Terms of reference and conduct of the inquiry

Terms of reference

1. On 29 October 2013, the OFT sent the following reference to the CC:

   1. In exercise of its duty under section 22(1) of the Enterprise Act ('the Act') to make a reference to the Competition Commission ('the CC') in relation to a completed merger, the Office of Fair Trading, ('the OFT') believes that it is or may be the case that:

      (a) a relevant merger situation has been created in that:

         (i) enterprises carried on by or under the control of Tradebe Environmental Services Limited (Tradebe) have ceased to be distinct from enterprises carried on by or under the control of Sita UK Limited (Sita); and

         (ii) as a result, the condition specified in section 23(4) of the Act is satisfied; and

      (b) the creation of that situation has resulted or may be expected to result in a substantial lessening of competition within any market or markets in the UK for goods or services, including the supply of healthcare risk waste services for large quantity generators:

         i. in and around Birmingham; and

         ii. in and around Gloucester.

   2. Therefore, in exercise of its duty under section 22(1) of the Act, the OFT hereby refers to the CC, for investigation and report within a period ending on 14 April 2014, the following questions in accordance with section 35(1) of the Act:

      (a) whether a relevant merger situation has been created; and

      (b) if so, whether the creation of that situation has resulted or may be expected to result in a substantial lessening of competition within any market or markets in the UK for goods and services.

   (signed) CHRIS WALTERS
   Office of Fair Trading
   29 October 2013

Conduct of the inquiry

2. On 29 October 2013, we posted on our website an invitation to express views about the merger.

3. On 15 November 2013, we published an administrative timetable for our inquiry.

4. We asked a number of relevant parties to comment and complete a questionnaire on the merger. We gathered oral evidence through hearings with selected third parties. Summaries of these hearings are on our website.

5. The Inquiry Group, accompanied by staff, visited the main parties' sites at Redditch and Yardley Green on 28 November 2013.

6. On 5 December 2013, we published an issues statement on our website. We received no responses to the issues statement from third parties. We published the main parties' response to the issues statement on 14 January 2014.

7. We received a joint written submission from Tradebe and Sita and published a non-confidential version on our website on 13 December 2013. We also held hearings with the main parties on 16 January 2014 in separate sessions.

8. During the course of our inquiry, we sent Tradebe and Sita working papers for comment and considered a number of submissions from them and other parties.

9. Our provisional findings were published on the CC website on 20 February 2014. We received no responses to the provisional findings.

10. On 28 March 2014, we published a non-confidential version of our final report on our website.

11. We would like to thank all those who have assisted with our inquiry.

Interim measures

12. On 29 October 2013, we adopted the initial undertakings given to the OFT by Tradebe and THHL and published these on our website.

13. On 18 November 2013, we directed THHL to appoint a Monitoring Trustee.

14. Throughout the inquiry, we considered a number of derogation requests and published on our website any consents granted.

The regulatory framework for handling and disposing of healthcare risk waste

1. The regulatory framework for HRW can be considered under the following headings:

   (a) environment and waste;

   (b) controlled drugs;

   (c) infection control;

   (d) health and safety;

   (e) transport; and

   (f) treatment and disposal.

2. The detailed regulatory requirements are brought together in a Department of Health publication entitled *Safe Management of Healthcare Waste*, which was updated and published in March 2013. The main requirements are summarized in this appendix. The emphasis of recent regulatory guidance has been on more effective segregation of waste to reduce the volume of HRW requiring treatment.

Environment and waste

3. *The Waste (England & Wales) Regulations 2011:*[1] these regulations require healthcare providers to manage their waste in accordance with a 'waste hierarchy'. This means that waste must be managed in such a way as to ensure that risk is minimized and that the most appropriate and environmentally sensitive waste management option is chosen. In practice this means that the waste must be appropriately packaged and tagged prior to collection.

4. *The Hazardous Waste Regulations 2005 (as amended):* the majority of healthcare waste is subject to these regulations because of its potentially infectious nature. These regulations require producers of hazardous waste to be registered with the Environment Agency and that the appropriate hazardous waste consignment notes are used when waste is transported. The regulations also prohibit the mixing of hazardous and non-hazardous waste.

5. *The Environmental Protection (Duty of Care) Regulations 1991 (as amended):* these regulations place a duty on the producer and all subsequent holders of waste to ensure that it is correctly managed and that those to whom it is transferred are provided with a full and accurate description of the waste. It is partly to fulfil this obligation that NHS hospital trusts, for example, will audit their suppliers of waste care treatment services. Defra has produced a Code of Practice for the Duty of Care. The Government is planning to consult on a new waste management code of practice in 2014 and will make amendments following this consultation.

6. *The Climate Change Act (2008)* was introduced to ensure that the UK cuts its carbon emissions by 80 per cent by 2050 (against a 1990 baseline). It sets in place a legally

[1] These regulations were amended in 2012 in relation to the separate collection of waste (to reflect the Revised Waste Framework Directive).

binding framework allowing the Government to introduce measures which will achieve carbon reduction and mitigate and adapt to climate change. In order to achieve these targets, the NHS has committed to reducing its carbon footprint by 10 per cent by 2015.[2]

7. The NHS Carbon Reduction Strategy was published in 2009 and updated in 2010. This requires every organization to develop a board-approved sustainable development management plan and to start measuring and monitoring progress towards a 10 per cent carbon reduction by 2015 on 2007 levels.[3] NHS organizations may take these requirements into account when tendering for HRW services. A new strategy is expected to be published in January 2014.[4]

Controlled drugs

8. The Misuse of Drugs Regulations 2011 set out the level of control applied to controlled drugs, including destruction and/or disposal procedures.

Infection control

9. The Health and Social Care Act 2008 places a duty on the Care Quality Commission to assess and maintain a register of healthcare providers which meet the Care Quality Commission's quality standards. The Code of Practice attached to the Act gives healthcare providers guidance on how to meet the cleanliness and infection control requirements set out in the Act. In particular, the Code of Practice requires that:

   (a) the risks from waste disposal should be properly controlled;

   (b) precautions must be implemented when handling waste; and

   (c) systems should be put in place to ensure that the risks to service users from exposure to infectious waste are properly managed and that duties under environmental law are discharged.

Health and safety

10. The Health and Safety at Work etc Act 1974 requires healthcare waste to be handled, stored and transported on site in a manner that protects personnel from the risk of infection or other risks, such as exposure to pharmaceutical or radioactive products that may cause harm.

11. The Control of Substances Hazardous to Health Regulations 2002 set out the duty of employers to manage the risk of exposure to hazardous substances, including healthcare waste.

Transport

12. The transport of dangerous goods, which includes healthcare waste, is covered by the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment

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[2] www.sdu.nhs.uk/corporate-requirements/legal-requirements/climate-change-act.aspx.
[3] www.sdu.nhs.uk/documents/publications/1237308334_qylG_saving_carbon,_improving_health_nhs_carbon_reducti.pdf.
[4] www.sdu.nhs.uk/sustainable-health/engagement-resources.aspx.

Regulations 2009, which adopts the 'Accord européen relatif au transport international des marchandises Dangereuses par Route'[5] (known as the ADR).

13. The ADR requires healthcare waste to which it applies to be placed into approved packaging at the point of generation and labelled in accordance with a standard format and coding system to indicate the appropriate level of hazard.

14. All carriers must be registered with the Environment Agency, which issues an authorization certificate for the transport of waste. As already noted, the Environment Agency monitors all movements of healthcare waste in the UK by requiring a consignment note to be submitted to it in respect of every movement.

15. In addition, the consignor is obliged by the ADR to complete appropriate documentation to accompany the waste. This would generally be in the form of a Hazardous Waste Transfer Note. As well as details about the waste, including quantities, code number and types of container, this must give details of the consignee and consignor. The carrier's vehicle when loaded must comply with the segregation requirements of the ADR and display the appropriate ADR hazard markings.

Treatment and disposal

16. The Environmental Permitting (England and Wales) Regulations 2010 (as amended) (the EPR) are the main regulations that provide the framework for the operation of waste management facilities for the treatment and disposal of healthcare waste. The EPR require facilities to be permitted and to be operated in accordance with best practice. The EPR also require incineration facilities to comply with the European Industrial Emissions Directive.

17. Large incineration facilities[6] and larger AT treatment facilities (ie those with a treatment capacity of more than 10 tonnes per day) are required to hold a bespoke permit from the Environment Agency which will detail specific operational conditions. Smaller AT facilities (ie those with a capacity of less than 10 tonnes per day) may apply for a 'standard rules' permit.

18. Standard rules consist of requirements common to this industry sector where a number of regulated facilities share similar characteristics in relation to environmental hazards. They are used in place of site-specific permit conditions and require an operator to operate in accordance with standard Environment Agency guidance. If an operator cannot comply with any of the rules or the location of the site is not suitable, then an application must be made for a bespoke permit. A standard-rules permit currently costs £1,590 and takes around two to three months to obtain from the Environment Agency. The larger AT facility bespoke permit costs £32,361 and can take between 6 and 12 months to obtain.

19. The Environment Agency has issued guidance documents in order to assist the operators of healthcare waste treatment and disposal facilities to comply with the EPR. The most recent version of the guidance (EPR 5.07) was issued in January 2011. The guidance specifies standards for treatment of healthcare waste, and operational requirements that apply to both producers of healthcare waste and those that operate facilities.

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[5] The European Agreement concerning the International Carriage of Dangerous Goods by Road.
[6] The Environment Agency told us that some small incinerators might be regulated by local authorities.

20. In particular, the guidance requires that a waste pre-acceptance audit must be provided to the operator of the treatment facility prior to the disposal of healthcare waste. The audit, which can be conducted by the producer, the facility operator or a third party, must demonstrate that the waste has been appropriately segregated such that it is suitable for treatment.

21. The Environment Agency conducts routine audits and inspections of producers, transfer stations and facilities. An Environment Agency officer will review compliance with the facility permit, having regard to the Environment Agency's guidance and the Department of Health's Safe Management of Healthcare Waste guidance. In the event of non-compliance, the Environment Agency can take enforcement action against the operator of the facility and in certain circumstances against the healthcare waste producer, for example where waste has been incorrectly segregated and described.

Financial performance of parties

Tradebe HRW

1. Tradebe HRW's financial reporting separates the business into Tradebe Healthcare (Southwest) Limited, which consists of the results of the Avonmouth plant, and Tradebe Healthcare Limited, which consists of the results of its remaining plants (Birmingham and Doncaster).

2. Tables 1 and 2 detail Tradebe HRW's financial performance over the last three years.

TABLE 1 **Tradebe Healthcare Limited**

	01/06/10–31/12/10 (7 months)	*01/01/11–31/12/11 (12 months)*	*01/01/12–31/12/12 (12 months)*
Turnover (£'000)	2,351	3,852	3,471
Operating profit (£'000)	159	436	221
Operating profit margin (%)	6.8	11.3	6.4
Profit after tax (£'000)	45	288	173
Net assets at balance sheet date (£'000)	547	835	1,008

Source: Tradebe Healthcare Limited audited financial statements.

TABLE 2 **Tradebe Healthcare (Southwest) Limited**

	27/01/11–31/12/11 (11 months)	*01/01/12–31/12/12 (12 months)*
Turnover (£'000)	1,613	1,758
Operating profit (£'000)	387	465
Operating profit margin (%)	24.0	26.4
Profit after tax (£'000)	264	340
Net assets at balance sheet date (£'000)	-	256

Source: Tradebe Healthcare (Southwest) Limited and Ecowaste Southwest Limited audited financial statements.

Notes:
1. Tradebe Healthcare (Southwest) Limited was called Ecowaste Southwest Limited prior to August 2012, when Tradebe purchased this company. Financial information shown in this table prior to August 2012 therefore relates to the predecessor company.
2. Prior to 27 January 2011 only unaudited abbreviated financial statements were prepared for Tradebe Healthcare (Southwest) Limited.

Sita HRW

3. Table 3 details the financial position of Sita HRW.

TABLE 3 **Sita HRW financial performance, 2010 to 2012**

	2010	*2011*	*2012*
Turnover (£'000)	19,676	18,615	20,598
Gross profit (£'000)	1,942	–402	1,020
Gross margin (%)	9.9	–2.2	5.0
EBIT (£'000)	434	–1,684	–1,600
EBIT margin (%)	2.2	–9.0	–7.8

Source: Financial statements of Polkacrest Limited, Polkacrest Midlands Limited, Polkacrest Wales Limited and Polkacrest Northwest Limited.

Capacity

Birmingham

TABLE 1 **AT plants within 100 miles of Birmingham**

Operator	*Site*	*Max capacity*	*Pre-merger/ counterfactual utilization %*	*Post-merger utilization %*	*Post-merger spare capacity*	*Road distance miles*
Tradebe HRW	Birmingham	[✂]	[✂]	[✂]	[✂]	3
SRCL	Four Ashes	[✂]	[✂]	[✂]	[✂]	23
GWB	Nottingham	[✂]	[✂]	[✂]	[✂]	51
Sita HRW	Wrexham	[✂]	[✂]	[✂]	[✂]	71
Tradebe HRW	Avonmouth	[✂]	[✂]	[✂]	[✂]	88
Clinipower	Bristol	5,000	Not open	0	5,000	89
Tradebe HRW	Doncaster	[✂]	[✂]	[✂]	[✂]	99

Source: CC analysis of data from the parties and competitors.

Note: Distances have been calculated using MapInfo 10 and RouteFinder 3.0. For the parties, the capacity figures are based on the model (base case) accompanying the paper on cost savings submitted by the parties. These reflect utilization under a counterfactual which differs slightly from the pre-merger situation. For competitors, pre-merger utilization is based either on forecast 2013 volume by the relevant company or pro-rating for all of 2013 according to YTD 2013 volume. For competitors, post-merger utilization is equal to pre-merger utilization.

TABLE 2 **HT plants within 125 miles of Birmingham**

Operator	*Site*	*Max capacity*	*Pre-merger utilization %*	*Post-merger utilization %*	*Post-merger spare capacity*	*Road distance miles*
Veolia	Veolia	[✂]	[✂]	[✂]	[✂]	4
New Cross Hospital	Wolverhampton	[✂]	[✂]	[✂]	[✂]	17
Sita HRW	Redditch	[✂]	[✂]	[✂]	[✂]	18
SRCL	Nottingham	[✂]	[✂]	[✂]	[✂]	51
Sita HRW	Wrexham HT	[✂]	[✂]	[✂]	[✂]	71
Clinipower	Bristol	[✂]	[✂]	[✂]	[✂]	89
Sita HRW	Salford	[✂]	[✂]	[✂]	[✂]	93
Grundon	Colnbrook	[✂]	[✂]	[✂]	[✂]	98
SRCL	Oldham	[✂]	[✂]	[✂]	[✂]	98
SRCL	Bolton	[✂]	[✂]	[✂]	[✂]	99
SRCL	Uxbridge	[✂]	[✂]	[✂]	[✂]	104
Addenbrookes Hospital	Cambridge	[✂]	[✂]	[✂]	[✂]	104
SRCL	Leeds	[✂]	[✂]	[✂]	[✂]	119

Source: CC analysis of data from the parties and competitors.

Note: Distances have been calculated using MapInfo 10 and RouteFinder 3.0. For the parties, the capacity figures are based on the model (base case) accompanying the paper on cost savings submitted by the parties. These reflect utilization under a counterfactual which differs slightly from the pre-merger situation. For competitors, pre-merger utilization is based either on forecast 2013 volume by the relevant company or pro-rating for all of 2013 according to YTD 2013 volume. For competitors, post-merger utilization is equal to pre-merger utilization. For Veolia, post-merger utilization is pre-merger utilization minus volumes which the parties plant to internalize post-merger.

Gloucester

TABLE 3 **AT plants within 100 miles of Gloucester**

Operator	*Site*	*Max capacity*	*Pre-merger/ counterfactual utilization %*	*Post-merger utilization %*	*Post-merger spare capacity*	*Road distance miles*
Tradebe HRW	Avonmouth	[✂]	[✂]	[✂]	[✂]	36
Clinipower	Bristol	[✂]	[✂]	[✂]	[✂]	37
Tradebe HRW	Birmingham	[✂]	[✂]	[✂]	[✂]	58
SRCL	Frome	[✂]	[✂]	[✂]	[✂]	59
SRCL	Four Ashes	[✂]	[✂]	[✂]	[✂]	69
SRCL	Bridgend	[✂]	[✂]	[✂]	[✂]	77
Grundon	Knowl Hill	[✂]	[✂]	[✂]	[✂]	95

Source: CC analysis of data from the parties and competitors.

Note: Distances have been calculated using MapInfo 10 and RouteFinder 3.0. For the parties, the capacity figures are based on the model (base case) accompanying the paper on cost savings submitted by the parties. These reflect utilization under a counterfactual which differs slightly from the pre-merger situation. For competitors, pre-merger utilization is based either on forecast 2013 volume by the relevant company or pro-rating for all of 2013 according to YTD 2013 volume. For competitors, post-merger utilization is equal to pre-merger utilization.

TABLE 4 **HT plants within 125 miles of Gloucester**

Operator	*Site*	*Max capacity*	*Pre-merger/ counterfactual utilization %*	*Post-merger utilization %*	*Post-merger spare capacity*	*Road distance miles*
Clinipower	Bristol	[✂]	[✂]	[✂]	[✂]	37
Sita HRW	Redditch	[✂]	[✂]	[✂]	[✂]	49
Veolia	Veolia	[✂]	[✂]	[✂]	[✂]	56
New Cross Hospital	Wolverhampton	[✂]	[✂]	[✂]	[✂]	63
Grundon	Colnbrook	[✂]	[✂]	[✂]	[✂]	90
SRCL	Uxbridge	[✂]	[✂]	[✂]	[✂]	100
Tradebe	Fawley	[✂]	[✂]	[✂]	[✂]	105
SRCL	Nottingham	[✂]	[✂]	[✂]	[✂]	105
Sita HRW	Wrexham HT	[✂]	[✂]	[✂]	[✂]	116
SRCL	Bournemouth	[✂]	[✂]	[✂]	[✂]	119

Source: CC analysis of data from the parties and competitors.

Note: Distances have been calculated using MapInfo 10 and RouteFinder 3.0. For the parties, the capacity figures are based on the model (base case) accompanying the paper on cost savings submitted by the parties. These reflect utilization under a counterfactual which differs slightly from the pre-merger situation. For competitors, pre-merger utilization is based either on forecast 2013 volume by the relevant company or pro-rating for all of 2013 according to YTD 2013 volume. For competitors, post-merger utilization is equal to pre-merger utilization. For Veolia, post-merger utilization is pre-merger utilization minus volumes which the parties plant to internalize post-merger.

Sheffield/Leeds

TABLE 5 **AT plants within 100 miles of Sheffield and Leeds**

Operator	*Site*	*Max capacity*	*Pre-merger/ counterfactual utilization %*	*Post-merger utilization %*	*Post-merger spare capacity*	*Road distance miles—Leeds*	*Road distance miles—Sheffield*
GWB	Bradford	[✂]	[✂]	[✂]	[✂]	9	43
HES	Leeds	[✂]	[✂]	[✂]	[✂]	11	35
Tradebe HRW	Doncaster	[✂]	[✂]	[✂]	[✂]	43	26
GWB	Nottingham	[✂]	[✂]	[✂]	[✂]	72	45
Sita HRW	Wrexham	[✂]	[✂]	[✂]	[✂]	97	91/140
SRCL	Newcastle	[✂]	[✂]	[✂]	[✂]	106	133
SRCL	Four Ashes	[✂]	[✂]	[✂]	[✂]	112	85
Tradebe HRW	Birmingham	[✂]	[✂]	[✂]	[✂]	115	88

Source: CC analysis of data from the parties and competitors.

Note: Distances have been calculated using MapInfo 10 and RouteFinder 3.0. For the parties, the capacity figures are based on the model (base case) accompanying the paper on cost savings submitted by the parties. These reflect utilization under a counterfactual which differs slightly from the pre-merger situation. For competitors, pre-merger utilization is based either on forecast 2013 volume by the relevant company or pro-rating for all of 2013 according to YTD 2013 volume. For competitors, post-merger utilization is equal to pre-merger utilization. Mileages from Wrexham shown using shortest route and routing via M62.

TABLE 6 **HT plants within 125 miles of Sheffield and Leeds**

Operator	*Site*	*Max capacity*	*Pre-merger/ counterfactual utilization %*	*Post-merger utilization %*	*Post-merger spare capacity*	*Road distance miles—Leeds*	*Road distance miles—Sheffield*
SRCL	Leeds	[✂]	[✂]	[✂]	[✂]	2	36
SRCL	Oldham	[✂]	[✂]	[✂]	[✂]	36	42
Sita HRW	Salford	[✂]	[✂]	[✂]	[✂]	44	43/89
SRCL	Bolton	[✂]	[✂]	[✂]	[✂]	48	55
SRCL	Nottingham	[✂]	[✂]	[✂]	[✂]	72	44
Sita HRW	Wrexham	[✂]	[✂]	[✂]	[✂]	97	91/140
New Cross Hospital	Wolverhampton	[✂]	[✂]	[✂]	[✂]	114	86
Veolia	Tyseley	[✂]	[✂]	[✂]	[✂]	120	92
Sita HRW	Redditch	[✂]	[✂]	[✂]	[✂]	134	106

Source: CC analysis of data from the parties and competitors.

Note: Distances have been calculated using MapInfo 10 and RouteFinder 3.0. For the parties, the capacity figures are based on the model (base case) accompanying the paper on cost savings submitted by the parties. These reflect utilization under a counterfactual which differs slightly from the pre-merger situation. For competitors, pre-merger utilization is based either on forecast 2013 volume by the relevant company or pro-rating for all of 2013 according to YTD 2013 volume. For competitors, post-merger utilization is equal to pre-merger utilization. For Veolia, post-merger utilization is pre-merger utilization minus volumes which the parties plant to internalize post-merger. Mileages from Wrexham and Salford shown using shortest route and routing via M62.

Manchester

TABLE 7 **AT plants within 100 miles of Manchester**

Operator	*Site*	*Max capacity*	*Pre-merger/ counterfactual utilization %*	*Post-merger utilization %*	*Post-merger spare capacity*	*Road distance miles*
GWB	Bradford	[✂]	[✂]	[✂]	[✂]	37
HES	Leeds	[✂]	[✂]	[✂]	[✂]	52
Sita HRW	Wrexham AT	[✂]	[✂]	[✂]	[✂]	55
Tradebe HRW	Doncaster	[✂]	[✂]	[✂]	[✂]	63/76
SRCL	Four Ashes	[✂]	[✂]	[✂]	[✂]	68
GWB	Nottingham	[✂]	[✂]	[✂]	[✂]	82
Tradebe HRW	Birmingham	[✂]	[✂]	[✂]	[✂]	94

Source: CC analysis of data from the parties and competitors.

Note: Distances have been calculated using MapInfo 10 and RouteFinder 3.0. For the parties, the capacity figures are based on the model (base case) accompanying the paper on cost savings submitted by the parties. These reflect utilization under a counterfactual which differs slightly from the pre-merger situation. For competitors, pre-merger utilization is based either on forecast 2013 volume by the relevant company or pro-rating for all of 2013 according to YTD 2013 volume. For competitors, post-merger utilization is equal to pre-merger utilization. Mileages from Doncaster shown using shortest route and routing via M62.

TABLE 8 **HT plants within 125 miles of Manchester**

Operator	*Site*	*Max capacity*	*Pre-merger/ counterfactual utilization %*	*Post-merger utilization %*	*Post-merger spare capacity*	*Road distance miles*
Sita HRW	Salford	[✂]	[✂]	[✂]	[✂]	5
SRCL	Oldham	[✂]	[✂]	[✂]	[✂]	9
SRCL	Bolton	[✂]	[✂]	[✂]	[✂]	15
SRCL	Leeds	[✂]	[✂]	[✂]	[✂]	44
Sita HRW	Wrexham HT	[✂]	[✂]	[✂]	[✂]	55
New Cross Hospital	Wolverhampton	[✂]	[✂]	[✂]	[✂]	74
SRCL	Nottingham	[✂]	[✂]	[✂]	[✂]	81
Veolia	Veolia	[✂]	[✂]	[✂]	[✂]	91
Sita HRW	Redditch	[✂]	[✂]	[✂]	[✂]	104

Source: CC analysis of data from the parties and competitors.

Note: Distances have been calculated using MapInfo 10 and RouteFinder 3.0. For the parties, the capacity figures are based on the model (base case) accompanying the paper on cost savings submitted by the parties. These reflect utilization under a counterfactual which differs slightly from the pre-merger situation. For competitors, pre-merger utilization is based either on forecast 2013 volume by the relevant company or pro-rating for all of 2013 according to YTD 2013 volume. For competitors, post-merger utilization is equal to pre-merger utilization. For Veolia, post-merger utilization is pre-merger utilization minus volumes which the parties plant to internalize post-merger.

Further information from customers regarding tenders

Birmingham area

Hinchingbrooke Healthcare NHS Trust

1. Hinchingbrooke Healthcare NHS Trust last ran a tender for HRW services in 2012. It became the first such hospital to be operated by a private partner, Circle, shortly before the tender. The contract value was about £[✂] and the volume was about 240 tonnes in 2012. It runs until 2015 with two options to extend for a year each. It involves three collections a week from a single site in Huntingdon, Cambridgeshire. It is about 90 miles from Redditch[1] and 80 miles from Birmingham, and so is at the edge of the distance over which the parties might be expected to compete.

2. Both parties made bids. Sita was the incumbent and retained the contract. Tradebe came in second, [✂] failed the PQQ as it did not answer all of the mandatory questions.

TABLE 1 **Hinchingbrooke NHS Trust 2012 tender**

Rank	*Bidder*	*Score*	*Incumbent*
1	Sita	[✂]*	Sita
2	Tradebe	[✂]	
3	[✂]	[✂]	
4	[✂]	[✂]	
5	[✂]	[✂]	
6	[✂]	[✂]	
Failed PQQ	[✂]	[✂]	

Source: Customer information. CC analysis of score implied by corrected price.

*Hinchingbrooke's original scoring sheet we received included the incorrect prices for Sita, which the customer told us caused Sita to fall behind Tradebe. Sita's original uncorrected score was [✂].The above scores are those which are produced when the correct prices for Sita are entered into the scoring matrix.

3. Sita and Tradebe were the two most competitive bidders for this contract. [✂] had relatively similar scores. [✂] performed poorly.

4. While we only have data from a single tender, the ranking of the parties and the gap between the parties and their competitors fits the profile of tenders which may raise concerns of unilateral effects. However, we also note that the value of this tender is small compared with some other tenders.

5. The customer had a positive view of the merger, stating that it gave the parties access to more disposal sites and incentives for investment. It said that: 'It is the Trust's view, at this point in time, that the merger would not be detrimental to service delivery or impact on market price.' It mentioned the option of joining the East of England consortium if it believed that its bargaining power was weakened, but also said that it had been able to secure more competitive rates by dealing directly with suppliers. It listed SRCL, GW Butler, Mitie and possibly Grundon and Initial Services as potential bidders for future tenders. It said:

> In terms of pricing, this is a tight and competitive market, so key players with their own disposal sites ie Sit[a], Tradebe, Grundon and SRCL

[1] Sita services the contract from Redditch despite it being 60 miles from Enfield.

would normally be expected to come close on pricing. Butlers, Mitie and Initial who are dependent on 3rd party disposal for all or part of their service, will tend to be slightly more expensive. In terms of quality and other aspects, there is not a great deal between them as would be expected in a highly regulated market.

University Hospital of North Staffordshire NHS Trust and Mid Staffordshire Foundation Trust

6. University Hospital of North Staffordshire (UHNS) NHS Trust last ran a tender for HRW services in 2012 and the winner was decided in February 2013. Mid Staffordshire Foundation Trust was also included in the tender. The contract runs until March 2016 with an option to extend for a further two years. For UNHS, the contract value was about £[✂], covering two sites in Stoke on Trent. For the Mid Staffordshire Foundation Trust the contract value was £[✂], covering two sites in Stafford and Cannock.

7. Both parties made bids. Tradebe was the incumbent and retained the contract. [✂] came in second, [✂] failed the PQQ on the basis of [✂].

TABLE 2 **North and Mid Staffordshire NHS Trusts tender, 2012**

Rank	*Bidder*	*Score*	*Incumbent*
1	Tradebe	[✂]	Tradebe
2	[✂]	[✂]	
3	[✂]	[✂]	
4	[✂]	[✂]	
5	[✂]	[✂]	
6	[✂]	[✂]	
Failed PQQ	[✂]	[✂]	

Source: Customer information.

8. Tradebe was the most competitive bidder [✂]. [✂] and [✂] scored similarly. Sita scored [✂] below both of those [✂].

9. Absent the merger, the customer expected Sita and Tradebe to bid in future tenders along with SRCL, HES, Mitie and PHS. The customer listed Tradebe, SRCL and potentially GWB as potentially viable alternative providers for this contract.

10. The customer said that ‘there are enough potential suppliers able to make the clinical waste market a competitive one’ and ‘that there will still be a range of economic operators who have the potential to provide clinical waste management services to North Staffordshire hospital trusts. If the merger goes ahead, I do not think that it will have any great detrimental effect to the clinical waste market’.

West Midlands Consortium

11. Tradebe said that the consortium consisted of 13 hospitals and estimated a volume of 5,000 to 5,500 tonnes a year. University Hospitals Birmingham Foundation Trust was the host organization for the consortium and provided information relating to the most recent tender in 2009. The contract was to run until March 2014 but the consortium has decided to exercise its option to extend the contract for a further five years.

12. Neither Sita nor its predecessors bid for this tender in 2009. Ecowaste and Britcare, both now part of Tradebe, failed at the PQQ stage.

13. SRCL won the contract from the incumbent Eurocare. [✂] was the only other bidder to pass the PQQ stage. Scoring was based on organizational, technical and economic criteria. SRCL scored [✂] and [✂] scored [✂] failed to submit a completed PQQ. [✂] failed to demonstrate sufficient technical ability.

14. The customer said that it would have expected both Sita and Tradebe to bid for future tenders. It also mentioned Biffa as a possible bidder. The customer said that it 'do[es] not have any market intelligence that would allow us to make an informed decision on this commercial transaction' when asked for an opinion on the merger.

Shrewsbury and Telford NHS Trusts

15. Shrewsbury and Telford NHS Trusts last ran a tender in 2012. The value of the contract in 2012 was about £[✂]. This tender includes two hospital sites in Shrewsbury and Telford, which are about 40 and 55 miles west of Birmingham, and 30 and 40 miles south-east of Wrexham.

TABLE 3 **Shrewsbury and Telford 2012 tender**

Rank	*Bidder*	*Score*	*Incumbent*
1	SRCL	[✂]	Tradebe
2	[✂]	[✂]	
3	[✂]	[✂]	
4	[✂]	[✂]	

Source: Customer information.

16. Tradebe was the incumbent but scored [✂] lower than both SRCL (the winner) and [✂] scored substantially worse than the other bidders, which is consistent with its distance from the customer.

17. The customer had no opinion of the merger and was unsure if its bargaining power would be affected by the merger.

Gloucester area

Gloucestershire NHS Foundation Trust

18. The Gloucestershire NHS Foundation Trust last ran a tender for HRW services in 2009. It involved six collections a week from Gloucestershire Royal Hospital and Cheltenham General Hospital. It also involves weekly, monthly or quarterly collections from a further five sites. The sites are in Cheltenham, Gloucester or Stroud. In 2012, the contract value was about £[✂] and the volume was about 920 tonnes. The contract expires in 2014 and has no extension option.

19. Both parties under previous ownerships and names bid for the tender. Polkacrest and Ecowaste were later acquired by Sita and Tradebe respectively. They came [✂] behind SRCL in the tender.

TABLE 4 **Gloucestershire NHS Foundation Trust 2009 tender**

Rank	*Bidder*	*Score*	*Incumbent*
1	SRCL	[✂]	Polkacrest
2	[✂]	[✂]	
3	[✂]	[✂]	
4	[✂]	[✂]	
5	[✂]	[✂]	
Failed PQQ	[✂]	[✂]	
Failed PQQ	[✂]	[✂]	

Source: Customer information.

20. The sites are:

    (a) about 30 miles from the then Ecowaste, and now Tradebe plant in Avonmouth;

    (b) about 45 miles from the then Polkacrest, and now Sita plant in Redditch;

    (c) about 65 miles and 80 miles from the SRCL sites in Frome and Bridgend respectively; and

    (d) about 80 to 90 miles from the Grundon sites in the Thames Valley.

21. The bidders for the tender and the results are in Table 4. The incumbent was Polkacrest. The tender scoring was based on price and technical/quality metrics, with price having a weighting of about 40 per cent. [✂]

22. The ranking of bidders on both their overall score and score based solely on financial measures was [✂]. [✂] was relatively close to SRCL, while [✂] was closer to [✂]. It is notable that [✂], a collection-only company, passed the PQQ, but then had a substantially lower score than any other bidder. This may be indicative of collection-only companies having only a limited ability to bid competitively for contracts involving large hospitals.

23. The customer said that it was concerned about the effect of a reduction in the competitors on its ability to ensure that it could get competitive prices. It listed Grundon, PHS and potentially Sita as potential bidders for a future contract. SRCL may also have a strong incentive to take part in future tenders, particularly if [✂].

Royal United Bath

24. This tender was for an NHS trust outside of Bath. This is 90 to 95 miles from Redditch and 20 to 25 miles from Avonmouth. It is at or beyond the south-western edge of any overlap in Gloucester.

25. We received data for the 2013 and 2006 tenders. We focus on the more recent tenders, as few of the bidders for the 2006 tender are still actively in the form they then were (eg STG and White Rose are now part of SRCL), and so the more recent tender is likely to be of greater evidential value for assessing the effect of the merger.

26. The bids were scored on price, delivery and accountability, risk and performance. Tradebe won the tender. [✂] came second. [✂] This is consistent with Bath's distance from Sita's Redditch plant.

TABLE 5 **Royal United Bath, 2013**

Rank	*Bidder*	*Score*	*Incumbent*
1	Tradebe	[✂]	Tradebe
2	[✂]	[✂]	
3	[✂]	[✂]	
4	[✂]	[✂]	
5	[✂]	[✂]	
6	[✂]	[✂]	
Failed PQQ	[✂]	[✂]	

Source: Customer information.

27. [✂], bid in 2006 but did not do so in 2013.

28. The customer expected that SRCL, Viridor and Merlin would bid in future tenders. When asked its opinion of the merger, the customer said:

> I would consider that this is a good thing for large acute care hospitals given that we have received good service from both SITA and Tradebe. I don't consider the market place would be less competitive as only companies with suitable infrastructure (large vehicles, treatment plants etc) would bid on our HRW contracts. This merger would not significantly affect the HRW marketplace as it is not resulting in a reduction in the total number of HRW suppliers.

Bristol City Council

29. This tender relates to a contract whereby Bristol City Council itself delivers to the treatment plant directly. The value of the contract was about £[✂] in 2012, and so is relatively low compared with other tenders.

30. In 2012, only Tradebe and [✂] made bids. Tradebe won the contract. Sita did not bid in 2012. In 2010, Ecowaste (which Tradebe later acquired) and Sita finished first and second respectively in this tender. There was a gap between them and [✂] about 150 miles away, came third. [✂], which does not own treatment facilities, scored zero.

31. The ranking of the parties and the gap between the parties and their competitors fits the profile of tenders which may raise concerns of unilateral effects. However, in the more recent tender [✂] also bid and Sita did not, which may reduce these concerns.

TABLE 6 **Bristol City Council, 2010**

Rank	*Bidder*	*Score*	*Incumbent*
1	Ecowaste (Tradebe)	[✂]	Ethos/Compact Power
2	Sita	[✂]	
3	[✂]	[✂]	
4	[✂]	[✂]	

Source: Customer information.

32. Regarding the merger, the customer said that: 'It reduces competition in the market place. The location of outlets is crucial, the less of these the worse off we will be. Therefore the reduction of competition may result in less locations and increase costs to us.'

North Bristol Trust

33. This tender relates to a number of NHS hospitals and facilities of varying size in and around Bristol. The value of the contract in 2012 was about £[✂] and the volume was about 1,630 tonnes.

34. Tradebe has a plant in Avonmouth, but at the time of the tender this was still owned by Ecowaste, and so Tradebe's nearest plant would have been in Birmingham. Sita's nearest plant in Redditch is about 75 miles away. This is at, or beyond, the edge of the distance in which Sita might be expected to be competitive.

35. This was a two-stage tender process following a PQQ stage, with an initial stage scored on risk and technical measures and a final stage scored on price for the five-year term.

36. SRCL retained the contract. [✂] bid about [✂] per cent higher than SRCL and [✂] bid about [✂] per cent higher than SRCL. Several companies failed the PQQ for not meeting the basic quality criteria, including integrated providers [✂], and collection-only companies such as [✂].

37. The customer said that 'Based on my current knowledge of the quality provided by these contractors I don't feel it will unduly reduce the competition'. When asked if its bargaining power would have changed, it said: 'No—we can still expect more competitive bids because of the size of contract we can let if we join forces with other Trusts. If anything the bids would have to be more competitive as there would be another large player as the result of the merger.'

TABLE 7 **North Bristol Trust, 2012**

Rank	*Bidder*	*Price bid £m*	*Incumbent*
1	SRCL	[✂]	SRCL
2	[✂]	[✂]	
3	[✂]	[✂]	
Failed PQQ	[✂]		

Source: Customer information.

Other areas

Lincolnshire Community Health Services

38. Both parties bid for the 2013 Lincolnshire Community Health Services Contract in Lincolnshire. This tender covered a number of SQG sites to the east of Sheffield. The value of the contract in 2012 was £[✂].

39. This tender was won by PHS, a collection-only company. [✂] came second of the two bidders. [✂] failed the PQQ as they did not provide sufficient financial information.

40. This tender alone does not provide evidence of substantial competitive interaction between the parties in this area. It is an indication that collection-only companies can effectively compete for SQG contracts.

Other tenders outside the Birmingham and Gloucester areas

41. Some of the other tenders occurred in the Manchester and Sheffield areas. Of the parties, only Sita bid in the Warrington and Halton NHS Foundation Trust tender. Of the parties, only Tradebe bid in the Doncaster and Bassetlaw NHS Foundation Trust tender. This is a limited sample, but it does not point to significant competitive interaction in these areas between the parties.

Bidding data analysis

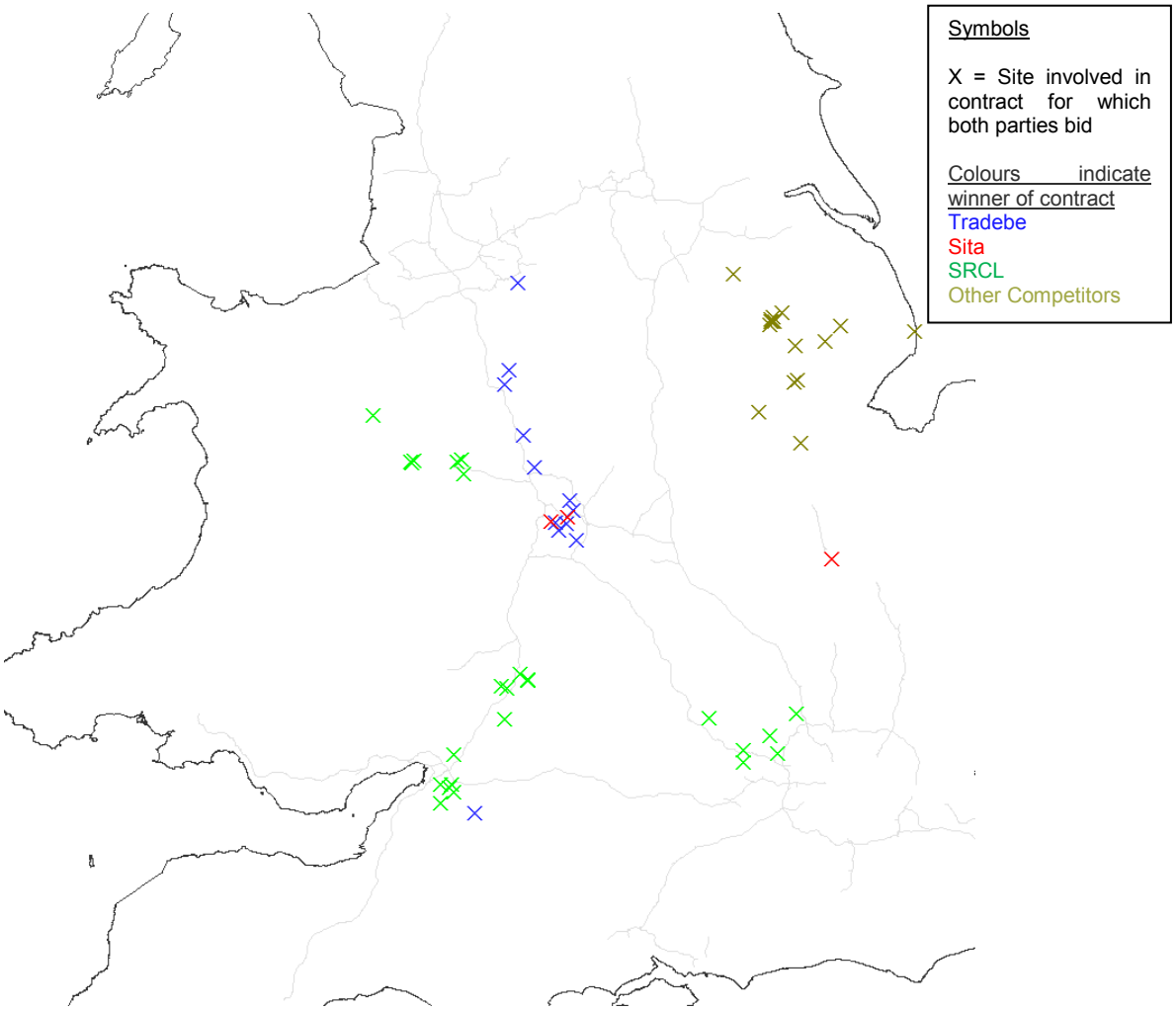
FIGURE 1

Map showing tenders analysed

Source: CC analysis.
Note: Each X indicates a single site which is part of a tender. Multiple sites may be part of any single tender. This map excludes the tender for Birmingham and Solihull Mental Health Foundation Trust which includes 46 sites. [✂] have also been excluded from this table.

FIGURE 2

Map showing tenders where both parties bid



Source: CC analysis.
Note: Each X indicates a single site which is part of a tender. Multiple sites may be part of any single tender.

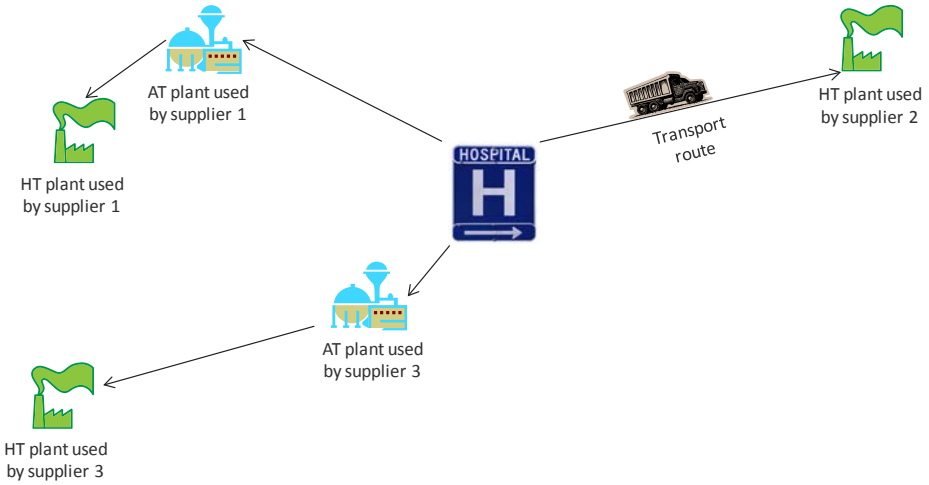
Assessment of HRW supply costs

1. This appendix summarizes the methodology and the key assumptions we have used in our assessment of HRW supply costs in the Birmingham area.

2. We estimate the costs of servicing LQG customers located in the Birmingham area for different suppliers. The cost of servicing a customer includes both transport and treatment costs (see Figure 1). We then rank suppliers according to their total cost of supply to assess the effect of the merger on the tender outcome (Annex 1 sets out the theoretical framework that underpins this approach).

FIGURE 1

Components of the cost assessment (illustration)



Source: CC analysis.

Suppliers and supply options

3. The first step in our assessment was to identify the suppliers who might compete for customers around Birmingham, and the different plants that they may use to service these customers. We have decided to include the following suppliers in our assessment:

   (a) Tradebe HRW (counterfactual). We have assumed that Tradebe HRW would treat AT waste at the Yardley Green facility and would outsource the treatment of HT waste to Veolia in Tyseley.

   (b) Sita HRW (counterfactual). We have modelled two supply options for Sita HRW pre-merger: treat both waste streams at Redditch, and treat both waste streams at Wrexham HT.

   (c) SRCL. SRCL owns an AT plant in Four Ashes near Birmingham and an incinerator in Nottingham. [✂] As such, we have assessed [✂] options for SRCL: treat AT waste at Four Ashes and HT waste in [✂]; treat AT waste at Four Ashes and HT waste in Leeds; [✂].

(d) *Veolia.* Veolia does not currently collect waste from customers, [✂]. However, the parties have argued that other suppliers could use Veolia's capacity to compete with existing suppliers in this area. To test this argument we have included the Tyseley plant in our assessment. We do not assess Veolia as a 'stand-alone' supplier, but rather as an independent provider of capacity that could be used by a third party to bid for customers in this area.

(e) *GW Butler.* We have assumed that GW Butler would treat AT waste at its AT facility in Nottingham and would outsource HT treatment to Veolia in Tyseley.

(f) *Tradebe HRW/Sita HRW (post-merger).* Tradebe has told us that it intended to stop using [✂] for HT waste. We have therefore assessed four supply options for the JV: two that were available to Sita HRW before the merger (treat all waste at Wrexham HT, and treat all waste at Redditch), and two new options that combine the assets of the two parties (treat AT waste at Yardley Green and HT waste at Redditch; treat AT waste at Yardley Green and HT waste at Wrexham).

4. We have assumed that Wrexham AT would remain mothballed in both scenarios (the counterfactual and the merger). We believe that this is a realistic assumption as there is spare capacity at Wrexham HT. We assumed Fawley would be used to treat HRW given the counterfactual.

5. We have decided *not* to include the following suppliers in our assessment:

(a) *New Cross Hospital.* New Cross Hospital has its own incinerator, which it uses to treat the waste generated by the Trust. The incinerator also treats waste generated by third parties. It said the ratio of Trust waste to third party waste was [✂]. However, Tradebe HRW's pricing model indicates that the prices charged by the hospital for the treatment of third party waste are slightly higher than those charged by Veolia because the Veolia waste is delivered to it and there is no collection cost. Suppliers wishing to access wholesale capacity to service customers in the Birmingham area are therefore more likely to use Veolia.

(b) *Grundon.* We have not included Grundon in the assessment as there is no evidence that it is active commercially in the area around Birmingham, and its plants are located more than 80 miles away from the centre of demand.

(c) *HES.* We note that HES has bid for contracts North of Birmingham, [✂]. However, we have seen no evidence that HES has customers around Birmingham at the moment. We have decided not to include them in the assessment.

Plant capacity

6. The second step in our assessment was to estimate the available capacity of the different plants that supply the area. Capacity utilization was relevant to our assessment because suppliers may price capacity differently depending on utilization (see below). Table 1 below summarizes our findings.

TABLE 1 **Utilization rate of plants used to service customers in the Birmingham area**

Owner	*Tradebe HRW*	*Sita HRW*	*Sita HRW*	*SRCL*	*SRCL*	*SRCL*	*GWB*	*Veolia*
Plant	*Yardley Green*	*Wrexham HT*	*Redditch*	*Four Ashes*	*Bristol*	*Leeds*	*Nottingham*	*Tyseley*
Type	*AT*	*HT*	*HT*	*AT*	*HT*	*HT*	*AT*	*HT*
Utilization—counterfactual	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Utilization—post-merger	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Operational capacity	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Utilization rate counterfactual (%)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Utilization rate—post-merger (%)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: Data from parties.

7. For Yardley Green, Wrexham and Redditch, we have used the utilization rates predicted by the cost-optimization model provided by the parties. Future utilizations predicted by this model are broadly in line with current utilization, except for Redditch. Redditch had a utilization rate of approximately [80–90] per cent in 2012, but the parties predict it will be [✂] to treat HT waste collected around Birmingham and in other areas. However, the parties have also told us that there might be some scope to treat more HT waste at Redditch by displacing AT waste currently treated at the plant. We have reflected this uncertainty calculating different sensitivities around the cost of using Redditch. [✂]

Plant costs

8. We have estimated the marginal and average costs of the different plants based on the information at our disposal (the companies' management accounts, their business plans, and their pricing spreadsheets for recent bids). Where different sources pointed to different results, we have put more emphasis on estimates that have been used to support recent commercial decisions. We have also made the following assumptions:

   (a) Wrexham HT. We could not directly estimate the fixed costs of Wrexham HT as Sita HRW's management accounts consolidate the costs of the AT and HT units. We therefore assumed similar fixed costs to Redditch (in terms of cost per tonne of capacity). For marginal costs we used the assumption provided by Tradebe in its cost-optimization model. This assumption was also used by Tradebe in its internal business turnaround plan.

   (b) GW Butler. Similarly we did not have sufficient information to estimate the marginal cost of GW Butler's plant in Nottingham. We only have accounting information for one month, and the plant operates at a low capacity level. We have assumed that the marginal cost was equal to that of Yardley Green. The marginal costs of AT plants of [✂] appear relatively similar, which suggests that marginal costs for AT technologies show limited variation. We have derived fixed costs from the accounting information provided for January 2012 (we have verified that the resulting figure is consistent with the fixed costs of Yardley Green in terms of cost per tonne of capacity).

   (c) Veolia. For Veolia we have used the weighted average cost charged to Tradebe HRW for different types of waste treated at the plant. This assumption is meant to represent the cost of using the plant for a third party, rather than the cost of

delivering the service for Veolia. We understand that Tradebe HRW uses Veolia primarily for HT waste, so the price charged to a new entrant wishing to use the plant to treat both AT and HT waste might be lower. We also note that Veolia is likely to have some spare capacity in the future, and that this may incentivize it to lower treatment prices. We recognize that our assumption is conservative, in the sense that it may overstate the cost of using Veolia in the future. However, we also note that the gap between the price currently charged by Veolia [✂] it would probably take a radical change in business model on the part of Veolia [✂] for external suppliers wishing to enter the Birmingham market.

9. Table 2 summarizes our results. We calculated average costs based on the plants' current utilization level, and based on their 'normalized' utilization. We estimate each plant's normalized utilization by multiplying its capacity by the average utilization rate observed in the area (70 per cent). The normalized average cost of a plant is its marginal cost plus its fixed costs divided by its normalized utilization. This is meant to represent the average price that the plant needs to charge over the life of the asset to break even and keep the capacity operational.

TABLE 2 **Plant costs**

Owner	*Tradebe HRW*	*Sita HRW*	*Sita HRW*	*SRCL*	*SRCL*	*SRCL*	*GWB*	*Veolia*
Plant	*Yardley Green*	*Wrexham HT*	*Redditch*	*Four Ashes*	*Bristol*	*Leeds*	*Nottingham*	*Tyseley*
Type	*AT*	*HT*	*HT*	*AT*	*HT*	*HT*	*AT*	*HT*
Fixed costs (£/year)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Marginal cost (£/tonne)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Current average cost (£/tonne)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Normalized average cost (£/tonne)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CC analysis.

10. Table 2 shows that AT plants have higher marginal costs than HT plants. This reflects the costs of flock disposal, consumables, and the energy used in the AT process. However, AT plants tend to have slightly lower average costs, due to lower maintenance and labour costs. The only exception to this is [✂] has higher costs than competitors and the plant appears to be loss-making [✂].

11. We recognize that the marginal cost of a treatment plant may vary depending on its level of utilization. HT plants are designed to run continuously, which means that marginal costs may be very low where additional quantities allow the operator to avoid interruptions in running patterns. However, we do not have sufficient information on running patterns to assess the relationship between marginal costs and quantities. We have therefore assumed constant marginal costs for all plants, based on current levels of utilization.

Bidding strategies

12. We also had to make some assumptions about the pricing strategies of the suppliers. Suppliers have told us that their pricing strategies depend on a number of factors:

    (a) Tradebe has submitted the pricing spreadsheet it has used for recent tenders. [✂]

(b) Sita has also submitted a pricing spreadsheet used for a recent tender (and we have information on its methodology from the Ecowaste inquiry[1]). [✂] Sita has explained that due to requiring a mix of bagged waste and HT waste for the plants to run efficiently HT waste is always charged higher than bagged clinical waste.

(c) SRCL has told us that [✂].

(d) The merger parties told us that suppliers might be incentivized to price closer to marginal costs under certain circumstances, for example if they have spare capacity, their fixed costs are already covered by long-term contracts, and there are no more valuable long-term contracts up for tender in the short term. They have argued that there is a greater incentive for an HT plant to price closer to marginal costs than an AT plant as an AT plant can be more readily switched off and switched on again than is the case for an HT plant.

13. This evidence suggests that the most common pricing strategy is to seek to recover the average cost of production for each plant, although there are some departures from this approach. To test this conclusion, we compared current market prices with our own estimates of marginal and average costs:

(a) *Average market prices achieved by Tradebe HRW in 2012.* Tradebe told us that their current selling prices for HT and AT waste were £[✂] and £[✂] per tonne, respectively. Assuming an average proportion of 20 per cent of HT waste, this gives a weighted average market price of £[✂] per tonne. We estimate that the average cost for Tradebe HRW of servicing a customer located about 25 miles from Yardley Green (which is approximately the average distance travelled for LQGs) is £[✂] per tonne (including transport costs but excluding any profit margin). The marginal cost of servicing this customer would be £[✂] per tonne. This indicates that the average market prices currently achieved by Tradebe HRW are consistent with a pricing strategy based on [✂] costs and [✂].

(b) *Prices bid in the UHNS tender (May 2012).* The University Hospital of North Staffordshire (UHNS) NHS Trust has provided the prices quoted by bidders in its recent tender. We compared these prices with the average and marginal costs predicted by our assessment (see Figure 2). [✂] Tradebe HRW appears to have bid at [✂] (assuming it would [✂] to treat HT waste). To understand why this was the case, we examined Tradebe HRW's pricing spreadsheet for this bid. This indicated that Tradebe HRW expected to treat HT waste at [✂], at a more competitive rate than we assumed. This would imply that the bid was actually [✂]. Tradebe then told us that, at the time it prepared this bid, it did not know [✂], and it made the bid accepting that it might be [✂] if it was obliged to [✂] HT treatment.

FIGURE 2

Comparison between our cost estimates and the price bid in the UHNS tender (£/tonne)

[✂]

Source: CC analysis, UNHS questionnaire response.

(c) *Bid ranking in the STH tender (June 2012).* The Shrewsbury and Telford Hospitals (STH) NHS Trust has provided the ranking achieved by different

[1] A report on the completed acquisition by Stericycle, Inc of Ecowaste Southwest Limited

bidders in its recent tender, based on the total cost of the service. We compared that ranking with that based on the average and marginal costs of servicing this customer predicted by our assessment (Figure 3). We note that [✂].

FIGURE 3

Comparison between ranking observed in STH tender and ranking based on marginal and average costs

[✂]

Source: CC analysis, STH—note the ranking relates to the overall bids for four hospital trusts and not just STH.

14. The analysis of these two recent tenders indicates that certain suppliers—[✂]—are currently bidding under average costs. However, we do not consider that this strategy would be sustainable. Sita HRW was making losses before the JV, and the parties told us that this was partly due to [✂].

15. More fundamentally, it seems to us that continually pricing the service at marginal costs would be a risky strategy in a context where the price is agreed for three to five years. If suppliers with spare capacity were continually pricing new contracts at marginal costs, then, as old contracts expire their profit margin would decrease and could eventually become negative, which would ultimately force exit or repricing.

16. For these reasons, we assessed two bidding strategies. The first (the 'average cost pricing' scenario) is based on the following assumptions:

    (a) Plants operating at a normal level of utilization (under 80 per cent) are priced at their 'normalized' average cost of operation. This is meant to represent the average price that the plant needs to charge over the life of the asset to break even and keep the capacity operational.

    (b) Plants operating at a higher level of utilization (between 80 and 90 per cent) are priced at the average between their normalized average cost and the opportunity cost of their capacity, which we estimate to be £[✂]/tonne for AT plant and £[✂]/tonne for HT plant, based on Tradebe HRW's estimate of current market prices. The rationale is that plants that are capacity-constrained may forego revenues from other, more profitable contracts by using their capacity for a tender. This approach has the effect of reducing the competitive pressure applied by plants that are capacity-constrained.

    (c) Plants that are capacity constrained (with a utilization rate between 90 and 100 per cent) are priced at their opportunity cost (again, £[✂]/tonne for AT waste and £[✂]/tonne for HT waste). The rationale is that to bid for new contracts these plants would need to displace existing waste treated at the plant. Alternatively, they would need to outsource the treatment to a merchant plant (eg Veolia) at similar prices. In practice, this assumption only applies to Redditch, and it has the effect of pricing the plant out of the market.[2]

17. In the second scenario (the 'marginal cost pricing' scenario), the plants with a utilization rate significantly below the market average (<60 per cent) are priced at the

[2] In principle, the owner of Redditch might be able to free up some HT capacity by sending some of the AT waste somewhere else (for example at Yardley Green in the merger scenario). However, we note that Tradebe's cost optimization model predicts that Redditch will already treat [✂] per cent of HT waste in both the counterfactual and the merger scenario. We understand that it is difficult to operate HT plants with a higher proportion of HT waste.

average between their marginal cost and their normalized average cost. This applies to [✂]. The bidding policy of the other plants is left unchanged.

18. We recognize that the relationship between capacity utilization and bidding strategy might be more complex than suggested by this scenario. In practice it is conditioned by other factors such as the extent to which suppliers already cover their fixed costs with existing contracts, the perspective of tendering for more valuable contracts in the short term, and whether spare capacity is AT or HT. However, in practice our assumption appears to be a good approximation of the behaviours we can currently observe around Birmingham.

19. We have not included a profit margin in our cost estimates. This is because we are interested in estimating the relative cost-competitiveness of different suppliers, rather than the absolute level of prices. We would not expect profit margins to be a significant factor of differentiation between suppliers in the long-run, and at any rate we have insufficient information to make accurate assumptions for different suppliers.

20. Similarly we have not included depreciation in our estimate of fixed costs. Depreciation is a sunk cost and as such we would not expect it to affect pricing decisions for *existing* plants (though it might affect decisions to build new capacity). In practice, we note that Tradebe HRW's pricing spreadsheet [✂] in the 'fully costed' price of servicing customers.

21. We recognize that, in the long term, suppliers need to face a reasonable prospect of capital cost recovery. In our assessment this happens in two ways: the most competitive supplier in a tender can bid a price above its average cost (up to the average cost of the second most competitive supplier); and suppliers can charge prices above costs when they are capacity constrained. In addition, we would expect suppliers to take account of capital costs when they build new capacity to enter a market. In sum, we consider that we can allow for the long-term recovery of capital costs without explicitly including depreciation in pricing decisions.

Transport

22. Our assessment of HRW transport costs is based on Tradebe's costs. This is calculated based on a cost per hour and a cost per mile travelled for different types of vehicles. Tradebe HRW's commercial managers use commercial judgement to select the most effective options (in terms of vehicles and routes) to service customers. Due to the nature of our assessment, we have had to make more generic assumptions about the way waste can be transported:

    (a) Transport routes. We assume relatively simple transport routes, where the waste is transported from the largest site(s) of each customer to the 'primary plant' used to treat AT waste. If the primary plant is an AT plant, the HT waste is then forwarded to a 'secondary plant' to be incinerated. We have not sought to model various ways of optimizing transport routes, for example by incorporating a detour to secondary plants in the collection route. There are no waste transfer stations in the Birmingham area so we have not sought to model that feature of the market. We use route distances and times given by the mapping software Mapinfo based on actual road distances.

    (b) Collections. We only assume separate collections for different sites (eg different hospitals for one trust) where the different sites are likely to generate significant amounts of waste and are located more than 10 miles apart. Otherwise we assume that all the waste is collected in one collection from the main site.

(c) *Vehicles.* We assume that suppliers use large trucks (18 tonnes/36 bins) to transport the waste from each customer site to the primary plant, and the largest trucks available (18 tonnes/42 bins) to 'trunk' HT waste from primary plants to secondary plants. We assume that these larger trucks are always full.

(d) *Non-driving time.* We have assumed load times of 40 minutes per tonne, and checks and breaks of 30 minute per round trip, [✂].

23. Figure 4 below shows how transport costs vary for a sample customer, the University Hospitals Birmingham NHS Trust (whose main site is the Queens Elizabeth Hospital in central Birmingham). The chart only shows the transport costs from the site to the 'primary plant'. The chart illustrates the relationship between distance and costs, although our assessment also takes account of route time to estimate cost. This chart shows that there is a fixed cost component to transport costs, but transport costs vary with distance nonetheless.

FIGURE 4

Transport costs for a sample customer

[✂]

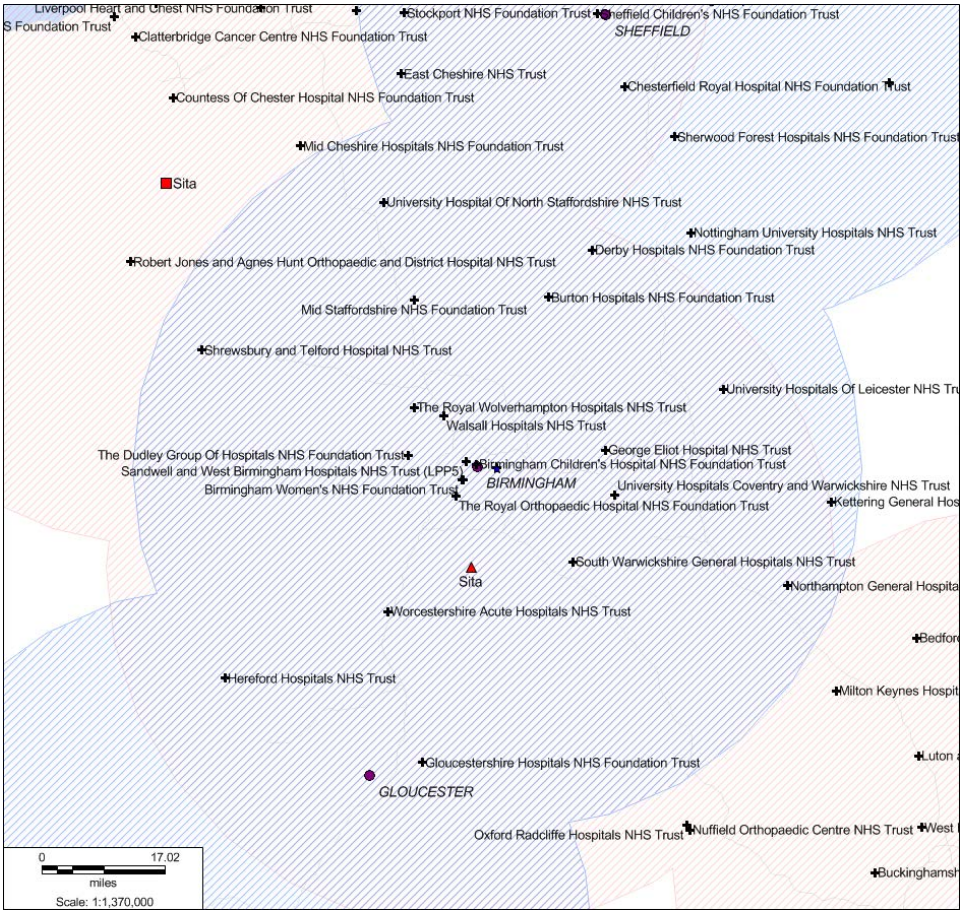
Source: CC analysis based on Tradebe HRW transport costs.

Customers

24. Using Tradebe HRW's list of potential customers we identified 19 Acute trusts located in the area of overlap around Birmingham (see Figure 5).

FIGURE 5

Acute trusts located in the area of overlap around Birmingham



Source: CC analysis.

25. We decided to exclude two trusts from our sample because they are unlikely to be affected by the merger: the Royal Wolverhampton Hospitals Trust, which treats most of its waste in house using its own incinerator; and the Worcestershire Acute Hospitals Trust, which has a long-term contract in place with Sita HRW for the treatment of its waste and the management of the Redditch incinerator. We excluded two other trusts (Burton Hospitals and Sandwell and West Birmingham Hospitals) because we had insufficient information on their volumes and site locations.

26. This gave us a sample of 15 trusts to analyse (Table 3). Seven of these trusts responded to our questionnaire, which gave use reliable information on their waste mix, collection frequencies, and site locations. For the remaining eight trusts we combined information from Tradebe HRW's database with information from the trusts' websites to form some assumptions.

TABLE 3 **Sample of customers covered in this analysis**

	Annual tonnage	*Incumbent*
University Hospitals Of Leicester NHS Trust	[✂]	SRCL
University Hospitals Coventry and Warwickshire NHS Trust	[✂]	Not known
University Hospital Birmingham NHS Foundation Trust	[✂]	SRCL
The Dudley Group Of Hospitals NHS Foundation Trust	[✂]	Not known
University Hospital Of North Staffordshire NHS Trust	[✂]	Tradebe HRW
Heart Of England NHS Foundation Trust	[✂]	Tradebe HRW
George Eliot Hospital NHS Trust	[✂]	SRCL
Kettering General Hospital NHS Foundation Trust	[✂]	SRCL
Walsall Hospitals NHS Trust	[✂]	SRCL
Northampton General Hospital NHS Trust	[✂]	SRCL
Birmingham Women's NHS Foundation Trust	[✂]	SRCL
Mid Staffordshire NHS Foundation Trust	[✂]	Tradebe HRW
Birmingham Children's Hospital NHS Foundation Trust	[✂]	SRCL
The Royal Orthopaedic Hospital NHS Foundation Trust	[✂]	SRCL
Shrewsbury and Telford Hospital NHS Trust	[✂]	SRCL

Source: Tradebe HRW data on potential customers.

27. We have estimated costs for individual trusts, which are the lowest unit of bidding. In practice some of these customers tender for services as part of a consortium.

Overview of how competition works in the HRW market

Introduction and summary

1. This annex sets out a highly simplified overview of competition and price formation for tenders in the HRW market. It does not aim to capture all the complexities of price-setting in the industry. Its purpose is simply to provide a framework for our analysis and to help us interpret the empirical evidence we are collecting.

Discussion

2. A key feature of the HRW market is that the costs of providing the service vary by plant (depending on the technology used) and by location (depending on the distance to consumers). In this context, a simplified view of price formation can be broadly understood as follows:

   (a) For each customer, suppliers are ranked by order of ascending costs to form a 'merit order'. The cost of delivering the service includes both treatment costs and transport costs. This means that a supplier with relatively high treatment costs can still be competitive if it is located close to the customer, and, conversely, that a supplier located far away from the customer may still be competitive if it has low treatment costs.

   (b) If suppliers are able to estimate other's costs, then the most competitive supplier has the incentive to bid above its 'true' costs, up to the costs of the second most competitive supplier. In effect, this means that the price is set with reference to the costs of the second most-competitive supplier (see Figure 1 (1A) below). That is, the second most competitive bidder is the most relevant constraint on the market power of the most competitive bidder.

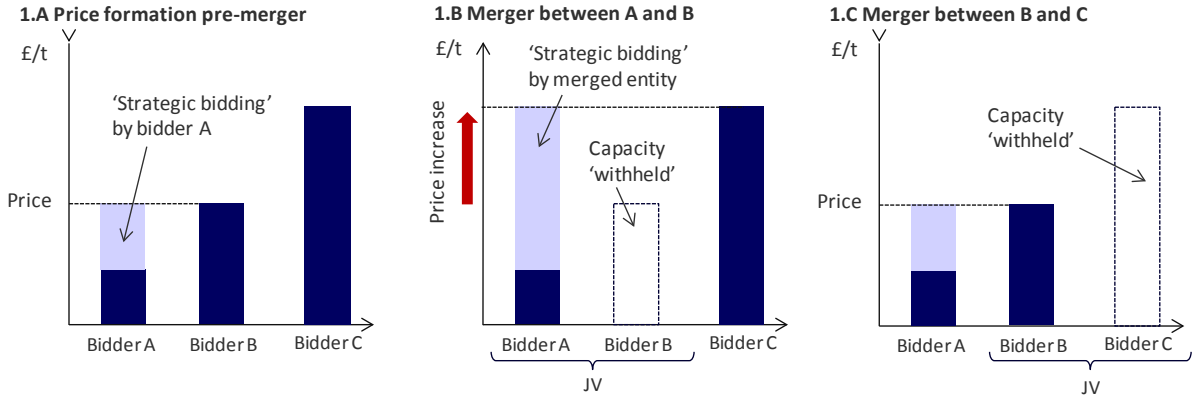
3. While this view relies on a series of simple assumptions (we discuss some of the key limitations below), it helps explain how a merger between two HRW suppliers may affect prices, and the circumstances where this may be most likely to happen. We can distinguish between two cases:

   (a) If the two most competitive suppliers merge, then the merged entity has an incentive to 'withhold' the capacity of its most expensive plant and bid up to the costs of the third most expensive bidder (see Figure 1 (1B)). The merger essentially eliminates the competitive constraint set by the second most competitive plant.

   (b) If the two least competitive suppliers merge, then the merged entity still has an incentive to bid its most competitive plant, which means that the constraint on the most competitive supplier is unchanged, and the merger would have no impact on the price (see Figure 1 (1C)).

FIGURE 1

Impact of merger on price formation



Source: CC.

4. This stylized representation of the market has a number of limitations which are worth bearing in mind:

   (a) *Capacity.* If a supplier has limited capacity, it may decide not to participate in the tender, or it may bid a higher price, for example to reflect the opportunity cost of lost profits from not using the capacity to service another, more profitable customer. In the example set out above, if the least competitive supplier (Bidder C) is capacity-constrained, then a merger between the two most competitive suppliers is even more harmful because the competitive constraint exercised on the merged entity is less effective. If the most competitive supplier is capacity-constrained, then the second most competitive bidder is more likely to win the auction. In this case a merger between the two least competitive suppliers is more likely to have an impact on the price.

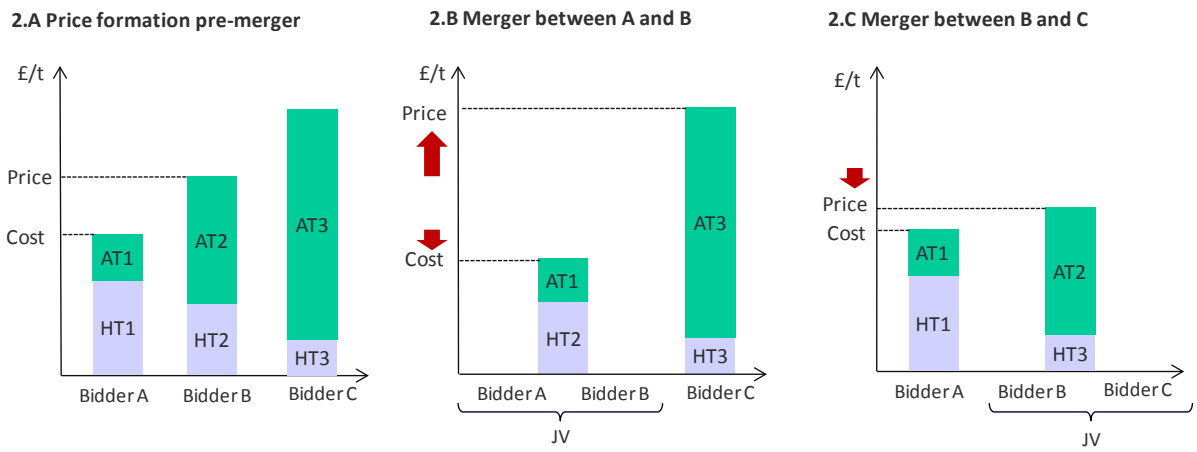
   (b) *Information*. If the most competitive supplier has limited or uncertain information on the costs of his competitors (or, indeed, on its position in the merit order), then it is less likely to bid significantly above costs. This is because, when bidding strategically, it has to deal with the uncertainty by weighting the probability of higher revenues if it wins against the risk of losing the tender. However, while this may affect the *absolute* level of prices in the market, it is not clear that it conditions the *relative* impact of the merger on prices. If the merged entity faces the same level of uncertainty about the costs of the remaining competitors, then it will continue to bid conservatively to avoid losing the tender. In this case the relative impact of the merger may not be different from that estimated with perfect information. On the other hand, if the merged entity faces less uncertainty about the costs of the remaining competitors (for example because it 'pools' the market intelligence owned by the two companies, or simply because of the fact that there are fewer competitors), then it may be able to bid a higher price.

   (c) *Efficiencies.* The impact of the merger may be different if it reduces the cost of delivering the service for the merged entity, for example by allowing more efficient combinations of HT and AT plants. However, the impact on price is not straightforward. Suppose, for example, that the most competitive supplier has a low-cost solution for treating AT waste and a relatively high-cost solution for treating HT waste, and the second most competitive supplier has a lower cost solution for treating HT waste and a high cost option for treating AT waste (see Figure 2 (2A)). If these two suppliers merge, the merged entity could combine the two lowest costs options for AT and HT waste to provide the service at a lower

cost. However, it would still have an incentive to bid up to the costs of the third supplier, which would be unchanged (see Figure 2 (2B)). In other words, the merged entity would be unlikely to pass through the efficiency benefits to consumers. However, if a merger between the two least competitive suppliers allows them to combine their assets more efficiently, then the competitive pressure on the most competitive supplier is increased, and the price is reduced (see Figure 2 (2C)). Against this backdrop, a merger is more likely to benefit customers if it allows the 'challengers' to reduce costs (and if there are no other ways of realising these efficiencies, for example through contracting between firms).

FIGURE 2

Impact of merger on price formation with efficiencies



Source: CC.

Review of Tradebe's cost savings analysis

1. This annex reviews Tradebe's assessment of the cost savings that may arise from the JV with Sita.

2. We performed our own analysis of the efficiencies associated with the merger as part of our assessment of its competitive effects. We incorporated the results into our analysis of the relative competitiveness of suppliers (see Section 6). Our analysis differs from that submitted by Tradebe in two main respects: firstly, it focuses on the efficiencies that are likely to arise in the region around Birmingham, which is where competitive effects are most likely; and secondly it examines how the efficiencies might affect the relative competitiveness of different suppliers and the likelihood of these efficiencies being passed through to customers. We considered that our approach was more suited to the requirements of our assessment, and as a result we did not rely on Tradebe's analysis significantly. However, we reviewed Tradebe's submission to ensure that it was consistent with our own work.

Review of Tradebe's analysis

3. The model used by Tradebe evaluates efficiencies by estimating the optimal cost of treating HT waste for the parties in the counterfactual compared with the merger scenario. Tradebe concludes that the merger might generate cost savings of £[✂] in a 'base case' scenario where the cost of displacing waste at Fawley is £[✂] per tonne (which is the margin on [✂], the type of waste that is easiest to displace). To put this figure into perspective, Tradebe's and Sita's combined operating expenditures in 2012 was approximately £[✂], so the estimated savings would reduce the JV's running costs by approximately 2.5 per cent (though the impact will be proportionally greater in certain areas).

4. This result is driven by two main factors working in opposite directions:

   (a) *Lower treatment costs (as more waste is treated in house).* Tradebe and Sita currently outsource a significant share of their HT treatment: Tradebe outsources the bulk of its HT treatment to Veolia in Birmingham, and Sita sends a share of the HT waste it collects in the South-East to [✂] (the rest of the HT waste collected in this area is trucked over long distances to Redditch or Wrexham). The transaction would allow the parties to internalize a larger share of their HT treatment: Tradebe could use Redditch and Wrexham to treat HT waste, while Sita could potentially use Fawley to treat the waste currently sent to [✂]. The price charged by Veolia and [✂] for HT treatment is £[✂] and £[✂] per tonne, respectively, while the marginal cost of treating HT waste at Wrexham and Redditch is £[✂] and £[✂] per tonne, respectively, and the cost of displacing non-HRW waste at Fawley is £[✂]. This means that the internalization of HT treatment would lead to an immediate and substantial reduction in treatment costs for the JV.

   (b) *Higher transport costs (as own sites are located further away).* The plants that would be used to treat HT waste in the base case scenario are located further away from the parties' operations than the third-party plants currently used. This means that almost all the actions contemplated by Tradebe in the merger scenario would increase transport costs compared with the counterfactual, and this effect partly offsets the benefit due to lower treatment costs.

5. Table 1 below provides more details on the different factors driving Tradebe's cost-saving estimates. The bulk of the effect comes from redirecting Tradebe's HT waste from Veolia to Sita's plants in Redditch and Salford.

TABLE 1 **Changes in treatment and transport costs in Tradebe's base case**

£ per year

Cost-saving actions contemplated by Tradebe	*Change in treatment costs*	*Change in transport costs*	*Net effect*
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]

Source: [✂].

6. Tradebe also calculates various sensitivities, based mainly on the cost of displacing non-HRW waste at Fawley. Basically, the cheaper it is to use Fawley, the more likely it is that Tradebe would use the plant in the counterfactual, which reduces the gap between the counterfactual and the merger scenarios. This results in a range for cost savings of £[✂] to £[✂].

7. We have reviewed Tradebe's assumptions and calculations. The assumptions on treatment costs at Redditch, Salford, and Wrexham can be traced back to Sita's management accounts and pricing models. The assumptions on transport costs are broadly consistent with those used by Tradebe in the company's pricing model (albeit the model assumes shorter no-driving time, which results in slightly lower transport costs). The assumption on the price charged by Veolia can be traced back to documentation provided to the OFT in the Phase 1 inquiry. These assumptions are consistent with those we used in our own cost model. The resulting estimate of cost savings is consistent with that used in the company's business turnaround plan (which estimated the additional EBITDA to be worth £[✂]).

8. We conclude that Tradebe's analysis provides a realistic estimate of the cost savings that may be achieved by the JV.

Effect on competition

9. In and by itself, the existence of cost savings for the parties does not indicate that the merger would be beneficial for consumers (or for the economy in general). The JV is essentially proposing to redirect HT waste from third-party plants to its own plants. Given that marginal treatment costs are broadly similar across plants, but transport costs are higher when the JV's plants are used, it may be argued that the merger might actually *increase* the industry-wide costs of treating HT waste, even if it decreases the JV's own costs. All else equal, this would simply lead to a transfer of margin from Veolia and [✂] to the JV, which is not directly relevant to customers.

10. These efficiencies are only likely to benefit consumers if they enable the JV to compete more effectively against other suppliers and a share of these benefits is passed through to consumers.

11. In their initial submission, the parties contended that the efficiencies would be rivalry-enhancing. They argued that the lack of in-house HT capacity was the main factor

explaining their inability to compete with SRCL in the area around Birmingham, and that the merger would remedy this.

12. To assess the scope for pass-through in more detail we incorporated estimates of cost savings in our assessment of the relative competitiveness of the different suppliers around Birmingham pre- and post-merger. This analysis is detailed in Section 6 of our findings and in this appendix.

Examples of past entry and exit into the supply of HRW services

1. In recent years a number of players have exited the supply of HRW services. These businesses have generally been acquired by other participants in the waste sector.[1] For example:

   (a) SRCL acquired White Rose, Cliniserve and STG since 2005;

   (b) Tradebe acquired Britcare Limited in 2010 and Ecowaste Southwest Limited in 2012;

   (c) Sita acquired Polkacrest Limited in 2009; and

   (d) in June 2009 GW Butler acquired Medical Waste Solutions Limited which operated an AT plant in Nottingham.

2. Recent examples of entry are shown in Table 1. The remainder of this appendix provides further details of six examples of entry and one example of unsuccessful entry in recent years.

[1] Veolia told us that 'most of those companies that have exited have done so as a result of acquisition by a competitor, so loss of processing capacity has not necessarily been affected'.

TABLE 1 **Recent examples of entry into HRW treatment**

Party (location)	*Type*	*Operational capacity tonnes pa*	*Time required for entry*	*Operating date*	*Cost £m*	*Comments*
Scotgen (Dumfries)	HT	[✂]	PP: 6 months PPC: 14-15 months Construction: 18 months Total: 3 years	Jan 2008	20	Gasification technology. The plant is not operating at present due to a fire and the revocation of its environmental permit.
HES (Yorkshire)	AT	[✂]	PP: existing planning permission Total: 9 months	April 2011	[✂]	
Ecowaste Southwest* (Avonmouth)	AT	[✂]	PP: 6–12 months PPC: 6–9 months Construction: 9 months Total: 12 months	August 2009	>1	
SRCL (Merseyside)	AT	[✂]	PP: 9 months PPC: 4 months Construction: 3 months Total: 12 months	February/ March 2014	[✂]	
Augean (Kent)	HT	[✂]	Not known—Augean did not build the plant			
Clinipower (Avonmouth)	HT + AT	[✂]	PP: N/A as the facility was operational prior to 2010 PPC: N/A as the EA advised a PPC permit was no longer required Construction: 9 months Total: 2 years	April/May 2014	[✂]	HT plant is pyrolysis.
GW Butler (Essex)	AT	[✂]	PP: 4–6 months. PPC: 4–6 months Construction: 9 months Total: 9 months	Q3 2010	1.25	
Medisort (Littlehampton)†	AT	[✂]	N/A	2006 (by Cliniserve)	N/A	
[✂]	[✂]		[✂]	[✂]	[✂]	

Source: Compiled by the CC based on responses from JV and third parties.

*Ecowaste Southwest Limited was acquired by Tradebe in August 2012 and Tradebe told us that the information in this table was therefore an estimate.
†Medisort Limited acquired the facility in June 2010 as a fully operational site and therefore does not know the original cost or time required for entry.
Note: PP = planning permission; PPC = the permit issued by the EA for a treatment plant.

SRCL (Merseyside)

3. SRCL told us that it was constructing a new AT plant with a capacity of approximately [✂] tonnes a year in the Knowsley area to treat waste from a consortium contract. The contract covers 16 trusts in the Merseyside area and was awarded to SRCL from April 2013. SRCL told us that the total volumes of the contract were between 4,500 and 5,000 tonnes and it was a three-year contract with a one-plus-one option for extension. The plant is due to open in February or March 2014. While the new plant is under construction the majority of this waste is being treated at SRCL's HT incinerators at Bolton, Oldham and Leeds and at an AT plant in Four Ashes.

4. [✂]

5. [✂]

HES (Yorkshire)

6. The North of England Commercial Procurement Collaborative (NOECPC) told us that it facilitated the procurement of a contract for the Yorkshire consortium (23 trusts) for 9,000 tonnes of waste. In August 2010, HES, a company based in Scotland which serviced a large Scotland NHS contract, was awarded this contract for [✂] years commencing April 2011. The contract has a [✂]. The previous provider was SRCL.

7. The NOECPC told us that although the building of a new plant was not a requirement of the tender, the consortium was keen to reduce its carbon footprint.

8. HES undertook to build a new AT facility to service the contract, which it subsequently built at Wakefield.

9. The previous tender (involving 22 NHS trusts) was in 1995 and was a 16-year contract. The supplier was White Rose Environmental (now SRCL). At the time, regulations specified that all waste should be incinerated. The average price by the close of the contract was £[✂] per tonne.

10. The new contract began in April 2011, but this time the consortium wanted a balance of HT and AT treatment (75 per cent of the waste was AT waste) as AT treatment was recognized to be cheaper and thought to be more environmentally friendly. The consortium did not specify that a new plant should be constructed in the Yorkshire region, but it did state that it was looking for the bidder to balance the need for AT treatment and incineration requirements with the carbon footprint of the bid. Several bidders offered to build a new plant or plants in the region, including SRCL. Some bidders already had planning permission for a plant.

11. There were initially eight bidders but some were speculative (eg with a general waste background rather than clinical waste). Eventually the bidders were shortlisted to four that were invited to submit final offers. These were: Polkacrest (Sita), GW Butler, SRCL and HES. The results of the tender were that HES came top (with a price of £[✂] per tonne) [✂]. HES bid one price for both AT and HT waste which the consortium felt would be a benefit because it would mean that HES would be keen to ensure proper segregation of waste through training. Particular aspects of the HES bid that made it attractive were: price, recycling options for flock, reclamation of metals and a more central plant. HES had a good reputation in Scotland and the consortium had spoken to its colleagues in Scotland.

12. The consortium was aware that the parameters of the contract would encourage investment. Three aspects of the tender made entry possible:

    - The lead time between the award of the contract and the contract start was nine months, which allowed HES to secure approval and construct its plant.

    - The total tonnage of the contract was large (10,000 tonnes a year). HES said that the size of the contract was essential in ensuring that entry was attractive.

    - HES said that the length of contract, which guaranteed tonnage for [✂] years, was vital in making the construction of a new facility viable.

Ecowaste Southwest, now Tradebe Healthcare (Southwest) Limited (Avonmouth)

13. Another example where a company proposed to construct a new plant as the basis for securing an NHS contract was Ecowaste in 2006, which built the Avonmouth AT plant and started treating HRW in August 2009. The contract process was led by RUH Bath and was a five-year contract plus a two-year extension. Similar to the HES example, the driver for the change to Ecowaste appears to have been that the cost of treatment was high. White Rose (now SRCL) was the existing supplier and the price was high because most of the HRW was being incinerated.[2] In a previous inquiry, Ecowaste Group told us that the contract was awarded to it because it was able to introduce greater waste segregation to reduce cost, and this was confirmed by RUH Bath.[3] This contract was tendered jointly with Bristol PCT, North Somerset PCT and South Gloucestershire PCT. The combined tonnage of these different customers was approximately 650 tonnes a year. Ecowaste Southwest was not active in HRW in England but had HRW experience in Scotland. In the intervening period between gaining the contract and building its plant, Ecowaste Southwest acted as a collection company transporting the waste to other treatment plants.[4]

Augean (Kent)

14. In April 2012, Augean plc (a waste management company) announced that it had entered into a ten-year agreement to manage and operate a commercial HT incinerator in Sandwich, Kent.[5] This plant was previously owned by the pharmaceutical company Pfizer and used for its own in-house requirements. Augean told us that this plant could treat [✂] tonnes of HRW a year.

Clinipower (Avonmouth)

15. Clinipower is refurbishing a pyrolysis (HT) plant in Avonmouth that was built by Compact Power and had been mothballed. It will also install an AT plant. The capacity of the HT and AT plants will be [✂] and [✂] tonnes a year respectively and the plants are expected to be operational in April or May 2014. Clinipower told us that it intended to concentrate on contracting largely with collection companies as this strategy was successful for Compact Power. However, due to consolidation of the market towards integrated collection and treatment companies, Clinipower also intends to seek to bid directly for NHS business. Clinipower told us that it would be prepared to provide collection services if the independent collection industry remained weak despite Clinipower's entry.

Medisort Limited (Littlehampton)

16. In 2010, Medisort Limited purchased Ethos Acquisition Limited's AT plant in Littlehampton. Ethos bought the plant from Cliniserve following the OFT's investigation into the acquisition of Cliniserve by SRCL.

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[2] RUH Bath told us that at the time it did not have much choice between providers, and most of the product was being incinerated so its waste costs were very high. It decided to support Ecowaste to install autoclave equipment and provide it with that waste stream opportunity at a price that seemed attractive to it at the time.
[3] RUH Bath told us that part of the award was based on the fact that it wanted to improve separation and segregation of the HRW streams so that it could take advantage of the lower price offer for autoclave, rather than the high cost of incineration.
[4] The information in this paragraph is taken from Appendix F of the CC's report on the completed acquisition by Stericycle, Inc of Ecowaste Southwest Limited.
[5] www.augeanplc.com/hti/default.aspx.

17. Medisort installed a second autoclave in 2011, increasing operational capacity to [✂] tonnes a year. Medisort's website states that plans exist to install HT treatment in 'the near future'.[6] [✂]

Tradebe (Bristol)—unsuccessful entry

18. In 2011, Tradebe bid for the North Bristol/UH Bristol contracts. Whilst Tradebe's bid was initially based on servicing the contracts from Birmingham, it assumed that it would then build a new plant at Bristol. This new plant had [✂]. Tradebe assumed that it would have to gain a [✂]. Tradebe did not win the contracts [✂]. Tradebe also told us that [✂].[7]

[6] www.medisort.co.uk/index.
[7] A report on the completed acquisition by Stericycle, Inc of Ecowaste Southwest Limited, Appendix F.

Glossary

Acute (NHS) trusts — Acute trusts manage **NHS** hospitals to make sure that they provide high-quality healthcare and that they spend their money efficiently. Acute trusts also decide how a hospital will develop, so that services improve.

Acute hospitals — Hospitals intended for short-term medical and/or surgical treatment and care.

AT — Alternative technology, a term used to refer to technologies to treat **HRW** that do not incinerate the **HRW**. AT treatment covers a variety of methods to make **HRW** safe prior to final disposal. ATs for treating **HRW** include: **dry heat** or **steam augers**; **autoclave**s, which use steam and pressure in the treatment process; **microwave**s, which generate heat to treat the **HRW**; **chemical treatment** systems, which use disinfectants such as sodium hypochlorite and chlorine; and **irradiation systems**, which use gamma radiation to render safe small quantities of **HRW** (see also **HT**).

Autoclave — Equipment to sterilize **HRW** by subjecting it to high-pressure saturated steam at 121°C for around 15–20 minutes depending on the size of the load and the contents. The process of treating waste using pressurized steam heated is called autoclaving.

Cannon Hygiene — A company which collects **HRW** and transports it to a third party for treatment.

Chemical treatment — A system that uses disinfectants, such as sodium hypochlorite and chlorine, to treat the waste. Chemical treatment does not use heat.

Clinical waste — Defined in Regulation 1(2) of The Controlled Waste Regulations 1992 (SI 1992/588) as meaning medically-related waste which, if not rendered safe, may prove hazardous or infectious to any person coming into contact with it, ie:

(a) any waste which consists wholly or partly of human or animal tissue, blood, other body fluids, excretion, drugs or other pharmaceutical products, swabs or dressings, or syringes, needles or other sharp instruments, being waste which unless rendered safe may prove hazardous to any person coming into contact with it; and

(b) any other waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practice, investigation treatment, care, teaching or research, or the collection of blood for transfusion, being waste which may cause infection to any person coming into contact with it.

Clinipower — A prospective provider of **HT** and **AT HRW** treatment facilities.

CC — Competition Commission.

CCGs — Clinical Commissioning Groups, responsible for commissioning most healthcare services for patients within their local communities.

Cytotoxic and cytostatic medicines	Any medical product that exhibits one or more of certain hazardous properties, such as toxic, carcinogenic and mutagenic. They include: most hormonal preparations; some anti-viral drugs; many antineoplastic agents; immunosuppressants; some antibiotics; and drugs from a number of medicinal classes.
Cytotoxic and cytostatic waste	Any waste that is contaminated by **cytotoxic and cytostatic medicines** should be classed as cytotoxic and cytostatic waste. Cytotoxic and cytostatic waste includes waste **cytotoxic and cytostatic medicines** in tablet, liquid, cream or aerosol form. Waste that could be contaminated by these medicines include: **sharps** (eg needles); syringes; scalpels; blades and sharp instruments; used glass bottles and vials; personal protective equipment (eg gloves, masks and gowns); syringe bodies; and tubing. The waste products must be incinerated at 1,000°C.
Dry heat augers	Augers which use gas or electricity to heat a process fluid, such as oil, which is circulated around the **HRW**.
EA	The Environment Agency, an Executive Non-departmental Public Body responsible to the Secretary of State for Environment, Food and Rural Affairs.
Ecowaste Southwest Ltd	The company sold to **SRCL** in January 2011 and acquired by **Tradebe Environmental Services Limited** in August 2012 following a **CC** inquiry.
GW Butler	GW Butler Limited, an integrated **HRW** collection and treatment company with **AT** plants in Bradford, Nottingham and London.
Grundon	Grundon Waste Management Limited, an integrated **HRW** collection and treatment company with **AT** plants across the South of England.
Hazardous waste	Defined in this report as waste that requires treatment before disposal; more generally waste that exhibits one or more of the hazardous properties listed in Annex III of the EU Hazardous Waste Directive 2008/98/EC.
Healthcare risk waste services	The provision of collection, transport, treatment and disposal services for **HRW**.
Healthcare waste	Waste produced in healthcare and related settings.
HES	Healthcare Environmental Services Group, an integrated **HRW** treatment and collection company which owns **AT** plants in Scotland and Yorkshire.
HRW	Healthcare risk waste, a category of **healthcare waste** defined in this report as **healthcare waste** requiring treatment prior to disposal.
HT	High temperature (one of two types of treatment technology for **HRW**, where the **HRW** is incinerated) (see also **AT**).

Irradiation systems	These use gamma radiation to render **HRW** safe, but can only be used for small quantities.
Landfill Tax	Landfill Tax was introduced in October 1996 and is incurred on end-products sent to landfill for disposal. The standard rate is £72 per tonne.
LQG	Large quantity generator of **HRW** (see also **SQG**). The majority of LQGs are **NHS** hospitals.
NHS	National Health Service.
Microwave	Microwaves use microwave energy to generate the heat that is used to treat the **HRW**.
NOECPC	The North of England Commercial Procurement Collaborative. The **NOECPC** is an **NHS**-owned organization that provides collaborative procurement and procurement solutions to the public sector.
Offensive waste	A category of **healthcare waste** which, if non-infectious, does not require treatment prior to disposal, eg soiled nappies, sanitary waste and incontinence pads.
OFT	Office of Fair Trading.
PCT	Primary Care Trust. **PCT**s previously had responsibility for commissioning primary care (such as GP services) and acute services. Under the Health and Social Care Act 2012, **PCT**s were abolished and replaced by **CCGs** from 1 April 2013.
PFI	Private Finance Initiative, a way of creating 'public–private partnerships' by funding public infrastructure projects with private capital.
PHS	PHS Waste Management, a company which collects **HRW** and transports it to a third party for treatment.
Polkacrest Limited	A waste management company based in the South-East of England prior to its purchase by **Sita** in 2009.
PQQ	Pre-qualification questionnaire. The initial questionnaire often used by public bodies in a tender exercise to identify who to invite to submit bids. The PQQ seeks information from a potential bidder such as financial status, legal compliance, customer base, policies and procedures, etc.
Professional Hygiene	Professional Hygiene Ltd, an independent janitorial and waste packaging supplier.
Pyrolysis	The process of thermal decomposition in the absence of oxygen and an alternative method to incineration for **HT** treatment of **HRW**.
Rentokil Initial	A collection-only company which collects **HRW** and transports it to a third party for treatment. It owns Initial Medical Services, a healthcare waste management company.

Sharps	Sharp medical equipment, for example scalpels and hypodermic needles.
Sita	Sita UK Limited, the UK waste management business of GDF Suez SA, a company incorporated in France. Prior to the transaction, Sita provided **HRW** services through its wholly-owned subsidiary, **SITA Healthcare Limited** (formerly called **Polkacrest Limited**).
SITA Healthcare Limited	A subsidiary and **HRW** provider of **Sita**. It includes three wholly-owned subsidiaries: Polkacrest Northwest Limited; Polkacrest Midlands Limited; and Polkacrest Wales Limited.
Sita HRW	SITA HRW is the business of SITA Healthcare Limited and its subsidiaries carried on as from 19 September 2013 and includes the plants contributed to the JV by SITA UK Limited, being those at Enfield, Salford, Redditch, Rochester and Wrexham.
SLC	Substantial lessening of competition.
SQG	Small quantity generator of **HRW**. There is no commonly accepted definition of **SQG**s in the industry. For the purposes of our analysis, SQGs mean all generators of **HRW**s which are *not* **NHS** acute hospitals or private hospitals (or those facilities management companies procuring **HRW** services on behalf of **LQG** customers).
SRCL	SRCL Limited, a subsidiary of Stericycle Incorporated, a US waste collection and disposal company. SRCL was formed by a merger between White Rose Environmental and Sterile Technologies Group Ltd (STG) in 2006.
Steam augers	A form of heat-based treatment where steam is injected directly into the waste as well as used to heat the walls of a treatment chamber.
Tradebe	Tradebe Environmental Services Limited, a subsidiary of Grupo Tradebe Medioambient, SL, a company registered in Spain. Prior to the transaction, Tradebe provided **HRW** services (known as Tradebe HRW) through two wholly-owned subsidiaries (**Tradebe Healthcare Limited** and **Tradebe Healthcare (Southwest) Limited**).
Tradebe Healthcare Limited	One of two wholly-owned subsidiaries of **Tradebe** that provides **HRW** services across England and Wales. It operates the **AT** treatment plants at Doncaster and Birmingham.
Tradebe Healthcare (Holdings) Limited	The joint venture of **Tradebe** and **Sita**.
Tradebe Healthcare (Southwest) Limited	One of two wholly-owned subsidiaries of **Tradebe** that provides **HRW** services across England and Wales. It operates the **AT** treatment plant at Avonmouth. It was previously named **Ecowaste Southwest Limited** and was acquired by **SRCL** in January 2011 but was then acquired by **Tradebe** in August 2012 following a **CC** inquiry.

Tradebe HRW	The combined **HRW** services division of **Tradebe** which is made up of **Tradebe Healthcare Limited** and **Tradebe Healthcare (Southwest) Limited**.
Veolia	Veolia Environmental Services, a waste management and re-cycling business in the UK. It has an **HT** facility in Tyseley, Birmingham, and provides **HRW** treatment facilities for third parties.