



Planning Act 2008

North Lincolnshire Green Energy Park

Volume 9

9.14 Footprint Services: North Lincolnshire Green Energy Park – Regional Waste Assessment (August 2021)

PINS reference: EN010116

December 2022

Revision number: 0





SUPPLEMENTARY INFORMATION

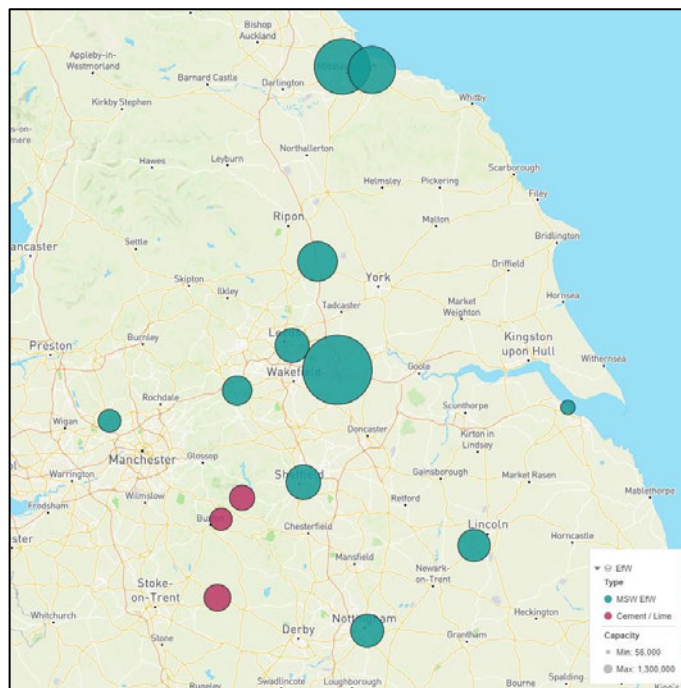
1. PURPOSE OF THIS DOCUMENT

This information has been compiled to provide an update to the client on key trends relating to energy from waste activity within 100 miles of the planned development site based on the latest information from the Environment Agency.

2. ENERGY FROM WASTE WITHIN 100 MILES OF SITE

All images presented in this document shall be separately provided as JPG files for ease of incorporation into submission documents.

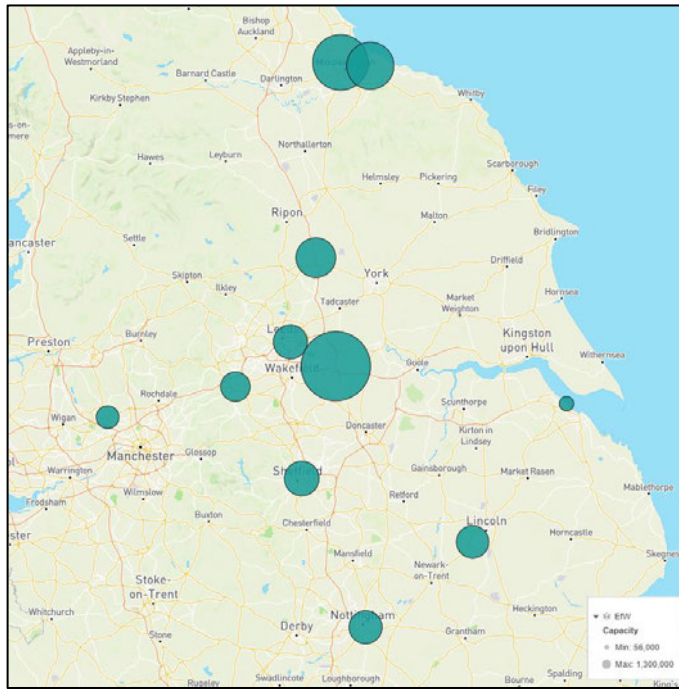
- **Map 2.01:** Shows capacity of operational facilities within 100 miles of Flixborough receiving municipal waste (or SRF in the case of the cement facilities)



Map 2.01

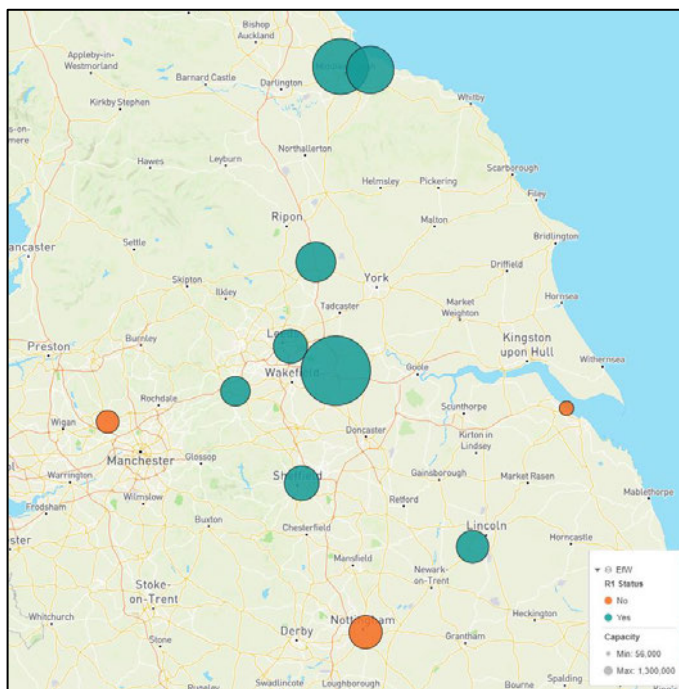
Note: Ferrybridge FM1 and FM2 are two separate facilities of very similar capacity. Given their proximity to each other, they would ordinarily appear on this map as two separate-but-identical circles, overlaid. This would diminish the relative scale of their combined capacity. Therefore, to improve the accuracy of the map representation, the Ferrybridge sites have been combined into one single entity with a capacity of 1.3 million tonnes. The graphs presented later in this document separate out the two sites where appropriate.

- **Map 2.02:** Shows capacity of operational EfW within 100 miles of Flixborough receiving municipal waste (this map does not include the cement works)



Map 2.02

- **Map 2.03:** Shows a variation identifying the EfW sites that meet the R1 criteria¹. Most sites in the area meet the minimum R1 threshold with the exception of Grimsby, Bolton and Eastcroft (Nottingham), though some sit more securely with their R1 status than others as can be seen in table 2.01.



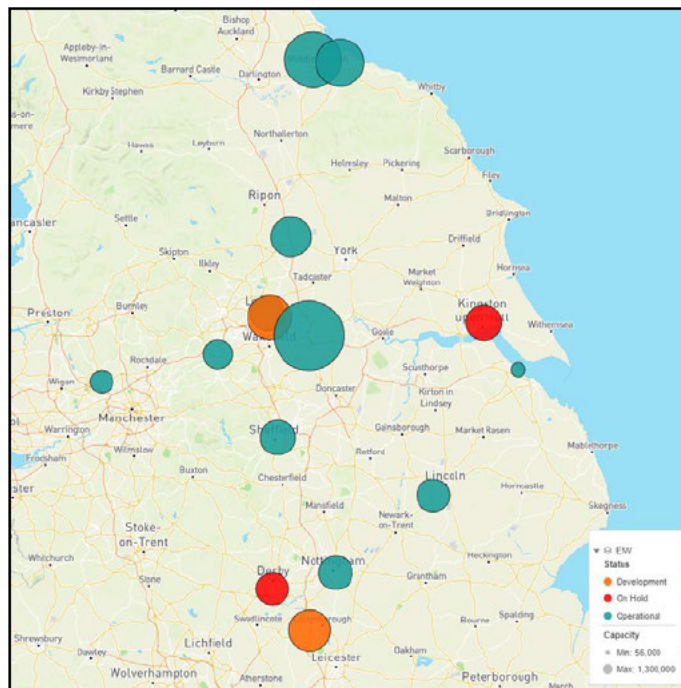
Map 2.03

¹ 0.60 for MSW permitted and in operation before 1 January 2009, 0.65 for MSW permitted and in operation after 31 December 2008

Plant Name	Operator	Postcode	Start-Up	Capacity	R1 Status	R1 Value
Kirklees	Suez	HD1 6NT	2000	150,000	Yes	0.66
Sheffield	Veolia	S4 7YX	2006	225,000	Yes	0.80
Teeside (Haverton Hill)	Suez	TS23 1PY	1998	756,000	Yes	0.68
Ferrybridge FM1+FM2	Enfinium	WF11 8SD	2015	1,300,000	Yes	0.89
Lincoln	FCC Recycling	LN6 3QZ	2014	190,000	Yes	0.68
Leeds Cross Green	Veolia	LS9 0SG	2016	214,000	Yes	0.71
Allerton	AmeyCespa	HG5 0SD	2018	320,000	Yes	0.81
Wilton 11	Suez	TS10 4RG	2017	500,000	Yes	0.80
Bolton	Suez	BL3 2NP	2000	85,000	No	
Grimsby	Newlincs Development	DN41 8BZ	2004	56,000	No	
Eastcroft	FCC Recycling	NG2 3JH	1975	200,000	No	

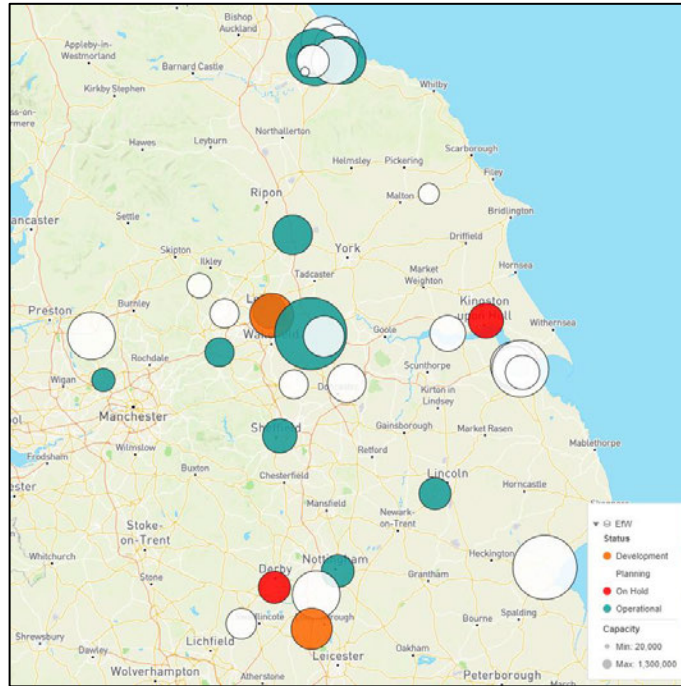
Table 2.01 – Operational EfW sites within 100 miles of Flixborough and their R1 value and status

- Map 2.04:** Shows capacity of operational EfW within 100 miles of Flixborough receiving municipal waste, along with facilities that are presently under construction, plus two facilities that are currently ‘on hold’ (having formally passed the commissioning phase but whose operations have since been suspended).



Map 2.04

- Map 2.05:** Shows capacity of operational EfW within 100 miles of Flixborough plus those under construction, on hold and those that have been granted planning permission. The granting of planning permission is not a guarantee of development; while there is evidence of potential over-capacity in some areas such as Grimsby and Teesside, the successful sites will be those in strategic locations with good feedstock catchment and convenient logistical access.



Map 2.05

- Chart 2.01:** Shows the trend of headline capacity as stated by operational EfW sites within 100 miles of Flixborough. Presently, the total capacity stands at just over 4 million tonnes.

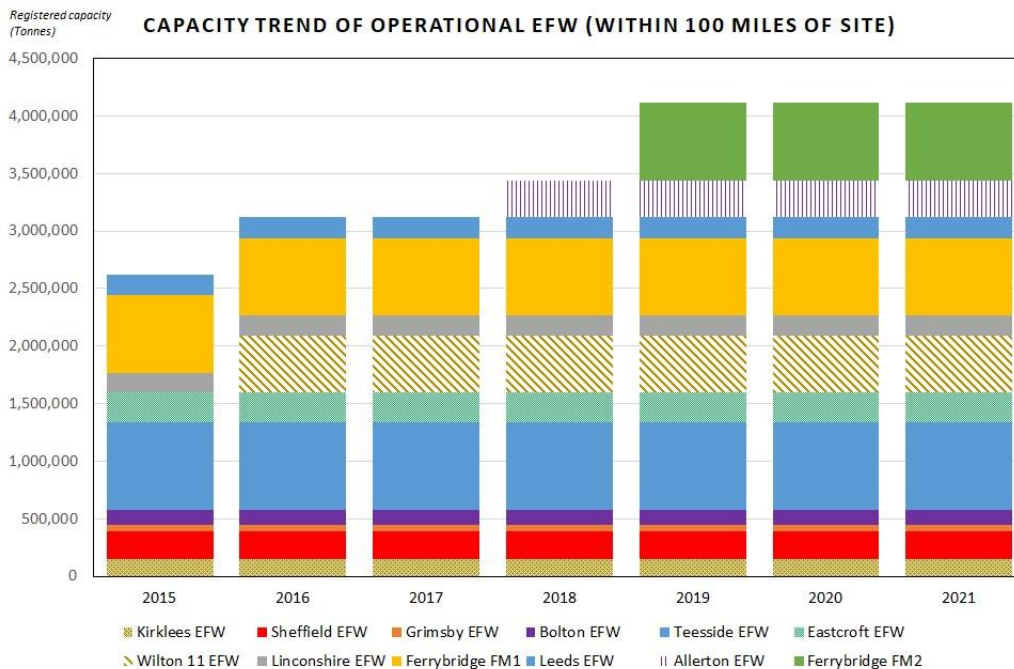


Chart 2.01

- Chart 2.02:** Shows actual received input by the EfW sites within 100 miles of Flixborough. The volume has been rising over the past six years, now approaching the total capacity of 4 million tonnes, leaving little contingency room in case of plant shutdown for maintenance or incident.

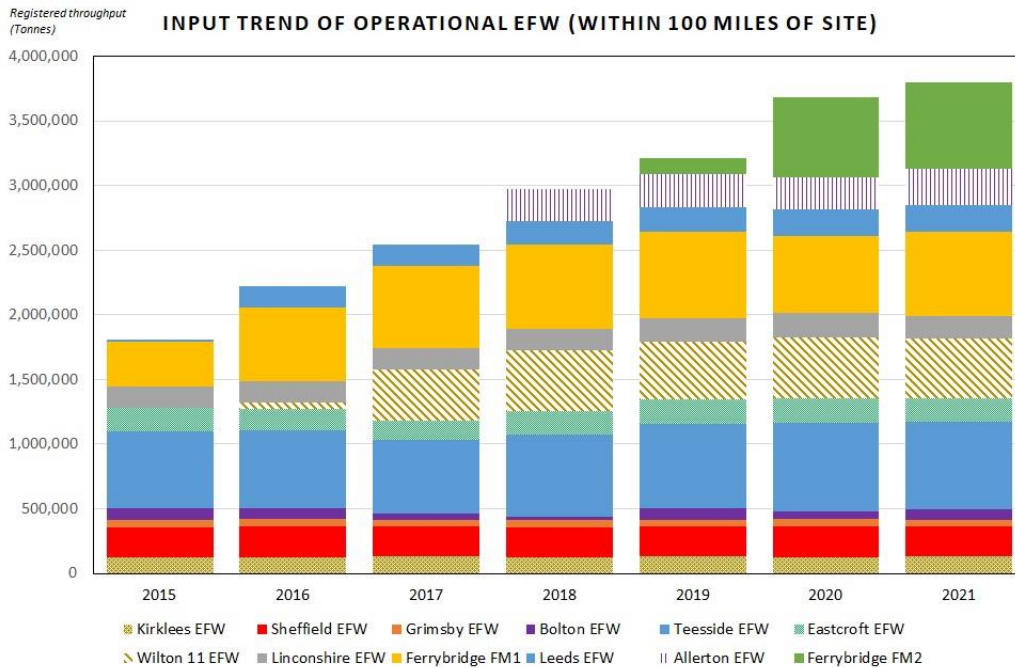


Chart 2.02

- Chart 2.03:** Shows the capacity of operational EfW sites within 50 miles of Flixborough. This currently stands at 2 million tonnes.

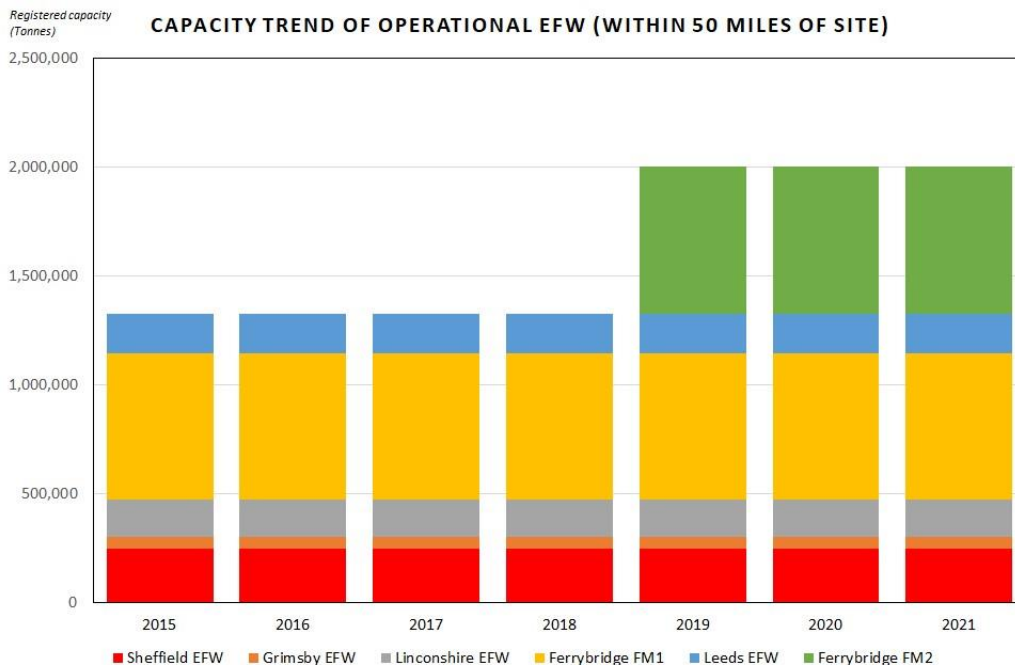


Chart 2.03

- **Chart 2.04:** Shows the actual received tonnage at the operational EfW sites within 50 miles of Flixborough. Again, the conclusion is that the feedstock approaches the available capacity with little room for manoeuvre.

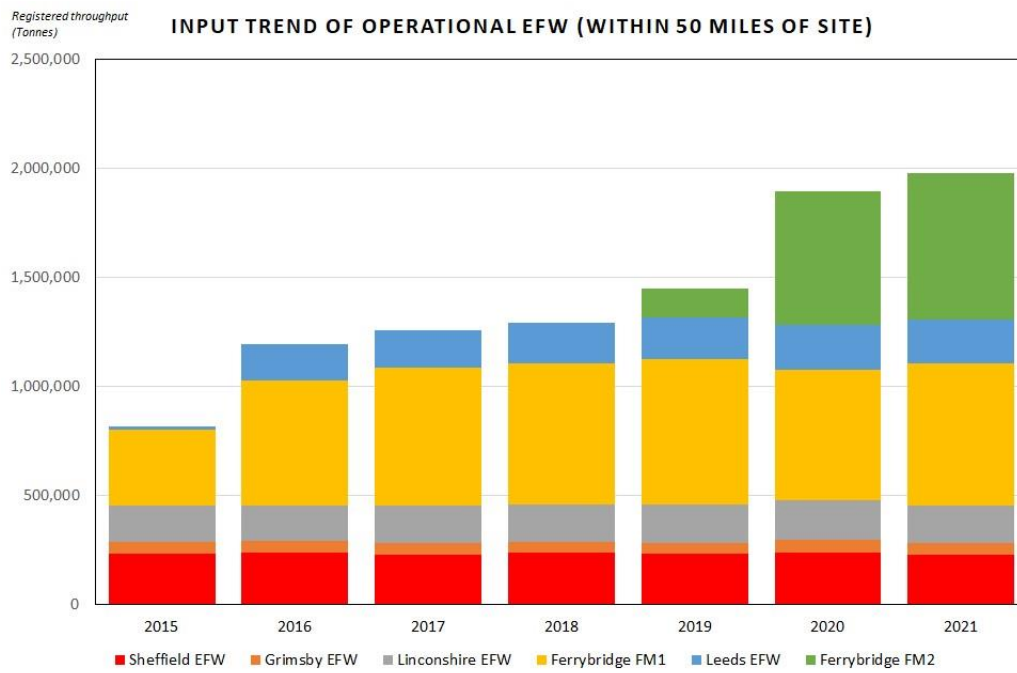
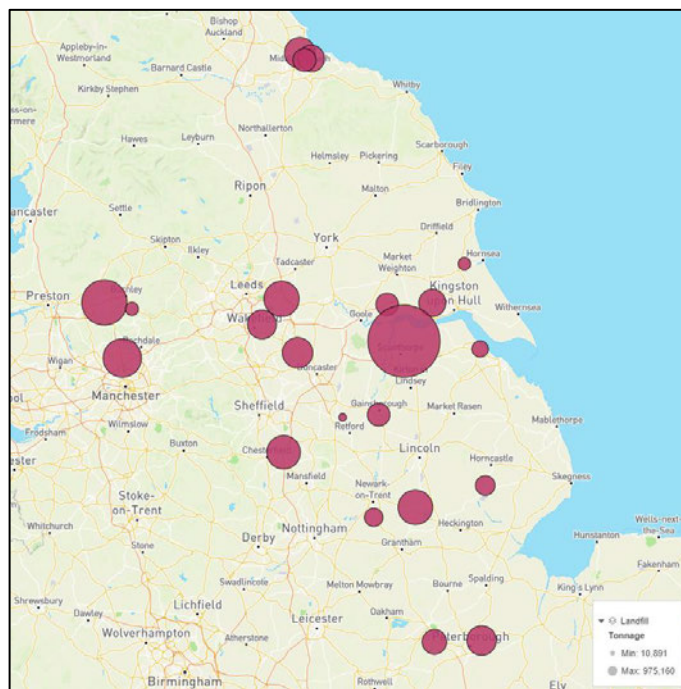


Chart 2.04

3. GENERAL WASTE LANDFILL WITHIN 100 MILES OF SITE

- Map 3.01:** Shows the volume of general waste received at active landfill sites (in 2021) within 100 miles of Flixborough.



Map 3.01

- Chart 3.01:** Compares the EfW capacities for EfW (Operational, Development, On Hold and Planning) versus the tonnage of general waste received at landfill sites within the different concentric zones. The implication of Chart 5 is that there is justifiable opportunity for EfW development in Flixborough or the immediate vicinity, but some other areas are top-heavy with planned sites versus the amount of accessible feedstock.

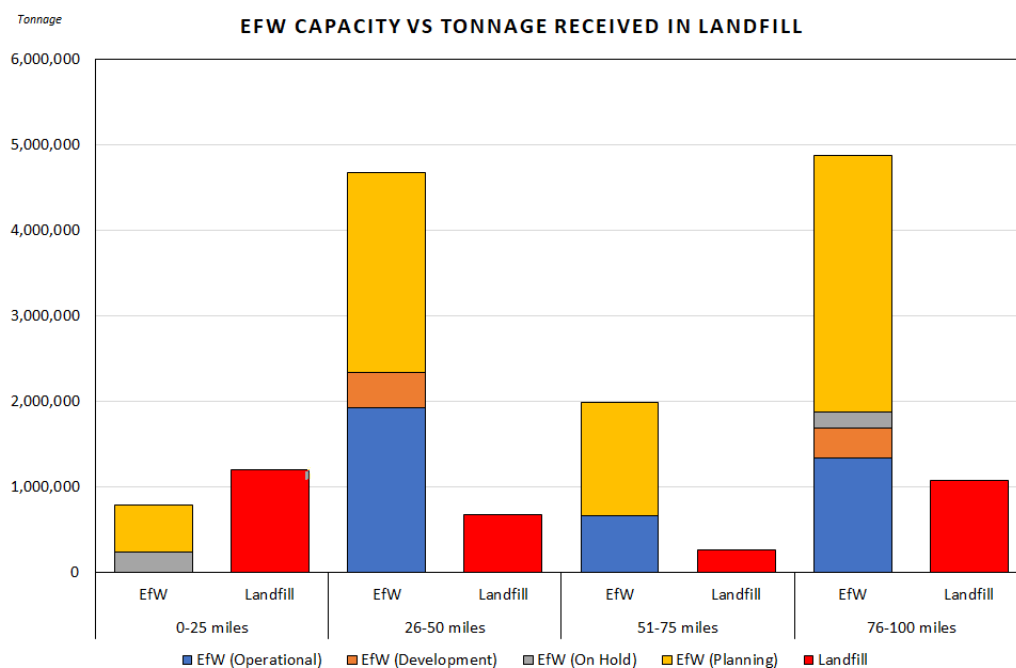


Chart 3.01

- Chart 3.02:** Shows the trend of general waste received at active landfill sites between 2018 and 2021. One might expect to see the volume falling over time; instead, there has been more waste sent to landfill, which suggests that there is a capacity issue. This is especially noticeable in the vicinity of Flixborough; again, this supports the premise that there is scope for the development of the North Lincolnshire Green Energy Park given its excellent access links by road and rail.

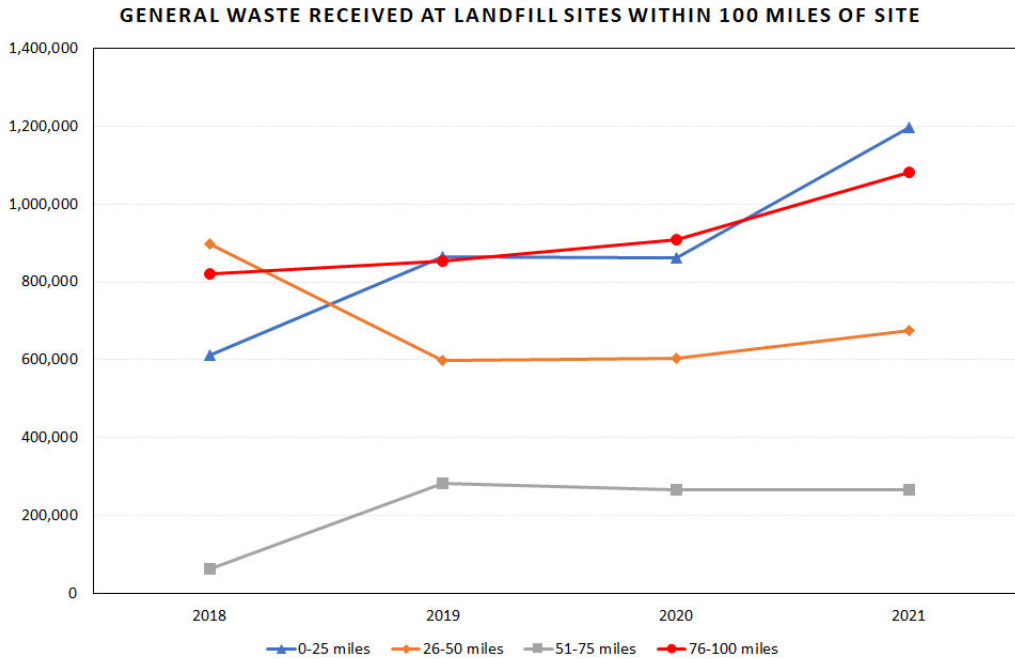


Chart 3.02

4. RESIDUAL WASTE TREATMENT TRENDS

- Chart 4.01** is taken from a recent Defra report ² exploring ways of reducing residual waste in England and accelerating the transition towards a circular economy. Determining robust data for residual waste incorporating arisings from households, local authority collected waste, municipal waste, commercial & industrial waste, and construction, demolition & excavation waste, can be difficult because of the likelihood of double-counting (the same physical waste being recorded across a number of weighbridges before reaching its final disposal / recovery point). The Defra report is therefore being taken as a headline benchmark, giving an officially-sanctioned yardstick by which to present trends in the methodology employed in subsequent charts in this section. By referencing the Defra-reported figures, the charts presented herewith can be assessed with a higher level of confidence of acceptance by authorities.
- The key message of chart 4.01 is that residual waste, taken from the range of sources identified above, has remained reasonably consistent over the decade in the reporting snapshot and, since 2014, has risen slowly but steadily.

² Resource Efficiency and Waste Reduction Targets (Defra, 2022)

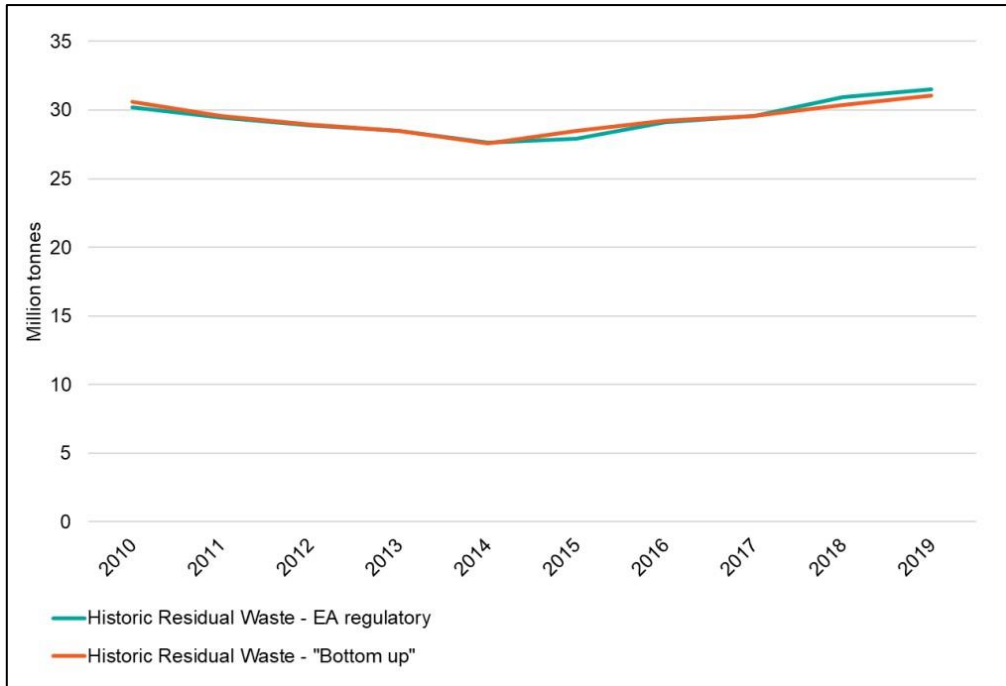


Chart 4.01

- Chart 4.02** presents unadjusted data from site waste returns for receipts at Landfill and EfW facilities (since once waste has been received at such sites, it has reached its final destination; therefore reported data on incoming tonnage can be considered as reliable). The ‘Other Processing’ takes the reported data on other residual waste movements into Material Recovery Facilities (MRFs) and physical processing sites, and adjusts that portion of data to ensure the total is consistent with the Defra trend shown in Chart 4.01. Broadly, the application of this adjustment factor reduced the reported ‘Other’ weighbridge tonnage by half. Intuitively, that feels entirely plausible, given the propensity for waste to move between facilities before reaching its end stage.

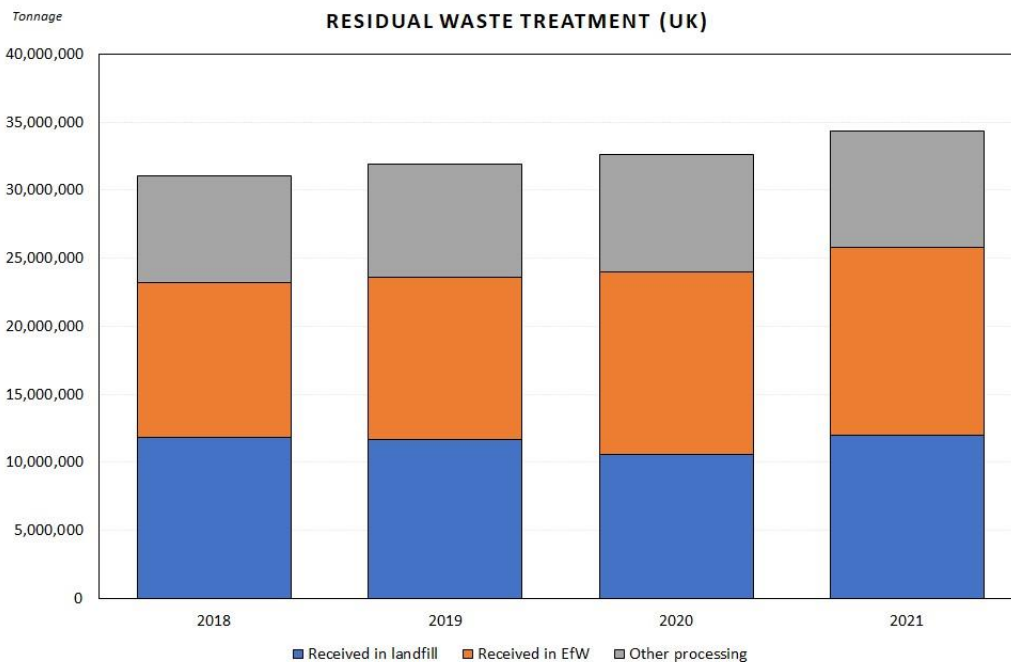


Chart 4.02

- Chart 4.03 through to Chart 4.06 breaks this down by the four regions encompassing the north of England. In each case, there is a level of stubborn consistency in the data which suggests that the higher ambition to drive up recycling rates has not yet materialised to any tangible degree in the regional data. In each of the regional snapshots, significant volumes of residual waste are being disposed of in landfill, and there are further sources of residual waste that are likely to be equally problematic in the 'Other Processing' portion which may have undergone physical / chemical / biological treatment. Particularly striking is the increase in residual waste in the Yorkshire & Humber region (Chart 4.06) which tallies with the trends previously presented in Chart 2.02 and Chart 3.02.

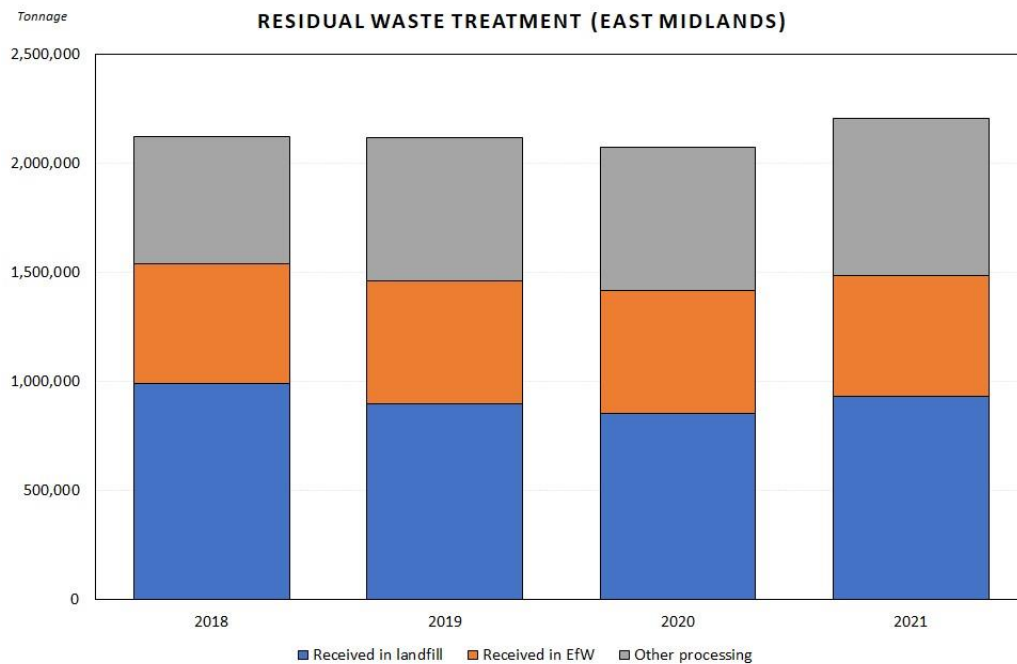


Chart 4.03

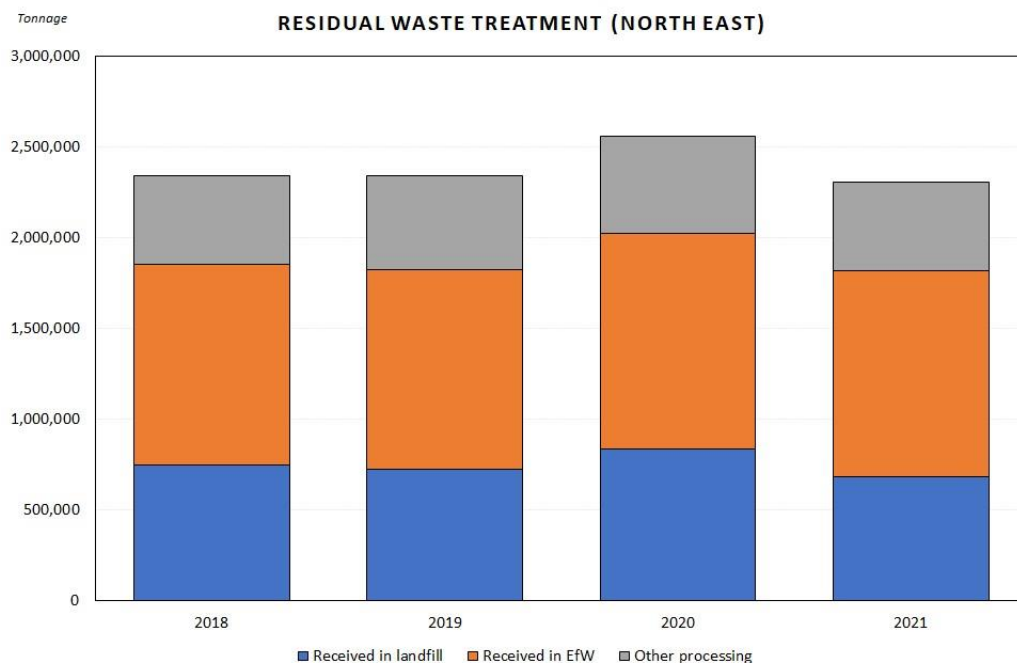


Chart 4.04

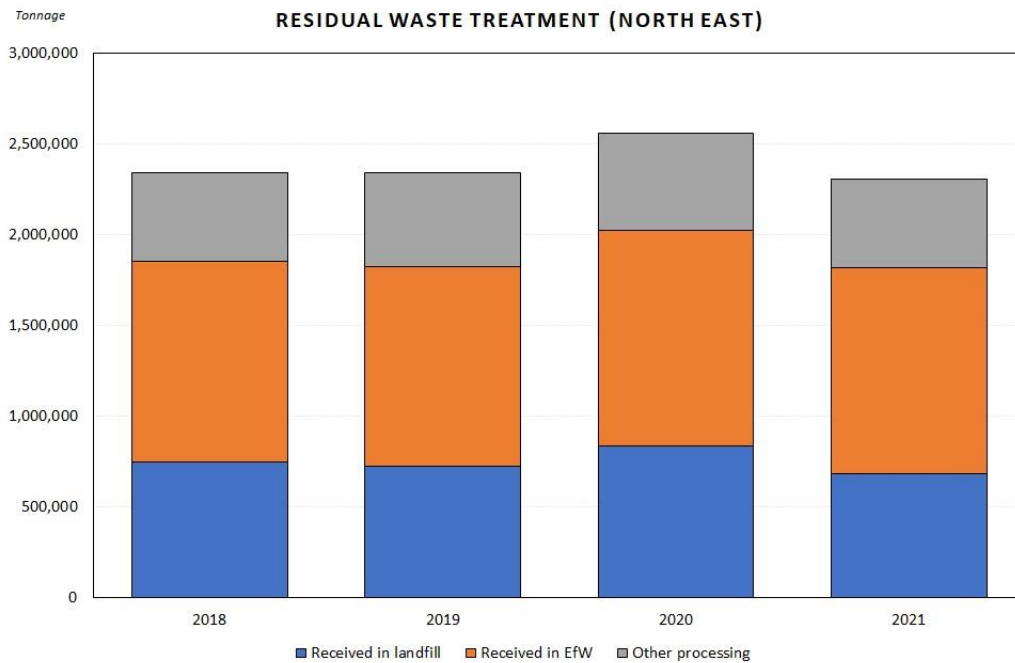


Chart 4.05

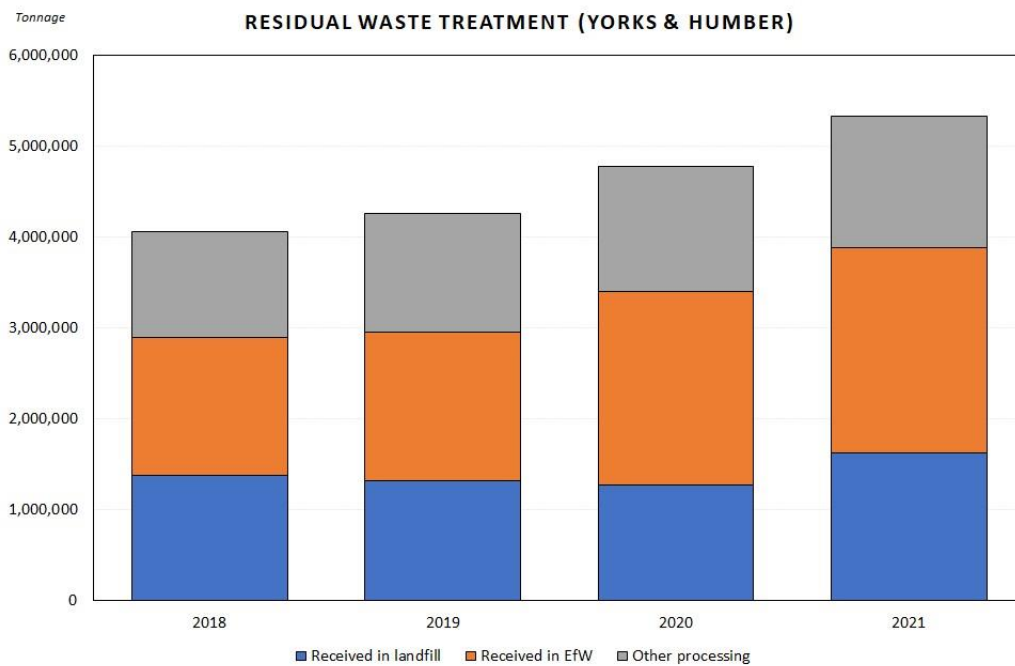


Chart 4.06

- **Chart 4.07** combines the four northern regions into one chart, the unmistakable conclusion being that landfill volumes are proving stubbornly static at around four million tonnes, and the overall level of residual waste has risen, approaching fourteen million tonnes.

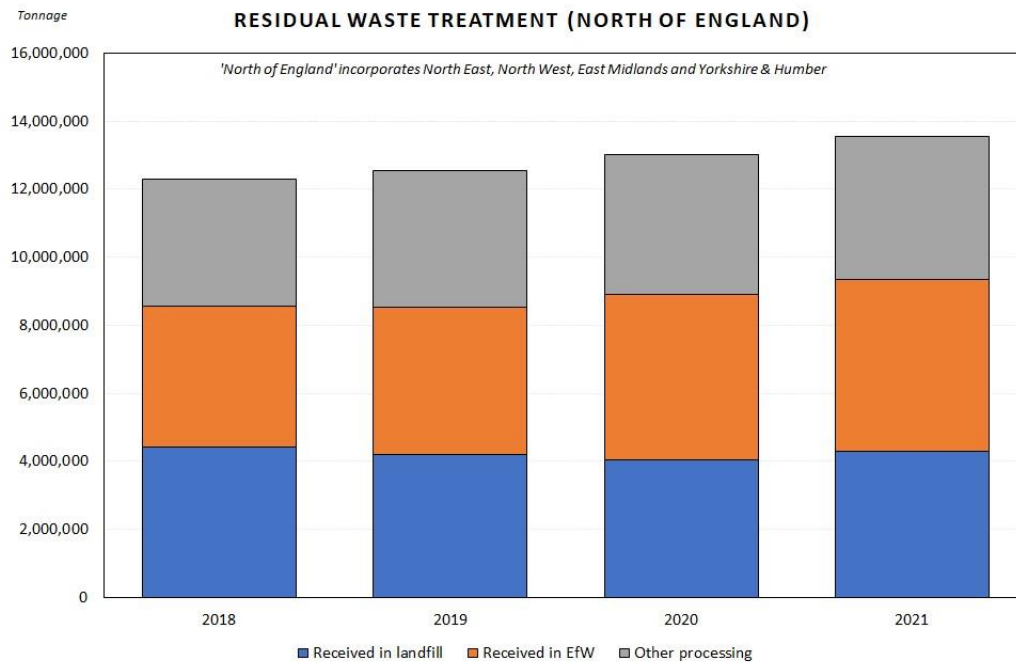


Chart 4.07

- Chart 4.08** compares the historical residual waste treatment trend in the north of England (shown above in Chart 4.07) with the EfW capacity of existing sites, facilities in development and sites that have been given planning permission. It is undeniably true that Chart 4.08 implies that there would be excess capacity were all the planned facilities to progress through to completion, but it is equally valid to assert that this is an unrealistic presumption. Does Grimsby / Cleethorpes, an urban area with a population of approximately 100,000, truly need additional EfW capacity amounting to 1.5 million tonnes? In reality, the need is for new facilities to be sited in appropriate locations, mindful of waste availability and transport links, rather than simply wherever planning permission may be granted.

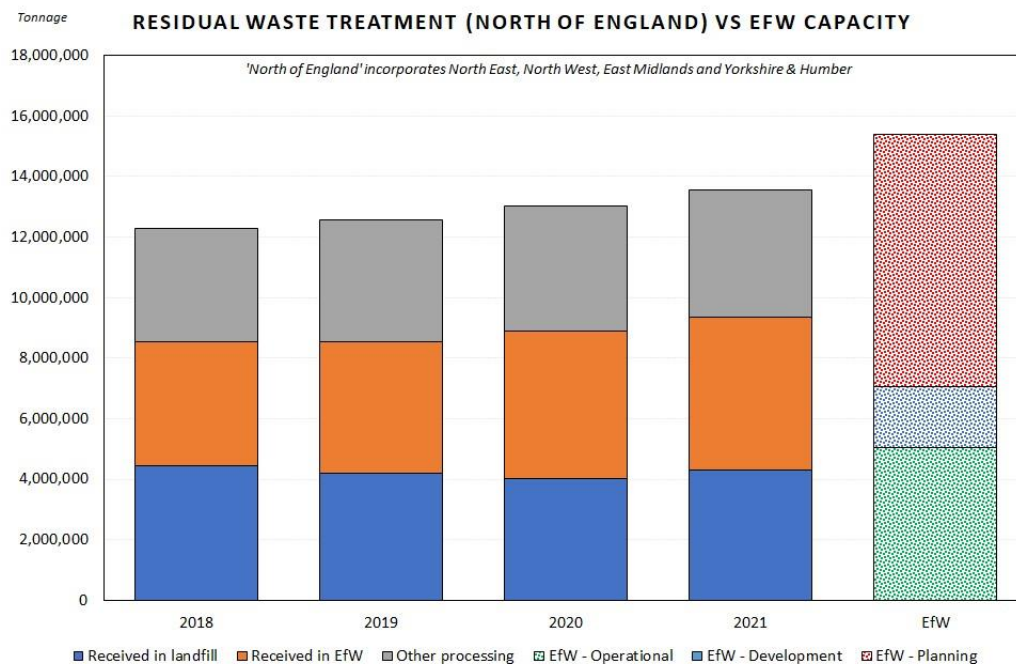


Chart 4.08

5. RECYCLING RATES

- **Chart 5.01** shows the official headline recycling rate in the UK and England, 2015 through to 2020. In the latest step by government to tackle waste, the Circular Economy Package (EU, 2020) as transposed into UK law sets a target to recycle 65% of municipal waste by 2035 and to have no more than 10% municipal waste going to landfill also by 2035. Chart 5.01 suggests that this will present a significant challenge, although the most effective means is likely to be through the banning of certain waste streams being disposed of in landfill, creating the impetus for creativity and innovation, such as when tyres were banned in 2006. A prime candidate for a landfill ban is food waste, which would deliver a noticeable shift in the recycling rate. The current plan, under the Environment Act 2021, is for weekly food waste collections to be mandatory in England from 2025 (or 2031 for councils currently collecting mixed food & garden waste). Under the Circular Economy Package, it will not be possible to incinerate materials that have been collected separately for recycling. These two initiatives will have some effect on residual waste volumes, but not to the extent that it would affect the decision of whether to increase capacity of EfW in a particular region. According to WRAP, 9.5 million tonnes of food waste is disposed of in the UK each year ³. Given that the UK has a population of 67 million, and Yorkshire & Humber has a population of 5.5 million, on a pro-rata basis, this suggests that there may be around 780,000 tonnes of food waste being disposed of in the whole of Yorkshire & Humber. Some of this is already being collected separately (there is a food waste / green waste comingled collection service in Hull, for instance), so this presents a maximum. Were we to assume that the food waste collection managed to drive all food waste from the general waste stream, then the available residual waste in Yorkshire and Humber would fall from 5.3 million to 4.6 million tonnes (with existing EfW capacity for 2.2 million tonnes).

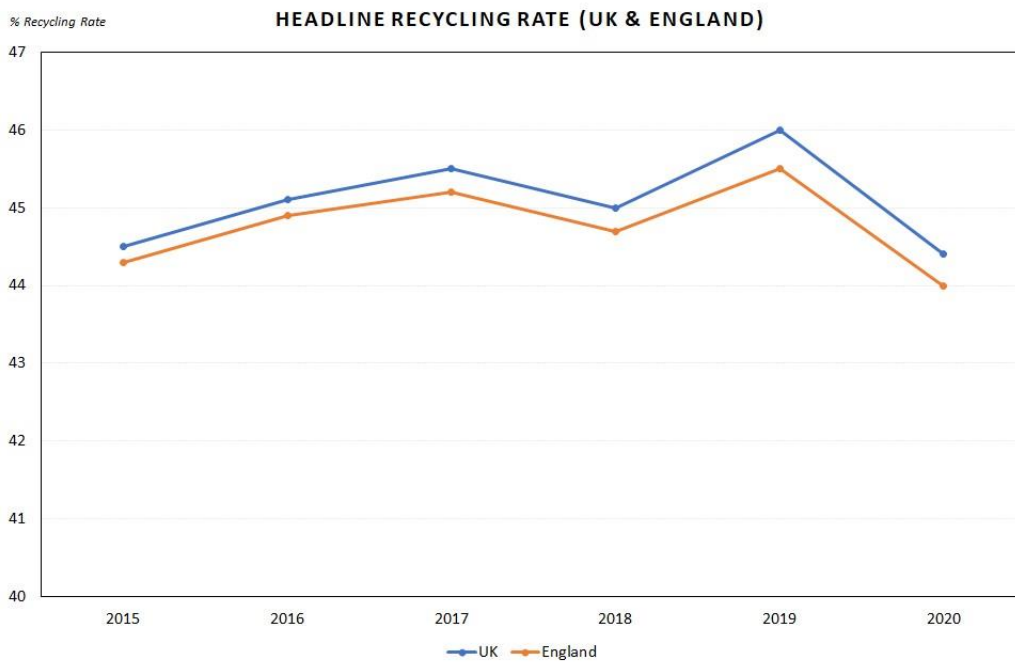


Chart 5.01

³ [Redacted]

6. CONCLUSIONS

- The latest available data confirms the business case for the development of the North Lincolnshire Green Energy Park. Across the whole region within 100 miles of Flixborough, there are certain areas where it would appear that there are perhaps too many EfW facilities that have passed the planning hurdle but lack the fundamentals to warrant their progression to actual construction. The cluster of sites around Grimsby will struggle to source the waste fuel from further afield, and there is not the urban or industrial base nearby to capture sufficient local sources. The large development planned for Boston, while not in an ideal position from a road network perspective, does at least have the advantage that it can source material from the East of England, so it would pose little competitive relevance to the Flixborough site.
- The steady rise in the volume of general waste being disposed of in landfill cells is a strong indicator that the region is in need of additional facilities for processing residual waste in a purposeful and productive way. The general waste being sent to landfill typically has no recyclable value, all viable segregation having occurred upstream; the charts presented here do not include any separated plastics, cardboard or other recyclates in an attempt to bolster the tonnages, it is entirely non-hazardous general waste (predominately EWC 20 03 01 – Mixed Municipal Waste, EWC 19 12 10 – Refuse-Derived Fuel and EWC 19 12 12 – Other Waste From Mechanical Treatment). Particularly noticeable is the increase in tonnages being sent to the Biffa Roxby landfill facility (with permission to use the Roxby sidings to import waste by rail extended until 2026). Given the proximity of this landfill to the Green Energy Park site, it is apparent that there is a strong geographical advantage in progressing the development of the Flixborough facility through to full operational status.
- Residual waste availability has risen in the north of England in recent years, now standing at almost 14 million tonnes, of which 4.3 million tonnes goes to landfill. Even when municipal collection practices change, such as the segregated collection of food waste, this need not be a detrimental factor in the development of an EfW site such as the North Lincolnshire Green Energy Park. Presently, there is little or no spare capacity in case of facility breakdown or maintenance and, as noted above, 4.3 million tonnes of residual waste still goes to landfill.
- Recycling rates across the UK have remained stubbornly at the 44%-45% level for a number of years without improvement. To migrate from this level to the envisaged 65% by 2035 would take a level of resolve and investment unseen since the change of government in 2010. Landfill bans on certain wastes (e.g. food) will have some effect on the residual waste tonnage, given the relative density of food waste, but still not enough to suggest that there is not the need for additional EfW capacity.