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# Kent Waste Needs Assessment 2018

## Capacity Requirement for the Management of Residual Non Hazardous Waste

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# Abbreviations and Glossary

## Abbreviations

| | |
|---|---|
| EA | Environment Agency |
| EfW | Energy from Waste |
| HWRC | Household Waste Recycling Centre |
| JMWMS | Joint Municipal Waste Management Strategy |
| LACW | Local Authority Collected Waste |
| MSW | Municipal Solid Waste |
| WCA | Waste Collection Authority |
| WDA | Waste Disposal Authority |
| WNA | Waste Needs Assessment |
| WPA | Waste Planning Authority |

## Glossary of Terms

| | |
|---|---|
| Commercial Waste | Waste arising from premises which are used wholly or mainly for trade, business, sport, recreation or entertainment, excluding municipal and industrial waste. |
| Composting | A process in which biodegradable waste (such as green waste and kitchen waste) is broken down in aerobic conditions by naturally occurring micro-organisms to produce a material suitable for use as a soil improver. |
| Energy from Waste | The conversion of the calorific value of waste into energy, normally heat or electricity through applying thermal treatment of some sort. |
| Environment Agency | The body responsible for the regulation of waste management activities through issuing permits to control activities that handle or produce waste. It also provides up-to-date information on waste management matters and deals with other matters such as water issues including flood protection. |
| Green Waste | Biodegradable plant waste from gardens and parks such as grass or flower cuttings and hedge trimmings, from domestic and commercial sources suitable for subjecting to composting. |
| Household Waste | Waste from households collected through kerbside rounds, bulky items collected from households and waste delivered by householders to household waste recycling centres and "bring recycling sites". along with waste from street sweepings, and public litter bins. |
| Household Waste Recycling Centres | A facility that is available to the public to deposit waste not collected through kerbside collection (otherwise known as a civic amenity site). |
| Industrial Waste | Waste arising from any factory and from any premises occupied by an industry (excluding mines and quarries). |
| Joint Municipal Waste Management Strategy | A strategy developed by the Kent Waste Partnership a collaboration between the County Council as Waste Disposal Authority and the 12 Waste Collection Authorities in Kent. |
| Kerbside Collection | The collection of materials and waste from households, or occasionally industrial and commercial premises. |
| Landfill (including land raising) | The permanent disposal of waste to land, by the filling of voids or similar features, or the construction of landforms above ground level (land-raising). |
| Local Authority Collected Waste | All waste collected by a local authority. Includes household waste and business waste where collected by a local authority and non municipal fractions such as construction and demolition waste. LACW is the definition used in statistical publications, which previously referred to municipal waste. |
| Municipal Solid Waste (MSW) | Household waste and any other waste collected by a waste collection authority such as municipal parks and gardens waste and waste resulting from the clearance of fly-tipped materials. |
| Organic Waste Treatment | Processes involving the decomposition of biodegradable and putrescible matter including green waste and food waste either by aerobic processes i.e. composting or anaerobic processes i.e. digestion. |
| Open Windrow Composting | A process in which biodegradable waste (such as green waste and kitchen waste) is broken down in an open air environment (aerobic conditions) by naturally occurring micro-organisms to produce a |

| | |
|---|---|
| | material suitable for use as a soil improver. |
| Other Recovery | Processes that recover value from waste such as thermal treatment to recover energy. Lower than recycling or composting on the waste hierarchy. |
| Recovery | Term to cover any process that recovers value from waste including recycling, composting or thermal treatment to recover energy. |
| Recycling | The reprocessing of materials extracted from the waste stream either into the same product or a different one. |
| Residual Waste | Waste remaining after materials for re-use, recycling and composting/organic waste treatment e.g. anaerobic digestion have been removed. |
| Waste Collection Authority (WCA) | A local authority that has a duty to collect household waste. They also have a duty to collect commercial waste if requested to do so and may also collect industrial waste.. In this case the 12 Borough, City & District Councils in Kent. |
| Waste Disposal Authority (WDA) | A local authority responsible for managing the waste collected by councils acting as waste collection authorities and the provision of household waste recycling centres. In this case Kent County Council |
| Waste Planning Authority (WPA) | The local authority responsible for waste development planning and control. In this case Kent County Council |
| Waste Transfer Station | A site to which waste is delivered for bulking prior to transfer to another place for further processing or disposal. |

# 1.0 Introduction

## 1.1. Purpose

Principally, this report is intended to refresh the calculation of the future capacity requirement for Energy from Waste (EfW) (referred to as the 'Other Recovery') within the context of the remaining consented non-hazardous waste landfill capacity and the objective of achieving net self sufficiency for the management of residual non-hazardous waste for Kent during the period of the adopted Kent Minerals and Waste Local Plan (KMWLP). In doing so, the report updates the calculation contained in the Kent County Council report, *Waste Topic Report 8: Assessment of Need for Energy from Waste for Non-Hazardous Waste (May 2012)* using more recent capacity data and the outputs of updated forecasts of waste arising as set out in other sections of the WNA 2017. This therefore takes into account the updated capacity requirements calculated for Local Authority Collected Waste (LACW), Commercial and Industrial (C&I) waste and for waste that may be imported from, or is currently exported to, London.

## 1.2. Definitions

For the avoidance of doubt, definitions are set out below of the key terms used in this report.

*Residual non hazardous waste*

That portion of waste left over after elements have been extracted for recycling/composting. In this report the term refers to such waste that arises in the Local Authority Collected Waste

(LACW) and Commercial and Industrial (C&I) waste streams, as these are the principal sources of non-hazardous waste.

*'Other Recovery'*

The Waste Framework Directive classes any waste operation that isn't disposal, as 'recovery'. Recovery therefore includes recycling, composting and energy recovery. Recovery is further refined in the waste hierarchy which applies levels of preference between certain recovery activities, placing recycling and composting above energy recovery. Since recycling and composting fall within the overall class of recovery, and this report addresses the management needs of waste that is left once recycling and composting has been prioritised, the term 'Other Recovery' has been used to cover those operations that fall within the recovery class other than recycling or composting. For residual non hazardous waste 'Other Recovery' normally means thermal treatment with energy recovery i.e. EfW.

## 1.3. Context

*Waste Topic Report 8* concluded the following on the need for Energy from Waste (EfW) capacity:

> "*…sufficient sites should be identified such that new capacity in EfW could be provided for an additional 562,000 tpa. However, only 437,500 tpa new EfW capacity should be permitted until monitoring indicates that the provision of only this amount of EfW capacity would result in non-hazardous landfill capacity in Kent being used up before the end of the plan period. This will need one site to be identified in Kent that would not need to be developed until the long term, if at all.*"

This conclusion underpins Policies CSW 7 and CSW 8 of KWMLP reproduced below:

**Policy CSW 7**

**Waste Management for Non-hazardous Waste**

In seeking to be as self-sufficient as possible in managing non-hazardous waste arisings in Kent, and for providing for limited amounts of non-hazardous waste from London, sufficient sites for waste management facilities will be identified in the Waste Sites Plan to meet identified needs as a minimum, including the following capacity.

**Non-Hazardous**

| Year | Maximum Additional Recovery Capacity Required [1] (tonnes per annum) | Indication of Number of New Facilities for Recovery Needed [2] | Minimum Additional Treatment Capacity for Green and Kitchen Wastes (tonnes per annum) | Indication of Number of New Facilities Needed for Treating Green and Kitchen Waste [3] |
|---|---|---|---|---|
| 2011 | 0 | 0 | 0 | 0 |
| 2016 | 375,000 | 1-2 | 20,000 | 1 |
| 2021 | 125,000 | 1 | 0 | 0 |
| 2026 | 62,500 | 1 | 20,000 | 1 |
| 2031 | 0 | 0 | 24,000 | 1 |
| **Total** | **562,500** | **3-4** | **64,000** | **3** |

1. Calculation of capacity at any proposed sites may include recycling and composting in an integrated waste management facility providing the total capacity calculated results in no significant amount of residue having to go to non-hazardous landfill. These figures are based on the high growth forecasts.
2. The actual number of facilities required will depend on the throughput capacity of proposed facilities brought forward to meet the identified need. Facilities with a smaller capacity will result in more facilities than indicated being required.
3. Additional capacity required to achieve composting rates of 65% C&I waste and 60% MSW by 2025.

Waste management capacity for non-hazardous waste will be provided through sites for managing waste, including Energy from Waste, recycling, in-vessel (enclosed) composting facilities and anaerobic digestion.

Sites for anaerobic digestion, composting, Energy from Waste, mechanical biological treatment and other energy and value recovery technologies that assist Kent in meeting the capacity gap identified in this policy will be granted planning permission provided that:

Figure 1: KMWLP Policy CSW 7 Waste Management for Non-hazardous Waste

**Policy CSW 8**

**Recovery Facilities for Non-hazardous Waste**

Sites for additional recovery facilities will be identified in the Waste Sites Plan to treat a capacity of 562,500 tonnes per annum.

Permission will be granted for a maximum of 437,500 tonnes in total capacity until such time that the results of annual monitoring indicate that this restriction would result in the loss of all non-hazardous landfill capacity in the county before the end of the plan period.

Facilities using waste as a fuel will only be permitted if they qualify as recovery operations as defined by the Revised Waste Framework Directive. (90)

When an application for a combined heat and power facility has no proposals for use of the heat when electricity production is commenced, the development will only be granted planning permission if:

1. the applicant and landowner enter into a planning agreement to market the heat and to produce an annual public report on the progress being made toward finding users for the heat.

Figure 2: KMWLP Policy CSW 8 Recovery Facilities for Non-Hazardous Waste

# 2. Updated Forecasts of Residual Non-hazardous Waste to be Planned For

The initial 2017 Waste Needs Assessment reassessed the needs for the management of Residual Waste from the principal waste streams on the following basis.

## 2.1. Residual Waste from Kent LACW Stream

Table 1: Targets applied to total LACW Arisings in Kent in the adopted KMWLP (tonnes)

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2015/16 | 2020/21 | 2025/26 | 2030/31 |
| Recycling/composting | 51.0% | 55.0% | 59.0% | 62.0% |
| Other Recovery | 40.0% | 38.0% | 37.0% | 35.0% |
| *Overall diversion from landfill* | *91%* | *93%* | *96%* | *97%* |
| Remainder to Landfill[1] | 9.0% | 7.0% | 4.0% | 3% |

Representations have been received in response to the consultation on the Early Partial Review of the KMWLP, suggesting that the projected landfill diversion targets were considered to be unambitious in the early part of the Plan period. Therefore the LACW landfill diversion target was reviewed in light of targets included in Plans adopted more recently by Waste Planning Authorities in the South East. A target of 98% landfill diversion as used in the East Sussex and Brighton & Hove Waste Local Plan (adopted in 2013) has been applied in this revised waste needs assessment. In addition, in light of analysis of WCA current and projected recycling performance and the fact that the *Kent Joint Municipal Waste Management Strategy 2012/13 to 2020/21* adopted by the Kent Resource Partnership now includes a target to recycle/compost at least 50% of household waste by 2020/21, it is now considered that the recycling and composting target in the latter period of the plan may be over ambitious. Therefore the recycling and composting target has been scaled back to reflect this and to reflect the targets in the recently adopted EU Circular Economy package as follows:

- 55% recycling target for municipal waste by 2025;
- 60% recycling target for municipal waste by 2030;

Essentially this means that it is now expected that a greater proportion of LACW will be diverted from landfill and this will be achieved by 'Other Recovery'. The proposed suite of targets are shown in Table 2.

[1] This identifies the consequential predicted remaining management requirement assuming the other targets are met. It is increasing in latter years of the Plan period because overall arisings are predicted to grow and since Other Recovery capacity is fixed at 562,500 tpa by 2026 the additional residual waste produced after this date is to be managed through landfill.

Table 2: Proposed Targets for LACW Management Partial Review of Kent MWLP

*2015/16 values italicised as actual values*

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2015/16[2] | 2020/21 | 2025/26 | 2030/31 |
| Recycling/composting | *46%* | 50% | 55% | 60% |
| Other Recovery[3] | *47%* | 48% | 43% | 38% |
| *Overall diversion from landfill* | *94%* | *98%* | *98%* | *98%* |
| Remainder to Landfill | *6.5%* | 2% | 2% | 2% |

Applying these to the forecast arisings[4] gives the requirement in Table 3.

Table 3: Proposed Updated Targets applied to total LACW Arisings in Kent (tonnes) *rounded*

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2015/16 | 2020/21 | 2025/26 | 2030/31 |
| Recycling/composting (tpa) | *331,433* | 362,500 | 403,000 | 444,000 |
| Other Recovery (tpa) | *338,068* | 348,000 | 315,000 | 281,000 |
| Remainder to Landfill (tpa) | *46,197* | 14,500 | 14,500 | 15,000 |

## 2.2. Residual Waste from Kent C&I Waste Stream

Table 4: Targets applied to total C&I Waste Arisings in Kent in adopted KWMLP (tonnes)

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2015/16 | 2020/21 | 2025/26 | 2030/31 |
| Recycling/composting | 61% | 63% | 65% | 65% |
| Other Recovery | 20% | 21% | 19% | 19% |
| Remainder to Landfill | 19% | 16% | 16% | 16% |

Representations have been received in response to the consultation on the Early Partial Review, suggesting that the projected recycling targets in particular were considered to be overly ambitious. The targets relating to C&I waste in the recently adopted EU Circular Economy package are as follows:

[2] Values in this column do not sum to 100% due to rounding.

[3] This identifies the consequential predicted remaining management requirement assuming the other targets are met.

[4] Updated Management Requirement for Local Authority Collected Waste Generated in Kent, BPP, November 2017

- 55% recycling target for municipal waste by 2025; and
- 60% recycling target for municipal waste by 2030; and
- 10% limit of landfilling of municipal waste by 2035.

In light of the above, the targets have been scaled back and these are shown in Table 5 below.

Table 5: Proposed Targets for C&I Waste Management Partial Review of Kent MWLP

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2015/16 | 2020/21 | 2025/26 | 2030/31 |
| Recycling/composting | n/a | 50% | 55% | 60% |
| Other Recovery[5] | n/a | 35% | 32.5% | 30% |
| Remainder to Landfill[6] | n/a | 15% | 12.5% | 10% |

Applying these to the forecast arisings gives the capacity requirement in Table 6.

Table 6: Proposed Updated Targets applied to total C&I Waste Arisings in Kent (tonnes) *rounded*

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2015/16 | 2020/21 | 2025/26 | 2030/31 |
| Recycling/composting (tpa) | 535,000 | 637,000 | 736,000 | 845,000 |
| Other Recovery (tpa) | 237,800 | 446,000 | 435,000 | 422,000 |
| Remainder to Landfill (tpa) | 416,000 | 191,000 | 167,000 | 141,000 |

[5] This identifies the consequential predicted remaining management requirement assuming the other targets are met.

[6] Progressive reduction towards target brought forward by 5 years on EU limits due to predicted limited availability of landfill capacity in Kent and ambition to drive waste up the hierarchy.

# 3. Future Residual Non-hazardous Waste Management Needs for Kent

To calculate the overall residual waste management capacity requirement for Kent, the values from lines 3 and 4 of Tables 3 and 6 above are combined in Table 7 below.

Table 7: Projected Tonnages of Kent Residual Waste Arisings Requiring Management (tonnes) *rounded*

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2015/16 | 2020/21 | 2025/26 | 2030/31 |
| Other Recovery | 576,000 | 794,000 | 750,000 | 703,000 |
| Remainder to Landfill | 462,000 | 205,500 | 181,500 | 156,000 |

Table 7 above suggests that the maximum annual quantity of residual waste requiring 'other recovery' over the period 2015/16 to 2030/31 is predicted to be 794,000 tonnes at 2020/21 reducing to 703,000 at the end of the Plan period. The total landfill requirement over this period is predicted to be 4.4m tonnes based on a year on year requirement (or 4.4m cubic metres in line with the *Waste Topic Paper 8* assumption of a placed density of 1 t/m$^3$ i.e. 1 tonne of residual non hazardous waste would occupy 1 cubic metre of voidspace).

In addition to Kent's residual waste, account needs to be taken of London's residual waste as detailed in WNA 2017 Report entitled *Review of Waste Flows Between London & Kent*. As this is not specifically apportioned to a management route it is considered separately to Kent arisings as set out below.

## 3.1. London Waste

Table 8: Projected Management Requirements for London Residual Waste Imports (tonnes) *rounded*

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2015/16 | 2020/21 | 2025/26 | 2030/31 |
| Landfill &/or EfW (tpa) | 34,500 | 54,500 | 55,000 | 56,000 |

Table 8 shows that if all of it were managed through a facility providing 'Other recovery' then a maximum additional management capacity of 56,000 tonnes per annum would be required instead. If all of this waste were to be managed by landfill then the additional cumulative requirement for landfill void space would be c820,000 cubic metres.

## 3.2. Capacity for Management of Residual Non-Hazardous Waste by Other Recovery

*Allington Energy from Waste plant*

The Energy from Waste (EfW) plant at Allington is currently the only active major EfW managing residual waste in the county. This has capacity to process up to 500,000 tonnes per annum (tpa). Kent County Council as Waste Disposal Authority (WDA) has a contract to supply up to 374,000 tpa of Local Authority Collected Waste (LACW) to this facility until 2030 so it may be assumed that the remaining capacity i.e. 126,000 tonnes will be available for the management of residual non-hazardous waste from the Commercial and Industrial (C&I) waste stream arising in Kent. If the spare capacity is utilised by waste from elsewhere then under the net self sufficiency objective it is reasonable to plan on the basis that an equivalent tonnage of waste from Kent may be managed outside the Plan Area.

*Kemsley Sustainable Energy Plant*

Since adoption of the KMWLP, construction of a 'Sustainable Energy Plant' at Kemsley Paper Mill has commenced. While supplying heat and power to the adjacent paper mill, for the purposes of this exercise it is treated as an Energy from Waste facility as it utilises waste as its feedstock/fuel. Once fully operational (anticipated 2020/21) this provide management capacity for between 500,000 to 550,000 tonnes per annum of residual non-hazardous waste. This was granted a Development Order Consent[7] during the course of the Plan's production process (in March 2012) and *Waste Topic Paper 8* explains why its management capacity was not taken into account in the estimation of future waste management requirement at the time, in the following terms:

"*A.10 There is also a planning permission for the development of another EfW plant at Kemsley Paper Mill which would have some merchantable spare capacity. However, this has not been taken into account as part of the forecast modelling as it is a very recent permission and its construction has not started. Furthermore, the development of this plant is subject to the securing of contracts for SRF (Solid Refined Fuel) and it is too soon to ascertain whether this plant will be developed.*"

Waste to be managed at the Kemsley Sustainable Energy Plant (SEP) would comprise non-hazardous residual waste from municipal and commercial and industrial sources and may include up to 25,000 tpa of waste plastics arising from the adjoining paper making process currently managed through a smaller CHP plant onsite. It is intended that the majority of the waste would be sourced from within Kent, with the balance from the South East and elsewhere in the UK including London.

*Barge Way Advanced Thermal Conversion & Energy Facility*

[7] Permission Ref: SW/10/444 Approved 12 April 2011 Issued 6 March 2012

Consent was granted for the construction and operation of an Advanced Thermal Treatment (ATT) plant on 29th January 2016 (ref: SW/15/500348). The consent limits annual inputs to 48,000 tpa.

# 4. Assessing the 'Other Recovery' Capacity Gap for Residual Non Hazardous Waste

The 'Other Recovery' capacity gap can be calculated by comparing the 'Other Recovery' requirement (set out in Table 7 above) against the consented capacity for EfW to manage residual waste summarised in the previous section. This comparison is set out in Table 9 below.

Table 9: Projected 'Other Recovery' Capacity Gap for Kent Non Haz Residual Waste Arisings (tpa)

| | Milestone Year | | | |
|---|---|---|---|---|
| | 2016 | 2021 | 2026 | 2031 |
| *Other Recovery Requirement (Line 1 Table 7)* | *576,000* | 794,000 | 750,000 | 703,000 |
| Allington EfW capacity | *500,000* | 500,000 | 500,000 | 500,000 |
| Initial Capacity Gap | *76,000* | n/a | n/a | n/a |
| Kemsley SEP capacity at 2019 | *0* | 525,000 | 525,000 | 525,000 |
| Barge Way at 2021 | *0* | 48,000 | 48,000 | 48,000 |
| 'Other Recovery' Capacity Gap | *76,000* | 0 | 0 | 0 |

This indicates that there is no predicted shortfall in 'other recovery' capacity (the 'capacity gap') in the first future Milestone Year i.e. 2021 as the Kemsley SEP is now predicted to be fully operational by 2019. In addition, the Barge Way plant may come on stream during that period. In light of the initial shortfall being short term (i.e. less than 3 years), and taking account of the financial investment cost and timescale involved in the development of such additional capacity, it is not feasible for additional capacity to be developed to specifically address the gap indicated in the meantime. Therefore this waste has been planned for on the assumption that it will be disposed to Kent landfill as a worst case.

The discussion above only addresses those streams arising in Kent itself which are subject to Plan targets and as such assumes that London's non hazardous residual waste will go to landfill. If it were assumed that this waste was also to be managed at EfW facilities instead, then it could still be accommodated at consented EfW capacity. This is illustrated in Table 10. Again addition of the Barge Way consented capacity increase the surplus accordingly.

Table 10: Projected Overall Non Hazardous Residual Waste Management Needs (tonnes)

| | 2016 | 2021 | 2026 | 2031 |
|---|---|---|---|---|
| *Other Recovery Requirement (Table 7)* | *576,000* | 794,000 | 750,000 | 703,000 |
| minus Allington capacity | 500,000 | 500,000 | 500,000 | 500,000 |
| Remainder | 76,000 | 294,000 | 250,000 | 203,000 |
| minus Kemsley SEP capacity at 2020 | 0 | 525,000 | 525,000 | 525,000 |
| Other Recovery capacity gap<br>shortfall (+ve) / surplus (-ve) | - | -231,000 | -275,000 | -322,000 |
| Residual Waste from London | 34,500 | 54,500 | 54,500 | 55,000 |
| Remaining Other Recovery Capacity Gap | - | -177,000 | -220,500 | -267,000 |
| Barge Way at 2021 | | 48,000 | 48,000 | 48,000 |
| Total Remaining Other Recovery Capacity Gap<br>shortfall (+ve) / surplus (-ve) | - | -225,000 | -268,500 | -315,000 |

# 5. Implications for Kent Net Self Sufficiency for Residual Waste

Given that the policy driver to provide additional Other Recovery capacity is to ensure that Kent remains self sufficient in non hazardous residual waste management capacity throughout the Plan period, consideration has also been given to the implications of the predicted diversion to Other Recovery for the remaining consented non hazardous landfill capacity within the county.

## 5.1. Kent Non Hazardous Waste Landfill Capacity

Environment Agency data shows that at the end of 2016 there was 2,578,519 cubic metres of void remaining at the two landfills in Kent consented to accept non hazardous waste for disposal. An assessment of the residual management requirement after consented Other Recovery capacity comes on stream shows landfill capacity will still remain available to accommodate residues to the end of the Plan period. This is shown in Table 11.

Table 11: Total Predicted Residual Non Hazardous Waste Management Requirement (tonnes)

| | C&I | LACW | London [8] | Total Other Recovery Requirement | Operational EfW Capacity | Shortfall taken to be sent to Kent Landfill |
|---|---|---|---|---|---|---|
| 2016 | 237,800 | 338,068 | 34,364 | 610,233 | 500,000 | 40,000[9] |
| 2017 | 241,203 | 337,960 | 34,399 | 613,562 | 500,000 | 113,562 |
| 2018 | 244,607 | 338,636 | 34,433 | 617,676 | 500,000 | 117,676 |
| 2019 | 248,010 | 339,313 | 54,468 | 641,791 | 1,025,000 | 0 |
| 2020 | 251,413 | 339,992 | 54,502 | 645,907 | 1,025,000 | 0 |
| 2021 | 445,929 | 347,920 | 54,536 | 848,385 | 1,073,000 | 0 |
| 2022 | 450,452 | 341,353 | 54,571 | 846,376 | 1,073,000 | 0 |
| 2023 | 454,976 | 334,758 | 54,716 | 844,450 | 1,073,000 | 0 |
| 2024 | 459,499 | 328,136 | 54,862 | 842,497 | 1,073,000 | 0 |
| 2025 | 464,022 | 321,486 | 55,008 | 840,517 | 1,073,000 | 0 |
| 2026 | 435,078 | 314,808 | 55,155 | 805,041 | 1,073,000 | 0 |
| 2027 | 439,558 | 308,102 | 55,303 | 802,963 | 1,073,000 | 0 |
| 2028 | 444,039 | 301,367 | 55,543 | 800,949 | 1,073,000 | 0 |
| 2029 | 448,519 | 294,605 | 55,785 | 798,909 | 1,073,000 | 0 |
| 2030 | 452,999 | 287,814 | 56,028 | 796,842 | 1,073,000 | 0 |
| 2031 | 422,289 | 280,995 | 56,273 | 759,557 | 1,073,000 | 0 |

Taking account of projected management capacity required for non inert CDEW residues of c 800,000 tonnes over the Plan period (Table 24 Kent C, D & E Waste Management Needs 2017) plus inert cover/ restoration material (assumed to be 15% of void space) the Plan Area non hazardous waste landfill capacity would still provide sufficient capacity to the end of the Plan period and beyond. This is shown in Table 12.

[8] All London Waste assumed to be managed through 'Other Recovery'.

[9] Comparison between the 2016 value and the 2015 indicates that only just under 40,000 cubic metres of void was actually consumed in 2016.

Table 12: Predicted Depletion of Non Hazardous Waste Landfill void in Kent (m3)

| | Residual Non Haz taken to be sent to Kent Landfill (Table 11) | Kent Non inert CDEW input (Table 24 CDEW Report) | Inert Cover/ Restoration material @15% input | Void remaining |
|---|---|---|---|---|
| 2016 | 40,000[10] | | | 2,578,519 |
| 2017 | 113,562 | 110,803 | 33,655 | 2,320,500 |
| 2018 | 117,676 | 95,693 | 37,054 | 2,070,077 |
| 2019 | 0 | 80,584 | 17,646 | 1,971,848 |
| 2020 | 0 | 65,474 | 12,468 | 1,893,905 |
| 2021 | 0 | 50,365 | 9,425 | 1,834,116 |
| 2022 | 0 | 45,328 | 8,213 | 1,780,574 |
| 2023 | 0 | 40,292 | 7,276 | 1,733,007 |
| 2024 | 0 | 35,255 | 6,380 | 1,691,371 |
| 2025 | 0 | 30,219 | 5,490 | 1,655,663 |
| 2026 | 0 | 25,182 | 4,601 | 1,625,879 |
| 2027 | 0 | 22,664 | 4,090 | 1,599,125 |
| 2028 | 0 | 20,146 | 3,635 | 1,575,344 |
| 2029 | 0 | 17,628 | 3,189 | 1,554,527 |
| 2030 | 0 | 15,109 | 2,745 | 1,536,673 |
| 2031 | 0 | 12,591 | 2,300 | 1,521,781 |

## 5.2. Conclusion

The assessment shows that the combined consented EfW capacity and remaining consented non hazardous landfill capacity together is likely to be more than sufficient to meet the revised projected Plan needs for the management of residual non hazardous waste to the end of the Plan period. Therefore net self sufficiency in residual waste management capacity may be achieved in Kent without provision for additional Other Recovery capacity other than that which has already been consented. The predicted remaining non hazardous waste landfill void confers flexibility in the event of unforeseen changes in residual waste management requirements.

[10] Comparison between the 2016 value and the 2015 indicates that only just under 40,000 cubic metres of void were actually consumed in 2016.