Kirklees Waste Needs Assessment 2025

Scoping of 'Other' Waste Streams

Report: Final Issue

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Abbreviations

Abbreviation	Full Term
AD	Anaerobic Digestion
AMP	Asset Management Plan
C & I	Commercial & Industrial Waste
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EfW	Energy from Waste
EWC	European Waste Catalogue
HLW	High Level Radioactive Waste
LACW	Local Authority Collected Waste
PPG	Planning Practice Guidance
STW	Sewage Treatment Works
VLLW	Very Low Level Radioactive Waste
WDF	WasteDataFlow
WDI	Waste Data Interrogator
WNA	Waste Needs Assessment
WPA	Waste Planning Authority
WRMP	Water Resource Management Plan

Glossary of Terms

Term	Definition
Agricultural Waste	Waste produced on a 'farm' in the course of 'farming'. Agricultural waste takes both 'natural' (or organic) and 'non- natural' forms e.g. plastics and metal.
Anaerobic Digestion	A process to manage organic matter including green waste and food waste broken down by bacteria in the absence of air, producing a gas (biogas) and nutrient rich solid or liquid (digestate). The biogas can be used to generate energy either in a furnace, gas engine, turbine or to power vehicles, and digestate can be applied to land as a fertiliser.
Asset Management Plan	An asset management plan produced by sewerage and water undertaking for approval by Ofwat includes an assessment of what assets make up the water, sewer or storm system in a particular area and plans to meet future needs within agreed budgets.
Biodegradable waste	Waste that can break down over time due to natural biological action/processes, such as food, garden waste and paper.
Commercial Waste	Waste from factories or premises used for the purpose of trade or business, sport, recreation or entertainment
Controlled Waste	Waste subject to controls emanating from the EU Waste Framework Directive.
Construction, Demolition & Excavation Waste	Waste arising from the building process comprising demolition and site clearance waste and builders' waste from the construction/demolition of buildings and infrastructure. Includes masonry, rubble and timber.
Defra	The UK Government department responsible for developing national waste management policy.
Energy from Waste (EfW)	The conversion of the calorific value of waste into energy, normally heat or electricity through applying thermal treatment of some sort. May also include the production of gas that can be used to generate energy.
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.
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).
Exemptions	Certain activities exempt from the need to obtain an environmental permit. Each exemption has specific limits and conditions that must be complied with to remain valid. Exemptions must be registered with the Environment Agency. Each registration lasts 3 years.
Green waste	Biodegradable plant waste from gardens and parks such as grass and hedge trimmings, from domestic and commercial sources suitable for composting.
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).

Term	Definition
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	Waste collected by or on behalf of 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 delivered to HWRCs. LACW is the definition used in statistical publications, which previously referred to municipal waste.
Ofwat	The regulatory body responsible for overseeing the privatised water and sewage industry in England and Wales.
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.
The Plan area	The area subject to the Waste Local Plan to which this study relates. In this case the area of Kirklees.
Waste Planning Authority	The authority responsible for planning for waste within a specific administrative area. In this case Kirklees Council.
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.
Water Resources Management Plans	Statutory documents that all water companies must produce at least every 5 years intended to set out how they will achieve a secure water supply while also enhancing the environment.

1. Introduction

1.1 Kirklees Council has contracted BPP Consulting to produce the Kirklees Waste Needs Assessment 2024 (WNA 2024). This uses 2023 data where available, from which, waste arisings to 2043 have been forecast and any resulting management requirements assessed.

1.2 The WNA 2024 consists of 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 Waste Flows.
7. Overview of above.

1.3 This report is concerned with a scoping review of the management requirements for the following 'other' waste streams:

- Wastewater
- Agricultural Waste
- Low Level Radioactive waste

1.4 National Planning Practice Guidance (nPPG)[1] is the principal source of advice with respect to the production of a Local Plan evidence base. This advises that Waste Planning Authorities (WPAs) should seek to plan for the above streams. Hence, this report is intended to determine if it is necessary to expressly provide for the future management needs of these streams in the emerging updated Local Plan for Kirklees to 2043.

Advice on Data

1.5 The national PPG states that:

"Assessing waste management needs for Local Plan making is likely to involve:
• understanding waste arisings from within the planning authority area, including imports and exports
• identifying the waste management capacity gaps in total and by particular waste streams
• forecasting the waste arisings both at the end of the period that is being planned for and interim dates
• assessing the waste management capacity required to deal with forecast arisings at the interim dates and end of the plan period."

Paragraph: 022 Reference ID: 28-022-20141016

[1] Available at: https://www.gov.uk/guidance/waste.

1.6 It includes a section entitled "Using data to monitor and forecast waste needs", which articulates the following principles WPAs should adopt when using data to plan for the management of waste arising in their respective Plan area:

- *Make clear assumptions on how data were handled, as well as their impact (including on forecasting)*
- *Provide data to an appropriate level of significance, based on their explicit assumptions. In practice, data quoted to more than 2 or 3 significant figures will not be helpful and spurious accuracy stemming from precise figures should be avoided*
- *Plan for a range of each type of waste rather than a specific single figure."*
  Paragraph: 036 Reference ID: 28-036-20141016 Revision date: 16 10 2014

Principal Data Sources

1.7 The principal data sources used to generate this WNA are as follows:

Waste Data Interrogator

1.8 Operators of all sites in England formally permitted to manage waste are required to submit returns on the quantities, types and origin of waste received and, where applicable, destination of waste removed at their sites. These returns are collated by the Environment Agency (EA) annually and are included in a national dataset known as the Waste Data Interrogator (WDI) - waste received and waste removed. This dataset is released approximately nine months after the end of the calendar year to which the data relates. The 2023 WDI (version 1 released Dec 2024) consisting of data for the calendar year 2023 is the most current version available at the time of writing.

1.9 While the WDI may be used to inform the generation of estimations for the principal waste streams, the data to estimate arisings of 'Other' waste streams is less readily available and as a result quantifying and forecasting arisings of these can be more problematic

1.10 Nevertheless, the nPPG does advise that WPAs seek to plan for these streams, so the following presents an overview of the quantities of each of these waste streams that may arise in Kirklees and what if any specific capacity might be provided to ensure future safe management.

Data Presentation

1.11 In order to avoid "spurious accuracy", the following approach has been taken:

- Where actual tonnage data has been accessed, this has been used in the computations.
- Where data has been subject to computation, this has been included to 3 sf. Final values discussed in the text are rounded to the nearest 500.
- Where percentages have been used to generate data, the percentages are presented as whole numbers, however the computations actually use the true value. This means that values generated as a result of computations may not always precisely correspond to the values computed if the percentage value presented in this report is applied.
- A threshold of >500 tonnes has been applied to certain computations.

2. Wastewater and Sewage Sludge

Context

2.1 In Kirklees, Yorkshire Water Services is the designated sewerage and water undertaker with responsibility for amongst other things providing wastewater treatment capacity. Yorkshire Water operates the following facilities located in Kirklees:

- Mitchell Laithes Wastewater Treatment Works (WwTW),
- Neiley Sludge Treatment Facility, and
- Huddersfield Energy and Recycling Facility.

2.2 Every five years water and sewerage undertakers are required to submit to the water regulator, Ofwat, business plans known as Asset Management Plans (AMPs) that set out the services and infrastructure improvements the undertaker is planning to make and how these are to be funded. Ofwat sets price limits for the next five years based around these AMPs. Certainty of infrastructure provision over the medium and long terms can only be gained when future funding is secured through Ofwat's asset management plan review process. The current AMP period (known as AMP7) runs from 1 April 2020 to 31 March 2025 and does not therefore cover the whole Plan period to 2043[2].

2.3 While WwTW are considered to be waste developments, the need for future wastewater management is assessed through the AMP process informed by requirements for improvements in the water environment regulated by the EA. Therefore, PPG advises that early discussions take place between local planning authorities and water and sewerage undertakers, so that proposed growth and environmental objectives, set out in the AMP's, are reflected in local plans. This in turn should help ensure that the necessary infrastructure is funded through the water industry price review mechanism regulated by Ofwat.

2.4 There are two aspects of wastewater treatment that need to be addressed:

- The provision of capacity to treat wastewater itself; and
- the provision of capacity to manage the resultant solid wastes (sewage sludge) that arise from the treatment process.

Each is covered in the following sections.

[2] AMP8 covers the period from 1st April 2025 to 31st March 2030. The final determinations of the 2024 Price Review were published on 19 December 2024. This sets the price, investment and service package for the following 5-year period (2025-2030).

Wastewater Treatment Capacity

2.5 The Kirklees WNA 2016 that informed the production of the adopted Kirklees Local Plan (2019)[3] reported that:

"At the time of completion of this report Yorkshire Water has not communicated any requirement for additional land to be allocated in the Plan to allow physical expansion of existing infrastructure over the period covered by AMP-6, but further dialogue will be necessary to substantiate this matter."

Management of Sewage Sludge

2.6 Sludge resulting from the treatment of wastewater is termed sewage sludge. Sewage sludge undergoes three stages of treatment, whereby primary treatment is the first phase of sewage treatment, followed by secondary and finally tertiary treatment. Some sites only undertake primary treatment capacity, and the resulting sludge may then be moved on to sites that offer secondary and tertiary treatment capacity. This section looks at the current capacity in Kirklees for the management of sludge and requirements for future capacity.

Sewage Sludge Arisings

2.7 The WDI 2023 shows that virtually all sites operated by Yorkshire Water Services report waste inputs as arising from Yorkshire and Humber (WPA Not Codeable) of which Kirklees forms a part. c4.3M tonnes of sewage sludge (EWC code 19 08 05 '*sludges from treatment of urban waste water*') accepted at permitted facilities across Yorkshire Water's operating area was reported as arising from Yorkshire and Humber (WPA Not codeable). Of this tonnage, 765,026 tonnes were accepted at facilities located within Kirklees with the remaining c3.5M tonnes managed at facilities outside Kirklees. The facilities and tonnage received are displayed in Table 1. It should be noted that given different facilities perform different functions, there may be a degree of double counting between the inputs of each facility, with outputs of one becoming an input of another that undertakes further treatment. This is demonstrated in Table 1 below where outputs of sites located in Yorkshire and Humber are shown to be sent for recovery in the Yorkshire and Humber region. However, given the lack of specificity in destination, it is not possible to determine to what degree this might actually occur.

[3] Kirklees Local Plan. Kirklees Local Plan Strategy and Policies. (adopted 27 February 2019).

Table 1: Permitted facilities operated by Yorkshire Water receiving sewage sludge reported as coming from Yorkshire & Humber (WPA Not codeable) (>500 tonnes) and their outputs

Source: WDI 2023

Facility WPA	Site Category	Facility Name	Tonnes Received	Output	Destination WPA
Kirklees	Incineration[4]	Huddersfield Energy & Recycling Facility	710,206	10,985	Yorkshire & Humber
Kirklees	Treatment	Mitchell Laithes WwTW	32,492	7,340	Yorkshire & Humber
Kirklees	Treatment	Neiley Sludge Treatment Facility	22,327	2,497	Yorkshire & Humber
Leeds	Treatment	Knostrop Sludge Treatment Facility	2,140,871	-	Yorkshire & Humber
Leeds	Treatment	Lemonroyd Sludge Treatment Facility	32,340	9,653	Yorkshire & Humber
East Riding of Yorkshire	Treatment	Hull Sludge Treatment Facility	775,422	-	Yorkshire & Humber
East Riding of Yorkshire	Combustion	Hull Sludge Treatment Facility	260,634	-	Yorkshire & Humber
Calderdale	Treatment	Copley Sewage Sludge Treatment Plant	158,675	-	Yorkshire & Humber
Bradford City	Combustion	Esholt WwTW CHP Plant	150,873	7,241	Yorkshire & Humber

2.8 Table 1 shows total outputs of sludges from the Kirklees facilities of only c21,000 tonnes (as compared with 765,026 t input), all of which was reported as being sent for recovery somewhere in the Yorkshire & Humber region.

Inputs of Other Waste to Wastewater Treatment Works in Kirklees

2.9 WwTWs can provide a valuable function in managing wastes other than wastewater that arise in liquid and sludge form, such as septic tank emptyings. WwTWs that receive such waste normally require an environmental permit. Review of the data presented in the WDI 2023 indicates that Mitchell Laithes WwTW in Kirklees is permitted to receive and treat waste other than wastewater and sludges. However, the WDI 2023 indicates this only amounted to 150 tonnes of digestate from anaerobic treatment of animal and vegetable waste (19 06 06) arising from within the Yorkshire and Humber region (WPA unspecified).

[4] The WDI classes the Huddersfield Energy & Recycling Facility as incineration, but online sources indicate this is a sludge treatment facility including anaerobic digestion. https://waterprojectsonline.com/case-studies/huddersfield-erf-2021/

Conclusion

2.10 The adopted Kirklees Local Plan (2019) states the following:

"Yorkshire Water has advised the Council that additional capacity is likely to be needed at two plants within the Borough. The timescale for improvement has not been established yet and will be identified through ongoing dialogue with the company."

In that context prior to 2016, sludge treatment in the Huddersfield area was provided by the Calder Valley Incinerator. However, Yorkshire Water Services has now constructed the sludge treatment facility known as the Huddersfield Energy and Recycling facility. Therefore, communication with Yorkshire Water is advised to confirm or otherwise if the need for additional capacity previously indicated, still stands.

3. Agricultural Waste

Context

3.1 *The Waste Management (England and Wales) Regulations 2006* brought the management of agricultural waste under legislative control for the first time. Prior to this, a significant proportion was managed on farms by burning or disposal into farm tips. These practices became illegal under the 2006 Regulations.

3.2 In advance of the introduction of the regulations a number of research projects were undertaken to establish quantities and composition of arisings from this stream[5] and understand management arrangements in place at the time with a view to identifying management needs at national level:

- 1998 survey reported in a 2001 EA report
- Agricultural Waste Survey reported in a 2003 EA report

These remain the most current sources of data available for the agricultural waste stream as a whole and therefore continue to be relied upon when seeking to generate local estimates for planning purposes.

3.3 Following the introduction of the regulations, certain agricultural waste is considered more likely to be managed in the same way as the Commercial and Industrial (C&I) waste stream, thus placing some additional capacity requirements on the management network that manages the C&I waste stream in a particular area.

3.4 To identify whether waste produced by agricultural sources in Kirklees needs separate consideration in any updated Plan, the following three aspects have been considered:

- The nature of different agricultural wastes in relation to types of agricultural holdings in Kirklees;
- the likely current level of arisings;
- the way in which the arisings are managed.

The Nature of Different Agricultural Wastes

3.5 To be regarded as agricultural, waste must have been produced on a 'farm' in the course of 'farming'. Therefore, waste arising from activities that happen to be located on a farm, such as crop processing for food consumption, would fall outside this definition and be considered as C&I waste.

[5] Environment Agency (2001). Towards Sustainable Agricultural Waste Management. Environment Agency R&D Technical Report P1-339. https://www.gov.uk/government/uploads/.../geho0003bieo-e-e.pdf

3.7 Agricultural waste takes both 'natural' (or organic) and 'non- natural' forms.

Natural Agricultural Waste Arisings

3.8 This is the predominant waste stream produced by farming with the most commonly produced natural waste being those from livestock farming such as slurries and manure. In the UK, if manures and slurries are used as a fertiliser on agricultural land they are technically not seen as a controlled waste and are excluded from waste management regulation (although there are controls on the application through other means). Since natural wastes are outside formal control it is considered that they are unlikely to enter the formal waste management system which needs to be planned for[6]. Therefore, this report focuses on non-natural waste arisings.

Non-Natural Agricultural Waste Arisings

3.9 'Non-natural' agricultural waste is waste other than 'natural' organic waste arising from farming activities. This includes discarded pesticide containers, plastics, tyres, batteries, clinical waste, old machinery, waste oil and packaging waste. Non-natural waste arisings may also include organic waste such as crop residues. The only recognised source of national estimates for arisings of non-natural agricultural waste available is the 2001 EA Report entitled 'Towards Sustainable Agricultural Waste Management'.

Management Options

3.10 The 2006 DEFRA 'Waste Minimisation Manual: A Practical Guide For Farmers & Growers'[7] identifies three principal routes for managing agricultural waste as follows:

- Remove waste from the farm and deliver to an appropriately permitted facility.
- Apply to the EA for a permit to manage certain waste on-farm[8].
- Register an appropriate exemption to recover or dispose of some waste on-farm.

Each route is considered below.

Delivery to a permitted facility

3.11 This route would mean that any waste produced will be recorded at the permitted facility and hence reported through the WDI. Agricultural waste is coded under EWC 01 and EWC sub chapter codes 02 01. The WDI 2023 reports only 64 tonnes of waste managed through permitted facilities in England under these codes arose from Kirklees in 2023. However, c179,500 tonnes of agricultural waste is reported as arising under the Yorkshire and Humber (WPA Not codeable) category of which Kirklees forms part. Of this, c5,000 tonnes was managed at one site within Kirklees with the remaining c174,500 tonnes managed at sites outside Kirklees. For the purposes of this estimation exercise it has been assumed that the c5,000 tonnes of Yorkshire and Humber (WPA Not codeable) waste managed at one site within Kirklees, actually arose from Kirklees.

[6] It should be noted that some on farm waste management facilities such as lagoons and AD plants may make provision for this waste stream, sometime in conjunction with other wastes counted under other streams.

[7] DEFRA 2006 Product code PB 11674

[8] Intensive farming units such as pig or poultry farms are subject to environmental permitting as installations.

Applying for a permit

3.12 Where agricultural waste is being managed on a farm in sufficient quantities or on an ongoing basis an environmental permit may be required. Where a permit is granted by the EA the quantities of waste managed through such facilities would be reported through the WDI and hence captured for the purposes of quantifying this waste stream. Permitted facilities may also require express planning consent. Note that only one such facility exists within Kirklees as identified in para 3.10.

Registering a Permitting Exemption

3.13 Typical exemptions that farmers apply for include the ability to burn waste in the open (D7), spreading waste to benefit agricultural land (U10) and the use of waste in construction (U1), which covers the use of waste hardcore to maintain farm tracks and roads. However, these exemptions may also be used to cover activities taking place on farmland involving the import of waste from non-agricultural sources. The specific exemptions that relate solely to the management of agricultural waste are as follows:

- Deposit of agricultural waste consisting of plant tissue under a Plant Health notice.
- Treatment of sheep dip for disposal.
- Treatment of non-hazardous pesticide washings by carbon filtration for disposal.
- Spreading pig and poultry ash mixed with manure on farmland.

Context in Kirklees

3.14 The WNA 2016 reported c586,500 tonnes of agricultural waste arose in Kirklees in 2014. However, it concluded that "...*only 4,166 tonnes (0.7%) required third party waste management capacity*"

3.15 Furthermore, the adopted Kirklees Local Plan (2019) concluded that:

"The small amount of agricultural waste generated in Kirklees [9] is not expected to increase over the plan period and there is no requirement to plan for additional facilities to manage this waste stream."

Update

3.16 As stated in paragraph 3.10 above, the WDI 2023 reports c5,000 tonnes of waste from agricultural sources being managed at permitted sites located in Kirklees in 2023. This was all composed of non-natural waste (02 01 10 – waste metal). The recipient of this waste was Top Vale Works operated by Milnsbridge Metals Ltd.

[9] Referring to the 4,166 tonnes that requires off-site management.

Agricultural Waste Managed via Exempt Activities

3.17 Due to the imprecise and non-specific nature of registered exemptions it is not possible to attribute tonnages managed through these routes. However, it may be reasonable to assume that some of the waste managed through some exemptions that don't involve the final fate (S, T and U categories) eventually ends up at permitted facilities and the tonnages of waste are therefore recorded in the WDI. It may have been mixed with non-agricultural waste at that point and is therefore not identified as coming from agricultural sources in the permitted site waste returns submitted. Due to this, no attempt to calculate the total agricultural waste managed at exempt sites has been made. Instead, reliance has been placed on the WDI which suggests c5,000 tonnes of agricultural waste that arose in Kirklees in 2023 was managed through permitted facilities.

Conclusion

3.18 The estimated agricultural waste arising from Kirklee in 2023 that may require management through permitted facilities is c5,000 tonnes. The tonnages managed through exemptions may add to the arisings figure, but the quantities are unknown, and it is likely that some is reported in the WDI at 'next step 'sites. Given the position of the adopted Local Plan (2019) it is considered that it is not justified to plan for additional management capacity for this stream alone.

4. Low Level Radioactive Waste

Context

4.1 Solid radioactive waste is categorised into three principal categories (and a subcategory) according to its level of radioactivity and the heat it produces. These categories are:

i) **High-level radioactive waste (HLW)** waste which can generate significant heat because of its radioactivity, and so this factor has to be taken into account in the design of storage or disposal facilities.

ii) **Intermediate level radioactive waste (ILW)** has lower levels of radioactivity than HLW and does not generate sufficient heat for this to determine the design of storage or disposal facilities.

iii) **Low level radioactive waste (LLW)** is radioactive waste having a low radioactive content. LLW makes up more than 90% of the UK's radioactive waste by volume but contains less than 0.1% of the total radioactivity. Within the definition of LLW, there is a sub-classification, known as Very Low Level radioactive waste (VLLW).

iv) **Very low level waste (VLLW)** may either be low volume VLLW or high volume VLLW. The principal difference between the two types is the need for total volumes of high volume VLLW deposited at any one particular landfill or other waste management facilities being subject to control.

Context in Kirklees

4.2 The WNA 2016 stated the following:

"*The data supplied by the EA indicates the material produced locally was disposed to foul sewer (as waste water) and therefore did not make use of any specialised handling facilities locally or in other authorities."*

4.3 The Kirklees Local Plan (2019) took the position that:

"Kirklees contains a single location generating a very small amount of low-level radioactive waste, the nature of which means it can be disposed via the foul sewer network with other wastes. Therefore there is no need for specialised local management capacity."

Policy Relevant to Kirklees Arisings

4.4 In the absence of any nuclear sector facilities within Kirklees, the primary national Government policy document that still affects the management of radioactive waste that may arise within Kirklees is the *UK Strategy for The Management Of Solid LLW Arising From The Non-Nuclear Industry*[10] (hereinafter referred to as 'the LLW strategy').

[10] https://www.gov.uk/government/publications/strategy-for-the-management-of-solid-low-level-radioactive-waste-from-the-non-nuclear-industry-part-1-anthropogenic-radionuclides

4.5 The LLW strategy is primarily aimed at non-nuclear industry waste producers, the environment agencies and waste planning bodies and:

i) provides guidance and background information to enable planning authorit*ies to make informed decisions on planning applications and to respond to concern*s from their communities;

ii) clarifies the respective roles of waste producers, the environment agencies, planning authorities and the Nuclear Decommissioning Authority to enable decisions to be made that properly recognise the responsibilities of others; and,

iii) informs waste producers and regulators of how the regulatory framework applies to LLW, particularly the need for producers of LLW to produce waste management plans, consider waste minimisation at source and apply the waste hierarchy.

Low Level Radioactive Waste from Non-Nuclear and Nuclear Sources

Nature

4.6 The majority of radioactive waste that is not classed as high or intermediate level is produced by sectors outside the nuclear industry and hence is termed 'non-nuclear'. Most radioactive waste produced by non-nuclear sources contains very small levels of radioactivity and is therefore classed as VLLW. The majority of this material is similar in its physical and chemical nature to residual waste from household, commercial or industrial sources.

Non-Nuclear Sources

4.7 Non-nuclear sources of radioactive waste include hospitals, the pharmaceutical sector, and research and education establishments, all of which may use radioactive materials which ultimately leads to the generation of radioactive waste. Individually these sources generate relatively small volumes of radioactive waste. Further information regarding these sources is provided below.

4.8 **Hospitals** - Solid low level radioactive wastes arise as a result of traces of radiopharmaceuticals in used syringes, needles, vials from which radiopharmaceuticals have been withdrawn and absorbent or protective materials (e.g. swabs, dressings, sheets and plastic film) which may be contaminated with small amounts of radiopharmaceutical. Traditionally, most hospital waste has been designated as clinical waste, much of which is incinerated. However, hospitals are now segregating wastes at source distinguishing between that waste that requires management as clinical and that which can be managed as 'general' waste. This may result in some LLW being managed as general waste.

4.9 **Industry** - The pharmaceutical industry carries out drug and technology development in specific areas of disease research and, in doing so, makes wide use of radiopharmaceuticals. Solid LLW from the pharmaceutical industry comprises general laboratory plastics, vials, sharps (i.e. needles and blades), gloves and any material which may be contaminated. LLW from biotechnology companies includes equipment to count the radioactivity, gloves, protective overalls and vials, and the waste is treated as either clinical or general waste

4.10 **Research** - Radioactive tracers are used in universities, colleges and other research laboratories, to study the incorporation of chemical compounds into cells and organisms and also to study their transfer and metabolism. LLW arising at medical schools and biomedical research laboratories is similar to that from hospital laboratories and the pharmaceutical and biotechnology industries. The waste typically includes disposable plasticware, sample tubes, paper and plastic coverings, paper tissues, and organic liquids that are used to count certain types of radioactivity (called scintillation fluids). Agricultural and animal research will result in rather more bulky wastes (for example plant matter and animal bedding).

4.11 **Contaminated Land** - Whilst waste arisings from the remediation of land contaminated with radioactivity from non-nuclear sources are potentially significant in terms of volumes, their ad hoc nature makes it difficult to undertake any meaningful long term planning for disposal of associated soils. In its strategy, the Government does not therefore expect planning authorities to make specific provision for this within their planning frameworks. However, it does consider it prudent for waste planning authorities to make reference in their planning documents to the possibility that radioactively contaminated soil might arise where historical activities involving radioactive sources may have taken place, and that such waste might require disposal to specially authorised landfills.

Management of VLLW and LLW

Very Low Level Waste (Exempt Waste)

4.12 A site producing or managing less than 50 m^3 of VLLW per year is classed as a low volume VLLW source and as such is exempt from reporting quantities of waste produced and managed. VLLW from such sources is not required to be managed separately and so is expected to be managed in the same manner as general waste produced on the source site. As a result, any waste management facility in the UK may accept small volumes of VLLW mixed in with the other wastes depending on whether source sites fall within their catchment. However, VLLW is rarely (if ever) declared as such in any waste returns submitted so there are no specific records of its management to draw on. The LLW strategy states that Government considers that the present arrangements for low volumes of exempt VLLW are satisfactory and does not expect WPAs to make specific provision for the management of VLLW in their waste plans.

Low Level Waste

4.13 When considered on its own, the small quantity of LLW produced in the UK is insufficient to drive the provision of dedicated management facilities via the market. Therefore, the LLW Strategy concludes that producers of these wastes will nearly always have to rely on waste management networks provided for other large volume wastes. This can be problematic as the public perception of the risks associated with the management of LLW can deter waste facility operators from providing such a disposal service.

4.14 Most disposal of LLW requires a permit to be held by both the waste producer and the operator of the waste management facility that receives it. LLW can go either to a landfill as a 'controlled burial', the national Low Level Waste Repository (LLWR) located in Cumbria at Drigg, or may be dealt with by incineration (with or without energy recovery). To extend its life, use of the national LLWR is reserved for particular types of LLW, so LLW disposal usually takes

place at specially authorised facilities used for the management of other types of waste. Unlike the network of existing waste management facilities available to take VLLW there are considerably fewer facilities across the UK that currently take LLW. While operators of appropriate facilities may apply to take LLW at any time, in England there are currently only three landfill sites granted permits to do so. These are shown in Table 2. The closest site to Kirklees is Clifton Marsh landfill so current and future arrangements at this site may be of greatest relevance. This site was granted planning permission to operate through to 31st December 2035[11]The EA remaining landfill void dataset shows no data for Clifton Marsh landfill in 2023. In contrast the 2022 dataset showed c1.67 Mm^3 of void space remaining to be filled at the site in total.

Table 2: Landfill Sites Permitted to Receive LLW in England

Site Name	Operator	Waste Type	Source Specific	Host WPA
Clifton Marsh	Suez Recycling & Recovery Lancashire Ltd	LLW	Small quantities of lower activity low level radioactive wastes[12].	Lancashire
East Northants Resource Management Facility	Augean South PLC	LLW	Waste mainly generated from the decommissioning and cleanup of nuclear industry sites[13]	Northants
Lillyhall Landfill Site	FCC Recycling (UK) Ltd	High Volume -VLLW	No more than 26,000 m^3 of HV-VLLW per year and if the landfill remains operational until 2031 no more than 582,000 m^3 of HV-VLLW in total.[14]	Cumbria

Planning for the Management of LLW

4.15 The LLW strategy exhorts producers of LLW to work with planning authorities, to ensure that such wastes may be effectively handled through the preparation of local plans and in determining planning applications. It also suggests that any waste management plans produced by LLW producers should take account of the proximity principle alongside other considerations. It states that:

"*Waste planning authorities should consider how to manage LLW and VLLW arising in their areas as part of the preparation of their local waste plans. They should seek advice from waste producers and the environment agencies to ensure that the waste is being sent to a suitable waste management facility. If necessary and feasible, they should work with other waste planning authorities to share facilities.*"[15]

[11] Development Control Committee

[12] Permit WB3495DU issued to SUEZ Recycling & Recovery (Lancashire) Limited on 18/07/2022 for the Disposal of Radioactive Waste

[13] Permit FB3598DD issued to Augean South Limited on 15/09/2023 for the Disposal of Radioactive Waste

[14] Environment Agency. 2011. Environmental Permitting (England and Wales) Regulations 2010 Decision Document. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/303034/WRG_Decision_Document.pdf

[15] LLW Strategy key point page 18

LLW - The Proximity Principle

4.16 The LLW strategy recognises that planning by waste producers, for the disposal of VLLW and LLW involves balancing regulatory and policy requirements with what appropriate disposal routes are actually available. In the case of most low volume VLLW from non-nuclear sources, its management route/fate is purely dependent on that of general waste with which it is mixed at the point of production i.e. waste producers have little influence on choice of destination at which the waste is ultimately disposed unless they segregate it at source.

4.17 In the case of deciding on disposal routes for LLW, the LLW strategy states that the Government wishes to see “appropriate and explicit consideration” of the proximity principle. “Appropriate and explicit consideration" means that proximity must be a feature of any options assessment process which supports a proposed waste management plan. "Appropriate” consideration means that the proximity principle will assume a different importance in an options assessment for, say, a site producing large volumes of contaminated steel, for which only a limited number of decontamination facilities are available, compared to a hospital generating low volumes of radioactive waste suitable for (local) incineration or landfill.

4.18 The LLW Strategy also states that:

"*Communities which benefit from the beneficial uses of radioactive materials (including direct benefit such as the use of radiopharmaceuticals, and indirect benefits such as contributions to a local economy from commercial bodies using radioactive materials) should take a share in the responsibility for managing the radioactive wastes which inevitably arise from their use, where possible*"

It does however go on to recognise that "...*each and every local authority cannot necessarily be self-sufficient in the matter of waste management*." [16]

Production and Management of LLW in Kirklees

4.19 Establishments that use radioactive substances must gain an authorisation from the EA. Given they are handling radioactive materials it is possible that some LLW or VLLW requiring disposal may arise. A review of the EA authorisation register shows a single authorisation granted to an entity located in Kirklees as set out in Table 3.

Table 3: Radioactive Source Authorisations held within Kirklees

Source: EA Public Register accessed December 2024

Activity	Entity	Data Approved	Location
Keeping & Use of Radioactive Materials and Disposal of Radioactive Waste	Calderdale & Huddersfield NHS Foundation Trust	05/05/2022	Huddersfield Royal Infirmary, Acre Street, Lindley, Huddersfield, HD3 3EA

[16] LLW Strategy key point page 17.

Conclusion

4.20 This review has found that nothing substantial has changed regarding sources of radioactive waste in Kirklees and therefore the findings of the WNA 2016 and consequential policy in the adopted Local Plan set out in paragraph 4.3 above still hold.

5. Overall Conclusion

5.1 Review of the above data sources allows the following conclusions to be reached about the need to plan for 'other wastes' in the preparation of the Kirklees Local Plan:

i) Wastewater and the associated sludge appear to be catered for adequately through arrangements made by Yorkshire Water Services, the statutory sewerage undertaker. It is considered that the findings of the Kirklees WNA 2016, and the associated policies in relation to wastewater and sewage waste ought to be checked given the construction of the Huddersfield sludge treatment plant.

ii) Agricultural waste – Kirklees is not considered to generate sufficient quantities of such waste that would warrant specific separate provision assuming the continuation of the existing arrangements including the exemption regime.

iii) Radioactive waste – This review has found only one permitted source of non-nuclear radioactive waste within Kirklees. This strongly suggests that there is no critical mass of material requiring specialist capacity provision that needs to be planned for within the county and therefore the conclusions made in the WNA 2016 still hold and the current policy in the Local Plan still holds.