TOLVIK CONSULTING

The Waste and Bioenergy Experts

Residual Waste in London and the South East

Where is it going to go…?

October 2018

SUMMARY EXTRACT

Full report available for download at http://www.tolvik.com/reports/

INTRODUCTION

In 2017, London and the South East generated just under 10 Million tonnes ("Mt") of Residual Waste, exporting circa 1.7Mt as Refuse Derived Fuel ("RDF") to Europe – a greater dependence on the export market than the rest of the UK. When combined with the potential impact of Brexit on RDF export, there is greater uncertainty in this Residual Waste market than any other in the UK.

This report therefore considers in detail the future for Residual Waste in London and the South East in the period through to 2025 with a particular emphasis on the availability of local landfill capacity.

Treatment	Residual Waste Mt	Sources	Residual Waste Mt
UK EfW	4.19	LACW	5.86
RDF Export	1.72		
MBT & Co-Incineration	0.39	C&I Waste	4.02
Landfill Total	3.58		
Total	**9.88**	**Total**	**9.88**

Copies of this summary extract and the full report can be downloaded free of charge via www.tolvik.com.

PROJECTED EFW CAPACITY

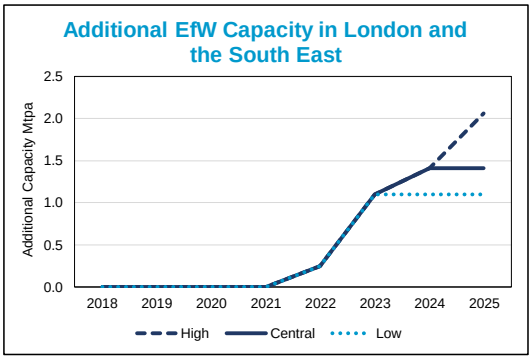
In 2017, **4.19Mt** of Residual Waste arising in London and the South East was sent to UK EfWs, 13 of which are located in the region.

When combined with **0.93Mt** of capacity at EfWs currently in construction, the projected EfW capacity "available" to Residual Waste in London and the South East is projected to be **5.21Mt.**

The full report lists EfW development projects in London and in the South East.

Three scenarios have been developed with respect to "Additional" EfW capacity in London. In the Central EfW construction scenario, it is estimated that **1.41Mt** of "Additional" EfW capacity could be operational by 2025. In a Low construction scenario, the figure is projected to be **1.09Mt** whilst in the High construction scenario the figure is **2.06Mt.**

Whilst there is considerable uncertainty in the projections of "Additional" EfW capacity – in all cases the lengthy construction period for EfWs means that the material effects of any additional EfW projects on the market will not be until at least 2022.



RDF EXPORT POST BREXIT

It is estimated that in 2017, **1.72Mt** of RDF was exported from London and the South East – around 54% of the 3.35Mt in total exported from England. This is broadly identical to the estimate for 2016. Significant tonnages are exported from London and the South East, particularly via the ports of Felixstowe, Tilbury, Dover and Purfleet to the Netherlands and Germany.

Data for the first 7 months of 2018 suggest overall RDF export from England are down by 8% on the same period in 2017 – reflecting the effects of a tightening Residual Waste market in Europe. At the time of writing this report the future implications for RDF export post Brexit are wide and varied as the UK Government is deep in negotiations with Brussels.

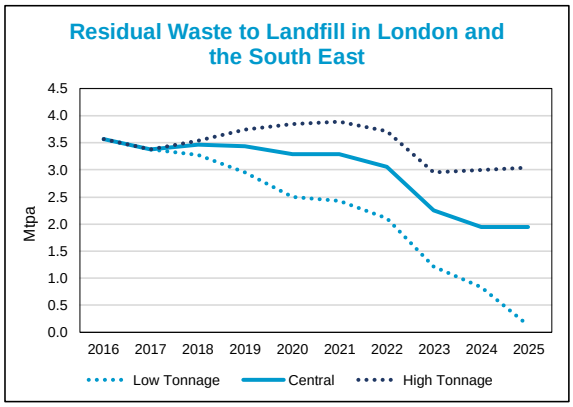
In the near to medium term, the most likely short-term impact on RDF export will be as a consequence of issues relating to road transport logistics and customs arrangements rather than macro-economic factors.

In this report, for illustrative purposes, two post-Brexit scenarios have been adopted:

- **Limited disruption** - based solely upon the impact of logistics challenges which may result from Brexit. This has been modelled on the basis of an assumed 25% reduction in RDF export by 2021 (the year of the expiry of the proposed Brexit transition period) and beyond to 1.29Mt. This is effectively an extension of the current 8% reduction in exports from England seen in the past year.
- **Significant disruption** – a long term impact arising from severe disruption to RDF export post Brexit. This has been modelled as a 75% reduction in exports by 2021 and beyond to 0.43Mt – as it assumes that only those RDF export committed on medium to long term contracts continue to be exported.

RESIDUAL WASTE TO LANDFILL

Three scenarios projecting the future tonnages of Residual Waste to landfill in London and the South East have been developed. The scenarios demonstrate the compound effect of three different factors at play – future Residual Waste volumes, the level of developed EfW capacity and RDF export post Brexit. The Low Tonnage and High Tonnage scenarios have been deliberately selected, for illustrative purposes, as “boundary” conditions.



The Low Tonnage scenario could be described as an optimist’s scenario (high recycling rates, RDF exports hold up well post Brexit and a strong pipeline of additional EfW capacity is developed). In which case the High Tonnage could similarly be regarded as a pessimist’s scenario. Tolvik expects that the Central scenario will be the one around which the most likely set of outcomes through to 2025 will result.

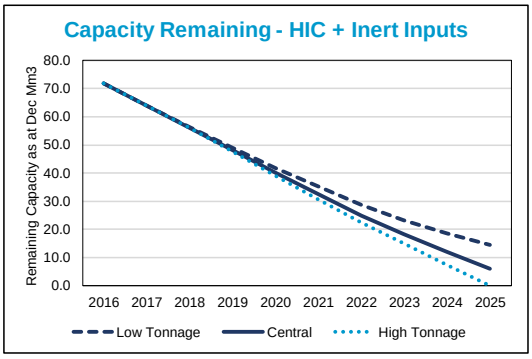
Landfill Scenario	Residual Waste Projection Scenario	Reduction in RDF export by 2021	Additional EfW Capacity
Low Tonnage	CE Target	25.0%	High (2.06Mt)
Central	Central	37.5%	Central (1.41Mt)
High Tonnage	Limited Intervention	75.0%	Low (1.06Mt)

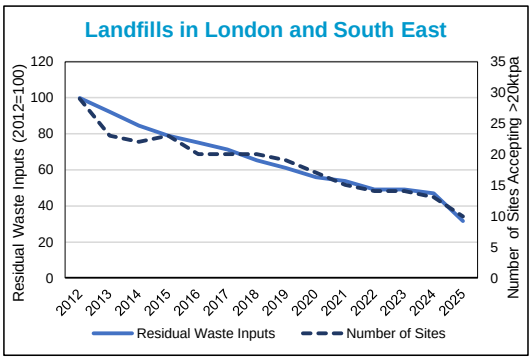
LANDFILL CAPACITY

There is little debate in the UK that landfill has a role to play in bridging the gap between the tonnage of Residual Waste generated and the capacity to treat it. In 2017 **3.58Mt** of Residual Waste generated in London and the South East was sent to landfill of which **3.38Mt** was landfilled locally and just **0.20Mt** transported to landfills outside London and the South East.

In 2017 the total tonnage of HIC landfilled in London and the South East was **4.75Mt** - 3.38Mt of Residual Waste and 1.37Mt of "other" HIC.

With Residual Waste being landfilled in London and the South East in decline, so the number of operational landfills has correspondingly fallen, and is projected to continue to do so – with 9 sites expected to continue to be operational by 2025.



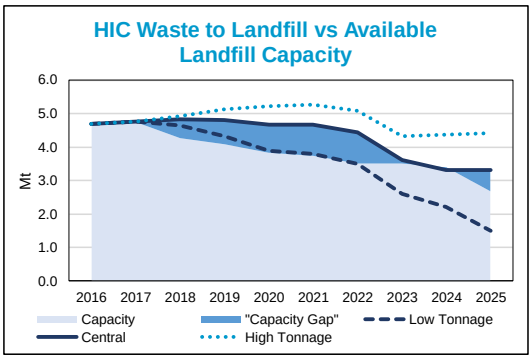


Projected Landfill Capacity

A key issue considered in the report is whether the **70 million m³** (December 2016) of consented landfill capacity in London and the South East is sufficient capacity to meet future requirements.

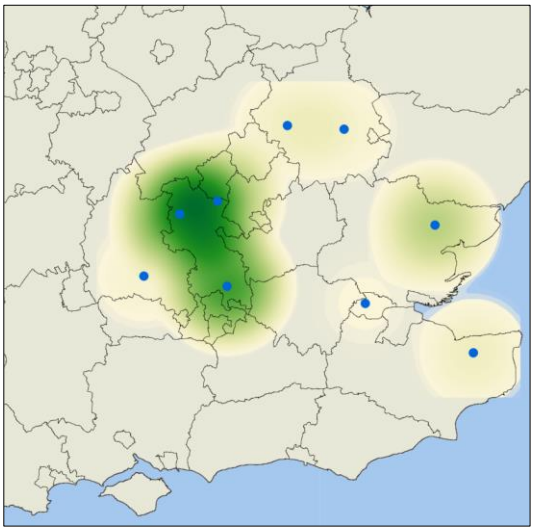
There are a number of factors which will influence the future "availability" of landfill capacity in London and the South East:

- The rate at which landfill capacity is being utilised;
- Site specifics - including early closure on commercial grounds or due to planning/permitting constraints;
- The existing geographical distribution of landfill capacity throughout London and the South East;
- Willingness/ability of the market to re-open moth-balled sites/secure extensions and/or new consents.



The analysis of "available" capacity, fill rates and closures dates has been compared with the projected tonnages of HIC to be landfilled under the three Residual Waste scenarios. **In the Central scenario** this highlights the potential risk of a **shortfall in landfill capacity across London and the South East of 4.66Mt before 2025**.

In the Low Tonnage scenario the projected capacity gap arises after 2025, whilst in the High Tonnage scenario the projected capacity gap is double that modelled in the Central scenario.



South of London

There is an even greater shortage of consented Non-Hazardous Landfill capacity in the area south of London (South London, Kent, Sussex, Hants, Surrey) with a cumulative shortfall in the Central scenario of **7.50Mt** – which is greater than that for London and the South East as a whole.

SUMMARY OF ANALYSIS ND IMPLICATIONS

This report has considered the final treatment destinations for the 10Mt of Residual Waste generated in London and the South East in 2017, and projects Residual Waste tonnages forward 8 years to 2025. The report has considered the future capacity of EfW in London and the South East by 2025, potential scenarios for flow of RDF Exports to Europe after Brexit and, critically, the available Non-Hazardous Landfill capacity within London and the South East to receive this waste.

The key findings are:

- The Central scenario assumes modest increases in Household Waste recycling rates, disruption in RDF export leading to a fall in tonnages of 37.5% by 2021 (0.7Mt) and "Additional" EfW capacity of 1.4Mt becomes operational by 2025. **In this scenario it is projected that by 2025 there could be a cumulative shortfall of 4.66Mt in Non-Hazardous Landfill capacity across London and the South East**.
- **For the optimist** considering a scenario in which there is a progressive increase in recycling through to 2025, RDF exports fall only modestly post Brexit and most planned large scale EfW capacity is developed in London and the South East, **existing Non-Hazardous Landfill capacity is likely to last until 2025**. The risk of a capacity shortfall post 2025 remains high.
- On the other hand**, the pessimist** could point to the High Tonnage scenario with limited additional EfW capacity, a major reduction in RDF exports and conclude that the capacity shortfall for Non-Hazardous Landfills could be more than double the Central scenario.
- Whatever the assumptions, there is little doubt that **for the "south" area**, (South London, Kent, East & West Sussex, Surrey and Hampshire) **the currently available Non-Hazardous Landfill capacity will almost certainly be exhausted before 2025**. At least in the short term this will almost certainly necessitate movement of waste from the south, round the M25 to the north of London.
- **This movement will come at a cost – both economic and environmental.** For Local Authorities and waste management companies, the additional costs could be £10-£20 per tonne with the equivalent of at least an additional 20,000 vehicle movements each year. Unlike RDF exports, these are likely to be real additional movements – as vehicles used to transport waste to landfill are likely to be dedicated bulk waste transporters rather than curtain-sided lorries used on a return load to a UK port.
- For the reasons set out in Biffa's "The Reality Gap" Report[(c)] there will continue to be a need for **Non-Hazardous Landfill** in London and the South East - to **bridge** the gap between Residual Waste generated and the capacity available to treat it, to **support** EfWs (both for the treatment of residues and managing short term EfW downtime) and to provide a disposal option for **specialist** HIC wastes for which there is no alternative waste management solution.

Given the **very real prospect of a shortfall in Non-Hazardous Landfill capacity** in London and the South East, what are the potential options available to investors, operators and regulators?

- **Increase Recycling:** A 2025 Household Waste recycling rate 5% higher than that modelled in the Central scenario would reduce the cumulative shortfall in landfill capacity by 1.87Mt (or 40% of the projected shortfall).
- **Increase exports of RDF to Europe**: Given the various uncertainties surrounding RDF exports post Brexit this is unlikely to be a realistic short-term option; whether there is a potential for increase in exports in the longer term will be dependent on a number of factors – not least the extent to which the EU successfully implements its Circular Economy package and the corresponding future balance between waste supply and EfW capacity in Northern Europe.
- **Transport the Residual Waste to elsewhere in the UK**: As highlighted in the report, road transport could create significant additional movements on an already busy network and there are real challenges around the delivery of new rail infrastructure. One possible option could be the greater

use of sea ports, (possibly substituting RDF exports) providing suitable delivery locations, coastal sea routes and reception points can be identified and that the economics remain viable. Tolvik notes with some interest several recently announced development plans for port based EfW infrastructure in the UK outside London and the South East.

- **Carefully manage existing consented landfill capacity**. There is potential scope for landfill operators to "nurture" existing consented capacity for example by ensuring this is used by HIC waste only. If, the tonnage of inert waste inputs to consented capacity were to be reduced by, say, 10%, the cumulative shortfall in landfill capacity could be reduced by more than 1.0Mt. However, each operator will manage their site to their own best interests rather than those of the market as a whole – and so in practice such an option is likely to be limited in effectiveness.
- **Deliver additional Non-Hazardous Landfill capacity**. As outlined in this report, present Waste Local Plans suggest only limited potential for the development of additional/new landfill capacity and securing consents for such developments (even if armed with a strong "need" argument) without explicit allocated sites will face potentially significant opposition.
- **Develop additional EfW capacity**. Consider, for example, if there was a "zero landfill" policy across London and the South East in which no Residual Waste is to be landfilled by 2025 (similar to the current Greater London Authority's policy of working towards not sending any biodegradable waste to landfill by 2026). In the Central scenario 4.7Mt of EfW capacity over and above that currently operational in London and the South East would need to be available. Whilst some of this capacity could potentially continue to be met by RDF export to Europe, any shortfall would need to be through the construction of new EfWs in London and the South East. The modelling in the Low Tonnage scenario assumes a maximum of 2.06Mt of "Additional" EfW capacity by 2025 – less than half required for a "zero landfill" scenario – putting into context deliverability of such a solution.

In practice, it is likely that there will be no single solution, rather that the market will bring forward a range of responses to the potential shortfall in Non-Hazardous Landfill capacity in London and the South East.