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Kent Waste Needs Assessment 2022 Update

Hazardous Waste Management Requirements in Kent to 2039

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Version No.	Version Description	Key Changes
1.2	Post Consultation	Section 1.1: Emphasis added in light of proposed change to KMWLP regarding removal of Plan area commitment to net self sufficiency. Section 2.1: Reorganised and streamlined for clarity. Section 4: Addition of footnote relating to additional planning permission granted. Section 4.1.1: Overview Assessment of Management Capacity added. Section 4.1.2 Assessment of life of Pinden landfill added. Section 4.1.3: Additional information relating to APCr management requirements. Section 6: Conclusion expanded to include proposed wording of Policy CSW12 and commentary.

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Abbreviations and Glossary

Abbreviations

APCr	Air Pollution Control residues
CFC's	Chlorofluorocarbons
CRT	Cathode Ray Tube
C, D & E / CDEW	Construction, Demolition & Excavation Waste
EA	Environment Agency
ELVs	End of Life Vehicles
EWC	European Waste Catalogue
GVA	Gross value added
HTI	High Temperature Incinerator
HWI	Hazardous Waste Interrogator
HWRCs	Household Waste Recycling Centres
MRS	Metal Recycling Sites
nPPG	National Planning Practice Guidance
PI	Pollution Inventory
WDI	Waste Data Interrogator
WEEE	Waste Electrical & Electronic Equipment

Glossary of Terms

Construction, Demolition & Excavation Waste	Waste arising from construction and demolition activity, including excavation during construction, maintenance and repair activities, and mainly consists of inert materials such as soils, and some non-inert materials.
Duty to Cooperate	A legal test that requires cooperation between planning authorities and other bodies to maximise the effectiveness of Plan making on strategic matters.
End of Life Vehicles (ELVs)	Vehicles classed as waste having been declared as no longer usable and for which a Certificate of Destruction has been issued by DVLA. Deemed hazardous until hazardous components removed via depollution processes.
Energy from Waste (EfW)	The use of waste to generate energy (power and/or heat) or produce a gas that can be used as a fuel.
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 information on waste management matters and deals with other matters such as water issues including flood protection advice.
European Waste Catalogue (EWC)	Comprehensive listing of wastes, divided into 20 chapters, most of which are industry-based, although some are based on materials and processes. Each waste type is assigned a unique six-digit code.
Hazardous Waste Landfill	Sites where hazardous waste may be disposed by landfill. This can be a dedicated site or a single cell within a non-hazardous landfill, which has been specifically designed and designated for depositing hazardous waste.
Hazardous Waste	Waste requiring special management under the Hazardous Waste Regulations 2005 due to it posing potential threat to public health or the environment (when improperly treated, stored, transported or disposed). This can be due to quantity, concentration, or characteristics of the waste.
Incineration	The controlled combustion of waste. Energy may also be recovered in the form of heat (see Energy from Waste).
Industrial Waste	Waste arising from any factory and from any premises occupied by an industry (excluding mines and quarries).
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).
Pollution Inventory	Dataset compiled by the Environment Agency from information supplied by operators of regulated industrial activities. The pollution inventory provides information about releases and transfers of substances including reporting on annual emissions of certain substances to air,

	controlled waters and land, and off-site transfers in wastewater and waste. Facilities such as incinerators (inc high temperature) and major industrial processing sites such as solvent blending facilities report through the Pollution Inventory.
Recovery	Subjecting waste to processes that recover value 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.
Waste Transfer Station	A site to which waste is delivered for sorting or baling prior to transfer to another place for recycling, treatment or disposal.

1. Introduction

The term 'hazardous waste' is used in England, Wales and Northern Ireland to describe waste with hazardous characteristics as set out in the List of Wastes (LoW) Regulations.[1] Certain types of waste are classed as 'hazardous' because they possess properties that pose a threat to human health or the environment such as toxicity, flammability, corrosiveness and carcinogenicity. Hazardous waste is different to other waste considered as it does not have a discrete source as it is instead a collection of different materials, which are generally collected and managed separately due to their hazardous properties, which may arise from different sources. For example, fridges containing CFC gases and cathode ray tubes used in TV and computer monitor screens which are classed as hazardous waste may occur in both domestic and commercial waste streams but require separate management from other wastes to minimise the environmental impact of their management.

Hazardous wastes generally arise within the following waste streams depending on their origin:

- Local Authority Collected Waste (LACW)
- Commercial and Industrial Waste (C&I)
- Construction and Demolition and Excavation Waste (CDE)

As the management requirements of the wastes classed as hazardous are generally different to that of the non-hazardous elements of these waste streams, hazardous waste needs to be planned for separately. Therefore, to avoid 'double counting' the quantities are excluded from consideration in the C&I waste, CDE waste and LACW stream reports, and are considered separately in this report instead.

1.1 Kent Minerals and Waste Local Plan

The baseline report used to underpin the 'early partial review' of the Kent Minerals & Waste Local Plan (KMWLP) adopted in September 2020 was the 'Update' dated September 2018[2]. It assessed future needs for hazardous waste management capacity based on a review of Environment Agency held data from the Hazardous Waste Interrogator, the Waste Data Interrogator and the Pollution Inventory. The most current year of data available at that time related to 2016 and the report found total hazardous waste arisings from Kent to be c260,500 tonnes. The report included an assessment of capacity for hazardous waste management within Kent, which indicated that c216,500 tonnes of hazardous waste were managed within Kent during 2016; suggesting that net self sufficiency was close to being achieved. It should be noted that data on the quantity of hazardous waste managed was taken as a proxy for assessment of actual consented hazardous waste management capacity. Given the data used

[1] List of Wastes (England) Regulations 2005 which came into force on 16th July 2005. http://www.legislation.gov.uk/uksi/2005/895/contents/made

[2] https://consult.kent.gov.uk/file/5162974

relates to tonnes of waste actually managed it is reasonable to believe that theoretical capacity would be significantly greater.

Net Self Sufficiency

The Kent MWLP has a strategic objective of net self-sufficiency for the Plan area. That is to say, overall, the aim is to ensure sufficient capacity is provided to manage the tonnage of waste equivalent to that predicted to arise within Kent over the Plan period. This does not necessarily mean that every tonne of waste produced in Kent ought to be managed within Kent, rather that overall, there should be a balance of provision.

Policy CSW 12 of the adopted KMWLP has a stated intention to "*maintain net self sufficiency in the management of hazardous waste throughout the plan period*" and, in light of this, a strategic site was identified in the KMWLP to receive air pollution control residues from Allington EfW plant. However, as recognised in the South East Waste Planning Advisory Group (SEWPAG) Statement of Common Ground (SoCG), planning for net self sufficiency in the management of hazardous waste ignores the fact that the management of hazardous waste involves many distinct specialist management activities which are often only viable at a regional, or larger scale, and so this principle is not considered to apply to hazardous waste specifically. Given KCC is a signatory to the SoCG as a member of SEWPAG, it is now proposed to update the KMWLP, including Policy CSW12, to remove the objective of net self sufficiency insofar as it relates to hazardous waste as part of the update to the KMWLP.

This report updates and supersedes the 2018 report as an assessment of future hazardous waste capacity requirements in Kent using data from 2020. This report uses a combination of available datasets to provide a more current and accurate assessment of arisings and capacity.

Given that it is now proposed to remove the commitment to achieve net self sufficiency for hazardous waste management contained in the Kent MWLP, any indication of Kent's state of net self sufficiency ought only to be taken as a guide in the context of the current objective.

2. Calculating a Baseline Arisings Estimate

The Environment Agency's Hazardous Waste Interrogator (HWI) provides data relating to movements of waste which is consigned as hazardous when it is moved and/or changes hands e.g. when it is passed from producer to manager. This means that hazardous waste consigned between producers and disposal/treatment facilities, as well as most consignments between treatment facilities and final disposal sites, are recorded and then aggregated into a single dataset and made publicly available in a HWI that is updated each year.

'Consignment notes' are used to record transfers of hazardous waste and it is the information from these notes that is reported in the HWI. The recording method means that the dataset may be incomplete for the following reasons:

- Consignment notes are not always issued where hazardous waste is managed on the site of production by the producer or managed on the same site by the same operator.
- Certain types of hazardous waste may not be consigned by the producer if the producer is unaware that the waste is to be dealt with, and so classified, as hazardous waste. Therefore, such waste may only be recorded on receipt at a site with an Environmental Permit which is required to record and report inputs to the Environment Agency. These site records are aggregated into the annual Waste Data Interrogator (WDI) released by the Environment Agency. For example, End of Life Vehicles, which are classed as hazardous waste, will often not be consigned to a vehicle de-pollution site as hazardous waste because the producer (the owner of the vehicle) does not consider it to be hazardous waste and hence it is not recorded in the HWI. However, on acceptance at the de-pollution site, it would be recorded as hazardous waste as an input to a site with an Environmental Permit.

Both of the above cases may result in under-reporting in the HWI of actual hazardous waste arisings. However, to a certain extent this is balanced by aspects of the hazardous waste consignment process that may result in over-reporting. Two ways in which over-reporting may occur are as follows:

- Double counting in the HWI may occur when a single load of hazardous waste is managed at more than one site, for example, if waste is moved to an intermediate waste management site within Kent and then moved on to a further waste management site it will be consigned twice and so reported twice.
- The person or company consigning hazardous waste may not have facilities to precisely measure the quantity of waste being consigned so may estimate the amount per load. This may result in a discrepancy between the quantity recorded as having been consigned and the quantity actually recorded at the receiving site which would normally have a reliable measurement method such as a weighbridge.

In light of the limitations associated with sole reliance on the HWI data, a number of datasets have been accessed to improve the accuracy of estimates of hazardous waste arisings for Kent as follows:

1. The EA Hazardous Waste Interrogator 2020 - movements.

2. The EA Waste Data Interrogator 2020 – inputs to permitted management sites.
3. The EA Waste Data Interrogator 2020 – outputs from permitted management sites.
4. The EA Pollution Inventory

The results obtained from each dataset are set out below.

2.1 The Environment Agency Hazardous Waste Interrogator (HWI) 2020

The EA Hazardous Waste Interrogator 2020 indicates the following:

- In 2020 172,044 tonnes of hazardous waste were produced in Kent;
- Of this, 60,019 tonnes were managed in Kent and 112,026 tonnes managed outside Kent.
- In addition, 86,268 tonnes of waste were imported to Kent for management.

2.2 The Environment Agency Waste Data Interrogator (WDI) 2020

The EA WDI 2020 indicates the following:

- In 2020 199,173 tonnes of hazardous waste managed at permitted sites (both within and beyond Kent) were attributed to Kent as its source;
- Of this, the EA WDI indicates that 59,887 tonnes were managed in Kent.
- In addition, 108,204 tonnes of waste were imported for management in Kent.

The data derived from the WDI and HWI referred to above is summarised in Table 1:

Table 1: Plan Area Hazardous Waste Arisings Data Sources

Blue indicates values contributing to arisings, pink to Plan Area management capacity

	Plan Area Waste Arisings (tonnes)		Plan Area Management (tonnes)	
Data source	Quantity Managed Attributed to Kent	Of which Quantity Managed outside Plan Area (exports)	Quantity Managed in Plan Area Attributed to Kent	Quantity Managed in Plan Area from outside (imports)
HWI	172,044	112,026	60,019	86,268
WDI (inputs to facilities)	199,173	139,286	59,887	108,204
Preferred Value	**199,173**	**139,286**	**60,019**	**108,204**

Table 1 shows that more waste is recorded as arising from Kent in the WDI (199,173 tonnes) than is reported as being consigned from Kent in the HWI (172,044 tonnes). Given the purpose of this reconciliation exercise is to ensure that the value obtained is comprehensive the WDI values being larger are preferred. Reporting of higher values in the WDI is also observed when considering quantities of waste managed in Kent where the total quantity recorded in the WDI is 168,091 tonnes (59,887 + 108,204) as compared with 146,287 tonnes (60,019 + 86,268) in the HWI.

Comparison between arisings (199,173 tonnes) and waste managed (168,091 tonnes) in 2020 suggests that while a significant quantity of hazardous waste was managed in Kent, overall Kent was a net exporter of hazardous waste. However, given this data is only a snapshot of management capacity in Kent in the year 2020, it is expected that the true capacity will be in excess of that actually utilised as all sites would not be operating at peak throughput in 2020.

2.3 Pollution Inventory Site Inputs

The EA Pollution Inventory captures data on waste arising from certain industrial installations, regulated under the Industrial Emissions Directive (IED) permitting regime. Such installations may manage their waste onsite or send their waste for offsite management. This dataset is considered for the following reasons:

- As previously stated, the HWI may not capture all hazardous waste arisings as waste managed on the site of production through onsite treatment doesn't need to be consigned and it may be managed onsite by a method that is recorded in the Pollution Inventory;
- The WDI datasets can be prone to under-reporting by the failure to attribution all waste down to WPA level, some of which way have actually arisen within Kent[3]. The Pollution Inventory does record sources of inputs and so allows for a cross check of the WDI.

A check has therefore been made of hazardous waste data for facilities that report through the Pollution Inventory. This dataset shows that 111,705 tonnes of hazardous waste was produced by IED permitted installations located within Kent. However, given that the value from the Pollution Inventory is significantly lower than the WDI and HWI arising values and is therefore taken to have been included within the WDI and HWI values on the basis that it will ultimately be managed through a permitted facility reporting through the WDI, and in most cases moved offsite and would therefore be subject to consignment and hence reported through the HWI. Therefore the Pollution Inventory data has not been considered further.

[3] c27,500 tonnes of hazardous waste was managed at Kent permitted facilities that was not attributed down to WPA level in 2020.

2.4 Tracking Exports of Kent's Hazardous Waste

This section assesses the management routes followed by hazardous waste arisings from Kent. This section focuses on waste produced within, but managed outside, Kent. The HWI is used as the primary source, cross checked with the WDI to identify the specific receiving site where possible. This exercise is important to identify WPAs hosting receiving facilities with whom Kent County Council ought to engage under the Duty to Co-operate to establish if the current patterns of management can continue for the Plan period.

Table 1 shows that the HWI identified just over 112,000 tonnes of hazardous waste leaving Kent for management. This was managed at facilities located within a wide range of WPAs. Applying a significance threshold, whereby only WPAs receiving over 500 tonnes of waste are considered, reduces the number of receiving WPAs down to 33 (as shown in Table 2), with inputs to facilities in four WPAs accounting for c50% of the total as follows:

- Northamptonshire (24,501 tonnes),
- Surrey (16,479 tonnes),
- Lincolnshire (11,380 tonnes); and
- South Gloucestershire (10,791 tonnes).

This is presented in rank order in terms of tonnage, type and fate in Table 2.

Table 2: WPA's Receiving Hazardous Waste from Kent (500t or more in either WDI or HWI) in alphabetical order

Source: Environment Agency WDI 2020, Environment Agency HWI 2020

Key: Green: close match Amber: reasonable match Red: mismatch

Deposit WPA	WDI Total (tonnes)	HWI Total (tonnes)	Hazardous Waste Management Detail
Bexley	1,049	0	ELVs, lead batteries for recovery
Bristol City	847	601	Infectious waste for incineration
Cambridgeshire	1,029	2,468	Mixed hazardous waste from mechanical treatment + soils and stones for recovery
Cheshire West & Chester	1,175	833	Slags, and solid waste from gas treatment for storage + transmission oils for recovery
Derbyshire	516	1,064	Acids for treatment
East Sussex	1,088	0	Waste Electrical and Electronic Equipment + waste containing chlorofluorocarbons for recovery
Essex	1,232	928	Oil water for recovery + materials containing asbestos for transfer
Gloucestershire	0	590	Sludges
Greenwich	9,426	1,331	Oils for recovery
Hampshire	1,357	0	Dangerous chemical + cytotoxic medicines for incineration
Havering	690	507	Oils for treatment
Hertfordshire	1,210	1,392	Liquids and oils for treatment
Kingston Upon Hull City	1,108	0	Oils for recovery
Lancashire	8,882	7,236	Bottom ash to landfill
Leeds	6,749	6,965	Solid wastes from gas treatment for treatment
Leicestershire	535	0	WEEE for recovery
Lincolnshire	8,304	11,380	Materials containing CFCs + premixed wastes with one hazardous waste for recovery
Medway	4,645	3,613	Oils for recovery + infectious waste for treatment
Northamptonshire	24,846	24,501	Bottom ash to landfill, soils and stones for recovery, solid wastes from gas treatment for treatment
Nottinghamshire	938	527	Oils for recovery
Peterborough	1,056	0	CDE for landfill
Salford	1,323	1,204	Sludges for treatment
Sandwell	1,728	2,137	Materials containing asbestos for recovery
Sefton	0	616	Oils
South Gloucestershire	10,792	10,791	Solid wastes from gas treatment for recovery
Staffordshire	778	748	Hazardous components for recovery
Stoke-on-Trent City	1,368	1,440	Soils and stones for recovery
Suffolk	10,305	1,279	Solid wastes from gas treatment for recovery
Surrey	21,737	16,479	CDE, materials containing asbestos and sludges for landfill
Thurrock	4,669	577	Bituminous mixtures + materials containing asbestos for transfer
Walsall	0	920	Lead batteries
Warwickshire	574	0	Machining emulsions and solutions free of halogens for recovery
Wolverhampton	2,049	2,022	Soils and stones for treatment
Total	**132,004**	**102,149**	

Table 2 indicates that some inputs recorded as coming from Kent in the WDI are not being attributed to Kent in the HWI. In a smaller number of cases the situation is reversed. This suggests that the WDI dataset for Kent's hazardous waste arising is the most reliable and hence represents the 'best available' data for the purposes of forward planning for this waste stream in Kent.

Conclusion

Overall, hazardous waste arisings are largely identical with the value obtained in 2016[4] using the WDI dataset (199,270 tonnes vs 199,173 tonnes).

Table 3 presents a comparison between the datasets for the 2016 and 2020 hazardous waste arisings in Kent.

Table 3: Comparison between data for Kent Hazardous Waste Arisings: 2016 vs. 2020

Dataset	2016	2020	Diff	%
WDI	199,270	199,173	-97	-0.05%
HWI	214,396	172,044	-42,352	-20%

This indicates that the tonnage reported in the WDI has seen zero-growth over the 4-year period from 2016. In contrast the HWI tonnages have decreased more markedly.

Table 2 also indicates the shifting flow of hazardous waste, confirming the importance of monitoring flows on a regular basis and undertaking ongoing Duty to Cooperate engagement whilst bearing in mind the specialist nature of some management processes and facilities which may involve movements and receipts from wide catchments.

[4] *Kent Waste Needs Assessment 2018 Hazardous Waste Needs Assessment September 2018 Update BPP Consulting 5th September 2018.*

3. Composition of Plan Area Hazardous Waste

In order to understand the source of the difference in values for 2020 vs 2016, the composition of the hazardous waste has been analysed to identify the principal arisings that contribute to the 2020 value and allow comparison with the 2016 value.

Table 4 below compares the profile of arisings on a waste by waste basis. The hazardous waste types listed account for c88% of the total WDI arisings value of 199,173 tonnes.

Table 4: Kent Hazardous Waste Arisings: Principal Waste Streams (5,000 tpa or more)
Source: WDI plus HWI; (values in italics are waste management facility outputs)

Category	2016	2020	% diff
Combustion residue	*63,519*	*61,532*	*-3%*
Contaminated CDEW	46,584	11,030	-76%
ELV	37,417	16,167	-57%
WEEE	23,297	13,653	-41%
ELV oils & batteries	*15,355*	*12,503*	*-19%*
Bottom ash & fly ash	*15,102*	*12,417*	*-18%*
Solidified wastes	*9,250*	*8,453*	*-9%*
Asbestos based CDEW	9,891	9,021	-9%
Clinical	6,087	6,591	8%
Physico-chemical treatment sludges	*5,996*	*6,907*	*15%*
Premixed wastes	23	9,744	+100%
Process residues	25	5,240	+100%

Comments on Table 4 are as follows:

1. Combustion residues – EWC 19 01 07* from EfW plants predominately those listed below:
    - Kemsley SEP 12, 447 tonnes
    - Allington EfW Plant38, 284 tonnes
2. Contaminated CDEW has reduced by 76%.
3. ELVs have fallen significantly as has the output wastes from authorised ELV treatment facilities. This may be due to extracted fluids such as petrol and diesel being used onsite.
4. WEEE has reduced which may be as a result of the fall in the number of fridges with CFCs and the fall in CRT screens (TVs and computer monitors) as the quantity in use diminishes due to substitution by other non-hazardous materials.
5. Bottom ash and fly ash – recorded under EWC code 10 01 14* reduced by 18%.
6. Solidified waste from waste management facilities has fallen by 9%.
7. Asbestos based CDEW has reduced marginally.
8. Infectious clinical waste has increased marginally.
9. Physico-chemical treatment sludge has increased by 15%.
10. Two additional hazardous waste types appear in the WDI 2020 dataset, that of premixed wastes and process residues.

This comparison demonstrates how over a 4-year period the profile of hazardous waste arisings has changed significantly and therefore illustrates that estimates of arisings ought to be kept under regular review to ensure that any emerging capacity requirements are properly understood and that planning policies remain fit for purpose.

4. Hazardous Waste Management Capacity in Kent

The following section considers the different types of hazardous waste management capacity that exist in Kent and establishes the existing baseline hazardous waste management capacity in Kent. In establishing capacities, only the input values have been considered (as explained at the beginning of this report). This may underestimate overall capacity given consented capacity cannot be expected to have been operating at peak capacity and some may not have been operational in 2020[5].

Table 5: Inputs of Hazardous Waste to Different Categories of Facility in Kent (regardless of origin)

Source WDI 2020

Site Category	Facility Type	Total
Landfill	Hazardous Merchant LF	9,342
	Hazardous Restricted LF	18,972
	Landfill Total	**28,314**
Metal Recycling Site	Vehicle Depollution Facility	30,419
	Metal Recycling	8,225
	Metal Recycling Site Total	**38,644**
Transfer	CA Site	2,552
	Clinical Waste Transfer	166
	Haz Waste Transfer	4,250
	Non-Haz Waste Transfer	2,524
	Transfer Total	**9,494**
Treatment	Biological Treatment	14,463
	Material Recycling Facility	30,622
	Physical Treatment	208
	Physical-Chemical Treatment	38,612
	Other Transfer/Treatment	260
	Treatment Total	**84,164**
Incineration	Hazardous Waste Incinerator	4,543
Storage	Storage Total	2,932
	Grand Total	168,090

4.1.1 Capacity Assessment

Table 5 shows that permitted waste management facilities in Kent managed a total of c168,000 tonnes of hazardous waste in 2020. This presents a reasonably close match with the arisings value. Of this c140,000 tonnes of hazardous waste was managed through non landfill routes, and given landfill capacity is a special case this value may be taken as a minimum value for operational management capacity in Kent in 2020.

[5] For example permission for a facility capable of managing up to 25,000tpa of hazardous waste at Unit 6 Rod End Estate Northfleet was granted in May 2023 (EDC/22/0110 (KCC/DA/0082/2022)). It is understood this is now operational.

Given the management needs of different hazardous wastes vary significantly the focus of the next section is on the continued provision of landfill capacity for hazardous waste in Kent.

4.1.2 Asbestos Waste Landfill

Examination of the WDI dataset indicates that 9,021 tonnes of asbestos containing waste was generated within Kent in 2020 of which 5,739 tonnes went direct to landfill. The dataset also reports that in 2020 the Pinden Quarry Landfill site in Kent received 9,342 tonnes of asbestos containing waste, out of a total input of 13,002 tonnes, with the difference being made up by inert waste used as a cover/restoration material. This therefore indicates that, in 2020, marginally more asbestos based waste was managed in Kent to that produced (9,342 tonnes vs 9,021 tonnes).

Environment Agency data for remaining void capacity of landfills at the end of 2020 indicates that there was 121,500m^3 of remaining landfill void at Pinden Quarry. To determine what capacity that might offer for the management of Kent asbestos arisings the following calculation has been undertaken:

1. Void available for hazardous vs inert waste = (9,342 /13,002) = 72% of void = 87,480m3

2. Applying a density factor of 1.2 tonnes of hazardous waste per m3 = 104,976 tonnes

If production of asbestos containing waste continues at its most current rate (2020), this indicates capacity would last 11yrs. However asbestos arisings can reasonably be expected to decline over time as the asbestos in Kent building stock diminishes, asbestos having been banned from use since 1999. Moreover only half of the tonnage produced was actually sent direct to landfill in 2020, so alternative methods of management can be expected to meet some of the need. **Therefore it is considered that the capacity offered by Pinden Landfill ought to suffice to meet Kent's need for the disposal of asbestos based waste for the Plan period i.e. to 2039**.

4.1.3 Treatment Capacity for Air Pollution Control Residues

Provision has been made in the KMWLP for an extension to Norwood Farm landfill as a strategic site to accommodate hazardous flue ash residues from the Allington EfW that services the KCC LACW residual waste management contract. This was on the following basis as stated in the 2016 adopted version of the Kent MWLP:

> *6.4.3 The landfill at Norwood Quarry on the Isle of Sheppey accommodates the hazardous flue ash residues from the Allington EfW facility, but it has limited consented void space remaining. To make provision for this waste for the duration of the Plan, it is considered essential that Kent has the capacity to deal with these residues. Enabling the continued management of hazardous flue ash within Kent has the added benefit of contributing to achieving the continued net self-sufficiency in hazardous waste management capacity.(83)*
>
> *6.4.4 Therefore, a matter fundamental to the central achievement of the Plan is the identification of a suitable location for the treatment or disposal of the hazardous*

waste residues within Kent. No site for the treatment of this waste was submitted to the County Council in response to the call for sites in 2010 and only one site was put forward for its disposal. The submission for hazardous waste disposal was for an extension to the existing facility at Norwood Quarry, which benefits from suitable geology for engineering a hazardous landfill.

Close reading of this text shows that provision for the extension to Norwood Quarry was predicated on the following assumptions:

1a. The residues from the Allington EfW plant could only be managed by landfill due to its particular properties[6][7], and, if that were not the case,

1b. the absence of alternative management capacity within Kent.

2. The site having limited capacity remaining.

3. The achievement of net self sufficiency in hazardous waste management capacity remained a strategic objective for the Kent MWLP.

Taking each point in turn:

1a. The residues from the plant could only be managed by landfill

The data presented in the WDI and HWI show an increasing tonnage of the APC type residues produced by the Allington EfW plant being managed through alternative routes with nearly 50% recorded as going for management by means other than landfill. The data for 2020 is displayed in Table 6 below.

Table 6: Destinations of APCr from Allington EfW in 2020

Receiving Facility	Operator	Landfill	Treatment	Grand Total
Avonmouth Aggregate Facility	Carbon8 Aggregates		10,791	10,791
Brandon Aggregate Manufacturing Plant			420	420
Knostrop Waste Treatment Facility			6,749	6,749
Norwood Farm Landfill	Waste Recycling Group (Central)[8]	18,972		18,972
Grand Total		**18,972**	**17,960**	**36,932**

The trend away from landfilling to treatment, and from treatment to recovery, in accordance with the waste hierarchy, is shown in Figure 1 below.

[6] Due to the type of grate system used i.e. fluidised bed.

[7] A representation for an enlarged extension to Norwood Farm Quarry was made by the promoter at the time of the 2016 KMWLP. No modification was made on the grounds that at the time the Waste Acceptance Criteria derogation permitting the continued disposal of APC residues to landfill may be withdrawn as stated by Government plus the void would only be needed for residues from the Allington EfW alone due to their particular properties.

[8] WRG is a subsidiary of the FCC Environment Group.

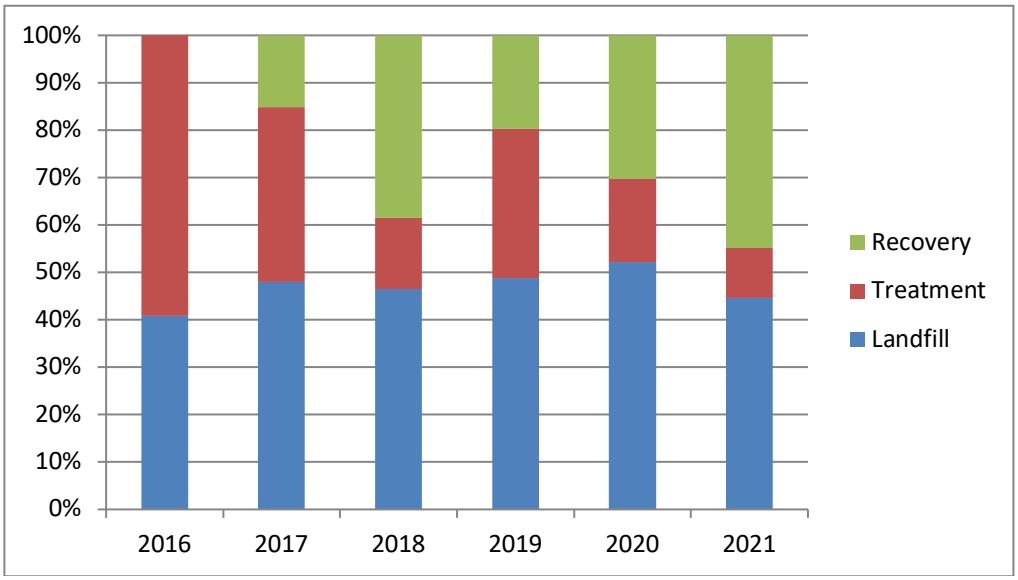

Figure 1: Fates of Allington APCr 2016-2021 (source WDI & HWI)

1b. The absence of alternative management capacity within Kent.

Planning consent for an APCr processing facility at Hermitage Quarry near Maidstone was granted by Kent County Council in 2020[9]. This allows up to 30,000tpa of APCr to be accepted in the manufacture of aggregate. This has completed trials and its process outputs have gained 'End of Waste' status from the Environment Agency. This means that the product can be used as a substitute for virgin materials, avoiding the environmental impact associated with the production of the virgin material. This ranks as waste avoidance on the waste hierarchy and therefore the management of APCr through this route is highly desirable as compared to landfilling. The availability of plentiful landfill capacity for APCr in the vicinity of this facility could undermine its viability, particularly given that the landfill tax, the principal policy tool to drive waste out of landfill, does not reflect the higher cost of hazardous waste management.

2. The site having limited capacity remaining.

The 2021 Annual Report submitted by the operator of Norwood Farm landfill to meet the requirements of Condition 3 states the following:

(iv) An assessment as to whether operations are on target to be completed within the permitted timescale

The total remaining whole site void as of the survey date 31/12/21 is 173,335 cu m. Remaining engineered void as of 31/12/21 is 93,319 cu m.

Forecast tonnages for 2023 onwards are circa 10,000 tons per annum with a density of 1.14. Based upon this estimation the site will not be up to final capacity until June 2038.

[9] Permission TM/19/2091 (KCC/TM/0200/2019)

3. The achievement of net self sufficiency in hazardous waste management capacity as a strategic objective for the Kent MWLP.

As the KMWLP objective for net self sufficiency in hazardous waste management capacity goes beyond the requirements of national policy and is not an appropriate principle to apply to hazardous waste specifically[10], it is proposed that this is not included in the updated KMWLP.

4.1.3.1 Conclusion

Whilst provision was made in the KMWLP for the continued disposal of Allington EfW residues to landfill (by virtue of the allocation of an extension to Norwood Quarry landfill in Policy CSW5), the above assessment indicates that the need for additional void to the extent projected previously, may not materialise and that alternative management routes to landfill are viable. Given that landfill is at the bottom of the waste hierarchy, future arisings of APC residue requiring management may be managed through other methods that are preferred to landfill, either within Kent or elsewhere. The tension between continuing to identify the Norwood Quarry site as a strategic allocation and the need to encourage diversion of this waste from landfill, where possible, is already recognised in para 6.4.3 of the Kent MWLP in the following terms:

> "*While there is a risk that identifying the extension area at Norwood Quarry as a Strategic Site for Waste could hinder the development of alternative treatment solutions for the flue ash, there is a need to make provision for this waste stream*."

Given the above, the continued allocation of Norwood Quarry as a strategic site in the Kent MWLP is no longer considered justified.

[10] As set out in the SEWPAG Statement of Common Ground

5. Forecasting Future Hazardous Waste Management Capacity Requirements

5.1 Approach

While there is no expectation in national policy that individual Plan areas be self sufficient in hazardous waste management capacity, it is still appropriate to consider whether the current provision of capacity will be sufficient to meet any emerging future needs within the Plan area i.e. Kent. A starting point for this is to consider what quantity and types of hazardous waste might arise in Kent during the Plan period.

5.2 Forecasting future waste arisings

While Planning Practice Guidance advises that future hazardous waste arisings be estimated by extrapolating time series data drawn from the HWI, reliance on historical data from the HWI to establish possible future trends is not considered to be reliable. This is largely due to frequent changes in the definition of hazardous waste and refinement of regulatory guidance which has tended towards increasing range of waste being classed as hazardous and thereby 'artificially' inflated quantities of arisings. For example, the Environment Agency has recently identified soft furnishing treated with persistent organic pollutants (PoPs), in the form of flame retardants, as hazardous requiring disposal by incineration. Also, as the baseline calculation methodology demonstrates, simple reliance on the HWI, as suggested by PPG, may significantly underestimate arisings.

The 2013 National Policy Statement for Hazardous Waste[11] states that arisings of hazardous waste are expected to increase for the following reasons:

- Continuing consumer demand means that hazardous waste will continue to arise as consumer durables containing hazardous materials are discarded.
- Increasing use of producer responsibility schemes, such as those provided for Waste Electrical and Electronic Equipment (WEEE) which require the separate collection of WEEE resulting in more hazardous items being removed from the mixed municipal waste stream and collected separately as hazardous waste.
- Changes to the list of hazardous properties in the revised Waste Framework Directive and changes to the European Waste List, lead to further increases in the amount of waste that must be managed as “hazardous”.
- There are still uses in which components that become hazardous waste may be unavoidable for the foreseeable future. For example, the use of oil in internal combustion engines.

[11] National Policy Statement for Hazardous Waste: A framework document for planning decisions on nationally significant hazardous waste infrastructure Defra June 2013.

However, ultimately, it is reasonable to expect that over time hazardous waste production will stabilise, if not decline, for the following reasons:

1. Regulations banning the use hazardous materials and components in consumer products and promotion of more circular design promoting reuse/recycling mean that over time the quantity of hazardous material in circulation should decline.
2. Hazardous materials such as asbestos and chromate treated wood bound up in the building stock will reduce as the now banned elements are replaced.
3. The use of hazardous materials in manufacturing declines for both worker health & safety & product safety reasons.
4. The incidence of contamination by industrial use will reduce due to more stringent regulatory controls and point 3 above.

The Resources & Waste Strategy for England published by Government in 2018 specifically identified the need to encourage waste producers and managers to implement the waste hierarchy in respect of hazardous waste, but does not identify any specific actions to ensure this is achieved.

Given the above, it is concluded that quantities of hazardous waste arising in Kent are likely to remain at a similar level to that established in this report but may change in composition over time.

5.3 Future Hazardous Waste Management Capacity Requirements

There is a reasonable balance between arisings values and quantities of waste managed in Kent in 2020. Other than landfill capacity, it is assumed that the management capacity currently utilised for the management of hazardous waste arising in Kent will remain available over the Plan period (to 2039). For facilities within Kent, this will be assured by the Plan's safeguarding policies, and for those facilities located outside Kent, through verification with those WPAs within whose areas facilities managing hazardous waste from Kent are currently situated under the Duty to Cooperate.

6. Overall Conclusions on Hazardous Waste Capacity Management Requirements

The key findings of this report are as follows:

1. Examination of the datasets indicates that between c172,000 and 199,000 tonnes of hazardous waste was produced in Kent in 2020.
2. There is a reasonable balance between arisings values and tonnes of waste managed in Kent in 2020.
3. Substantial quantities of hazardous waste arising in Kent are managed outside Kent and the continuation of these flows ought to be verified with receiving WPAs (identified in Table 2).
4. While the quantity of arisings are not expected to increase over the Plan period, the types and management methods are likely to. .

It is therefore considered that the current provision of capacity ought to suffice for the purposes of forward planning for hazardous waste arising in Kent for the Plan period.

However, given the management needs of different hazardous wastes vary significantly, the changing nature of hazardous waste and its management requirements the provision of additional capacity for the management of hazardous waste in Kent cannot be ruled out. It may be justified to meet specific needs which may extend beyond the catchment of Kent. This addressed by Policy CSW 12 which is shown below (with proposed updates):

Policy CSW 12

Hazardous Waste Management

~~To maintain net self-sufficiency in the management of hazardous waste throughoutthe plan period~~, **D**~~d~~evelopment proposals for built hazardous waste management facilities will be granted planning permission in locations consistent with Policy CSW 6 **and for landfill sites in accordance with Policy CSW9**, regardless of whether their catchment areas for waste extend beyond Kent.