

# LEEDS CITY COUNCIL

## RESIDUAL WASTE MANAGEMENT PFI PROJECT

### QUANTITATIVE CAPEX PRE FBC OB

Appendix 8a (ii)

#### Instructions

	Only add inputs to cells shaded yellow
1	Read Key Guidance Notes in 'Guidance' worksheet
2	Insert name of Client in 'Summary' worksheet cell A1 and description of Project in Summary Sheet A2
3	Identify Category of project on Summary Sheet cell C9 - use drop down function
4	Provide justification of Category in Summary Sheet cell D12.
5	Insert NPV of Capital Cost from PSC in Summary Sheet cell C17
6	Input mitigation factors (ability to mitigate the contributory factors) in Worksheet Mitigation cells in column F
7	Ensure that checks are ok on Summary Sheet cells C41 and C43
8	Review optimism bias adjustment throughout life of project

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#### Optimism Bias Adjustment - Key Guidance Notes

1	There is a demonstrated, systematic tendency for project appraisers to be overly optimistic. To redress this tendency appraisers should make explicit, empirically based adjustments to the estimates of a project's <b>capital costs</b> and <b>capital works duration</b> .
2	These worksheets contain data as contained in the Supplementary Green Book Guidance - Optimism Bias see HM Treasury web page at; <a href="#">Green Book Guidance HM Treasury Web Page</a>
3	It is the responsibility of the technical advisers to provide the input for the mitigation factors ('mitigation' worksheet column F).
4	Where the project specific risks have been costed it is key to ensure that there is no double counting of risk uplift in terms of the project specific risks and the optimism bias adjustment.

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Leeds City Council  
Residual Waste Treatment Project

Calculation of Optimism Bias

Summary

**Table 1 - Categorisation of Project**

<b>Categorisation</b>	<b>Non-standard Buildings</b>	<p><u>Categorisation Guidance Notes</u> Construction of buildings requiring special design considerations due to space constraints/complicated site e.g. specialist/innovative buildings - specialist hospitals/high tech facilities/unique buildings/ refurb projects</p> <p><u>Justification</u> Construction within relatively new sector through a standardised PFI project agreement. Site risk is a particular issue for this type of contract, and design of facility may be fairly innovative with unique characteristics.</p>	<p><u>Notes</u> The project should be determined by its dominant characteristics</p> <p>Factors to consider:- A) Is the project innovative, B) Does the project have mostly unique characteristics, C) Does the construction involve a high degree of complexity and/or difficulty.</p>
<b>NPV of Capital Expenditure from PSC (£'000)</b>	<b>105,175</b>		

**Table 2 - Summary of Optimism Bias**

	£'000
<b>Capital Expenditure</b>	18,050
<b>Works Duration</b>	15,074
<b>Total Optimism Bias</b>	<b>33,124</b>

**Table 3 - Recommended Adjustment Ranges**

Works Duration	Upper	39.00%
	Lower	2.00%
Capital Expenditure	Upper	51.00%
	Lower	4.00%

**Table 4 - Check adjustment within ranges**

	<b>% adjustment</b>	<b>Check</b>
Works Duration	14.33%	ok
Capital Expenditure	17.16%	ok

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Calculation of Optimism Bias

Capital Expenditure

Step	Description	Outcome	Guidance Notes
Step 1	Decide which project type to use	Non-standard Buildings	Project type should be determined by its dominant characteristics
Step 2	Always start with the upper bound	51.00%	Use appropriate upper bound value for optimism bias from Table 1 as starting point
Step 3	Consider whether optimism bias factor can be reduced	66.35%	Reduce upper bound optimism bias according to extent to which contributory factors have been managed. Mitigation factor has a value between 0.0 and 1.0 i.e. 0.0 means that contributory factors are not mitigated at all and 1.0 means they are fully mitigated.
Adjusted Optimism Bias Rate		<b>17.16%</b>	
Step 4	Apply optimism bias factor	<b>18,050</b>	(£'000) NPC of Capital x Adjusted Optimism Bias. Does not include any cost of mitigating the risk
Step 5	Review the optimism bias adjustment	N/a	To be completed throughout life of project.

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Leeds City Council  
Residual Waste Treatment Project

Calculation of Optimism Bias

Works Duration

Step	Description	Outcome	Guidance Notes
Step 1	Decide which project type to use	Non-standard Buildings	Project type should be determined by its dominant characteristics
Step 2	Always start with the upper bound	39.00%	Use appropriate upper bound value for optimism bias from Table 1 as starting point
Step 3	Consider whether optimism bias factor can be reduced	63.25%	Reduce upper bound optimism bias according to extent to which contributory factors have been managed. Mitigation factor has a value between 0.0 and 1.0 i.e. 0.0 means that contributory factors are not mitigated at all and 1.0 means they are fully mitigated.
Adjusted Optimism Bias Rate		<b>14.33%</b>	
Step 4	Apply optimism bias factor	<b>15,074</b>	(£'000) NPC of Capital x Adjusted Optimism Bias. Does not include any cost of mitigating the risk
Step 5	Review the optimism bias adjustment	N/a	To be completed throughout life of project.

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Leeds City Council  
Residual Waste Treatment Project

Calculation of Optimism Bias

Mitigation Factor

Guidance The extent to which the Contributory factors are mitigated can be reflected in a mitigation factor. The mitigation factor has a value between 0.0 and 1.0. Where 0.0 means that contributory factors are not mitigated at all, 1.0 means all contributory factors in a particular area are fully mitigated and values between 0.0 and 1.0 represent partial mitigation.

Contributory Factors

Mitigation Factors

Classification	Non-standard Buildings		Factor	Justification for mitigation for the Publicly funded model	% Mitigation on Capex	% Mitigation on Works Duration	
	Capital Expend	Works Duration					
<b>Upper Bound</b>	<b>51%</b>	<b>39%</b>					
<b>Procurement</b>							
	Complexity of Contract Structure	1%	3%	0.75	Standardised precedent contract anticipated, risk remaining pending PFA conclusion on risk	1%	2%
	Late Contractor Involvement in Design	2%	6%	0.5	Design not reviewed, risk remains though anticipated involvement of experienced completed projects; contractor involvement not reviewed, risk remains though anticipated involvement of experienced	1%	3%
	Poor Contractor Capabilities	5%	5%	0.9	Pre-qualification process should ensure suitable contractor, established market.	5%	5%
	Government Guidelines	0%	0%			0%	0%
	Dispute and Claims Occurred	11%	5%	0.9	PQQ and final choice of contractor would factor in prior record on claims, market experience suggests not expected to be high value.	10%	5%
	Information Management	0%	0%			0%	0%
	Other(specify)	0%	0%			0%	0%
<b>Project Specific</b>							
	Design Complexity	3%	2%	0.5	No actual design currently available. Abnormals estimated where data available but limited	2%	1%
	Degree of Innovation	9%	8%	0.8	No design/contractor as yet, appropriate standard design, comparative review of innovation/ EFM technology.	7%	6%
	Environmental Impact	0%	0%			0%	0%
	Other(specify)	5%	5%			0%	0%
<b>Client Specific</b>							
	Inadequacy of the Business Case	23%	22%	0.8	Experienced PM team involved Pre FBC. Design info underpinning PSC limited however formulaic approach used following waste PFI funding guidance. Leeds CC confirmed	18%	18%
	Large Number of Stakeholders	0%	0%			0%	0%
	Funding Availability	0%	3%	0.9	High level of market capacity.	0%	3%
	Project Management Team	2%	5%	0.9	LCC strong PPPu team. Both internal and external consultants engaged.	2%	5%
	Poor Project Intelligence	6%	5%	0.8	Some desktop surveys undertaken however yet not complete or conclusive. Market sounding performed showing strong market interest in project.	5%	4%
	Other(specify)	2%	1%			0%	0%
	Public Relations	0%	0%			0%	0%
	Site Characteristics	1%	3%	0.5	Principal apparent issues eg contamination, addressed as 'abnormals'	1%	2%
	Permits/Consents/Approvals	0%	3%	0.2	Reference site requires waste designation.	0%	1%
	Other(specify)	3%	1%			0%	0%
<b>External Influences</b>							
	Political	0%	13%	0.3	Politically sensitive issue with significant interest both locally and nationally. Stakeholder engagement	0%	4%
	Economic	13%	0%	0.6	Financial issues or economic uncertainty but not disproportionate to this project. Established	8%	0%
	Legislative/Regulations	7%	6%	0.6	Potential for changes that likely to be major unforeseen legislative / reg changes or serious cost impact	4%	4%
	Technology	5%	4%	0.8	EFW reference project has previous track record in UK.	4%	3%
	Other(Specify)	2%	0%			0%	0%
		100%	100%				
<b>Managed Optimism Bias</b>					<b>66%</b>	<b>63%</b>	

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Leeds City Council		
Residual Waste Treatment Project		
<u>Calculation of Optimism Bias</u>		
<u>Capital Expenditure</u>		
<u>Risk Area Contributions to Upper Bound Optimism Bias - Recommended from Green Book (Motts Report)</u>		
		<b>CASE SELECTED:</b>
		<b>Non-Standard Buildings</b>
		<b>2</b>
<b>Procurement</b>		
	Complexity of Contract Structure	1%
	Late Contractor Involvement in Design	2%
	Poor Contractor Capabilities	5%
	Government Guidelines	0%
	Dispute and Claims Occurred	11%
	Information Management	0%
	Other(specify)	0%
<b>Project Specific</b>		
	Design Complexity	3%
	Degree of Innovation	9%
	Environmental Impact	0%
	Other(specify)	5%
<b>Client Specific</b>		
	Inadequacy of the Business Case	23%
	Large Number of Stakeholders	0%
	Funding Availability	0%
	Project Management Team	2%
	Poor Project Intelligence	6%
	Other(specify)	2%
<b>Environment</b>		
	Public Relations	0%
	Site Characteristics	1%
	Permits/Consents/Approvals	0%
	Other(specify)	3%
<b>External Influences</b>		
	Political	0%
	Economic	13%
	Legislative/Regulations	7%
	Technology	5%
	Other(Specify)	2%
<b>TOTAL</b>		<b>100%</b>

Note: The guidance states that 'Standard Buildings, Client Specific - Other' and 'Non-Standard, Environment -

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**RESIDUAL WASTE MANAGEMENT PFI PROJECT**  
**QUANTITATIVE CAPEX PRE FBS OB**

<b>Leeds City Council</b>		
<b>Residual Waste Treatment Project</b>		
<b>Calculation of Optimism Bias</b>		
<b>Works Duration</b>		
<b>Risk Area Contributions to Upper Bound Optimism Bias (%) - Recommended from Green Book (Motts Report)</b>		
		<b>CASE SELECTED:</b>
		<b>Non-Standard Buildings</b>
	<b>Contributory Factors</b>	<b>2</b>
<b>Procurement</b>		
	Complexity of Contract Structure	3%
	Late Contractor Involvement in Design	6%
	Poor Contractor Capabilities	5%
	Government Guidelines	0%
	Dispute and Claims Occurred	5%
	Information Management	0%
	Other(specify)	0%
<b>Project Specific</b>		
	Design Complexity	2%
	Degree of Innovation	8%
	Environmental Impact	0%
	Other(specify)	5%
<b>Client Specific</b>		
	Inadequacy of the Business Case	22%
	Large Numberof Stakeholders	0%
	Funding Availability	3%
	Project Management Team	5%
	Poor Project Intelligence	5%
	Other(specify)	1%
<b>Environment</b>		
	Public Relations	0%
	Site Characteristics	3%
	Permits/Consents/Approvals	3%
	Other(specify)	1%
<b>External Influences</b>		
	Political	13%
	Economic	0%
	Legislative/Regulations	6%
	Technology	4%
	Other(Specify)	0%
<b>TOTAL</b>		<b>100%</b>