

**LEEDS CITY COUNCIL
RESIDUAL WASTE MANAGEMENT PFI PROJECT
WHOLE LIFE COST MODEL**

Months	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Status	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating
Operating Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Period Start Date	01-Apr-10	01-Apr-11	01-Apr-12	01-Apr-13	01-Apr-14	01-Apr-15	01-Apr-16	01-Apr-17	01-Apr-18	01-Apr-19	01-Apr-20	01-Apr-21	01-Apr-22	01-Apr-23
Period End Date	31-Mar-11	31-Mar-12	31-Mar-13	31-Mar-14	31-Mar-15	31-Mar-16	31-Mar-17	31-Mar-18	31-Mar-19	31-Mar-20	31-Mar-21	31-Mar-22	31-Mar-23	31-Mar-24

Inflation Index

RPI deflator	100.00%	97.56%	95.18%	92.86%	90.60%	88.39%	86.23%	84.13%	82.07%	80.07%	78.12%	76.21%	74.36%	72.54%
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Costs uplifted to 1 April 2010 and shown in real terms

	NPV	Total													
EFW, WTS and Landfill															
Capital Costs - Construction - Buildings	32,501	35,214	0	18,539	16,675	0	0	0	0	0	0	0	0	0	0
Capital Costs - Construction - Plant and Machinery	75,836	82,167	0	43,258	38,909	0	0	0	0	0	0	0	0	0	0
Capital Costs - Lifecycle	4,849	8,445	0	0	0	0	0	0	1,590	0	0	0	0	0	2,597
Facility Operating Costs	59,463	101,257	0	0	0	538	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197
Revenue - Energy	-48,068	-82,100	0	0	0	0	-3,418	-3,403	-3,408	-3,411	-3,414	-3,417	-3,418	-3,419	-3,420
Revenue - Sale of extra capacity	-411	-568	0	0	0	0	-37	-99	-77	-66	-52	-41	-36	-31	-27
Active Landfill costs	533	925	0	0	0	0	34	34	35	35	36	36	36	37	37
Active Landfill taxes	873	1,436	0	0	0	0	78	75	73	72	70	69	67	66	64
Haz Landfill costs	24,277	41,530	0	0	0	0	1,723	1,686	1,698	1,705	1,714	1,720	1,723	1,726	1,729
Haz Landfill taxes	5,186	8,528	0	0	0	0	464	443	435	426	418	409	400	391	382
Bottom ash re-processing costs	11,869	20,303	0	0	0	0	842	824	830	834	838	841	842	844	846
Total	166,908	217,137	0	61,797	55,584	538	3,883	3,756	3,783	5,382	3,806	3,814	3,813	3,810	3,807

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Months	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Status	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating
Operating Year	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Period Start Date	01-Apr-24	01-Apr-25	01-Apr-26	01-Apr-27	01-Apr-28	01-Apr-29	01-Apr-30	01-Apr-31	01-Apr-32	01-Apr-33	01-Apr-34	01-Apr-35	01-Apr-36	01-Apr-37
Period End Date	31-Mar-25	31-Mar-26	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	31-Mar-32	31-Mar-33	31-Mar-34	31-Mar-35	31-Mar-36	31-Mar-37	31-Mar-38
Inflation Index														
RPI deflator	70.77%	69.05%	67.36%	65.72%	64.12%	62.55%	61.03%	59.54%	58.09%	56.67%	55.29%	53.94%	52.62%	51.34%
Costs uplifted to 1 April 2010 and shown in real terms														
<u>EFW, WTS and Landfill</u>														
Capital Costs - Construction - Buildings	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capital Costs - Construction - Plant and Machinery	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capital Costs - Lifecycle	0	0	0	0	1,840	0	0	0	0	2,418	0	0	0	0
Facility Operating Costs	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197	4,197
Revenue - Energy	-3,422	-3,423	-3,423	-3,424	-3,425	-3,425	-3,425	-3,426	-3,426	-3,426	-3,426	-3,426	-3,426	-3,426
Revenue - Sale of extra capacity	-19	-16	-13	-10	-8	-6	-4	-3	-1	-1	0	0	0	-1
Active Landfill costs	38	38	39	39	40	40	40	41	41	42	42	42	43	43
Active Landfill taxes	61	60	59	57	56	54	53	52	51	49	48	47	46	45
Haz Landfill costs	1,733	1,735	1,737	1,738	1,740	1,741	1,742	1,743	1,744	1,744	1,744	1,745	1,744	1,744
Haz Landfill taxes	364	356	348	339	331	324	316	308	301	294	287	280	273	266
Bottom ash re-processing costs	847	848	849	850	851	851	852	852	852	853	853	853	853	853
Total	3,800	3,796	3,791	3,787	5,622	3,776	3,771	3,764	3,758	6,169	3,744	3,737	3,729	3,721

LEEDS CITY COUNCIL RESIDUAL WASTE MANAGEMENT PFI PROJECT WHOLE LIFE COST MODEL

Appendix 8b (i)

Months			12	12	12	12	12	12	12	12	12	12	12	12	12	12
Status			Construction	Construction	Construction	Construction	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating
Operating Year			0	0	0	0	1	2	3	4	5	6	7	8	9	10
Period Start Date			01-Apr-10	01-Apr-11	01-Apr-12	01-Apr-13	01-Apr-14	01-Apr-15	01-Apr-16	01-Apr-17	01-Apr-18	01-Apr-19	01-Apr-20	01-Apr-21	01-Apr-22	01-Apr-23
Period End Date			31-Mar-11	31-Mar-12	31-Mar-13	31-Mar-14	31-Mar-15	31-Mar-16	31-Mar-17	31-Mar-18	31-Mar-19	31-Mar-20	31-Mar-21	31-Mar-22	31-Mar-23	31-Mar-24
Capital indexation			115.77%	121.55%	127.63%	134.01%	140.71%	147.75%	155.14%	162.89%	171.04%	179.59%	188.57%	198.00%	207.90%	218.29%
RPI indexation for 2006 prices			107.69%	110.38%	113.14%	115.97%	118.87%	121.84%	124.89%	128.01%	131.21%	134.49%	137.85%	141.30%	144.83%	148.45%
Nominal Prices																
		NPV	Total													
Capital Costs - Construction Buildings	PFI Credit	119,998														
WTS	451	523	0	0	523	0	0	0	0	0	0	0	0	0	0	0
EFW	32,048	35,999	0	19,003	16,997	0	0	0	0	0	0	0	0	0	0	0
	32,499	36,522	0	19,003	17,519	0	0	0	0	0	0	0	0	0	0	0
Capital Costs - Construction Plant and Machinery																
WTS	1,052	1,220	0	0	1,220	0	0	0	0	0	0	0	0	0	0	0
EFW	74,779	83,999	0	44,340	39,659	0	0	0	0	0	0	0	0	0	0	0
	75,831	85,218	0	44,340	40,879	0	0	0	0	0	0	0	0	0	0	0
Capital Costs - Lifecycle																
PFI Credit	6,142															
EFW	4,848	12,606	0	0	0	0	0	0	0	1,890	0	0	0	0	0	3,580
	4,848	12,606	0	0	0	0	0	0	0	1,890	0	0	0	0	0	3,580
Operating Costs																
WTS	8,038	19,807	0	0	0	580	594	609	624	640	656	672	689	706	724	742
EFW	51,409	130,622	0	0	0	0	4,038	4,139	4,242	4,348	4,457	4,569	4,683	4,800	4,920	5,043
	59,447	150,429	0	0	0	580	4,632	4,748	4,867	4,988	5,113	5,241	5,372	5,506	5,644	5,785
Revenue																
EFW Energy	-48,055	-122,180	0	0	0	0	-3,773	-3,850	-3,953	-4,055	-4,160	-4,267	-4,375	-4,486	-4,600	-4,716
EFW TPI	-411	-709	0	0	0	0	-40	-112	-90	-78	-63	-52	-46	-41	-36	-31
	-48,466	-122,889	0	0	0	0	-3,813	-3,962	-4,042	-4,133	-4,223	-4,318	-4,421	-4,527	-4,636	-4,747
Landfill																
Active Landfill costs	533	1,393	0	0	0	0	38	38	40	42	43	45	47	48	50	52
Active Landfill taxes	873	2,078	0	0	0	0	86	84	85	85	86	86	86	86	86	87
Haz Landfill costs	24,271	61,869	0	0	0	0	1,901	1,907	1,970	2,027	2,088	2,148	2,206	2,265	2,325	2,386
Haz Landfill taxes	5,185	12,340	0	0	0	0	512	501	505	507	509	511	512	513	514	514
Bottom ash re-processing costs	11,866	30,247	0	0	0	0	930	932	963	991	1,021	1,050	1,078	1,107	1,137	1,167
	42,727	107,927	0	0	0	0	3,467	3,463	3,562	3,652	3,747	3,840	3,929	4,019	4,111	4,205
Total	162,038	257,207	0	63,342	58,398	580	4,286	4,249	4,387	6,397	4,637	4,763	4,880	4,998	5,120	8,823

**LEEDS CITY COUNCIL
RESIDUAL WASTE MANAGEMENT PFI PROJECT
WHOLE LIFE COST MODEL**

Appendix 8b (i)

Months	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Status	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating	Operating
Operating Year	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Period Start Date	01-Apr-24	01-Apr-25	01-Apr-26	01-Apr-27	01-Apr-28	01-Apr-29	01-Apr-30	01-Apr-31	01-Apr-32	01-Apr-33	01-Apr-34	01-Apr-35	01-Apr-36	01-Apr-37
Period End Date	31-Mar-25	31-Mar-26	31-Mar-27	31-Mar-28	31-Mar-29	31-Mar-30	31-Mar-31	31-Mar-32	31-Mar-33	31-Mar-34	31-Mar-35	31-Mar-36	31-Mar-37	31-Mar-38
Capital indexation	229.21%	240.67%	252.70%	265.34%	278.61%	292.54%	307.16%	322.52%	338.65%	355.58%	373.36%	392.03%	411.63%	432.21%
RPI indexation for 2006 prices	152.16%	155.97%	159.87%	163.86%	167.96%	172.16%	176.46%	180.88%	185.40%	190.03%	194.78%	199.65%	204.64%	209.76%
Nominal Prices														
Capital Costs - Construction Buildings														
WTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EFW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capital Costs - Construction Plant and Machinery														
WTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EFW	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capital Costs - Lifecycle														
EFW	0	0	0	0	2,870	0	0	0	0	4,267	0	0	0	0
	0	0	0	0	2,870	0	0	0	0	4,267	0	0	0	0
Operating Costs														
WTS	761	780	799	819	840	861	882	904	927	950	974	998	1,023	1,049
EFW	5,169	5,298	5,431	5,566	5,705	5,848	5,994	6,144	6,298	6,455	6,617	6,782	6,952	7,125
	5,930	6,078	6,230	6,386	6,545	6,709	6,877	7,049	7,225	7,405	7,590	7,780	7,975	8,174
Revenue														
EFW Energy	-4,835	-4,957	-5,082	-5,210	-5,341	-5,475	-5,613	-5,754	-5,898	-6,046	-6,197	-6,352	-6,511	-6,674
EFW TPI	-27	-23	-19	-15	-12	-9	-6	-4	-2	-1	0	0	0	-1
	-4,862	-4,980	-5,101	-5,225	-5,353	-5,484	-5,619	-5,758	-5,901	-6,047	-6,198	-6,352	-6,511	-6,675
Landfill														
Active Landfill costs	54	56	58	60	62	64	66	68	71	73	76	78	81	84
Active Landfill taxes	87	87	87	87	87	87	87	87	87	87	87	87	87	87
Haz Landfill costs	2,449	2,513	2,578	2,645	2,714	2,783	2,855	2,928	3,002	3,078	3,155	3,234	3,315	3,397
Haz Landfill taxes	515	516	516	517	517	517	518	518	518	518	518	518	518	518
Bottom ash re-processing costs	1,197	1,229	1,261	1,293	1,327	1,361	1,396	1,431	1,468	1,505	1,543	1,581	1,621	1,661
	4,301	4,399	4,500	4,602	4,706	4,813	4,921	5,032	5,146	5,261	5,379	5,499	5,622	5,748
Total	5,369	5,497	5,628	5,762	8,768	6,037	6,178	6,323	6,470	10,886	6,772	6,927	7,086	7,247

LEEDS CITY COUNCIL RESIDUAL WASTE MANAGEMENT PFI PROJECT WHOLELIFE COST MODEL

Dates

Price base date	01-Apr-07
Contract start	01-Apr-10
Operating Start	01-Apr-14
Operating finish	31-Mar-38

Modelling periods

Length of operating period - years	28
Operating	12
Operating period length check	OK

Discount & Inflation rates

Real treasury discount rate	3.50%
Capex Indexation	5.00%
Annual RPI	2.50%
Annual Nominal Discount Rate	6.09%

Uplift

Uplift to applied to DBFO costs	107.69%
Uplift to applied to DBFO costs - construction only	115.77%

Buildings	30.00%
Plant	70.00%

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E3: Energy from Waste (with pre-screening)

Professional fees	5%
Abnormals	10%
Design enhancement	5%
Grid and enabling works	5%

	FY Starting 1 April:	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	FY Ending 31 March:	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
WTS														
Capex		1,300	0	0	1,300	0	0	0	0	0	0	0	0	0
Fees		65	0	0	65	0	0	0	0	0	0	0	0	0
Total WTS Capex		1,365	0	0	1,365	0	0	0	0	0	0	0	0	0
Opex		12,000	0	0	0	500	500	500	500	500	500	500	500	500
		14,730	0	0	2,730	500	500	500	500	500	500	500	500	500
EFW														
Base Building cost		77,200	0	38,600	38,600	0	0	0	0	0	0	0	0	0
Design and other professional fees @ 5%		3,860	0	1,930	1,930	0	0	0	0	0	0	0	0	0
Abnormals		7,720	0	7,720	0	0	0	0	0	0	0	0	0	0
Grid and Enabling Works		3,860	0	3,860	0	0	0	0	0	0	0	0	0	0
Design Enhancement		3,860	0	0	3,860	0	0	0	0	0	0	0	0	0
Total EFW Capex		96,500	0	52,110	44,390	0	0	0	0	0	0	0	0	0
Lifecycle Costs		5,030	0	0	0	0	0	0	1,160	0	0	0	0	0
Opex		78,128	0	0	0	0	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397
Energy Revenue		-73,055	0	0	0	0	-3,174	-3,160	-3,165	-3,167	-3,170	-3,173	-3,174	-3,175
Third Party Revenue		-527	0	0	0	0	-34	-92	-72	-61	-48	-38	-33	-29
		106,077	0	52,110	44,390	0	189	145	160	1,328	179	186	190	193
Landfill														
Active Landfill costs		1,309	0	0	0	0	38	38	40	42	43	45	47	50
Active Landfill taxes		1,990	0	0	0	0	86	84	85	85	86	86	86	86
Haz Landfill costs		36,944	0	0	0	0	1,600	1,565	1,577	1,584	1,591	1,597	1,600	1,603
Haz Landfill taxes		11,822	0	0	0	0	512	501	505	507	509	511	512	513
Bottom ash re-processing costs		18,062	0	0	0	0	782	765	771	774	778	781	782	784
		70,127	0	0	0	0	3,018	2,954	2,978	2,991	3,008	3,020	3,027	3,034
Total Facility Costs		190,934	0	52,110	47,120	500	3,707	3,599	3,638	4,820	3,686	3,706	3,717	3,727

Key

No inflation to apply as is tax
At 2007 Prices
Inflation of 3.45% built into base prices by Jacobs Ltd

LEEDS CITY COUNCIL RESIDUAL WASTE MANAGEMENT PFI PROJECT WHOLELIFE COST MODEL

Professional fees
Abnormals
Design enhancement
Grid and enabling works

	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
WTS															
Capex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fees	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total WTS Capex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Opex	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
EFW															
Base Building cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design and other professional fees @ 5%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Abnormals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grid and Enabling Works	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Design Enhancement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total EFW Capex	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lifecycle Costs	1,640	0	0	0	0	1,030	0	0	0	0	1,200	0	0	0	0
Opex	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397	3,397
Energy Revenue	-3,177	-3,178	-3,178	-3,179	-3,179	-3,180	-3,180	-3,181	-3,181	-3,181	-3,182	-3,182	-3,182	-3,182	-3,182
Third Party Revenue	-21	-18	-15	-12	-9	-7	-5	-4	-2	-1	-1	0	0	0	-1
	1,839	202	204	206	208	1,240	211	212	213	214	1,415	215	215	215	215
Landfill															
Active Landfill costs	52	54	56	58	60	62	64	66	68	71	73	76	78	81	84
Active Landfill taxes	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
Haz Landfill costs	1,607	1,609	1,611	1,613	1,614	1,616	1,617	1,618	1,619	1,619	1,620	1,620	1,620	1,620	1,620
Haz Landfill taxes	514	515	516	516	517	517	517	518	518	518	518	518	518	518	518
Bottom ash re-processing costs	786	787	788	789	789	790	790	791	791	792	792	792	792	792	792
	3,046	3,052	3,057	3,062	3,067	3,071	3,076	3,080	3,083	3,087	3,090	3,093	3,096	3,098	3,101
Total Facility Costs	5,385	3,753	3,761	3,768	3,775	4,811	3,787	3,792	3,797	3,801	5,005	3,808	3,811	3,814	3,816

Key

No inflation to apply as is tax
At 2007 Prices
Inflation of 3.45% built into base prices by Jacobs Ltd