

## Introduction


The following sheets allow forecasts for each regions C&I waste - instructions for constructing scenarios are in each tab. It is initially set up for the East of England but the baseline data is included for all regions and employment growth forecasts can be altered to reflect local conditions/employment model forecasts. Further information on the method used can be found in the accompanying report.

**Baseline data** - has data for each region on 2006/07 arisings by sector, number of employees, and waste per employee

**Employee data** - shows the baseline plus the annual growth forecasts for each sector through to 2031 (currently for the East of England)

**Forecast tonnes** - simply multiplies the number of employees by the waste per employee in the baseline data. The waste per employee figure can be adjusted to reflect different scenarios

**Forecast by substance** - apportions the forecast tonnes by substance oriented classification following the 2006/07 survey plus adjustments as outlined in the report

 Cells in this colour can be changed for scenario analysis

Baseline data

North East	2006		
	Total C&I waste	Employees (000's)	Waste per employee
Food, drink & tobacco	136,355	18062.5	7.55
Other low tech	155,830	19037.5	8.19
Power & Utilities	61,129	7430	8.23
Chemical & process industries	462,651	35487.5	13.04
Metals & engineering	339,557	71852.5	4.73
Retail & wholesale	481,914	149302.5	3.23
Other services	572,293	252850	2.26
Public sector	230,691	264370	0.87

Yorkshire & Humber	2006		
	Total C&I waste	Employees (000's)	Waste per employee
Food, drink & tobacco	908,515	55877.5	16.26
Other low tech	481,581	67120	7.17
Power & Utilities	2,337,094	9290	251.57
Chemical & process industries	1,056,790	60250	17.54
Metals & engineering	2,095,363	149035	14.06
Retail & wholesale	1,150,523	352425	3.26
Other services	1,291,559	555035	2.33
Public sector	430,589	492090	0.88

East Midlands	2006		
	Total C&I waste	Employees (000's)	Waste per employee
Food, drink & tobacco	694,175	45082.5	15.40
Other low tech	488,506	71192.5	6.86
Power & Utilities	1,372,670	8165	168.12
Chemical & process industries	566,956	59387.5	9.55
Metals & engineering	657,453	134642.5	4.88
Retail & wholesale	995,319	302030	3.30
Other services	1,035,176	435060	2.38
Public sector	348,661	396275	0.88

South West	2006		
	Total C&I waste	Employees (000's)	Waste per employee
Food, drink & tobacco	479,219	37475	12.79
Other low tech	306,033	44132.5	6.93
Power & Utilities	101,551	11657.5	8.71
Chemical & process industries	396,491	39410	10.06
Metals & engineering	472,402	132537	3.56
Retail & wholesale	1,174,684	360432.5	3.26
Other services	1,367,384	574915	2.38
Public sector	462,486	529662.5	0.87

London	2006		
	Total C&I waste	Employees (000's)	Waste per employee
Food, drink & tobacco	172,731	27532.5	6.27
Other low tech	630,968	93180	6.77
Power & Utilities	53,951	6255	8.63
Chemical & process industries	206,908	20537.5	10.07
Metals & engineering	275,514	52219.5	5.28
Retail & wholesale	1,732,980	524787.5	3.30
Other services	3,491,860	1575925	2.22
Public sector	641,742	742840	0.86

West Midlands	2006		
	Total C&I waste	Employees (000's)	Waste per employee
Food, drink & tobacco	445,243	31850	13.98
Other low tech	270,610	42852.5	6.31
Power & Utilities	682,135	11040	61.79
Chemical & process industries	705,789	64307.5	10.98
Metals & engineering	1,132,729	242192.5	4.68
Retail & wholesale	1,253,987	383780	3.27
Other services	1,360,411	597035	2.28
Public sector	438,817	510765	0.86

South East	2006		
	Total C&I waste	Employees (000's)	Waste per employee
Food, drink & tobacco	157,427	26470	5.95
Other low tech	711,781	68777.5	10.35
Power & Utilities	1,086,999	17112.5	63.52
Chemical & process industries	632,000	65155	9.70
Metals & engineering	731,944	188887.5	3.88
Retail & wholesale	2,079,814	633155	3.28
Other services	2,623,272	1131760	2.32
Public sector	678,277	781530	0.87

Employee data

	Baseline employment 2006	Forecast employee growth rates										
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Food, drink & tobacco	37.79	-1.40%	-0.04%	-0.30%	-0.56%	-1.93%	-1.93%	-1.87%	-1.80%	-1.76%	-1.78%	-1.89%
Other low tech	56.60	-5.48%	-4.70%	-2.54%	-2.51%	-2.50%	-2.35%	-2.29%	-2.20%	-2.14%	-2.07%	-1.96%
Power & Utilities	7.30	0.76%	1.74%	2.83%	1.68%	1.64%	1.61%	1.58%	1.55%	1.52%	1.50%	1.47%
Chemical and process industries	48.32	-1.14%	-0.33%	-2.26%	-2.44%	-2.51%	-2.40%	-2.34%	-2.26%	-2.18%	-2.16%	-2.17%
Metals and engineering	125.31	-3.05%	-0.56%	-3.10%	-1.81%	-2.00%	-2.41%	-2.37%	-2.37%	-2.46%	-2.49%	-2.50%
Retail & wholesale	512.51	1.53%	0.63%	-1.55%	-0.82%	0.97%	1.35%	1.18%	0.82%	0.74%	0.76%	0.70%
Other services	1062.55	0.36%	0.68%	-0.01%	-1.90%	1.69%	2.21%	2.81%	2.46%	2.34%	2.08%	1.84%
Public sector	662.47	1.12%	0.71%	1.38%	1.05%	0.93%	0.89%	0.88%	0.86%	0.88%	0.88%	0.88%

Input cells

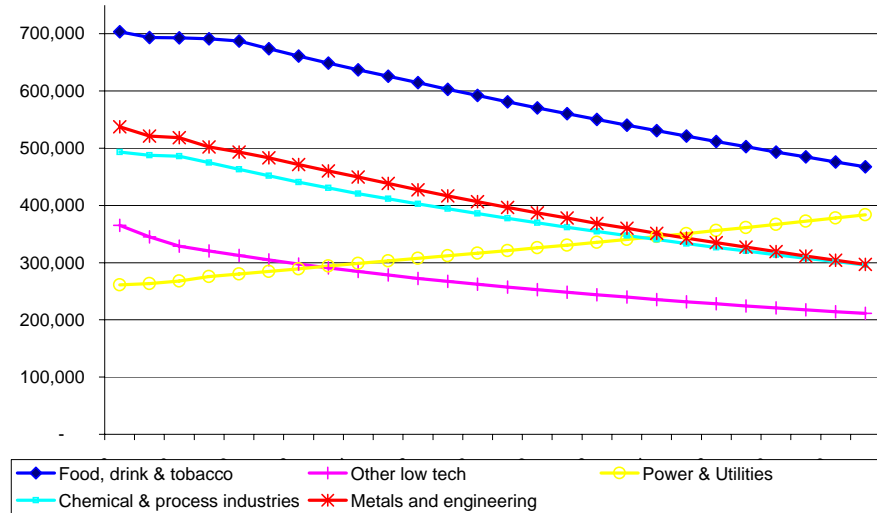
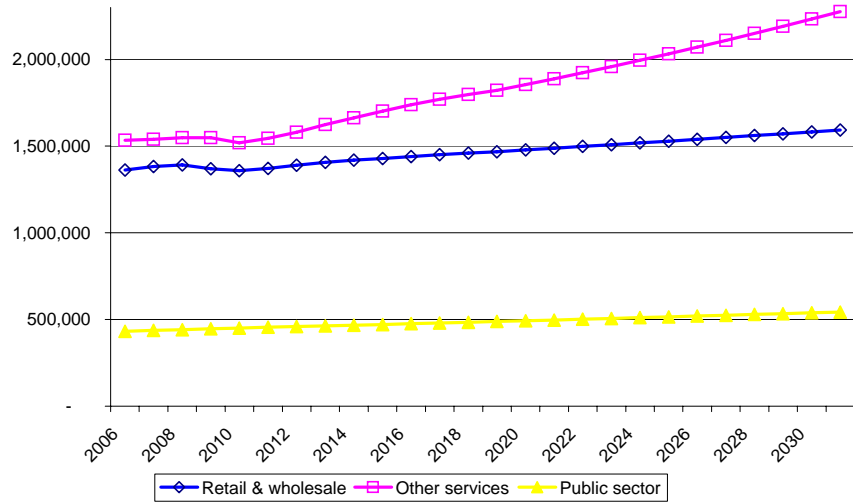
Data here on sector employee growth rates is for the East of England and is from a recent regional forecast model that incorporates some element of "crunch". These figures can be changed to reflect local circumstances. Baseline employment has been estimated from ONS data and is linked to Baseline data tab i.e. do not change.

Employee data

2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
-1.81%	-1.90%	-1.79%	-1.79%	-1.79%	-1.79%	-1.79%	-1.79%	-1.79%	-1.79%	-1.79%	-1.79%	-1.79%	-1.79%
-1.94%	-1.90%	-1.79%	-1.76%	-1.73%	-1.70%	-1.67%	-1.64%	-1.61%	-1.58%	-1.55%	-1.52%	-1.49%	-1.46%
1.44%	1.42%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%	1.49%
-2.12%	-2.19%	-2.05%	-2.04%	-2.04%	-2.03%	-2.02%	-2.01%	-2.00%	-1.99%	-1.98%	-1.97%	-1.96%	-1.95%
-2.47%	-2.48%	-2.39%	-2.39%	-2.39%	-2.38%	-2.38%	-2.38%	-2.38%	-2.38%	-2.38%	-2.38%	-2.38%	-2.38%
0.64%	0.60%	0.68%	0.68%	0.68%	0.68%	0.68%	0.68%	0.68%	0.69%	0.69%	0.69%	0.69%	0.69%
1.56%	1.40%	1.81%	1.82%	1.83%	1.84%	1.85%	1.86%	1.88%	1.89%	1.90%	1.91%	1.92%	1.93%
0.87%	0.88%	0.89%	0.89%	0.89%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%

	Baseline tonnes 2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Food, drink & tobacco	703,323	693,491	693,230	691,146	687,289	673,993	661,018	648,657	636,977	625,780	614,650	603,059	592,139	580,864
Other low tech	365,306	345,289	329,057	320,715	312,671	304,861	297,711	290,905	284,499	278,424	272,648	267,292	262,109	257,120
Power & Utilities	261,450	263,431	268,006	275,590	280,212	284,819	289,411	293,988	298,551	303,100	307,634	312,155	316,662	321,155
Chemical & process industries	493,149	487,547	485,952	474,950	463,338	451,717	440,867	430,549	420,830	411,672	402,774	394,040	385,687	377,258
Metals and engineering	537,652	521,260	518,328	502,249	493,178	483,295	471,638	460,439	449,510	438,450	427,554	416,867	406,582	396,501
Retail & wholesale	1,362,409	1,383,267	1,392,004	1,370,414	1,359,235	1,372,370	1,390,845	1,407,215	1,418,685	1,429,187	1,439,988	1,450,037	1,459,311	1,468,045
Other services	1,533,096	1,538,589	1,548,998	1,548,782	1,519,366	1,545,080	1,579,298	1,623,691	1,663,658	1,702,593	1,737,988	1,769,927	1,797,505	1,822,580
Public sector	432,337	437,170	440,281	446,377	451,048	455,262	459,323	463,362	467,364	471,494	475,658	479,837	484,034	488,275

Multiplies waste per employee by forecast number of employees



Forecast tonnes

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
570,440	560,204	550,152	540,280	530,585	521,064	511,714	502,531	493,514	484,658	475,961	467,421
252,526	248,089	243,804	239,665	235,668	231,807	228,079	224,479	221,002	217,645	214,403	211,274
325,938	330,792	335,719	340,718	345,792	350,942	356,169	361,473	366,856	372,319	377,864	383,492
369,511	361,955	354,585	347,397	340,386	333,546	326,874	320,366	314,016	307,821	301,777	295,880
387,035	377,799	368,788	359,996	351,417	343,046	334,878	326,909	319,133	311,545	304,140	296,915
1,478,053	1,488,137	1,498,298	1,508,536	1,518,851	1,529,245	1,539,718	1,550,270	1,560,902	1,571,616	1,582,411	1,593,288
1,855,488	1,889,204	1,923,752	1,959,156	1,995,438	2,032,625	2,070,742	2,109,815	2,149,871	2,190,939	2,233,048	2,276,227
492,635	497,038	501,484	505,974	510,508	515,087	519,711	524,381	529,096	533,859	538,669	543,526

## Proportion Tonnage

SICDescription	Animal & vegetable waste	Chemical wastes	Common sludges	Discarded equipment	Health care	Metallic wastes	Mineral wastes	Mixed (ordinary) wastes	Non-metallic wastes
Food, drink & tobacco	50.49%	5.35%	9.13%	0.01%	0.00%	1.87%	0.61%	18.65%	13.88%
Other low tech	0.05%	1.99%	2.37%	0.02%	0.00%	3.60%	0.16%	31.84%	59.97%
Power & Utilities	0.00%	72.52%	1.85%	0.21%	0.00%	2.02%	16.08%	6.08%	1.23%
Chemical & process industries	0.08%	62.92%	0.34%	0.05%	0.01%	1.73%	15.63%	11.71%	7.53%
Metals and engineering	0.90%	16.58%	0.28%	1.89%	0.00%	24.19%	11.43%	22.29%	22.43%
Retail & wholesale	2.72%	5.97%	0.01%	1.87%	0.04%	14.94%	0.06%	35.27%	39.12%
Other services	1.31%	10.91%	2.62%	0.36%	0.07%	16.51%	0.19%	27.73%	40.31%
Public sector	6.90%	0.04%	0.00%	1.42%	13.75%	0.08%	0.00%	55.34%	22.46%

	2006	2010	2020	2030
Food, drink & tobacco	703,323	687,289	570,440	475,961
Other low tech	365,306	312,671	252,526	214,403
Power & Utilities	261,450	280,212	325,938	377,864
Chemical & process industries	493,149	463,338	369,511	301,777
Metals and engineering	537,652	493,178	387,035	304,140
Retail & wholesale	1,362,409	1,359,235	1,478,053	1,582,411
Other services	1,533,096	1,519,366	1,855,488	2,233,048
Public sector	432,337	451,048	492,635	538,669

These proportions are from the NW survey and exclude the pollution inventory PPC returns from those companies producing very large amounts. These cells can be changed to reflect local information.

## 2006

SICDescription	Animal & vegetable waste	Chemical wastes	Common sludges	Discarded equipment	Health care	Metallic wastes	Mineral wastes	Mixed (ordinary) wastes	Non-metallic wastes	
Food, drink & tobacco	355,092	37,660	64,234	66	32	13,166	4,285	131,191	97,597	703,323
Other low tech	187	7,255	8,673	56	-	13,150	589	116,321	219,077	365,306
Power & Utilities	-	189,613	4,845	543	8	5,281	42,038	15,898	3,225	261,450
Chemical & process industries	375	310,281	1,653	230	72	8,553	77,092	57,755	37,139	493,149
Metals and engineering	4,828	89,135	1,531	10,157	10	130,081	61,452	119,845	120,613	537,652
Retail & wholesale	36,998	81,402	166	25,425	482	203,492	859	480,586	532,998	1,362,409
Other services	41,633	91,601	187	28,611	543	228,986	966	540,795	599,774	1,533,096
Public sector	5,665	47,179	11,344	1,543	294	71,379	812	119,866	174,256	432,337
<b>Total</b>	<b>444,778</b>	<b>854,125</b>	<b>92,632</b>	<b>66,631</b>	<b>1,441</b>	<b>674,088</b>	<b>188,092</b>	<b>1,582,256</b>	<b>1,784,679</b>	<b>5,688,723</b>

## Forecast by substance

2010

SICDescription	Animal & vegetable waste	Chemical wastes	Common sludges	Discarded equipment	Health care	Metallic wastes	Mineral wastes	Mixed (ordinary) wastes	Non-metallic wastes	
Food, drink & tobacco	346,997	36,801	62,770	64	31	12,866	4,187	128,200	95,372	687,289
Other low tech	160	6,209	7,423	48	-	11,255	504	99,560	187,511	312,671
Power & Utilities	-	203,220	5,192	582	9	5,660	45,055	17,039	3,456	280,212
Chemical & process industries	352	291,524	1,553	216	67	8,036	72,432	54,264	34,893	463,338
Metals and engineering	4,428	81,762	1,404	9,317	10	119,321	56,369	109,931	110,636	493,178
Retail & wholesale	36,912	81,213	166	25,366	481	203,018	857	479,466	531,757	1,359,235
Other services	19,908	165,800	39,866	5,423	1,032	250,847	2,853	421,247	612,390	1,519,366
Public sector	31,110	186	-	6,418	62,041	378	6	249,615	101,294	451,048
<b>Total</b>	<b>439,868</b>	<b>866,717</b>	<b>118,374</b>	<b>47,434</b>	<b>63,672</b>	<b>611,380</b>	<b>182,261</b>	<b>1,559,322</b>	<b>1,677,310</b>	<b>5,566,337</b>

2020

SICDescription	Animal & vegetable waste	Chemical wastes	Common sludges	Discarded equipment	Health care	Metallic wastes	Mineral wastes	Mixed (ordinary) wastes	Non-metallic wastes	
Food, drink & tobacco	288,003	30,545	52,098	53	26	10,679	3,475	106,404	79,157	570,440
Other low tech	129	5,015	5,995	39	-	9,090	407	80,409	151,442	252,526
Power & Utilities	-	236,383	6,040	677	10	6,584	52,407	19,819	4,020	325,938
Chemical & process industries	281	232,490	1,239	172	54	6,409	57,764	43,275	27,827	369,511
Metals and engineering	3,475	64,165	1,102	7,312	7	93,640	44,237	86,272	86,825	387,035
Retail & wholesale	40,139	88,312	180	27,584	523	220,765	931	521,379	578,241	1,478,053
Other services	24,312	202,479	48,685	6,623	1,261	306,340	3,484	514,437	747,866	1,855,488
Public sector	33,979	204	-	7,010	67,761	413	6	272,629	110,633	492,635
<b>Total</b>	<b>390,318</b>	<b>859,592</b>	<b>115,339</b>	<b>49,469</b>	<b>69,643</b>	<b>653,919</b>	<b>162,712</b>	<b>1,644,625</b>	<b>1,786,011</b>	<b>5,731,627</b>

2030

SICDescription	Animal & vegetable waste	Chemical wastes	Common sludges	Discarded equipment	Health care	Metallic wastes	Mineral wastes	Mixed (ordinary) wastes	Non-metallic wastes	
Food, drink & tobacco	240,302	25,486	43,469	44	22	8,910	2,900	88,781	66,047	475,961
Other low tech	110	4,258	5,090	33	-	7,718	345	68,270	128,579	214,403
Power & Utilities	-	274,041	7,002	784	12	7,632	60,756	22,976	4,660	377,864
Chemical & process industries	230	189,873	1,012	141	44	5,234	47,176	35,343	22,726	301,777
Metals and engineering	2,731	50,422	866	5,746	6	73,585	34,762	67,794	68,229	304,140
Retail & wholesale	42,973	94,547	193	29,531	560	236,352	997	558,191	619,067	1,582,411
Other services	29,259	243,680	58,592	7,970	1,517	368,675	4,194	619,116	900,044	2,233,048
Public sector	37,154	223	-	7,665	74,093	451	7	298,105	120,971	538,669
<b>Total</b>	<b>352,758</b>	<b>882,530</b>	<b>116,224</b>	<b>51,914</b>	<b>76,254</b>	<b>708,557</b>	<b>151,136</b>	<b>1,758,576</b>	<b>1,930,324</b>	<b>6,028,273</b>

Forecast by substance

Change from 2006	Animal & vegetable waste	Chemical wastes	Common sludges	Discarded equipment	Health care	Metallic wastes	Mineral wastes	Mixed (ordinary) wastes	Non-metallic wastes	
to 2010	-4,910	12,591	25,742	-19,197	62,230	-62,707	-5,830	-22,935	-107,370	-122,386
to 2020	-54,460	5,466	22,707	-17,162	68,202	-20,169	-25,380	62,368	1,332	42,904
to 2030	-92,020	28,405	23,591	-14,717	74,813	34,469	-36,955	176,320	145,645	339,550

Change 2006-2020

SICDescription	Animal & vegetable waste	Chemical wastes	Common sludges	Discarded equipment	Health care	Metallic wastes	Mineral wastes	Mixed (ordinary) wastes	Non-metallic wastes	
Food, drink & tobacco	-67,090	-7,115	-12,136	-12	-6	-2,488	-810	-24,787	-18,440	-132,883
Other low tech	-58	-2,240	-2,677	-17	0	-4,060	-182	-35,911	-67,635	-112,780
Power & Utilities	0	46,769	1,195	134	2	1,303	10,369	3,921	795	64,488
Chemical & process industries	-94	-77,791	-414	-58	-18	-2,144	-19,328	-14,480	-9,311	-123,639
Metals and engineering	-1,352	-24,970	-429	-2,845	-3	-36,441	-17,215	-33,573	-33,788	-150,617
Retail & wholesale	3,140	6,910	14	2,158	41	17,273	73	40,793	45,242	115,645
Other services	-17,321	110,879	48,498	-21,988	718	77,354	2,518	-26,358	148,092	322,392
Public sector	28,314	-46,975	-11,344	5,467	67,468	-70,966	-806	152,763	-63,623	60,298
Total	-54,460	5,466	22,707	-17,162	68,202	-20,169	-25,380	62,368	1,332	42,904