



Residual Waste Infrastructure Review

High-level Analysis - Issue 2

About Eunomia

Eunomia has significant experience of assessing the need for new infrastructure development in the energy and waste sectors on behalf of both public and private sector clients. Accordingly, we have provided market and technical due diligence services to a range of lenders and equity funds. Eunomia is also recognised as a leader in understanding the direction and trajectory of waste policy. We have advised Defra, Scottish Government, Welsh Government, Government of Ireland, the Environment Agency, OECD and the European Commission on a range of waste-related issues since our incorporation in 2001. On behalf of our private sector clients, therefore, we have been able to second guess the trends in legislation and wider developments that drive change in the market. This enables us to identify more secure, but high-yield investment opportunities.

Contact Details

Eunomia Research & Consulting Ltd
37 Queen Square
Bristol
BS1 4QS
United Kingdom

Tel: +44 (0)1179 117 2250

Fax: +44 (0)1179 117 2252

www.eunomia.co.uk

Disclaimer

Eunomia Research & Consulting has taken due care in the preparation of this report to ensure that all facts and analysis presented are as accurate as possible. As a result of the rapidly changing waste market, it is possible that some information may become quickly out of date. We have, therefore, chosen to update this Review on a bi-annual basis to give readers the most up-to-date information.

No guarantee is provided in respect of the information presented and Eunomia Research & Consulting is not responsible for decisions or actions taken on the basis of the content of this report.

Preface

Eunomia Research & Consulting ('Eunomia') publishes this bi-annual review of residual waste treatment capacity to provide initial information to help guide both investment and planning decisions for a range of organisations including:

1. Financial institutions, including lenders and private equity funds;
2. Technology providers, based both in the UK and overseas;
3. Project developers, including land-owners and property development companies;
4. Waste management companies offering collection, treatment and disposal services;
5. Utility companies;
6. Local authorities; and
7. Policy makers.

In addition to information on treatment capacity, we present an estimate of the current national residual waste treatment 'capacity gap'. This relates to the tonnage of residual waste which is potentially 'available' to operators or developers of new treatment facilities relative to the capacity potentially available in future.

The data presented draws upon information held within Eunomia's internal database, which is updated by our consultants on an ongoing basis. Our database holds information on every residual treatment facility in Great Britain (GB), including data on facility capacity, electrical output, current feedstocks and municipal contracts held.

Updates to the First Issue

This Second issue of the report updates the First Issue, which was initially published in October 2011. As would be expected with a report of this nature, we have made a significant number of updates with regard to the development status of facilities. This includes both those facilities which were not previously suitable for inclusion within the modelling undertaken for the First Issue, i.e. they had not yet entered the consenting process, and those which were included, but which have since changed status.

In response to feedback from our customers, we have also made a number of improvements to our approach to modelling of residual waste treatment 'capacity gaps' at both national and regional levels. These can be summarised as follows:

- In the First Issue, our estimates of residual commercial and industrial (C&I) waste were based upon data published by Defra in 2010.¹ We have subsequently undertaken further detailed analysis of this data alongside information on local authority collected (LAC) wastes, also published by Defra, and most importantly, alongside Landfill Tax receipt data published by HMRC.² This has led us to the conclusion that our assessment of the tonnage of C&I wastes sent to landfill in the First Issue was overestimated. The suggestion is that the aforementioned Defra report on C&I waste

¹ Defra (2010) Survey of Commercial and Industrial Waste Arisings 2010 – Final Results, December 2010
<http://archive.defra.gov.uk/evidence/statistics/environment/waste/documents/stats-release101216.pdf>

² HM Revenue and Customs, *Landfill Tax Bulletin*, February 2012
<https://www.uktradeinfo.com/Statistics/Lists/Data%20Release%20Calendar/DispForm.aspx?ID=34>

arisings suggested landfilled waste to be far greater than is implied by landfill tax returns, which we believe are likely to give a more accurate picture of landfilled wastes.³ In this Second Issue, we have therefore accordingly reduced the quantity of C&I wastes which might be available for residual treatment;

- As set out in detail in Section 1.0, we have refined our assumptions relating to future waste growth. Whilst in the First Issue, the net impact of changes in assumed arisings across LAC, commercial and industrial wastes resulted in growth of total arisings by 3 million tonnes between 2009/10 and 2020/21, our revised assumptions result in a net fall in tonnage during this period of 1.5 million tonnes; and
- In the First Issue, all plant which were under judicial review, appeal or within a public inquiry were given the same classification and associated likelihood of reaching operational status. As detailed in Section 1.0, our revised approach differentiates between these various consenting processes, such that we have assigned different levels of probability to provide greater accuracy to our modelling of the capacity gap;
- Whilst in the First Issue, we assumed that 100% of the capacity of Waste Incineration Directive (WID) compliant biomass facilities might be theoretically available to process solid recovered fuels (SRF), based on the likely design and permitting conditions of such plant, we have revised this level down to 50% of plant capacity.

The above improvements are such that to compare the level of change in the capacity gap during the last 6 months is not useful. The changes in absolute treatment capacity, however, are more meaningful, and we have therefore highlighted these in each relevant section of the report.

³ The approach and methodology employed by the Environment Agency, from which Defra took the data for its report, can be perceived as being somewhat unreliable. We therefore believe that our revised approach based on actual Landfill Tax data is far more accurate

Contents

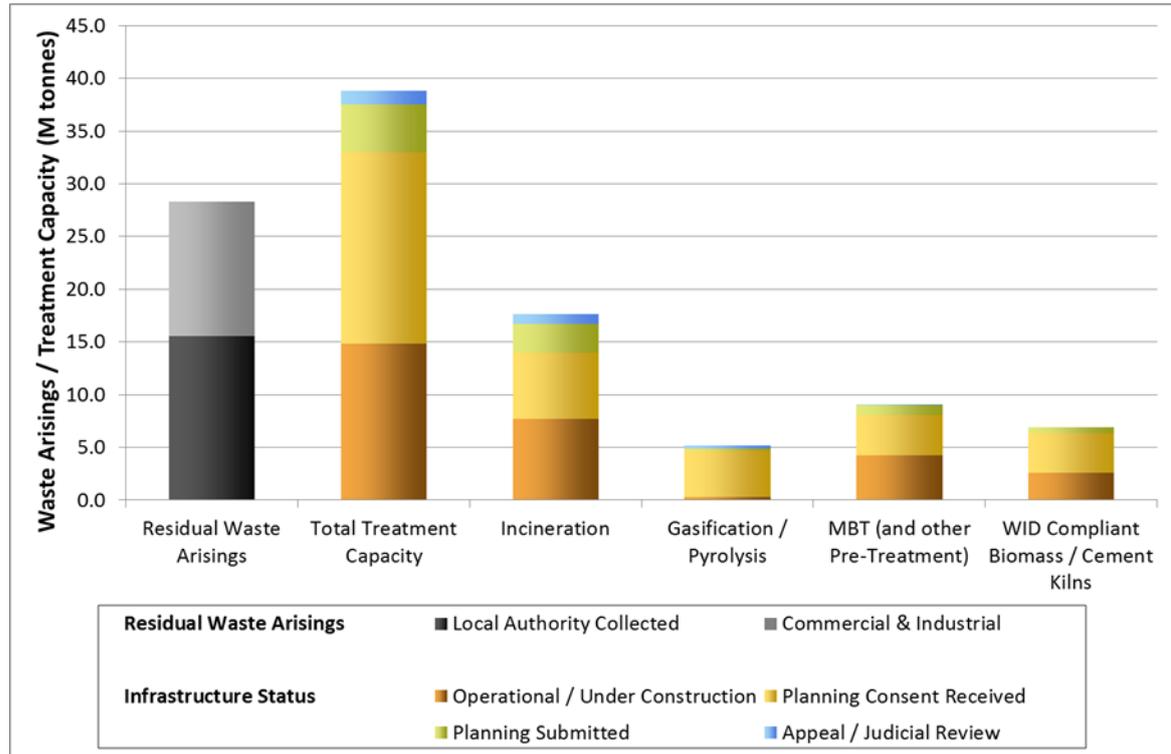
- 1.0 The National Picture 1
- 2.0 South East England 9
- 3.0 London 10
- 4.0 South West England 11
- 5.0 North East England 12
- 6.0 North West England 13
- 7.0 East Midlands 14
- 8.0 West Midlands 15
- 9.0 East of England 16
- 10.0 Yorkshire and Humber 17
- 11.0 Wales 18
- 12.0 Scotland 19
- A.1.0 Data Sources 20
- A.2.0 Detailed Review 21

1.0 The National Picture

As shown in Figure 1, the key data for Great Britain (GB) can be summarised as follows:

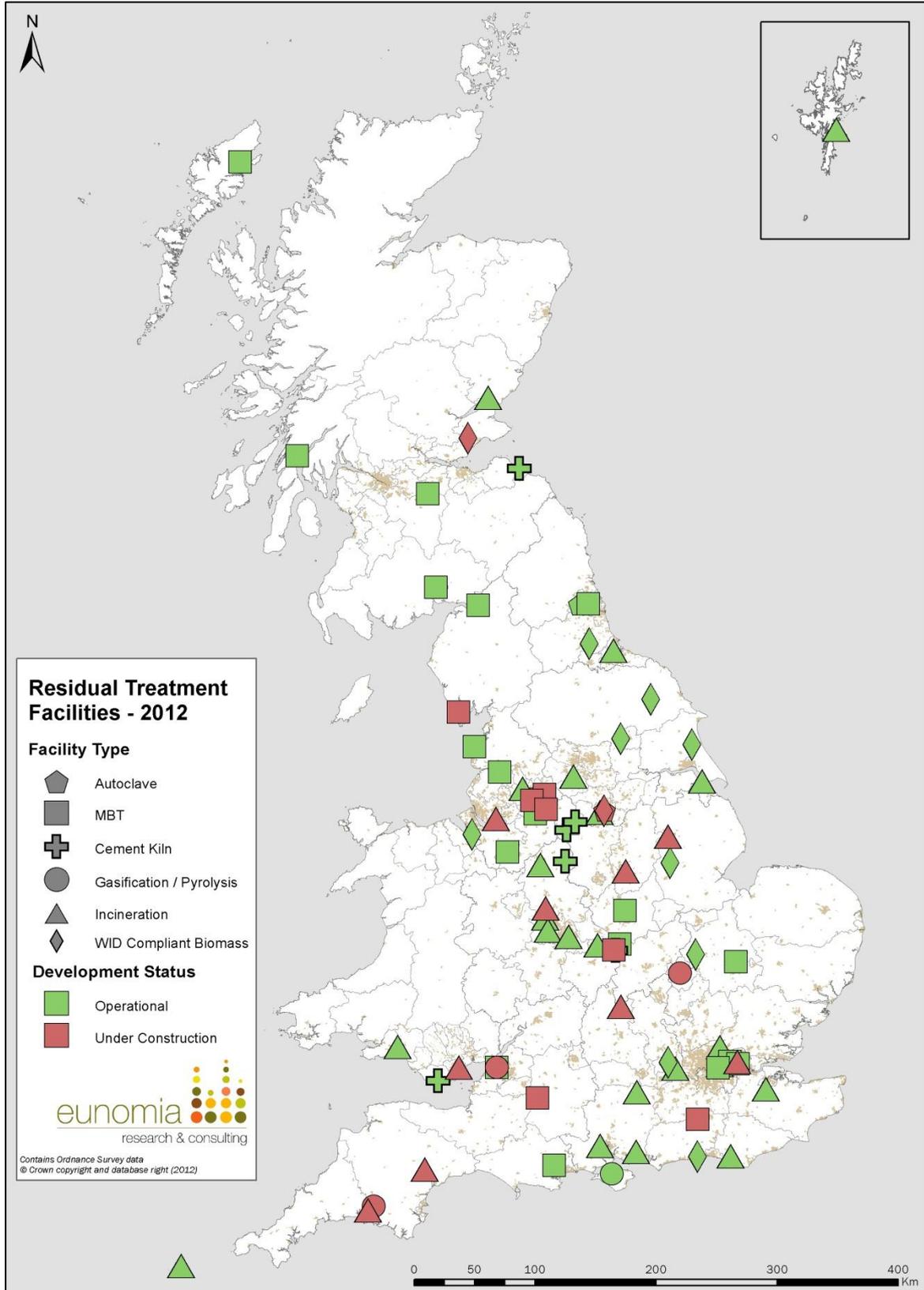
- GB had over 28.3 million tonnes of residual waste arisings from local authority collected (LAC), commercial and industrial sources in 2011/12;
- Currently, GB has around 14.8 million tonnes of residual waste treatment capacity either 'operating' or 'under construction'. This represents a 2.6 million tonnes increase in capacity compared with the data presented in the First Issue of this report;
- This capacity is made up of 32 dedicated incineration facilities, 5 gasification facilities, 29 pre-treatment facilities (using either mechanical-biological treatment (MBT) or autoclave technologies), 11 Waste Incineration Directive (WID) compliant biomass facilities and 6 cement kilns processing solid recovered fuels (SRF), as shown spatially in Figure 2;
- In 2011/12 there was a 'capacity gap' of around 13.5 million tonnes (per annum) between the quantity of residual waste arisings and the amount of treatment infrastructure capacity either 'operating' or 'under construction';
- Without any change in residual waste quantities, there would be overcapacity of 4.7 million tonnes (per annum) if the 18.2 million tonnes of waste treatment capacity that has planning consent reaches financial close and begins construction; and
- Planning consent is being sought for a further 4.5 million tonnes of waste treatment capacity. If, on top of the 18.2 million tonnes already with planning consent, this was consented and then reached financial close, then if all this capacity moved through to construction, and if residual waste quantities remain constant, there would be overcapacity in GB of around 9.2 million tonnes (per annum).

Figure 1: Residual Waste Arisings and Treatment Capacity - Great Britain



Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply 'additive'.

Figure 2: Location of Residual Waste Facilities across Great Britain



The potentially significant level of residual waste treatment capacity which could come on stream suggests it is important to undertake analysis of how the 'capacity gap' in future might be affected by changes in the quantity of residual waste. This requires consideration of several key related influences and associated assumptions, which can be summarised as follows:

1. Defra's recent Waste Review puts significant emphasis on waste minimisation and prevention across all sectors.⁴ Taking this, and actual data (where available) into account, along with other factors such as economic and population growth, we have assumed that:

➤ Household waste arisings have the following profile:

- 1.8% fall (2010-2011);
- 1% fall (2011-12);
- 0.5% fall (2012-13);
- 0% growth (2013-14); and
- 0.5% rise year on year thereafter.

This reflects recent investigations conducted by Eunomia and assumes economic growth in years after 2013-14 is of the order 2-2.5% in real terms;

- Commercial waste arisings will grow 0.5% year-on-year;
- Industrial waste arisings will fall 1% year-on-year. It should be noted that data suggests that rates of decline have been much faster than this over the past ten years.

The result of these assumptions is that total waste arisings are assumed to be 1.5 million tonnes lower in 2020/21 than in 2009/10. These projections depend critically upon what happens to the economy (both in terms of structure, and in terms of growth), the effects of drivers such as the landfill tax in incentivising further waste prevention efforts, and the effects of ongoing efforts to reduce resource use in manufacturing, itself influenced by commodity prices.

2. In reviewing the analysis in the previous report, we considered also the data from landfill tax returns. It seems likely that the majority of residual waste of interest to new treatment facilities will be the material which is subject to the standard rate of landfill tax, although some might be derived from further sorting of, for example, wastes comprising mainly materials landfilled at the lower rate of tax (though as the level of the tax increases, it seems reasonable

⁴ Defra, *Government Review of Waste Policy 2011*, June 2011, <http://www.defra.gov.uk/environment/waste/review/>

to assume that the proportion of waste landfilled without prior sorting will be diminishing). If one assumes that data on local authority collected waste is reasonably accurate, then the landfill tax return data is not readily reconciled with the data from the commercial and industrial waste survey. In order to reconcile them in a manner which renders the data meaningful for the purposes of our report, we have increased the proportion of C&I waste assumed to be handled in the category 'other', and reduced the quantity of residual waste by a corresponding amount;⁵

3. The recycling and composting rate for local authority collected (LAC) waste in England is currently at 40%, whilst the intention in Wales is to reach the equivalent of 70% by 2024/25, and Scotland plans to achieve a 70% rate, but measured using the Scottish carbon metric, by 2025. Data relating to commercial and industrial (C&I) wastes is less reliable, but we have assumed that across all sectors the recycling and composting rate for Great Britain as a whole (including LAC waste) will rise from 50% in 2010 to around 67% in 2020;
4. Alongside recycling and composting, a relatively large tonnage of C&I waste is managed by low-cost routes such as direct land-spreading. Such routes account for 18% of C&I wastes (11% of total wastes), which are therefore not considered as 'residual' within our model. The fate of such wastes could be strongly influenced by regulatory decisions in future;
5. It is essential in this type of analysis to avoid double counting of available capacity as a result of pre-treatment facilities (such as MBT and autoclave plant) producing SRF, or other forms of residual waste, some of which are subsequently subject to further treatment at another facility, or are sent for disposal. The way in which this material is handled is likely to change over time.
6. In the previous version of the report, we assumed that 40% of the input capacity by weight was converted to SRF that was subsequently thermally treated at another facility. Of this SRF, we assumed that 50% was treated in the UK, with the other 50% exported for treatment in other European Union (EU) Member States, such as Germany and Holland, where there is spare capacity to be filled at existing incinerators. The net effect of this in the modelling is to reduce the capacity to treat SRF at thermal facilities in the UK by 20% (or 40% x 50%) of the capacity of the pre-treatment facilities.
7. In this version of the report, we considered revising these assumptions, both in terms of the SRF derived from such facilities, and the proportion dealt with in

⁵ Our view of the C&I waste survey results in England is that it probably under estimated total waste quantities, but also underestimated the extent to which C&I waste was being recycled (the implications, after all, were that the proportion being recycled had barely changed since 2002/03, which is manifestly not what confronts one as one reviews the changes which have taken place over the intervening period). As a result, although waste generation seems to have been under estimated, the landfilled quantities seem to have been over-estimated.

the UK. It is the product of these two figures which is important for the purposes of the modelling. For example, we could have assumed that on average, 60% by weight of material from the MBT facilities still requires some form of thermal treatment, or is used as landfill cover, or is otherwise sent for disposal, but that 33% was treated thermally within the UK. The outcome as far as the modelling of capacity is concerned would be the same (20% of input is treated thermally in the UK). Given the uncertainty around this figure, and given also that it seems likely to change over time, we have retained the same figures in this report. These figures will be influenced by market conditions, and one factor affecting market conditions will be the level of capacity relative to the available residual waste;

8. Within this Second Issue of the report, we have sought to include facilities which have been designed to process automotive shredder residue (ASR), as such plant have the capability to process SRF from LAC and C&I wastes. Whilst these facilities are included within the maps in this report, however, we have not included any associated capacity within our modelling of capacity gaps. This is because our market intelligence suggests such plant are currently fully contracted to process ASR, and therefore do not have spare capacity for LAC and C&I wastes, which are the sole wastes included within the scope of our model. Should this situation change in the future, however, we will update future versions of this report accordingly;
9. To take into consideration the difficulties in reaching financial close on waste treatment facilities, for those which have received planning consent, but are not yet under construction, under our central scenario we have assumed that only 70% of this capacity comes into operation.⁶ Furthermore, to take into consideration the difficulty in gaining planning consent for those facilities still within the planning process, under our 'central' scenario we have assumed that only 30% of the related capacity comes into operation. Whilst these views might possibly be viewed as optimistic, this is somewhat deliberate, as we have not included either sites which have not yet formally entered the planning process, or those which are yet to be announced. To add an element of sensitivity analysis to the assessment, we have also modelled both 'low' and 'high' infrastructure development scenarios, the assumptions for which can be found alongside those for our 'central' scenario in Table 1;
10. As summarised in Table 1, we have also made specific assumptions with regard to facilities which are currently undergoing applicant appeal or judicial review (JR). As shown in Table 1 it is also important to distinguish between the nature of such appeals and JRs. It should be noted that these assumptions

⁶ It should be acknowledged that for facilities for which 'ground has been broken' we have assumed that a final investment decision has been made. In reality, however, this might not be the case, as sometimes such actions are driven by the conditions and timing of the associated planning consent, rather than a commitment to construction and operation

may change in future versions of this report, subject to how the National Planning Framework (NPF) is borne out.

11. Where the data is available, the year a facility is due to become operational is based on published information. However, as information is not available for every facility, their assumed starting years are based on two factors; a facility's position within the development process, and the size of the facility in terms of operating capacity.

Table 1: Development Success Rates Modelled for Potential Treatment Facilities

Stage of Facility Development	'Low'	'Central'	'High'
Planning Consent Granted	50%	70%	100%
Application for Planning Submitted	0%	30%	100%
Appeal (Refusal of Consent <i>in line</i> with Officer's Recommendation)	0%	20%	100%
Appeal (Refusal of Consent <i>against</i> Officer's Recommendation)	0%	40%	100%
Judicial Review (by Applicant)	0%	10%	100%
Judicial Review (by 3 rd Party)	0%	55%	100%

We acknowledge the simplicity of the assumptions presented in Table 1, but believe they are appropriate for a study of this nature. In this context, it should be noted that in our bespoke client studies, we use more detailed assumptions which apply likelihoods at the individual facility level, taking into consideration such factors as:

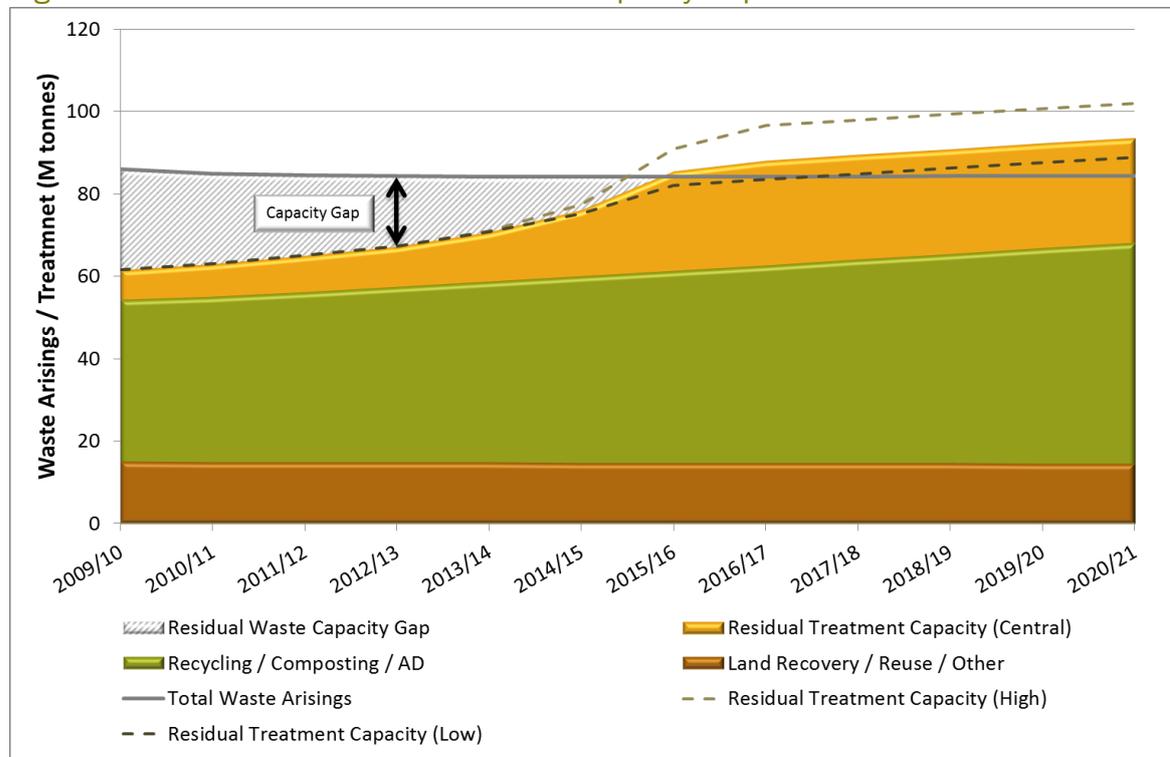
- The age of the application, i.e. as more time elapses between consent being granted and financial close being reached, there is a reduced likelihood of facilities moving forward to construction;
- The proposed technology, i.e. non-thermal technologies tend to have greater chance of consent being granted, whilst novel technologies tend to have less chance of reaching financial close;
- The nature of the applicant, i.e. major waste management companies are more likely than smaller project developers to go on to build and operate facilities following consent; and
- Facilities linked to a local authority contract are far more likely to reach financial close.

Modelling of our central scenario suggests that the capacity gap between residual waste arisings and available treatment capacity will fall over time, decreasing from the current (2011/12) 19 million tonnes, and moving to a situation of overcapacity in

GB of around 1.2 million tonnes in 2015/16, as shown in Figure 3. The extent of this overcapacity rises to almost 9.2 million tonnes in 2020/21. It should be acknowledged, however, that this does not include potential future capacity, which has not yet entered the planning system, and which may result in earlier overcapacity. This is a situation broadly reflected in our 'high' infrastructure scenario in which the onset of overcapacity is in the same year (2015/16) as in the central scenario, but at a higher level of around 6.6 million tonnes. Should a far lower level of capacity become operational, however, as reflected in our 'low' infrastructure scenario, it is possible that the onset of overcapacity will be delayed until 2017/18.

As a result of limitations in the ability of waste to be moved significant distances at low cost, and the fact that capacity is unevenly spread across GB, the situation of overcapacity may occur sooner in some geographical regions than in others. Sections 2.0 to 12.0 therefore provide analysis of forthcoming capacity at a regional level.

Figure 3: Potential Future Residual Waste Capacity Gap in Great Britain



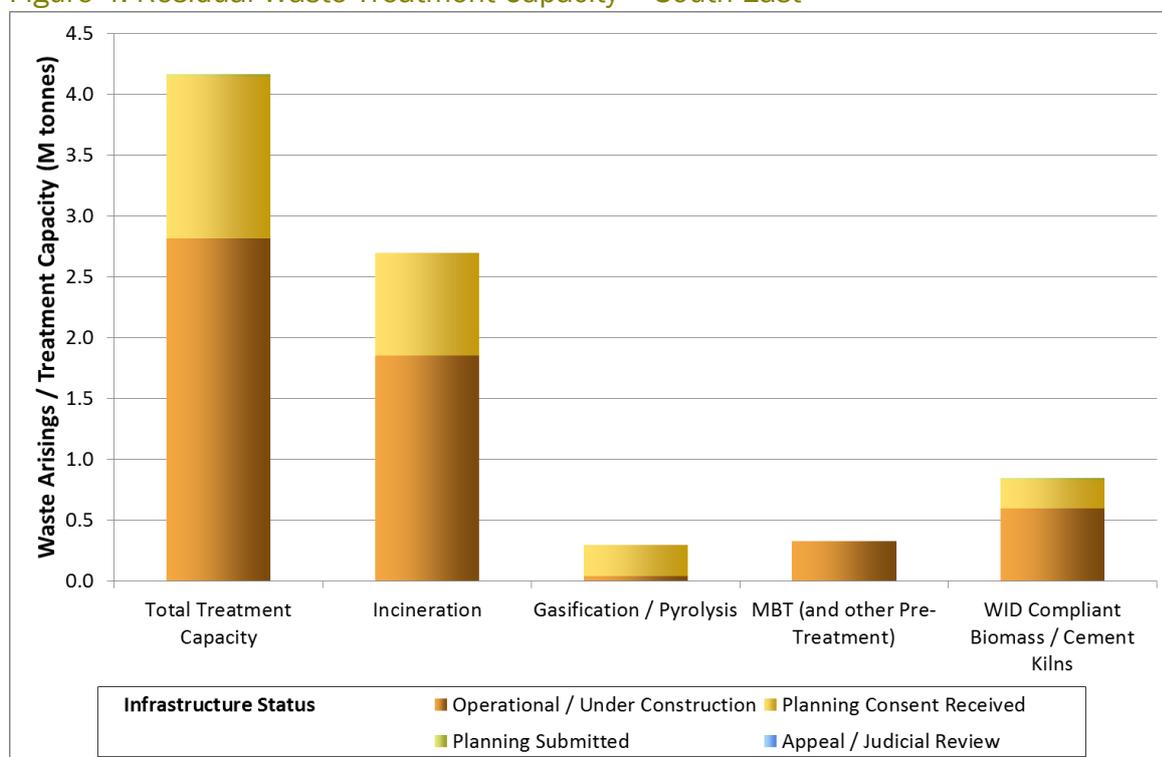
Note: 1. Only 50% of WID-compliant biomass capacity is included within the model
 2. The 'Other' category includes waste sent to landfill but not subject to the standard rate of tax.

2.0 South East England

As shown in Figure 4, the key regional data for the South East can be summarised as follows:

- Currently the South East has over 2.8 million tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 7 incineration facilities, 1 gasification facility, 1 pre-treatment facility and 2 WID-compliant biomass facilities;
- Planning consent has been granted to over 1.3 million tonnes of new incineration, gasification and WID-compliant biomass capacity; and
- An application for planning consent has been submitted for a further 20,000 tonnes of WID-compliant capacity.

Figure 4: Residual Waste Treatment Capacity – South East



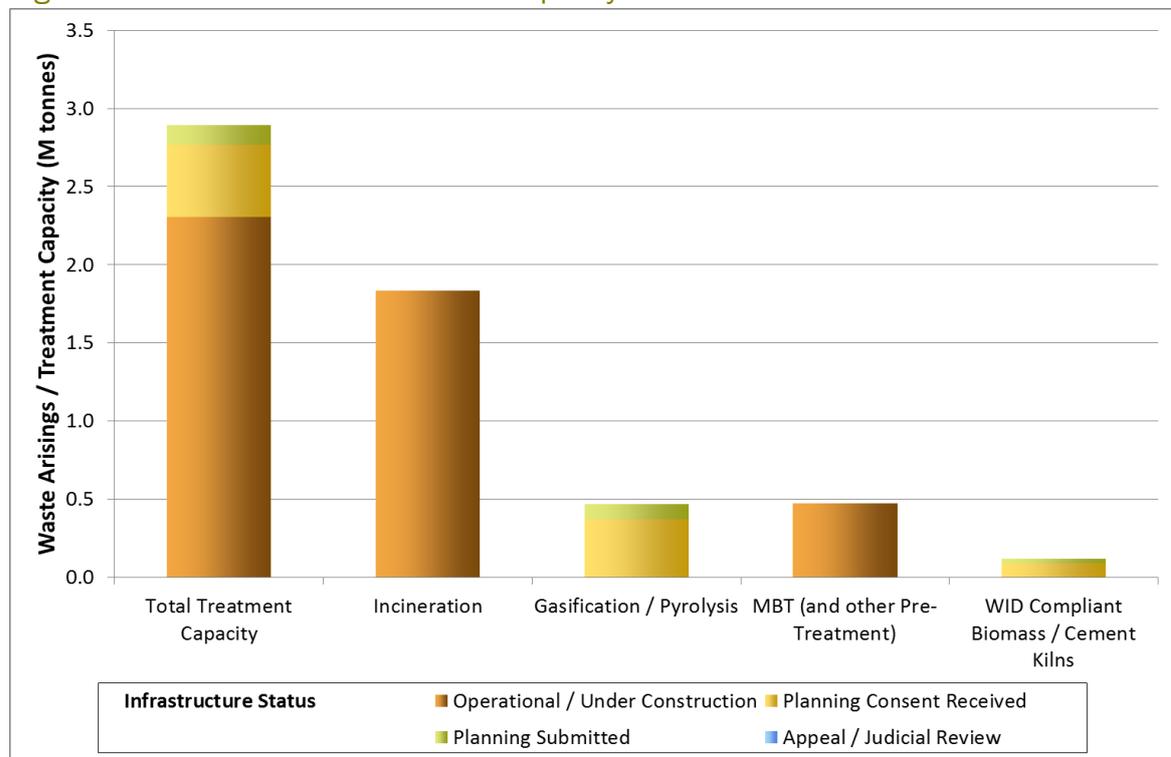
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

3.0 London

As shown in Figure 5, the key regional data for London can be summarised as follows:

- Currently London has over 2.3 million tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 3 incineration facilities, and 3 pre-treatment facilities;
- Planning consent has been granted for over 450,000 tonnes of new gasification, and WID-compliant biomass capacity; and
- Applications for planning consent have been submitted for a further 130,000 tonnes of gasification, and WID-compliant biomass capacity.

Figure 5: Residual Waste Treatment Capacity – London



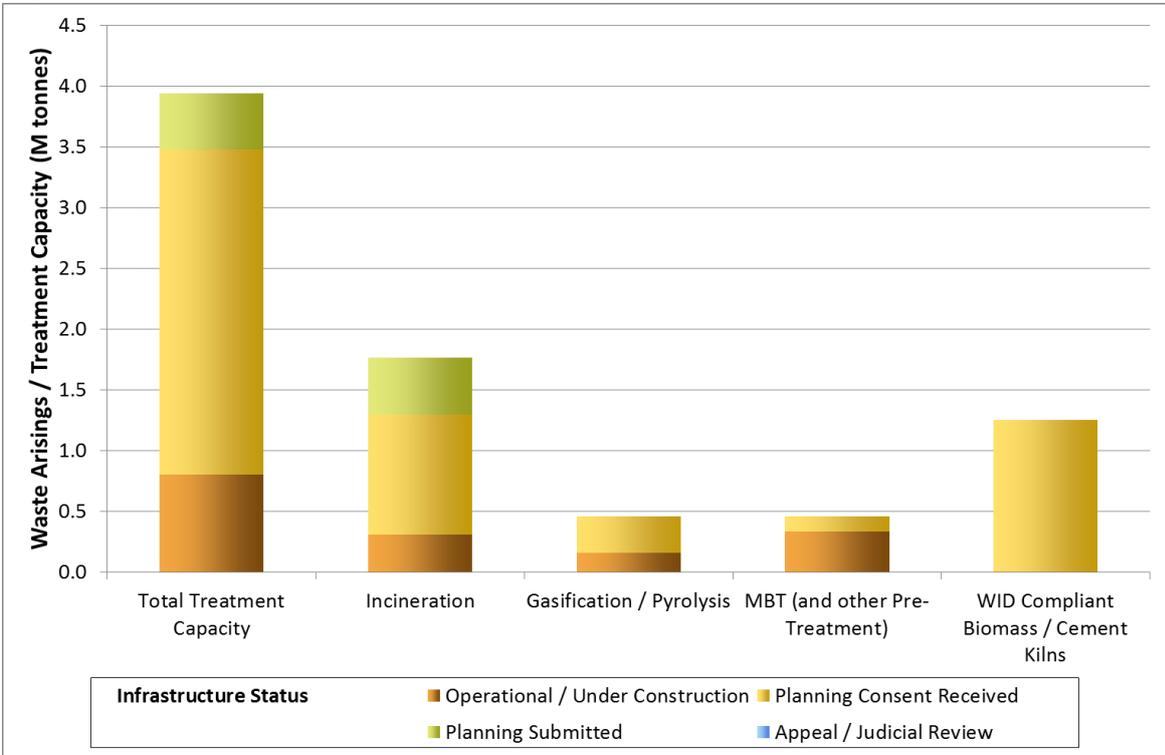
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

4.0 South West England

As shown in Figure 6, the key regional data for the South West can be summarised as follows:

- Currently the South West has over 800,000 tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 3 incineration facilities, 2 gasification facilities, and 3 pre-treatment facilities;
- Planning consent has been granted to over 2.6 million tonnes of new incineration, gasification, pre-treatment and WID-compliant biomass capacity; and
- Applications for planning consent have been submitted for a further 450,000 tonnes of incineration capacity.

Figure 6: Residual Waste Treatment Capacity – South West



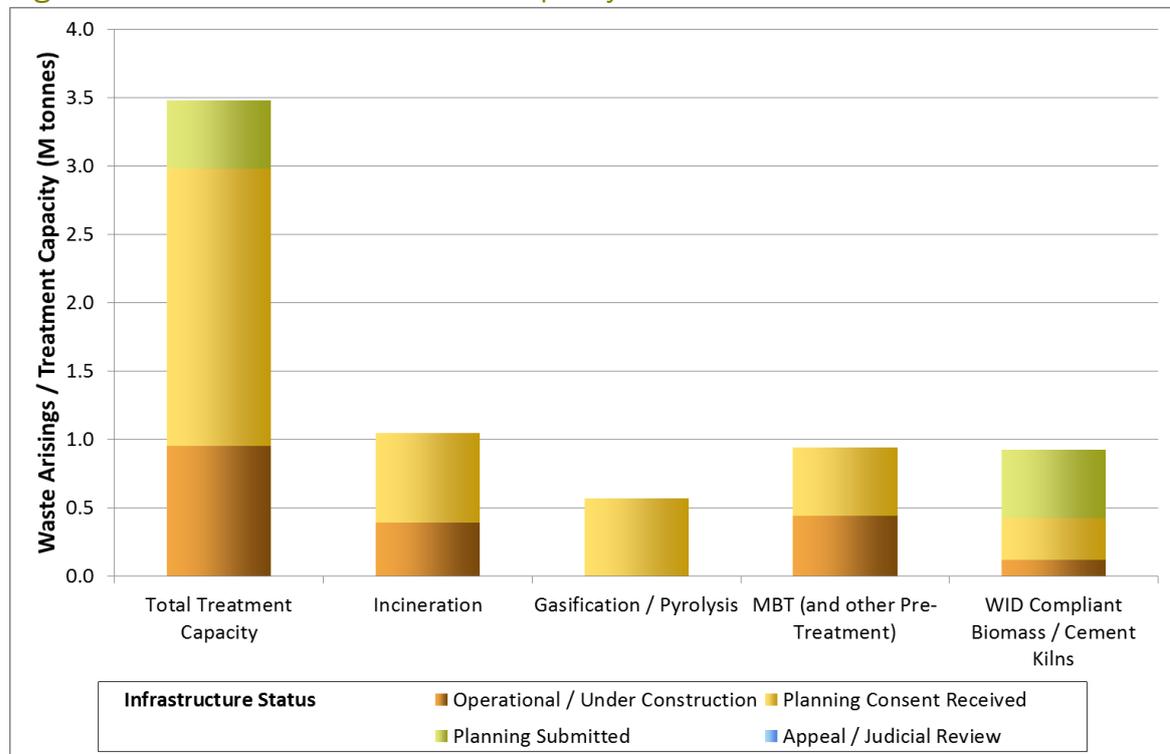
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

5.0 North East England

As shown in Figure 7, the key regional data for the North East can be summarised as follows:

- Currently the North East has almost 1 million tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 1 incineration facility, 2 pre-treatment facilities and 1 WID-compliant biomass facility;
- Planning consent has been granted to over 2 million tonnes of new incineration, gasification, pre-treatment and WID-compliant biomass capacity;
- and
- Applications for planning consent have been submitted for a further 450,000 tonnes of WID-compliant biomass capacity.

Figure 7: Residual Waste Treatment Capacity – North East



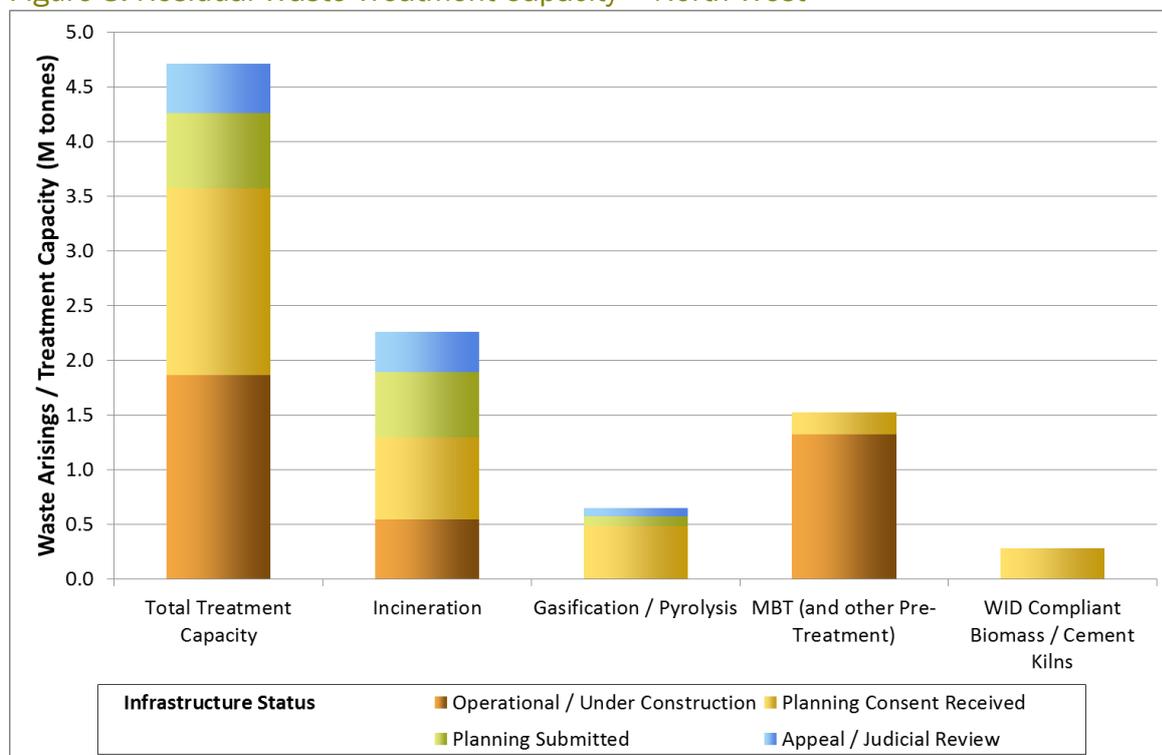
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

6.0 North West England

As shown in Figure 8, the key regional data for the North West can be summarised as follows:

- Currently the North West has over 1.8 million tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 2 incineration facilities, and 10 pre-treatment facilities;
- Planning consent has been granted to over 1.7 million tonnes of new incineration, gasification, pre-treatment and WID-compliant biomass capacity;
- Applications for planning consent have been submitted for a further 700,000 tonnes of incineration, and gasification capacity; and
- There is 450,000 tonnes of incineration and gasification capacity where either a planning appeal or a judicial review is currently ongoing.

Figure 8: Residual Waste Treatment Capacity – North West



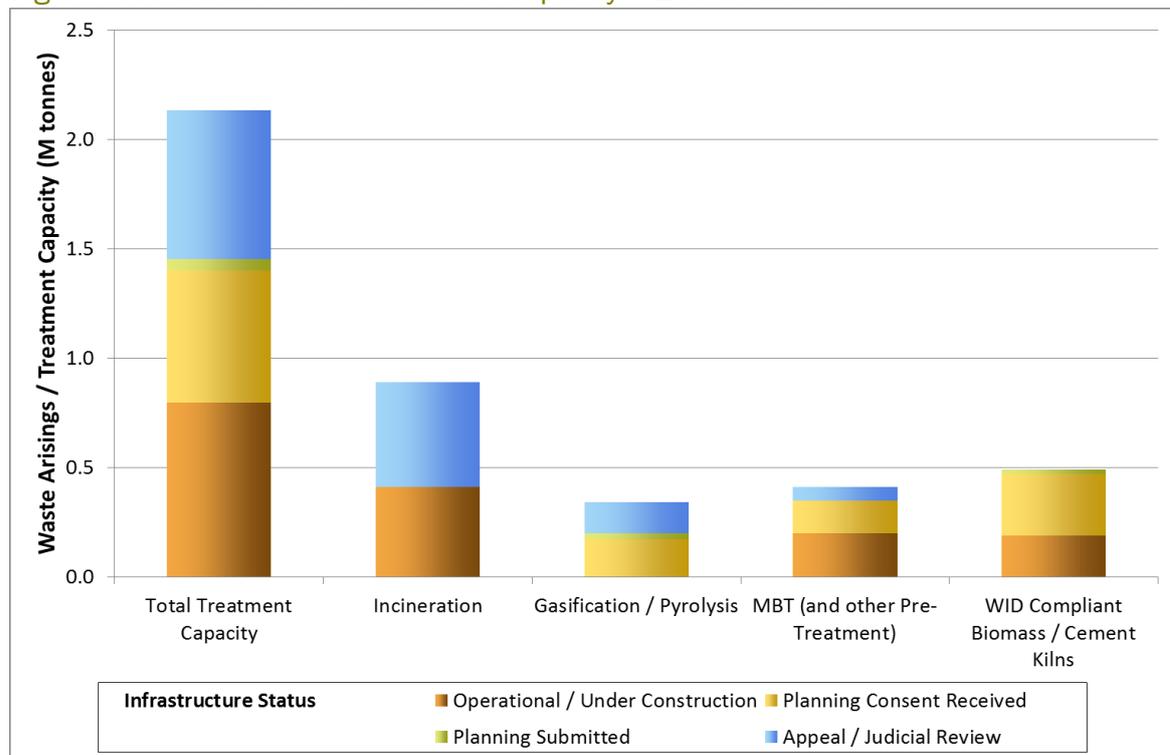
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

7.0 East Midlands

As shown in Figure 9, the key regional data for the East Midlands can be summarised as follows:

- Currently the East Midlands has almost 800,000 tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 3 incineration facilities, 2 pre-treatment (MBT) facilities, 1 WID-compliant biomass facility and 2 cement kilns;
- Planning consent has been granted to over 600,000 tonnes of new gasification, pre-treatment and WID-compliant biomass capacity;
- Applications for planning consent have been submitted for a further 50,000 tonnes of gasification and WID-compliant capacity; and
- There is over 650,000 tonnes of incineration, gasification and pre-treatment capacity where either a planning appeal or a judicial review is currently ongoing.

Figure 9: Residual Waste Treatment Capacity – East Midlands



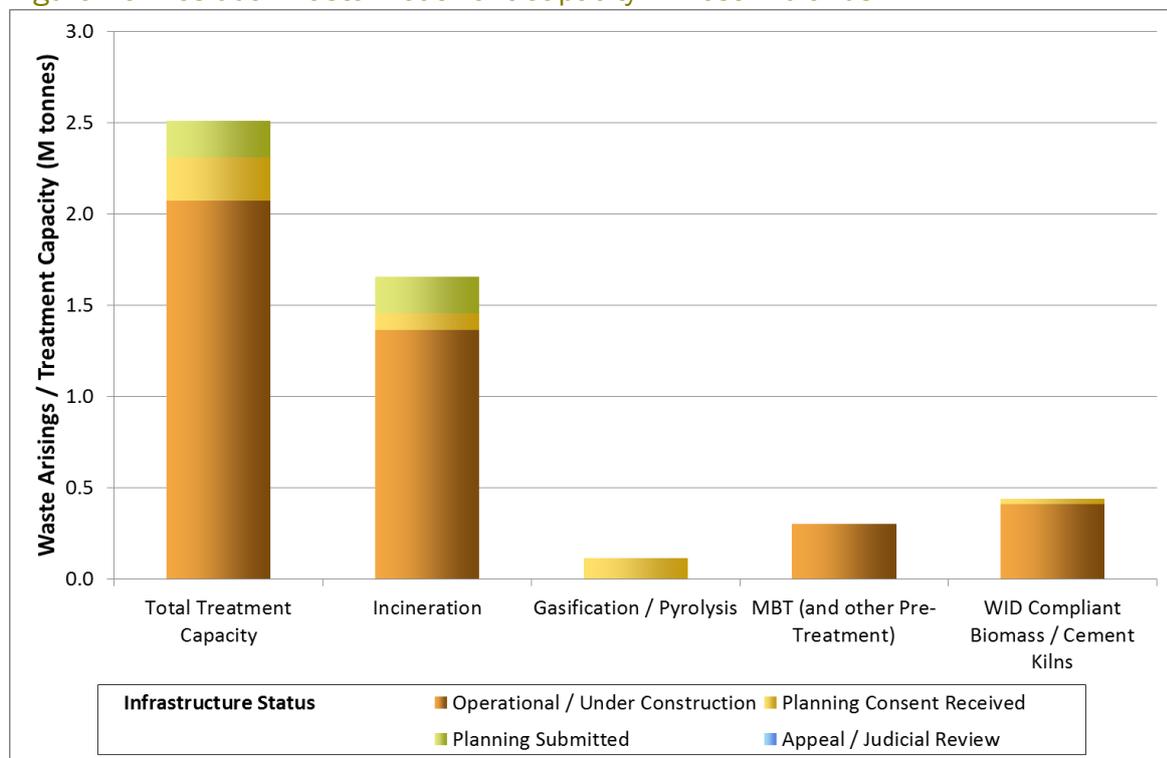
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

8.0 West Midlands

As shown in Figure 10, the key regional data for the West Midlands can be summarised as follows:

- Currently the West Midlands has over 2 million tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 6 incineration facilities, 1 pre-treatment facility and 2 cement kilns;
- Planning consent has been granted to over 230,000 tonnes of new incineration, gasification, and WID-compliant biomass capacity; and
- An application for planning consent has been submitted for a further 200,000 tonnes of incineration capacity.

Figure 10: Residual Waste Treatment Capacity – West Midlands



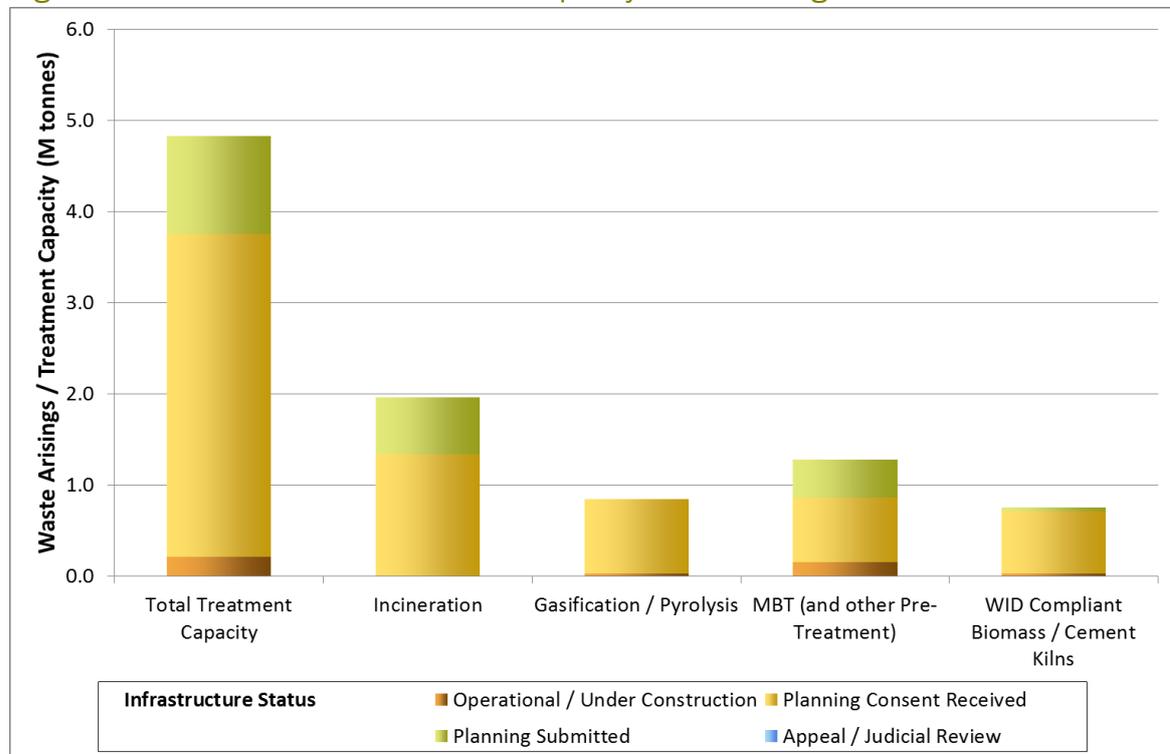
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

9.0 East of England

As shown in Figure 11, the key regional data for the East of England can be summarised as follows:

- Currently the East of England has over 200,000 tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 1 gasification facility, 1 pre-treatment (MBT) facility and 1 WID-compliant biomass facility;
- Planning consent has been granted to over 3.5 million tonnes of new incineration, gasification, pre-treatment, and WID-compliant biomass capacity; and
- Applications for planning consent have been submitted for a further 1.0 million tonnes of incineration, pre-treatment and WID-compliant biomass capacity.

Figure 11: Residual Waste Treatment Capacity – East of England



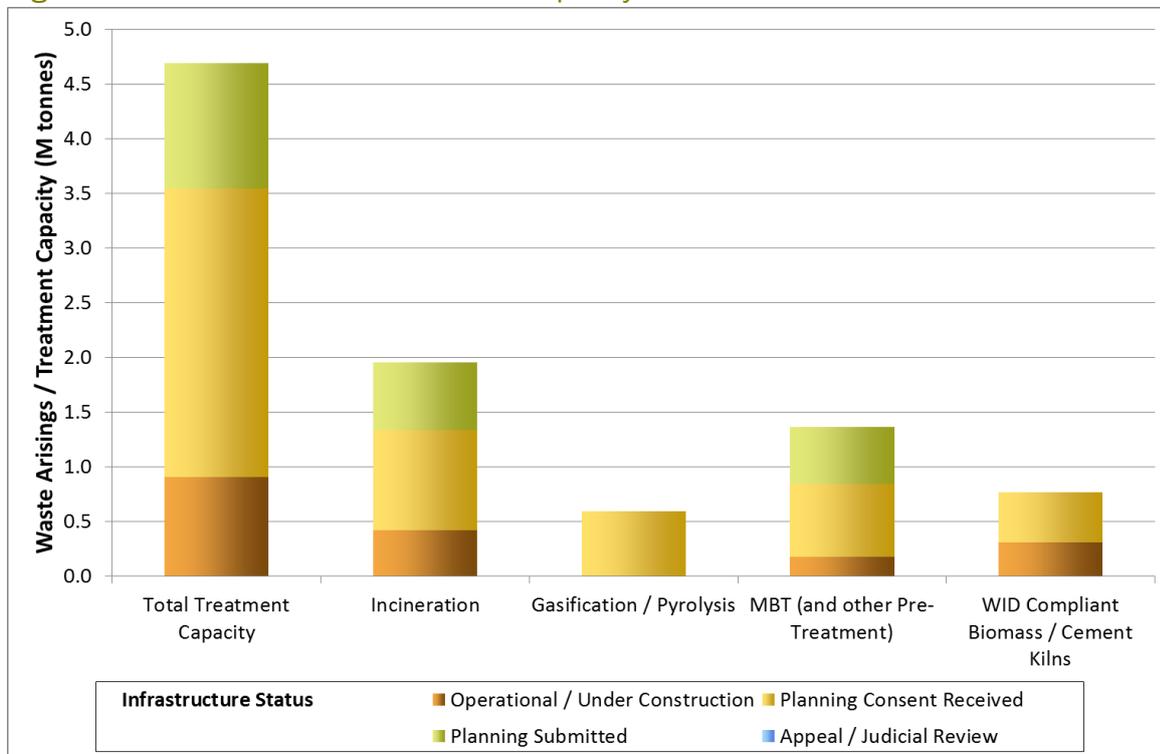
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

10.0 Yorkshire and Humber

As shown in Figure 12, the key regional data for Yorkshire and Humber can be summarised as follows:

- Currently Yorkshire and Humber has over 900,000 tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 3 incineration facilities, 2 pre-treatment (MBT) facilities and 4 WID-compliant biomass facilities;
- Planning consent has been granted to over 2.6 million tonnes of new incineration, gasification, pre-treatment and WID-compliant biomass capacity; and
- Applications for planning consent have been submitted for a further 1.1 million tonnes of incineration and pre-treatment capacity.

Figure 12: Residual Waste Treatment Capacity – Yorkshire and Humber



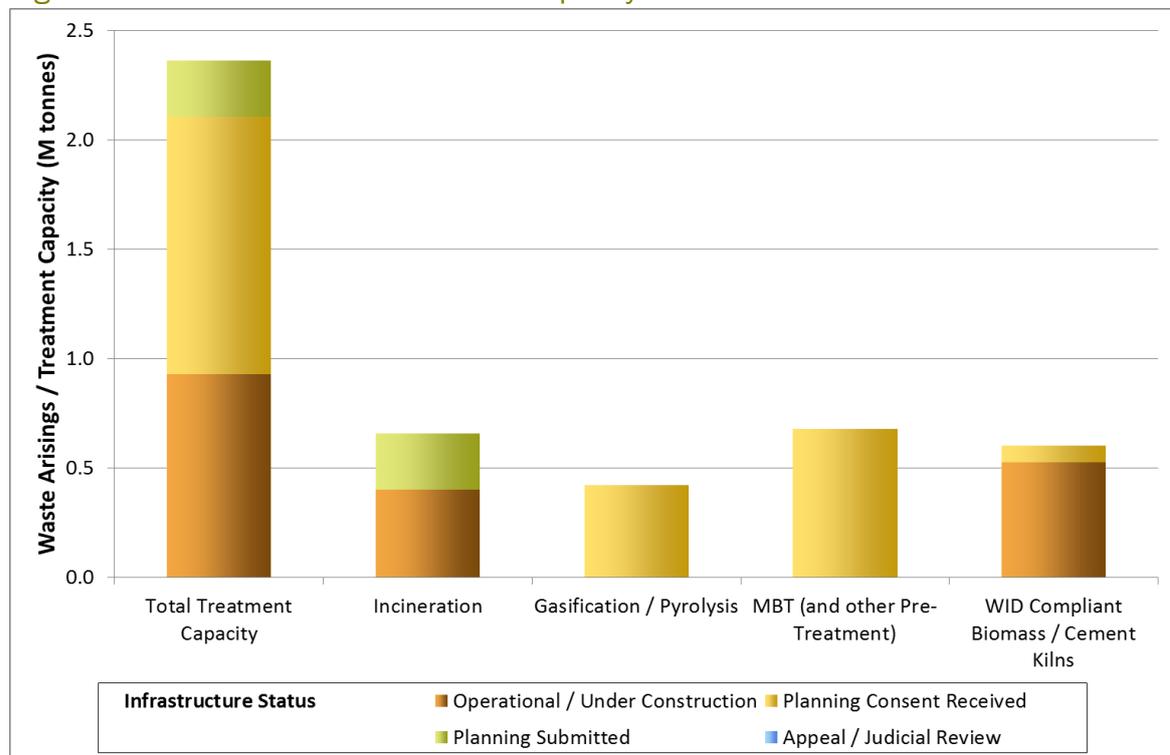
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

11.0 Wales

As shown in Figure 13, the key regional data for Wales can be summarised as follows:

- Currently Wales has over 900,000 tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 2 incineration facilities, and 1 WID-compliant biomass facility, and 1 cement kiln;
- Planning consent has been granted to over 1 million tonnes of new gasification, pre-treatment and WID-compliant biomass capacity.
- Applications for planning consent have been submitted for a further 250,000 tonnes of incineration capacity.

Figure 13: Residual Waste Treatment Capacity – Wales



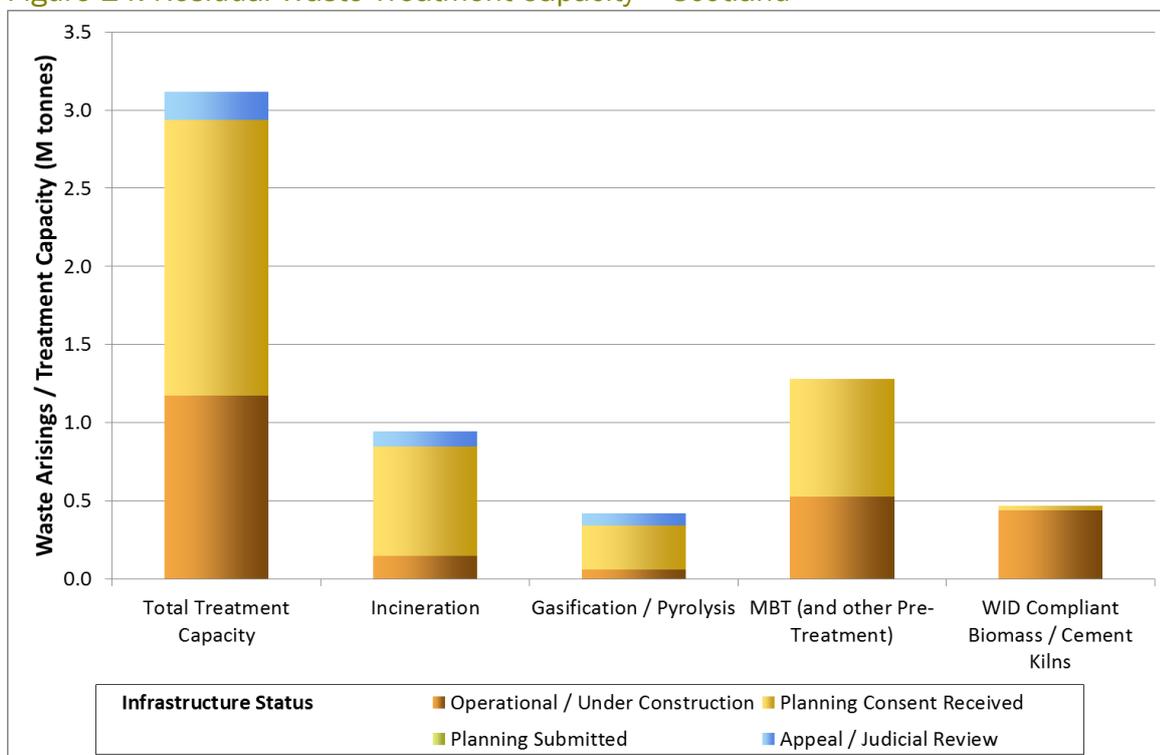
Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

12.0 Scotland

As shown in Figure 14, the key regional data for Scotland can be summarised as follows:

- Currently Scotland has almost 1.2 million tonnes (per annum) of residual waste treatment capacity either ‘operating’ or ‘under construction’;
- This capacity is made up of 2 incineration facilities, 1 gasification facility, 4 pre-treatment facilities, 1 WID-compliant biomass facility, and 1 cement kiln;
- Planning consent has been granted to over 1.7 million tonnes of new incineration, gasification, pre-treatment and WID-compliant biomass capacity;
- There is no capacity for which applications for planning consent have been submitted, but which await a decision; and
- There is 180,000 tonnes of incineration and gasification capacity where either a planning appeal or a judicial review is currently ongoing.

Figure 14: Residual Waste Treatment Capacity – Scotland



Note: This figure is presented without allowing for the fact that outputs from some facilities may be inputs to others. As such, the capacity in this figure is not simply ‘additive’.

A.1.0 Data Sources

The information on residual waste treatment sites presented within this report has been obtained from a variety of sources, including primary research interviewing both site operators, project developers and local planning authorities.

The information presented on waste arisings has been obtained from the following publicly available sources:

1. Defra, Local Authority Collected Waste for England – Annual Statistics, accessed 8th August 2011
<http://www.defra.gov.uk/statistics/environment/waste/wrfg23-wrmsannual/>
2. Defra, Commercial and Industrial Waste Survey 2009, May 2011
<http://www.defra.gov.uk/statistics/files/ci-project-report.pdf>
3. SEPA, Waste Data Digest 11, 2011
http://www.sepa.org.uk/waste/waste_data/waste_data_digest.aspx
4. SEPA, Business Waste Data 2009, March 2011
http://www.sepa.org.uk/waste/waste_data/commercial_industrial_waste/business_waste_surveys.aspx
5. StatsWales, Municipal Waste Management, accessed 11th August 2011
<http://www.statswales.wales.gov.uk/TableViewer/tableView.aspx?ReportId=10972>
6. EA, Survey of Industrial and Commercial Waste 2007, May 2009
<http://www.environment-agency.gov.uk/research/library/publications/107692.aspx>
7. HMRC, Landfill Tax Bulletin, February 2012
<https://www.uktradeinfo.com/Statistics/Lists/Data%20Release%20Calendar/DispForm.aspx?ID=34>

As a result of a reliance on these publicly available sources for data on waste arisings, our modelling of the current and future national capacity gaps is only as accurate as this information.

A.2.0 Detailed Review

As mentioned above, to enable more informed decision-making, more detailed, regional-level information is available under a cost-effective service offered by Eunomia.

For a one-off fee of £385 (plus VAT), organisations can receive PDF access to:

1. Tabular information on every residual waste treatment site in the UK (including those operating, under construction, consented, in the consenting process or simply 'planned' or announced);
2. Scenario modelling (including sensitivity analysis) of future residual waste treatment capacity gaps at regional level, as per the example shown on Page 8 at national level; and
3. Maps at regional level resolution showing the geographical location of each residual waste treatment site, including those operating, under construction, consented, in the consenting process, in appeal or judicial review.

All of the above information will be updated every six months (published in November and May annually), and automatically issued to organisations which have purchased the Review within the previous nine month period.

A sample datasheet of residual waste treatment facilities from this subscription service can be viewed below in Figure 15.

To purchase this service online, please visit www.eunomia.co.uk/product.php/113. Alternatively, please call us on 01179 172250 and we would be happy to issue the report following receipt of a purchase order for subsequent invoice.

To discuss any site specific waste availability modelling or any other bespoke consultancy requirements, please contact James Fulford on the above number or james.fulford@eunomia.co.uk

Figure 15: Sample Datasheet for Detailed Report – East of England Region

Operator	Facility Name / Location	Technology	Capacity (tpa)	Development Status	(Likely) Year Operational	Electrical Output (MW)	Current or Proposed Feedstock(s)	Known MSW Contracts	Postcode
xx	xx	WID Compliant Biomass	30,000	Operational	2011	3	Waste Wood	None known	xx
xx	xx	MBT	179,000	Operational	2009	n/a	MSW	Cambridgeshire CC	xx
xx	xx	WID Compliant Biomass	420,000	Operational	1999	39	Other	None known	xx
xx	xx	WID Compliant Biomass	200,000	Operational	2000	38	Biomass	None known	xx
xx	xx	WID Compliant Biomass	160,000	Operational	1992	13	Biomass	None known	xx
xx	xx	Incineration	360,000	Consented	2014	33	SRF / RDF	None known	xx
xx	xx	Incineration	269,000	Consented	2014	20	MSW	Suffolk CC	xx
xx	xx	Incineration	585,000	Consented	2015	55	MSW / C&I	None known	xx
xx	xx	Incineration	124,000	Consented	2014	9	SRF / RDF	None known	xx
xx	xx	Gasification	65,000	Consented	2015	4	MSW	Peterborough CC	xx
xx	xx	Gasification	650,000	Consented	2014	80	MSW / C&I	None known	xx
xx	xx	MBT	100,000	Consented	2014	n/a	MSW / C&I	None known	xx
xx	xx	MBT	250,000	Consented	2013	n/a	MSW / C&I	None known	xx
xx	xx	Autoclave	240,000	Consented	2014	n/a	MSW / C&I	None known	xx
xx	xx	Incineration	268,000	Planning	2015	21	MSW	Norfolk CC	xx
xx	xx	WID Compliant Biomass	313,000	Planning	2014	40	Waste Wood	None known	xx
xx	xx	Incineration	270,000	Proposed	2017	26	MSW	Hertfordshire CC	xx
xx	xx	Incineration	400,000	Proposed	2017	34	MSW / C&I	None known	xx
xx	xx	MBT	377,000	Proposed	2017	n/a	MSW / C&I	None known	xx