upper Band	Mitigation	Upper Band After Mitigation
Standard Buildings	54,027,259	-	-	54,027,259	12,966,542		3,624,149
Non Standard Buildings	-	-	-	-	-		-
Standard Civil Engineering	-	-	-	-	-		-
Non Standard Civil Engineering	126,063,605	-	-	126,063,605	83,201,979		23,546,160
Equipment	-	-	-	-	-		-
					<u>96,168,522</u>		<u>27,170,309</u>

53.40%      71.75%  
Optimism Bias      15.09%

<b>Works</b>	EfW CHP	[spare]	[spare]	Total	Upper Band	Mitigation	Upper Band After Mitigation
Capex %age	100.0%	0.0%	0.0%	100.0%			
Standard Buildings	30.0%	0.0%	0.0%	30.0%	4.0%	32.1%	1.3%
Non Standard Buildings	0.0%	0.0%	0.0%	0.0%	39.0%	23.7%	9.2%
Standard Civil Engineering	0.0%	0.0%	0.0%	0.0%	20.0%	24.5%	4.9%
Non Standard Civil Engineering	70.0%	0.0%	0.0%	70.0%	25.0%	28.5%	7.1%
Equipment	0.0%	0.0%	0.0%	0.0%	54.0%	27.1%	14.6%

**Capex Split**

<b>180,090,865</b>	EfW CHP	[spare]	[spare]	Total	Upper Band	Mitigation	Upper Band After Mitigation
Standard Buildings	54,027,259	-	-	54,027,259	2,161,090		693,710
Non Standard Buildings	-	-	-	-	-		-
Standard Civil Engineering	-	-	-	-	-		-
Non Standard Civil Engineering	126,063,605	-	-	126,063,605	31,515,901		8,966,274
Equipment	-	-	-	-	-		-
					<u>33,676,992</u>		<u>9,659,984</u>

18.70%      71.32%  
Optimism Bias      5.36%  
Total Optimism Bias      20.45%

**PROJECT TRANSFORM: OBC STAGE OPTIMISM BIAS CALCULATIONS – PREFERRED OPTION "EfW" at preferred site**

												Completed: 11th of September 2008				
		Standard Buildings		Non - Standard Buildings		Standard Civil Engineering		Non-Standard Civil Engineering		Equipment						
Upper Bound		4%	24%	39%	51%	20%	44%	25%	66%	54%	200%					
Contributory factors to Upper Bound Optimism Bias (%)		Work Duration	Capex	Work Duration	Capex	Work Duration	Capex	Work Duration	Capex	Work Duration	Capex	GT Adjusted MF	MITIGATION FACTOR %	Generic examples (from guidance)	Justifications for mitigation factor	
Procurement	Complexity of Contract Structure	1		3	1			4		13	7	50	50	<ul style="list-style-type: none"> <li>Details of risk transfer had to be clarified</li> <li>Payment mechanism had to be defined</li> <li>Unforeseen amount of negotiation required on terms of contract</li> </ul>	<ul style="list-style-type: none"> <li>Detailed risk matrix already prepared</li> <li>Using standard 4ps/SopC contract, but funders will still require review</li> <li>Focus on residual waste only – helps reduce multiple interfaces/WCA issues</li> <li>Legal/financial/technical advisers appointed</li> <li>However Competitive Dialogue (which is being used in this project) is yet to be tested</li> <li>Having 3 partnering councils will add some complexity</li> </ul>	
	Late Contractor Involvement in Design	3	2	6	2		3	1			7	10	90	<ul style="list-style-type: none"> <li>Value management was necessary but contractor was not involved early enough to allow for it.</li> <li>The design could not be built due to construction problems</li> </ul>	<ul style="list-style-type: none"> <li>Design and build type contract; risk mainly held by contractor and therefore largely mitigated. note: although an initial Planning Application will be submitted by Project Transform based on generic designs, the Contractor will be responsible for submitting a new Planning Application as Preferred Bidder and will take on Design risk. Team notes that any cosmetic re-design for planning (beyond what is in bid) is likely to become council's risk in negotiation.</li> <li>High level due-diligence from funders/advisers to look over contractor designs at procurement stage.</li> <li>May be some redesign necessary with planning permission: the cost of this risk has already largely been mitigated by the inclusion of a £10,000,000 million allowance for architectural enhancement costs in the base case PFI model.</li> <li>Council could decide in advance what they would accept in terms of building design (e.g. type of material)</li> <li>The contractor is involved from the outset therefore this should not be a problem</li> </ul>	
	Poor Contractor Capabilities	4	9	5	5	16		2			11	4	10	90	<ul style="list-style-type: none"> <li>Contractor was inexperienced</li> <li>Site health and safety standards were not met</li> <li>Construction was not carried out to the necessary standards</li> <li>The contractor had insufficient resources</li> </ul>	<ul style="list-style-type: none"> <li>Specifically looking at main aspects of bidders track record through PQQ and ITT process.</li> <li>PQQ evaluation and capabilities assessment tests will be set appropriate rigorous standards to be met.</li> <li>Financial risks largely with sub-contractors; managed by main contractor. Could be some delays</li> </ul>
	Government Guidelines												100	0	<ul style="list-style-type: none"> <li>No precedent or guideline had been developed to procure a leading edge project</li> </ul>	
	Dispute and Claims Occurred	4	29	5	11		21	16					40	60	<ul style="list-style-type: none"> <li>Dispute over interim payments</li> <li>Claims for changes in scope</li> <li>Claims for late release of information by other stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>No interim payments.</li> <li>Output spec based.</li> <li>In waste this does not usually happen as the contractor only gets paid when the facility runs. Waste PFI contracts do not have detailed "input" specifics over which arguments can be had (e.g. such as doorhandles on schools deals etc.)</li> <li>Project Transform will seek to transfer the LAWDC to the Contractor. Uncertainty over how bidders will perceive the LAWDC - some may view it as risky</li> <li>Have yet to complete initial site investigations so at this stage some uncertainty over ground conditions contamination, however this risk is going to be mitigated as surveys will be undertaken by the Partnership's experienced Technical Advisor Entec</li> </ul>
	Information Management											5	0	100	<ul style="list-style-type: none"> <li>The interfaces between the stakeholders were not managed efficiently resulting in information not being transferred effectively.</li> </ul>	<ul style="list-style-type: none"> <li>Waste processing contract, not data management –risk should not have effect on equipment. Good baseline data collection.</li> <li>Not much IT required for waste projects</li> </ul>
	Other							1	2				100	0		
Project Specific	Design Complexity	3	1	2	3			5	8		10	30	70	<ul style="list-style-type: none"> <li>The design had to be built in difficult conditions</li> <li>Site topography</li> </ul>	<ul style="list-style-type: none"> <li>Standardised equipment designs, but may be some risks around process guarantees if being used for different aims. Not having to build on an existing operational site. Residual waste only, but may be some specific design/interface design issues. Specifics of design and site not finalised but Partnership is in process of commissioning site investigation report to mitigate this risk.</li> <li>Design of EfW facilities fairly well established but complex.</li> </ul>	
	Degree of Innovation	1	4	8	9			13	9	20	17	30	70	<ul style="list-style-type: none"> <li>New generation design</li> <li>Unusual site conditions requiring innovative solutions e.g., large wind forces, chemical nature of soil and soil contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Nothing has been built on the site before, so the level of innovation necessitated by the site cannot be determined. However, adjacent sites are used for heavy industrial use, which may be assumed to be a slight mitigation.</li> <li>Established technology should be sufficient - the project will not require particularly innovative solutions.</li> </ul>	
	Environmental Impact					46	22		5	9			30	70	<ul style="list-style-type: none"> <li>Contamination e.g., Incinerator</li> <li>Noise pollution</li> <li>Impact on wildlife e.g., new road through protected area</li> <li>Don't know what the specific technology is at this stage</li> </ul>	<ul style="list-style-type: none"> <li>No environmental impact work undertaken as yet but will be conducted by Project's technical advisor Entec</li> <li>Human impact of location important - new facility will be further from housing than present plant.</li> <li>Allowance for enhanced environmental measures included in base costings (Entec capex). Cost of additional mitigation work relatively small in context of overall cost of plant.</li> </ul>
	Other			5	5		18	3					0	0		
	Inadequacy of the Business Case	31	34	22	23	8	10	3	35	20	18	20	80	<ul style="list-style-type: none"> <li>Number of services were not anticipated</li> <li>Output specifications were not defined clearly</li> <li>Oversight in facilities required</li> </ul>	<ul style="list-style-type: none"> <li>Council are developing the OBC off the back of both a waste strategy and an EfW - deadlines for completion of the OBC is challenging but the reference case is well established.</li> <li>Output spec focused on landfill diversion. Scope clear, and good background information on waste flows and composition.</li> <li>Councils are clear on scope of project and size of wasteflows to be treated</li> </ul>	

	Standard Buildings		Non - Standard Buildings		Standard Civil Engineering		Non-Standard Civil Engineering		Equipment		GT Adjusted MF	MITIGATION FACTOR %	Generic examples (from guidance)	Justifications for mitigation factor
	4%	24%	39%	51%	20%	44%	25%	66%	54%	200%				

Contributory factors to Upper Bound Optimism Bias (%)	Work Duration	Capex	Work Duration	Capex	Work Duration	Capex	Work Duration	Capex	Work Duration	Capex	Work Duration	Capex	GT Adjusted MF	MITIGATION FACTOR %	Generic examples (from guidance)	Justifications for mitigation factor	
Client Specific															All stakeholders were not involved and so their needs were not defined and included in business case	The "planning health check" has been completed	
	Large number of Stakeholders	6											65	35	Different public sector parties having differing interests in the project Process of obtaining approval took longer than expected due to number of parties involved.	Prudent base Case cost assumptions being assumed on key cost issues relating to sites and planning Project Transform is a Partnership with many stakeholders including collection Authorities. Project governance and communication strategy in place. Approval timelines being managed and are reflected in Project Timetable.	
	Funding Availability	8		3		6						5	25	75	Difficulties in obtaining financial backing for project Additional funding was made unexpectedly available later on in the project thus changing project scope	Partnering Councils are firmly behind project The Councils' primary source of external funding is the PFI Credit, and the financial modelling and affordability assumptions including sensitivities assume the Council will not get more than the current proposed levels. The Council are proposing a ringfenced residual waste contract base on known , and therefore even if more funding was made available to the Council outside of PFI Credits it would not use it to change the scope of the project - any further funding would be likely to be used for activities to enhance front end recycling.	
	Project management Team		1	5	2							2	5	30	70	The project management team was inexperienced in delivering a project of this nature Inadequate review of drawing by the project manager before construction	Advisers in place for post-OBC project phase Project Team in place - always a risk of key people leaving
	Poor Project Intelligence	6	2	5	6	14	7	3	9	4	4		25	75	Insufficient ground investigation The detailed design was based on insufficient site information Insufficient surveying of existing conditions e.g., for refurbishment of buildings	Uncertainty over ground conditions However surveys being commissioned from Technical Advisors so ground investigations will be completed in time for procurement Have included "mid range" allowance for ground conditions in base case costings - hence 75% mitigation	
Other		1	1	2									0	0			
Environment	Public Relations	8	2										70	30	Opposition from the local community (with regards to traffic and construction noise and environmental policy) Environmental protests	Friends of the Earth are providing significant opposition to the referenced project (Efw). The Council will however be procuring on an open technology basis The Council have developed a communication strategy Little local opposition There is an existing incinerator on the site	
	Site Characteristics	5	2	3	1	10	3					5	25	75	The presence of badger sets within construction site Underground stream requiring protection during construction Archaeological findings	Site selection report completed by Technical Advisors Entec Site investigation and Ecological surveys work is to be carried out by Entec Archaeological findings may be possible given connections in the area to Roman times "Most likely" range allowances for utility connections, ground conditions, contaminate ground , flood risk measures and road upgrades in base case capex assumption, hence 75% mitigation	
	Permits/Consents / Approvals	9		3	0								35	65	Parliamentary Bill required for project initiation Difficulties in obtaining planning permission, possibly resulting in an appeal to the Secretary of State	Main uncertainties around obtaining planning and PPC / licence (the site is in greenbelt land) Members of planning team are part of the project board and project team	
	Other			1	3								0	0			
External Influences	Political			13									20	80	Opposition by a major political party Impact on sensitive constituencies Lacks support from key political stakeholders	Project scrutinised by a committee which has members across all parties and approved by full council Support from controlling party Doing as much as probably can to mitigate this Elections will occur during procurement Site(s) location could be an issue	
	Economic		11		13		7	24	3				25	75	Change in market demand resulting in a change in funding priorities Crash in stock markets / currency risk / interest rate risk	Prudent allowances for inflation in base case , base case includes 50 bps buffer for interest rates Difficult to mitigate other than making prudent allowances for risk in base case	
	Legislation / Regulations	9	3	6	7				8	4	5		50	50	Change in required standards	Waste sector already fairly heavily legislated but difficult to mitigate as to too many unknowns SOPC4 transfers General Change in Law revenue cost risk and Foreseeable Change in Law (exc. Waste Law List) risk to contractor - otherwise legislative / regulatory risk with Authority.	
	Technology			4	5				6	8	19	18	20	80	Unanticipated technological advancements Limits in technology	The main residual waste treatment processes that are likely to be proposed are all of established design. Whilst there may be innovation later in the contract, it should not have a major effect at the procurement stage. Reference projects assumes well established and understood technology. Also even though it will be open technology procurement a key criterion will be proven deliverable technology	
Other				2				1	1			100	0				

% of Upper Bound OB Remaining after mitigation	98	101	100	100	100	100	101	100	100	100	100	100		
OB % Post Mitigation	32.1	28.0	23.7	25.9	24.5	27.9	28.5	28.3	27.1	24.9				
	1.28%	6.71%	9.24%	13.21%	4.90%	12.25%	7.11%	18.68%	14.63%	49.80%				