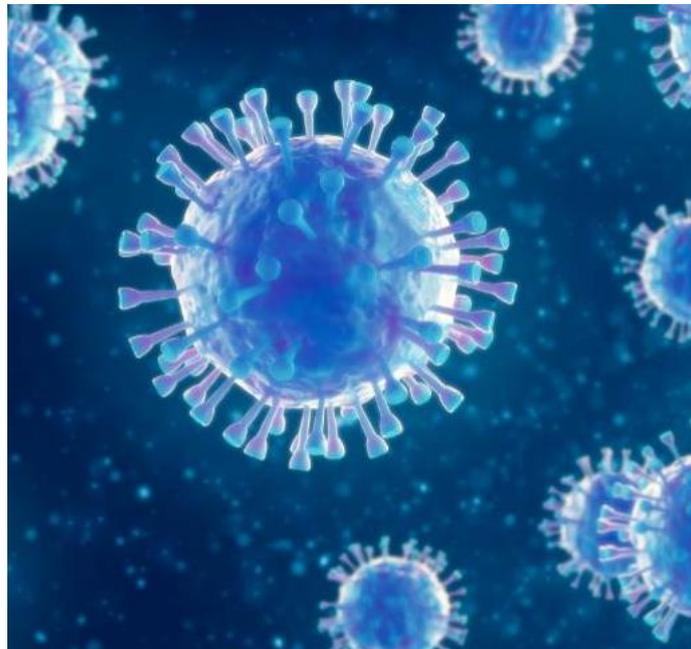


Briefing: COVID-19 and UK Waste Sector

Potential Impacts



EXECUTIVE SUMMARY

- ◆ This Briefing Report considers the potential impact of COVID-19 on the UK waste sector, with a particular focus on Residual Waste in England. It assesses both the immediate short term effect of the lockdown and the potential medium to long term impact of a general economic slow down.
- ◆ This is the second version of the report, following the version released on 27 March. In the last three weeks there have been some significant developments in the market.
- ◆ On the 14 April, the Office for Budget Responsibility issued its “Coronavirus reference scenario”⁽¹⁾. This points to an annualised 2020 GDP impact, on the basis of a 3 month period of full lockdown and 3 months of “recovery”, of a 12.8% decline. However, it assumes “*no lasting economic hit*” in order to provide baseline model for future reference. This necessitates a 17.9% rise in GDP in 2021 and so its analysis cannot be regarded as projections. It does, however, provide a helpful sector-by-sector analysis of the short term impact of GDP which has been used in this version of our Briefing Report.
- ◆ Almost all recent published GDP projections for the UK in 2020 are based on similar assumptions to the OBR Report with respect to the assumed duration of the lockdown. These generally point to a 2020 GDP reduction of 4-8% - with the IMF the latest to suggest a 6.5% reduction. Unlike the OBR modelling, however, these published projections do not expect the UK GDP to return immediately to pre-COVID levels and are broadly consistent with our assumptions in Version 1.
- ◆ Whilst Government restrictions effectively lockdown all but essential services there will be a “*very significant reduction*” in tonnages of Residual C&I Waste. Based on current restrictions it is estimated that **the fall in Residual C&I Waste in the short term is estimated to be 46%** - very slightly less than modelled in Version 1. As expected, waste collections from national retail accounts have been hardest hit – with activity down by as much as 60%.
- ◆ However the lockdown restrictions have already led to increases in Household Waste. The number of meals eaten at home is estimated to have risen by just under a quarter. Together with rises in online shopping and an increased focus on waste generating activities such as DIY, gardening and decluttering, **total Household Waste arisings have been modelled to increase by around 13%**. This is unchanged from Version 1. This in turn is already impacting on tonnages of Residual Household Waste.
- ◆ At the time of previous Version 1 it was reported that local authority waste management services were already starting to be affected by COVID-19. Almost all HWRCs had closed, whilst a number of local authorities were reporting that employee absences were impacting their ability to collect some waste streams – particularly dry recyclables, bulky waste and garden waste – and that service changes would be made.
- ◆ Surveys of local authorities by ADEPT⁽²⁾ have highlighted that Household Waste recycling services have in fact been far more resilient to COVID-19 than we originally modelled. With an estimated average staff absence rate of 17%, the current recycling performance is better than our most optimistic estimate which was based on a 20% absence rate.
- ◆ **Local authorities’ ability to sustain recycling services remain key to determining the total tonnage of Residual Waste generated during the outbreak.** Based on current level of Household Waste recycling services and HWRC closures, overall Residual Waste tonnages are projected to fall by 11.3% for the duration of current restrictions.

- ◆ If, in time, there is only moderate disruption to recycling services (i.e. in which only 5% of recycling services are withdrawn), then overall Residual Waste tonnages could fall by as much as 14.2%.

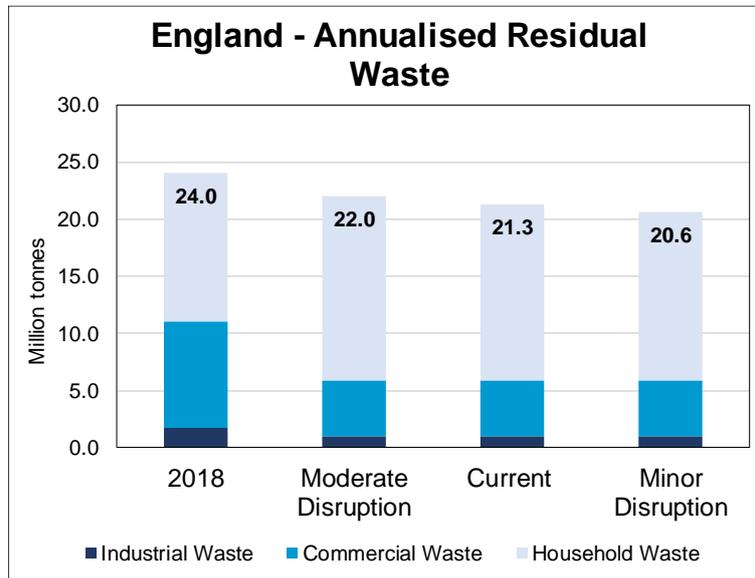


Figure E1: Annualised Impact of COVID-19 on Residual Waste in England

- ◆ Figure E2 compares the analysis of Residual Waste tonnages between Version 1 and Version 2 and highlights the lower tonnages projected when compared with Version 1.

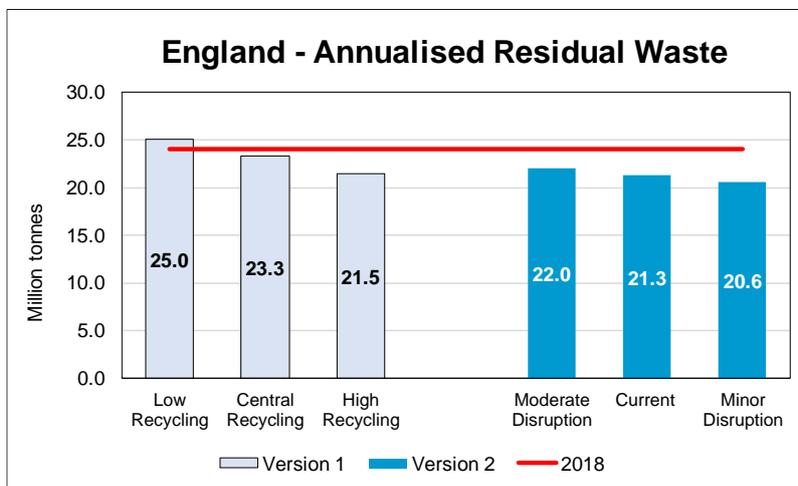


Figure E2: Comparison of Annualised Impact of COVID-19 on Residual Waste in England

- ◆ In practice the impact of COVID-19 will develop over time and Government restrictions are likely to progressively reduce – although there is always the possibility of restrictions being re-introduced if the virus breaks out again. Such scenarios have not been modelled in this Briefing Report.
- ◆ The Briefing Report pulls together three scenarios for Residual Waste in England for the period to the end of 2021. The conclusions differ from Version 1 in that the lower than projected disruption to Household Waste recycling services means that no short term increase in Residual Waste is projected – rather the projection under each scenario is for a somewhat erratic decline in Residual Waste tonnages to Q1 2021.

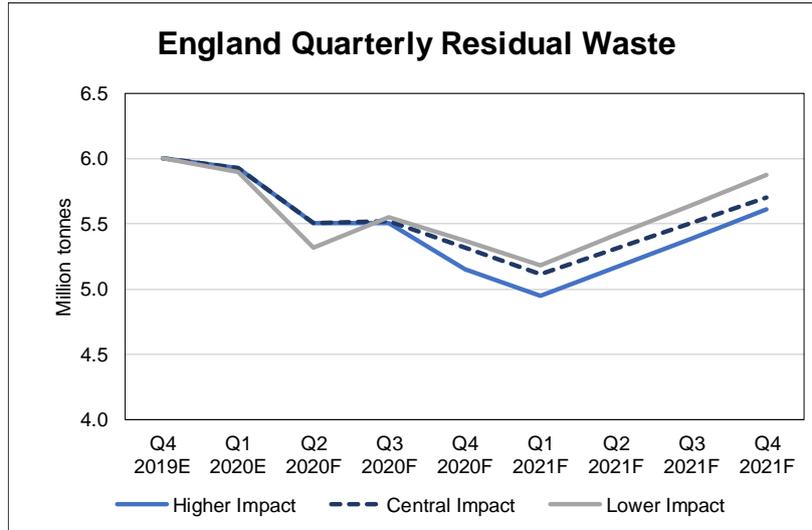


Figure E3: Projected Quarterly Residual Waste Source: Tolvik analysis

- ◆ Modelling suggests that, by the end of 2021, as a result in the impact of COVID-19 on the economy and specifically C&I Waste, Residual Waste tonnages in England will be between 0.5Mtpa (2.2%) and 1.6Mtpa (6.5%) lower than in 2019. This is unchanged from Version 1.

BACKGROUND

Given the rate at which our way of living in the UK has changed in recent weeks, it is with some trepidation that, in response to requests from a number of stakeholders, we have prepared this initial Briefing Report on the potential impacts of the COVID-19 pandemic on the UK waste sector.

It is still relatively early days in the development of the COVID-19 virus. In the coming months the impact of the virus, and the UK Government's response to it, is likely to evolve. As a result we plan to review this Briefing Report from time to time and update it as necessary.

The Briefing Report splits into three specific elements:

- ◆ An analysis of the **short term impact** of the Government's actions to slow down the spread of the virus, with a particular emphasis on the effects on Residual Waste in England. This section of the report develops an assumed baseline which reflects the impact, on an annualised basis, of current restrictions. Based on current information it seems unlikely that any further Government restrictions would have a material impact on this analysis;
- ◆ Using this analysis, an assessment of the **potential quarter-by-quarter** evolution of the market in the period to the end of 2021;
- ◆ Using third party GDP projections, a **preliminary assessment of the potential medium to long term economic impacts** of the virus on the UK Residual Waste market.

This Briefing Report draws on a range of sources – from early evidence from those countries in which the virus is more developed, horizon scanning from other publications, conversations with the industry and our own numerical analysis. In a rapidly developing market it can only represent a “snapshot” in time and will no doubt change.

The availability of data means that this Briefing Report is focussed on England but the analysis is generally applicable to the UK as a whole.

We would very much welcome comments and feedback which we will then use to inform any subsequent updates of the report.

As previously in our reports, Residual Waste is defined as non-hazardous, solid, combustible mixed waste which remains after recycling activities and is capable of being processed alongside Residual Household Waste.

Copies of this report can be downloaded via www.tolvik.com. Third parties are entitled to freely use the contents of the report, subject to appropriately acknowledging its source.

Please note, tables may not total due to rounding.

1. PROJECTING THE COVID-19 BASELINE

1.1. Waste Generation

Government advice has had an immediate impact on patterns of waste generation across the UK. This has manifested itself through a mix of a shock to demand through households’ reduced willingness and ability to spend and a general shock to supply of key resources to the sector as a result of staff availability and other supply chain disruptions.

According to the recently released UK Statistics on Waste⁽³⁾, the tonnage of Household Waste generated in England was 22.0 Million tonnes (“Mt”), whilst the total tonnage of Commercial and Industrial (“C&I”) Waste was estimated to be 37.2Mt. Figure 1 also provides Tolvik’s estimate of the tonnages of Residual Waste in 2018 based on its own analysis of a range of data sources. These figures are the starting point for the analysis in this report.

England, 2018 Mt	Arisings	Residual Waste
Industrial Waste	10.1	1.8
Commercial Waste	27.1	9.3
Household Waste	23.0	13.0
Total	60.2	24.0

Figure 1: Total Waste Arisings – England – 2018 Source: UK Statistics on Waste, Tolvik

1.2. Industrial Waste

The impact of COVID-19 on the manufacturing sector (and hence Industrial Waste production) is expected to be mixed. Whilst the Government is particularly keen to ensure that the food and pharmaceutical sectors continue to operate (but with potentially fewer product lines to provide greater underlying resilience), difficulties in sourcing materials and components, the impact of social distancing and increasing absence through sickness have led to a significant number of larger manufacturing companies (including all UK car manufacturers) to cease operations.

As Figure 1 shows, only a relatively small proportion of Industrial Waste is managed and treated alongside Household Waste and Commercial Waste as Residual Waste. As most recycling of Industrial Waste is at source, it has been assumed in this report that recycling activities at industrial sites will not change as a result of the virus – although anecdotally for some food manufacturers are so focussed on increased production that recycling activities are already much reduced.

SIC Sector, Mt	SIC	% of Residual Waste	2018 Residual Waste	COVID-19 Impact	Revised Residual Waste
Food & Beverage	C10-C12	30.0%	0.5	90%	0.5
Chemical & Pharmaceutical	C20-C22	29.9%	0.5	50%	0.3
Metal Product Fabrication etc	C24-C25	20.0%	0.4	25%	0.1
Computing, Electronic, Cars	C26-C30	10.0%	0.2	25%	0.0
Paper & Card Products etc	C17-C18	10.0%	0.2	50%	0.1
Other	-	0.1%	0.0	25%	0.0
Total		100.0%	1.8		1.0

Figure 2: Residual Industrial Waste Source: UK Statistics on Waste, Tolvik

Figure 2 shows the breakdown in Residual Waste generated by industry by SIC code. The two industrial sectors which are expected, as a matter of necessity, to be most resilient to the COVID-19 outbreak are Food & Beverage and the Chemical & Pharmaceutical sectors. These generate the greatest tonnages of Residual Waste and in modelling the impact of current restrictions it has been conservatively assumed that, at its lowest, production activity for each will be down to 90% and 50% respectively when compared with 2018 levels.

For other sectors, its lowest activity has been assumed to reduce to 25% of 2018 levels – save for Paper & Card Products where a 50% reduction has been assumed on 2018 levels on the basis that this sector will be needed to support ongoing materials supply in certain sectors, but not all.

The net effect, on an annualised basis, means that, at its lowest it is estimated that there would be a reduction in Residual Waste tonnages from the Industrial sector by 46% to 1.0Mt. This is consistent with the OBR Report estimate of a 45% decline in manufacturing activity.

1.3. Commercial Waste

A recent report from WRAP⁽⁴⁾ analysed the composition of municipal waste in England in 2017. This looked at both Household Waste and municipal Commercial Waste. The total tonnage of Residual Waste in the WRAP report, of 25.1Mt, is very similar to the estimate in Figure 1 – but uses slightly different definitions to those used in this Briefing Report. As a result this Briefing Report uses the composition percentages (rather than tonnage) data in the WRAP report.

There are two ways in which the impact of COVID-19 on Commercial Waste tonnages can be considered – by activity generating the waste or through an analysis of the composition.

It has been assumed that Commercial Waste recycling rates will not change as a result of COVID-19.

1.3.1. By Activity

Tolvik’s long standing methodology in assessing Commercial Waste generation has been based on employment data by sector and so the assessment of the effect of COVID-19 on Commercial Waste is also driven by employment data.

SIC Sector, Mt	% of Residual Waste	2018 Residual Waste	COVID-19 Impact	Revised Residual Waste
Wholesale/Retail	22.3%	2.1	59%	1.2
Health & Social Care	18.4%	1.7	107%	1.8
Professional/Scientific/Technical	13.1%	1.2	60%	0.7
Education	13.0%	1.2	10%	0.1
Food, Tourism and Hospitality	10.7%	1.0	15%	0.1
Logistics	7.2%	0.7	65%	0.4
Public/Defence	5.7%	0.5	80%	0.4
Admin	2.7%	0.2	60%	0.1
Property	2.5%	0.2	80%	0.2
IT/Communications	1.3%	0.1	55%	0.1
Finance	1.0%	0.1	95%	0.1
Arts	0.7%	0.1	0%	0.0
Other	1.3%	0.1	40%	0.0
Total	100.0%	9.3	59%	5.4

Figure 3: Residual Commercial Waste Source: Tolvik

For those sectors generating the greatest tonnage of Residual Waste, the analysis has been on the basis of detailed ONS employment data by SIC code. For the others the COVID-19 impacts in Figure 3 have been taken from the OBR Report.

Using this methodology, as shown in Figure 3, on an annualised basis, tonnages of Residual Commercial Waste are estimated to fall by just under 41% to 5.4Mt. (Previous version 49% to 4.7Mt).

1.3.2. By Composition

An alternative approach considers the composition of Residual Commercial Waste and, using professional judgement with respect to the more detailed composition analysis contained within the WRAP report, considers how composition is expected to be impacted as a result of changes in activity levels during the COVID-19 outbreak.

This approach, calculated independently to that in Section 1.3.1, generates a more conservative result with a projected Residual Commercial Waste total, on an annualised basis, of 4.5Mt.

Composition, Mt	% of Residual Waste	2018 Residual Waste	COVID-19 Impact	Revised Residual Waste
Food Waste	25%	2.3	10%	0.2
Garden & other organic	2%	0.2	0%	0.0
Paper & Card	30%	2.8	56%	1.6
Glass	2%	0.2	25%	0.1
Metals	4%	0.4	52%	0.2
Plastic	19%	1.8	78%	1.4
Textiles	3%	0.3	61%	0.2
WEEE	1%	0.1	50%	0.0
Wood	3%	0.3	55%	0.2
Miscellaneous	10%	0.9	67%	0.6
Total	100%	9.3		4.5

Figure 4: Residual Commercial Waste Source: Tolvik based on WRAP adjusted

As a result this Briefing Report takes the average of the two approaches, a reduction to 4.9Mt, as the basis for analysis.

1.4. Household Waste

1.4.1. Waste Generation

Waste type, Mt	2018 Arisings	2018 Residual Waste	Recycling Rate
Food Waste	4.2	3.8	10%
Dry Recyclables – Paper, card, metal etc	10.0	5.2	48%
Garden Waste - Kerbside	3.2	1.1	67%
HWRCs	4.2	1.7	59%
Other Generally Residual	1.4	1.2	11%
Total	23.0	13.0	44%

Figure 5: Household Waste Arisings Source: Tolvik based on WRAP adjusted

Figure 5 is based on WRAP data shows the composition split for the 23.0Mt of Household Waste arisings in England using some reasonably broadly defined categories. These are intended to be indicative - the uncertainty around various assumptions used in this Briefing Report means that a detailed analysis is unnecessary.

The effective closure of schools, significant increases in working from home and with almost all meals eaten at home, there is little doubt that Household Waste tonnages will rise as a result of COVID-19.

To consider the impact of COVID-19 it is therefore necessary to consider each of the component elements of the Household Waste stream.

According to Food Standards Agency data from 2014⁽⁵⁾, around 18% of meals in the UK were eaten away from the home. More recently it has been reported in the press that these meals account for one quarter of all calories consumed. Given that the level of eating out has risen consistently in recent years, this Briefing Report assumes that in 2019 20% of all food was consumed outside the home.

With the closure of all hospitality venues, this food will be eaten in the home. Assuming the same level of waste as that generated by current home food preparation and consumption, modelling suggests that a 25% increase in Food Waste in the Household Waste stream is likely. Early analysis of supermarket sales (after adjusting for the initial “panic buying”) suggests this is a reasonable estimate.

This is the equivalent, on an annualised basis, to an additional 1.1Mt of Food Waste.

A corresponding increase in the associated packaging waste – glass, tins and plastics etc has been assumed – estimated to be the equivalent of a further 0.9Mt of waste.

Meanwhile the Chartered Institute of Logistics and Transport has suggested that online retail sales could double from current circa 20% in the UK to 40%. Early indications are that this could prove to be an under-estimate. This could lead to a modest increase in cardboard and packaging entering UK homes. However reductions in wider consumer purchasing habits as a result of financial uncertainty are likely to lead to reductions in other wastes generated and so the net effect is assumed to be zero.

With time spent in the house, anecdotal evidence suggests that there will be an increased in DIY, general decluttering and gardening. Estimating the effects of these on total Household Waste arisings is difficult but a figure of a 10% increase has been nominally assumed for garden waste and waste which would typically be taken to a Household Waste Recycling Centre (“HWRC”) for disposal. The consequential impact of HWRC closures is discussed in further detail below.

The net effect is a potential increase of around 12.6% in Household Waste arisings in England from 23.0Mt to 26.0Mt.

Waste type, Mt	2018 Arisings (Figure 5)	COVID-19 Impacts			Revised Arisings
		Additional Food	Shopping Trends	Declutter, DIY & Garden	
Food Waste	4.2	1.1			5.3
Dry Recyclables – Paper, card, metal etc	10.0	0.9	0.1	0.1	11.2
Garden Waste - Kerbside	4.1			0.4	4.5
Other Generally Residual	0.5		(0.1)	0.1	0.5
Kerbside Total	18.9	2.0	0.0	0.6	21.5
HWRCs	4.2			0.4	4.6
TOTAL	23.0	2.0	0.0	1.0	26.0

Figure 6: Potential Impact of COVID-19 on Household Waste Arisings Source: Tolvik

1.4.2. Waste Collection

However, whilst COVID-19 persists, two critical factors for the sector will be:

- ◆ the **capacity to collect** Household Waste tonnages in the light of staff illness and absence as a result of self-isolation. In such cases local authorities and their contractors will need to prioritise Household Waste collection – with the focus likely to be on Residual Waste, food waste and, to a less extent and where applicable, dry recycling collections (possibly with reduced frequency). This means that for the duration of the COVID-19 pandemic collections of garden waste and, where provided, bulky waste are likely be restricted from time to time as they are dependent on staff availability;
- ◆ the **capacity to process and store** separately collected dry recyclables. Sorting recyclables at the kerbside can be labour intensive (and so subject to risk of employee absence) whilst operations at a Materials Recycling Facility (“MRF”) may require staff to work closely alongside each other potentially in breach of Government guidelines. Furthermore any protracted impact on the recyclable supply chain will result in insufficient capacity to store recyclables and to maintain quality thresholds.

At the start of the COVID-19 outbreak there were reports of green waste collections being stopped (or not going to restart for the summer) and reduced frequency service for the collection of dry recyclables.

Since Version 1 of this Briefing Report was released, ADEPT (Association of Directors of Environment, Economy, Planning and Transport) have issued two sets of results arising from surveys of local authority waste services⁽²⁾.

	Recycling Collection		Food Waste Collection		Garden Waste Collection	
	Week 1	Week 2	Week 1	Week 2	Week 1	Week 2
Operating Normally	73%	76%	63%	71%	41%	48%
Minor Disruption	20%	18%	18%	13%	12%	11%
Moderate Disruption	4%	4%	8%	8%	8%	9%
Severely Disrupted	2%	1%	1%	1%	1%	4%
Withdrawn	1%	1%	9%	7%	38%	28%

Figure 7: Survey Impact of COVID-19 on Household Waste Recycling Collection Source: ADEPT

These figures show a modest improvement in service levels over the last couple of weeks and significantly more resilient service levels than modelled in Version 1.

The key determinant in the provision of these services is the local authorities’ ability to staff recycling services. Government modelling early in the pandemic suggested that up to 20% of the workforce could be off work at any one time at the peak of COVID-19. The latest figures from the ADEPT survey suggest that the figure is currently slightly lower – estimated to be around 17% as per Appendix 1.

Version 1 suggested that, given the priority to maintain Residual Waste collection services as normal, an overall 20% staff absence could readily result in a shortfall in available recycling collections of 40%. In practice it appears that, through reallocating staff from a range of operations and use of overtime, the overall impact of staff sicknesses to date has been much reduced.

Whilst residents may store recyclables for a 2 week (or maximum 4 week) cycle, it is likely that in time that where recycling collections are interrupted a significant portion of recyclables will end up in the Residual Waste stream. However, given the resilience of current collection arrangements the impact

is now expected to be less than previously – although recyclable collections may at some point in the future come under pressure as a result of a reduction in demand for the collected materials.

According to the ADEPT survey, since the Government announcement of the lockdown, 90% of HWRCs have been closed, 8% have been severely disrupted and 2% faced moderate disruption.

In 2018/19 it is estimated that total Household Waste inputs to these sites was around 4.2Mtpa – about 17.5% of all Household Waste. For smaller items, residents are likely to present the waste at the kerbside alongside general Household Waste. However this will not be possible for larger items needing to be disposed.

Restricted access to HWRCs will mean that an increasing tonnage of Garden Waste is likely to be home composted or burnt on bonfires, whilst some householders are likely to store waste until HWRC sites re-open. Nevertheless there is a very real risk of increased fly tipping – and the latest ADEPT survey reports that 51% of local authorities have already reported an increase.

Despite guidance from DEFRA as recently as 7 April that the re-opening of HWRCs was a medium priority, it appears that DEFRA is currently modifying its position and on the 14 April suggested that under certain circumstances a visit to the local HWRC could be regarded as an “essential” journey. Tolvik remains of the view that pressure will build to re-open larger, accessible HWRCs – even if it is just to accept a very limited range of materials. The Briefing Report assumes that, on an annualised basis around 0.8Mtpa of HWRC Residual Waste will either appear in kerbside collected tonnages or at partially re-opened HWRC sites.

Using the data in Appendix 1, the ADEPT survey information can therefore be used as an assessment of the “Current” impact of COVID-19 on Residual Household Waste.

Waste Type, Mt	Revised Arisings (Figure 6)	2018 Recycling	Recycled - pre COVID-19 Impact	Reduced Recycling – Current COVID-19 Impact	Recycled – Current COVID-19 Impact	Revised Kerbside Residual
Food Waste	5.3	10%	0.5	9%	0.5	4.8
Dry Recyclables	11.2	48%	5.4	44%	4.9	6.3
Garden Kerbside	3.6	67%	2.4	41%	1.5	2.1
Other Generally Residual	1.4	11%	0.2	0%	0.0	1.4
Kerbside Total	21.5	39%	8.5		6.9	14.6

Mt	Revised Arisings (Figure 6)	Recycling - COVID-19 Impact	HWRC Residual	HWRC Home Compost	HWRC not Presented	HWRC Residual Remaining
HWRC Tonnages	4.6	0%	4.6	0.7	3.2	0.8
Total	26.0					15.4

Figure 8: Potential Impact of COVID-19 on Residual Household Waste – Current Impact Source: Tolvik

In this case the estimate, based on the revised arisings and “Current” data, is that on an annualised basis, as a result of COVID-19, Residual Household Waste will rise from 13.0Mt to 14.9Mt – an increase of 18.4%. This performance is not materially different to the “High Recycling” scenario in Version 1.

This analysis is consistent with estimates gained from another element of the ADEPT survey which considers the impact of COVID-19 on the tonnages of various waste streams. As detailed in Appendix

1, it can currently be inferred that Residual Household Waste is currently 18.7% higher – consistent with the analysis above.

In considering the ongoing impact on COVID-19, three illustrative scenarios have therefore been developed based on assumed future service levels for the collection of recyclables. Based on the data from the ADEPT survey, these scenarios are based on an assumption that recycling services will be more resilient than modelled in Version 1.

Three scenarios have therefore been developed:

- ◆ **Minor Disruption to Recycling** - local authorities overall maintain 95% of dry recyclable and food waste collections
- ◆ **Current Recycling** – local authorities in total maintain a similar service to that set out in the ADEPT survey for week ending 10 April;
- ◆ **Moderate Disruption to Recycling** – local authorities in total maintain 75% of dry recyclable and food waste collections.

In the Minor Disruption and Moderate Disruption scenarios the analysis assumes Residual Waste collection is unaltered and that garden waste collections are reduced to half the level of the other two recyclable streams.

1.5. Overall Annualised Impact – Household, Commercial and Industrial

It is therefore possible to estimate the annualised baseline impact of COVID-19 on Residual Waste in England under the three different scenarios for the collection of Household Waste recyclables. It must be stressed that the projections are extremely unlikely to apply for a whole year – rather the analysis forms the basis of the quarterly projections in Section 2.

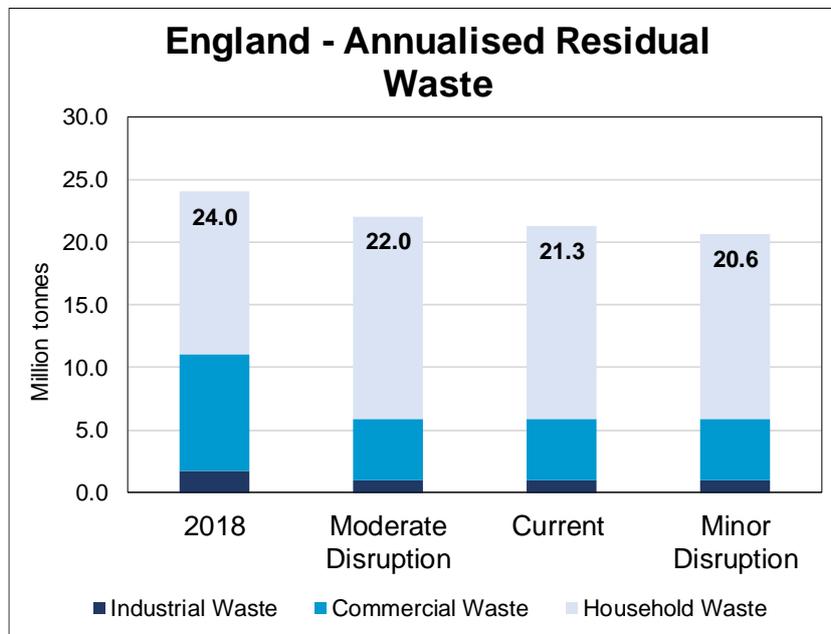


Figure 9: Annualised Impact of COVID-19 on Residual Waste in England Source: Tolvik

England, Mt	2018	COVID-19 Residual		
		Moderate Disruption to Recycling	Current Recycling	Minor Disruption to Recycling
Industrial Waste	1.8	1.0	1.0	1.0
Commercial Waste	9.3	4.9	4.9	4.9
Household Waste	13.0	16.1	15.4	14.7
Total Residual Waste	24.0	22.0	21.3	20.6

Figure 10: Annualised Impact of COVID-19 on Residual Waste in England Source: Tolvik

1.6. Comparison With Previous Briefing Report - Version 1

Figure 11 provides the comparison with the analysis in Version 1. As can be seen, the greater resilience in Local Authority recycling services has meant that, on an annualised basis, projected Residual Waste tonnages as a result of COVID-19 are lower.

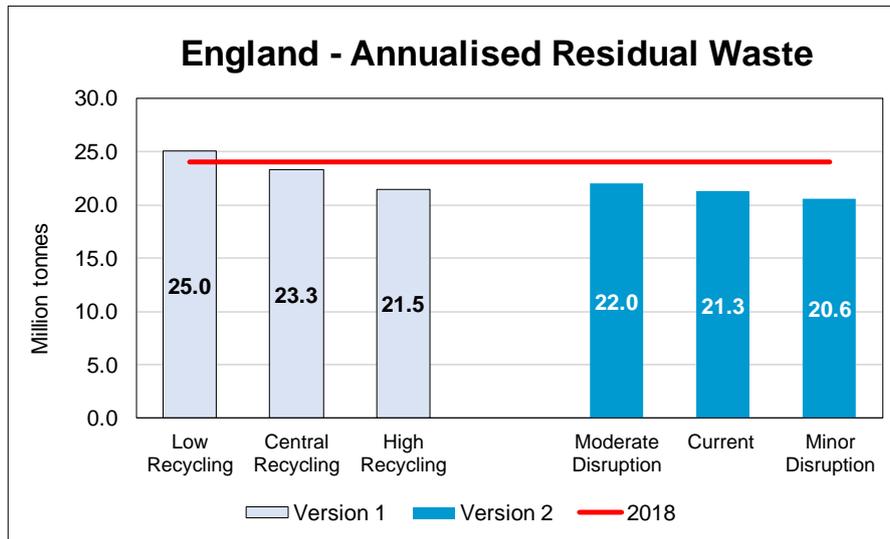


Figure 11: Comparison of estimated Annualised Impact of COVID-19 on Residual Waste in England Source: Tolvik

1.7. Regional Considerations

The analysis in Section 1 applies to England as a whole. Clearly the circumstances in each region will vary and will be dependent on a number of specific local factors including:

- ◆ **The impact of COVID-19 restrictions on the local economy** – e.g. the impact on Residual Waste streams is likely to be greater in the vicinity of those large manufacturers which have ceased operations;
- ◆ **The level of commercial activity** – COVID-19 will have a greater impact on Residual Waste tonnages in those markets (e.g. London) where Commercial Waste tonnages are a proportionately more significant element of the Residual Waste stream;
- ◆ **Distribution of COVID-19** – in those areas where the effects of COVID-19 on staff availability are less significant, the disruption in Household Waste recycling collection may be lower.

Such detail is beyond the scope of this Briefing Report.

2. QUARTERLY PROJECTIONS

2.1. Approach

Unless, as seems extremely unlikely, that the current restrictions are in place for a whole year, the projections in Section 1 will not apply for a full 12 months.

This Briefing Report therefore considers the potential impact of COVID-19 on Residual Waste in England on a quarter-by-quarter basis under three scenarios. In each case it is assumed that, as seems likely, current restrictions or something similar, remain in place for the second quarter of 2020 (“Q2 2020”) and that there are ongoing impacts of some kind at least until Q3 2020 and probably through to the latter part of Q4 2020. For simplicity, the analysis excludes the usual modest seasonal variations in Residual Waste and instead focusses on the COVID-19 impacts.

The three scenarios which have been developed are:

- ◆ **Higher Impact** - in which the disruption to the collection of Household Waste recyclables is at its greatest for the longest period and the longer term impact of COVID-19 (see Section 3) on tonnages of Residual C&I Waste is at its greatest;
- ◆ **Central Impact** - a scenario between High and Low impact;
- ◆ **Lower Impact** - in which the disruption to the collection of Household Waste recyclables is at its least for the shortest period and the longer term impact of COVID-19 (see Section 3) on tonnages of Residual C&I Waste is at its least.

2.2. Residual Waste Projections

Figure 12 shows the projected quarterly tonnage of Residual Waste in England under the three scenarios. This differs from Version 1 in so far as the lower than projected disruption to Household Waste recycling services means that no short term increase in Residual Waste has been modelled.

All scenarios point to a somewhat erratic decline towards Q1 2021 and steady recovery thereafter. Thereafter tonnages fall rapidly as recycling collections are re-introduced but the C&I Waste market is slowest to move towards something nearing normality. Taken over 2020 as a whole, in this scenario total Residual Waste tonnages are only modestly below estimated 2019 levels.

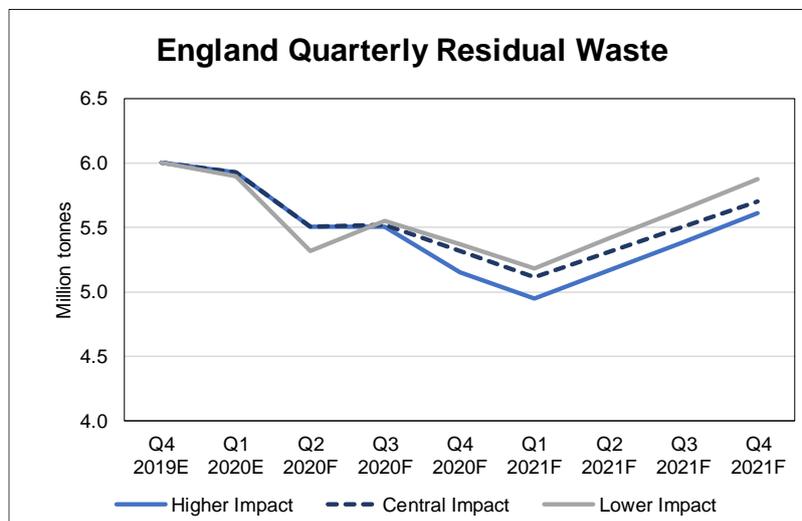


Figure 12: Projected Quarterly Residual Waste Source: Tolvik analysis

Scenario, Mt	Q4 2019E	Q2 2020F	Q4 2020F	Q2 2021F	Q4 2021F
Higher Impact	6.00	5.51	5.15	5.17	5.61
Central Impact	6.00	5.51	5.32	5.31	5.70
Lower Impact	6.00	5.32	5.37	5.41	5.87

Figure 13: Projected Quarterly Residual Waste Source: Tolvik analysis

The modelling suggests that overall, by the end of 2021, as a result of the expected post COVID-19 recession, Residual Waste tonnages in England will be between 0.5Mtpa and 1.6Mtpa lower than estimated for 2019.

2.3. Observation

In January 2020, largely as a result of the new tax in the Netherlands, RDF exports from England were just 60% of the average seen in January in the previous two years.

If this trend were to continue, then RDF exports from England in 2020 would fall by around 1.0Mtpa when compared with 2019. Clearly, therefore, in terms of the tonnage of Residual Waste available for treatment in England, the changing pattern of RDF exports has the potential to limit the impact of COVID-19 on the Residual Waste market.

3. LONGER TERM PROJECTIONS

3.1. GDP Projections

For some years now, in the absence of Gross Value Added forecasts, Tolvik has used GDP Growth for Services as the principle driver for C&I Waste arisings.

Judging at this point in time just how far GDP (hence C&I Waste arisings) will fall amid the virus outbreak is still largely guesswork – although an increasing number of projections are now being developed.

For those brave enough to forecast significant ranges are being suggested as the long term outcome will of course reflect the effectiveness and duration of virus containment efforts, the impact of various Government stimulus packages and post COVID-19 changes by consumers and businesses.

One of the most detailed and recent reports on the UK economy (released in late March) is that authored by KPMG⁽⁶⁾. Its assessment of economic outcomes identifies a potential downside GDP growth of -5.4% in 2020 and -1.4% in 2021 and includes quarterly GDP projections. This would point to a recession “slightly more severe than the downturn experienced in 2008-09.”

Meanwhile the IMF has projected a decline of 6.5% in GDP for the UK in 2020 and PwC have pointed to a GDP reduction in the range of 4-8% depending on the duration of the lockdown.

Deutsche Bank similarly suggested a 5.5% fall in GDP in the UK in 2020, whilst, excluding the OBR Report, the worst case projection found is of a 8% decline in 2020.

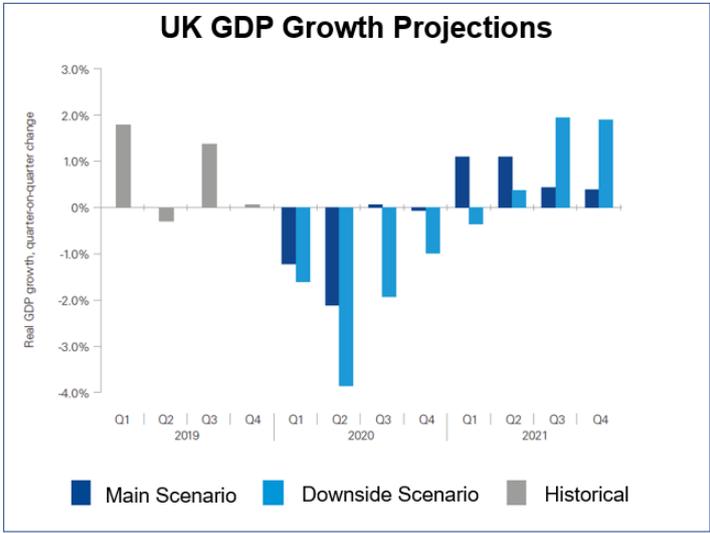
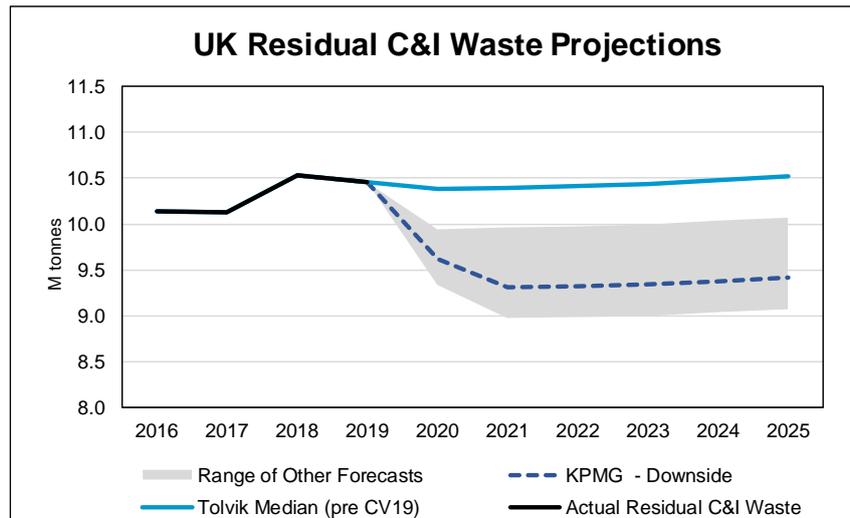


Figure 14: GDP Growth Projections - March 2020 Source: KPMG

3.2. Impact on Residual C&I Waste in the UK

Figure 15 shows the impact of various GDP forecasts on the projected tonnages of Residual C&I Waste in the UK under various scenarios and this has been compared against Tolvik’s median projection immediately prior to the COVID-19 outbreak. These are unchanged from Version 1.

This modelling assumes that recycling rates will not be affected by COVID-19 and the recession – although there is the potential that recycling could become more difficult – at least in the short to medium term.



Mt	2019	2021	2023	2025
Tolvik Median Projection (pre CV19)	10.45	10.40	10.43	10.52
KPMG - Downside		9.31	9.34	9.41
Upper Range of Other Forecasts		9.96	9.99	10.07
Lower Range of Other Forecasts		8.97	9.00	9.07

Figure 15: UK Residual C&I Waste Projections

These projections point to a fall in Residual C&I Waste in the UK by 2021 of between 5% and 14%.

Ultimately though, the extent to which GDP declines and the corresponding impact on Residual C&I Waste tonnages will be determined by the longevity of the Government restrictions, the rate at which they are unwound and the ability of businesses to remobilise their activities once restrictions have been lifted.

The extent to which some aspects of containment (and reduced business activity) become semi-permanent in order to limit a second outbreak has not been considered in the analysis. This will be considered in any future updates.

In summary, based upon recent and emerging GDP forecasts, future Residual C&I Waste tonnages are likely to be lower than recent years, the question is by how much. Tolvik will update these projections as and when more robust economic forecasts become available.

SOURCES

- (1) <https://obr.uk/coronavirus-reference-scenario/>
- (2) <https://www.adeptnet.org.uk/news/local-authorities-publish-second-report-impact-covid-19-waste-services>
- (3) DEFRA: UK Statistics on waste data – March 2020
- (4) WRAP: National Municipal Waste Composition, England 2017 – January 2020
- (5) Food Standards Agency: 2014 Food and You Survey
- (6) KPMG: Global Pandemic – UK Economic Outlook – March 2020

GLOSSARY

ADEPT	Association of Directors of Environment, Economy, Planning and Transport
C&I Waste	Commercial and Industrial Waste
GDP	Gross Domestic Product
HWRC	Household Waste Recycling Centre
Mt	Million tonnes
OBR	Office for Budget Responsibility
ONS	Office of National Statistics
SIC	Standard Industry Classification

APPENDIX 1 – PUTTING VALUES TO THE ADEPT SURVEY - WEEK 2
Staff Absence Levels

	Assumed Median Reduction	Reported % of Local Authorities
No Impact	0%	6%
Less than 20% reduction	10%	60%
20 - 40% reduction	30%	32%
40 - 60% reduction	50%	1%
60 - 80% reduction	70%	1%
Greater than 80% Reduction	90%	0%
Assumed Weighted Average	17%	100%

Recycling Collections

	Modelled Impact compared to Normal	Reported % of Local Authorities		
		Recycling Collection	Food Waste Collection	Garden Waste Collection
Operating Normally	100%	76%	71%	48%
Minor Disruption	75%	18%	13%	11%
Moderate Disruption	50%	4%	8%	9%
Severely Disrupted	25%	1%	1%	4%
Withdrawn	0%	1%	7%	28%
Assumed Weighted Average		92%	85%	62%

Waste Arisings – including withdrawn services

	Modelled Impact compared to Normal	Reported % of Local Authorities			
		Residual	Recycling Collection	Food Waste Collection	Garden Waste Collection
100% or greater decrease	-100%	0%	1%	6%	23%
50 - 100% decrease	-75%	1%	1%	5%	3%
20 - 50% decrease	-35%	1%	2%	0%	3%
0 - 20% decrease	-10%	4%	2%	3%	1%
No impact	0%	14%	19%	24%	17%
0 - 20% increase	10%	42%	41%	34%	18%
20 - 50% increase	35%	32%	28%	26%	24%
50 - 100% increase	75%	5%	5%	2%	10%
Greater than 100% increase	100%	1%	1%	0%	1%
Assumed Weighted Average		18.7%	17.0%	10.0%	15.3%



Adrian Judge



Chris Jonas



Sally Freshwater



CONSULTING



MARKET ANALYSIS



DUE DILIGENCE

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This report has been written by Tolvik Consulting Ltd on an independent basis using our knowledge of the current UK waste market and with reference inter alia to various published reports and studies and to our own in-house analysis.

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