



CAS-03463-R2W9C2 - Kronospan Low Carbon CHP Facility

Environmental Statement

Vol2: Chapter 10.0 – Waste

Prepared for



December 2025
DNS5-2-010



Document Control

Revision	Date	Prepared By	Reviewed / Approved By
DNS5-2-010	December 2025	RW	TD/BC
DNS5-2-010 Rev 1			
DNS5-2-010 Rev 2			

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APPENDICES

Appendix 10A – Waste Planning Assessment



10.0 WASTE

10.1 Introduction

Introduction

- 10.1.1 This chapter of the Environmental Statement (ES), along with the accompanying Appendix, addresses the potential effects on waste during the construction, operation, and decommissioning of the Proposed Development. A description of the Proposed Development is provided in **ES Chapter 4.0 (Description of the Proposed Development)**.

Competence

- 10.1.2 This chapter has been prepared by Rhys Williams (BSc, MSc, MISEP, CEnv). Rhys has 4 years' experience in Environmental Impact Assessment (EIA), focussing on EIA coordination and review of technical documents including materials and waste ES chapters. Rhys' experience is rooted in academia, where he undertook a Masters degree in Integrated Environmental Studies, which included sustainable resource management and waste management modules, as well as a BSc (Hons) in geology. Rhys is also a Full Member with the Institute of Sustainability and Environmental Professionals (ISEP) and a Chartered Environmentalist (CEnv) with the Society for the Environment.
- 10.1.3 The chapter has been reviewed by Tom Dearing, Director at Savills, who is a Chartered Environmentalist and Full Member of ISEP. Tom has 15 years' experience in EIA for development projects.

10.2 Planning Policy, Legislation and Guidance

National Planning Policy

- 10.2.1 The following national planning policies are relevant to the assessment:
- Planning Policy Wales Edition 12.
 - PPW Technical Advice Note 21: Waste (2014).
 - Towards Zero Waste (2010).
 - Beyond Recycling 2021 – A strategy to make the circular economy in Wales a reality.



Planning Policy Wales Edition 12

- 10.2.2 Planning Policy Wales Edition 12 (PPW12) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural wellbeing of Wales.
- 10.2.3 Waste is considered specifically within Chapter 5 (Productive and Enterprising Places), with circular economy principles covered under 'Making Best Use of material Resources and Promoting the Circular Economy' (page 104). PPW states that circular economy principles should underpin all development and that development should seek to minimise the use of non-renewable resources and prevent the generation of waste.

PPW Technical Advice Note 21: Waste (2014)

- 10.2.4 PPW is supported by Technical Advice Note 21, which provides advice on how the land use planning system should contribute towards sustainable waste management and resource efficiency. Technical Advice Note 21 sets a framework for facilitating the delivery of sustainable waste management infrastructure through the planning process.

Towards Zero Waste (2010)

- 10.2.5 Towards Zero Waste is the overarching waste strategy document for Wales, which sets out the long-term framework for resource efficiency and waste management for the Welsh Government up to 2050.

Beyond Recycling (2021)

- 10.2.6 Beyond Recycling is the national Circular Economy Strategy for Wales, which sets out how the Welsh Government plan to go beyond recycling by keeping resources in use and avoiding all waste.



Local Planning Policy

Overview

- 10.2.7 The adopted local development plan for Wrexham County Borough Council (WCBC) comprises the Wrexham Unitary Development Plan 1996-2011 (the UDP) which was adopted in February 2005. However, the local development plan has been through significant upheaval in recent years. WCBC adopted the Local Development Plan 2013-2028 (the LDP) on 20 December 2023, however, the decision to adopt the LDP has subsequently been quashed by a High Court Order issued on 12 June 2025. The LDP has therefore been returned to unadopted status and the UDP has been returned to being the adopted development plan. Further information regarding the status of the UDP and LDP is provided in the Planning Statement (**DNS4-001**).
- 10.2.8 In the above context, relevant policies from the UDP and LDP are set out below.

Wrexham Unitary Development Plan

Policy PS10: Waste

- 10.2.9 UDP Policy PS10 supports sustainable waste management practices that prioritise waste reduction, re-use, and recycling. The Proposed Development directly aligns with this policy by providing a recovery solution for residual waste that cannot be reused or recycled. By diverting waste from landfill and converting it into energy, the scheme supports the waste hierarchy and contributes to regional renewable energy targets. The Proposed Development would also be designed to optimise resource efficiency, with robust waste acceptance protocols and emissions controls in place to ensure compliance with environmental standards. Furthermore, the Proposed Development supports the proximity principle by serving local and regional waste catchments, thereby reducing transport distances and associated environmental impacts.

Policy MW12: Waste Management

- 10.2.10 UDP Policy MW12 supports the development of waste management facilities where they contribute to sustainable waste strategies and do not result in unacceptable environmental or amenity impacts. The Proposed Development is consistent with this policy by providing a modern, recovery-based solution for residual waste, in line with the waste hierarchy. The Proposed Development would be within an established



industrial site, minimising land use conflict and visual intrusion. It incorporates emissions control systems and will operate under an Environmental Permit, ensuring that impacts on noise, air quality, and traffic are effectively mitigated (see **ES Chapter 5.0 (Noise and Vibration)**, **ES Chapter 6.0 (Air Quality and Odour)**, and the Transport Statement (**DNS4-005**)). The Proposed Development would also support regional waste infrastructure needs and reduce reliance on landfill, contributing positively to both local and national waste and energy objectives.

Wrexham Local Development Plan

Policy SP17: Sustainable Waste Management

- This is the core policy directly addressing waste. It promotes the waste hierarchy (prevention, reuse, recycling, recovery, disposal) and supports facilities that contribute to sustainable waste management.
- It encourages integrated waste strategies, including proximity principles and self-sufficiency.
- Proposals must demonstrate how they contribute to national and regional waste targets.

Policy SP18: Climate Change

- Waste management proposals should align with climate change mitigation and adaptation strategies, including reducing greenhouse gas emissions from waste activities.

Policy SP14: Natural Environment

- Waste developments must avoid adverse impacts on biodiversity, protected habitats, and ecological networks.

Legislation and Guidance

10.2.11 The following key pieces of legislation and guidance are considered relevant to this assessment:

- Waste (England and Wales) Regulations 2011 (as amended).
- The Environment (Wales) Act 2016.



- Waste (Wales) Measure 2010.
- ISEP (formerly IEMA) Materials and Waste in Environmental Impact Assessment (March 2020).
- Biomass Policy Statement 2021.

10.3 Consultation

EIA Scoping Direction

- 10.3.1 In accordance with Regulation 14 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (The EIA Regulations), a formal request for a Scoping Direction was submitted to Planning and Environment Decisions Wales (PEDW) on 30 May 2024 and was accompanied by a Scoping Report (**Appendix 1C**) which set out the proposed EIA scope of the Proposed Development.
- 10.3.2 A formal Scoping Direction (**Appendix 1D**) was issued by PEDW on 31 July 2024 which confirmed that the Proposed Development would fall under Schedule 1, Part 10 of the EIA Regulations (and would therefore require EIA) and provided PEDW's opinion regarding the proposed EIA scope of the Proposed Development.
- 10.3.3 A response to the Scoping Direction setting out how each matter is addressed in the ES and details of where areas of disagreement are clarified and/or resolved is provided at **Appendix 1G**.
- 10.3.4 A summary of the Scoping Direction responses (and the Applicant's response) relevant to material assets and waste is provided in **Table 10.1** below.

Table 10.1 – Summary of (Material Assets and Waste) Scoping Direction Responses

Consultee	Summary of Consultee Response	How Response has been Addressed in the ES
PEDW	Given the nature of the development is an energy from waste scheme, the impact on waste should be considered as part of the ES. The ES should be supported by an assessment of the onsite waste, forestry waste and refuse derived fuels. It should include details of the volume or weight of waste that will be recovered (both on-site and off-site),	All points outlined by PEDW have been actioned. The ES includes a dedicated assessment of waste, covering onsite waste, forestry waste, and refuse-derived fuels. It details volumes and weights of waste recovered both on- and off-site. A cumulative assessment has also

Consultee	Summary of Consultee Response	How Response has been Addressed in the ES
	details of on-site storage and segregation arrangements, logistical information for waste imported to site, and details of the energy from waste process. The assessment should also include a cumulative assessment regarding the overall waste at the site, including the recently approved OSB facility. The assessment should consider any significant impact, both positive and negative. Given the nature of the development as an energy from waste project, PEDW direct that Material Assets and Waste should be scoped into the ES.	been undertaken, including consideration of the recently approved oriented strand board (OSB) facility. Both positive and negative impacts have been assessed. Although the Scoping Direction refers to a chapter titled 'Material Assets and Waste', the commentary is specific to waste, so the chapter is consistent with that. The Proposed Development is not in a minerals safeguarded area so there is no impact on minerals as a material asset.
PEDW	The waste assessment (which may form part of a planning statement) should be included as a technical appendix to the ES, to support a proportionate chapter on waste.	The Waste Planning Assessment has been included as Appendix 10A.

EIA Scoping Direction - Addendum

10.3.5 Following receipt of the Scoping Direction (**Appendix 1D**), formal pre-application advice from PEDW (received 19 June 2024), further informal discussions with PEDW and informal pre-application discussions with WCBC, the Applicant issued (on 15 October 2024) a document to PEDW entitled 'EIA Scoping Direction Clarification and Update to the Proposed Development Design' (**Appendix 1E**). This document provided details of the proposed changes to the Proposed Development which arose since the initial pre-application advice was sought, as well as setting out broad areas of agreement and disagreement/clarification with the EIA Scoping Direction referred to above. A summary of the main Proposed Development design changes made at this point is provided below:

- The status of the existing K7 Biomass Plant would change from 'remaining in operation' to 'remain in situ but be used as a back-up biomass plant only' – as a result, the existing K7 Biomass Plant feedstock would be re-directed for use in the proposed Low Carbon CHP Facility.

- A detailed review of CHP Facility feedstock generated on-site was undertaken to understand the maximum wood residue feedstock that would be generated from existing and planned manufacturing operations.
 - The proposed use of Refuse Derived Fuel (RDF) was removed.
- 10.3.6 The proposed change to the Proposed Development design also confirmed that the proposed electrical generating capacity of the proposed Low Carbon CHP Facility would increase from 30 megawatts (MW) to 40MW.
- 10.3.7 An EIA Scoping Direction Addendum (see **Appendix 1F**) was issued by PEDW on 14 January 2025 and provides PEDW's updated opinion regarding the proposed EIA scope of the Proposed Development.
- 10.3.8 A response to the Scoping Direction Addendum setting out how each matter is addressed in the ES and details of resolution of areas of disagreement is provided at **Appendix 1G**.
- 10.3.9 A summary of the Scoping Direction responses (and the Applicant's response) relevant to material assets and waste (and where they differ to those received in the initial Scoping Direction) is provided in **Table 10.2** below.

Table 10.2 – Summary of (Material Assets and Waste) Scoping Direction (Addendum) Responses

Consultee	Summary of Consultee Response	How Response has been Addressed in the ES
PEDW	<p>Section 2 of the Scoping Clarification Report (SCR) sets out changes to the proposed development since the Scoping Direction was issued. This includes increasing the proposed generation capacity from 30 megawatts (MW) to 40 MW of electricity. The proposed thermal energy generation capacity is to remain at 125 MW.</p> <p>The SCR also confirms changes to the sources of feedstock for the CHP, resulting in feedstock for the proposed CHP Facility being produced predominately (88.7%) by existing on-site processes. The SCR sets out an increase in feedstock from on-site process residues (bark, MDF</p>	<p>The import of waste has been assessed as part of this ES. The potential impacts of the import of waste relate primarily to transport, air quality, noise and vibration, and climate change. See the relevant ES chapters for reference to</p>

Consultee	Summary of Consultee Response	How Response has been Addressed in the ES
	<p>and particleboard process residues) and fuel to be diverted from one biomass boiler to the CHP.</p> <p>The SCR states that the feedstock is no longer proposed to be from imported Grade C Waste Wood, Refuse Derived Fuel (RDF) or Forestry Residues. However, paragraph 2.3.5 of the SCR goes on to state that this results in a feedstock shortfall of 32,887 tonnes per annum (TPA), which is proposed to be met through a combination of the following:</p> <ul style="list-style-type: none"> i) 50% (16,444 TPA) - The import of forestry brash for direct use in the proposed CHP Facility. ii) 25% (8,222 TPA) - The import of Grade C waste wood for direct use in the proposed CHP Facility. iii) 25% (8,222 TPA) - Increasing on-site production to generate further on-site process residues for indirect use in the proposed CHP Facility. <p>Paragraph 2.3.8 of the SCR also confirms that there would still be 7 HGVs (14 two-way journeys) per operational day. Based on the information in the SCR, feedstock is still proposed to be imported to the site. As the ES should be based on the worst-case scenario, the impact of importing waste must be included in the EIA. Further detail regarding the assessment of waste impacts is included in section 4 below.</p>	<p>potential effects (for those topics).</p>
PEDW	<p>PEDW confirm that an assessment of waste is required regardless of whether the waste is from on-site or off-site sources. Given the nature of the development as an energy from waste project, the development has the potential for significant waste impacts which must be assessed as part of the ES. PEDW direct that Material Assets and Waste should be scoped into the ES.</p> <p>As noted above, there still appears to be potential for off-site waste to be imported for feedstock. The ES should be undertaken on the worst-case scenario, therefore the impact assessment should be undertaken on the basis of a proportion of the feedstock from imported waste, as set out in the SCR.</p>	<p>As noted above, the assessment of waste has been provided in this chapter.</p>

Consultee	Summary of Consultee Response	How Response has been Addressed in the ES
PEDW	PEDW welcome that a Waste Assessment will be provided. PEDW reiterate that this should be included as a technical appendix to the ES, to support a proportionate ES chapter on waste.	The Waste Planning Assessment has been included as Appendix 10A.

Other Engagement with Stakeholders

- 10.3.10 There has been no further engagement with stakeholders, aside from the Scoping Direction detailed above.

Statutory Pre-Application Consultation

- 10.3.11 Sections 7, 8, 9, and 11 of the Developments of National Significance (Procedure) (Wales) Order 2016 (as amended) ('the DNSPWO') and Section 61Z of the Town and Country Planning Act 1990 require the Applicant to undertake statutory consultation prior to submitting a Development of National Significance (DNS) application. The statutory pre-application consultation period was between (insert date) and (insert date). **THIS PARAGRAPH IS A PLACEHOLDER AND WILL BE FINALISED UPON COMPLETION OF PRE-APPLICATION CONSULTATION – THE PAC REPORT IS NOT YET AVAILABLE.**
- 10.3.12 A series of responses from consultees received in month 2024 identified issues relating to material assets and waste matters, as set out in **Table 10.3** below. Full consultee responses (and how each has been addressed) is provided in the Pre-Application Consultation (PAC) Report (**DNS4-009**). **THIS PARAGRAPH IS A PLACEHOLDER AND WILL BE FINALISED UPON COMPLETION OF PRE-APPLICATION CONSULTATION – THE PAC REPORT IS NOT YET AVAILABLE.**

Table 10.3 – Summary of (Material Assets and Waste) Pre-Application Consultation Responses

Consultee	Summary of Consultee Response	How Response has been Addressed in the ES

Consultee	Summary of Consultee Response	How Response has been Addressed in the ES

10.4 Assessment Methodology

Technical Scope

Overview

- 10.4.1 The scope of this assessment is limited to the consideration of waste generation associated with the demolition, construction, operation and decommissioning phases of the Proposed Development. It does not include a detailed assessment of commercial waste sourcing or broader waste needs, which are addressed separately in the Planning Statement (**DNS4-001**). The identification, classification, and quantification of waste types are based on standard construction practices and anticipated operational activities. Additionally, the assessment does not include an evaluation of material use or sourcing; such considerations are beyond the scope of this report and are addressed through separate materials management or sustainability assessments.
- 10.4.2 The impacts associated with the by-products and associated wastes from the extraction of raw materials and the manufacture of products outside of the Materials and Waste Expansive Study Area are excluded from the scope. These stages of a products or a materials life cycle would have been subjected to environmental assessment and are therefore outside the scope of this assessment.
- 10.4.3 The Proposed Development would have a cut and fill balance and therefore no import or export of excavation material is anticipated. Therefore, excavation waste is not considered further in this assessment.

Storage of Waste

- 10.4.4 Measures to control the management and temporary storage of waste during construction are detailed within a Framework Construction Environmental Management Plan (**DSN4-003**).

- 10.4.5 Construction waste would be separated at source, with storage areas laid out to facilitate the segregation of waste material to encourage reuse and recycling: for example, by using colour-coded skips. Signage would be used to clearly identify the material to be stored in each area and the site set up should be continuously reviewed and modified where necessary to maximise the opportunity for reuse and recycling. As such, storage of waste has not been considered further in this assessment.

Transportation of Waste

- 10.4.6 The movement of waste would be undertaken by road. The extent of the impacts would be proportional to the waste generated and any reduction in waste would reduce the impacts on the road network. During construction works the reuse of material onsite would reduce waste movements. The impact on air quality (**ES Chapter 6.0 (Air Quality and Odour)**), noise (**ES Chapter 5.0 (Noise and Vibration)**), climate change (**ES Chapter 9.0 (Climate Change)**), and traffic (Transport Statement (**DNS4-005**)) is assessed separately.

Study Area

- 10.4.7 The spatial scope of waste assessments is often not easily defined as the sources of waste, its collection, sorting and transport, can occur at many locations in a geographical region well beyond the site boundary.
- 10.4.8 For this assessment, the 'Development Study Area' in which demolition and construction waste arisings are likely to occur, is defined by the application boundary of the Site.
- 10.4.9 Operational, construction and demolition waste arisings exclude any waste generated as part of the onsite (internal) circulation and access improvement works as minimal construction and demolition waste from those works is expected.
- 10.4.10 The 'Expansive Study Area' is defined by the availability of landfill sites and recycling facilities relative to the proximity of the 'Development Study Area' – this is based on a 30 kilometre (km) radius of the site boundary and available waste collection facilities. This has to be realistic around the practicalities of construction and operation. If this process identifies a capacity problem, then the Proposed Development would then look at a wider catchment of landfill and recycling facility

capacity. This comes with added challenges in that an increase in the Expansive Study Area would increase the catchment of other waste users/projects competing for capacity. This assessment looks at the available capacity and the quantities received to assess available capacity. The use of material received is an accurate record of the regional requirements when determining the baseline assessment. An increase of the Expansive Study Area would only be undertaken if the needs of the Proposed Development cannot be met by local capacity. A smaller regional assessment is considered a more conservative approach than increasing the Expansive Study Area to outside the region.

Establishing the Baseline

- 10.4.11 Baseline data that is proportionate to the scale and nature of the Proposed Development has been collected. Regional baseline information was targeted as a priority.
- 10.4.12 Where applicable, production of excavated arisings, and generation and disposal of waste is described and quantified for the existing activities and operations within the Development Study Area.
- 10.4.13 The assessment of the baseline is proportionate to the Study Area receptors (landfill sites). This is measured by waste received by each receptor based on Environment Agency (EA) data¹ and Natural Resources Wales data².

Identifying the Receptors

- 10.4.14 The ISEP (formerly IEMA) Guide to Materials and Waste in EIA defines:

'For waste, the sensitive receptor is landfill capacity. Landfill is a finite resource, and hence – through the ongoing disposal of waste – there is a continued need to expand existing and develop new facilities. This requires the depletion of natural and other resources which, in turn, adversely impacts the environment.'

¹ Landfill data for England: <https://www.data.gov.uk/dataset/237825cb-dc10-4c53-8446-1bcd35614c12/remaining-landfill-capacity1>

² <https://naturalresourceswales.sharefile.eu/share/view/sb2191ade60e841a99cd356275d22f288/fof469c2-9669-4c96-80a5-a0cf8a41ac35>



10.4.15 Receptors have been identified by a desk study of Ordnance Survey map data, publicly available data, the EIA Scoping Direction, and the use of waste management experience and judgement.

Sources of Waste

10.4.16 The Proposed Development may generate the following types of waste which is considered in the assessment:

- demolition wastes;
- construction wastes; and
- operation wastes.

Assessing Sensitivity of a Receptor

10.4.17 The significance of waste arisings is largely based on the nature of the waste, the location and capacity of local and regional waste management facilities and the sustainability of the disposal or processing method.

10.4.18 Overall, the purpose of a waste management assessment is to characterise development waste types and arisings and to identify existing and potential methods employed for their management, as well as the significance of change associated with a proposed development in comparison to the current and likely future situation without the development. For the purposes of this assessment, a methodology has been utilised that allocates a 'score' based on various considerations of waste type and quantity, as well as disposal. This score is used to determine the significance of impact.

10.4.19 This approach broadly conforms with the standard EIA approach of assessing significance as a function of the magnitude of impact and sensitivity of any receptors. In this case, magnitude of impact and proximity and sustainability of receptors. The sensitivity of landfill void capacity can be determined using **Table 10.4** below.



Table 10.4 - Inert and Non-Hazardous Landfill Void Capacity Sensitivity

Waste	
Across construction and/or operation phases, the baseline/future baseline (i.e., without development of regional (or where justified, national) inert and non-hazardous landfill void capacity is expected to...	
Negligible	...remain unchanged or is expected to increase through a committed change in capacity.
Low	...reduce minimally: by <1% as a result of wastes forecast.
Medium	...reduce noticeably: by 1-5% as a result of wastes forecast.
High	...reduce considerably: by 6-10% as a result of wastes forecast.
Very High	...reduce very considerably (by >10%); end during construction or operation; is already known to be unavailable; or would require new capacity or infrastructure to be put in place to meet forecast demand.

10.4.20 The quantity of waste is assessed by interrogating the designs for the Proposed Development (shown on the DNS Drawings) where possible, and by using professional judgement.

10.4.21 The sensitivity of hazardous landfill void capacity can be determined using **Table 10.5** below.

Table 10.5 - Hazardous Landfill Void Capacity Sensitivity

Hazardous Waste	
Across construction and/or operation phases, the baseline/future baseline (i.e., without development of regional (or where justified, national) hazardous landfill void capacity is expected to...	
Negligible	...remain unchanged or is expected to increase through a committed change in capacity.
Low	...reduce minimally: by <0.1% as a result of wastes forecast.
Medium	...reduce noticeably: by 0.1-0.5% as a result of wastes forecast.
High	...reduce considerably: by 0.5-1% as a result of wastes forecast.
Very High	... reduce very considerably (by >1%); end during construction or operation; is already known to be unavailable; or would require new capacity or infrastructure to be put in place to meet forecast demand.

10.4.22 The quantity of waste is assessed by interrogating the designs for the Proposed Development (shown on the DNS Drawings) where possible, and by using professional judgement. An interpretation is then made as to whether it is likely to be hazardous.

Assessing Magnitude of Impact

10.4.23 The magnitude of impact from inert and non-hazardous waste can be determined using **Table 10.6** below.

Table 10.6 - Assessment Criteria for the Magnitude of Impacts from inert and Non-Hazardous Waste

Waste	
No change	Zero waste generation and disposal from the development.
Negligible	Waste generated by the development will reduce regional landfill void capacity baseline by <1%.
Minor	Waste generated by the development will reduce regional landfill void capacity baseline by 1-5%.
Moderate	Waste generated by the development will reduce regional landfill void capacity baseline by 6-10%.
Major	Waste generated by the development will reduce regional landfill void capacity baseline by >10%.

10.4.24 The magnitude of impact from hazardous waste can be determined using **Table 10.7** below.

Table 10.7 - Assessment Criteria for the Magnitude of Impacts from Hazardous Waste

Hazardous Waste	
No change	Zero waste generation and disposal from the development.
Negligible	Waste generated by the development will reduce national landfill void capacity baseline by <0.1%.
Minor	Waste generated by the development will reduce national landfill void capacity baseline by 0.1-0.5%.
Moderate	Waste generated by the development will reduce national landfill void capacity baseline by 0.5-1%.
Major	Waste generated by the development will reduce national landfill void capacity baseline by >1%.

Assessing Significance of Impact

10.4.25 The significance of impact can be determined using the sensitivity of receptor and the magnitude of impact to identify thresholds as shown in **Table 10.8** below.

Table 10.8 - Thresholds of Impact

	Magnitude of Impact					
		No change	Negligible	Minor	Moderate	Major
Sensitivity of Receptor	Very High	Neutral	Slight	Moderate or large	Large or very large	Very large
	High	Neutral	Slight	Slight or moderate	Moderate or large	Large or very large
	Medium	Neutral	Neutral or slight	Slight	Moderate	Moderate or large
	Low	Neutral	Neutral or slight	Neutral or slight	Slight	Slight or moderate
	Negligible	Neutral	Neutral	Neutral or slight	Neutral or slight	Slight

10.4.26 Impacts which reach a threshold of moderate or above are considered significant. Where the threshold is “slight or moderate”, professional judgement should be used in combination with documented justification, to determine a final outcome.

Identifying Potential Mitigation Measures

10.4.27 Mitigation measures are identified using professional judgement based on experience from previous projects, using the suggested mitigation from the ISEP Guidance as a basis.

Limitations and Assumptions

10.4.28 There are a number of assumptions used in the preparation of this chapter, a summary of these is provided in **Table 10.9** below.



Table 10.9 - Main Assumptions

Assumption	
Volume of buildings to be demolished	1. Gas turbines 1 and 2 = 4,915 m ³ (to be sold for reuse) 2. Redundant steelwork = 20 m ³ 3. Redundant manual loading and conveyor system = 874 m ³ 4. Materials reception building = 100 m ³ 6. Transportation system between existing chip silos and existing refiner building = 358 m ³
Proposed floorspace	Area of CHP buildings = 1,637 m ³
External hardstanding	Site is currently existing hardstanding, which is to be constructed on. Any residual concrete to be crushed and reused on site.
Earthworks cut and fill	Cut and fill balance, no import or export of excavation waste
Study area for landfill sites	30 km radius

10.4.29 For the assessment, the landfill capacity for sites has been based on available capacity data from 2023 which is assumed to continue from 2023-2028 as a projection. The latest landfill void capacity data for Wales is dated 2018. Therefore, the reported capacity figures have been adjusted to reflect an estimated capacity in 2023. This has been done by projecting the 2018 capacity forwards to 2023 using the tonnes received for the relevant site in 2023, which is considered to represent a reasonable worst case.

10.5 Baseline Environment

Current Baseline

10.5.1 The existing Kronospan Facility covers an area of approximately 40 hectares, with approximately 14 hectares of this developed with industrial buildings and plant. Several planning consents have been granted on the existing Kronospan Facility, which are either completed or under construction, which include warehouses, substation infrastructure and other associated infrastructure.

10.5.2 Existing operations at the Kronospan Facility would generate approximately 88.8% (260,113 TPA) of the feedstock for the Proposed Development, in the form of on-site process residues such as bark and medium density fibreboard (MDF) residue and diverted fuel for the existing K7 biomass boiler which would revert to a back-up boiler should the Proposed Development be granted. The remaining 32,887 TPA required

to meet the maximum throughput of the Proposed Development would be met as follows:

- 50% (16,444 TPA) - **The import of forestry brash** for direct use in the proposed Low Carbon CHP Facility.
- 25% (8,222 TPA) - **The import of Grade C waste wood** for direct use in the proposed Low Carbon CHP Facility.
- 25% (8,222 TPA) - **Increasing on-site production** to generate further on-site process residues for direct use in the proposed Low Carbon CHP Facility.

10.5.3 Further information regarding the feedstock sources for the Proposed Development is provided at **Section 4.4** and **Table 4.3** of **ES Chapter 4.0 (Description of the Proposed Development)**.

10.5.4 An appraisal of the proposed feedstock against the relevant (national and local) waste policies and guidance is provided in the Planning Statement (**DNS4-001**).

Existing Landfill Sites

10.5.5 A summary of the capacity and annual waste reception data from active landfill sites within 30km of the Site has been summarised in **Table 10.10** below. This has been sourced from EA Remaining Landfill Capacity 2023 data³ and NRW Remaining Landfill Void in Wales data⁴.

Table 10.10 - Regional Landfill Sites Identified within 30 km of the Site

Facility Name	Facility Address	Local Authority	Site Type	Total Tonnes Received 2023	Remaining Capacity 2023 (cubic metres)
Wood Lane Landfill Site	Wood Lane, Ellesmere SY12 0HY	Shropshire	L04 - Non-Hazardous	21,998	824,725
Dorrington Quarry Landfill Site	Dorrington, Shrewsbury, Shropshire, SY5 7EE,	Shropshire	L05 - Inert Landfill	33,519	8,150
Hafod Quarry Landfill Site	LL14 6ET	Wrexham	L04 - Non-Hazardous	71,251	1,921,658*

³ <https://www.data.gov.uk/dataset/237825cb-dc10-4c53-8446-1bcd35614c12/remaining-landfill-capacity1>

⁴ <https://datamap.gov.wales/documents/3249>

*The latest landfill void capacity data for Wales is dated 2018. The reported capacity figure for Hafod Quarry Landfill Site in 2018 of 2,218,538 m³ has been adjusted to reflect an estimated capacity in 2023. This has been done by projecting the 2018 capacity forwards to 2023 using the tonnes received in 2023, which is considered to represent a worst case.

- 10.5.6 By conservatively assessing the cumulative landfill void capacity of the Wood Lane Landfill Site in **Table 10.10**, the calculation in **Table 10.11** below determines that the regional landfill void capacity forecasted for 2028 is 2,671,599 tonnes based on a projection of the quantity of material received in 2023 over a 5-year period against the 2023 capacity. At this same rate of receiving material (126,768 TPA), based on the assessment criteria presented in the methodology section, the sensitivity is assessed as **Medium**.

Table 10.11 - Regional Non-Hazardous/Inert Landfill Capacity and Received Waste

Descriptor	Value
Total Capacity of sites 2023	= 2,754,533 m ³
At 1.2 tonnes ⁵ per m ³	= 3,305,439 tonnes
Total material received 2023	= 126,768 tonnes
2023 sensitivity	= 126,768 / 3,305,439 x 100% = 3.8% (Medium)
Projection of 5 years based on 126,768 TPA	
5-year tonnage	= 633,840 tonnes
2028 Total Capacity	= 2,671,599 tonnes
2028 Sensitivity	= 126,768 / 2,671,599 x 100% = 4.8% (Medium)

- 10.5.7 Based on the EA Hazardous Waste Data Interrogator 2023, there are nationally a limited number of hazardous waste landfill sites. The management and disposal of hazardous waste is a specialist process and usually would involve some interim treatment processes prior to disposal at landfill. Given the nationally limited number of sites that accept landfill, the sensitivity of all sites has been considered in **Table 10.12** below. The sensitivity is concluded to be **Very High**.

⁵ https://www.sustainabilityexchange.ac.uk/conversion_factors_for_calculation_of_weight_to_vol

Table 10.12 - Regional and National Hazardous Waste Landfill Capacity and Received Waste

Descriptor	Value
Total Capacity 2023	= 8,487,521 m ³
At 1.2 tonnes ⁶ per m ³	= 10,185,025 tonnes
Total material received 2023	= 861,979 tonnes
2023 sensitivity	= 861,979 / 10,185,025 x 100% = 8.5% (Very High)
Projection of 5 years based on 861,979 TPA	
5-year tonnage	= 4,309,895 tonnes
2028 Total Capacity	= 5,875,130 tonnes
2028 Sensitivity	= 861,979 / 5,875,130 x 100% = 14.7% (Very High)

Other Waste Material and Management Facilities

10.5.8 A review of waste management facilities located in Denbighshire, Wrexham, Powys and Shropshire were conducted using the EA Waste Data Interrogator 2023⁷ and the NRW Waste Permit Returns Data Interrogator 2023⁸. The sites presented in **Table 10.13** below accepted Construction & Demolition waste at quantities of over 1,000 tonnes in that year.

Table 10.13 - Facilities which accepted over 1,000 Tonnes of Construction and Demolition Waste in 2023

Site Name	Facility Type	Facility District	Tonnes Received
A R Richards	Non Haz Waste Transfer / Treatment	Shropshire	1,315
A R Richards Ltd	Municipal Waste Incinerator Inert Waste Transfer / Treatment Non Haz Waste Transfer / Treatment Material Recycling Facility Physical Treatment	Shropshire	31,768
B A Shorthouse Ltd	Physical Treatment	Shropshire	1,355
Bridgnorth Integrated Waste Management Facility	CA Site	Shropshire	1,054

⁶ https://www.sustainabilityexchange.ac.uk/conversion_factors_for_calculation_of_weight_to_vol

⁷ <https://environment.data.gov.uk/dataset/134f7ce9-5123-4813-b4e5-c4fdf621200d>

⁸ <https://naturalresourceswales.sharefile.eu/share/view/s9f2b6fa3de6e4c23bcc027237aa5e0a6/fo32643a-bb38-4031-b6a8-ae66a79b848e>

Site Name	Facility Type	Facility District	Tonnes Received
Buildwas Quarry	Non Haz Waste Transfer / Treatment	Shropshire	4,816
D J & P A Pennill	Metal Recycling	Shropshire	2,328
Evans Aggregates	Physical Treatment Non-Haz Waste Transfer	Shropshire	3,147
Evans Aggregates (shrewsbury) Ltd	Physical Treatment Non Haz Waste Transfer / Treatment	Shropshire	6,876
Haughmond Hill Quarry	Physical Treatment	Shropshire	6,203
Oswestry Integrated Waste Management Facility	Non Haz Waste Transfer / Treatment	Shropshire	1,374
P G Skips Materials Recycling Facility	CA Site Non Haz Waste Transfer / Treatment	Shropshire	13,891
Samco (Norton) Ltd	Non-Haz Waste Transfer	Shropshire	1,868
Veolia Battlefield I W M F	Non Haz Waste Transfer / Treatment	Shropshire	2,762
Wades Skip Hire	Non Haz Waste Transfer / Treatment	Shropshire	1,031
Whitchurch Transfer Station and Household Waste Recycling Centre	CA Site	Shropshire	1,085
Wood Lane Landfill Site EPR/CP3698VW	Physical Treatment Non-Haz Waste Transfer	Shropshire	20,427
Zone A, Eight Gables	Non-Haz Waste Transfer	Shropshire	11,344
Min Y Clwyd Yard	Non-Haz Waste Transfer	Denbighshire	1,386
Lelo Aggregates	Inert & excavation Waste TS + treatment	Denbighshire	5,980
The Old Coal Yard	Physical Treatment Inert & Excavation Waste TS	Wrexham	60,462
Bryn Lane Civic Amenity Site	CA Site	Wrexham	2,358
Lelo Metal Recycling Ltd	Metal Recycling	Denbighshire	19,269
Plas Madoc Household Waste Recycling Centre	CA Site	Wrexham	1,180
Brymbo Household Waste Recycling Centre	CA Site	Wrexham	1,165
Miner's Road Depot	Physical Treatment	Wrexham	4,332
ASH Wrexham Recycling Centre	Non-Haz Waste Transfer	Wrexham	13,085
Heather Brown	Non-Haz Waste Transfer	Wrexham	2,593

- 10.5.9 There are 27 waste transfer or treatment sites accepting more than 1,000 tonnes of construction and demolition waste respectively in 2023. These are sorting and recycling waste streams reducing the quantity going to landfill. The sensitivity of this receptor is considered to be **low**.

10.6 Initial Development Design and Impact Avoidance/Reduction Measures

- 10.6.1 General design measures to avoid or minimise the potential for significant effects are described in **ES Chapter 4.0 (Description of the Proposed Development)**.
- 10.6.2 Design measures to avoid or minimise the potential for significant waste effects are summarised below.

Construction and Decommissioning

Construction Environmental Management Plan

- 10.6.3 A Framework Construction Environmental Management Plan (CEMP) (**DNS4-003**) is provided with this DNS application and presents the approach and application of environmental management and mitigation for the construction of the Proposed Development. A series of phase-specific CEMP documents (as required) which define specific measures to be adopted during the construction of the various components of the Proposed Development would be produced (post-consent) by the Principal Contractor (PC).
- 10.6.4 An overview of the approach to site waste management is set out in the Framework CEMP; once appointed, the PC will produce a site-specific SWMP that will form part of the CEMP suite of documents. Depending upon the volumes involved, coupled with an intention to reuse site-won soils/fill materials or import such materials from off-site donors, this may be managed via means of a Materials Management Plan (MMP). For soils and fill of less than 1,000 tonnes in total, it may be possible to obtain a U1 Waste Exemption from Natural Resources Wales (NRW).

Decommissioning Environmental Management Plan

- 10.6.5 The decommissioning phase will be supported by a Decommissioning Environmental Management Plan (DEMP) which will include measures similar to those proposed as part of the CEMP.



Demolition Material Reuse and Recycling

- 10.6.6 As part of the initial mitigation measures, sustainable waste management practices will be prioritised, including the reuse and recycling of key infrastructure components wherever feasible. Turbines will be sold for reuse where feasible, extending their operational life and reducing waste. Any hardstanding areas will be crushed and repurposed, minimising the need for new construction materials. Additionally, all metals recovered during demolition, construction and decommissioning will be recycled in accordance with industry standards and any waste wood will be recycled through the existing Kronospan Facility or the Proposed Development, contributing to a circular economy and reducing the environmental footprint of the project.
- 10.6.7 A pre-demolition audit is not required as the existing materials are intended to be reused and recycled in accordance with best practice, thereby minimising waste and supporting circular economy principles, as explained above.

Operation

- 10.6.8 The waste hierarchy will be central to the facility's waste strategy. Operational procedures will aim to source feedstock from the nearest sources to reduce the distance that feedstock will need to travel to the Site.
- 10.6.9 In addition, the proposed Low Carbon CHP Facility will be designed and operated to meet the criteria for R1 status under the Waste Framework Directive, confirming its classification as a recovery operation rather than disposal; further details are provided in the Heat and Power Plan (**DNS4-004**). Achieving R1 status demonstrates that the CHP plant delivers a high level of energy efficiency, ensuring that waste-derived fuels are used in a manner that provides a beneficial output of energy.

10.7 Assessment of Potential Effects

Introduction

- 10.7.1 This section sets out the assessment of effects taking into consideration the initial development design and impact avoidance/reduction measures detailed in **Section 10.6** above.

Construction Phase

Overview

- 10.7.2 This assessment has been separated to identify the impacts of solid waste that would be generated by demolition, earthworks, and construction activities that require off-site disposal during the construction period.

Demolition Waste

- 10.7.3 Demolition works would be required as part of the site preparation works. This would include the removal of existing gas turbines, and demolition of hardstanding areas and existing buildings. This would include a mixture of inert and non-inert waste. The gas turbines are proposed to be sold for reuse and so they are not considered further under demolition waste.
- 10.7.4 Demolition of the buildings on the Site would produce a variety of waste materials including concrete, ferrous and non-ferrous material, and timber. A relatively small quantity of material is expected to be generated from these demolition works. Using the Waste & Resources Action Programme ('WRAP') Designing out Waste Tool for Buildings, which indicates approximately 0.47 tonnes of waste per m³ for steel framed buildings and based on the footprint area of existing buildings it has been calculated that demolishing the buildings within the Site would result in approximately 635.5 tonnes of demolition waste, shown in **Table 10.14** below. All wood waste is expected to be recycled on site as part of the existing wood processing facility.

Table 10.14 - Building Demolition Waste

Building Type	Total Building Demolition Volume (m ³)	Total Building Demolition Material (tonnes)
Gas turbines 1 and 2	4,915 m ³	N/A – sold for reuse
Redundant steelwork	20 m ³	9.4
Redundant manual loading and conveyor system	874 m ³	410.8
Materials reception building	100 m ³	47
Transportation system between existing chip silos and existing refiner building	358 m ³	168.3
Total		635.5

- 10.7.5 Based on the quantity of demolition waste predicted above, the magnitude of impact is anticipated to be **negligible**, against a landfill sensitivity of **medium** and a waste management facility sensitivity (for recycled elements) of **low**, this would be considered as a **neutral or slight** effect at worst, which is **not significant**.

Construction Waste

- 10.7.6 Waste predicted to be produced from the construction of buildings within the Proposed Development is displayed in **Table 10.15** below. This figure has been calculated using Smart Waste BRE Waste Benchmark Data ⁹ and uses the industrial building criteria, producing an average quantity of 12.6 tonnes of construction waste per 100 m² of floor space². The floorspace figure has been provided by the Applicant and represents the total floorspace of new buildings proposed.

Table 10.15 - Construction Waste

Total Floorspace of New Buildings (m ²)	Total Building Construction Waste (Tonnes)
1,637 m ²	206

- 10.7.7 On the assumption that the recycling rates would be 90%¹⁰, with the remaining 10% sent to landfill, the total amount of construction waste to be recycled is 185 tonnes and 21 tonnes is to be sent to landfill. The magnitude of impact is therefore anticipated to be **negligible**, against a landfill sensitivity of **medium** and a waste

⁹ <https://www.smartwaste.co.uk/swmp/login.jsp>

¹⁰ Waste Management Plan for England, January 2021 Department for Environment Rural & Food Affairs Available from: www.gov.uk/government/publications see p30 - Arrangements for construction and demolition waste.

management facility sensitivity (for recycled elements) of **low**, this would be considered as a **neutral or slight** effect at worst, which is **not significant**.

- 10.7.8 Given that the Site already largely comprises hardstanding areas, it is not anticipated that any significant quantum of waste will be produced from the construction of paved areas or foundations. Any waste concrete produced will be crushed and reused on site. Therefore, no significant effects in relation to hardstanding areas are anticipated.

Decommissioning

- 10.7.9 The proposed lifespan of the Proposed Development is anticipated to be approximately 40 years. Upon completion of the operational stage, it is anticipated that the plant will be decommissioned. Decommissioning will involve similar activities to the construction phase, but generally to a lesser magnitude and therefore a lower impact. Therefore, a full analysis of the decommissioning phase has not been undertaken, as the construction phase is considered to be a reasonable worst-case scenario for the potential effects of decommissioning to be compared to. The decommissioning phase will be subject to a Decommissioning Environment Management Plan (DEMP), which will provide measures to reduce and avoid potential effects related to the stage of the project, and will likely align with measures from the CEMP for the construction phase.

Summary of Construction Impacts

- 10.7.10 An assessment of construction impacts in terms of waste is presented in **Table 10.16** below.

Table 10.16 - Assessment of the Construction Impacts

Project Activity	Activities with Potential Impacts on Waste	Sensitivity of Receptor	Description of Magnitude	Significance
Demolition	Disposal of demolition waste	Medium	Negligible	Neutral or Slight, not significant
Construction (inc. decommissioning)	Disposal of construction waste	Medium	Negligible	Neutral or Slight, not significant

Operation Phase

Feedstock

- 10.7.11 During operation, the Proposed Development would generate energy using a mix of onsite and imported feedstock. The onsite proportion of the feedstock would comprise approximately 260,113 TPA of bark and MDF residues from the existing operation of the Site. This equates to 88.8% of the capacity of the Proposed Development, meaning the remaining feedstock would be imported as required, as described in **Section 10.5** above.

Ash

- 10.7.12 The operation of the proposed Low Carbon CHP Facility would result in the generation of ash as a by-product of the combustion process. Based on the expected throughput of the facility (maximum throughput of 293,000 TPA), ash production is anticipated to constitute approximately 6,672 TPA, including the material proposed to be imported to the site. If this material were to be sent to landfill, the magnitude of impact would be **negligible** and the sensitivity is **medium**, which results in a **neutral or slight** effect, which is **not significant**.

Air Pollution Control Residue

- 10.7.13 Air Pollution Control Residue (APCR) is a fine particulate waste material generated during the flue gas treatment process in energy recovery facilities, such as the Proposed Development. It typically consists of fly ash and residues from the neutralisation of acidic gases, including lime and activated carbon, and may contain trace heavy metals and other contaminants. APCR is classified as hazardous waste due to its chemical composition and must be managed in accordance with relevant environmental regulations. The proposed Low Carbon CHP Facility is expected to produce approximately 5,424 TPA of APCR, which will be collected and transferred off-site for appropriate treatment or disposal by licensed waste contractors. This volume would result in a magnitude of impact of **negligible**, with a **very high** sensitivity, which results in a **slight** effect, which is **not significant**.

10.8 Inter-Relationship of Potential Effects

- 10.8.1 The potential environmental effects associated with the Proposed Development have been assessed across relevant technical disciplines. Based on the nature, scale, and location of the Proposed Development, as well as the characteristics of the waste to be processed, no significant interrelationships between topic areas have been identified that would give rise to additional or compounded environmental effects.
- 10.8.2 Each environmental topic has been considered independently, and the findings indicate that the potential impacts are discrete and do not interact in a manner likely to result in cumulative or synergistic effects. As such, no further assessment of interrelated effects is considered necessary.

10.9 Further Mitigation and Monitoring

- 10.9.1 The only additional mitigation measure identified is the recycling of ash produced by the proposed Low Carbon CHP Facility. Ash (bottom ash and APCR) constitutes approximately 4.1% of the proposed Low Carbon CHP facility's throughput and, where feasible, should be sent to an appropriately licensed facility for recovery or beneficial reuse, such as in construction materials or aggregate production. This approach would support the minimisation of waste and would align with circular economy principles, reducing the need for landfill disposal and contributing to sustainable resource management.

10.10 Summary of Potential Residual Effects

- 10.10.1 As no additional mitigation is necessary, the residual effects remain the same as described in **Section 10.7**.

10.11 Cumulative Effects

- 10.11.1 There is the potential for the effects of the Proposed Development to interact with the effects of other projects or activities in the surrounding area. These are 'inter-project' cumulative effects and include projects that are under construction, projects that are approved but awaiting implementation, and projects awaiting determination within the planning process with design information in the public domain. Such projects are required to be within a geographical scope where environmental impacts could act together to create a more significant overall effect on a receptor and where sufficient environmental information is available.

10.11.2 The method for identifying other projects and activities is provided within **ES Chapter 2.0 (EIA Methodology)**; this includes a list of the specific projects and activities identified, which also takes into consideration the other Kronospan development proposals that are being progressed separately by the Applicant. The cumulative effects Study Area and the locations of the other projects and activities are illustrated on **Figure 2.1** and **Figure 2.2** respectively.

10.11.3 A review of other existing and proposed waste-related and non-waste developments (referred to above) in the surrounding area has been undertaken to assess the potential for cumulative environmental effects in combination with the Proposed Development.

10.11.4 No significant cumulative effects are anticipated. This is primarily due to the remaining available landfill capacity, which is sufficient to manage waste arisings from the identified cumulative schemes in addition to ongoing waste supply in the region. In addition, the differing characteristics of these developments—such as variations in waste type, scale, technology, and operational processes—mean that their environmental effects are unlikely to interact in a way that would result in significant cumulative impacts.

10.11.5 Furthermore, the Proposed Development is designed to manage waste in a controlled and regulated manner, with mitigation measures in place to minimise environmental effects. As such, when considered alongside other developments, the Proposed Development is not expected to contribute to any significant cumulative impacts.

10.12 Enhancement Measures

10.12.1 No enhancement measures are required or proposed.

10.13 Conclusions

10.13.1 The assessment of potential environmental effects associated with the waste aspects of the Proposed Development has identified a **slight** effect in relation to APCR waste on hazardous waste landfill capacity, with all other effects identified as **neutral** or **slight**, which are not considered significant. This reflects the controlled nature of the waste management processes, the implementation of initial design



mitigation measures, and the Proposed Development's compliance with relevant regulatory standards.

10.13.2 Overall, the waste-related elements of the Proposed Development are considered to be environmentally acceptable, with no significant residual effects expected.

Appendix 10A – Waste Planning Assessment

