Kirklees Waste Needs Assessment 2025

Hazardous Waste Management Requirements in Kirklees to 2043

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Abbreviations

Abbreviation	Full Term
APCr	Air Pollution Control residues
C & I	Commercial & Industrial Waste
C, D & E	Construction, Demolition & Excavation Waste
CFC	Chlorofluorocarbon (gases)
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
ELVs	End of Life Vehicles
EWC	European Waste Catalogue
HWI	Hazardous Waste Interrogator
HWRCs	Household Waste Recycling Centres
IED	Industrial Emissions Directive
LACW	Local Authority Collected Waste
MRS	Metal Recycling Sites
PPG	Planning Practice Guidance
PI	Pollution Inventory
SNRHW	Stable non-reactive hazardous waste
WDF	WasteDataFlow
WDI	Waste Data Interrogator
WEEE	Waste Electrical & Electronic Equipment
WNA	Waste Needs Assessment
WPA	Waste Planning Authority
WTS	Waste Transfer Station
WYCM	West Yorkshire Capacity Model

Glossary of Terms

Term	Definition
Commercial Waste	Waste from factories or premises used for the purpose of trade or business, sport, recreation or entertainment.
Construction, Demolition & Excavation Waste	Waste arising from construction and demolition activities, including excavation during construction, mainly consisting of inert materials such as soils, stone, concrete, and brick. This waste stream also contains non-inert elements such as wood, metals, plastics, cardboard and plasterboard
DEFRA	The UK Government department responsible for developing national waste management policy.
Duty to Cooperate	The Duty to Cooperate is a legal test that requires cooperation between local planning authorities and other public bodies to maximise the effectiveness of policies for strategic matters in Local Plan making.
End of Life Vehicles	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.
Environment Agency	The body responsible for the regulation of waste management activities through issuing Environmental 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.
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. Otherwise referred to as List of Waste (LoW).
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 risk to public health or the environment (when improperly treated, stored, transported or disposed). This can be due to the quantity, concentration, or its characteristics.

Term	Definition
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".
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).
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).
Other Recovery	Subjecting waste to processes that recover value by means other than recycling and composting – mainly thermal treatment to recover energy.
Recovery	Subjecting waste to processes that recover value including recycling, composting or thermal treatment to recover energy.
Recycling	The sorting and separate storage of materials extracted from the waste stream for reprocessing either into the same product or a different one.
Vehicle depollution	Removal of hazardous components from End of Life vehicles. May only take place at authorised facilities permitted to do so.
Waste Planning Authority (WPA)	The local authority responsible for waste development planning and control. In this case Kirklees Council.
Waste Transfer Station	A site to which waste is delivered for bulking prior to transfer to another place for further processing or disposal.
Waste Electrical and Electronic Equipment (WEEE)	Waste from electrical and electronic equipment which includes a large range of devices such as computers, fridges and mobile phones at the end of their life.

Introduction

1.1 Kirklees Council contracted BPP Consulting to produce the Kirklees Waste Needs Assessment 2025 (WNA 2025). This uses 2023 data, from which, waste arisings to 2043 have been forecast and any resulting management requirements assessed.

1.2 The WNA 2025 covers the following reports:

1. Management Requirements for Local Authority Collected Waste to 2043;
2. Management Requirements for Commercial & Industrial Waste to 2043;
3. Management Requirements for Construction, Demolition & Excavation Waste to 2043;
4. Management Requirements for Hazardous Waste to 2043;
5. Scoping Review of Management Requirements for Other Waste;
6. Review of Strategic Waste Flows.
7. Overview of above.

1.3 This report estimates the quantity of hazardous waste arising in Kirklees in 2023 and from this baseline arisings value forecasts and assesses its projected management requirements through to 2043. Due to the variable nature of hazardous waste and differing management requirements, forecasts have been generated by waste type.

1.4 The term 'hazardous waste' is used to describe waste that possess properties considered to pose a threat to human health and/or the environment such as toxicity, flammability, corrosiveness and carcinogenicity. Hazardous waste arises from different sources so does not occur as a discrete waste stream, being more a collection of different materials, which are generally collected and managed separately according to their differing hazardous properties. For example, fridges containing CFC gases and cathode ray tubes used in TV and computer monitor screens are classed as hazardous, as are oily water, interceptor wastes and undepolluted scrap ('End of Life') vehicles. Each of these waste types normally require management by distinctly different methods and hence provision of different types of facilities. Moreover, these items and materials can arise in different waste streams and so the hazardous component of each of the main origin streams i.e. Construction, Demolition & Excavation (C, D & E), Commercial and Industrial (C&I) and Local Authority Collected Waste (LACW) are considered together in this report. To avoid double counting, the quantity arising in each stream has been deducted from the estimate of the origin stream arisings reported elsewhere in the WNA.

Data Sources

The Environment Agency Hazardous Waste Interrogator (HWI) 2023

1.5 Legislation requires that the relevant waste regulation authority[1] be notified when hazardous waste is moved. The notification takes the form of a consignment note that details amongst other matters, the quantity and destination of the waste. The following movements of hazardous waste are recorded and reported to the relevant regulatory body:

- From producer sites directly to disposal/treatment facilities;
- from producer sites to transfer facilities for bulking up and onward management; and,
- from treatment facilities to final disposal sites.

In England this data is aggregated by the Environment Agency and made available in the HWI published on an annual basis with a delay of c9 months.

1.6 The reporting method means that the HWI dataset may be incomplete for the following reasons:

- Consignment notes are not issued when hazardous waste is managed on the site of its production by the producer or same operator.
- Where the producer of hazardous waste is a householder the requirement to consign does not apply and therefore quantities of hazardous waste that arise in households are not reported directly when moved from the point of production. Where a receiving site operates under an Environmental Permit, (and reports through the WDI[2]), waste will first be recorded either on arrival, or when it is removed. For example, undepolluted End of Life Vehicles (ELV), which are classed as hazardous waste, will often not be consigned from their origin when being scrapped because the owner of a vehicle is not required to do so and hence this initial movement is not reported in the HWI. However, it would be recorded as hazardous waste on arrival at the vehicle de-pollution site by the permit holder, as an input of waste to a site with an Environmental Permit, and it is then reported through the WDI. Another example is any hazardous waste such as a lead acid battery brought to a household waste recycling centre (HWRC) will not

[1] For England this is the Environment Agency.

[2] Some permitting exemptions allow the receipt of certain hazardous wastes, and these sites do not report through the WDI.

be consigned in but will normally be consigned out by the operator/permit holder.

Both above circumstances may result in under-reporting of hazardous waste arisings through the HWI.

1.7 This under-reporting risk may be balanced by aspects of the hazardous waste consignment process that allows for the possibility of over-reporting. For example, if waste is moved to an intermediate management site within Kirklees and then moved on to a further site it will be consigned twice from Kirklees, when leaving its origin and then when leaving the intermediate site, and so double counted as Kirklees hazardous waste. Also, the person consigning hazardous waste may not have facilities to precisely measure the quantity of waste they are passing on and so may estimate the amount per load. This may result in a discrepancy between the quantity recorded as having been consigned from the source e.g. a half-full drum may be recorded by the drum's total capacity, and the quantity actually recorded as having been received at the waste management site which would normally have a reliable measurement method such as a weighbridge.

1.8 To address the limitations associated with the HWI outlined above and ensure use of the best available data as required by national Planning Practice Guidance (nPPG), data from the WDI and the Pollution Inventory (PI) has also been consulted.

The Environment Agency Waste Data Interrogator (WDI) 2023

1.9 The values for inputs to permitted intermediate sites as reported through the WDI do not always correspond to outputs from those sites and there can be discrepancies. These can be attributed to a lack of comprehensive reporting of inputs to certain facilities, or treatment having taken place that reduces the volume of hazardous waste. For example, ELVs received at vehicle depollution sites are rendered non-hazardous following removal of hazardous components and fluids via depollution, leaving a much smaller tonnage of hazardous waste reported as leaving the site for onward management. Comparing the WDI output value with the input value can therefore reveal such discrepancies. In some cases, for the same type of hazardous waste, output values are greater than input values. In these cases, the output value may be capturing a more complete picture and hence result in a more accurate estimate of arisings.

The Environment Agency Pollution Inventory (PI) 2023

1.10 The Environment Agency PI captures data on waste arising from certain industrial installations, regulated under the Industrial Emissions Directive (IED)[3] permitting regime. Such installations may manage their waste onsite or send their waste for offsite management. In the case of Kirklees this dataset shows c9,500 tonnes of hazardous waste was produced by one non-waste industrial installation reporting through this route in 2023 located in Kirklees. Given this is a significantly lower value to that reported in the WDI and HWI for Kirklees, no additional value has been taken forward.

1.11 The relationships between the datasets are illustrated in Figure 1.

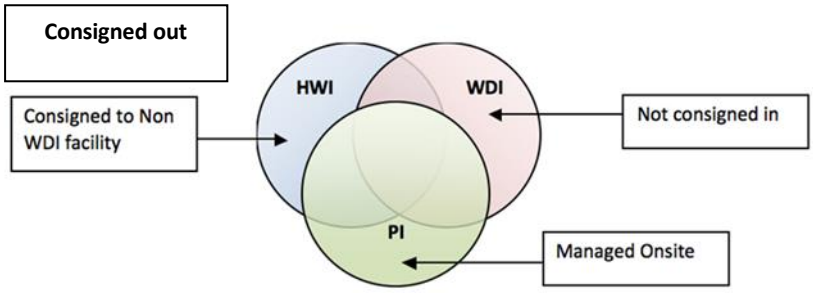


Figure 1: Relationship between Datasets for Hazardous Waste

1.12 Notably while the HWI always specifies the waste origin and destination by Waste Planning Authority (WPA) it does not identify the specific facility at which the waste has been managed, whereas the WDI may only report by originating region but does report inputs and outputs by individual facility. Hence both the WDI and HWI datasets have been accessed to generate a comprehensive picture of fates of Kirklees hazardous waste in 2023.

[3] Retained EU legislation.

Estimating a Baseline Arisings Value

1.13 To generate a baseline estimate of hazardous waste arising in Kirklees in 2023 the following datasets have been accessed:

1. The Environment Agency (EA) Hazardous Waste Interrogator (HWI) 2023[4] - movements.
2. The EA Waste Data Interrogator (WDI) 2023[5] – hazardous inputs to permitted sites.
3. The EA Waste Data Interrogator 2023 – hazardous outputs from permitted sites.

1.14 The HWI 2023 indicates the following:

- In 2023, 43,443 tonnes of hazardous waste (of all types) produced in Kirklees were reported;
  - of this, 4,955 tonnes were managed in Kirklees; with the difference (38,488 tonnes) managed outside Kirklees i.e. exported.

In addition, 20,706 tonnes were imported to Kirklees for management.

1.15 The WDI 2023[6] indicates the following:

- In 2023 34,376 tonnes of hazardous waste reported as having been managed at permitted sites (both within and beyond Kirklees) were produced in Kirklees;
  - of this, 570 tonnes were managed in Kirklees with the difference (33,805 tonnes) managed outside Kirklees i.e. exported.

In addition, 25,950 tonnes were imported to Kirklees for management.

Outputs from Kirklees to permitted sites reporting in the WDI

1.16 Outputs of hazardous waste from Kirklees' permitted sites reporting through the WDI will be identified as arising within Kirklees (regardless of its original source). For example, ELVs are classed as hazardous by virtue of the presence of oils, fluids and batteries within them. Once depolluted, the ELV shell ceases to be hazardous but the extracted hazardous components will leave the depollution site as hazardous waste for onward management. Those components that arise from depollution sites operating in Kirklees will be reported as hazardous waste arising in Kirklees regardless of where the ELV that underwent depollution at the site originally arose. This is illustrated in Figure 2.

[4] This reports data for 2023 but was published in 2024 and is the latest data available.

[5] As in footnote 4.

[6] Hazardous waste codes are identified with an asterisk '*' after the EWC in the WDI.

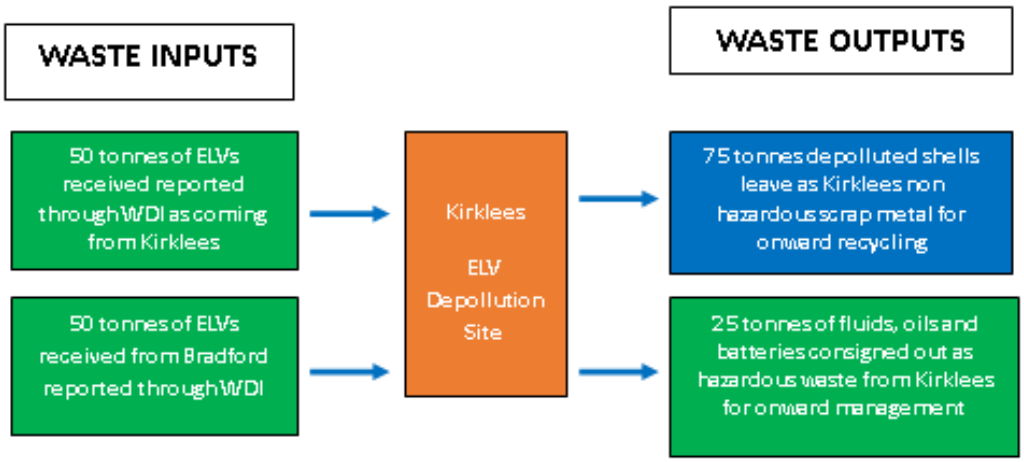


Figure 2: Illustrative Schematic of flows of ELVs to, and resulting from, an ELV depollution site located in Kirklees

1.17 The WDI 2023 indicates that 14,157 tonnes of hazardous waste were removed from permitted sites operating within Kirklees.

1.18 Table 1 sets out the values discussed above in the HWI and WDI.

Table 1: Kirklees Hazardous Waste Arisings & Management Data (tonnes)
Blue indicates values contributing to arisings, pink indicates Kirklees management capacity
Source: HWI 2023 and WDI 2023

Data source	Total Kirklees Hazardous Waste Arisings	Kirklees Waste Managed outside Kirklees (exports)	Quantity Managed in Kirklees Attributed to Kirklees	Quantity Managed in Kirklees from outside (imports)	Total Managed in Kirklees
HWI	43,443	38,488	4,955	20,706	25,661
WDI (inputs from Kirklees to all facilities including outputs from Kirklees facilities)	34,376	33,805	570	25,950	26,520
WDI (outputs from Kirklees facilities)	14,157	13,899	258	n/a	

1.19 Table 1 shows that:

- more waste is recorded as arising in Kirklees in the HWI than the WDI (43,443 vs 34,376 tonnes).
- the total amount of waste managed within Kirklees is marginally greater according to the WDI than is reported in the HWI (26,520 vs 25,661 tonnes); and
- the quantity of Kirklees hazardous waste managed outside Kirklees differs by c5,000 tonnes (38,488t vs 33,805t),

To understand the possible source of this latter discrepancy better the tonnages have been interrogated by destination WPA, waste code and fate. The outcome and findings of the comparison exercise for WPAs receiving 500 tonnes or more is shown in Table 2 below.

Table 2: Destination of Kirklees Hazardous Waste by WPA (exc Kirklees [7]) (500t or more in either dataset)

Source: HWI and WDI 2023

Deposit WPA	HWI	WDI	Hazardous Waste Management Detail (500t or more in WDI or HWI)
Derbyshire	5,108	4,974	Solid wastes from gas treatment for recovery
Wakefield	4,637	3,923	Soils and stones for recovery
Liverpool	2,916	2,852	Organic solvents, washing liquids and mother liquors for recovery
Leeds	2,790	1,980	Washing liquids and machining emulsions for treatment
Stockton-on-Tees	2,650	595	Soils and stones for treatment
Sunderland	2,518	6,134	Organic solvents, washing liquids and mother liquors for recovery
Solihull	2,251	1,978	Soils and stones for transfer
Cheshire West & Chester	1,954	2,180	Organic solvents, washing liquids and mother liquors for incineration without recovery
Lancashire	1,710	1,546	Organic solvents, washing liquids and mother liquors for recovery
Trafford	957	<500	Sludges for treatment
Sandwell	942	935	Soils and stones for recovery
North Tyneside	722	<500	Washing liquids for transfer
Gateshead	660	<500	Waste containing CFCs for recovery
Doncaster	606	595	Bituminous waste for recovery
York, City of	606	869	Oily water from oil/water separators for treatment
Redcar and Cleveland	576	<500	Multiple wastes sub 500 tonnes
Sheffield	576	951	ELV depollution waste for transfer
Lincolnshire	512	<500	Multiple wastes sub 500 tonnes
North East Lincolnshire	<500	881	Lead acid batteries for treatment
Bury	<500	686	Asbestos to landfill
Salford	<500	553	Multiple wastes sub 500 tonnes
Total	**32,691**	**31,633**	

[7] Excluded because movement to Kirklees sites that don't involve final fate would be counted at the next step site and hence double count the tonnage.

1.20 Table 2 indicates that inputs recorded as coming from Kirklees in the WDI are not always attributed to Kirklees in the HWI and vice versa. The most significant underreport in the HWI for Kirklees inputs is waste reported as managed in Sunderland with a c,3,600 tonne discrepancy between the HWI and WDI values while the most significant WDI underreport is to Stockton-on Tees of 2,100t. The WDI under reports may be attributed to site inputs in the WDI not being coded below regional level, and accounts for c1,000t difference between the totals shown.

1.21 The outcome of this exercise confirms that the HWI dataset for Kirklees hazardous waste arising appears to be the most comprehensive for 2023 and hence represents the 'best available' data for the purposes of forward planning for this waste stream in Kirklees.

Findings: Kirklees Hazardous Waste Arisings

1.22 According to the HWI 2023 c43,500 tonnes of hazardous waste attributable to Kirklees were produced in 2023. This value compares with the WNA 2016 value of c32,500 tonnes in 2014 which also used the HWI. This suggests that the amount of hazardous waste has increased by 11,000 tonnes in total over a nine-year period, giving an annual growth rate of c3.7%.

Forecasting Future Hazardous Waste Arisings

National Policy

1.23 The 2013 National Policy Statement for Hazardous Waste[8] remains the most current national review of hazardous waste arisings in England. It states that arisings of hazardous waste are expected to increase for the following reasons:

- Continuing consumer demand for consumer durables containing hazardous materials.
- 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, being 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, leading to increases in the amount of waste classed 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.

1.24 It should also be noted that Persistent Organic Pollutants (POPs) bearing materials are being added to the POPs Regulations 2007, which will also lead to an increase in reported hazardous arisings. For example, most recently the Environment Agency has determined furniture containing PoPs to be hazardous and unsuitable for landfilling[9].

Defining Growth Factors for Hazardous Waste arising in Kirklees

1.25 While nPPG advises that future hazardous waste arisings be estimated by extrapolating time series data from the HWI, reliance on historical data to establish possible future trends is not considered to be robust due to frequent changes in the definition of hazardous waste and refinement of regulatory guidance which has tended towards increasing the range and quantity of waste classed as hazardous and thereby artificially 'inflating' quantities of arisings. That is to say the dataset for 2017 would capture a more limited range of wastes than the 2023 dataset, so if the value shown by the more recent dataset is greater, this is not necessarily because production of the hazardous wastes that arose in 2017 actually increased by 3.7%

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

[9] Environment Agency on GOV.UK website: Identify and dispose of waste containing persistent organic pollutants March 2015

per annum during the intervening period. For example certain bituminous materials i.e. tarmac has been classed as hazardous in recent years.

1.26 Table 3 displays the trend in arising values obtained from the HWI for hazardous waste produced in Kirklees over the past five years.

Table 3: Hazardous Waste Arising in Kirklees Over the Past 5-data years
Source: Environment Agency HWI

Year	Indicated arisings
2019	42,860
2020	45,618
2021	42,094
2022	59,865
2023	43,443

1.27 These values are plotted in Figure 3 along with a trendline.

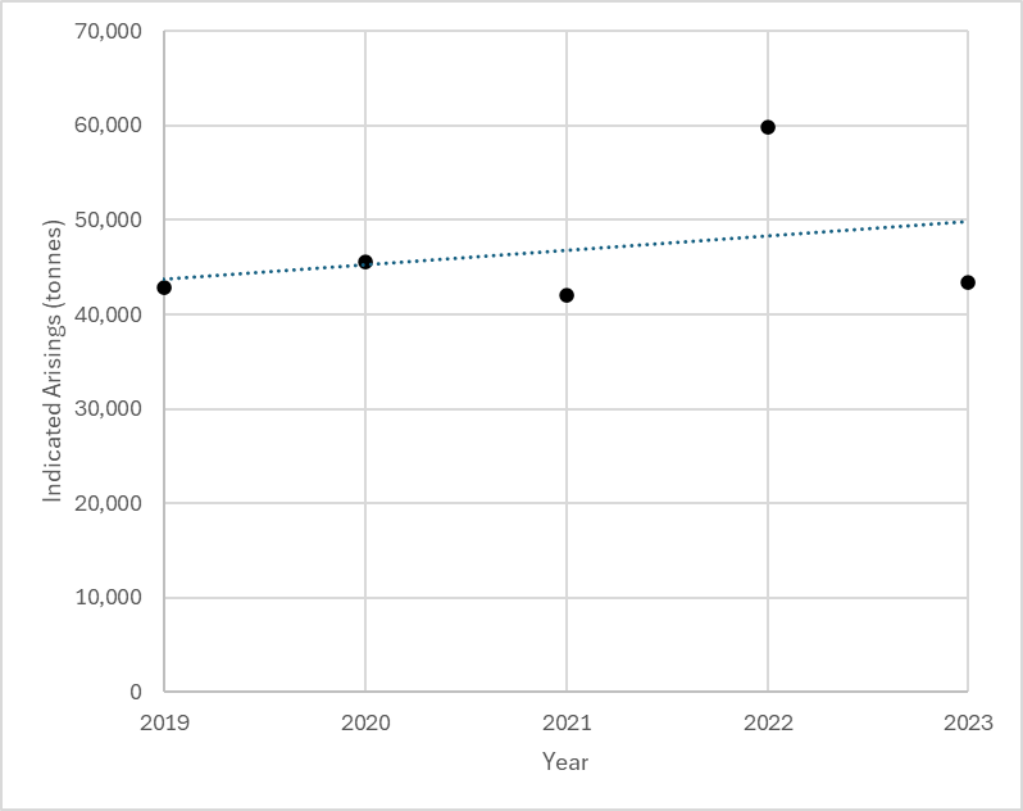


Figure 3: Total Hazardous Waste arising in Kirklees (tonnes) managed at permitted facilities in England as reported in the HWI (2019-2023)

1.28 The blue dashed trend line in Figure 3 calculated using values over the 5-year period, indicates a gradual increase in arisings over time. This is largely due to the exceptionally high value in 2022 and if that were to be disregarded, the trend line would be flat, indicating static growth.

1.29 However, it is not considered appropriate to solely rely on the historical projection using total tonnes of hazardous waste produced to forecast future arisings. Therefore, the composition of arisings has been considered on a waste type basis.

Composition of Kirklees Hazardous Waste

1.30 Table 4 below presents the principal arisings of Kirklees hazardous waste for 2023 based on the HWI dataset. Hazardous waste types arising in a quantity greater than 500 tonnes account for nearly 83% of total arisings in 2023, and these have been aggregated into categories

Table 4: Principal Hazardous Waste Types arising in Kirklees in 2023 (>500 tonnes)
Source: HWI 2023

Hazardous Waste Type/Source	2023
Construction, Demolition & Excavation Waste	12,168
Organic solvents, washing liquids and mother liquors	8,562
Solid wastes from gas treatment	4,619
WEEE inc WEEE containing chlorofluorocarbons	3,913
Hazardous packaging	2,845
Vehicle Maintenance	1,791
Oil water from oil/water separators	772
Sludges from physical/ chemical treatment	686
Machining emulsions and solutions free of halogens	609
Total	**35,965**

1.31 Below is a breakdown of the principal waste types that make up each of the categories:

- C, D & E waste ranked first amongst the principal hazardous waste types. The predominant wastes in 2023 are contaminated soil (17 05 03) at c10,000 tonnes, asbestos contaminated waste (17 06 05 and 17 06 01) at c1,500 tonnes and bituminous waste (17 03 01) at c1,000 tonnes.
- Hazardous liquids (07 04 04) at c5,500 tonnes and mother liquors (07 04 01) at c3,000 tonnes.
- Solid wastes from gas treatment (19 01 07) at c4,500 tonnes.

- WEEE (20 01 35) at c2,000, WEEE containing chlorofluorocarbons (CFCs) - fridges and air conditioning units (20 01 23) at c1,000 and hazardous components removed from discarded equipment (16 02 15) at c500 tonnes.
- Hazardous packaging (15 01 10) at c3,000 tonnes.
- Vehicle maintenance waste including engine oils (13 02 05) at c1,000 tonnes and lead acid batteries (16 06 01) at c1,000 tonnes.
- Oil based waste from drainage systems consisting of oily water from oil/water separators (13 05 07) at c1,000 tonnes.
- Sludges from physical/ chemical treatment (19 02 05) at c500 tonnes.
- Waste from treatment of metals and plastics including machining emulsions and solutions free of halogens (12 01 09) at c500 tonnes.

Forecasting Arisings of Kirklees Hazardous Waste by Type

1.32 To discern possible trends, the data for hazardous waste arisings >500 tonnes over the past 5 years[10] reported through the HWI has been reviewed and are presented in Table 5 and Figure 4.

Table 5: Principal Hazardous Waste Component Arisings in Kirklees >500 tonnes 2019 - 2023[11]

Source: HWI 2019 -2023

Hazardous Waste Type/Source	2019	2020	2021	2022	2023	Mean annual growth rate
Construction, Demolition & Excavation Waste	3,093	6,398	3,407	22,990	12,168	
		106.87%	**-46.75%**	**574.84%**	**-47.07%**	**146.97%**
Organic solvents, washing liquids and mother liquors	18,368	15,627	13,926	12,220	8,562	
		-14.92%	**-10.89%**	**-12.25%**	**-29.93%**	**-17.00%**
Solid wastes from gas treatment[12]	3,347	3,984	4,510	3,984	4,619	
		19.03%	**13.21%**	**-11.66%**	**15.92%**	**9.13%**
WEEE inc WEEE containing chlorofluorocarbons	3,060	4,375	5,732	4,915	3,913	
		42.94%	**31.03%**	**-14.25%**	**-20.39%**	**9.83%**
Hazardous packaging	5,597	5,177	4,110	3,286	2,845	
		-7.50%	**-35.48%**	**-20.05%**	**-13.41%**	**-15.40%**
Vehicle Maintenance	1,577	1,418	1,533	1,393	1,791	
		-10.08%	**8.16%**	**-9.17%**	**28.62%**	**4.18%**
Oil water from oil/water separators	658	578	981	1,907	772	
		-12.12%	**69.66%**	**94.46%**	**-59.52%**	**23.12%**
Sludges from physical/ chemical treatment	<500	<500	<500	<500	686	-
Machining emulsions and solutions free of halogens	<500	<500	<500	<500	609	-
Interceptor sludges	<500	<500	<500	543	<500	-
Total	**35,699**	**37,556**	**34,199**	**51,239**	**35,965**	

[10] Note that the principal arisings over the 5-year period have been grouped into relevant categories. So, some years may include wastes coded under other EWC codes that did not arise in quantities greater than 500 tonnes in 2023 mentioned in paragraph 4.9.

[11] Percentages are calculated using values from the HWI which include fractions of a tonne so percentages arrived at when using the values may not directly correspond to percentages calculated using rounded figures.

[12] This is composed of the air pollution control residues (APCr) from the Kirklees EfW plant.

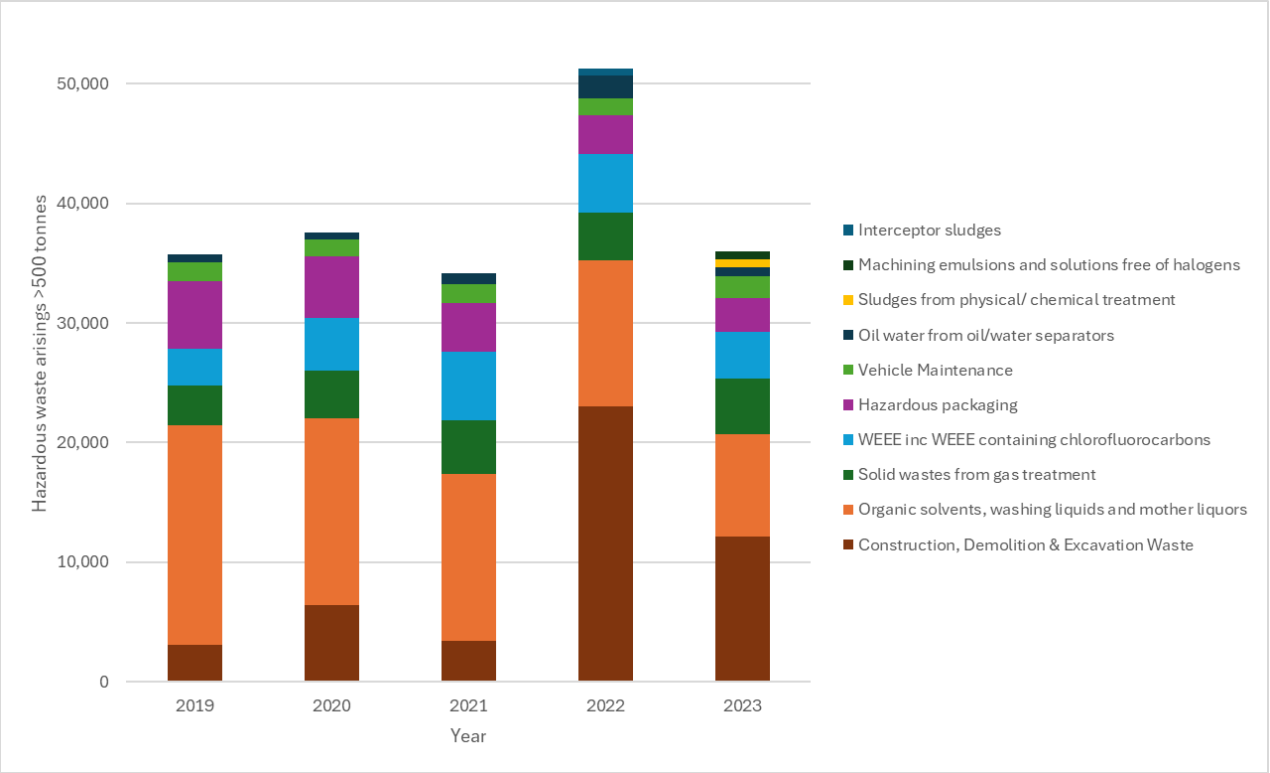


Figure 4: Principal Hazardous Waste Component Arisings in Kirklees 2019-2023
Source: Table 5

1.33 Table 5 and Figure 4 shows the main cause for variability in hazardous waste arisings in Kirklees over the period is C, D & E waste, with a significant peak in 2022. Organic solvents have gradually decreased over time at minus 17% per annum. The third principal stream of solid waste from gas treatment increased between 2019 and 2021, followed by a decline in 2022 and then peaked in 2023. Given this stream arises solely from the operation of the Kirklees EfW plant, it is not clear why the tonnages produced vary across years, but the peak value has been taken on a conservative basis. The other 5 waste streams show varying growth rates over the period varying from -15.40% (hazardous packaging) to +34.75% (oily water from oil/water separators).

1.34 To determine any trend in hazardous C, D & E waste arisings, the principal hazardous waste types that make up the total C, D & E waste arisings have been analysed as shown in Table 6 below for the most recent three-year period for which data is available, 2021-2023.

Table 6: Hazardous C, D & E Waste (2021-2023) [13]

Source: HWI

Hazardous C, D & E Waste Type	2021	2022	2023	Mean annual growth rate
Soils and stones tonnes)	763	21,471	9,885	
Indicated growth rate		2,712%	-53.96%	1,329%
Bituminous waste (tonnes)	909	-	780	
Indicated growth rate	-	-	-	-
Asbestos (tonnes)	1,735	1,519	1,503	
Indicated growth rate		-12.42%	-1.06%	-6.74%
Total tonnes	**3,407**	**22,990**	**12,168**	
Mean annual growth rate		**574.84%**	**-47.07%**	**263.88%**

1.35 Table 6 shows that soils and stones waste have a very large positive annual growth rate over the three-year period. Bituminous waste exceeded the 500-tonne threshold in 2021 and 2023 with a small decrease in arisings in 2023 while the tonnage of asbestos contaminated waste has decreased marginally over the three-year period.

1.36 Hazardous soils and stones arise principally from the redevelopment of brownfield sites with historic contamination. Given it is not possible to predict when such sites will be redeveloped each year and the other hazardous C, D & E waste types have also fluctuated over the period, the average of hazardous C, D & E waste arisings across the three-year period of c13,000 tonnes has been used as a starting point to forecast from on a conservative basis.

[13] Percentages are calculated using absolute values from the HWI which may include fractions of a tonne so percentages arrived at when using the absolute values may not correspond to percentages calculated using rounded values.

Future waste arisings

1.37 As discussed in Section 3, while the 2013 National Policy Statement for Hazardous Waste[14] considers that arisings of particular hazardous waste can be expected to increase, it is considered that production of the principal hazardous wastes produced in Kirklees will stabilise if not decline over time for the following reasons:

1. Regulations banning the use of hazardous materials and components in consumer products[15] mean that over time the quantity of hazardous material in WEEE should decline.
2. Hazardous materials such as asbestos and chromate treated wood bound up in the building stock will reduce as the components are replaced with non-hazardous materials.
3. The incidence of land contamination by industrial use will reduce due to more stringent regulatory controls meaning that contaminated soil will only arise as a result of legacy sites which will decline over time.
4. Electric vehicles are expected to account for 20% of car sales at 2025, with a ban on sales of conventional vehicles by 2030 now proposed by Government[16] so hazardous waste arising from internal combustion engines such as oil and lead acid batteries is expected to decline over the medium to long term as they are taken out of use and scrapped[17].

1.38 Given the National Policy Statement for Hazardous Waste advice that hazardous waste is expected to increase in the short-term but based on the assumptions above, hazardous waste may be expected to stabilise over time, the following growth forecast is suggested on a waste stream basis:

- Hazardous C, D & E waste held constant to 2033 at c13,000 tonnes using three-year average as per discussion in para 4.14 before applying a moderated decline of minus 6.74% (as per historical decline in asbestos waste) from 2034 with the expectation that over time arisings of this component will reduce as historical land contamination (source of contaminated soils) is remediated and legacy asbestos in the building stock is removed.
- Organic solvents, washing liquids and mother liquors held constant to 2043 at c11,500 tonnes using the three-year average arisings;

[14] Para 3.2.2 The total amounts of hazardous waste remain significant and are expected to increase – *National Policy Statement for Hazardous Waste, 2013*

[15] *The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (as amended)*

[16] Note that the transition from internal combustion engines to electric vehicles is expected to be significant over time. However, it may be beneficial to include a policy which provides a degree of flexibility for ELV depollution sites.

[17] While lithium-ion batteries are not classed as hazardous electric vehicles may give rise to some hazardous waste.

- Solid wastes from gas treatment held constant (taking the 2023 value which happens also to be the peak) throughout Plan period. The sole source of this waste is the Kirklees EfW plant.
- Increasing WEEE to 2033 by 9.83% (as per historical growth) before being held constant from 2033 to 2043;
- The remaining waste streams combine to amount to a smaller proportion of the total hazardous arisings compared to the principal waste types. Therefore, they have been held constant from 2023 values.

1.39 The growth forecasts based on these assumptions are presented in Table 7.

Table 7: Forecast Hazardous Waste Arisings in Kirklees

Source: Baseline Arising plus discussion above

Hazardous Waste Type/Source	*2023*	2028	2033	2038	2043
Construction, Demolition & Excavation	12,855	12,855	12,855	9,068	6,397
Organic solvents, washing liquids and mother liquors	*11,569*	11,569	11,569	11,569	11,569
Solid wastes from gas treatment	*4,619*	4,619	4,619	4,619	4,619
WEEE inc WEEE containing CFCs	*3,913*	6,254	9,996	9,996	9,996
Subtotal	*32,956*	*35,297*	*39,039*	*35,252*	*32,581*
Other wastes[18]	14,182	14,182	14,182	14,182	14,182
Total Projected Arisings	**47,138**	**49,479**	**53,221**	**49,434**	**46,763**

Conclusion

1.40 The forecast assumptions result in an initial increase in hazardous waste arisings to 2033 before a marginal decrease resulting in a baseline arising of **c47,000 tonnes** in 2041. This reflects the best available data combined with an assessment of factors likely to affect arisings as set out above. These values have therefore been used to project capacity requirements based on an assessment of existing capacity within Kirklees and management routes followed, presented in Section 6.

[18] Including hazardous waste <500t.

Hazardous Waste Management Capacity in Kirklees

1.41 This section considers the availability of capacity within Kirklees for managing hazardous waste based on the latest data available i.e. 2023. It provides the basis on which the quantum of existing hazardous waste management capacity may be established and, subsequently, from which specific management capacity requirements might be identified. Quantities of hazardous waste inputs to sites recorded in the WDI across 5 years and the West Yorkshire Capacity Model (WYCM) have been reviewed to establish each site's most representative capacity i.e., the notional capacity, shown in Table 8. The sites identified as non-hazardous waste transfer stations (WTS) have been ignored as hazardous inputs are only expected to be accepted on an incidental basis, as well as any HWRCs on the basis that they will be principally accepting other waste streams, particularly LACW. Seven other vehicle depollution sites that did receive waste within the last 3 years but received less than 100 tonnes were also removed (see Appendix 1 for list of vehicle depollution sites excluded).

Table 8: Notional Capacity of Facilities Permitted to Manage Hazardous Waste in Kirklees (>100 tonnes)

Source: WDI

Facility Type	Site Name	Operator	WDI 5-year peak input +15%	Operator Survey Value *(contacted but no positive response in italics)*	Preferred value
Vehicle Depollution Facility	Mirfield Motor Spares	Mirfield Motor Spares Ltd	95	-	95
Vehicle Depollution Facility	Huddersfield Road	S S Components Ltd	217	-	217
Vehicle Depollution Facility	AJ Motors	AJ Motors (Dewsbury) Ltd	110	-	110
Vehicle Depollution Facility	Unit 3 R S Autos, 101 Thornhill Road,	RS Autos	254	-	254
Vehicle Depollution Facility	Land Off Bent Ley Road	Wells & Moorhouse (Dismantlers) Ltd	1,559	*1,559*	1,559
Chemical Treatment	West Yorkshire Treatment Centre	Acumen Waste Services Ltd	12,098	*12,098*	12,098
Drum reconditioner	Upper Station Road	R. Spivey & Son Ltd	1,512	*1,512*	1,512
Drum reconditioner	30 Pheasant Drive	R. Spivey & Son Ltd	4,821	*4,821*	4,821
Drum reconditioner	Unit 7 & 8 Norquest Ind Est	R. Spivey & Son Ltd	889	-	889
Physical-Chemical Treatment	Nab Lane, Birstall	X P O Bulk (UK) Ltd	310	-	310
Physical-Chemical Treatment	Matrix-Direct-Recycle	Electrical Waste Recycling Group Ltd	10,224	19,000	19,000
WEEE treatment facility	Milnsbridge AATF	Wiser Recycling Ltd	4,768	*4,768*	4,768
				Total	**45,680**

1.42 Comparing the notional total capacity value shown in Table 8 (c45,500 tonnes) to the peak arising value for Kirklees of c53,000 tonnes suggests a marginal deficit of hazardous waste management capacity of c7,500 within Kirklees. Kirklees does host a hazardous waste landfill which accepted c144,000 tonnes of waste as reported by the WDI 2023. However, the EA dataset on remaining landfill[19] at the end of 2023 indicates there is no void remaining. Therefore, the site has not been considered further and the closure of the site may create further demand for hazardous waste management capacity either within Kirklees or outside[20].

Management Capacity Conclusion

1.43 Kirklees hosts a number of facilities that manage hazardous waste including vehicle depollution sites, physical-chemical treatment, and WEEE treatment with three drum reconditioning sites together providing over 7,000 tpa of capacity and a chemical treatment facility providing c12,000 tpa of capacity. The combined notional capacity offered by permitted facilities located within Kirklees capable of managing hazardous waste has been taken to be c45,500 tonnes per annum.

1.44 It is important to ensure that each type of hazardous waste produced in significant quantities will be adequately catered for throughout the Plan period within Kirklees or outside. For this reason, the role of facilities beyond Kirklees in the management of certain types of hazardous waste arising in Kirklees has been considered in the report dealing with strategic waste flows from Kirklees[21].

[19] Environment Agency's Remaining Landfill Capacity database (available at https://environment.data.gov.uk/dataset/6d0cd361-d465-11e4-81cd-f0def148f590

[20] It should be noted that Indaver have recently announced its intention (March 2025) to build 15kta solvent recovery plant on the Sygenta site. This may reduce capacity deficit if plans go ahead.

[21] Kirklees WNA 2025 – Strategic Flows v1.0 BPP Consulting July 2025.

Appendix 1: List of Vehicle Depollution Sites Excluded from Hazardous Capacity Given they Received Less than 100 tonnes.

Site Name	Operator	Peak input (2021 -2023)
Rawsons Scrapyard	Robert Robinson	59
Cleckheaton Auto Dismantlers	Ribwar Faraj	24
Highline Group	Yorkshire Light Commercials Ltd	46
Bottom Yard, Britannia Road	Home Cars Ltd	67
Mansu Group	Mohammed Sadiq	18
Bindit bike spares	Paul Sykes And Philip Ineson	2
7 Vernon Road, Liversedge	R C C Autos Ltd	18