



CAS-03463-R2W9C2 - Kronospan Low Carbon CHP Facility

Supporting Document 1

Planning Statement

Prepared for



December 2025
DNS4-001



Document Control

Revision	Date	Prepared By	Reviewed / Approved By
DNS4-001	December 2025	GE/BC	DA
DNS4-001 Rev 1			
DNS4-001 Rev 2			

© AXIS P.E.D. Ltd 2025. All rights reserved.

This document and its accompanying documents contain information which is confidential and is intended only for the use of the client. If you are not one of the intended recipients any disclosure, copying, distribution or action taken in reliance on the contents of the information is strictly prohibited.

Unless expressly agreed, any reproduction of material from this document must be requested and authorised in writing from AXIS P.E.D. Ltd. Authorised reproduction of material must include all copyright and proprietary notices in the same form and manner as the original and must not be modified in any way. Acknowledgement of the source of the material must also be included in all references.



Well House Barns, Chester Road, Bretton, Chester, CH4 0DH
1st Floor, Barfield House, Alderley Road, Wilmslow, SK9 1PL
Maling Exchange, Studio 307, Hoults Yard, Walker Road, Newcastle Upon Tyne, NE6 2HL

T: 0344 8700 007
enquiries@axis.co.uk
www.axis.co.uk

CONTENTS

1.0	INTRODUCTION	1
1.1	Introduction	1
1.2	The Applicant.....	1
1.3	The Site and its Surroundings.....	3
1.4	Pre-Application Consultation and Engagement.....	8
1.5	Structure of this Planning Statement.....	10
2.0	THE PROPOSED DEVELOPMENT.....	11
2.1	Overview.....	11
2.2	Key Components	11
2.3	The CHP Process	12
2.4	Feedstock	16
2.5	Operating Hours	18
3.0	NEED AND BENEFITS OF THE PROPOSED DEVELOPMENT	19
3.1	Introduction	19
3.2	Background.....	19
3.3	Kronospan Vision 2025 and Vision 2030.....	20
3.4	Environmental and Social Governance	22
3.5	Changing Operational Energy Requirements.....	22
4.0	FEEDSTOCK AVAILABILITY AND SUSTAINABILITY.....	29
4.1	Introduction	29
4.2	Feedstock Availability and Future Demand	29
4.3	Feedstock Sustainability	32
5.0	ENVIRONMENTAL EFFECTS.....	41
5.1	Introduction	41
5.2	ES Chapter 5.0 – Noise and Vibration.....	41
5.3	ES Chapter 6.0 – Air Quality and Odour	42
5.4	ES Chapter 7.0 – Landscape and Visual Impact Assessment.....	44
5.5	ES Chapter 8.0 – Historic Environment.....	47
5.6	ES Chapter 9.0 – Climate Change	49
5.7	ES Chapter 10.0 – Waste	49
5.8	ES Chapter 11.0 – Population and Human Health	50
5.9	Framework Construction Environmental Management Plan (CEMP)	50
5.10	Transport Statement	52
5.11	Phase 1 Geo-Environmental Assessment Report	53
5.12	Biodiversity Assessment Report and Green Infrastructure Statement	55
6.0	PLANNING POLICY CONTEXT	57
6.1	Introduction	57
6.2	National Development Plan.....	57



6.3	Strategic Development Plan.....	61
6.4	WCBC Development Plan Status.....	61
6.5	Wrexham Unitary Development Plan 1996-2011	62
6.6	Material Planning Considerations.....	65
7.0	PLANNING POLICY APPRAISAL.....	95
7.1	Introduction	95
7.2	Principle of the Proposed Development	96
7.3	Economic Benefits	110
7.4	Noise and Vibration.....	111
7.5	Air Quality and Odour	111
7.6	Landscape and Visual Impact	112
7.7	Historic Environment.....	112
7.8	Climate Change and Sustainability	113
7.9	Waste	113
7.10	Population and Human Health	114
7.11	Transport	114
7.12	Geology, Hydrology, Hydrogeology and Contaminated Land	115
7.13	Biodiversity	116
7.14	Flood Risk and Drainage.....	116
7.15	Summary	117
8.0	SUMMARY AND CONCLUSIONS.....	123
8.1	Introduction	123
8.2	The Proposed Development	123
8.3	Need and Benefits of the Proposed Development.....	124
8.4	Planning Policy Appraisal.....	124

TABLES

Table 2.1 – Proposed Feedstock Configuration (existing on-site processes)	16
Table 3.1 – Proposed Energy Generation Shift under ‘Normal’ Operations	25
Table 5.1 – Residual Noise and Vibration Effects	41



APPENDICES

Appendix A – Waste Wood Market Assessment



1.0 INTRODUCTION

1.1 Introduction

- 1.1.1 This Planning Statement has been prepared on behalf of Kronospan Limited (Kronospan) (the Applicant) in support of a Development of National Significance (DNS) application under Section 62D of the Town and Country Planning Act 1990.
- 1.1.2 The application is for the construction and operation of a Low Carbon Combined Heat and Power (CHP) Facility (the Proposed Development) on land at the existing Kronospan Facility, Chirk, North Wales. The proposed Low Carbon CHP Facility would process up to 293,000 tonnes per annum (TPA) of waste wood and forestry residues as feedstock for the existing Kronospan Facility.
- 1.1.3 The Proposed Development lies within the administrative area of Wrexham County Borough Council (WCBC).
- 1.1.4 This introductory section provides a description of:
- The Applicant.
 - The Proposed Development Site and its surroundings.
 - The pre-application consultation and engagement undertaken.
 - The remaining structure of this Planning Statement.

1.2 The Applicant

- 1.2.1 The Applicant is Kronospan Limited. Kronospan has been operating for 55 years (manufacturing for 52 years) at its site in Chirk, Wales. It is the world's leading manufacturer of wood-based panels using advanced technology and has pioneered many of the industry's key advances. The products produced have a wide application across the flooring, furniture, and refurbishment industries.
- 1.2.2 Kronospan is the UK's leading manufacturer of high-quality wood-based panels and associated products and has been operating in the UK since 1970, and the operation in Chirk was the first outside of Austria. The primary products manufactured by Kronospan at the Chirk site are Particleboard (PB) and Medium Density Fibreboard (MDF), from which several secondary products are produced such as laminate flooring, worktops and melamine faced boards.



- 1.2.3 The Kronospan manufacturing facility is a major local employer within WCBC with the site at Chirk employing over 600 staff. It is estimated that the existing Kronospan Facility also provides indirect employment to 6,000 people in industries relating to the manufacturing and supply chains associated with the operations at the site.
- 1.2.4 Kronospan is committed to reducing carbon as part of its operations and is a critical aspect of its long-term sustainability goals. An extract from the Kronospan Environmental, Social and Governance Report 2022-2023 is provided below.

“Attaining carbon-negative production is one of our key goals and reflects our commitment to environmental responsibility. Businesses have fundamental responsibilities towards our planet and are increasingly called upon to reduce carbon emissions in their production processes. Recent research shows the significance of responsible forest management. Forests can be utilised as a natural and effective form of carbon storage. Furthermore, through the utilisation of end-of-life post-consumer timber as a raw material, compounded carbon absorption and storage can be achieved through a combination of sustainable forestry and efficient recycling practices. By utilising wood over energy-intensive materials, such as concrete and plastic, we can effectively limit emissions resulting from fossil fuels.

At Kronospan UK, we utilise wood-based products as raw materials, prolonging the period of carbon storage. In essence, Kronospan products function as material reservoirs of CO2. For a comprehensive understanding of our product-based circular approach aimed at achieving carbon-negative production, please refer to “We Aim for Carbon-Negative Production.

Recognising our presence in an energy-intensive industry, we understand the substantial energy requirements inherent to the production of wood-based panel products. The preparation of raw material involves processes such as breaking down and bonding timber fibres using significant heat and electricity. To fulfil our dedication to addressing climate change, we consistently channel significant investment into the development and enhancement of technologies aimed at increasing production efficiency, whilst reducing emissions.

We believe continuous efforts will positively impact our sustainability journey. At Kronospan UK, we believe that harnessing renewable energy from end-of-life timber



lies at the core of our business model, driving our continued commitment to combat climate change.”

1.3 The Site and its Surroundings

The Existing Kronospan Facility

- 1.3.1 The entirety of the existing Kronospan Facility covers an area of approximately 40 hectares (ha), with approximately 14ha of this developed with industrial buildings and plant. Several industrial process facilities are in the western half of the existing Kronospan Facility which are used to process, sort and dry the raw wood materials used in the manufacture of MDF and PB. These include several tall structures, including stacks, that emit abated process emissions to the atmosphere. The tallest structures within the existing Kronospan Facility are the biomass plant stack which is 70m in height, the SEKA wet electrostatic precipitator (WESP) filter which has a stack height of 65.5m and stack width of approximately 5m, the MDF cyclones (57m high), and the dryer exhaust stack at the WESP Chip Dryer (50m high).
- 1.3.2 Several process buildings are in the northern half of the existing Kronospan Facility including: a sawmill, formalin plant and the secondary product manufacturing facility (*Kronoplus*) which produces laminate flooring and worktops.
- 1.3.3 The development of the existing Kronospan Facility is ongoing, reflecting changes in industrial processes and in market conditions. Planning permission has been granted for the following developments which are either recently completed, under construction, or planned to be constructed in the near future:
- An oriented strand board (OSB) Facility (granted 14 August 2019 under appeal reference APP/H6955/A/19/3227571) at the western extent of the existing Kronospan Facility; the OSB Facility is currently under construction.
 - A new warehouse building (granted 13 April 2022 under planning reference P/2021/0725) in the north-east part of the existing Kronospan Facility, which will deliver 15,029 sq.m. of floorspace (GEA). This planning permission also includes a new sprinkler tank between the northern extent of *Kronoplus* and the existing Kronospan Facility's northern boundary.
 - An extension to the existing main warehouse building to create a covered loading yard and storage area to facilitate site operations (granted 04 July 2022 under planning reference P/2022/0336).

- The erection of a new building to form engineering stores, a dedicated apprentice workshop, an access track around the new structure and ancillary works (granted 07 November 2022 under planning reference P/2022/0615).
 - The erection of two raw material silos, extension to the existing chip preparation building, and the erection of three silos and associated works (granted 09 January 2023 under planning reference P/2022/0765).
 - A proposed new access road (North Access Road), lorry park, weighbridge, 132kV substation and associated infrastructure on land immediately north of the existing Kronospan Facility (Decision Notice is pending (under planning reference P/2022/1080) subject to confirmation of legal agreements for off-site enhancements).
- 1.3.4 A draft planning application for a proposed 132kV electrical connection via underground cables between the existing Legacy to Oswestry 132kV overhead line and the proposed Kronospan 132kV substation (the latter included in planning permission P/2022/1080 referenced above) is currently subject to statutory pre-application consultation; the planning application is expected to be submitted to WCBC in Q1 2026.
- 1.3.5 Surface water for most of the manufacturing site currently drains to two lagoons on the northern boundary of the manufacturing facility, each of 2,033sqm in volume. A third lagoon was constructed to take surface water from the log yard.
- 1.3.6 An overview of the Proposed Development Site and existing site operations is provided at Environmental Statement (ES) **Figure 1.2**.

The Proposed Development Site

- 1.3.7 The Proposed Development Site (see the drawing provided at **DNS3-001**) is at the south-western extent of the existing Kronospan Facility which is predominately characterised by substantial built development. The Site is currently hardstanding and is on the footprint of the existing Gas Turbines 1 and 2. The existing Gas Engines 1 – 3, the existing K7 and K8 biomass plant stack, existing SEKA WESP filter and the existing dryer exhaust stack at the WESP Chip Dryer are immediately adjacent or very close to the Site. The existing MDF cyclones are approximately 150m to the south of the Site. Existing open wood storage is predominately to the north of the Site.



- 1.3.8 Several existing components would be required to be removed entirely, removed and relocated, removed and replaced with new; the most notable such component is the existing Gas Turbines 1 and 2 which are on the footprint of the proposed Low Carbon CHP Facility and would be decommissioned and removed (as an inherent part of the Proposed Development and attaining the core objective of decarbonisation). All such components are shown on the drawings provided at **DNS3-002** and **DNS3-003** and described in further detail at **Sections 4.13 – 4.16, ES Chapter 4.0 (Description of the Proposed Development)**.

Wider Site Context

- 1.3.9 Chirk is a small town off the A5 and just north of the England-Wales border (within Wales). The residential areas of the town mostly lie east of the B5070, with the existing Kronospan Facility to the west of this road. On the western side of the B5070, to the south-east of the existing Kronospan Facility is an area of greenspace comprising a private sports club (immediately south of the Kronospan car park) and Chirk Recreation Ground. The larger structures within the existing Kronospan Facility are visible from the recreation ground, but other structures are very well screened from view by intervening vegetation cover. Chirk town centre lies south-east of the existing Kronospan Facility and includes various commercial and community buildings and areas of public open space.
- 1.3.10 The wider area is rural. The landform falls steeply, from the hills to the west towards the much lower-lying Shropshire Plain to the east. Local variations in topography are evident, with a marked rise to a ridge east of the town.
- 1.3.11 The western perimeter of the existing Kronospan Facility is formed by the Shrewsbury to Chester railway. Further west, the land rises towards the foothills of the Welsh mountains. The Llangollen Canal forms part of the Pontcysyllte Aqueduct and Canal World Heritage Site (WHS). In addition to recognised heritage value, the canal corridor is an important recreational route; water is also abstracted from the canal for use in the Applicant's manufacturing process. Beyond the canal, settlement is sparse, and land cover comprises a mixture of pasture and small woodlands. Chirk Castle and its associated grounds (Grade 1 registered) are a notable feature within the landscape. The Castle is owned by the National Trust and is a well-known and well-frequented visitor destination. The Offa's Dyke Path National Trail runs in a broadly north-south direction further to the west, with views available east over the



lower ground. Much of this area falls with the boundary of the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB).

- 1.3.12 A sewerage pumping station and one property, owned by the Applicant, are to the immediate north of the existing Kronospan Facility; immediately north of this is the site of the proposed North Access Road and associated development referred to above. Further north, the land undulates before falling into the steep valley of the River Dee approximately 1.6km north of the existing Kronospan Facility. The canal (WHS) runs due north before turning westwards along the southern lip of the valley. The northern side of the valley is urbanised, with a string of contiguous small villages at Cefn.
- 1.3.13 The eastern perimeter of the existing Kronospan Facility is formed by Holyhead Road (B5070). An earth bund, planted with trees, has been developed along the eastern perimeter of the existing Kronospan Facility to reduce the visibility of Kronospan operations from neighbouring properties on Holyhead Road (B5070). An undulating agricultural landscape extends east of Chirk. The A5 corridor runs north-south in what is almost a straight line along the eastern edge of a ridge approximately 1km east of the existing Kronospan Facility. The Brynkinallt estate (Registered Park and Garden) is bisected by the road. The wholly separate Brynkinallt Park lies west of the road, at the eastern edge of Chirk, on reclaimed colliery land.
- 1.3.14 To the immediate south of the existing Kronospan Facility is the Mondelez International factory, the Chirk AAA sports ground and the Chirk recreational ground. Further south, the steep sided valley of the River Ceiriog cuts through the surrounding hills 1.8km to the south of the existing Kronospan Facility. Parts of the valley slopes are well wooded. The Llangollen Canal crosses the valley via the Chirk Aqueduct, which forms part of the WHS. The Ceiriog Trail recreational route runs along the southern lip of the valley.

Previous Landscape Strategy

- 1.3.15 A condition was attached to several planning permissions for development at Kronospan which required the development of a landscape strategy to mitigate the visual impact of the wider Kronospan site from public viewpoints. As such, the Applicant submitted a landscape strategy for the area surrounding the wider



Kronospan site to WCBC in 2017. The landscape strategy was approved in 2019, and planting has subsequently been carried out within land owned by the Applicant.

- 1.3.16 Further on-site and off-site planting will be undertaken (some planting has already been implemented, other planting will be undertaken in the near future) in relation to the planning permissions for the warehouse building, the engineering stores, and North Access Road.

Access

- 1.3.17 The existing main site entrance is a T-junction with Holyhead Road (B5070) which runs in a north south direction to the east of the existing Kronospan Facility. The B5070 meets the A5 approximately 1.5km to the north of the existing Kronospan Facility via a roundabout junction, known as Whitehurst Roundabout. Approximately 1km to the east of this roundabout the A5 forms a junction with the A483. The A483/A5 provide links north to Chester, west to Llangollen and south to Shrewsbury. To the south of the manufacturing site, access via the B5070 leads to the A5 via Chirk town centre, this route is restricted to non-HGV traffic.
- 1.3.18 The existing T-junction main site entrance (T-junction with the B5070) would be used as the main site entrance for the construction phase of the Proposed Development.
- 1.3.19 Once constructed, the proposed North Access Road would be used as the main access to the existing Kronospan Facility; the current access would no longer be used for the access and egress of all HGVs except in exceptional circumstances. The North Access Road would be used as the main site entrance for the operational phase of the Proposed Development.
- 1.3.20 The existing railhead and sidings within the existing Kronospan Facility are used to import timber for the manufacturing process (as well as import via HGV). Improved railway siding facilities have been constructed to enable an increased volume of timber to be imported by rail.

1.4 Pre-Application Consultation and Engagement

Introduction

- 1.4.1 It should be noted that, at the outset of this project, the proposed feedstock for the proposed Low Carbon CHP Facility consisted of up to 30,000 TPA of Refuse Derived Fuel (RDF) and/or Forestry Residues and significantly more feedstock to be imported to Site (than the current approach as part of this DNS application). Following the pre-application advice process and receipt of PEDW's first Scoping Direction on 31 July 2024 (summarised below), the proposed feedstock configuration was revised to remove RDF and use a significantly greater quantity of on-site process residues; further details of this are provided below and at **Section 3.6, ES Chapter 3.0 (Alternatives)**.

Overview of Pre-Application Engagement with PEDW and WCBC

- 1.4.2 A high-level summary of the consultation undertaken with Planning and Environment Decisions Wales (PEDW) and WCBC throughout the design development and assessment of the Proposed Development is provided below:
- Inception meeting with PEDW (04 May 2024) to provide an overview of the early design of the Proposed Development, the sustainability principles driving the need case and the desire to decarbonise the existing Kronospan Facility, the siting considerations, and the approach to maximising the proposed feedstock generated on-site as far as practicable.
 - Request to PEDW (22 May 2024) for pre-application advice which was subsequently issued by PEDW on 19 June 2024.
 - Request to WCBC (23 May 2024) for pre-application advice. A meeting was held on site (Kronospan, Chirk) with Robin Wynne Williams (Senior Minerals and Waste Planning Officer, North Wales Minerals and Waste Planning Service, acting on behalf of WCBC) on 08 August 2024. Initial (informal advice) was subsequently issued by Robin Wynne Williams.
- 1.4.3 A more detailed summary of the consultation undertaken with PEDW and WCBC throughout the design development and assessment of the Proposed Development is provided at **Section 1.5, ES Chapter 1.0 (Introduction)**. The Pre-Application Consultation (PAC) Report (**DNS4-009**) **NOT YET AVAILABLE** also accompanies

this DNS application and provides an overview of all pre-application consultation undertaken.

Overview of EIA Scoping Process

EIA Scoping Direction

- 1.4.4 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.
- 1.4.5 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.
- 1.4.6 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**.

EIA Scoping Direction – Addendum

- 1.4.7 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 Low Carbon 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 RDF was removed.

1.4.8 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.

1.4.9 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.

1.4.10 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**.

1.5 Structure of this Planning Statement

1.5.1 Following on from this Introduction, the remainder of this document is organised to the following structure:

- Section 2.0 provides a description of the Proposed Development.
- Section 3.0 provides a description of the need and benefits of the Proposed Development.
- Section 4.0 provides an overview of feedstock availability and sustainability.
- Section 5.0 provides a summary of the likely environmental effects resulting from the Proposed Development.
- Section 6.0 provides an overview of planning policy relevant to the Proposed Development.
- Section 7.0 provides an appraisal of the Proposed Development against relevant planning policy.
- Section 8.0 provides the summary and conclusions.



2.0 THE PROPOSED DEVELOPMENT

2.1 Overview

2.1.1 A summary description of the Proposed Development is provided below. The full description of the Proposed Development is provided at **ES Chapter 4.0 (Description of the Proposed Development)**.

2.1.2 The Proposed Development (see Location Plan at **Figure 1.1, DNS3-001** and DNS Drawings at **DNS3-002 – DNS3-011**) is a Low Carbon CHP Facility with the capacity to generate up to 40 megawatts (MW) of renewable electricity and 125 MW of renewable thermal energy for use in the existing manufacturing processes at the existing Kronospan Facility.

2.1.3 The proposed Low Carbon CHP Facility would process up to 293,000 TPA of waste wood and forestry residues as feedstock for the existing Kronospan Facility.

2.1.4 Based on the likely availability of feedstock that can be generated on-site (based on an average taken from the calendar years 2021, 2022, and 2023), the proposed (on-site) feedstock configuration for the proposed Low Carbon CHP Facility would be as follows:

- Existing on-site process residues currently sold off-site – 76,991 TPA.
- Diverted fuel from the existing K7 Biomass Plant - 74,667 TPA.
- Other on-site process residues – 108,455 TPA.
- **Total feedstock generated on-site = 260,113 TPA.**

2.1.5 Further details of the proposed feedstock and the proposed changes to how energy would be generated and used on-site are provided below under the headings '2.4 – Feedstock' and '3.5 – Changing Operational Energy Requirements'.

2.2 Key Components

2.2.1 The proposed Low Carbon CHP Facility would comprise the following key components:

- Feedstock Storage and Handling
- Boiler Building

- Turbine Building
- Service Building
- Air Cooled Condenser (ACC)
- Flue Gas Treatment (FGT) Facility
- Air Pollution Control (APC) Reagent Provisions (lime silo and ammonia tank)
- Ash Silo (FGT)
- Ash Pit (bottom ash)
- Water treatment
- Stack

2.2.2 The design of the Proposed Development is provided on the DNS Drawings at **DNS3-002 – DNS3-011** which provides details of approximate dimensions of the key components and how the Proposed Development would be integrated into the other existing site operations. The tallest component (all heights taken from ground level) would be the stack (75m) which has been determined by way of (air quality) dispersion modelling. Details of the stack height assessment and air quality dispersion modelling are provided in **ES Chapter 6 (Air Quality and Odour)**.

2.3 The CHP Process

Combustion

2.3.1 The feedstock would be fed into the combustion chamber which would be equipped with a dosing bin, rotary valves, spreader stokers and a travelling grate which would form the basis for a highly effective and efficient combustion process. The travelling grate movement turns and mixes the feedstock along the surface of the grate to ensure that all biomass is exposed to the combustion process. A proposed blow line (between the existing chip silos and the proposed Low Carbon CHP Facility boiler building) would enable wood dust originating from onsite processes to be fired directly into the combustion chamber.

2.3.2 A start up and support burner would be positioned on one of the sidewalls in the lower part of the furnace and used during start up. This would also be used as an auxiliary combustion system if required. The start-up burners (which typically operate for 10-20 hours during a start-up event) are likely to be fuelled by diesel or low sulphur gas oil. There should be only two start-ups per year after planned



maintenance activities. After the start-up period, the feedstock would continually combust without any auxiliary fuel.

- 2.3.3 A control system would optimise the quantity of biomass added to the furnace and the combustion rate. The temperature in the furnace would be continuously monitored and recorded to ensure the flue gasses are retained at a minimum temperature of 850 degrees Celsius for a minimum of two seconds to meet the requirements set down in the IED, which would be reflected in the Environmental Permit.

Energy Recovery

- 2.3.4 The proposed boiler would be a single drum steam boiler. The hot flue gases from the furnace would be piped to the boiler where they would convert water into steam. The superheated steam would then drive the high-efficiency reaction steam turbine generator (STG) to produce electricity.
- 2.3.5 The exhaust steam from the STG would be condensed in the ACC equipped with several variable speed fans for air flow control. The condensate would be recirculated and reused in the boiler. The exhaust steam would also be used in the MDF2 refining process and/or passed through a heat exchanger to increase the temperature of the flue gases in the MDF2 dryer.
- 2.3.6 Similar to the existing K7 and K8 Biomass Plants, the combustion exhaust gases would be re-directed to the MDF facilities to the south of the proposed Low Carbon CHP Facility and used directly for MDF2 manufacturing processes (also MDF1 in the event that MDF2 is offline). Combustion gases would be used in the MDF2 dryer for direct drying purposes; the combustion gases would be released through the MDF2 cyclones.

Flue Gas Treatment

- 2.3.7 Having passed through the boiler system, the flue gases generated during the combustion process would be cleaned and directed for use in the MDF2 dryer (they would only be released into the atmosphere via the ID fan and the emergency stack in the event both MDF1 and MDF2 are offline). The following flue gas cleaning systems will be included as part of the proposed design:



- Selective Catalytic Reduction (SCR) system for nitrogen oxide (NO_x) reduction.
 - After dust removal, the flue gas would pass through a catalyst system used to reduce nitrogen oxides.
 - A small amount of ammonia solution would be injected before the catalyst; this would react with NO_x to form nitrogen and water vapor.
 - This would achieve very low NO_x emissions using a proven, widely accepted technology.
- Bag filter for particulate reduction.
 - The bag filter is the primary dust removal system.
 - Flue gas would pass through rows of fabric filter bags that would trap fine particles, including ash, unreacted powder, and reaction products.
 - The system would continuously clean itself, collecting the dust in hoppers positioned underneath.
 - All collected material would be transported to a sealed storage silo for safe handling and disposal.
 - This would ensure very low particulate emissions, typically far below permitted levels.
- Adsorbent injection (before filter) for acid gas reduction.
 - A fine powder (lime) would be injected into the flue gas.
 - This powder would react with acid gases such as hydrogen chloride (HCl) and sulphur dioxide (SO₂).
 - This would neutralise acid pollutants to ensure they can be safely captured.

2.3.8 FGT residues comprise fine particles of ash and residue from the flue gas treatment process. Due to the alkaline nature of the FGT residues, they are classified as hazardous waste (in much the same way as cement). Based on the expected throughput of the proposed Low Carbon CHP Facility (maximum throughput of 293,000 TPA), FGT residues are expected to constitute approximately 6,672 TPA.

2.3.9 The FGT residues would be temporarily stored on site within a sealed silo positioned behind the north elevation of the proposed (boiler building) backup feedstock loading area. The residues would periodically be transported for off-site (licensed) disposal at Whitemoss Landfill, Skelmersdale (operated by Veolia) as are FGT residues from the existing operational K7 and K8 Biomass Plants.



Bottom Ash

- 2.3.10 Bottom ash is the burnt-out residue from the combustion process. The ash would be quenched with water as it leaves the combustion chamber to both cool the ash and reduce the potential for fugitive dust to be released. Any water not vapourised in the quenching process would be collected and recycled for continued use in the quenching process. Based on the expected throughput of the proposed Low Carbon CHP Facility (maximum throughput of 293,000 TPA), bottom ash residue is expected to constitute approximately 5,424 TPA.
- 2.3.11 The bottom ash would be stored in an ash pit positioned behind the north elevation of the proposed boiler building. The bottom ash would then be transported to the off-site (licensed) disposal at Whitemoss Landfill, Skelmersdale (operated by Veolia).

Stack

- 2.3.12 Under normal operations, the exhaust gases from the proposed Low Carbon CHP Facility would be used in the drying process. However, if the MDF driers are offline and the proposed Low Carbon CHP Facility was online, the (cleaned) flue gases would need to vent to atmosphere via a dedicated stack.
- 2.3.13 Emissions from the proposed Low Carbon CHP Facility would be continuously monitored by an automatic computerised system and reported in accordance with NRW requirements for the operation of the proposed Low Carbon CHP Facility (via a variation to Kronospan's existing Environmental Permit). These would be monitored prior to the emissions either going to the MDF dryers or the dedicated stack.
- 2.3.14 The height of the stack would be 75m and is determined by dispersion modelling (see **Section 3.3, ES Chapter 3.0 (Alternatives)** for further details regarding the reduction of the stack height via the design and assessment process).

2.4 Feedstock

Sourced from Existing On-Site Processes

2.4.1 **Table 2.1** below provides details of the proposed Low Carbon CHP Facility feedstock that is proposed to be generated from existing on-site process wood residues.

Table 2.1 – Proposed Feedstock Configuration (existing on-site processes)

Type/Source	Proposed (Annual) Quantity
<p><u>Source A - Existing On-Site Process Residues Currently Sold Off-Site</u></p> <p>On-site process residues currently sold off-site (to be diverted to the proposed Low Carbon CHP Facility).</p> <ul style="list-style-type: none"> • Bark from the MDF chipper and sawmill debarking process. • MDF process residues. 	<p>2021 – 83,577 TPA</p> <p>2022 – 77,495 TPA</p> <p>2023 – 69,990 TPA</p> <p>2021-2023 Average – 76,991 TPA</p>
<p><u>Source B – Operational Status of Existing K7 Biomass Plant</u></p> <p>Currently processes approximately 70,000 TPA of virgin and exempt biomass – sourced via unsuitable material arising from the core on-site business of board production (roundwood logs, wood chip, sawmill off-cuts, sawmill bark, and sawmill sawdust) that is not suitable for board production.</p>	<p>K7 Biomass Plant would remain in situ but be used as a back-up (for when the proposed Low Carbon CHP Facility and the existing K8 Biomass Plant have their annual shutdowns) – fuel currently used in the K7 Biomass Plant would be diverted to the proposed Low Carbon CHP Facility and exhaust gases used for drying purposes in the MDF2 dryer</p> <p>2021 – 78,500 TPA</p> <p>2022 – 74,000 TPA</p> <p>2023 – 71,500 TPA</p> <p>2021-2023 Average – 74,667 TPA</p>

Type/Source	Proposed (Annual) Quantity
<u>Source C - Other On-Site Process Residues</u> Extraction of smaller fractions of recycled timber or fines from the existing PB process. This fraction often contains the most impurities and gives the PB no structural properties. Removing it adds significant quality improvements to the PB.	Based on the 2021 - 2023 processing data, the following wood residue would have been created from the enhanced PB manufacturing process: 2021 – 118,184 TPA 2022 – 104,853 TPA 2023 – 102,328 TPA 2021-2023 Average – 108,455 TPA
TOTAL	260,113 TPA (based on 2021-2023 average)

2.4.2 As set out in **Table 2.1** above, it is proposed that 260,113 TPA of the 293,000 TPA throughput capacity would be generated by existing on-site process residues. This means that the vast majority (88.8%) of the proposed feedstock would be sourced from on-site processes.

How the ‘Remainder’ would be Met

Overview

2.4.3 Based on the likely availability of feedstock that can be generated on-site (based on an average taken from the calendar years 2021, 2022, and 2023 – see **Table 2.1**), there would be a ‘remainder’ of 32,887 TPA of biomass feedstock required; this is based on attaining the maximum throughput of the proposed Low Carbon CHP Facility of 293,000 TPA.

2.4.4 The feedstock ‘remainder’ would be made up 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) - **Increased on-site production** that would generate further on-site process residues for direct use in the proposed Low Carbon CHP Facility.

2.4.5 Grade C wood is a mix of waste wood, including panel products and wood treated with preservatives. Whilst not suitable for traditional recycling, it can be used in biomass fuel applications.

2.4.6 The feedstock 'remainder' scenario set out above is considered feasible and reasonable and forms the basis of the feedstock assumptions considered as part of the ES. However, the Applicant would retain the flexibility to apply different percentages to the above depending on the actual feedstock 'remainder' in any given year and the availability/market conditions of the different types of feedstock. Increased on-site production (to generate further on-site process residues) would likely be the Applicant's priority given this would be more sustainable, more cost effective, and could occur under their existing manufacturing conditions and existing Environmental Permit restrictions.

2.4.7 The feedstock 'remainder' scenario set out above would increase the feedstock that could be generated on-site from 88.8% (260,113 TPA) to 91.6% (268,335 TPA). As stated above, depending on market factors and material available on site, there is the potential for 100% of the feedstock to be generated on-site.

2.5 Operating Hours

2.5.1 It is proposed that the proposed Low Carbon CHP Facility would operate on a 24-hour basis. The feedstock would be brought to site primarily between the hours of 07.00 and 19.00 seven days a week, including Bank Holidays but excluding Christmas Day, Boxing Day and New Years Day. Deliveries outside of those hours would be infrequent and will be accounted for in the various EIA topic assessments.



3.0 NEED AND BENEFITS OF THE PROPOSED DEVELOPMENT

3.1 Introduction

- 3.1.1 The Proposed Development forms part of a range of projects that have been proposed by Kronospan over recent years to improve the sustainability of operations at the Chirk manufacturing facility. The enhancements undertaken at the Site to date have enabled it to deliver continuous environmental improvement whilst maintain the manufacturing efficiencies required to sustain an economically viable business in the short, medium and long term. The recent improvements were delivered as part of the Kronospan Vision 2020 programme which involved the business investing £200 million in the site in Chirk since 2015.
- 3.1.2 The most recent developments at the Site have helped deliver a more efficient manufacturing process, responding to the evolving nature of customer demands. The Chirk facility can now offer a greater range of products than was previously the case and the business is continuing to deliver new and upgraded facilities required to meet future customer demands. The investments made will help secure the jobs and financial benefits that the business brings to the local economy.
- 3.1.3 To ensure that Kronospan maintains its position in a competitive market, delivers its products in a more sustainable way and make improvements to its impacts on the local community further investment at the Site is required.
- 3.1.4 This section of the Planning Statement examines the need for the proposed Low Carbon CHP Facility and the benefits that it will deliver.

3.2 Background

- 3.2.1 Kronospan is a leading producer of wood-based panels and has operated from Chirk since the 1970's. The Site manufactures wood-based panels and other wood products.
- 3.2.2 The Site is ideally located for the production of wood-based board due to the presence of the railway head within the facility which is connected to the Chester to Shrewsbury rail line. The railway head enables the delivery of round wood (small logs) to the manufacturing site via rail and therefore reduces the reliance of the facility on HGVs for the delivery of raw material. However, the delivery of wood to the

Site and export of manufactured products to clients from the Site remains heavily dependent on HGVs. The extent to which the use of rail can be increased in the future is limited by capacity issues on the local rail network. Some of the investments being made at Kronospan will also help reduce vehicle movements through more efficient product handling e.g. development of the raw board and paper warehouse. Despite such initiatives there will be a continued requirement for transport of raw material and manufactured goods via road.

3.2.3 Kronospan is an important local employer providing direct employment for over 660 people, the majority of whom live locally, and paying over £1.5million in net wages every month. Since establishing the business in Chirk over 50 years ago, Kronospan has invested over £1 billion through direct capital investment and asset maintenance. This has led it to become the 9th largest manufacturing business in Wales, delivering hugely significant employment and training benefits to the North Wales region.

3.2.4 In addition to the economic benefits accrued through the payment of wages, capital expenditure and maintenance costs, the business also makes a significant contribution to the local and national economy via business rates and corporation tax. Annually the business contributes over £1 million through business rates and since 1970 the business has paid £57 million in corporation tax.

3.2.5 In this regard, the ongoing operation of the facility at Chirk is undoubtedly a vitally important element of the local, regional, and national economy.

3.3 Kronospan Vision 2025 and Vision 2030

Overarching Sustainability Objectives of Vision 2025 and Vision 2030

3.3.1 Sustainability sits at the core of Kronospan's Vision 2025 strategy and has become a cornerstone of the Company's forward strategy. In delivering Vision 2025 and Vision 2030, Kronospan is seeking to achieve:

- Economic sustainability – delivering a profitable and growing business.
- Environmental improvement – reducing our impact and supporting UK Net Zero targets through production of sustainable products and operations.
- Social benefit – maximising the value of our teams and developing our role in the community.



Vision 2025

- 3.3.2 Following on from Kronospan's Vision 2020, the company has embarked on the delivery of Vision 2025 which is constructed around strategic goals, each with a series of objectives and detailed work streams.
- 3.3.3 Vision 2025 will adapt the site at Chirk to changes in the UK market for wood-based panel products ensuring it is able to sustainably fulfil the requirements of its customers and stakeholders. Some of the larger projects planned to deliver Vision 2025 include:
- North Access Road (Decision Notice is pending (under planning reference P/2022/1080) subject to confirmation of legal agreements for off-site enhancements).
 - 132kV connection (to provide the grid connection for the proposed 132kV substation which forms part of the North Access Road planning permission referred to above).
 - Solar plant.
 - Electrification of the forklift truck (FLT) fleet.
 - National network of 'Urban Forest' timber recycling centres.

Vision 2030

- 3.3.4 The core objective of Vision 2030 is to de-carbonise the existing Kronospan Facility as far as is practicable to ensure that the power (electrical and thermal) generation used directly for the manufacturing of all products significantly reduces its reliance on fossil fuels (burning of gas); this would subsequently ensure a net carbon benefit (see **Section 3.5**) in accordance with UK and Welsh Government Net Zero commitments, increase the effectiveness of Kronospan's existing Circular Economy approach (See **Section 7.2**), and reduce the carbon footprint of Kronospan's products (see **Section 3.7, ES Chapter 3.0 (Alternatives)**).
- 3.3.5 Subsequently, the Proposed Development is the key project which seeks to achieve the core objective of Vision 2030.



3.4 Environmental and Social Governance

- 3.4.1 Supporting the Vision 2025 and 2030 strategy will be an annually published Environmental Social Governance (ESG) report for Chirk, assessing the Company's performance against the ESG targets in development through Vision 2025.
- 3.4.2 Kronospan is committed to reducing carbon as part of its operations and is a key aspect of its long-term sustainability goals. An extract from the Kronospan Environmental, Social and Governance Report 2022-2023 is provided at **Section 1.2** above.

3.5 Changing Operational Energy Requirements

Current Position

- 3.5.1 The primary products manufactured at the Site are MDF and PB, from which several secondary products are produced such as laminate flooring, worktops and melamine faced boards. The site will also begin to install plant and manufacture OSB once the NRW operational permit for OSB production has been issued.
- 3.5.2 The manufacturing processes which take place at Kronospan require significant quantities of heat and electricity. The high voltage electricity network in this part of Wales is sub-standard for the level of demand it is required to meet.
- 3.5.3 Regular maintenance has to be undertaken by the District Network Operator (DNO) to the local grid infrastructure to ensure it continues to supply the needs of Chirk and the surrounding area. During periods of maintenance, the supply of power to the Site can be severely affected, this in turn has a significant impact on manufacturing operations at the Site.
- 3.5.4 Due to the fragility in the local grid, Kronospan is only licensed to draw approximately 55% of their total demand from the grid. To meet its power demands, safeguard against the fragility of the local electricity grid, and reduce the risk of the local grid hindering the manufacturing efficiency of the site, Kronospan has installed its own power generation facilities at the Site.
- 3.5.5 A proportion of the power generation comes from an onsite biomass plant (the K7 and K8 Biomass Plants described in **Section 2.0**), which generates renewable energy. However, to meet the required demand, it has been necessary to install a



series of natural Gas Engines (1 – 3) and Gas Turbines (1 and 2). Whilst the installation of newer, more efficient gas engines in recent years has helped to reduce the carbon intensity of the operations at the Site, reliance on fossil fuel-based energy is not seen as the long-term future for business.

Position following Completion of North Access Road Works

- 3.5.6 The North Access Road planning permission includes (amongst other components) a proposed 132kV substation.
- 3.5.7 Kronospan has collaborated with the DNO to identify how the current local grid issues can be resolved. This has resulted in the proposal to develop a new 132kV substation which will enable Kronospan to connect directly into the strategic 132kV overhead line that runs from Oswestry to Legacy, Wrexham. To expedite the connection, Kronospan would construct the proposed 132kV substation.
- 3.5.8 This new connection would mean that Kronospan would no longer be reliant on the ageing 33kV infrastructure which provides power to other business, community facilities and residential properties in Chirk. This has a range of positive consequences to Kronospan and the community of Chirk as follows:
- Kronospan could reduce reliance on the onsite fossil fuel energy generation by drawing more from the electricity network, which is on a path to a low, and eventually zero, carbon future. Based on the most recent emissions data for the facility this could lead to a 59% reduction in carbon emissions by 2030, with even greater reductions as the grid mix decarbonises further.
 - Kronospan will not be susceptible to intermittent constraints on the power it sources from the local grid, helping to maximise the manufacturing efficiency from the plant.
 - The new connection and reliability that it would provide will enable investment to be made in future manufacturing lines essential to the future success of the business e.g. OSB production.
 - A new connection would enable Kronospan to invest in further renewable energy projects on site such as solar PV, helping to contribute to the low carbon future for the plant.

- The new substation would reduce the strain on the existing local 33kV network helping to provide a greater security of supply to local business and residents (whose electrical energy demand will likely increase over time).
- Reduce the risk of intermittent or catastrophic failure of the local 33kV network which supplies essential infrastructure such as Chirk Community Hospital.
- The reduced demand on the local grid would enable Chirk to implement Electrical Vehicle charging schemes and open the opportunity for local community based solar schemes to connect into the grid which currently does not have the capacity to facilitate these Net Zero projects.

Future Position should the Proposed Development be Consented

Context

- 3.5.9 Whilst the future operation of the proposed 132kV substation would enable reliance on the onsite fossil fuel energy generation (as described above), this would not remove this reliance in its entirety due to the significant quantities of heat and electricity required to power existing operations. In addition, the extent to which the 132kV electricity grid would be used would also be dependent on commercial considerations i.e. the cost of electricity via the 132kV electricity grid versus the cost of obtaining electricity via onsite fossil fuel generation.
- 3.5.10 The existing Gas Turbines (1 and 2) and Gas Engines (1 – 3) generate waste heat and waste steam which is currently used for the direct drying of product from the primary manufacturing process via the MDF1 dryers, and for MDF1 and MDF2 manufacturing processes (respectively). This would be required to continue in a likely fluctuating capacity depending on day to day power and heat requirements, however, the existing K7 and K8 Biomass Plants similarly produce waste heat and combustion gases (which are also used for direct drying of product and in the MDF manufacturing process) and would be prioritised for use over the gas turbines and gas engines.
- 3.5.11 As a result, the future operation of the proposed 132kV substation would result in a reduced reliance on the gas turbines and gas engines but would not enable their use to cease in its entirety. The future operation of the proposed 132kV substation would provide Kronospan with surety and flexibility of supply.

3.5.12 However, as set out above, notably at **Section 1.2**, Kronospan is committed to the further decarbonisation of its operations; this is a critical aspect of its long-term sustainability goals.

Proposed Energy Generation Shift

3.5.13 The proposed Development would enable a significant shift in the way that Kronospan generates energy (electricity and heat) to power its existing operations. Currently, the existing Kronospan Facility consumes:

- 7.7% and 3.2% of the non-domestic gas consumption and total gas consumption (respectively) in Wales, and
- 48.4% and 35.7% of the non-domestic gas consumption and total gas consumption (respectively) in the County of Wrexham.

3.5.14 The proposed Low Carbon CHP Facility would generate more heat and power than the existing K7 and K8 Biomass Plants and would enable Kronospan to significantly reduce its reliance on the on-site gas engines that are currently used to provide additional heat and power to the existing Kronospan Facility whilst also reducing its reliance on the electrical grid. As such, the proposed energy shift would provide significant environmental benefits due to the reduction in the burning of fossil fuels (gas) and an increase in the use of renewable biomass material; this would help to significantly decarbonise Kronospan's wood product manufacturing processes and make a valuable contribution to meeting the Welsh Government's Net Zero commitments.

3.5.15 The proposed shift in energy generation/use is summarised in **Table 3.1** below.

Table 3.1 – Proposed Energy Generation Shift under 'Normal' Operations

Component	Current Status	Proposed Status
K7 Biomass Plant	Accepts Chapter IV and Annex VI exempt waste biomass (as per the Industrial Emissions Directive (2010/75/EU) (IED) Provides heat for thermal oil for PB, MDF2, plastics and	K7 Biomass Plant would remain in situ but be used as a back-up (for when the proposed Low Carbon CHP Facility and the existing K8 Biomass Plant have their annual shutdowns) – fuel currently used in

Component	Current Status	Proposed Status
	<p>impregnation lines as well as process steam via the thermal oil to steam generation.</p> <p>Combustion gases are used in MDF2 dryer for direct drying purposes; combustion gases released through MDF2 cyclone.</p> <p>If MDF2 dryer is offline, combustion gases from the K7 Biomass Plant are diverted to MDF1 dryer.</p>	<p>the K7 Biomass Plant would be diverted to the proposed Low Carbon CHP Facility and exhaust gases used for drying purposes in the MDF2 dryer.</p>
K8 Biomass Plant	<p>The Environmental Permit allows the acceptance of waste biomass that is not exempt from IED Chapter IV, specifically waste code 19 12 07 which includes wood from waste management facilities and waste code 20 01 38 which includes municipal waste wood.</p> <p>Provides heat for thermal oil for PB, MDF1, plastics and impregnation lines as well as process steam via the thermal oil to steam generation.</p> <p>Combustion gases are used in MDF1 dryer for direct drying purposes; combustion gases released through MDF1 cyclone.</p> <p>If MDF1 dryer is offline, combustion gases from the K8 Biomass Plant are diverted to the MDF2 dryer.</p>	<p>K8 Biomass Plant would remain in operation (for use in MDF1 process).</p>

Component	Current Status	Proposed Status
Gas Turbines 1 and 2	<p>Electricity generated is used to power site operations.</p> <p>Waste heat is used for the direct drying of product from the primary manufacturing process via MDF1 dryer (Gas Turbine 1) and MDF2 dryer (Gas Turbine 2).</p>	<p>Both gas turbines would be decommissioned and removed as they are within the footprint of the proposed Low Carbon CHP Facility.</p> <p>Waste heat from the proposed Low Carbon CHP Facility would replace the waste heat from Gas Turbines 1 and 2 (with respect to subsequent drying of product via MDF1 and MDF2 dryers).</p>
Gas Engines 1 - 3	<p>Gas Engines 1 – 3 are installed and generate electricity used to power site operations.</p> <p>Waste steam is used for MDF2 manufacturing processes and waste heat is used for the direct drying of product from the primary manufacturing process via the MDF2 dryer.</p> <p>If MDF2 is offline, Gas Engines 2 and 3 are diverted to MDF1.</p>	<p>Gas Engines 1 – 3 would remain in situ and will provide peak and standby generating capacity.</p> <p>The gas engines may be used in tandem with the other energy generating facilities (including the proposed Low Carbon CHP Facility) depending on comparative imported gas and electricity costs; the running of the gas engines is expected to be infrequent. This has been allowed for in the GHG assessment (see ES Chapter 9.0 (Climate Change) as the impact has been based on the net change in gas use allowing for the operation of one gas engine and the other two engines running for the proposed Low Carbon CHP Facility's annual outage.</p>
Gas Engines 4 and 5	Consented but not yet installed.	Gas Engines 4 and 5 would not be installed.

- 3.5.16 The proposed Low Carbon CHP Facility would help to significantly decarbonise Kronospan's wood product manufacturing processes and make a valuable contribution to meeting the Welsh Government's Net Zero commitments.
- 3.5.17 From a greenhouse gas (GHG) emissions perspective, **ES Chapter 9.0 (Climate Change)** concludes that the proposed Low Carbon CHP Facility would have a net carbon benefit of 3,024,740 tCO₂e (tonnes of carbon dioxide equivalent) over its estimated 40-year lifespan and would provide carbon benefits of 1.1% and 2.3% of the budget for the period 2026 – 2030 and 2031 – 2035 respectively. The proposed Low Carbon CHP Facility would therefore be consistent with existing and emerging policy requirements.
- 3.5.18 National and local policy and guidance with respect to Net Zero commitments, low carbon economy and energy generation, and decarbonisation is summarised at **Section 6.0** of this Planning Statement. This includes relevant policy and guidance with respect to waste.

4.0 FEEDSTOCK AVAILABILITY AND SUSTAINABILITY

4.1 Introduction

4.1.1 As outlined in **Section 2.0**, the proposed Low Carbon CHP Facility would require a total of 293,000 TPA of feedstock to operate at full capacity. It is proposed that 88.8% (260,113 TPA) of this feedstock would be made up of existing on-site process residues. The remaining 11.2% (32,887 TPA) of required feedstock is proposed to be made up of:

- 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) - **Increased on-site production** to generate further on-site process residues for indirect use in the proposed Low Carbon CHP Facility.

4.1.2 This section of the Planning Statement provides an assessment of feedstock availability and the sustainability of its use in the proposed Low Carbon CHP facility.

4.2 Feedstock Availability and Future Demand

On-Site Feedstock

Existing On-Site Process Residues

4.2.1 In assessing feedstock availability, it is critical to recognise that the majority of the feedstock proposed to be used would comprise existing on-site production residues. It is expected that the existing on-site waste wood stream would account for 88.8% of the total required feedstock. This figure has been established by Kronospan using historic waste wood residue arisings data for the existing Kronospan Facility and would include the feedstock redirected from the existing K7 Biomass Plant. See **Table 2.1** for further details and **ES Appendix 4A**.

Potential for Further On-Site Process Residues

4.2.2 Kronospan has also carefully considered the potential to increase production at the Site, which would in turn increase production residue volumes (see paragraph 4.1.1, bullet point 3). It is proposed that on-site manufacturing/production would be able to

increase to subsequently generate further on-site process residues to the extent that 25% (8,222 TPA) of the feedstock 'remainder' would be met (see **ES Appendix 4A** for further details).

- 4.2.3 Subsequently, 268,335 TPA (91.6%) of feedstock for the proposed Low Carbon CHP Facility could be generated on-site consisting of on-site process residues; however, depending on market factors and material available on site, there is the potential for 100% of the feedstock to be generated on-site. In this context, further analysis of these feedstock streams is not considered to be necessary.

Imported Feedstock

Overview

- 4.2.4 A small proportion (8.4%) of the feedstock for the proposed Low Carbon CHP Facility is expected to comprise imported waste wood material. Kronospan has identified several potential sources for the imported waste wood material, which is intended to comprise forestry brash and Grade C waste wood. These sources are:

- **Forestry brash** – Eskdalemuir Forest, Dumfries & Galloway, Scotland.
- **Grade C waste wood**¹ – Napton-on-the-Hill, Warwickshire and Corbriggs, Chesterfield, Derbyshire.

- 4.2.5 The Eskdalemuir Forest covers 12,507 hectares and includes 927 hectares of fertile farmland and 735 hectares of land which will become forests in the near future. It is a commercial forest providing timber for Kronospan and other wood-based industries. Eskdalemuir's operations maintain strict compliance with the EU and UK Timber Regulations.

- 4.2.6 It is important to recognise that, whilst these locations have been identified as likely potential sources of imported feedstock, changes to the sources in response to market conditions, availability, new legislation, management practices etc. are likely across the lifetime of the proposed Low Carbon CHP Facility. A good example of this, is if NRW implement changes in the way that they manage their

¹ Grade C wood would arrive as part of a mixed shipment of Grade B and C material which would be sorted on site. Grade B wood would be used for the manufacturing of wood products.

woodland/forestry assets (i.e. more widespread removal to be sold for commercial purposes as opposed to their current practice which is to leave it in situ for the purposes of nutrient recycling, ground protection and habitat creation). The delivery of new privately owned and managed forestry assets in Wales could open up new, local markets for brash.

Wider Waste Wood Market

- 4.2.7 Whilst sources of feedstock have been identified above, it is necessary to assess the wider wood waste feedstock market. Kronospan commissioned Contract Energy Services Ltd (CES) to undertake an independent assessment of the UK's waste wood feedstock availability.
- 4.2.8 It is worth noting that the CES report (**Appendix A – Waste Wood Market Assessment**) was drafted prior to Kronospan amending the feedstock proportions to significantly increase the percentage of on-site residues proposed to be used i.e. it is based on the original design subject to the EIA Scoping Report and first EIA Scoping Direction. As a result, the CES report quotes higher volumes of required imported wood waste. Notwithstanding this, the subsequent (and substantial) decrease in the volumes of imported feedstock required serve to further support the findings of the CES report, as the remaining quantities of feedstock that need to be found within the market have substantially decreased.
- 4.2.9 The CES report predominantly focuses on the past, existing and future availability of recycled waste wood fibre (RCF), which includes both forestry brash and Grade C wood waste along with other waste wood types. The report does not provide a breakdown of individual wood waste types. The report makes the following observations:
- 168,000 tonnes of waste wood was exported from the UK in 2023/24, indicating that the UK market is slightly long and there is scope for Kronospan to capture some of this exported wood waste. This is caveated by the fact that new biomass plants may open in the meantime, however, the report considers there to be a 'higher expectation' that future surpluses would emerge as older plants close.
 - Wales is a net importer of RCF, with 393ktpa consumed by Welsh biomass plants in 2023. Meanwhile only 230,000 TPA of RCF is produced in Wales, 184,000 tonnes of which was Grade B and C.

- The consumption of lower grade biomass is expected to decline from 2028, as some existing biomass plants will reach the end of their Renewables Obligation Certificate (ROC) support period resulting in higher gate fees and potentially a slow reduction in the consumption of biomass by these facilities. There are other emerging technologies that may pick up the slack in the market, however, there is uncertainty as to whether these will come to fruition.
- 4.2.10 A key conclusion drawn from the above observations by the CES report is that the anticipated decline in consumption from 2028 onwards would release a surplus of RCF into the market. This would dovetail well with the construction and commissioning of the proposed Low Carbon CHP Facility, which is expected to come online as this predicted surplus begins to emerge.
- 4.2.11 Whilst, like any wood availability/market report, the CES report relies on some speculation of future markets, it does provide strong indication that there will be suitable feedstock available for the proposed Low Carbon CHP Facility. This is reinforced by the fact that Kronospan's proposed reliance on imported waste wood has been significantly reduced significantly since the commissioning and issuing of the CES report. This change to the proposed feedstock sourcing provides additional headroom for variations in the surplus identified by the CES report.
- 4.2.12 Based on the above, there is currently a surplus of suitable imported feedstock to suitably fuel the proposed Low Carbon CHP Facility; once the proposed Low Carbon CHP Facility is constructed and enters into operation, it is predicted that an additional surplus of suitable feedstock would likely have emerged or would likely begin to emerge.

4.3 Feedstock Sustainability

Overview

- 4.3.1 The sustainability of the proposed feedstock is a key consideration in assessing the overall acceptability of the proposed Low Carbon CHP Facility. Key considerations include biomass 'Sustainability Criteria' and, given the feedstock would comprise waste wood material the application of the 'Waste Hierarchy' and 'Proximity Principle'. The sustainability of the feedstock intended for use in the proposed CHP is assessed below.

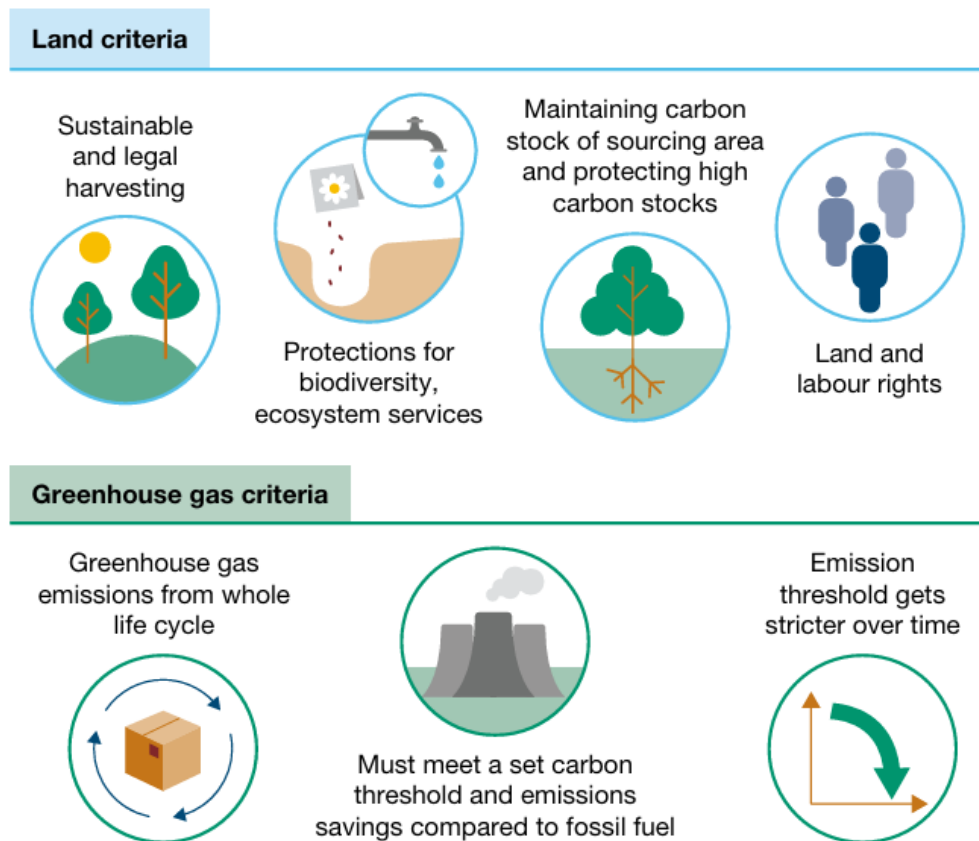


Biomass Sustainability Criteria

Overview

- 4.3.2 The Biomass Strategy (2023) set out how sustainable biomass can be used most effectively to help achieve net zero greenhouse gas emissions by 2050 whilst also supporting energy security and economic growth. It was introduced to clarify the role of biomass in the UK's net zero pathway and in response to concerns over energy security, sustainability and that the best use was not being prioritised.
- 4.3.3 A key tenet of the Biomass Strategy is the Sustainability Criteria, which is currently informed by several pieces of sector-specific legislation, such as Renewable Obligation Order (RO), Renewable Heat Incentive (RHI), Green Gas Support Scheme (GGSS), Renewable Transport Fuel Obligation (RTFO), along with the Contracts for Difference scheme (CfD) and the Low Carbon Hydrogen Standard (LCHS) private law contracts. Each of these schemes has different targets, which biomass facilities must meet to receive government or market support, creating the gateway to receiving sustainability support.
- 4.3.4 Figure 2.1 of The Biomass Strategy summarises the common criteria applied across all of the support schemes (see **Inset 4.1** below).

Inset 4.1 – Biomass Strategy Summary of Land and Greenhouse Gas Criteria across the UK Biomass Sustainability Criteria (source: The Biomass Strategy Figure 2.1)



4.3.5 The Biomass Strategy explains the following:

- The **land criteria** stipulate that all feedstocks should be legally sourced according to the laws of the country of harvest. They also set requirements for sustainable harvesting that account for protection for biodiversity and highly biodiverse areas, high carbon stock lands such as wetlands and peatlands, nature conservation, endangered species, ecosystem services such as soil, water and air quality. They also cover land rights that span the traditional, legal or customary land rights of local communities, labour rights cover health and safety of workers, right to collective action, training, minimum age of work, and dispute mechanisms.
- The **GHG criteria** require life cycle GHG emissions associated with biomass use (including production, cultivation, harvesting or collection, transportation, and

processing) to be included in emission calculations. Operators must meet set thresholds (which tighten over time) to ensure a minimum GHG saving is achieved against a fossil fuel reference.

- 4.3.6 Kronospan do not propose to apply for any current government funding to support the proposed Low Carbon CHP Facility, meaning that the specific targets set by the incentive schemes do not strictly apply. Nevertheless, the sustainability of the feedstock, its handling and its use in the proposed Low Carbon CHP Facility is an important consideration.
- 4.3.7 With reference to the land criteria, the proposed feedstock would largely comprise wood process residues that cannot be re-used or recycled, including manufacturing on-site into new wood-based products. Wood sorting at the existing Kronospan Facility forms an inherent part of day-to-day on-site operations and Kronospan is well versed in separating the wood that is suitable for manufacturing from that that has no production/recycling value (see **Inset 7.1** and paragraphs under the sub-header 'Circular Economy' in **Section 7.2** below for further information). It is the unusable end-of-life factions that would form the majority of the feedstock. Given that the end-of-life wood is clearly not virgin purpose grown biomass material, the land criteria would not apply to this proposed stream. Similarly, given that there is no viable re-use or recycling option for the wood residues, recovery represents the next best option in relation to the Waste Hierarchy (see sub-header 'Waste Hierarchy' below). The use of wood process residues and waste wood that is unable to be re-used or recycled therefore represents the most sustainable option and the GHG criteria associated with the combustion of these feedstock streams would not be applicable.
- 4.3.8 The land criteria may be somewhat applicable to the forestry brash fraction of the proposed feedstock. However, it should be noted that forestry brash is still a process residue resulting from other primary activities; therefore, it does not represent a purpose grown biomass, meaning that land use considerations would not apply. The sustainability of harvesting brash and the effect of removal on biodiversity is however of relevance.

- 4.3.9 The UK Forestry Standards (UKFS)² acknowledges the potential for the use of forestry brash as a wood fuel, but confirms that the use of brash can only be considered sustainable where *“it can be demonstrated that the nutrient status [of forest soils] will be maintained, there will be a net carbon gain from the activity over the forest cycle, and the soil is not classified as at high risk of acidification.”* Nevertheless, sustainable forest brash removal is an accepted and necessary practice across many forests across the UK; the removal of such material may be required for forest management/disease management, fire risk reduction, and access and site preparation for amenity infrastructure development (such as clearance for roads, paths, etc...). As such, sustainably sourced forestry brash is expected to be available for use in the proposed Low Carbon CHP Facility.
- 4.3.10 As discussed throughout this Planning Statement, Kronospan is committed to promoting sustainability throughout their supply chain, which would extend to future sourcing of forestry brash. As set out in Kronospan’s Sustainability Report 2022-2023³, timber used at the existing Kronospan Facility conforms with the UK Timber Regulations and Kronospan holds Forest Stewardship Council (FSC) certification to ensure that timber is sourced in the most sustainable way possible and exclusively sources its timber from forests recognised by the FSC or deemed low risk through its controlled wood due diligence system. This demonstrates Kronospan’s commitment to sustainably sourcing wood resources. Sustainable sources of forestry brash would be utilised to avoid any adverse harm on the UK’s forest assets, in line with the land criteria.
- 4.3.11 The GHG criteria is relevant to the act of collecting and importing feedstock. As set out in the ‘Feedstock Availability’ subsection above, Kronospan has identified potential sources for the feedstock to be imported using existing and well-established supply chains.
- 4.3.12 Overall, it is clear that the proposed Low Carbon CHP Facility would promote sustainability in line with the land and GHG biomass Sustainability Criteria outlined in the Biomass Strategy, by avoiding the use of virgin purpose-grown biomass

² <https://www.gov.uk/government/publications/the-uk-forestry-standard>

³ <https://viewer.ipaper.io/in-link/sustainable-reports-kronospan/uk/?page=1>



feedstock (with priority given to waste and residues) and the use of large proportions of feedstock which originates from on-site and forestry residues.

Self-Sufficiency and Proximity Principles

- 4.3.13 The Proximity Principle for waste originates from European Union waste law, particularly the Waste Framework Directive (75/442/EEC, later 2006/12/EC and then recast as Directive 2008/98/EC). The Directive introduces two related concepts, the 'Self-Sufficiency Principle' which expects member states to develop an adequate network of waste management facilities to become largely self-sufficient; and the 'Proximity Principle' requiring waste to be managed at the nearest appropriate facility, by means that safeguard the environment and public health. EU waste law, including these principles, were transposed into UK law through several pieces of legislation, including the Environmental Protection Act 1990 and the Waste (England and Wales) Regulations 2011.
- 4.3.14 In Wales, the Self-Sufficiency Principle and Proximity Principle are embedded in Planning Policy Wales (PPW) and Technical Advice Note (TAN) 21: Waste. Paragraph 2.9 of TAN 21 confirms that waste should be disposed of at the nearest appropriate facility (the Proximity Principle) in keeping with the provisions set out in the Waste Framework Directive. This approach is taken to minimise the environmental effects of transporting waste over greater distances and to help secure greater resource efficiency. Paragraph 2.10 of TAN 21 confirms the need to promote the Self-Sufficiency Principle by ensuring that Wales has an integrated and adequate network of waste facilities, to ensure that all waste types can be dealt with within Wales. This section also recognises the importance of taking into account geographical circumstances and providing specialised installations for certain types of waste.
- 4.3.15 The Strategic Assessment forecast in Scenario 1 (recycling and waste minimisation targets are met) shows that there would be a 55,000 tonne excess of EfW capacity in the North Wales economic region and a break even EfW capacity for Scenario 2 (recycling targets met, no waste reduction) by 2035; in the Mid and Southwest Wales economic region an EfW capacity shortfall of 170,000 tonnes and 220,000 tonnes for Scenario 1 and Scenario 2 respectively is anticipated by 2035. Whilst the Proposed Development Site is in the North Wales economic region, it is very close (7.6km as the crow flies) to the Mid and Southwest Wales economic region.



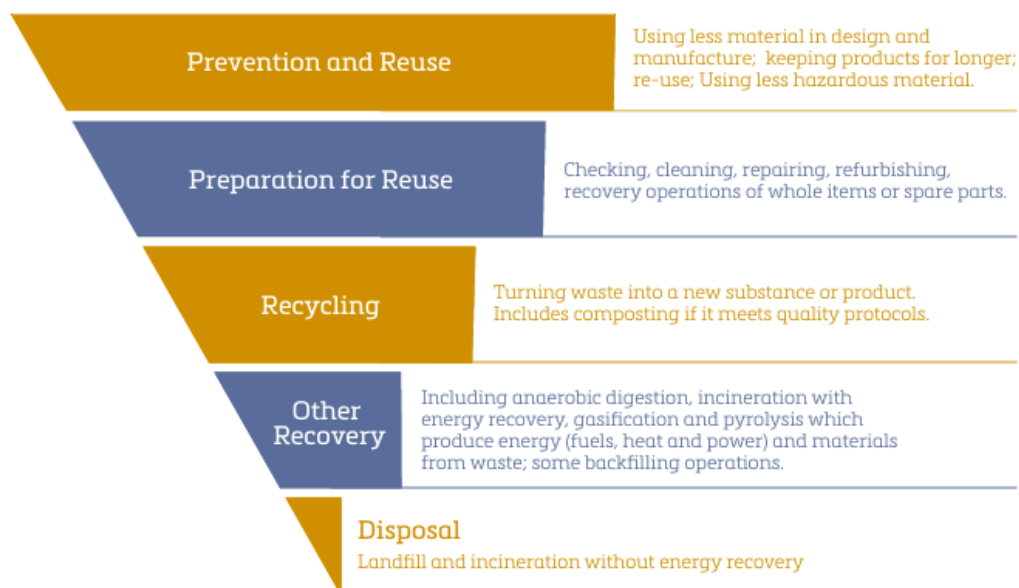
- 4.3.16 As set out in **Table 2.1**, a substantial percentage (minimum of 88.8% - 260,113 TPA) of the feedstock for the proposed Low Carbon CHP Facility (based on maximum throughput capacity) would comprise on-site waste wood residues from Kronospan's existing manufacturing processes that is and would continue to be unsuitable for re-use, recycling or manufacturing into product; as such, recovery in a facility of the nature proposed represents the next most sustainable outcome. The remaining 11.1% (32,887 TPA) ('the remainder') would be imported to site and comprise forestry brash, Grade C waste wood (for direct use in the proposed Low Carbon CHP facility), and increased on-site production to generate further on-site process residues for indirect use in the proposed Low Carbon CHP Facility.
- 4.3.17 Although a small percentage of the proposed feedstock would be sourced from off-site (forestry brash from Ayrshire, Grade B and C waste wood from Napton, Warwickshire and Chesterfield, Derbyshire) and transported to Site via HGV, the co-location of the proposed Low Carbon CHP Facility with the principal source of waste (the (minimum) 88.8% generated on-site) means that the vast majority of the proposed feedstock would be generated on-site, removing the need to transport the majority of the feedstock.
- 4.3.18 As such, the proposed Low Carbon CHP Facility would not contribute to an oversupply of EfW capacity, would promote sustainable waste management (largely contained on-site) and would be predominately consistent with the Proximity Principle.

Waste Hierarchy

- 4.3.19 The Waste Hierarchy was also introduced to the UK through the EU Waste Framework Directive 2008/98/EC and was transposed into domestic law through the Waste (England and Wales) Regulations 2011. As demonstrated by **Inset 4.2** below, taken from Figure 11 of the PPW, the Waste Hierarchy seeks to priorities the prevention and reuse of waste, ahead of recycling, recovery, and finally disposal.



Inset 4.2 – The Waste Hierarchy (source: PPW Figure 11)



- 4.3.20 PPW sets out that the Waste Hierarchy should be the key starting point for all types of waste management proposals. Development proposals that meet the Waste Hierarchy should be supported, in principle, and those that do not strictly meet the hierarchy should be considered against wider social, economic, environmental and cultural factors. TAN 21 supports this position, setting out that *“the waste hierarchy should be applied to all waste proposals, although it is acknowledged that the hierarchy itself is not absolute nor is it the only determining factor.”* It also states that development which represents a departure from the Waste Hierarchy should be justified through an appropriate Life Cycle Assessment.
- 4.3.21 Similarly, Towards Zero Waste states that the Waste Hierarchy is not absolute and does not mean that all waste should be reduced or recycled, where it is not practical to do so; nor does it necessarily mean absolutely zero landfill or energy from waste where this is not practical. Guidance on Applying the Waste Hierarchy provides a similar narrative stating that (for EfW and certain materials), there is evidence to suggest waste management options not in keeping with the Waste Hierarchy are better for the environment – lower grade wood is cited as an example where energy recovery options are more suitable than recycling.

- 4.3.22 Unlike a 'traditional' EfW facility, the proposed Low Carbon CHP Facility would not accept collected waste or utilise RDF as a feedstock. Instead, the proposed Low Carbon CHP Facility would complement Kronospan's existing Circular Economy approach (as illustrated at **Inset 7.1**) which is to maximise re-use and recycling, avoiding the use of virgin materials unless absolutely necessary. The proposed Low Carbon CHP Facility would accept a very narrow range of waste (wood) types, with the majority (88.8%) of the feedstock comprising on-site waste wood residues from existing Kronospan manufacturing operations. The on-site wood residues earmarked for use in the proposed Low Carbon CHP Facility comprises the lower grade fraction of the wood received for use in the manufacturing of Kronospan's products. This wood may comprise (*inter alia*) offcuts, contaminated wood, difficult to separate composites, which have been considered unsuitable for manufacturing and rejected following screening. These residues have reached the end of their life cycle and would either be sent to landfill or a different biomass facility. The use of these residues for the generation of low carbon energy on-site represents the most sustainable outcome.
- 4.3.23 It is worth noting that the Kronospan board manufacturing process demands Grade A and B waste wood; if Grade C waste wood was capable of being used in board manufacture, Kronospan would use it for this purpose as this would provide significantly greater commercial value than to use it as a fuel. The imported material (Grade C waste wood and forestry brash) would also have no value to the manufacturing process and cannot feasibly be re-used or recycled. It should also be noted that the waste wood typically contains contaminants that would make the material unsuitable for composting. These materials are therefore considered to have reached the end of their usable life, meaning that recovery is the most appropriate means of management.
- 4.3.24 In the above context, the proposed Low Carbon CHP Facility would clearly accord with the Waste Hierarchy. It should be noted that Kronospan is aiming to undertake a Life Cycle Assessment covering their whole product range by the end of 2025 to identify opportunities to improve their practice and deliver carbon-negative production.

5.0 ENVIRONMENTAL EFFECTS

5.1 Introduction

5.1.1 The following sections summarise the findings of the ES topic chapters together with the relevant non-EIA assessments and mitigation documents that are provided as supporting documents to the DNS application.

5.2 ES Chapter 5.0 – Noise and Vibration

5.2.1 No significant noise effects have been identified by the noise and vibration assessment in relation to construction or operation of the Proposed Development noise or plant vibration. **Table 5.1** below summarises the predicted effects of the construction, and operational phases of the Proposed Development.

Table 5.1 – Residual Noise and Vibration Effects

Source	Nature of Effect	Time Period	Impact Magnitude	Level of Significance
Construction noise	Temporary	Daytime	Negligible to Slight	Neutral to Minor
Road traffic noise (construction)	Temporary	Daytime	Negligible	Neutral
Road traffic noise (operation)	Permanent	Daytime Night-time	Negligible Negligible	Neutral Neutral
Industrial noise (Site operation)	Permanent	Daytime Night-time	Negligible Negligible to Slight	Neutral Neutral to Minor
Construction Vibration (plant)	Temporary	Daytime	Negligible	Neutral
Operational vibration (plant)	Permanent	Daytime Night-time	Negligible Negligible	Neutral Neutral
Construction vibration (road traffic)	Temporary	Daytime	Slight	Minor
Operational vibration (road traffic)	Permanent	Daytime Night-time	Slight Slight	Minor Minor
Cumulative Operational Noise	Permanent	Daytime Night-time	Negligible to Slight Negligible to Slight	Neutral to Minor Neutral to Minor

5.2.2 Noise and vibration levels have been considered and assessed during the construction and operational phases of the Proposed Development. Relevant and appropriate noise and vibration guidance and standards have been used to determine the impact. The assessment has been undertaken to inform and guide the design of the Proposed Development, such that any likely noise and vibration impact on existing and potential sensitive receptors is minimised.

- 5.2.3 To establish any likely impact from noise, an assessment of baseline sound levels has been considered by undertaking fixed position noise monitoring at Noise Sensitive Receptors (NSR) areas around the Site, over a weekday and weekend periods. The monitoring has enabled contextual background and ambient sound levels to be determined (i.e. which includes existing noise from the Kronospan Site) and to enable an estimate of background sound levels without the Kronospan Site in operation.
- 5.2.4 The noise assessment has benefited from pre-application discussions with WCBC and PEDW and responses provided in the EIA Scoping Direction (and Addendum) to enable agreement to be made on the approach to assessment methodology and noise criteria.
- 5.2.5 In accordance with appropriate standards, Best Practicable Means (BPM) would be employed to control the noise generation during the construction period. Measures may include restriction on operating hours, avoid un-necessary plant operation and revving of plant or vehicles and careful choice of piling rigs to minimise noise. Such measures are defined within the Framework Construction Environmental Management Plan (CEMP) (**DSN4-003**).
- 5.2.6 In relation to the operational phase, several further mitigation measures have been proposed to ensure that the resultant operational noise levels are within appropriate guidance and standards. The measures would be based on the employment of Best Available Techniques (BAT) to mitigate any potential peak noise sources.
- 5.2.7 The assessment shows that there would be **no significant effects** during the construction or operational phases of the Proposed Development, either in isolation or in combination with other projects both on the existing Kronospan Facility or the wider area, following the implementation of appropriate mitigation.

5.3 ES Chapter 6.0 – Air Quality and Odour

- 5.3.1 The proposed Low Carbon CHP Facility has the potential to impact upon local air quality during the construction and operational phases. The main air quality impact would be as a result of the emissions from the proposed Low Carbon CHP Facility, however, there would also be dust impacts as a result of construction phase activities, and the potential for fugitive dust and odour impacts from operational phase activities.



- 5.3.2 The construction of the proposed Low Carbon CHP Facility has been assessed to have a negligible to low risk of dust impacts. A Framework CEMP (**DNS4-003**) has been prepared by the Applicant and presents the approach and application of environmental management and mitigation for the construction of the Proposed Development. At the post-consent stage, and upon the appointment of the Principal Contractor (PC), detailed management plans will be produced by the PC and will form part of the suite of CEMP documents. With the implementation of these mitigation measures, no significant effects are expected.
- 5.3.3 The emissions from the proposed Low Carbon CHP Facility would be used within the drying process and replace the normal operation of the K7 Biomass Plant; this would mean that two of the gas engines (Gas Engines 4 and 5 which have planning permission, but have not been installed), would no longer be needed and would not be installed (**see ES Chapter 4.0 (Description of the Proposed Development)**). Detailed dispersion modelling of emissions from all sources within the existing Kronospan Facility has been undertaken using conservative assumptions. This has included the cumulative developments detailed in **ES Chapter 2.0 (EIA Methodology)** and assessed in **ES Chapter 6.0 (Air Quality and Odour)**. This has been used to establish a baseline and the impact and effect of the proposed Low Carbon CHP Facility then calculated.
- 5.3.4 The analysis has shown the magnitude of change in impact can be described as negligible and therefore the effect on human health is predicted to be 'not significant'.
- 5.3.5 A detailed ecological interpretation of air quality impacts has been carried out (**ES Appendix 6H**). This has concluded that the impacts are not predicted to result in a measurable ecological effect or constitute an operation likely to damage the special interest of the identified ecological sites. However, a series of proposals will be implemented to increase the resilience of the ecological habitats within the Chirk Castle SSSI and Canal Wood LWS to changes in air quality as a result of the Proposed Development.
- 5.3.6 The proposed Low Carbon CHP Facility also has the potential to cause impacts associated with the release of fugitive emissions of dust and odour. A qualitative analysis has been undertaken, which takes into account the control measures in place and the distance to sensitive receptors. This has concluded that the effect of the operation of the proposed Low Carbon CHP Facility on amenity due to dust and

odour emissions will be 'not significant'. The existing Odour Management Plan (OMP) and Dust Management Plan (DMP) for the existing Kronospan Facility will be updated to include the proposed Low Carbon CHP Facility as part of the Environmental Permit application process.

5.3.7 The dispersion modelling included the cumulative developments detailed in **ES Chapter 2.0 (EIA Methodology)** and assessed in **ES Chapter 6.0 (Air Quality and Odour)** and has not identified any risk of significant cumulative effects.

5.3.8 In conclusion, the proposed Low Carbon CHP Facility is not predicted to give rise to significant environmental effects on air quality and odour either in isolation or in combination with other projects both on the existing Kronospan Facility or the wider area.

5.4 ES Chapter 7.0 – Landscape and Visual Impact Assessment

5.4.1 The Proposed Development would be introduced at an existing brownfield location within the Kronospan Facility, at the edge of Chirk. The Kronospan Facility is a well-established industrial complex, which includes a series of large-scale industrial structures, including several prominent emissions stacks, and which is often apparent from locations within the surrounding area. The Proposed Development would include a large new building, two large silos and a new emissions stack. The proposed stack would be the tallest structure at the Kronospan Facility but would be less bulky than many of the existing stacks.

5.4.2 Low-level construction activities would be very well screened by a combination of existing structures, by vegetation cover in the surrounding landscape, and by landform. As such, the influence of construction upon landscape character and upon views would be limited to that resulting from the erection of taller proposed structures, and the presence of the cranes required to do this. The effects of construction would thus typically be very similar in their extent and nature to the operational effects of the Proposed Development and would form a precursor to these effects as new structures are progressively introduced into the landscape and the views available across it. Landscape and visual effects during the construction phase would not be significant.

5.4.3 Effects on landscape character would not be significant. The introduction of the Proposed Development would increase the influence of development at Kronospan



upon the character of the landscape/townscape, but not to such a degree that this would noticeably change character from baseline. The Proposed Development would be added to the existing assemblage of structures at Kronospan, and the new structures would be amongst the largest structures present. The character of the surrounding landscape would continue to be defined by urban development within Chirk, including a large-scale industrial facility at Kronospan, set in the context of surrounding rural land uses, long views out from the higher ground to the west, and often significant vegetation cover (especially along the Llangollen Canal corridor)

- 5.4.4 Visual effects would not be significant. The Proposed Development would always be seen in the context of existing structures at Kronospan. Whilst the proposed new structures would themselves be large in scale, their presence would only result in a limited increase in the influence of the Kronospan Facility upon views. The level of built development and vegetation cover in the surrounding area would also limit the extent to which views would change.
- 5.4.5 From most of the Llangollen Canal, views of the Proposed Development would be well screened by vegetation, with only glimpses of the new structures available. From a short section of the Canal corridor covering approximately 250m immediately north-west of the wider Kronospan Facility, views of the Proposed Development would be clearer. The proposed new structures would be visible within the existing industrial facility and separated from the Canal corridor by the intervening railway embankment. Views from this short section of the Canal are already defined by the presence of the railway and the Kronospan Facility, and the further presence of the Proposed Development would, whilst representing adverse change in view, not give rise to any notable change in the amenity experienced by Canal users, including walkers and cyclists on the towpath.
- 5.4.6 From within the Chirk Castle RPG (both within the estate managed by the National Trust, and those parts of the RPG further to the north), visibility of the existing Kronospan Facility is determined largely by the presence of woodland cover on the east-facing hillsides west of the Canal corridor. This woodland provides considerable screening including from the Castle itself and would similarly screen views of the Proposed Development. Views of the Proposed Development would be available from the Castle Terrace at the eastern edge of the formal gardens, from stretches of the permissive path that runs through the parkland, from stretches of the Castle

- driveway, from the eastern edge of the Estate, and from the Offa's Dyke Path National Trail in the northern part of the RPG. In all cases, the new structures would be visible in the context of the existing structures at Kronospan within expansive panoramic views, and both existing and new structures would be partially screened by a combination of landform and vegetation.
- 5.4.7 Views from Chirk would be defined by the juxtaposition of buildings within the town, and by existing screening along the B5070 and other roads. A combination of screening earthworks and dense tree cover along the eastern boundary of the Kronospan Facility would screen views from the B5070 and from properties along it. At the north-western edge of town, this screening is absent and views across the adjacent fields towards the Proposed Development would be available, set in the context of the visibility of existing structures at Kronospan, and of longer views west and north-west to the hills.
- 5.4.8 From elsewhere within the residential areas of Chirk, east of the B5070, views towards the Proposed Development would be determined by the location of property windows and by the orientation of side roads. Where visible, the proposed new structures would always be seen in the context of existing structures at Kronospan. From some locations therefore, views are likely to be relatively clear, but where clear views are available, these would already include the existing structures at Kronospan.
- 5.4.9 From the south, the Proposed Development would be added to existing views of the Kronospan Facility which are available from Chirk Recreation Ground and from some sections of Station Road. Industrial development already forms a backdrop to views north from this area, and the addition of the new structures would only result in limited change in the views from central Chirk.
- 5.4.10 None of the statutory purposes or special qualities of the Clwydian Range and Dee Valley National Landscape would be materially affected by the presence of the Proposed Development. In particular, the tranquillity of the National Landscape would not be materially affected by any change in landscape character or visual change (including at night-time from proposed lighting). Nor would the natural beauty of land within the designation boundary be affected by change resulting from the Proposed Development. The presence of large-scale industrial structures is a well-established presence in views looking out of the National Landscape from locations

within the Study Area. Any additional change resulting from the Proposed Development would be limited and incremental and would not result in any appreciable change in how people experience the landscape of the designation.

- 5.4.11 Cumulative landscape and visual effects that could occur in a scenario where other consented and proposed development schemes are also present would not be significant. The presence of other developments within the existing Kronospan Facility close to the Proposed Development, namely the consented Chip Preparation Building Extension and Storage Silos and the consented North Access Road developments would incrementally increase the influence of the Kronospan Facility upon the surrounding area. The additional presence of the Proposed Development would result in a further incremental increase of this influence, but cumulative change in landscape character and cumulative change in view would not differ appreciably from the non-cumulative change described above. Cumulative landscape and visual effects would not be significant.

5.5 ES Chapter 8.0 – Historic Environment

- 5.5.1 In accordance with the relevant planning policy and guidance context, a historic environment assessment has been undertaken for the Proposed Development.
- 5.5.2 The assessment identified the following baseline conditions for the historic environment:
- The Proposed Development Site is within the existing Kronospan Facility, an industrial complex dating to the late 20th century. The Site is previously developed and any archaeology that may have been present (although none is indicated by the HER and historic mapping) would have been already impacted. The Proposed Development site does not include any recorded designated or non-designated historic assets and has negligible archaeological potential.
 - The Proposed Development is adjacent to the Pontcysyllte Aqueduct and Canal WHS (also a Scheduled Monument (SM)) and is within the buffer zone of the WHS.
 - The Proposed Development is within the setting of the Grade I listed RPG at Chirk Castle, associated with the Grade I listed building Chirk Castle, and the Grade I listed Chirk Castle, gates, gate screens and piers.

- The Proposed Development is within the setting of Offa's Dyke SM, an asset whose landscape position and prominence in places, allows for views over the wider landscape which contribute to appreciating its heritage values.
- The Proposed Development is to the north of Chirk Conservation Area and is within the setting of that asset, although modern change to views in this direction are such that this aspect of the asset's setting does not make a positive contribution to appreciating its heritage value.

5.5.3 In relation to the assets within the historic environment baseline data, the following level of effect is predicted:

- The effect predicted in relation to Offa's Dyke SM (SM7) is **none**. This is because only occasional views of the Proposed Development would be available along relatively short sections of the monument, and in those views (given the distance of separation) the Proposed Development would form a contiguous part of the pre-existing industrial character of those views. The change from baseline conditions would be imperceptible and the contribution made by setting to the heritage values of the asset would be preserved.
- The effect predicted in relation to Grade I listed Chirk Castle (LB34), Chirk Castle Historic Park and Garden (RPG1) and Grade I listed Chirk Castle gates, gate screens and piers (LB1) is **none**. This is because the topography and mature trees largely screen the Proposed Development in views from these assets. In the few available views of the Proposed Development, it would be seen in the context of the existing Kronospan Facility. There would be no increased industrialisation of views or loss of heritage value as a result.
- The effect predicted in relation to Chirk Conservation Area is **none**. Views towards the Proposed Development already include the existing industrial character of the existing Kronospan Facility. These views are already significantly altered from the historic context of the settlement and do not contribute to appreciating the heritage value of the Conservation Area. There would be no increased industrialisation of views or loss of heritage value as a result.
- A **minor (adverse)** effect is predicted in relation to the Pontcysyllte Aqueduct and Canal WHS (also a SM) (WH1). This is because in close views there would be an increase in the scale and mass of the industrial character of the existing Kronospan Facility. Although only a marginal increase, which is less perceptible

in wider views, the proximity of the Proposed Development to the monument and location within its buffer zone is such that the change to baseline conditions would result in a very slight loss of heritage value (a negligible magnitude of impact). This would result, given the sensitivity of the asset, in a **minor (adverse)** significance of effect. This is not a significant effect in EIA terminology.

- 5.5.4 None of the predicted effects are significant and no further mitigation beyond those included in the design of the Proposed Development are proposed.

5.6 ES Chapter 9.0 – Climate Change

Climate Change Resilience

- 5.6.1 The resilience of the proposed Low Carbon CHP Facility to the effects of climate change has been considered with reference to the effects on operational equipment; vehicular access to Site; grid connection and local users; and on-site workers. The level of effect has been assessed to be negligible to slight, which is not significant. Therefore, it is considered that the proposed Low Carbon CHP Facility would be resilient to the effects of climate change.

Greenhouse Gas Emissions

- 5.6.2 The proposed Low Carbon CHP Facility would have a significant beneficial effect on climate change with respect GHG. The proposed Low Carbon CHP Facility would have a net carbon benefit of 3,024,740 tCO₂e over its estimated 40-year lifespan; it would provide carbon benefits of 1.1% and 2.3% of the budget for the period 2026 – 2030 and 2031 – 2035 respectively and is therefore consistent with existing and emerging policy requirements.

5.7 ES Chapter 10.0 – Waste

- 5.7.1 The assessment of potential environmental effects associated with the waste aspects of the Proposed Development has identified a slight effect in relation to Air Pollution Control Residue (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.

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

5.8 ES Chapter 11.0 – Population and Human Health

5.8.1 The assessment concludes that the Proposed Development would not result in any significant adverse effects on population and human health during its construction, operation, or decommissioning phases.

5.8.2 Key findings of the assessment include:

- Air quality: changes in pollutant concentrations (NO₂ and PM) are predicted to remain within objective thresholds set to be protective of human health, whereby the quantitative exposure response assessment determines that there would be no measurable change to population level health outcomes associated with these changes.
- Noise exposure: noise impacts from construction and operation are predicted to be negligible for most receptors, with only slight impacts at one location (R12 – Chirk Marina and canal). Receptors at this location do not permanently reside there, and overall there would be no measurable change to population level health outcomes.
- Transport: increases in traffic flow and HGV movements are minimal and fall below the relevant thresholds for health and wellbeing impacts to occur.

5.8.3 Overall, it is considered that the initial design and operational controls (e.g. DMP, OMP, Framework CEMP) are sufficient to avoid significant adverse health effects. On this basis, no further health-specific mitigation or enhancement measures would be required.

5.9 Framework Construction Environmental Management Plan (CEMP)

5.9.1 The Framework CEMP presents the approach and application of environmental management and mitigation for the construction of the Proposed Development and aims to ensure that adverse effects from the construction phase of the Proposed Development, on the environment and the local communities, are minimised as far as practicable. The Framework CEMP does not describe mitigation measures relating to the operation of the Proposed Development.



5.9.2 The construction works will be undertaken in accordance with the following guidance documents:

- GPP1: Understanding your environmental responsibilities – good environmental practice (NRW, 2021).
- GPP2: Above ground oil storage tanks (NRW, 2021).
- GPP3: Use and design of oil separators in surface water drainage systems (NRW, 2022).
- GPP5: Works and maintenance in or near water (NRW, 2018).
- GPP6: Working at construction and demolition sites (NRW, 2013).
- GPP8: Safe storage and disposal of used oils (NRW, 2021).
- GPP21: Pollution incident response planning (NRW, 2021).
- GPP 22: Dealing with spills (NRW, 2018).
- C532: Control of water pollution from construction sites (CIRIA, 2001).
- C650: Environmental good practice on Site (CIRIA, 2005).

5.9.3 The objectives of the Framework CEMP are to:

- Provide a mechanism for ensuring the delivery of mitigation measures to reduce environmental effects identified in the planning application documents.
- Provide an outline of the content that will be supplied in the additional plans to be provided upon the appointment of the PC.
- Ensure compliance with legislation and identify where it will be necessary to obtain authorisation from relevant statutory bodies.
- Provide a framework for compliance auditing and inspection to ensure the agreed environmental aims are being met.
- Ensure a prompt response to any non-compliance with legislative and planning permission requirements, including reporting, remediation and any additional mitigation measures required to prevent a recurrence.

5.9.4 The Framework CEMP is provided as supporting document **DNS4-003**.



5.10 Transport Statement

- 5.10.1 The Transport Statement (TS) is provided as supporting document **DNS4-005** and provides information about the highways and transport related implications of the Proposed Development.
- 5.10.2 Recent accident data collected from the CrashMap resource has been analysed. There is no evidence of any underlying road safety issues that would be exacerbated by the Proposed Development.
- 5.10.3 The accessibility of the Site to sustainable transport has been assessed and it has been established that the site is within an easy walk of the large residential area of Chirk. Several local settlements (including Chirk, Pontcysyllte, and Weston Rhyn) are within a reasonable cycle distance of the Site.
- 5.10.4 There are a number of bus stops locally that are served by up to three services per hour on weekdays and Saturdays which provide connections to Chirk Town Centre, Wrexham and Llangollen. Chirk railway station is a short walk from the Site and offers regular rail services to Birmingham, Holyhead and Cardiff, making multi-modal trips by rail/on foot a real possibility. Based on the above, it is evident that the Site is accessible by sustainable travel modes and complies with Planning Policy Wales and local policies.
- 5.10.5 The historic operation of the existing Kronospan Facility in terms of traffic generation has been well documented through both operational weighbridge data and recent planning applications. Further information provided by the Applicant has also identified levels that the Kronospan facility has operated at during 2006, where weighbridge records identified that HGV loads were up to c900 two-way movements per day.
- 5.10.6 Given that much of the feedstock for the Proposed Development would be sourced on-site, the trip impact of the Proposed Development in terms of additional traffic on the local road network would be negligible. A trip generation exercise has been undertaken, which predicts a net increase of just seven HGVs per operational day (i.e. 14 two-way per operational day). Changes in staff trips would also be negligible. Construction phase traffic flows would be no greater than this operational phase.

- 5.10.7 The effect of this additional traffic on has been assessed in the TS. Feedstock would be brought to the site 24 hours a day, seven days a week; however, for the purposes of robustness in establishing peak hourly traffic generation for the TS, it has been assumed that the above daily traffic flows are distributed over a shorter, 12-hour daytime period only.
- 5.10.8 On this basis, it is anticipated that the Proposed Development would generate approximately one, two-way HGV trip during each of the traditional highway network peak hours (0800-0900 hours and 1700-1800 hours), equating to one additional HGV movement every 60 minutes on average. This is a negligible increase in traffic.
- 5.10.9 The percentage impact analysis of the Proposed Development on local road links demonstrate that the Proposed Development would not have a material impact. The maximum impact in terms of increases in total traffic flows on any link amounts to less than 0.5%.
- 5.10.10 Notwithstanding this, several mitigation measures have been proposed as part of the TS to enforce HGV drivers to route north to/from the Site, including use of the new North Access Road (once completed), along with travel planning initiatives to minimise the level of vehicular trips, principally amongst staff.
- 5.10.11 Based on the review of anticipated future operational highway conditions and reference to appropriate guidelines and standards, it is concluded that the Proposed Development would not have a material impact in transport terms.

5.11 Phase 1 Geo-Environmental Assessment Report

- 5.11.1 The Phase 1 Geo-Environmental Assessment Report is provided as supporting document **DNS4-006**.
- 5.11.2 Much of the Proposed Development Site has not been previously developed and is external to existing buildings and operational areas and covered in hardstanding. Only the southwestern part of the Proposed Development Site extends into an operational area - the existing gas turbine building which was constructed in the 1990s and which does not store any fuels, chemicals or wastes.
- 5.11.3 There have been various intrusive investigations within the wider Kronospan facility (of which seven entries have encroached into the Proposed Development area). These site investigations have recorded only shallow deposits of made ground



comprising reworked soils and fill material of suitable geotechnical properties to enable development of the Kronospan facility. Groundwater has been recorded at variable depths (0.9m – 13m below ground level) and is reported to flow to the north. No visual or olfactory evidence of contamination has been reported within these previous investigations, other than one isolated incidence of elevated hydrocarbons within one sample at 250m to the north (hence down hydraulic gradient of the Proposed Development Site).

- 5.11.4 All previous chemical analysis undertaken has been compared to current guidance human health contaminant criteria for commercial end use and no exceedances have been reported.
- 5.11.5 It is not expected that significant risks from ground gas will exist on the Proposed Development Site as ground gas monitoring (performed in 2017 between the Site and the Bryn Kinnalt Siding landfill at 130m to the north (and which has since been redeveloped) has not identified elevated ground gas concentrations.
- 5.11.6 It is expected that such contaminant conditions as described above will be similar if not less contaminated on the Proposed Development Site and based on the existing information, the potential for construction activities to result in the mobilisation of shallow groundwater contamination is considered as low and hence the associated risks are insignificant. Given the available information on the contamination status of the soils across the Site and shallow groundwaters, no significant impacts from the Proposed Development on the deeper groundwater are expected regardless of whether piling is undertaken.
- 5.11.7 Following the completion of the Proposed Development, the presence of extensive concrete hardstanding will continue to restrict the infiltration of rainwater into the ground and mobilisation of any contaminants into the shallow groundwater. The Proposed Development will be connected to existing underground services which serve the Kronospan facility. The Proposed Development will be incorporated into the existing Environmental Permit under a future variation and managed in accordance with this permit (as agreed with NRW).
- 5.11.8 Materials management on Site will be required where site-won materials are proposed for reuse or there is the requirement to import soils and other fill materials to the Proposed Development Site. As standard requirements for materials

management, sampling and chemical testing will be required in tandem with any ground disturbance that occurs to determine potential for reuse and/or potential routes for off-site treatment/disposal. Such works could be completed concurrently with any geotechnical investigation to inform the structural design/bearing capacity of the soils or alternatively, can be undertaken during groundworks.

- 5.11.9 In the event any unexpected contamination is encountered during construction works, suitable precautions will be necessary to ensure contamination mobilisation does not occur. This is implemented into the Framework CEMP which is provided as supporting document **DNS4-003**.

5.12 Biodiversity Assessment Report and Green Infrastructure Statement

- 5.12.1 The Biodiversity Assessment Report (BAR) is provided as supporting document **DNS4-007**.
- 5.12.2 The assessment has confirmed that no ecological impacts are likely as a consequence of noise, lighting or human disturbance during the construction and operational phases of the Proposed Development.
- 5.12.3 With respect to air quality, small magnitude exceedances of screening thresholds for nitrogen and acid deposition, and ammonia levels are predicted on part of Chirk Castle SSSI. A small magnitude exceedance of nitrogen and acid deposition rates is predicted over the northern part of Canal Wood LWS, as well as some small ancient woodland sites to the northeast of the Proposed Development.
- 5.12.4 No impacts are predicted on European conservation sites, or on any other statutory or locally designated sites.
- 5.12.5 The extent and magnitude of impact is not considered to constitute an operation likely to damage the special interest of Chirk Castle SSSI, or to be regarded as an unacceptable level of harm to Canal Wood LWS or ancient woodland sites.
- 5.12.6 To ensure compliance with the Biodiversity and Resilience of Ecosystems Duty in Section 6 of Environment Act (Wales) 2016, mitigation and enhancement measures, in the form of two separate woodland buffers on the eastern and western extents of the old golf course, are proposed with the overarching aim of increasing resilience of Chirk Castle SSSI and Canal Wood LWS to air quality impacts and to enhance habitat connectivity and diversity. The proposed mitigation and enhancement

measures are shown on Figure 3 of the BAR (**DNS4-007**) and on the drawing provided at **DNS3-012**.

- 5.12.7 A separate Green Infrastructure Statement is provided as supporting document **DNS4-008** in accordance with Section 6 of PPW and sets out how green infrastructure has been incorporated into the DNS application.

6.0 PLANNING POLICY CONTEXT

6.1 Introduction

6.1.1 This Section of the Planning Statement identifies the relevant planning policy context for the Proposed Development and considers the statutory development plan for the Site and relevant national and local planning guidance. Policies that do not form part of the development plan but nonetheless are clearly material considerations in the determination of any planning application are also considered.

6.1.2 Section 38(6) of the Planning and Compulsory Purchase Act 2004 (PCPA) requires that planning applications should be determined in accordance with the statutory Development Plan unless material considerations indicate otherwise. Section 38(4) of the PCPA Act in Wales currently comprises the following Development Plan documents:

- the National Development Framework for Wales;
- any strategic development plan for an area that includes all or part of that area; and
- the local development plan for that area.

6.1.3 These Development Plan documents are discussed in the context of the Proposed Development in the subsequent sections.

6.2 National Development Plan

Future Wales: The National Plan 2040 (2021)

6.2.1 Future Wales: The National Plan 2040⁴ (National Plan) is the national development framework which sets the direction for development in Wales up to 2040. The National Plan sets out the strategy for addressing key national priorities through the planning system, which includes sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities.

⁴ <https://www.gov.wales/sites/default/files/publications/2021-02/future-wales-the-national-plan-2040.pdf>



- 6.2.2 The National Plan is influenced by the Well-being of Future Generations (Wales) Act 2015⁵, which demands that development and the use of land contributes to improving the economic, environmental and cultural well-being of Wales. This represents a commitment to delivering sustainable development, which maximises the contribution to each of the well-being goals.
- 6.2.3 A key element of the National Plan is the promotion of a low carbon economy and the decarbonisation of industry, with the growth of sustainable and renewable energy. Page 48 (Low Carbon Economy) sets out that *“Wales’s low carbon economy is currently estimated to consist of 9,000 businesses, employing 13,000 people and generating £2.4 billion turnover in 2016. Over the past 20 years carbon greenhouse gas emissions have fallen, whilst Gross Value Added has risen. To increase our economic prosperity, we must focus on delivering the clean growth aim and preparing the Welsh economy for the markets of the future and demand for low carbon goods and services.”*
- 6.2.4 Page 48 (Renewable Energy) goes on to state that *“Wales can become a world leader in renewable energy technologies. Our wind and tidal resources, our potential for solar generation, our support for both large and community scaled projects and our commitment to ensuring the planning system provides a strong lead for renewable energy development, mean we are well placed to support the renewable sector, attract new investment and reduce carbon emissions.”*
- 6.2.5 The Future Wales Outcomes include the promotion of *“a Wales where people live in places which are decarbonised and climate-resilient”*, which recognises the need to demand urgent action on carbon emissions and deliver a competitive, sustainable and decarbonised society.
- 6.2.6 The spatial strategy comprises several policies, which guide strategic and spatial planning across Wales. The strategy includes the strategic planning approach towards decarbonisation across the country, which seeks to create thriving and sustainable communities.

⁵ [Well-being of Future Generations \(Wales\) Act 2015 – The Future Generations Commissioner for Wales](#)



- 6.2.7 **Policy 1 – Where Wales will Grow** identifies Wrexham and Deeside as one of the National Growth Areas, where there will be growth in employment and housing opportunities, as well as investment in infrastructure.
- 6.2.8 **Policy 3 – Supporting Urban Growth and Regeneration – Public Sector Leadership** sets out the Welsh Government’s active and enabling role in supporting the delivery of urban growth and regeneration. The policy sets out that the Welsh Government, working with local authorities, will work to unlock the potential of land and support growth and regeneration for the benefit of communities across Wales.
- 6.2.9 **Policy 9 – Resilient Ecological Networks and Green Infrastructure** seeks to “ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure.” Measures to achieve this include identifying ecological networks and habitats that should be safeguarded and ensuring that these areas are not compromised, and the identifying opportunities to maximise existing and potential green infrastructure. The policy expects maintenance and enhancement of biodiversity to be secured and a nature-based approach to planning taken.
- 6.2.10 **Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure** affirms the Government’s strong support for “the principle of developing renewable and low carbon energy from all technologies at all scales to meet future energy needs” (emphasis added). The policy also emphasises that decision makers should consider the contribution to Wales’ commitments and target to generate 70% of consumed energy by renewable sources by 2030.
- 6.2.11 **Policy 18 - Renewable and Low Carbon Energy Developments of National Significance** sets out the renewable and low carbon energy projects considered to be Development of National Significance will only be permitted where it can be demonstrated that:
1. outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);
 2. there are no unacceptable adverse visual impacts on nearby communities and individual dwellings;

3. there are no adverse effects on the integrity of Internationally designated sites (including National Site Network sites and Ramsar sites) and the features for which they have been designated (unless there are no alternative solutions, Imperative Reasons of Overriding Public Interest (IROPI) and appropriate compensatory measures have been secured);
4. there are no unacceptable adverse impacts on national statutory designated sites for nature conservation (and the features for which they have been designated), protected habitats and species;
5. the proposal includes biodiversity enhancement measures to provide a net benefit for biodiversity;
6. there are no unacceptable adverse impacts on statutorily protected built heritage assets;
7. there are no unacceptable adverse impacts by way of shadow flicker, noise, reflected light, air quality or electromagnetic disturbance;
8. there are no unacceptable impacts on the operations of defence facilities and operations (including aviation and radar) or the Mid Wales Low Flying Tactical Training Area (TTA-7T);
9. there are no unacceptable adverse impacts on the transport network through the transportation of components or source fuels during its construction and/or ongoing operation;
10. the proposal includes consideration of the materials needed or generated by the development to ensure the sustainable use and management of resources; and
11. there are acceptable provisions relating to the decommissioning of the development at the end of its lifetime, including the removal of infrastructure and effective restoration.

6.2.12 **Policy 20 – National Growth Area – Wrexham and Deeside** states that Wrexham and Deeside represent the main focus for growth and investment in the North Region. The policy sets out that the Welsh Government will work with the relevant bodies to promote and enhance growth and ensure that key investment decisions support places in the area.

6.3 Strategic Development Plan

- 6.3.1 At the time of writing there is no adopted or draft Strategic Development Plan (SDP) available for North Wales.

6.4 WCBC Development Plan Status

- 6.4.1 At the time of writing, the adopted local development plan for WCBC comprises the ***Wrexham Unitary Development Plan 1996-2011 (the UDP)***, which was adopted in February 2005.
- 6.4.2 It is worth noting, however, that the local development plan for Wrexham has been through significant upheaval in recent years. WCBC adopted the ***Wrexham County Borough Local Development Plan 2013-2028 (the LDP)*** on 20 December 2023, however, the decision to adopt the plan 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 for Wrexham.
- 6.4.3 The issues with the adoption of the LDP have added a new complexity to decision making in Wrexham, particularly given that the UDP is clearly out-of-date, having been adopted over 20 years ago and prior to the latest National Plan. In this context, and as demonstrated by recent appeals, development proposals that do not conform with certain UDP policy may be permitted where material considerations, including evidence that underpins the unadopted LDP, justify a departure from the adopted plan.
- 6.4.4 It is clear that weight should be afforded to both the adopted UDP and the unadopted LDP, and it is for the decision maker to determine how much weight should be afforded to each policy. However, it should be recognised that the LDP is more up to date, considers the requirements for Wrexham during a more appropriate period (2013-2028 vs 1996-2011), and has been examined against the National Plan for soundness. Given the position of the LDP, in comparison with the adopted UDP, it is expected that where conflict exists between UDP and LDP policies occurs, the decision maker would typically afford greater weight on the more up-to-date LDP policy.

6.4.5 In the above context, relevant policies from the UDP have been set out in this sub-section below; and the LDP policies have been set out in the 'Material Planning Considerations' sub-section.

6.5 Wrexham Unitary Development Plan 1996-2011

6.5.1 The UDP policies deemed to be of most relevance are summarised below.

6.5.2 **Policy PS1: The Broad Location of Development** confirms that new development will be directed towards defined settlement areas.

6.5.3 **Policy PS2: The Broad Location of Development** asserts that development should not detrimentally affect the countryside, landscape character, open space or the natural environment.

6.5.4 **Policy PS3: The Broad Location of Development** expects development to make use of previously developed brownfield land, wherever possible.

6.5.5 **Policy PS4: The Broad Location of Development** requires that development maintains the existing settlement pattern and character, and is integrated into the transport network.

6.5.6 **Policy PS10: Waste** asserts that priority will be given to minimising waste and maximising re-use and recycling. It also sets out that energy recovery will be favoured where re-use and recycling is not feasible. The policy also emphasises that waste should be managed as close to source as practically possible.

6.5.7 **Policy PS12: Renewable Energy** supports renewable energy proposals where the benefits of the proposal outweigh any detrimental impacts.

6.5.8 **Policy GDP1: Development Objectives** sets out eleven objectives for all new development. The following objectives are considered to be particularly relevant to the Proposed Development:

- a) Ensure that built development in its scale, design and layout, and in its use of materials and landscaping, accords with the character of the site and makes a positive contribution to the appearance of the nearby locality.
- b) Take account of personal and community safety and security in the design and layout of development and public/private spaces.



- c) Make the best use of design techniques, siting and orientation in order to conserve energy and water resources.
- d) Ensure safe and convenient pedestrian and vehicular access to and from development sites, both on site and in the nearby locality.
- e) Ensure that built development is located where it has convenient access to public transport facilities and is well related to pedestrian and cycle routes where possible.
- f) Ensure the safety and amenity of the public and safeguard the environment from the adverse effects of pollution of water, land or air, hazards from industry and quarrying, and associated noise, odour or vibration arising from development.
- g) Secure public services (e.g. gas, water, electricity) to development at minimum public cost.
- h) Safeguard sites and areas of nature conservation and wildlife interest, and to provide new habitats where there is an unavoidable loss of existing habitats and areas of wildlife interest.
- i) Ensure that development does not result in, or is subject to, flooding, soil erosion, landslides or contamination, either on or off the site.
- k) Secure the development of sustainable communities, through the promotion of the economic, social and environmental well-being of the area.

6.5.9 **Policy EC5: Special Landscape Areas** states that within Special Landscape Areas, priority will be given to the conservation and enhancement of the landscape. Development, other than for agriculture, small-scale farm-based and other rural enterprises, and essential operational development by utility service providers, will be strictly controlled. Development will be required to conform to a high standard of design and landscaping, and special attention will be paid to minimising its visual impact both from nearby and distant viewpoints. It is worth noting that the area around Chirk is no longer proposed to be designated as a Special Landscape Area in the LDP. The boundary revision process is underpinned by a supporting document, namely the *Special Landscape Areas Study*⁶, and has been undertaken to comply with the requirements of *Planning Policy Wales* to “...identify which

⁶ TACP, 2017. *Special Landscape Areas Study*. Wrexham County Borough Council

features, characteristics or qualities require extra protection, and explain how the policy of designation will achieve this protection...

- 6.5.10 **Policy EC6: Biodiversity Conservation** confirms that development within or in close proximity to a site of biodiversity interest will be required to demonstrate that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. This policy is only relevant where a development would harm a site of biodiversity interest.
- 6.5.11 **Policy EC7: Conservation Areas** seeks to ensure that conservation areas are preserved or enhanced and requires new development within or in close proximity to be compatible with the special qualities of the conservation area.
- 6.5.12 **Policy EC9: Listed Buildings of Special Architectural or Historic Interest** states that development within the curtilage of buildings or structures listed as of special architectural or historic interest must respect their setting and character.
- 6.5.13 **Policy EC11: Archaeology** states that development which would adversely affect the site or setting of a Scheduled Ancient Monument or archaeological site of national significance will not be permitted. Development that directly affects non-scheduled sites of archaeological importance will only be permitted if an archaeological investigation has been carried out to determine the nature, extent and significance of the remains, and this investigation indicates that in-situ preservation is not justified, and a programme of excavation and recording has been agreed. Development will also be carefully controlled to ensure that the setting of non-scheduled sites of archaeological importance is not harmed where appropriate.
- 6.5.14 **Policy EC12: Development and Flood Risk** states that development within defined flood plains will only be permitted if it would not result in an unacceptable risk of flooding off-site or on-site and would not adversely affect flood management or maintenance schemes.
- 6.5.15 **Policy EC13: Surface Water Run-off** states that development which would result in an unacceptable adverse impact on the water environment due to additional surface water run-off will not be permitted.

- 6.5.16 **Policy EC14: Protection of Controlled Waters** states that development which would have an unacceptable adverse impact upon the capacity, flow, quality or availability of controlled waters and associated land will not be permitted.
- 6.5.17 **Policy MW12: Waste Management** confirms that waste management facilities will be located having regard to the best practicable environmental option, the Waste Hierarchy, the Proximity Principle, and regional self-sufficiency.
- 6.5.18 **Policy T8: Parking** states that development will be required to provide vehicle parking spaces either on site or nearby, in accordance with the Council's current parking standards. Special regard will be paid to the availability of public transport nearby, proximity to public car parking, proximity to local services and facilities, and road safety hazards and amenity considerations arising from on-street parking in the vicinity of the site.

6.6 Material Planning Considerations

Overview

- 6.6.1 There is no strict definition of what constitutes a 'material consideration' in planning legislation, although key principles from case law are that for a consideration to be material to a planning decisions, it must have a planning purpose and fairly and reasonably relate to the development. Information contained within national policy and guidance, as well as other policy, guidance and emerging documents can represent material planning considerations in the determination of a planning application. The weight to be attached to material considerations is a matter for the decision maker.
- 6.6.2 As discussed above, the recently unadopted LDP has not been withdrawn, rather the result of the High Court Decision is that the adoption status of it has been quashed. It is therefore considered to represent a key material consideration for development proposals in Wrexham. The LDP policies, together with other documents considered to be of material relevance to the Proposed Development, are summarised below.

Wrexham County Borough Local Development Plan 2013-2028

- 6.6.3 **Policy SP2: Location of Development** sets out that development should be directed towards the defined settlement limits and employment areas.



- 6.6.4 **Policy SP8: Economic Growth, Employment and Enterprise** seeks to ensure the continued role of the County Borough as a key economic driver in North Wales and the wider region, it sets out that the Plan will diversify the local economy and widen the economic base. To achieve this, it safeguards existing important industrial sites which are “*essential to meeting the future economic growth of the County Borough, which ensures a range and choice of sites co-located with housing in both urban and rural settlements.*” This policy seeks to facilitate a level of growth which allows opportunities to deliver approximately 4,200 jobs in the County Borough over the Plan period.
- 6.6.5 **Policy SP11: Transport and Accessibility** expects the transport network to be developed in a safe, efficient and sustainable manner. Under this policy, development is expected to avoid unacceptable impact on the safety and efficiency of the transport network, ensure adequate levels of car parking taking into consideration the location and accessibility of new developments to existing public transport facilities and walking and cycling network, and develop the coverage of the Active Travel Network across Wrexham to promote increased use of walking and cycling as safe, viable and sustainable alternatives to the car.
- 6.6.6 **Policy SP12: Design Principles & Masterplanning Framework** requires all development to incorporate high-quality and sustainable design, which takes the character of the area into consideration and enhances the quality of the built and natural environments.
- 6.6.7 **Policy SP13: Health and Wellbeing** expects all development to reduce health inequality and improve health and physical, economic and social well-being.
- 6.6.8 **Policy SP14: Natural Environment** demands that development protects, conserves and enhances the natural environment, including: SSSI; LWS; natural landscape features and green infrastructure (such as woodland); natural services (including water, soundscape, air and soil); and habitats and species of principal importance to Wales.
- 6.6.9 **Policy SP15: Historic and Cultural Environment** sets out that development will only be supported where it conserves protects, preserves or enhances cultural and heritage assets, including Listed Buildings, Conservation Areas and Pontcysyllte Aqueduct and Canal WHS.

- 6.6.10 **Policy SP17: Sustainable Waste Management** seeks to contribute towards sustainable waste management by providing a range of suitable waste management sites, supporting proposals which move the management of waste up the Waste Hierarchy, ensuring that sufficient disposal and recovery capacity is available whilst avoiding overprovision, and promoting the colocation of heat producers and the development of heat networks.
- 6.6.11 **Policy SP18: Climate Change** requires development proposals to demonstrate that they have taken into account the following: reducing carbon emissions; adapting to climate change implications; promoting energy efficiency and increasing renewable energy; maintaining ecological resilience; avoiding areas susceptible to flood risk; and preventing development that increases flood risk.
- 6.6.12 **Policy SP19: Green Infrastructure** expects development to maintain the extent, quality and connectivity of the green infrastructure network on or near to the site and, where appropriate, create new interconnected green infrastructure, improve connectivity, and protect valuable features.
- 6.6.13 **Policy EM1: Protection of Existing Employment Land** identifies the Site as part of the Chirk Industrial Estate which is identified as B1 and B2 uses. The policy confirms that the identified sites will be protected for B Use Class employment generating uses, and appropriate complementary uses.
- 6.6.14 **Policy NE1: International and National Nature Conservation Designations** outlines that permission will only be given for development likely to impact on the special features of Nationally Designated Sites (including SSSI) in exceptional circumstances, where appropriate compensation can be provided.
- 6.6.15 **Policy NE2: Local Designations for Nature Conservation and Geological Importance** states that development which would adversely affect locally designated sites, habitats or species will only be granted in exceptional circumstances, where there is no satisfactory alternative location, and where appropriate compensation measures can be implemented.
- 6.6.16 **Policy NE4: Area of Outstanding Natural Beauty** confirms that development proposals outside of, but closely interlinked with, the AONB must not have an adverse impact on the natural beauty of the AONB.

6.6.17 **Policy BE1: Pontcysyllte Aqueduct and Canal World Heritage Site** highlights that development will only be permitted where it does not harm the attributes which justifies the inscription of the WHS and the site's Outstanding Universal Value (OUV). Development is expected take into account the key material considerations, which are the authenticity and integrity of the attributes that contribute to OUV; and the setting of the WHS and the attributes important to the OUV within the buffer zone.

6.6.18 **Policy DM1: Development Management Considerations** sets out ten general criteria that development must fulfil. The following criteria are considered to be particularly relevant to the Proposed Development:

- i) Accord with or enhance the character, local distinctiveness and appearance of the site, existing building(s) and surrounding landscape/townscape in terms of their siting, layout, scale, height, design, density, use of materials and landscaping.
- ii) Not have an unacceptable effect on the amenity of the occupiers of nearby properties/land; and provide a satisfactory standard of amenity for the occupiers/users of the development itself.
- iii) Safeguard the environment from the adverse effects of pollution of water, land, noise, light or air, or land instability arising from development.
- iv) Take account of personal and community safety and security in their design and layout.
- v) Prioritise walking, cycling and public transport use ahead of travel by car.
- vi) Not give rise to highway safety, pedestrian safety or parking problems on site or in the locality.
- vii) Contribute to low carbon communities through energy efficiency, be designed to minimise the use of non-renewable energy, water and the production of waste both during construction and when in use.
- viii) Not increase the risk of flooding but makes adequate provision for sustainably dealing with foul and surface water drainage and not result in an unacceptable impact upon the water environment.
- ix) On sites which have previously been developed, new development proposals should make use of existing suitable building materials wherever possible for appropriate uses in order to re-use recyclable materials and reduce the amount of imported materials.

- 6.6.19 **Policy T1: Managing Transport Impacts** sets out that proposals will be supported where they: facilitate increased journeys by more sustainable modes of travel first by walking and cycling, then by public transport and finally by private motor vehicle; mitigate any significant adverse effects upon the transport network that arise from the proposed development; do not compromise the safe, effective and efficient use of the highway network and do not have an adverse impact on highway safety or create unacceptable levels of traffic generation; provide appropriate levels of parking and ensure access arrangements for the site to allow for safe manoeuvring; and make provision for people with restricted mobility including those with characteristics as defined by the Equality Act 2010.
- 6.6.20 **Policy T2: Active Travel** states that new development will be supported where, amongst others, walking and cycling infrastructure is an integral part of the overall design of the scheme.
- 6.6.21 **Policy MW5: Sustainable Waste Management** asserts that new developments must demonstrate how waste will be minimised minimize at all stages and manage any waste sustainably in line with the Waste Hierarchy. The policy also expects proposals to include suitable facilities for waste collection, composting, and recycling where relevant; and minimise any conflicts between sensitive developments and waste management uses.
- 6.6.22 **Policy MW6: Waste Management Facilities** identifies Chirk Industrial Estate as a location suitable for waste management uses. The policy also confirms that waste management proposals will be supported where:
- The proposal would move the management of waste up the Waste Hierarchy; or
 - There is an identified need for the facility type at the regional level, in accordance with Technical Advice Note 21; and
 - There would be no adverse impact on residential amenity by virtue of noise, dust or odour; and
 - There would be no adverse impact on air quality; and
 - The proposal would not have an adverse impact on areas designated for their landscape value; and
 - Any visual impacts would be minimised through the storage of wastes within buildings or height limits on stockpiles; and
 - There would be no adverse impact on water quality; and

- The highway is capable of accommodating the size and type of vehicles which would access the site or can be sufficiently improved prior to the development being brought into use.

6.6.23 **Policy RE1: Development and Renewable Energy/Low Carbon Technology** requires developers of Key Strategic Sites and major developments (100 or more dwellings or over 1,000m² of floorspace) to integrate renewable and low-carbon energy technologies unless it can be demonstrated that this is not financially or technically viable. Proposals should also incorporate measures to minimise carbon emissions associated with heating, cooling, and power systems in new developments.

6.6.24 **Policy RE2: Renewable Energy Schemes** confirms that proposals for renewable and low carbon energy development will be supported in appropriate locations outside of the solar local search areas (LSA), where the development is for biomass and energy from waste. The policy also sets out that, for such development, consideration will be given to the impacts on the landscape and the design of the development alone, cumulatively and in combination.

Planning Policy Wales (February 2024)

6.6.25 PPW⁷ was revised in February 2024 to Edition 12 with revisions made to Chapter 6 to improve protection for the natural environment. PPW sets out the land use planning policies of the Welsh Government. The aim of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental, and cultural well-being of Wales.

6.6.26 Section 5, which relates to productivity and enterprising places, confirms that plan making and development management decision making should encourage policies and proposals which promote low carbon developments and sites for renewable energy, promote the economic benefits of energy schemes (especially benefits to communities), and identify and support the potential for heat networks (including energy from waste plants).

⁷ <https://www.gov.wales/planning-policy-wales>

- 6.6.27 Paragraph 5.7.7 states that the benefits of renewable and low carbon energy, as part of the overall commitment to tackle the climate emergency and increase energy security, is of paramount importance; the continued extraction of fossil fuels will hinder progress towards achieving overall commitments to tackling climate change. It continues to assert that the planning system should maximise renewable and low carbon energy generation and minimise the carbon impact of other energy generation.
- 6.6.28 Paragraph 5.7.13 states that the Welsh Government expects all new development to mitigate the causes of climate change in accordance with the Energy Hierarchy for planning, as set out in the following energy policies. Reducing energy demand and increasing energy efficiency, through the location and design of new development, will assist in meeting energy demand with renewable and low carbon sources.
- 6.6.29 Paragraph 5.7.14 states that the Welsh Government has set targets for the generation of renewable energy (including for Wales to generate 70% of its electricity consumption from renewable energy by 2030).
- 6.6.30 Paragraph 5.9.1 states that *“local authorities should facilitate all forms of renewable and low carbon energy development and should seek cross department co-operation to achieve this. In doing so, planning authorities should seek to ensure their area’s full potential for renewable and low carbon energy generation is maximised and renewable energy targets are achieved.”* Further, Paragraph 5.9.11 confirms that *“the Welsh Government encourages the use of local renewable and low carbon energy as part of the imperative to reduce carbon emissions.”* Paragraph 5.9.12 expects authorities to promote links between renewable/low carbon energy projects and major development and high energy users and maximise the use of waste heat.
- 6.6.31 Paragraph 5.9.7 states that the local balance of the energy network will be a crucial consideration and planning authorities should consider the best places for local renewable energy generation to help improve the resilience of the grid in the future.
- 6.6.32 Paragraph 5.9.15 states that *“outside identified areas, planning applications for renewable and low carbon energy developments should be determined based on the merits of the individual proposal. The local need for a particular scheme is not a material consideration, as energy generation is of national significance and there is a recognised need to optimise renewable and low carbon energy generation.”*

Planning authorities should seek to ensure their area's renewable and low carbon energy potential is achieved and have policies with the criteria against which planning applications outside of identified areas will be determined."

- 6.6.33 In relation to waste management, Section 5.11 highlights the promotion of a Circular Economy, the Waste Hierarchy and effective waste management. Similarly, Section 5.13 highlights the role of planning in facilitating sustainable waste management, which recognises the role of the Waste Hierarchy, and the Welsh Government's policy for waste management in Towards Zero Waste. This section also outlines the social, economic and environmental benefits that can be realised through the management of waste. Waste development is expected to minimise environmental impact, protect landscape and ecology, and protect the amenity and health of residents.
- 6.6.34 The Biodiversity and Resilience of Ecosystems Duty in Section 6 of Environment Act (Wales) 2016 has been implemented through PPW, which integrates considerations of biodiversity and ecosystem resilience throughout its policies.
- 6.6.35 The Section 6 Duty is explicitly referenced in PPW Section 6, Paragraph 6.4.5, which states:

"Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity and improve, or enable the improvement, of the resilience of ecosystems. A net benefit for biodiversity is the concept that development should leave biodiversity and the resilience of ecosystems in a significantly better state than before, through securing immediate and long-term, measurable and demonstrable benefit, primarily on or immediately adjacent to the site. The step-wise approach outlined below is the means of demonstrating the steps which have been taken towards securing a net benefit for biodiversity. In doing so, planning authorities must also take account of and promote the resilience of ecosystems, in particular the following attributes, known as the DECCA Framework:

- i) diversity between and within ecosystems;*
- ii) the extent or scale of ecosystems;*
- iii) the condition of ecosystems including their structure and functioning;*

- iv) the connections between and within ecosystems; and*
- v) the adaptability of ecosystems including their ability to adapt to, resist and recover from a range of pressures likely to be placed on them through climate change for example.”*

- 6.6.36 The Section 6 duty is a holistic, rather than quantified approach to promoting ecosystem resilience.
- 6.6.37 In addition to the Section 6 Duty, PPW sets out the levels of protection applied to international, national, and locally designated sites. For SSSIs, the presumption is to avoid development likely to damage the notified features (paragraph 6.4.26). For locally designated sites such as SINC, a step-wise approach in accordance with DECCA principles to seek to ensure there is no reduction in overall conservation value is recommended (paragraph 6.4.33).

Technical Advice Notes

- 6.6.38 Technical Advice Notes (TAN) provide local authorities with detailed planning advice which are considered when preparing development plans. The TANs relevant to the Proposed Development are discussed in more detail below.

Technical Advice Note 5: Nature Conservation and Planning (September 2009)

- 6.6.39 TAN 5⁸ identifies biodiversity conservation and enhancement as an integral part of planning for sustainable development, but that development can present a significant opportunity to enhance wildlife habitats.
- 6.6.40 Key principles of positive planning for nature conservation are identified. They include that nature conservation should be integrated into all planning decisions. Development should also look to provide for net benefits for biodiversity conservation with no significant loss of habitats or populations of species.
- 6.6.41 The presence of protected species, and whether there would be any disturbance or harm to species or habitats, is a material consideration when considering a proposal.

⁸ <https://www.gov.wales/technical-advice-note-tan-5-nature-conservation-and-planning>

Technical Advice Note 11: Noise (October 1997)

- 6.6.42 TAN 11⁹ advises that the planning system should be used to minimise adverse impact of noise without placing unreasonable restrictions on development.
- 6.6.43 TAN 11 also advises on measures to mitigate the impact of noise, which fall into three categories: engineering, layout, and administrative.

Technical Advice Note 12: Design (March 2016)

- 6.6.44 TAN 12¹⁰ provides guidance on how design can contribute to the quality of Wales' varied landscape and can contribute to sustaining a positive image for Wales. It states that new development should harness intrinsic resources of the area for more environmentally sustainable development and in particular, measures to help reduce effects related to climate change and to build in resilience to mitigation and adaptation. Of particular note is ways in which good design can be delivered through appraisal of the context and consideration of access, character, community safety, environmental sustainability and movement.

Technical Advice Note 15: Development and Flood Risk (November 2021)

- 6.6.45 TAN 15¹¹ seeks to guide new development away from areas of high flood risk and categorises vulnerable industrial development (such as incinerators) as 'highly vulnerable development'.

Technical Advice Note 18: Transport (March 2007)

- 6.6.46 Section 2.3 of TAN 18¹² states that the integration of land use planning and development of transport infrastructure has a key role to play in addressing the environmental aspects of sustainable development by: promoting resource and travel efficient settlement patterns; ensuring new development is located where there is good access by public transport, walking and cycling; managing parking provision; ensuring new development include appropriate provisions for pedestrians, cyclists , public transport, traffic management and parking; and ensuring that transport

⁹ <https://www.gov.wales/technical-advice-note-tan-11-noise>

¹⁰ <https://www.gov.wales/technical-advice-note-tan-12-design>

¹¹ <https://www.gov.wales/technical-advice-note-tan-15-development-and-flood-risk-2004>

¹² <https://www.gov.wales/technical-advice-note-tan-18-transport>



infrastructure to serve new development allow existing transport networks to continue to perform their identified functions.

Technical Advice Note 21: Waste (February 2014)

- 6.6.47 TAN 21¹³ provides advice on how the planning system should contribute towards sustainable waste management and the efficient use of resources. It also provides details on how the targets, goals and policies set out in Towards Zero Waste are to be implemented.
- 6.6.48 Paragraph 2.6 reaffirms that the Waste Hierarchy represents a ‘central pillar’ in informing decisions on waste management, with the aim to promote sustainable waste management. This paragraph does note that *“the waste hierarchy is not absolute and does not mean that all waste should be reduced or recycled where it is not practical to do so, nor does it necessarily mean that there should be no further provision of disposal facilities.”*
- 6.6.49 Section 2.7.4 (recovery) sets out that other waste recovery operations, such as energy from waste, should be encouraged where waste cannot be recycled. Highly efficient recovery of energy from waste, including through incineration, is highlighted as a *“vital component of the waste management system in Wales.”* Energy from waste facilities are also encouraged to utilise heat produced by the process to maximise efficiency. Paragraphs 4.31 – 4.35 confirms the need for Energy from Waste (EfW) facilities to demonstrate a high level of energy efficiency.
- 6.6.50 Paragraph 3.27 targets industrial locations, especially those with heavy or specialised industry, as generally appropriate locations for waste facilities. Proximity to existing infrastructure (e.g. grid connection), transport links and planning permission/environmental permits, may also make a site more suitable.
- 6.6.51 Section 4 confirms that all disposal, recovery and recycling facilities should be supported by a Waste Planning Assessment, which is appropriate and proportionate to the development proposed. The Waste Planning Assessment should aim to provide all of the information necessary to enable a decision to be made, including the information specified at Annex B of TAN 21. Further to this, Paragraph 4.4 asserts

¹³ <https://www.gov.wales/technical-advice-note-tan-21-waste>

that the Waste Hierarchy should be applied to all waste proposals; and departures from the hierarchy should be justified through a Life Cycle Assessment.

Technical Advice Note 23: Economic Development (February 2014)

- 6.6.52 TAN 23¹⁴ confirms that economic development can include a broad range of uses, beyond just those falling within Use Class B, including energy generation. It advises that in determining planning applications local planning authorities need to bear in mind that traditional business use only account for part of the activity in the economy. It further states that it is important that planning decisions are made in a sustainable way which balance social, environmental and economic considerations.
- 6.6.53 Paragraph 2.1.1 states that *“It should not be assumed that economic objectives are necessarily in conflict with social and environmental objectives. Planning should positively and imaginatively seek such ‘win-win’ outcomes, where development contributes to all dimensions of sustainability.”*

Technical Advice Note 24: The Historic Environment (May 2017)

- 6.6.54 TAN 24¹⁵ sets out guidance on how plan preparation and decision making should consider the historic environment. It sets out that impacts of development on heritage assets should be assessed through consideration of the Conservation Principles and Heritage Impact Assessments (where necessary). It also asserts that consideration must also be given to the effects of development on the setting on Wales’ heritage assets, particularly where development relates to a WHS which are particularly sensitive areas.

National (UK and Wales) Legislation

Climate Change Act 2008 (2050 Target Amendment) Order 2019

- 6.6.55 The Climate Change Act 2008¹⁶ set a legally binding target for the UK to achieve an 80% reduction in GHG emissions by 2050, from the 1990 baseline. However, the UK Government decided that this legally binding target was not ambitious enough to

¹⁴ <https://www.gov.wales/technical-advice-note-tan-23-economic-development>

¹⁵ <https://www.gov.wales/technical-advice-note-tan-24-historic-environment>

¹⁶ <https://www.legislation.gov.uk/ukpga/2008/27/contents>



mitigate the nation's activities on climate change. In 2019 the UK Government became the first major economy in the world to pass laws to end its contribution to global warming by 2050, compared to the 1990 baseline.

6.6.56 On 12 June 2019, the Government laid the draft Climate Change Act 2008 (2050 Target Amendment) Order 2019¹⁷ to amend the Climate Change Act 2008 by introducing a target for at least a 100% reduction of GHG emissions (compared to 1990 levels) in the UK by 2050. This is otherwise known as the Net Zero target. The draft order amended the 2050 GHG emissions reduction target in the Climate Change Act from at least 80% to at least 100% thereby constituting a legally binding commitment to end the UK's contribution to climate change.

6.6.57 On 20 April 2021 the UK government announced that it would set in law a more ambitious target of cutting carbon emissions by 78% by 2035 compared to 1990 levels.

The UK Sixth Carbon Budget (December 2020)

6.6.58 The UK Sixth Carbon Budget¹⁸, which was required under the Climate Change Act, was published in December 2020. Subsequently, on 20 April 2021, the UK Government announced that it would adopt the recommendations of the UK Sixth Carbon Budget and enshrine them in law. The legislation was then set out in parliament on 21 April 2021.

6.6.59 The UK Sixth Carbon Budget provides advice on the volume of GHG emissions that the UK can emit between 2033 and 2037. To achieve the GHG emission volume prescribed by the UK Sixth Carbon Budget, the ambition targets of a 78% reduction (on 1990 levels) by 2035. One of the four key steps to achieving this target is the expansion of low-carbon energy supplies (such as the proposed Low Carbon CHP Facility), to ensure that the energy production in the UK achieves zero carbon emissions by 2035. This is a dramatic step-change and will logically require more emphasis on renewable energy as part of a suite of measures to achieve this target.

The Environment (Wales) Act 2016

¹⁷ <https://www.legislation.gov.uk/uksi/2019/1056/contents/made>

¹⁸ <https://www.theccc.org.uk/publication/sixth-carbon-budget/>



- 6.6.60 The Environment (Wales) Act 2016¹⁹ (as amended) sets out the legislative approach to the sustainable management of natural resources, reductions in GHG emissions, and waste reduction and management across Wales.
- 6.6.61 Part 1 seeks to ensure that natural resources (animals, plants, other organisms, air, water, soil, minerals, geological features, physiological features and climactic features) are sustainably managed across Wales. This means ensuring that these assets are maintained and enhanced to “*meet the needs of present generations without compromising the ability for future generations to meet their needs.*”
- 6.6.62 Part 2, Paragraph 29 reaffirms the Welsh Government’s commitment to reduce Wales’ carbon account to at least 100% lower than 1990 levels by 2050, in line with the UK Government's commitments.
- 6.6.63 Part 4 relates to the collection and disposal of waste. It requires that the appropriate separation of waste is undertaken at source; and prohibits the disposal of food waste to sewers. It also offers the legislative power for the Welsh Government to prohibit the incineration of certain waste kinds.

Wales’ Carbon Budgets 1 - 4

- 6.6.64 As certain areas of environmental policy, including climate change, are devolved matters under the UK’s constitutional framework, the Welsh Government and Parliament have the legal authority to create and implement their own legislation in these areas, separate from UK-wide laws. The Welsh Government’s net zero target for 2050 was approved in March 2021 and align with the UK Government targets.
- 6.6.65 The Welsh Government’s interim reduction targets for 2030 and 2040 are:
- 2030 target – 63% reduction.
 - 2040 target – 80% reduction.
- 6.6.66 The Welsh Government has also established a series of five-year carbon budgets summarised below:

¹⁹ <https://www.legislation.gov.uk/anaw/2016/3/contents>

- Carbon Budget 1 (2016-2020) – 23% reduction.
- Carbon Budget 2 (2021-2025) – 37% reduction.
- Carbon Budget 3 (2026-2030) – 58% reduction.
- Carbon Budget 4 (2031-2035) – 73% reduction.

Wales' Fourth Carbon Budget

- 6.6.67 Wales' Fourth Carbon Budget²⁰, produced in accordance with the requirements of the Environment (Wales) Act 2016, provides advice to the Welsh Government on the levels of decadal targets on the road to net zero. The report advises that Wales should adopt the 'Balanced Pathway' and aim to achieve a 73% reduction in annual emissions from 1990 levels between 2031 and 2035. The Fourth Carbon Budget was passed by the Senedd in early December 2025.
- 6.6.68 Wales' Carbon Budget provides an update on the progress to date, confirming that at 2022 Wales had achieved a 37% reduction in emissions from 1990 levels and had met the First and Second Carbon Budgets (23% and 37% respectively). It also indicates that Wales is on track to meet the Third Carbon Budget (58% reduction on 1990 levels), which covered the period of 2025-2030.
- 6.6.69 The Fourth Carbon Budget sets out several areas of the economy that should be focused on to meet the budget. Decarbonising electricity and heat supply is central to achieving the 73% reduction in emissions by the end of 2035. The Committee's pathway prioritises low-carbon technology deployment and reduced fossil combustion across sectors. In electricity supply modelling for the Fourth Carbon Budget, firm, dispatchable generation sources include bioenergy, EfW, and CHP in the near term, however, there is expected to be no role for unabated biomass generation by 2037.

Waste (Wales) Measure 2010

- 6.6.70 The Waste Measure 2010 seeks to strengthen Wales's ability to manage waste sustainably. It introduced targets for the management of municipal waste by

²⁰ <https://www.theccc.org.uk/publication/wales-fourth-carbon-budget/>

recycling, re-use and composting; and gave Welsh Ministers the ability to make provision to prohibit and regulate waste incineration.

National (UK and Wales) Guidance - Climate Change and Energy

The Clean Growth Strategy (October 2017)

- 6.6.71 The Clean Growth Strategy²¹ sets out policies and proposals that aim to accelerate the pace of 'clean growth'. The strategy reiterates the need to decarbonise the energy system to meet Net Zero targets, setting out the UK's approach to this.
- 6.6.72 Page 53 confirms that clean fuels such as bioenergy have potential for use in transport, industry and to heat homes and businesses. Pages 56 and 153 also highlight the potential for bioenergy with carbon capture to assist in the removal of emissions and the delivery of Net Zero by 2050.

Building a Low-Carbon Economy in Wales (December 2017)

- 6.6.73 Building a low-carbon economy in Wales²², produced by the Committee on Climate Change (CCC), set out Wales' strategy for reducing carbon emissions while promoting economic growth and social well-being.
- 6.6.74 Having been written prior to the 2019 amendment to the Climate Change Act 2008, the paper was written with a target to reduce emissions by 80% (on 1990 levels) by 2050. Notwithstanding this, it still provides Wales' carbon budgets between 2016 and 2025, interim reduction targets, and recommendations for reducing emissions up to 2050. These recommendations for emission reductions include:
- Retrofitting energy efficient and low-carbon heat to existing buildings, including in industry.
 - The decarbonisation of the energy sector in Wales, through the delivery of greater renewable and low-carbon energy capacity.

²¹ <https://www.gov.uk/government/publications/clean-growth-strategy>

²² <https://www.theccc.org.uk/publication/building-low-carbon-economy-wales-setting-welsh-carbon-targets/>

Prosperity for All: A Low Carbon Wales (March 2019)

- 6.6.75 Prosperity for All: A Low Carbon Wales²³ sets the foundations for Wales to cut emissions and transition to a low carbon economy. The paper reaffirms the need to transform the economy to reduce emissions, to minimise the impact of climate change, and to increase economic prosperity along the way. It outlines 100 policies and proposals to meet Wales' first carbon budget (2016-2020) and sets the foundation for decarbonisation and emission reductions across Wales.
- 6.6.76 Part 3 sets out how policies and proposals contribute to meeting emission reduction pathways across the key sectors of the Welsh economy. This section considers the changes required in the power sector, industry sector, and waste management.
- 6.6.77 With regards to the power sector, the paper confirms Wales' targets to reduce emissions from electricity generation and shift from towards greater use of low carbon and renewable energy technology. This involves phasing out fossil fuels and increasing the amount of energy generated from renewable sources through a series of policies. One key target is the deployment of sufficient renewable energy capacity across Wales to meet at least 70% of energy needs by 2030.
- 6.6.78 It also recognises the need to deliver more low carbon and sustainable industry across Wales. Key to this is increasing energy efficiency and reducing process emissions, particularly across energy intensive industrial sectors. The paper sets out that decarbonisation of the industrial sector is expected to include the delivery of low carbon technologies.
- 6.6.79 The paper also sets out the Welsh Government's support for significant afforestation across the Country, with the targets to plant at least 2,000ha of woodland per year increasing to 4,000ha as soon as possible.
- 6.6.80 It also expects reductions in emissions from the waste sector, by reducing landfill emissions. To achieve this, the paper sets out support for the generation of renewable energy from waste, including the use of waste wood in biomass power

²³ <https://www.gov.wales/prosperity-all-low-carbon-wales>

plants, and the promotion of a Circular Economy with greater prevention, re-use and recycling.

Welsh Government Climate Emergency Declaration (April 2019)

- 6.6.81 On 29 April 2019, the Welsh Government published a declaration²⁴ recognising the climate emergency in Wales. This recognised the urgent need to address global warming and its impacts on Wales and strengthened Wales' commitment to reducing carbon emissions and adapting to climate change.

The Energy White Paper – Powering Our Net Zero Future (December 2020)

- 6.6.82 The Energy White Paper²⁵ builds on the Prime Ministers Ten Point Plan and the National Infrastructure Strategy, providing further clarity on the strategy for the wider UK energy system. The paper sets out provisions to help achieve clean and green energy transformations, promote economic growth through green recovery, and create a fair deal for consumers with opportunities to save money on bills. The paper acknowledges the need to take actions to combat climate change and meet Net Zero commitments, which includes the decarbonisation of the energy system.
- 6.6.83 The Energy White Paper identifies bioenergy as one of the priority areas in the UK's 'Net Zero Innovation Portfolio' and confirms that the Government would establish the role of bioenergy by 2022. Page 53 of the paper states that biomass represents a unique renewable technology, which has a wide array of applications and can be used as a substitute for fossil-fuel based products and activities. It also highlights the potential for Bioenergy with Carbon Capture and Storage (BECCS) to deliver negative emissions (which makes it one of the most valuable tools for reaching Net Zero) and the value of the use of heat produced in industrial processes.

²⁴ <https://www.gov.wales/welsh-government-makes-climate-emergency-declaration>

²⁵ <https://www.gov.uk/government/publications/energy-white-paper-powering-our-net-zero-future>



Industrial Decarbonisation Strategy (March 2021)

- 6.6.84 The Industrial Decarbonisation Strategy²⁶ sets out how the UK can have a thriving industrial sector whilst meeting the Net Zero targets. The strategy covers the full range of UK industrial sectors.
- 6.6.85 Chapter 1 confirms the need to reduce emissions by around two thirds by 2035. To meet this need, the UK Government expect the industrial sector to switch to low carbon fuels such as bioenergy, and maximise energy, resource and material efficiency within industry.
- 6.6.86 Action 2.3 reaffirms the need to replace fossil fuels with low carbon alternatives, including biomass (primarily with carbon capture). Additionally, Action 2.4 identifies BECCS as a technology which, alongside afforestation and other technology, will need to be utilised for GHG removal.
- 6.6.87 The need to promote the switch to low carbon fuel is further identified in Chapter 4, which confirms that 20 TWh per year of fossil fuel use needs to be replaced with low carbon alternatives (including biomass) by 2030. Action 4.2 expands on the role of bioenergy in industry, confirming the prioritisation of the limited supply of biomass to BECCS facilities, support for the use of bioenergy in high temperature applications and CHP applications where the site is based off the gas grid.
- 6.6.88 Action 5.2 emphasises the need to improve heat recovery and reuse across industry, particularly in sites which use high temperature processes. This action acknowledges that the recovery of heat can significantly reduce energy consumption, improve manufacturing efficiency, and reduce waste.

Ministerial Written Statement: Taking Action to make the Circular Economy a Reality (March 2021)

- 6.6.89 The Ministerial Written Statement²⁷ was issued on 24 March 2021. With respect to energy from waste, it states that there is a moratorium in place for new large-scale

²⁶ <https://www.gov.uk/government/publications/industrial-decarbonisation-strategy>

²⁷ [file:///Q:/3551-3600/3587-](file:///Q:/3551-3600/3587-01%20Kronospan%20CHP/Documents/Policy%20Position/Reviewed/Written%20Statement%20Taking%20action%20to%20make%20the%20circular%20economy%20a%20reality%20(24%20March%202021)%20%20GOV.WALES.html)

[01%20Kronospan%20CHP/Documents/Policy%20Position/Reviewed/Written%20Statement%20Taking%20action%20to%20make%20the%20circular%20economy%20a%20reality%20\(24%20March%202021\)%20%20GOV.WALES.html](01%20Kronospan%20CHP/Documents/Policy%20Position/Reviewed/Written%20Statement%20Taking%20action%20to%20make%20the%20circular%20economy%20a%20reality%20(24%20March%202021)%20%20GOV.WALES.html)



energy from waste plants of 10MW or greater; the full (relevant) paragraph from the Ministerial Written Statement is set out below.

“The moratorium on new large-scale energy from waste plants will cover those of 10MW or greater and comes into effect immediately. Small scale energy from waste plants of less than 10MW will also only be allowable if the applicant can demonstrate the need for such a facility for the non-recyclable wastes produced in the region. Any new small-scale facilities must also supply heat, and where feasible, be carbon capture and storage enabled or ready. This will therefore mean a small-scale plant would not be allowable if waste is to be imported from outside of the proposed region (unless in close proximity to a region), in order to also avoid locking in transport emissions and associated pollution. This moratorium is being given effect through the planning system. Planning Policy Wales states that the extent to which a proposal demonstrates a contribution to waste management objectives, policy, targets and assessments contained in national waste policy will be a material consideration.”

Net Zero Wales Carbon Budget 2 (2021-25) (October 2021)

- 6.6.90 Net Zero Wales Carbon Budget 2²⁸ seeks to ensure that emission reductions are maximised, to minimise the effects of climate change. The plan sets out 123 policies and proposals across all Welsh Government ministerial portfolios to achieve this and meet the UK target of achieving Net Zero by 2050.
- 6.6.91 Policy 5 reaffirms waste targets across Wales, reiterating the target to transition to zero waste and the promotion of a Circular Economy.
- 6.6.92 The ‘Electricity and Heat Generation’ section reiterates the vision to decarbonise Wales’ energy system, whilst providing wider economic and social benefits. This section outlines the use of innovative and new technologies, to enable fuel switching and the decarbonisation of hard to treat sectors. It also highlights the need to increase electricity from low carbon and renewables. This section also highlights the presumption against new fossil fuel powerplants or the replacement of the existing plants with GHG emitting plants. Policy 19 sets out that EfW should only be used for non-recyclable waste material, provided there are no technically, economically or

²⁸ <https://www.gov.wales/net-zero-wales-carbon-budget-2-2021-2025>

environmentally better alternatives. It reiterates that there is a moratorium on new large scale EfW across Wales.

- 6.6.93 The 'Industry and Business' section confirms that the industrial sector faces decarbonisation challenges, which requires appropriate action including the promotion of a Circular Economy and a decarbonised energy network. Sub-section 3 sets out that to deliver Net Zero, industry would need to mitigate through heat recovery, fuel switching and carbon capture (including BECCS). Proposal 19 affirms that BECCS represents one of several desirable measures to remove/reduce industrial GHG emissions.

Net Zero: Building Back Greener (October 2021)

- 6.6.94 The Net Zero Strategy²⁹ sets out the UK Governments approach to achieving the binding target to reach Net Zero emissions by 2050. It sets out the measures that the Government intends to take to reduce emissions and support the transition to Net Zero across the economy. In relation to power, the paper introduces the Government's commitment to decarbonise the power system by 2035, by ensuring that all of the UK's electricity comes from low carbon sources.
- 6.6.95 Chapter 3(i), Paragraph 13 highlights that the government will actively take steps to bring forward low carbon energy capable of replicating the role of unabated gas in the electricity system, including BECCS. Paragraph 42 recognises that bioenergy already plays a significant role in decarbonising the electricity system, reiterates that biomass usage can now go beyond negative emissions, and that biomass development would need to meet stringent sustainability requirements.
- 6.6.96 Chapter 3(iii), Paragraph 38 confirms support for biomass fuel switching in industry, provided that BECCS is prioritised, to make best use of the limited supply of sustainable biomass.
- 6.6.97 Chapter 3(vii), Paragraphs 11 and 12 set out the expectation that by 2030, significant mature BECCS will have been deployed, which will not only contribute to the electrical grid, but also support the decarbonisation of industry. This section also

²⁹ <https://www.gov.uk/government/publications/net-zero-strategy>

reaffirms that BECCS can represent a cleaner form of energy production than fossil fuels, particularly where negative emissions can be achieved.

Biomass Policy Statement (November 2021)

- 6.6.98 The Biomass Policy Statement³⁰ sets out a strategic view on the role of biomass across the economy in the medium- to long-term, including the key principles to help deliver towards Net Zero. These principles include ensuring compliance with Sustainability Criteria and Waste Hierarchy principles, contribution to carbon budgeting and Net Zero, considering feedstock availability, life-cycle GHG emissions and cost-benefits, and the utilisation of BECCS, where feasible.
- 6.6.99 Chapter 1 identifies biomass as a renewable, low carbon energy source, which represents an alternative to energy from fossil fuels and can be made more sustainable through the use of BECCS. It is also highlighted that biomass can form part of a diverse mix of renewable energy and has the potential to unlock emissions reductions in the industrial sector.
- 6.6.100 The statement sets out the expectation for biomass feedstock to meet the UK's stringent Sustainability Criteria and deliver genuine GHG savings compared with fossil fuels. It highlights that around one third of the UK's current biomass feedstock demand is satisfied through foreign imports and that there is scope for the UK to increase domestic biomass feedstock production. Such UK sources are identified as forestry and agricultural residues, biodegradable municipal waste, used cooking oil, and bioethanol. The statement also identifies opportunities for future increases in UK biomass sources, through the planting of more perennial energy crops and short rotation forestry (SRF) which will provide additional biomass and ecological benefits, and increased material from the management of new woodland, which is set to be delivered as part of afforestation targets set by the English, Scottish and Welsh governments.
- 6.6.101 Chapter 2 highlights changes in the way biomass has been used over the past decade and changes in low carbon technologies. It also states that *"meeting our net zero targets will also depend on generating negative emissions which some*

³⁰ <https://www.gov.uk/government/publications/biomass-policy-statement-a-strategic-view-on-the-role-of-sustainable-biomass-for-net-zero>

biomass-based technologies have the potential to deliver” and that opportunities which may arise from the production and use of biomass should be taken.

- 6.6.102 In determining where biomass is used, it confirms that the limited biomass resources should be used in the areas of the economy where they have the greatest potential to reduce GHG emissions. This principle forms the basis of a priority use framework, which is applied to ensure that biomass is used most effectively.
- 6.6.103 Chapter 2.2 confirms that biomass energy generation has helped to reduce fossil fuel use dramatically in the UK. This section also highlights how bioenergy can provide dispatchable or baseload power, to meet demand whilst intermittent renewables are not meeting demand. It also reaffirms that carbon negative combustion plants are encouraged, emphasising that BECCS technology can be used to help achieve this. In addition to the benefits of biomass in generating energy, Chapter 2.3 highlights the need to decarbonise heating across the UK. Biomass is identified of a technology that can be utilised as a heating solution in certain scenarios.
- 6.6.104 With regards to the use of biomass in the industrial sector, Chapter 2.5 confirms that biomass already plays a role in the industrial sector and has the potential to be further utilised, offering reductions in industrial GHG emissions. This section also highlights that biomass should be used alongside BECCS and biomass use should comply with Sustainability Criteria and air quality requirements.
- 6.6.105 Chapter 2.7 reaffirms that BECCS could play a role in offsetting residual emissions in sectors that are difficult to decarbonise, such as heavy industry. This section states that *“BECCS deployment must be genuinely and credibly ‘net negative’, meaning it must remove more GHG emissions from the atmosphere than it creates, and store them in long-term geological storage.”* To achieve this, the feedstock will need to meet the Sustainability Criteria.

Wales Infrastructure Investment Strategy (December 2021)

- 6.6.106 The Wales Infrastructure Investment Strategy³¹ sets out how the Welsh government will tackle climate change through investment in infrastructure. It confirms the need

³¹ <https://www.gov.wales/wales-infrastructure-investment-plan-and-strategy>

to promote environmental, social, economic and cultural well-being through infrastructure investments.

- 6.6.107 Decarbonisation and GHG reduction are cited as key elements of promoting environmental well-being. The strategy highlights the importance of promoting renewable energy technologies to deliver a zero-carbon energy system in meeting decarbonisation and emission reduction targets. Reducing unsustainable consumption of natural resource is also cited as an important target, which promotes a Circular Economy to reduce and make the best use of waste.

Overarching National Policy Statement for Energy (EN-1) (March 2023)

- 6.6.108 The Overarching National Policy Statement for Energy (EN-1)³² sets out UK Government's policy for the delivery of Nationally Significant Infrastructure Projects (NSIPs) for energy. For onshore energy generating stations in Wales, NSIPs are defined as those with a capacity exceeding 350MW (as per the Planning Act 2008). EN-1 strictly applies to development in England, however, it is still considered to be relevant in setting the context for the delivery of energy infrastructure across the whole of the UK.
- 6.6.109 Paragraph 2.1.1 of EN-1 emphasises the need to transform the UK energy system to reduce emissions, increase energy security and ensure that affordable energy is delivered to consumers. Paragraph 2.3.4 confirms that to meet Net Zero and decarbonisation targets requires *"a significant amount of new energy infrastructure, both large nationally significant developments and small-scale developments determined at a local level."* Paragraph 2.3.5 builds on this, highlighting that *"we need to dramatically increase the volume of energy supplied from low carbon sources."*
- 6.6.110 EN-1 confirms a role for EfW and bioenergy technology in meeting the UK's energy needs in a sustainable manner. In Chapter 3, under the heading *'the role of combustion power stations'*, the statement confirms that EfW is a beneficial use of waste. However, it highlights that such facilities should not compete with greater waste prevention, re-use or recycling to generate feedstock. This section also

³² <https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1>

highlights the role of bioenergy in providing either baseload or dispatchable low carbon generation. Both EfW and bioenergy technologies are expected to be supported by carbon capture infrastructure.

6.6.111 In the above context, EfW and biomass generation technologies are identified as being part of the scope of the National Policy Statement at Paragraph 3.3.57, with Paragraph 3.3.58 highlighting that the need for all of the infrastructure identified in EN-1 is urgent.

6.6.112 Section 4.8 also sets out the Government's support for efficient CHP developments. The section highlights that CHP can be particularly useful for heat intensive industrial users and that generally it needs to be located close to the user of the heat.

National Policy Statement for Renewable Energy Infrastructure (EN-3) (November 2023)

6.6.113 The National Policy Statement for Renewable Energy Infrastructure (EN-3)³³ builds on the general approach to energy related NSIPs in the UK, as set out in EN-1, providing a more detailed approach to renewable energy infrastructure. As with EN-1, energy generating stations in Wales are defined as NSIPs where their capacity exceeds 350MW; the approach applies to NSIPs in England but is still considered relevant across the whole of the UK.

6.6.114 Section 2.7 set out that the combustion of biomass and waste for electricity generation plays an important role in meeting the UK's energy need, with biomass identified as having the potential to help deliver on the UK's Net Zero targets. Biomass material is identified as forest residues as co-products of conventional forestry management (including products generated during thinning, felling, and coppicing, and wood processing residues and parts of trees unsuitable for the timber industry), agricultural crops and residues, and biodegradable waste and other similar materials (including waste wood from construction).

6.6.115 Section 2.7 reaffirms that EfW must not compete with greater waste prevention, re-use or recycling, adding that it must also avoid over-capacity of residual waste treatment. In a similar context, biomass facilities must also consider the availability

³³ <https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3>

and sustainability of the fuel proposed for use. The fuel used is expected to be sustainable and comply with the Biomass Strategy and any new requirements. This section also promotes the use of CHP and expects biomass facilities to deliver negative emissions through the development of BECCS.

- 6.6.116 Such facilities are also expected to consider and address any environmental impacts. This includes the assessment and mitigation of impacts on air quality, GHG emissions, landscape, visual amenity, noise, vibration, odour, insects, vermin, waste management, residue management, water quality.

National (UK and Wales) Guidance - Waste

Towards Zero Waste – The Overarching Waste Strategy Document for Wales (June 2010)

- 6.6.117 Towards Zero Waste³⁴ sets out the approach to waste management in Wales, with the goal of zero waste by 2050. The document sets targets for 2025 and 2050. It states that zero waste is defined as “*an aspirational end point where all waste that is produced is reused or recycled as a resource, without the need for any landfill or energy recovery.*” It also confirms that one of the main targets for waste management in Wales towards 2050, is the maximisation of recycling and the phasing out of residual waste produced.
- 6.6.118 It highlights that waste should be managed in accordance with the Waste Hierarchy, which places energy recovery as the second least desirable method of waste management. However, it also confirms that the Waste Hierarchy is not absolute and does not mean that all waste should be reduced or recycled, where it is not practical to do so; nor does it necessarily mean absolutely zero landfill or energy from waste where this is not practical.
- 6.6.119 Figure 9 of the strategy states that by 2050 there will 100% recycling, with no residual waste and no energy from waste. However, it does acknowledge that high energy efficiency EfW plants will be utilised during the transition period as residual waste is phased out of landfill. Further to this Towards Zero Waste sets the target of managing

³⁴ <https://www.gov.wales/towards-zero-waste-our-waste-strategy>

a maximum of 30% of the waste generated by each waste authority using EfW in 2024/2025.

6.6.120 In defining EfW in the glossary, Towards Zero Waste highlights that *“Any given [energy from waste] technology is more beneficial if heat and electricity can be recovered. The Waste Framework Directive considers that energy efficient waste incineration (where waste is used principally as a fuel or other means to generate electricity) is a recovery activity provided it complies with certain criteria, which includes energy efficiency.”*

Guidance on Applying the Waste Hierarchy (January 2012)

6.6.121 Guidance on Applying the Waste Hierarchy³⁵ sets out what the Waste Hierarchy is, how it works for a range of materials, what establishments or undertakings need to do to comply with regulations, and key questions in dealing with waste.

6.6.122 In relation to EfW, Section 1.1 confirms that energy recovery represents the second least desirable waste management option. However, Section 2.2 states that for certain materials, there is evidence to suggest waste management options not in keeping with the Waste Hierarchy are better for the environment. It states that:

- *“for paper and cardboard, energy recovery is environmentally better than composting;*
- *for lower grade wood, energy recovery options are more suitable than recycling [...];*
- *for plastics, landfill and energy recovery with combined heat and power (CHP) are considered to be better environmental options than some open loop recycling options (for example, plastic wood manufacture) and energy recovery without CHP for some case. [...].”*

³⁵ <https://www.gov.wales/applying-waste-hierarchy-guidance>

Beyond Recycling (March 2021)

- 6.6.123 Beyond Recycling: A Strategy to make the Circular Economy in Wales a Reality³⁶ sets out how more sustainable resource management and the Circular Economy will be implemented across Wales.
- 6.6.124 The strategy confirms Wales' commitment to the pathway to 'zero waste' by 2050, meaning that *"all waste that is produced is re-used or recycled as a resource, without the need for any landfill or energy recovery."* It highlights that half the household residual waste and three quarters of commercial and industrial wastes could be recycled and seeks to stop sending recyclable waste to landfill or EfW facilities. The strategy also reaffirms that the Welsh Government has imposed a moratorium on large-scale energy from waste developments, as the need for such facilities is reduced by increased recycling and reduction in waste.

Strategic Assessment for the Future Need for Energy from Waste Capacity in the Three Economic Regions of Wales (March 2021)

- 6.6.125 The Strategic Assessment for the Future Need for Energy from Waste Capacity in the Three Economic Regions of Wales³⁷ (Strategic EfW Need Assessment) provides information for use when considering new or varied permission for EfW facilities and energy facilities using waste as fuel.
- 6.6.126 The Strategic Assessment forecast in Scenario 1 (recycling and waste minimisation targets are met) shows that there would be a 55,000 tonne excess of EfW capacity in the North Wales economic region and a break even EfW capacity for Scenario 2 (recycling targets met, no waste reduction) by 2035; in the Mid and Southwest Wales economic region an EfW capacity shortfall of 170,000 tonnes and 220,000 tonnes for Scenario 1 and Scenario 2 respectively is anticipated by 2035.
- 6.6.127 The Strategic Assessment reasserts that there is currently a moratorium on large-scale EfW development, following the Ministerial Written Statement issued on 24 March 2021.

³⁶ <https://www.gov.wales/beyond-recycling>

³⁷ <https://www.gov.wales/strategic-assessment-future-need-energy-waste-capacity-wales>

Local Planning Guidance

- 6.6.128 There are several local planning guidance notes (LPGN)³⁸ which have been adopted by WCBC. These notes support the Local Development Plan and offer additional guidance to various specific topics. The relevant notes are identified and summarised below.

Local Planning Guidance Note No. 7 – Landscape and Development (November 2003)

- 6.6.129 LPGN No. 7 aims to provide clarity on landscape information requirements and help to provide applicants with a better understanding of landscape issues. It asserts that consideration of design and landscape issues should be considered at an early stage. The LPGN sets out the Council's expectation that development proposals include a landscape scheme, which is informed by an appropriate survey of the existing landscape context and includes appropriate hard and soft landscaping.

Local Planning Guidance Note No. 26 – Landscape and Industrial Development (November 2023)

- 6.6.130 LPGN No. 26 provides guidance on the landscape and environmental issues that the Council will consider when determining proposals for industrial development. It confirms that industrial development can have a positive impact on the landscape by considering the impact that proposals may have. The note offers numerous design recommendations which can be considered across a range of industrial developments.

Local Planning Guidance Note No. 32 – Biodiversity & Development (March 2011)

- 6.6.131 LPGN No. 32 defines biodiversity and provides guidance on how it should be dealt with as part of planning applications. It confirms that certain development types and those with the potential to affect habitats should be supported by ecological assessments. It also provides details on the information that should be included within ecological appraisals; how harm to ecology and biodiversity should be

³⁸ <https://www.wrexham.gov.uk/service/development-plans-and-other-planning-policy/local-planning-guidance-notes>



avoided; and how mitigation, compensation and new benefits should be delivered, where appropriate.

Local Planning Guidance Note No. 33 – Pontcysyllte Aqueduct & Canal World Heritage Site (June 2012)

- 6.6.132 LPGN No. 33 provides guidance on how development in and around the Pontcysyllte Aqueduct & Canal WHS will be determined, with the goal of ensuring that the integrity and OUV of the WHS, and its setting (including the defined buffer zone), is maintained and adverse impact is avoided. The note provides guidance on how planning applications with the potential to affect the WHS should be assessed, through consideration of the existing context and the impacts of the development proposed.

7.0 PLANNING POLICY APPRAISAL

7.1 Introduction

7.1.1 This Section of the Planning Statement provides a detailed assessment of the Proposed Development against relevant planning policy and guidance previously identified in **Section 6.0**. The purpose of this assessment is to demonstrate the overall compliance of the Proposed Development in the context of key planning policy considerations.

7.1.2 When determining a planning application, the central principle is the comprehensive assessment of the application against the development plan as a whole. This approach acknowledges that development policies can, and often do, pull in different or competing directions; for example, a policy promoting economic growth might conflict with one prioritising environmental preservation. Consequently, the decision-maker's role is not a mathematical or mechanical exercise of simply counting policies for or against the proposal. Instead, it requires the application of professional judgement to identify which policies or material considerations are most relevant and carry the greatest weight in the specific circumstances of the case. The final determination rests on an evaluative judgement of whether, in light of the development plan's overall aims and objectives, the Proposed Development, on balance, substantially accords with the plan.

7.1.3 The following key topics are considered in this assessment:

- Principle of Development.
- Noise and Vibration.
- Air Quality and Odour.
- Landscape and Visual Impact.
- Historic Environment.
- Climate Change and Sustainability.
- Waste.
- Population and Human Health.
- Transport.
- Geology, Hydrology, Hydrogeology and Contaminated Land.
- Biodiversity.
- Flood Risk and Drainage.

7.2 Principle of the Proposed Development

Broad Location of Development

- 7.2.1 National Plan Policies 1 and 20 confirm that Wrexham and Deeside represent one of the National Growth Areas, where growth will be focused, supporting the principle of development in this location. At a local level, UDP Policies PS1 – PS4 and LDP Policy SP2 support development in this location on the basis that it would be within the settlement limit, would not detrimentally affect the countryside or landscape, would make use of previously developed land and would be consistent with the existing character of the wider site (existing Kronospan Facility).
- 7.2.2 The Site is identified in the LDP as part of the wider Chirk Industrial Estate allocation, where development of employment generating uses and other appropriate complimentary uses is supported by LDP Policy EM1. The proposed Low Carbon CHP Facility would provide power and heat for the existing manufacturing operations at the Kronospan Facility. The proposed Low Carbon CHP Facility is clearly complimentary to the existing employment use and is therefore supported by LDP Policy EM1.
- 7.2.3 In the above context, the location of the proposed Low Carbon CHP Facility is clearly supported by the National Plan, the UDP and the LDP. There does not appear to be any conflict between the UDP and the LDP in this regard.

Renewable and Low Carbon Development - General

- 7.2.4 National Plan Policy 17 strongly supports the principle of renewable and low carbon technology and energy from all technologies and at all scales, which would include the proposed Low Carbon CHP Facility. Likewise, National Plan Policy 18 strongly supports the principle of renewable and low carbon energy developments considered to be DNS projects subject to meeting the 11 requirements. Where relevant, the Policy 18 requirements have been considered in **Sections 7.4 – 7.14** below.
- 7.2.5 Similarly, PPW states that the benefits of renewable and low carbon energy, as part of the overall commitment to tackle the climate emergency and increase energy security, is of paramount importance, and that the continued extraction of fossil fuels will hinder progress towards achieving overall commitments to tackling climate change. Section 5 also states that local authorities should facilitate all forms of



- renewable and low carbon energy development, based on the merits of the individual proposal.
- 7.2.6 At a local policy level, UDP Policy PS12 supports renewable and low carbon energy proposals (notably biomass and EfW) provided that the benefits outweigh any adverse impacts whilst LDP Policy RE2 supports the delivery of low carbon energy development in the proposed location, provided that the development can be demonstrated to be acceptable from a landscape (see **Section 7.6** below) and design (see Design and Access Statement (**DNS4-002**) perspective.
- 7.2.7 Whilst LDP Policy RE1 relates to the integration of renewable energy and low carbon technologies in new development (the proposed Low Carbon CHP Facility is the integration and direct provision of power and heat for the existing operations at the Kronospan Facility), it clearly offers further support for the proposed Low Carbon CHP Facility by highlighting the need to meet energy and heating needs through renewable and low carbon technologies wherever possible.
- 7.2.8 LDP Policy SP18 also states that development proposals are required to demonstrate that they have taken into account: reducing carbon emissions; adapting to climate change implications (see **Section 7.8** below); and increasing renewable energy.
- 7.2.9 Further support for the principle of the proposed Low Carbon CHP Facility is offered by various national legislation and guidance (including but not limited to: The Environment (Wales) Act 2016; The Clean Growth Strategy; Building a Low-Carbon Economy in Wales; Prosperity for All – A Low Carbon Wales; The Welsh Government Climate Emergency Declaration; The Energy White Paper; The Industrial Decarbonisation Strategy; Net Zero – Building Back Greener; Wales Infrastructure Investment Strategy; EN-1; and EN-3) which clearly highlight a pressing need to deliver additional renewable and low carbon energy capacity, to decarbonise the economy and ensure that Wales meets Net Zero targets as set out in the Climate Change Act 2008 (2050 Target Amendment) Order 2019 and the subsequent (Sixth) Carbon Budget and Net Zero Wales Carbon Budget 2.
- 7.2.10 The proposed Low Carbon CHP Facility is not considered to be a 'traditional' EfW facility with the purpose of intentionally dealing with municipal and commercial waste to reduce the amount that goes to landfill (see section below entitled 'Waste

Management/Energy from Waste Development' for further details) and generating electricity for the national grid. Whilst reducing the amount of waste that goes to landfill may be an indirect effect of the proposed Low Carbon CHP Facility, its primary purpose is to increase the flexibility of the Applicant's on-site energy generation; generate on-site low carbon, renewable energy in the form of electricity and heat; and help to decarbonise the existing Kronospan Facility whilst using wood more sustainably and making a valuable contribution to meeting the Welsh Government's Net Zero commitments.

- 7.2.11 As set out in **Section 3.5**, from a GHG emissions perspective, **ES Chapter 9.0 (Climate Change)** concludes that the proposed Low Carbon CHP Facility would have a net carbon benefit of 3,024,740 tCO₂e over its estimated 40-year lifespan; it would provide carbon benefits of 1.1% and 2.3% of the budget for the period 2026 – 2030 and 2031 – 2035 respectively. The proposed Low Carbon CHP Facility would therefore be compliant with legislation, policies and guidance with respect renewable and low carbon development.

Renewable and Low Carbon Development - Biomass

- 7.2.12 Biomass facilities, such as the proposed Low Carbon CHP Facility, are identified as a key low carbon technology which will help Wales switch from fossil fuels to more sustainable fuel sources. Support for the principle of biomass facilities is set out in LDP Policy RE2, The Clean Growth Strategy, Prosperity for All: A Low Carbon Wales, The Energy White Paper, The Industrial Decarbonisation Strategy, Net Zero: Building Back Greener, Biomass Policy Statement, Wales Infrastructure Investment Strategy, EN-1, and EN-3.
- 7.2.13 The Energy White Paper identifies bioenergy as a unique renewable technology with a wide array of applications which can be used as a substitute for fossil-fuel based products and activities. It goes on to state that bioenergy is one of the priority areas in the UK's 'Net Zero Innovation Portfolio' and confirms that the Government would establish the role of bioenergy by 2022.
- 7.2.14 The Biomass Policy Statement goes on to state that biomass energy generation has already helped to reduce fossil fuel use in the UK and has the potential to be used further in the industrial sector to further reduce industrial GHG emissions.

- 7.2.15 EN-3 identifies biomass material as (amongst others) forest residues as co-products of conventional forestry management (including products generated during thinning, felling, and coppicing, and wood processing residues and parts of trees unsuitable for the timber industry), and biodegradable waste and other similar materials (including waste wood from construction). The proposed Low Carbon CHP Facility's feedstock (see **Section 2.3**) would consist of on-site wood process residues, forestry brash and Grade C waste wood, all of which would be consistent with the variations identified in EN-3.
- 7.2.16 The Proposed Development, as a low carbon power and heat producer via the use of biomass is therefore in accordance with national and local planning policy, legislation and guidance. The guidance specifically highlights the benefits of biomass in high temperature applications, confirming the particular suitability of the deployment of the proposed Low Carbon CHP Facility to provide power and heat to the existing Kronospan Facility.

Waste Management/Energy from Waste Development

Overview

- 7.2.17 PEDW's pre-application advice (**ES Appendix 1A**) and its EIA Scoping Direction (**ES Appendix 1D**) and EIA Scoping Direction Addendum (**ES Appendix 1E**) state that the Proposed Development should be considered in the context of national waste policy (including energy from waste and waste management). National and local waste legislation, policy and guidance is considered further below.

Principle

- 7.2.18 At a local level, UDP Policy PS10 supports the development of energy recovery facilities where re-use and recycling is not feasible, particularly where waste is managed as close to source as possible. UDP Policy MW12 builds on this, requiring waste management proposals to have regard to several key considerations, including the Waste Hierarchy, the Proximity Principle and regional self-sufficiency. LDP Policy MW6 states that Chirk Industrial Estate represents a suitable location for waste management use, provided it would move the management of waste up the Waste Hierarchy (also LDP Policy SP17), there is an identified need for the facility type at the regional level, and it meets the remaining development management criteria set out by the policy. LDP Policy SP17 also supports waste management



sites that ensure sufficient disposal and recovery capacity is available whilst avoiding overprovision and promote the colocation of heat producers.

- 7.2.19 Where relevant, the criteria of LDP Policy MW6 has been considered in **Sections 7.4 – 7.14** below.
- 7.2.20 TAN 21 confirms that waste uses are generally appropriate uses for industrial locations, especially those with heavy or specialised industry. It also sets out support for the recovery of waste that cannot be recycled through highly efficient energy recovery.
- 7.2.21 Further support for the principle of EfW and/or CHP is set out EN-1, and Towards Zero Waste.
- 7.2.22 Towards Zero Waste and Beyond Recycling both state that by 2050 there will 100% recycling, with no residual waste and no energy from waste. However, Towards Zero Waste does acknowledge that high energy efficiency EfW plants will be utilised during the transition period as residual waste is phased out of landfill.
- 7.2.23 Towards Zero Waste highlights that *“Any given [energy from waste] technology is more beneficial if heat and electricity can be recovered. The Waste Framework Directive considers that energy efficient waste incineration (where waste is used principally as a fuel or other means to generate electricity) is a recovery activity provided it complies with certain criteria, which includes energy efficiency.”*

The Ministerial Written Statement

- 7.2.24 A key aspiration in Wales is to phase out the management of waste by disposal or recovery by 2050. Whilst earlier guidance (including TAN 21) provides support for EfW during the transitional period up to 2050, the Ministerial Written Statement effectively suspended support for new large-scale (over 10MW) EfW facilities.
- 7.2.25 It is understood that the primary purpose of the Ministerial Written Statement was to avoid the oversupply of commercial EfW capacity, and drive waste further up the Waste Hierarchy by ensuring that it is not being sent to a recovery facility where it can feasibly be reused and recycled. In this context, it is understood that the Ministerial Written Statement seeks to restrict ‘traditional’ EfW facilities, which typically manage collected waste (i.e. municipal and commercial wastes), where there is a clear need to increase the rate of recycling to meet waste targets.



7.2.26 The above is also acknowledged in Net Zero Wales Carbon Budget 2, Beyond Recycling, and The Strategic Assessment.

7.2.27 As set out in the section above entitled 'Renewable and Low Carbon Development - General', the proposed Low Carbon CHP Facility is not considered to be a 'traditional' EfW facility. Further justification as to why the proposed Low Carbon CHP Facility would not conflict with the Ministerial Written Statement, as well as compliance with other relevant waste management legislation, policy and guidance is set out under the various sub-headers/themes below.

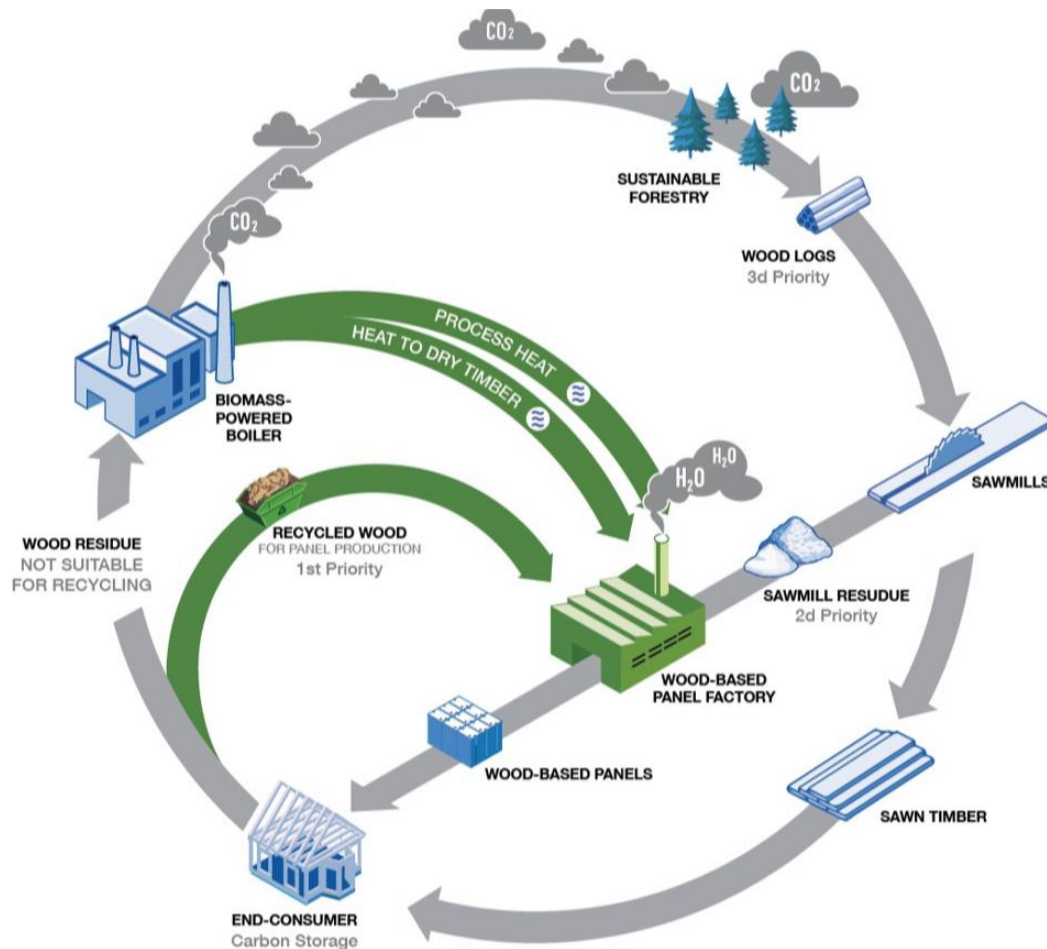
Circular Economy

7.2.28 The requirement to adhere to Circular Economy principles is set out in PPW, Prosperity for All: A Low Carbon Wales, Net Zero Wales Carbon Budget 2, The Wales Infrastructure Investment Strategy, The Ministerial Written Statement, and Beyond Recycling.

7.2.29 Circular Economy principles are firmly embedded into Kronospan's business model; a significant aspect of the operational Circular Economy approach is focused around reintegrating the maximum amount of production residues into other on-site processes with an overall aim of carbon negative production. This is done by considering the full life cycle of raw materials and their treatment at end of life. A visual representation of Kronospan's sustainable production cycle is provided at **Inset 7.1** below.



Inset 7.1 – Kronospan's Sustainable Production Cycle



7.2.30 As the world's leading manufacturer of wood-based panels, Kronospan is uniquely placed to sustainably use wood, on-site in a cradle-to-cradle manner. This already occurs on site, supported by the existing K7 and K8 Biomass Plants. Once the wood products reach the end of their usable (end consumer) life, they re-enter the waste stream where they would be able to either be re-used (as recycled wood) for manufacturing of new wood products or be used as biomass feedstock (together with on-site process residues from manufacturing) where it is not able to be re-used or recycled to provide electrical and heat energy for direct use on-site in the subsequent manufacture of high-quality wood products.

7.2.31 As the proposed Low Carbon CHP Facility would generate more heat and power than the existing K7 and K8 Biomass Plants, it provides an opportunity to further the sustainable use of wood, in accordance with its own sustainable production

cycle/Circular Economy and subsequently reduce its reliance on the on-site gas engines that are currently used to provide additional heat and power to the existing Kronospan Facility.

- 7.2.32 Therefore, in practice, the proposed Low Carbon CHP Facility would represent a unique embodiment of the Circular Economy principles promoted by the Ministerial Written Statement and other legislation, policy and guidance documents.

Self-Sufficiency and Proximity Principles

- 7.2.33 The importance of the Proximity Principle for waste management developments is set out at UDP Policies PS10 and MW12, and TAN 21. The importance of regional self-sufficiency (the Self-Sufficiency Principle) and ensuring there is not an over-supply of waste management facilities is set out at UDP Policy MW12, LDP Policies MW6 and SP17, EN-3, and The Strategic Assessment.

- 7.2.34 Further information regarding the proposed feedstock sources and compliance with the Self-Sufficiency Principle and Proximity Principle is set out at **Section 4.3**.

Waste Hierarchy

- 7.2.35 The requirement to adhere to the Waste Hierarchy is set out in LDP Policies SP17 and MW6, PPW, TAN 21, Prosperity for All: A Low Carbon Wales, The Industrial Decarbonisation Strategy, The Biomass Policy Statement, Towards Zero Waste, and Guidance on Applying the Waste Hierarchy.
- 7.2.36 Further information regarding compliance with the Waste Hierarchy is set out at **Section 4.3**.

Heat and Energy Efficiency

- 7.2.37 The benefits of fuel switching/bioenergy/CHP in maximising the use of waste heat and subsequently minimising carbon emission associated with heating are set out in LDP Policies SP17 and RE1, PPW, TAN 21, The Clean Growth Strategy, The Industrial Carbonisation Strategy, Net Zero Wales Carbon Budget 2, The Biomass Policy Statement, Towards Zero Waste, and EN-1. EN-1 also states that CHP can be particularly useful for heat intensive industrial users and that generally it needs to be located close to the use of the heat.

- 7.2.38 The importance of energy efficiency is contained within LDP Policies SP18 and RE1, PPW, and TAN 21. PPW goes on to state (at Paragraph 5.9.1) that it expects planning authorities to promote links between renewable and low carbon energy projects and major development and high energy users, and (at Paragraph 5.9.7) that planning authorities should consider the best places for local renewable energy generation to help improve the resilience of the grid in the future.
- 7.2.39 Towards Zero Waste highlights that *“Any given [energy from waste] technology is more beneficial if heat and electricity can be recovered. The Waste Framework Directive considers that energy efficient waste incineration (where waste is used principally as a fuel or other means to generate electricity) is a recovery activity provided it complies with certain criteria, which includes energy efficiency.”*
- 7.2.40 As set out in **Section 3.5**, the proposed Low Carbon CHP Facility would be genuinely dual purpose in that all of the electricity and much of the heat generated (both in terms of turbine steam and flue gases) would be used in the direct drying of product from the existing primary manufacturing process via the MDF1 dryers, and for MDF1 and MDF2 manufacturing processes.
- 7.2.41 Most UK EfW facilities only use the electricity with the heat being wasted – the UK is one of the lowest performers in Europe with respect the beneficial use of heat generated in such energy-generating facilities (Tolvik: UK Energy from Waste Statistics – 2021)³⁹. Therefore, the proposed Low Carbon CHP Facility would be highly efficient, the electricity and heat would be used on-site in what is an energy intensive existing industrial facility (removing the need for further grid connection infrastructure) and would therefore have greater sustainability credentials than a typical EfW facility.
- 7.2.42 As set out in **Section 3.5**, the proposed Low Carbon CHP Facility would generate more heat and power than the existing K7 and K8 Biomass Plants and would enable Kronospan to significantly reduce its reliance on the on-site gas engines whilst also reducing its reliance on the electrical grid. Together with the North Access Road development (which would provide a new 132kV electricity connection to the existing Kronospan Facility and remove reliance on the existing and ageing 33kV

³⁹ <https://www.tolvik.com/published-reports/view/uk-energy-from-waste-statistics-2021/>

infrastructure), the proposed Low Carbon CHP Facility would further remove reliance on the existing electrical grid and improve its resilience.

Heat Networks

- 7.2.43 The associated benefits, including for the local community, of establishing localised heat networks are set out at LDP Policy SP17 and PPW.
- 7.2.44 The potential to provide community heat by supplying low-grade waste heat from the proposed Low Carbon CHP Facility to nearby facilities such as a school, swimming pool, or care home has been explored by Kronospan. As part of this work, the likely heat demand, temperature needs, and operating patterns of these potential receivers was examined to understand whether the available heat could offer a practical and sustainable supply.
- 7.2.45 The technical feasibility of transferring heat over an approximate distance of 500–800m using a district-heating-style buried pipe network has been explored by Kronospan. This included initial consideration of route options, connection points and expected heat losses. The findings were shared with WCBC who chose not to take the opportunity forward at this time.
- 7.2.46 Whilst community heat benefits are not part of the proposed Low Carbon CHP Facility, their potential has been explored and could be revisited in the future.

Sustainability Criteria

- 7.2.47 The requirement to adhere to Sustainability Criteria is set out in the Biomass Policy Statement, Net Zero: Building Back Greener, The Biomass Policy Statement, EN-3,
- 7.2.48 Further information regarding compliance with Sustainability Criteria is set out at **Section 4.3**.

Energy Hierarchy

Overview

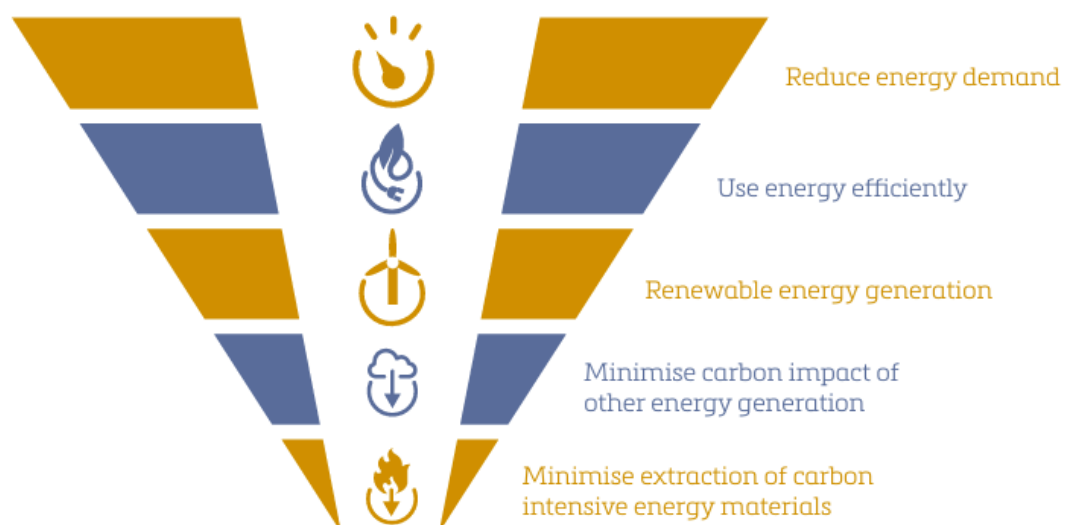
- 7.2.49 The importance of the Energy Hierarchy is set out in PPW. The Energy Hierarchy is applicable to all new development and is a framework that prioritises actions to reduce energy demand and shift towards sustainable energy sources, with the most



effective actions (reducing consumption) at the top, and the least effective (using fossil fuels) at the bottom. This is illustrated at **Inset 7.2** below.

- 7.2.50 The Energy Hierarchy is more applicable to ensuring development minimises its energy demands whilst ensuring its energy needs are met in as efficient and renewable manner as practicable. Whilst it is difficult to apply to a scheme that is itself a renewable energy scheme designed to reduce reliance on fossil fuels (gas), the following appraisal is undertaken in that context.

Inset 7.2 – The Energy Hierarchy (source: PPW Figure 10)



Reduce Energy Demand and Use Energy Efficiently

- 7.2.51 Kronospan recognises its presence in what is an energy intensive industry. The production of wood-based panel products has inherent and substantial energy requirements; for example, the preparation of raw material involves processes such as breaking down and bonding timber fibres using significant heat and electricity.
- 7.2.52 Energy demand associated with the production of wood-based panel products is relatively constant and typically fluctuates depending on product output in any given year. However, a reduction in industrial energy demand typically goes hand in hand with the principle of ‘using energy efficiently’ since gains in the latter would then directly result in reductions in the former. As part of ongoing sustainability commitments, Kronospan continuously seeks opportunities to invest in new and highly efficient machinery and equipment to reduce energy consumption; it is

expected that energy efficiency in the manufacturing processes would continue to increase in future years as technologies continue to develop. Examples of recent energy efficiency measures include implementing a heat recycling system in the gas-powered CHP units, replacing electrical motors across the site with state of the art, energy efficient models and substantial enhancements to the compressed air networks. In 2022, a cutting-edge heat exchanger was installed for the biomass plants.

- 7.2.53 With respect the proposed Low Carbon CHP Facility, as set out in the earlier part of **Section 7.2** (see header 'Waste Heat and Energy Efficiency'), it would be genuinely dual purpose in that all of the electricity and much of the heat generated would be used on-site. This would make it far more efficient and with greater sustainability credentials than a typical EfW facility.

Renewable Energy Generation and Minimise Carbon Impact of other Energy Generation

- 7.2.54 As set out in the earlier part of **Section 7.2** (see headers 'Renewable and Low Carbon Development – General' and Renewable and Low Carbon Development – Biomass'), the proposed Low Carbon CHP Facility is a biomass fuelled low carbon, renewable energy development.
- 7.2.55 As set out in **Section 3.5**, from a GHG emissions perspective, **ES Chapter 9.0 (Climate Change)** concludes that the proposed Low Carbon CHP Facility would have a net carbon benefit of 3,024,740 tCO₂e over its estimated 40-year lifespan; it would provide carbon benefits of 1.1% and 2.3% of the budget for the period 2026 – 2030 and 2031 – 2035 respectively. The proposed Low Carbon CHP Facility would therefore be compliant with legislation, policies and guidance with respect renewable and low carbon development.

Minimise Extraction of Carbon Intensive Energy Materials

- 7.2.56 As set out in **Section 3.5**, the proposed Low Carbon CHP Facility would generate more heat and power than the existing K7 and K8 Biomass Plants and would enable Kronospan to significantly reduce its reliance on the on-site gas engines that are currently used to provide additional heat and power to the existing Kronospan Facility. As such, the proposed energy shift would provide significant environmental

benefits due to the significant reduction in the burning of fossil fuels (gas) and an increase in the use of renewable biomass material.

Energy Hierarchy Conclusion

- 7.2.57 Due to the unique nature of the existing Kronospan Facility in the way it currently uses wood (including biomass energy) in a cradle to cradle manner, the proposed Low Carbon CHP Facility enabling an enhancement of the cradle to cradle approach, the existence and future removal of the existing gas turbines, and the electricity and heat generated retained on-site for manufacturing use means that the proposed Low Carbon CHP Facility is compliant with all aspects of the Energy Hierarchy.

Bioenergy with Carbon Capture and Storage

- 7.2.58 The potential for bioenergy developments to incorporate BECCS to further assist in the removal of emissions is set out in The Clean Growth Strategy, The Energy White Paper, The Industrial Decarbonisation Strategy, Net Zero Wales Carbon Budget 2, Net Zero – Building Back Greener, The Biomass Policy Statement, and EN-3.
- 7.2.59 Net Zero – Building Back Greener states that biomass fuel switching in industry will be supported provided that BECCS is prioritised to make best use of the limited supply of sustainable biomass.
- 7.2.60 The proposed Low Carbon CHP Facility would combust waste wood from the Site that originates from biological sources. As such it primarily produces biogenic CO₂ emissions. Biogenic sources of CO₂ are part of the natural short-term carbon cycle where CO₂ is absorbed by plants during photosynthesis and released upon respiration or decomposition. Therefore, releasing the biogenic CO₂ to the atmosphere would not increase the net carbon emissions in the atmosphere unlike non-biogenic sources (such as natural gas) which introduce carbon emissions which have been locked away for millions of years altering the natural atmospheric carbon balance. As set out in **ES Chapter 9.0 (Climate Change)**, the Proposed Development would result in a net reduction in carbon emissions. The addition of Carbon Capture and Storage (CCS) to the proposed Low Carbon CHP Facility would prevent CO₂ emissions from biogenic and non-biogenic sources emissions from being emitted to atmosphere increasing the carbon benefits of the Proposed Development.

- 7.2.61 The feasibility of CCS has been explored by Kronospan. Space is the critical limiting factor; the limits of the existing Kronospan Facility are already well established, fixed, and constrained by neighbouring development and established physical features (acknowledging the future North Access Road development would effectively extend the northern boundary further north to accommodate the new access road and 132kV substation). Due to the size of CCS plant and associated footprint likely required, it is likely that an area the size of the entirety of the existing log yard (open wood storage area) would be required; an alternative would be to use the former golf course immediately west of the railway line (either to accommodate the CCS facility or to accommodate (displaced) existing plant/work areas (such as the existing log yard)). An incursion of this size and scale into what is currently undeveloped land designated as Green Barrier (under UDP Policy EC1) would provide a further and notable layer of planning complexity given the Proposed Development is complex in nature but currently wholly within the boundary of the existing Kronospan Facility.
- 7.2.62 The inclusion of a CCS plant would result in additional power (electricity) requirements; this would require the running of additional gas engines or the use of existing Gas Turbines 1 and 2 and/or Gas Engines 1 – 3 (which are planned for decommissioning/removal and standby status respectively as part of the Proposed Development), subsequently losing a notable proportion of the carbon benefit summarised in **Section 3.5** above. Whilst a possible solution to additional power (electrical) requirements would be to construct a CHP facility with a larger electrical output, this would require a much larger CHP facility which was explored by Kronospan in 2022 as part of the early site search exercise (see **Section 3.2, ES Chapter 3.0 (Alternatives)**); that early site search exercise confirmed that a larger CHP facility would be required to be sited on land currently used for open wood storage (instead of the Proposed Development Site) which would subsequently have a detrimental impact on day-to-day operations as well as result in greater amenity (landscape, visual, noise) effects.
- 7.2.63 As set out in Vision 2030, Kronospan is committed to Net Zero and would like to achieve a carbon negative facility where it is achievable and practicable to do so. It is expected that, over time, CCS technology improvements will be made in terms of size and scale, and CCS opportunities will be fully explored in the future where it can be demonstrated that it is feasible within the physical limitations of the existing Kronospan Facility. Kronospan's intention is to integrate a practicable CCS solution

within the existing Kronospan Facility as the final part of its Net Zero/carbon negative approach, rather than as an easy, but likely sub-optimal solution at the start.

Principle of Development Conclusion

- 7.2.64 Based on the above, there is clear support for the principle of the proposed Low Carbon CHP Facility in this location at a national and local level, subject to demonstrating compliance with other (development management criteria and environmental impact) planning policy (set out below).

7.3 Economic Benefits

- 7.3.1 The National Plan (Policies 1, 3, and 20) identify Wrexham and Deeside as one of the National Growth Areas where there will be employment growth and infrastructure investment. From a local perspective, LDP Policy SP8 seeks to ensure the continued role of the County Borough as a key economic driver in North Wales whilst LDP Policy EM1 identifies the Site as part of the Chirk Industrial Estate which will be protected for B Use Class employment generating uses and appropriate complementary uses.
- 7.3.2 PPW promotes the economic benefits of energy (including waste) schemes, whilst TAN 23 states that traditional business use only account for part of the activity in the economy and that energy generation is a key part of those activities falling within Use Class B, and that proposals with economic benefits are not necessarily in conflict with social and environmental objectives. Prosperity for All – A Low Carbon Wales highlights the need to transition to a low carbon economy to reduce emissions and to increase economic prosperity along the way.
- 7.3.3 As set out in **Section 3.2**, Kronospan is an important local employer providing direct employment for over 660 people, the majority of whom live locally, and paying over £1.5million in net wages every month. Since establishing the business in Chirk over 50 years ago, Kronospan has invested over £1 billion through direct capital investment and asset maintenance. This has led it to become the 9th largest manufacturing business in Wales, delivering hugely significant employment and training benefits to the North Wales region.
- 7.3.4 Kronospan is continuously investing to achieve economic sustainability, environmental improvement, and social benefit with the overall objective of remaining



at the forefront of what is a highly competitive industry. Recent investments delivered, and pending delivery under Kronospan Vision 2020 and Kronospan Vision 2025 are set out at **Section 3.1** and **Section 3.3**; from a sustainability perspective, the proposed Low Carbon CHP Facility would align with the Applicant's intention to utilise technological advances where practicable, use its core resource (wood) in a cradle to cradle manner as far as is practicable, use power and heat as effectively and efficiently as possible, attain surety and flexibility of supply, and to decarbonise the existing Kronospan Facility by reducing its reliance on fossil fuels (gas) and the electrical grid. The proposed Low Carbon CHP Facility is wholly aligned with the above and would therefore contribute significantly towards its objective of maintaining its position in a highly competitive manufacturing market, and ultimately its position as a major employer locally in Chirk, and in a national context.

- 7.3.5 As such, the economic benefits of the Proposed Development are aligned with the relevant planning policy and guidance with respect to economic prosperity.

7.4 Noise and Vibration

- 7.4.1 As set out by National Plan Policy 18, UDP Policy GDP1, and LDP Policies DM1 and MW6, development proposals are expected to avoid unacceptable adverse impacts on neighbouring amenity, which includes impacts from noise and vibration. This is also reflected in TAN 11, which sets out further guidance on how noise impacts should be avoided, considered and mitigated.

- 7.4.2 **Section 5.2** of this Planning Statement provides a summary of the noise and vibration effects of the Proposed Development concluding that there would be **no significant effects** during the construction or operational phases of the Proposed Development (either in isolation or in combination with other projects both on the existing Kronospan Facility or the wider area) following the implementation of appropriate mitigation. As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

7.5 Air Quality and Odour

- 7.5.1 National Plan Policy 18, UDP Policy GDP1, and LDP Policies DM1 and MW6 all expect development to be acceptable from an air quality perspective and avoid unacceptable adverse impacts on amenity and the environment from airborne pollution, dust or odour.



7.5.2 **Section 5.3** of this Planning Statement provides a summary of the air quality effects of the Proposed Development, concluding that it is not predicted to give rise to significant environmental effects on air quality and odour either in isolation or in combination with other projects both on the existing Kronospan Facility or the wider area. As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

7.6 Landscape and Visual Impact

7.6.1 In accordance with National Plan Policy 18, UDP Policies GDP1 and PS2, and LDP Policies SP12, DM1, RE2, and MW6, development is expected to be of appropriate design, scale and layout, which does not unacceptably impact on visual amenity or landscapes. In addition to this, the proximity to the Special Landscape Area and the AONB, means that consideration must also be given to these assets, in line with National Plan Policy 18, UDP Policy EC5, and LDP Policy NE4. The development must also be considered in relation to the guidance set out in TAN 12, LPGN No. 7 and LPGN No. 26, which expect sufficient consideration to be given to design and landscape.

7.6.2 **Section 5.4** of this Planning Statement provides a summary of the landscape and visual impact of the Proposed Development. The assessment demonstrates that the development would avoid unacceptable landscape and visual harm. As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

7.7 Historic Environment

7.7.1 National Plan Policy 18 expects development to avoid adverse impacts on built heritage assets. This is reflected by UDP Policies EC7 and EC9, and LDP Policy SP15. Further guidance on how the historic environment should be considered in decision making is set out in TAN 24. Given the location of the Site adjacent to the Pontcysyllte Aqueduct and Canal WHS, UDP Policy EC11, LDP Policy BE1 and LPGN No. 33 are also of relevance to the development, which require the proposal avoid harm to the attributes that justify the WHS designation and its setting.

7.7.2 **Section 5.5** of this Planning Statement provides a summary of the impacts of the Proposed Development on the historic environment. It has been demonstrated that Proposed Development would not result in any significant effects on the historic



environment. As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

7.8 Climate Change and Sustainability

7.8.1 National Plan Policy 18 requires development proposals to use and management of resources sustainably. Further to this, LDP Policies SP18 and DM1 expect development to contribute to reducing emissions and help to address climate change. There is also a raft of legislation and guidance which seeks to promote environmental sustainability and address climate change. Policy and guidance also support the delivery of low carbon and renewable energy projects, most notably National Plan Policies 17 and 18, UDP Policy PS12, and LDP Policies RE1 and RE2. LDP Policies SP11 and SP14 also have relevance to climate change.

7.8.2 **Section 5.6** of this Planning Statement provides a summary of the effects of the Proposed Development in relation to climate change and sustainability (with respect climate change resilience and GHG emissions). It confirms that the Proposed Development would have a negligible to slight effect (not significant) with respect climate change resilience and would have a significant beneficial on climate change (with respect GHG emissions). The Proposed Development would therefore promote environmental sustainability, help to promote positive climate change action, and would therefore comply with relevant policy and guidance.

7.9 Waste

7.9.1 The requirement to promote sustainable waste management is set out by UDP Policy PS10 and LDP Policies SP17 and MW5. UDP Policy MW12 and LDP Policy MW6 set out the criteria to determine whether new waste management facilities should be deemed acceptable. LDP Policies SP14 and SP18 are also considered to be of some relevance to waste. TAN 21 offers further guidance on how waste management should be undertaken in Wales and how waste development proposals will be determined. There is also legislation and guidance that relates to waste management and development.

7.9.2 **Section 5.7** of this Planning Statement summarises the waste effects of the Proposed Development. A slight effect has been identified in relation to APCR waste on hazardous waste landfill capacity, with all other impacts identified as neutral or slight, which are not considered significant. Overall, the waste-related elements of



the Proposed Development are considered to be environmentally acceptable, with no significant residual effects expected.

7.10 Population and Human Health

7.10.1 National Plan Policy 18 requires development to avoid adverse impact on nearby receptors. Similarly, LDP Policy SP13 expects development to reduce and improve health, physical, economic and social well-being. The relevant development management policies, UDP Policy GDP1 and LDP Policies DM1 and MW6 also include provisions to protect the amenity of nearby residents/land users.

7.10.2 **Section 5.8** of this Planning Statement summarises the likely effects of the Proposed Development on population and human health. The initial design and operational controls (e.g. DMP, OMP, Framework CEMP) are sufficient to avoid significant adverse health effects, and no further health-specific mitigation or enhancement measures would be required. As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

7.11 Transport

7.11.1 The requirement to ensure that development is suitably served by the transport network and can be safely and conveniently accessed is set by National Plan Policy 18, UDP Policy GDP1, LDP Policies SP11, DM1, T1 and MW6 and TAN 18.

7.11.2 UDP Policy T8 and LDP Policy T1 set out the requirement to adhere to parking standards. LDP Policy T2 sets out Active Travel requirements including ensuring that walking and cycling infrastructure is an integral part of the overall design of the scheme (also LDP Policies T1 and SP11).

7.11.3 The existing T-junction main site entrance (T-junction with the B5070) would be used as the main site entrance for the construction phase of the Proposed Development. Once constructed, the North Access Road would be used as the main access to the existing Kronospan Facility; the current access would no longer be used for the access and egress of all HGVs except in exceptional circumstances. The North Access Road would be as the main site entrance for the operation phase of the Proposed Development.

7.11.4 **Section 5.10** of this Planning Statement provides a summary of the anticipated transport effects of the Proposed Development (the TS) which concludes a net



increase of just seven HGVs per operational day (14 two-way per operational day). This equates to approximately one, two-way HGV trip during each of the traditional highway network peak hours (0800-0900 hours and 1700-1800 hours), equating to one additional HGV movement every 60 minutes on average. percentage impact analysis of the Proposed Development on local road links demonstrate that the Proposed Development would not have a material impact. The maximum impact in terms of increases in total traffic flows on any link would amount to less than 0.5% and would not be material. Construction phase traffic flows would be no greater than this operational phase. As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

- 7.11.5 The Proposed Development is not expected to generate new permanent employment opportunities to the extent that additional parking would be required. There is sufficient car parking already provided on the existing Kronospan Facility, and the existing car park does not operate close to capacity. The TS also demonstrates that the Proposed Development Site is well located for other forms of sustainable transport including pedestrian access, public transport, and cycling.

7.12 Geology, Hydrology, Hydrogeology and Contaminated Land

- 7.12.1 UDP Policy GDP1 expects development to minimise risk of contamination, amongst other things. Similarly, LDP Policy DM1 expects development to safeguard the environment from pollution.
- 7.12.2 As detailed at **Section 5.11** of this Planning Statement, which provides a summary of the Phase 1 Site Investigation, there is not expected to be any unacceptable contaminated land impacts or impacts on geology, hydrology, and hydrogeology. Suitable mitigation measures (such as but not limited to unexpected contamination protocol, groundwater management practices, foundation works risk assessment, and dust suppression protocols) will be implemented during construction period to minimise the risk of any potential adverse effects. The Framework CEMP (DNS4-003) provides the mitigation and management measures to be implemented with regards geology, hydrology, hydrogeology and contaminated land. As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

7.13 Biodiversity

- 7.13.1 National Plan Policies 9 and 18, UDP Policies GDP1, EC6, and PS2, LDP Policies SP14, SP18, SP19, NE1, NE2 and DM1, and PPW all expect development proposals to protect the natural environment and deliver biodiversity enhancements. TAN 5 and LPGN No. 32 provide further guidance on how the natural environment will be protected through the plan making and decision taking.
- 7.13.2 PPW sets out the step-wise approach to achieving a net benefit for biodiversity.
- 7.13.3 **Section 5.12** of this Planning Statement provides a summary of the likely biodiversity effects of the Proposed Development. With respect to air quality, small magnitude exceedances of screening thresholds for nitrogen and acid deposition, and ammonia levels are predicted on part of Chirk Castle SSSI; a small magnitude exceedance of nitrogen and acid deposition rates is predicted over the northern part of Canal Wood LWS, as well as some small ancient woodland sites to the northeast of the Proposed Development.
- 7.13.4 Mitigation and enhancement measures, in the form of two separate woodland buffers on the eastern and western extents of the old golf course, are proposed with the overarching aim of increasing resilience of Chirk Castle SSSI and Canal Wood LWS to air quality impacts and to enhance habitat connectivity and diversity.
- 7.13.5 As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

7.14 Flood Risk and Drainage

- 7.14.1 UDP Policies GDP1 and EC12 and LDP Policy SP18 require that flood risk as a result of development is minimised, UDP Policy EC13 expects appropriate surface water management to be implemented, and UDP Policy EC14 seeks to avoid unacceptable impacts on controlled waters. LDP Policy MW6 expects waste development to avoid unacceptable impact on water quality. TAN 15 seeks to guide new development away from areas of high flood risk and categorises vulnerable industrial development (such as incinerators) as 'highly vulnerable development'.
- 7.14.2 The Proposed Development would be within Flood Zone 1 and would not result in an increase in impermeable areas. As such there would be no significant impacts during operation in relation to flooding and drainage. Discharges from the facility would



enter the existing process water system and would be treated within the onsite water treatment facility and would be discharged from site in line with the requirements of the facility's Environmental Permit. No direct effects on water resources with water quality impacts are anticipated during construction subject to implementation of the Framework CEMP (**DNS4-003**) which is provided with this DNS application.

- 7.14.3 As such, the Proposed Development would accord with the development plan and relevant guidance in this regard.

7.15 Summary

Introduction

- 7.15.1 As set out at paragraph 7.1.2, the role of the decision-maker is to come to a view as to the extent to which the Proposed Development, on balance, accords with the development plan.
- 7.15.2 The extent to which the Proposed Development accords with the development plan (as well as other relevant planning policy and guidance) is summarised below.

Principle of Development

Broad Location of Development

- 7.15.3 The Proposed Development is within the wider Chirk Industrial Estate allocation (LDP Policy EM1 and would provide power and heat for the existing manufacturing operations at the Kronospan Facility. As such, the proposed Low Carbon CHP Facility would be in accordance with the development plan.

Renewable and Low Carbon Development – General

- 7.15.4 Support for the principle of low carbon development is set out in National Plan Policy 17, PPW, UDP Policy PS12, and LDP Policies RE1, RE2, and SP18. Further support for the principle of the Proposed Development is offered by various national legislation and guidance (including but not limited to: The Environment (Wales) Act 2016; The Clean Growth Strategy; Building a Low-Carbon Economy in Wales; Prosperity for All – A Low Carbon Wales; The Welsh Government Climate Emergency Declaration; The Energy White Paper; The Industrial Decarbonisation Strategy; Net Zero – Building Back Greener; Wales Infrastructure Investment

Strategy; EN-1; and EN-3) which clearly highlight a pressing need to deliver additional renewable and low carbon energy capacity, to decarbonise the economy and ensure that Wales meets Net Zero targets as set out in the Climate Change Act 2008 (2050 Target Amendment) Order 2019 and the subsequent (Sixth) Carbon Budget and Net Zero Wales Carbon Budget 2.

- 7.15.5 As such, the proposed Low Carbon CHP Facility would be compliant with legislation, policies and guidance with respect renewable and low carbon development.

Renewable and Low Carbon Development - Biomass

- 7.15.6 The proposed CHP Facility's feedstock would consist of on-site wood process residues, forestry brash and Grade C waste wood, all of which would be consistent with the EN-3 variations. EN-3 guidance specifically highlights the benefits of biomass in high temperature applications, confirming the particular suitability of the deployment of the proposed Low Carbon CHP Facility to provide power and heat to the existing Kronospan Facility.

- 7.15.7 As such, the proposed Low Carbon CHP Facility would be compliant with legislation, policies and guidance with respect (biomass) renewable and low carbon development.

Waste Management/Energy from Waste Development

The Ministerial Written Statement

- 7.15.8 Whilst earlier guidance (including TAN 21) provides support for EfW during the transitional period up to 2050, the Ministerial Written Statement effectively suspended support for new large-scale (over 10MW) EfW facilities.
- 7.15.9 It is understood that the primary purpose of the Ministerial Written Statement was to avoid the oversupply of commercial EfW capacity, and drive waste further up the Waste Hierarchy by ensuring that it is not being sent to a recovery facility where it can feasibly be reused and recycled. In this context, it is understood that the Ministerial Written Statement seeks to restrict 'traditional' EfW facilities, which typically manage collected waste (i.e. municipal and commercial wastes), where there is a clear need to increase the rate of recycling to meet waste targets.

- 7.15.10 The proposed Low Carbon CHP Facility is not considered to be a 'traditional' EfW facility with the purpose of intentionally dealing with municipal and commercial waste to reduce the amount that goes to landfill and generating electricity for the national grid. Whilst reducing the amount of waste that goes to landfill may be an indirect effect of the proposed Low Carbon CHP Facility, its primary purpose is to increase the flexibility of the Applicant's on-site energy generation; generate on-site low carbon, renewable energy in the form of electricity and heat; and help to decarbonise the existing Kronospan Facility whilst using wood more sustainably and making a valuable contribution to meeting the Welsh Government's Net Zero commitments.
- 7.15.11 As such, the Ministerial Written Statement should be considered in the above context when applying its relevance to the proposed Low Carbon CHP Facility.

Other Waste Management/Energy from Waste Considerations

- 7.15.12 Notwithstanding the above, this Planning Statement has demonstrated that the proposed Low Carbon CHP Facility would be compliant with the following facets of waste management/EfW development:

- Circular Economy
 - Due to the inherent approach to the Circular Economy embodied by Kronospan's existing 'Sustainable Production Cycle', the proposed Low Carbon CHP facility would represent a unique embodiment of the Circular Economy principles promoted by the Ministerial Written Statement and other legislation, policy and guidance documents.
- Self-Sufficiency, Sustainability, and Proximity Principles
 - The proposed Low Carbon CHP Facility would not contribute to an oversupply of EfW capacity, would promote sustainable waste management (largely contained on-site) and would be predominately consistent with the Proximity Principle.
- Waste Hierarchy
 - The proposed Low Carbon CHP Facility would accept a very narrow range of waste (wood) types, with the majority of the feedstock comprising on-site waste wood residues from existing Kronospan manufacturing operations and other waste wood material that cannot feasibly be re-used or recycled.
- Heat and Energy Efficiency

- The proposed Low Carbon CHP Facility would be highly efficient, the electricity and heat would be used on-site in what is an energy intensive existing industrial facility and would therefore have greater sustainability credentials than a typical EfW facility.
- Energy Hierarchy
 - Due to the unique nature of the existing Kronospan Facility in the way it currently uses wood (including biomass energy) in a cradle to cradle manner, the proposed Low Carbon CHP Facility enabling an enhancement of the cradle to cradle approach, the existence and future removal of the existing gas turbines, and the electricity and heat generated retained on-site for manufacturing use means that the proposed Low Carbon CHP Facility is compliant with all aspects of the Energy Hierarchy.

7.15.13 The potential for community heat networks and CCS as part of the Proposed Development has been explored by the Applicant. Whilst not being taken forward at this time (justification for this is set out at **Section 7.2** above), Kronospan is keen to revisit this in the future, noting that community heat provision from the proposed Low Carbon CHP facility would require a collaborative approach with WCBC.

Economic Benefits

7.15.14 Kronospan is continuously investing to achieve economic sustainability, environmental improvement, and social benefit with the overall objective of remaining at the forefront of what is a highly competitive industry. The Proposed Development would align with the Applicant's intention to utilise technological advances where practicable, use its core resource (wood) in a cradle to cradle manner as far as is practicable, use power and heat as effectively and efficiently as possible, attain surety and flexibility of supply, and to decarbonise the existing Kronospan Facility by reducing its reliance on fossil fuels (gas) and the electrical grid. The Proposed Development is wholly aligned with the above and would therefore contribute significantly towards its objective of maintaining its position in a highly competitive manufacturing market, and ultimately its position as a major employer locally in Chirk, and in a national context.

- 7.15.15 As such, the economic benefits of the Proposed Development are aligned with the relevant planning policy and guidance with respect to economic prosperity.

Environmental Effects

- 7.15.16 The ES concludes that the Proposed Development would not result in any significant effects, either in isolation or cumulatively (with other Kronospan projects and/or other projects in the wider area). Maximising the use of on-site wood process residues for the majority of the feedstock would ensure that sustainability principles are fundamental to the design, which in turn would minimise the number of HGV movements (to net increase of 14 two-way per operational day).
- 7.15.17 With respect to GHG emissions, the proposed Low Carbon CHP Facility would have a net carbon benefit of 3,024,740 tCO₂e over its estimated 40-year lifespan and would provide carbon benefits of 1.1% and 2.3% of the budget for the period 2026 – 2030 and 2031 – 2035 respectively. The proposed Low Carbon CHP Facility would therefore be consistent with existing and emerging policy requirements.
- 7.15.18 To ensure compliance with the Biodiversity and Resilience of Ecosystems Duty in Section 6 of Environment Act (Wales) 2016, mitigation and enhancement measures, in the form of two separate woodland buffers on the eastern and western extents of the old golf course, are proposed with the overarching aim of increasing resilience of Chirk Castle SSSI and Canal Wood LWS to air quality impacts and to enhance habitat connectivity and diversity.
- 7.15.19 This DNS application is accompanied by a Framework CEMP which presents the approach and application of environmental management and mitigation for the construction of the Proposed Development and aims to ensure that adverse effects from the construction phase of the Proposed Development, on the environment and the local communities, are minimised as far as practicable.

Planning Balance and Adherence to the Development Plan

- 7.15.20 In consideration of the above, the Proposed Development adheres to the development plan as it would enable the existing Kronospan Facility to maintain its position at the forefront of its industry, whilst further decarbonising its existing operations (and products) in accordance with UK and Welsh Government Net Zero targets. The net carbon benefit (3,024,740 tCO₂e over its estimated 40-year lifespan



providing carbon benefits of 1.1% and 2.3% of the budget for the period 2026 – 2030 and 2031 – 2035 respectively) would be substantial, and together with the proposed biodiversity enhancement measures, are considered to comfortably offset other (not significant) adverse environmental effects resulting from the construction and operation of the proposed Low Carbon CHP Facility.

8.0 SUMMARY AND CONCLUSIONS

8.1 Introduction

8.1.1 This Planning Statement has been prepared on behalf of Kronospan in support of a Development of a DNS application under Section 62D of the Town and Country Planning Act 1990.

8.2 The Proposed Development

8.2.1 The Proposed Development is a Low Carbon CHP Facility with the capacity to generate up to 40 megawatts (MW) of renewable electricity and 125 MW of renewable thermal energy for use in the existing manufacturing processes at the existing Kronospan Facility.

8.2.2 The proposed Low Carbon CHP Facility would process up to 293,000 TPA of waste wood and forestry residues as feedstock for the existing Kronospan Facility.

8.2.3 Based on the likely availability of feedstock that can be generated on-site (based on an average taken from the calendar years 2021, 2022, and 2023), the proposed (on-site) feedstock configuration for the proposed Low Carbon CHP Facility would be as follows:

- Existing on-site process residues currently sold off-site – 76,991 TPA.
- Diverted fuel from the existing K7 Biomass Plant - 74,667 TPA.
- Other on-site process residues – 108,455 TPA.
- **Total feedstock generated on-site = 260,113 TPA.**

8.2.4 The feedstock 'remainder' would be made up 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) - **Increased on-site production** that would generate further on-site process residues for direct use in the proposed Low Carbon CHP Facility.



- 8.2.5 The feedstock 'remainder' scenario set out above would increase the feedstock that could be generated on-site from 88.8% (260,113 TPA) to 91.6% (268,335 TPA). Depending on market factors and material available on site, there is the potential for 100% of the feedstock to be generated on-site.

8.3 Need and Benefits of the Proposed Development

- 8.3.1 The Proposed Development would enable a significant shift in the way that Kronospan generates energy (electricity and heat) to power its existing operations. Currently, the existing Kronospan Facility consumes:

- 7.7% and 3.2% of the non-domestic gas consumption and total gas consumption (respectively) in Wales, and
- 48.4% and 35.7% of the non-domestic gas consumption and total gas consumption (respectively) in the County of Wrexham.

- 8.3.2 The proposed Low Carbon CHP Facility would generate more heat and power than the existing K7 and K8 Biomass Plants and would enable Kronospan to significantly reduce its reliance on the on-site gas engines that are currently used to provide additional heat and power to the existing Kronospan Facility whilst also reducing its reliance on the electrical grid. As such, the proposed energy shift would provide significant environmental benefits due to the reduction in the burning of fossil fuels (gas) and an increase in the use of renewable biomass material; this would help to significantly decarbonise Kronospan's wood product manufacturing processes and make a valuable contribution to meeting the Welsh Government's Net Zero commitments.

8.4 Planning Policy Appraisal

Introduction

- 8.4.1 As set out at paragraph 7.1.2, the role of the decision-maker is to come to a view as to the extent to which the Proposed Development, on balance, accords with the development plan.
- 8.4.2 The extent to which the Proposed Development accords with the development plan (as well as other relevant planning policy and guidance) is summarised below.



Principle of Development

Broad Location of Development

- 8.4.3 The Proposed Development is within the wider Chirk Industrial Estate allocation (LDP Policy EM1 and would provide power and heat for the existing manufacturing operations at the Kronospan Facility. As such, the proposed Low Carbon CHP Facility would be in accordance with the development plan.

Renewable and Low Carbon Development – General

- 8.4.4 Support for the principle of low carbon development is set out in National Plan Policy 17, PPW, UDP Policy PS12, and LDP Policies RE1, RE2, and SP18. Further support for the principle of the Proposed Development is offered by various national legislation and guidance (including but not limited to: The Environment (Wales) Act 2016; The Clean Growth Strategy; Building a Low-Carbon Economy in Wales; Prosperity for All – A Low Carbon Wales; The Welsh Government Climate Emergency Declaration; The Energy White Paper; The Industrial Decarbonisation Strategy; Net Zero – Building Back Greener; Wales Infrastructure Investment Strategy; EN-1; and EN-3) which clearly highlight a pressing need to deliver additional renewable and low carbon energy capacity, to decarbonise the economy and ensure that Wales meets Net Zero targets as set out in the Climate Change Act 2008 (2050 Target Amendment) Order 2019 and the subsequent (Sixth) Carbon Budget and Net Zero Wales Carbon Budget 2.
- 8.4.5 As such, the proposed Low Carbon CHP Facility would be compliant with legislation, policies and guidance with respect renewable and low carbon development.

Renewable and Low Carbon Development - Biomass

- 8.4.6 The proposed CHP Facility's feedstock would consist of on-site wood process residues, forestry brash and Grade C waste wood, all of which would be consistent with the EN-3 variations. EN-3 guidance specifically highlights the benefits of biomass in high temperature applications, confirming the particular suitability of the deployment of the proposed Low Carbon CHP Facility to provide power and heat to the existing Kronospan Facility.

- 8.4.7 As such, the proposed Low Carbon CHP Facility would be compliant with legislation, policies and guidance with respect (biomass) renewable and low carbon development.

Waste Management/Energy from Waste Development

The Ministerial Written Statement

- 8.4.8 Whilst earlier guidance (including TAN 21) provides support for EfW during the transitional period up to 2050, the Ministerial Written Statement effectively suspended support for new large-scale (over 10MW) EfW facilities.
- 8.4.9 It is understood that the primary purpose of the Ministerial Written Statement was to avoid the oversupply of commercial EfW capacity, and drive waste further up the Waste Hierarchy by ensuring that it is not being sent to a recovery facility where it can feasibly be reused and recycled. In this context, it is understood that the Ministerial Written Statement seeks to restrict ‘traditional’ EfW facilities, which typically manage collected waste (i.e. municipal and commercial wastes), where there is a clear need to increase the rate of recycling to meet waste targets.
- 8.4.10 The proposed Low Carbon CHP Facility is not considered to be a ‘traditional’ EfW facility with the purpose of intentionally dealing with municipal and commercial waste to reduce the amount that goes to landfill and generating electricity for the national grid. Whilst reducing the amount of waste that goes to landfill may be an indirect effect of the proposed Low Carbon CHP Facility, its primary purpose is to increase the flexibility of the Applicant’s on-site energy generation; generate on-site low carbon, renewable energy in the form of electricity and heat; and help to decarbonise the existing Kronospan Facility whilst using wood more sustainably and making a valuable contribution to meeting the Welsh Government’s Net Zero commitments.
- 8.4.11 As such, the Ministerial Written Statement should be considered in the above context when applying its relevance to the proposed Low Carbon CHP Facility.

Other Waste Management/Energy from Waste Considerations

- 8.4.12 Notwithstanding the above, this Planning Statement has demonstrated that the proposed Low Carbon CHP Facility would be compliant with the following facets of waste management/EfW development:



- Circular Economy
 - Due to the inherent approach to the Circular Economy embodied by Kronospan's existing 'Sustainable Production Cycle', the proposed Low Carbon CHP facility would represent a unique embodiment of the Circular Economy principles promoted by the Ministerial Written Statement and other legislation, policy and guidance documents.
- Self-Sufficiency, Sustainability, and Proximity Principles
 - The proposed Low Carbon CHP Facility would not contribute to an oversupply of EfW capacity, would promote sustainable waste management (largely contained on-site) and would be predominately consistent with the Proximity Principle.
- Waste Hierarchy
 - The proposed Low Carbon CHP Facility would accept a very narrow range of waste (wood) types, with the majority of the feedstock comprising on-site waste wood residues from existing Kronospan manufacturing operations and other waste wood material that cannot feasibly be re-used or recycled.
- Heat and Energy Efficiency
 - The proposed Low Carbon CHP Facility would be highly efficient, the electricity and heat would be used on-site in what is an energy intensive existing industrial facility and would therefore have greater sustainability credentials than a typical EfW facility.
- Energy Hierarchy
 - Due to the unique nature of the existing Kronospan Facility in the way it currently uses wood (including biomass energy) in a cradle to cradle manner, the proposed Low Carbon CHP Facility enabling an enhancement of the cradle to cradle approach, the existence and future removal of the existing gas turbines, and the electricity and heat generated retained on-site for manufacturing use means that the proposed Low Carbon CHP Facility is compliant with all aspects of the Energy Hierarchy.

8.4.13 The potential for community heat networks and CCS as part of the Proposed Development has been explored by the Applicant. Whilst not being taken forward at this time (justification for this is set out at **Section 7.2** above), Kronospan is keen to



revisit this in the future, noting that community heat provision from the proposed Low Carbon CHP facility would require a collaborative approach with WCBC.

Economic Benefits

8.4.14 Kronospan is continuously investing to achieve economic sustainability, environmental improvement, and social benefit with the overall objective of remaining at the forefront of what is a highly competitive industry. The Proposed Development would align with the Applicant's intention to utilise technological advances where practicable, use its core resource (wood) in a cradle to cradle manner as far as is practicable, use power and heat as effectively and efficiently as possible, attain surety and flexibility of supply, and to decarbonise the existing Kronospan Facility by reducing its reliance on fossil fuels (gas) and the electrical grid. The Proposed Development is wholly aligned with the above and would therefore contribute significantly towards its objective of maintaining its position in a highly competitive manufacturing market, and ultimately its position as a major employer locally in Chirk, and in a national context.

8.4.15 As such, the economic benefits of the Proposed Development are aligned with the relevant planning policy and guidance with respect to economic prosperity.

Environmental Effects

8.4.16 The ES concludes that the Proposed Development would not result in any significant effects, either in isolation or cumulatively (with other Kronospan projects and/or other projects in the wider area). Maximising the use of on-site wood process residues for the majority of the feedstock would ensure that sustainability principles are fundamental to the design, which in turn would minimise the number of HGV movements (to net increase of 14 two-way per operational day).

8.4.17 With respect to GHG emissions, the proposed Low Carbon CHP Facility would have a net carbon benefit of 3,024,740 tCO₂e over its estimated 40-year lifespan and would provide carbon benefits of 1.1% and 2.3% of the budget for the period 2026 – 2030 and 2031 – 2035 respectively. The proposed Low Carbon CHP Facility would therefore be consistent with existing and emerging policy requirements.

8.4.18 To ensure compliance with the Biodiversity and Resilience of Ecosystems Duty in Section 6 of Environment Act (Wales) 2016, mitigation and enhancement measures,



in the form of two separate woodland buffers on the eastern and western extents of the old golf course, are proposed with the overarching aim of increasing resilience of Chirk Castle SSSI and Canal Wood LWS to air quality impacts and to enhance habitat connectivity and diversity.

- 8.4.19 This DNS application is accompanied by a Framework CEMP which presents the approach and application of environmental management and mitigation for the construction of the Proposed Development and aims to ensure that adverse effects from the construction phase of the Proposed Development, on the environment and the local communities, are minimised as far as practicable.

Planning Balance and Adherence to the Development Plan

- 8.4.20 In consideration of the above, the Proposed Development adheres to the development plan as it would enable the existing Kronospan Facility to maintain its position at the forefront of its industry, whilst further decarbonising its existing operations (and products) in accordance with UK and Welsh Government Net Zero targets. The net carbon benefit (3,024,740 tCO₂e over its estimated 40-year lifespan providing carbon benefits of 1.1% and 2.3% of the budget for the period 2026 – 2030 and 2031 – 2035 respectively) would be substantial, and together with the proposed biodiversity enhancement measures, are considered to comfortably offset other (not significant) adverse environmental effects resulting from the construction and operation of the proposed Low Carbon CHP Facility.

Appendix A – Waste Wood Market Assessment



Providing professional, technical, and commercial
advisory services to the Energy Industry

**UK Recycled Waste Wood Market Assessment for Kronospan – with a
focus on future supply availability.**



Issue No. V.1.1

Report date: 7th May 2024

UK Recycled Waste Wood Assessment

Contents

1. Management Summary3

2. UK Market Assessment5

2.1 UK Market Assessment5

2.2 UK Market Developments5

2.3 Packaging Recovery Note (PRN)7

Legislation and Policy8

2.4 EA: Hazardous Waste Classification8

2.5 EA: Fire Prevention Plans (“FPP”)9

2.6 RCF Supply and Balance9

2.7 Location and Transport Costs11

2.8 Regional waste wood arisings12

2.9 Waste Wood Gate Fees.....13

3. Report Summary13

Appendices15

Appendix One – WRA’s guide to segregation following the expiry of RPS 25015

Appendix Two – Waste Wood Consumption from UK biomass assets16

Appendix Three – Waste wood supply risk assessment17

Appendix Four – CES’s view on forward waste wood delivered prices (under LT Agreements).18

Appendix Five – Waste wood make-up from market arisings.....19

Appendix Six – CES disclaimer.....20

1. Management Summary

This Independent Report has been commissioned by Kronospan to provide an impartial assessment on the recycled waste wood fibre (RCF) future availability in the United Kingdom and in particular a focus on Kronospan's site in Chirk, Wrexham in North Wales. Kronospan are investigating a carbon reduction improvement project to displace natural gas fired plant with additional biomass generation to be installed and operational by 2029. Kronospan have successfully built and managed a biomass plant for many years, so they are well placed to be able to increase their consumption of recycled waste wood for this new project.

Summary comments and notes:

Kronospan require an additional c153ktpa of recycled wood fibre (RCF) for their new facility which will consume a total of 293ktpa. The objective is to bring the plant into operation by 2028/9. There is the possibility that the plant could consume c30ktpa of its feedstock comprising of RDF or Virgin Residues (brash) if accessed within Wales.

Waste wood is a key component of the feedstock, and it is important to understand whether the volume is available and at the required specification for the plant.

CES expects the consumption of lower grade biomass to decline from 2028 – this assumption is predicated on the expectation that some IED/WID compliant biomass plants will come to the end of their ROC support period (grandfathered life of 20yrs). There will be a slow decline beyond 2028 where we could then start to see gate fees rising (and therefore spot prices for RCF reducing). Afry have stated publicly that they believe prices paid by biomass power plants may become negative over the longer-term. This is not a widely held view but is worthy of note when negotiating longer-term indexed linked feedstock supply agreements. CES expects to see more interest from SAF plants and UK Government providing some form of financial support to further develop this sector; this may impact on waste wood availability but as yet, still very uncertain.

168,000 tonnes of waste wood was exported during 2023-24 – this indicates that the UK has a slightly long market and therefore allows sufficient capacity for Kronospan to develop this project. However, the average availability from all biomass facilities is c74% and if this increased to 82% then an additional 300ktpa would be required. In summary, a balanced market but higher expectation that future surpluses will occur due to old plant closures.

184,000 tonnes of Grade B & C waste wood supply in the Wales region: Wales generates a total of 230ktpa of all grades of Recycled Wood Fibre (RCF) – based upon agreed methodologies c80% will be collected and processed in useable volumes – in some cases there is an additional loss due to fines waste from the processing/shredding of the wood. Approximately 50% of this total will be derived from packaging and construction sources and will be sold as higher quality virgin wood replacement and consumed primarily in the animal bedding and particle board markets. **393ktpa of RCF was consumed by biomass facilities in Wales (Margam, WBE and Kronospan) during 2023** making Wales a net importer of recycled waste wood.

Ability of Kronospan to source c153ktpa – from 2028, some of the initial ROC accredited biomass assets will reach the end of their 20-year subsidy period and may well close (for example, SembCorp's biomass plant in Teesside which was commissioned in 2008), this will release surplus waste wood into the market. From 2028 we expect there to be a slow decline in biomass generation which would dovetail well with Kronospan's increased requirements.

UK Biomass Assessment

The UK Waste Wood Market has now stabilised: following many years of growth in the biomass sector (since 2008) the UK demand for RCF has now reached a plateau brought about mainly due to the end of ROC subsidies (ended in Sept 2018). The UK supply-demand volumes are in balance (clearly each year will see fluctuations on both supply availability and demand due to a range of factors highlighted later in this report). There is a 35% reduction in supply availability during the months November to March therefore some consideration in having local storage is often needed to manage these fluctuations.

67,000 tonnes of RDF (Refuse Derived Fuel) exported from Wales in 2023: Tolvik's¹ most recent report confirms that 67ktpa of RDF was exported from Wales in 2023, making reference to a total of 276kt that was sent to landfill which would be mixed grade waste and therefore not suitable for RDF purposes. In summary, a small volume of RDF may be accessible for this project.

¹ <https://www.tolvik.com/published-reports/>

2. UK Market Assessment

2.1 UK Market Assessment

To provide some context around the use of RCF in the United Kingdom, this section provides an overview on the market and recent developments.

This review has been prepared using a number of data sources including:

- Ofgem Sustainability data for 2022-23;
- CES's UK Dedicated Biomass Statistics;
- Annual performance reviews for individual biomass facilities obtained under FoI requests;
- Environment Agency Waste Data Interrogator ("WDI") 2023;
- Data provided by the Wood Recyclers Association ("WRA");
- Data from CES's in-house databases, compiled from a range of both publicly available information and confidential information from third party sources.

Where other sources of information are used then they shall be separately identified within the report.

Definitions:

Waste Wood is used in this Report to refer to all wood within the waste stream, irrespective of whether it has been separated for recycling/recovery. Upon segregation and processing it is described as RCF – irrespective of whether it is sent for recycling or energy recovery.

Assumptions

Analysis of the RCF market in this report is based on European Waste Catalogue ("EWC") codes 02 01 03, 02 01 07, 02 01 09, 03 01 01, 03 01 05, 03 03 01, 15 01 03, 17 02 01, 19 12 07, 20 01 38.

For the ease of reporting, this Report assumes that all volumes of RCF have a moisture content of 25% and an average energy content of 13.64 GJ/t.

2.2 UK Market Developments

Overview

The UK RCF market is presently in a supply-demand balance. However, the total supply of wood waste is **expected to grow as the economy grows, reaching 6.2 million wet tonnes (25%mc) by 2045.**

In total, there is currently ~5.1 million of wood waste arisings in the UK, of which ~45% is high quality with the remainder low quality. High quality wood waste represents Grade A and the better fraction of Grade B wood waste and is largely free of contaminants such as paints, nails, and preservatives. Low quality wood waste represents the poorer fraction of Grade B and all of Grade C material, having a higher level of contaminants and only usable within WID/IED (Waste Incineration Directive/Industrial Emissions Directive) compliant boilers. Processed usable volumes are ~4.38 million of wood waste making an allowance for losses, wastage during segregation and processing.

Driven by increasing landfill tax and total bans encouraging the segregation of RCF from the Waste Wood stream and the price for processed wood being more attractive, the tonnage of RCF in the market has been rising steadily for several years. Prior to 2016, the market was long on RCF (i.e. waste wood was being sent to landfill/exported) and short on UK markets (being the combined demand from both particle board mills and biomass plants) for RCF. The net effect of this was that, in addition to RCF being sent to panel board and

UK Biomass Assessment

for energy recovery at the limited number of operational biomass facilities in the UK, RCF was also exported to biomass/EfW facilities in Europe and/or used in a range of other lower value “formal” (i.e. regulated) or “informal” UK markets (e.g. for poultry litter) to avoid landfill.

CES’s analysis suggests that during 2018 as much as 0.8Mt of RCF was either being exported or used informally. See figure 1 below for the end markets in that period. This export flow has since reduced as new biomass plants were commissioned. In 2023 the recorded export volume was 168ktpa.

End Market (Mt)	2018
UK Biomass Energy	1.24
Panel board	0.85
Agricultural/Horticultural	0.56
Exports	0.78
“Informal”	0.15
Total	3.58

Figure 1: Markets for RCF in 2018 Source: CES analysis

Stimulated by the renewable energy subsidy, primarily the Renewable Obligation (“RO”) scheme, the UK saw a significant increase in UK biomass capacity – with much of the new capacity focussed on demand for RCF (being the lowest cost biomass fuel). During 2018-20 the demand was progressively increasing with some unexpected delays due to commissioning/operations issues. The table in figure 2 plots the growth in consumption up to 2023 which is the latest available data – we do not expect to see any change in consumption for at least the next 5 years, i.e. the graph will plateau and then start to taper down.

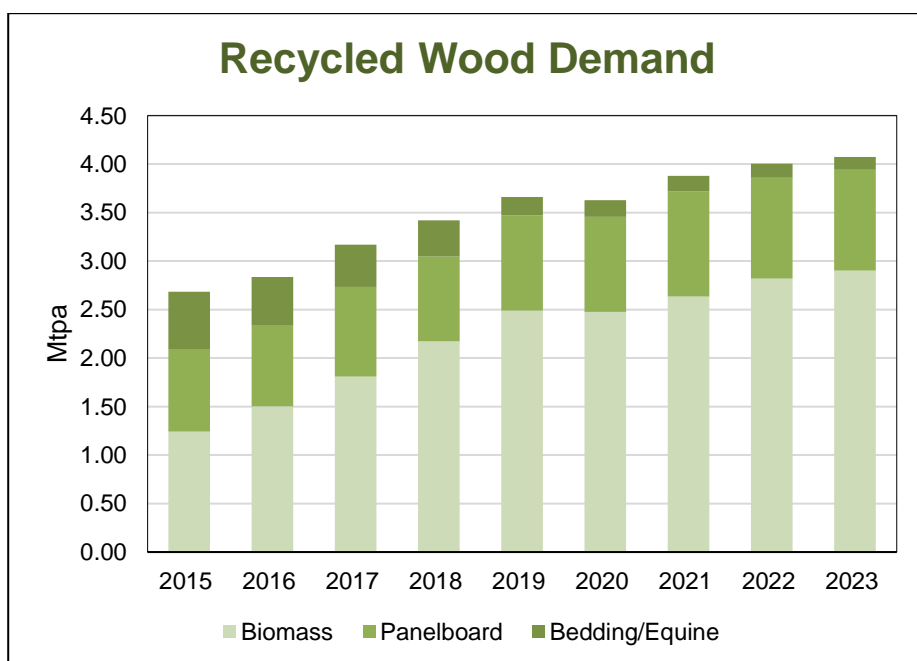


Figure 2: Actual Demand for RCF Source: CES analysis.

In 2023, the demand of RCF for biomass in the UK was **3.1Mt** and **1.1Mt** for Panel Board.

Figure 3 below shows the approximate split between wood sources – packaging wood is generally of better quality and therefore will be consumed in the animal bedding or board mill sectors. Construction waste

UK Biomass Assessment

wood is also from solid wood sources and has a higher value when processed. The demolition market will generally produce lower quality waste wood that will be incinerated in biomass plants. LA Civic Amenity sites are usually mixed grade, and the sub-split will depend upon the level of segregation that then occurs.

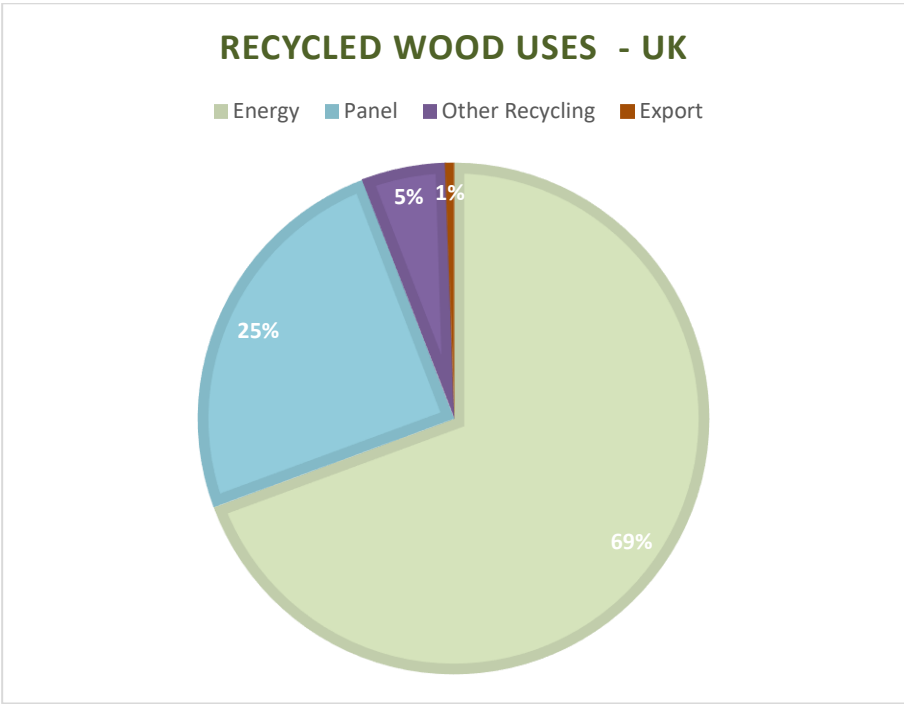


Figure 3: CES analysis of wood sources 2023

2.3 Packaging Recovery Note (PRN)

A Packaging Recovery Note is a piece of certificated evidence that proves a tonne of packaging waste has been recovered and reprocessed or exported for reprocessing. This market can be volatile and dependent upon many economic factors however for the wood sector it can impact the volumes of RCF are attracted to suitable recovery facilities and may reduce the volumes available for the biomass (combustion) sector.

During 2018 PRN prices peaked at £70.00 p/t – this period had some influence on the volumes of RCF that became available to biomass assets as greater volumes of recycled wood were purchased by Board Mills and blended more higher quality recycled wood into their products displacing virgin wood. See figure 4 below showing the historical spread and the wide range in prices for Wood PRN’s. This illustrates the effect that a relatively small market impact can have on the market and spot price/availability. To note that forthcoming Extended Producer Responsibility regulations could benefit the Board Mill sector with higher wood packaging recycling targets, advocating a target for recycled wood of 45% and therefore adversely impact the remaining markets for recycled wood. Conversely, the new regulations concerning waste wood testing and segregation (see Sec 2.4) may have a negative impact on the waste wood that can be processed by Board Mills therefore releasing more volume to incineration.

The PRN impact, although relatively small illustrates how surplus volumes can easily be absorbed largely driven by price incentives.

UK Biomass Assessment

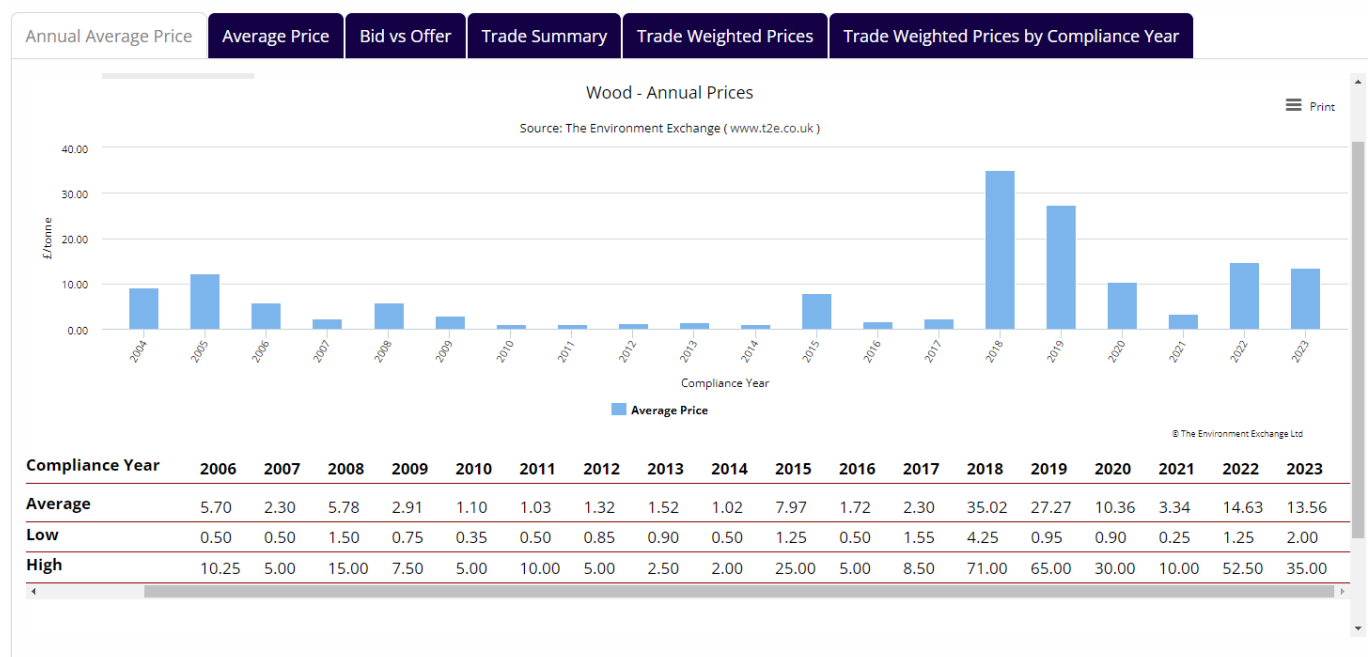


Figure 3: PRN's table from The Environment Exchange

In summary, Kronospan's ability to compete and attract c153ktpa from UK derived sources is thought to be possible giving the surplus that exists in the UK presently. However, it is worth noting that there is a correlation between the strength of the UK economy and the availability of waste wood – new building activity generates increased volumes of waste wood and we have seen fluctuations of between 200-300ktpa over the past 10 years due to economic factors. Having an arrangement with two or more credible waste wood supply counterparties with an understanding of where the wood will be sourced will provide some comfort to Kronospan.

Legislation and Policy

2.4 EA: Hazardous Waste Classification

The Environment Agency ("EA") has indicated that irrespective of the level of hazardous contamination from Grade D RCF, a contaminated mixed load of grade B/C RCF should be classified as hazardous. This is a recent EA policy, and it may have a negative impact on RCF supply – and in particular the way in which waste facilities are consented, the cost of RCF processing, and the ability for a range of facilities to accept RCF. Wood fines that are produced from wood shredding contain many contaminated particles and have limited options for disposal; some are incinerated but the majority tends to be sent to landfill whose cost is recovered in the sales price of waste wood.

The EA have withdrawn Regulatory Position Statements 207 and 250 ("RPS") and put in place PRS 249² until April 2024 (intention is to give the waste wood industry time until the end of March 2024 to demonstrate that there is no longer any hazardous content in household waste wood which is already diminishing and is not expected to exist at all by the time the RPS expires). Note also RPS 291 (Storing and treating hazardous waste wood – issued in Nov 2023 but will be withdrawn in October 2024) for the latest advice from the EA. The Wood Recyclers Association and CIWM Construction & Demolition Forum have issued guidelines for the

² <https://www.gov.uk/government/publications/receiving-hazardous-waste-wood-at-household-waste-recycling-centres-rps-249>

UK Biomass Assessment

categorisation regime for RCF from a range of sources to establish the underlying environmental risks arising from the inclusion of incidental quantities of Grade D material in a mixed load (see Appendix One in this report).

2.5 EA: Fire Prevention Plans (“FPP”)

Arguably the single most significant factor faced by wood processors, guidance was agreed between the WRA and EA in Sept 2018³ with respect to the requirements to be fulfilled to operate a range of waste storage and processing facilities. This required, in part as a response to several fires at waste facilities, that rather than use standard rules and permits, bespoke permits would be needed for a range of operations including many relating to RCF storage, which would set out specific (and relatively onerous) requirements with respect to FPP.

The original guidance which specified the minimum spacing between wood piles and set a maximum stack height of 4 metres, would have limited the tonnage of RCF which could be stored on a number of sites. This in turn would have significantly increased operator costs because of a need for a much greater storage area being required for the same tonnage of RCF (particularly over the winter months).

The industry response was to secure agreement from the EA to site specific (“bespoke”) FPPs and recently one wood processor had secured a bespoke permit which allowed RCF to be stored to a height of 8 metres. To achieve this, it is understood that the operator was required to invest additional sums in on site fire protection and spent considerable sums in compiling the necessary risk assessments needed to satisfy the EA. Whilst a helpful indication of what can be achieved, the FPP at each site is agreed on its merits, and agreeing FPPs remains a risk for the sector overall.

2.6 RCF Supply and Balance

Until recently, limited biomass demand and low PRN values meant that the supply of RCF in the UK was driven primarily by landfill tax and had been rising slowly but surely. As the market tightened, there was a further economic incentive to segregate wood for recycling. Figure 5 below shows the volume of recycled wood increasing due to these factors.

However, based on European benchmarks, in practice it is unlikely that there are more surplus tonnages of RCF which could be extracted from Residual Waste streams in the UK, and those tonnages which can be recovered are likely to be of a relatively low quality.

In summary, we expect the supply/availability of RCF to slowly increase as the economy and population grow over the next ten years.

³ <https://woodrecyclers.org/wp-content/uploads/WRA-Waste-Wood-FPP-Guide-Nov-18.pdf>

UK Biomass Assessment

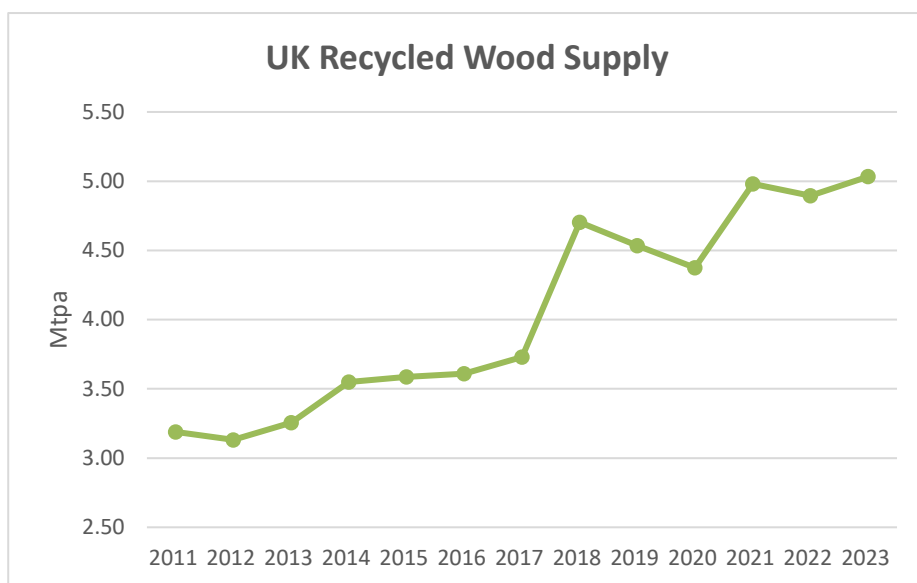


Figure 4: RCF Supply Source: CES Analysis

To note that the above excludes Virgin Wood, including sawmill co-product, which is not regarded as a waste.

Comparing the supply (fig. 4 above) with the UK demand for RCF (fig. 5 below), and assuming, as demand reaches peak periods, that some animal bedding producers will look to find substitute raw materials, it is difficult not to conclude that nationally there is a probability that there could be a shortfall in supply of around 0.2-0.3Mt. Biomass plants are designed to operate at close to MCR (maximum commissioned rate) for around 7,358 hrs per annum; however, our data collated from ROC submissions (over 4 years) indicate the average availability is much lower at c72%. The delta between the design operating availability and output has potentially prevented shortfalls: this situation may change as assets operators become more proficient in running their plants.

CES is aware of several biomass assets which were forced to reduce operations over the extended Christmas period (21-22) through lack of fuel supply, and some continued into the New-Year operating on reduced capacity for commercial rather than technical reasons. We believe this event was due to some complacency in the sector (lack of storage etc) and now lessons have been learnt and no future such events have occurred.

We note the above to explain the present balance in the UK market, however our view is that biomass plants are likely to start to decommission post 2028 when they lose their ROC support and therefore Kronospan's new build programme will not be impacted by market shortfalls but indeed is well timed to coordinate with this expectation.

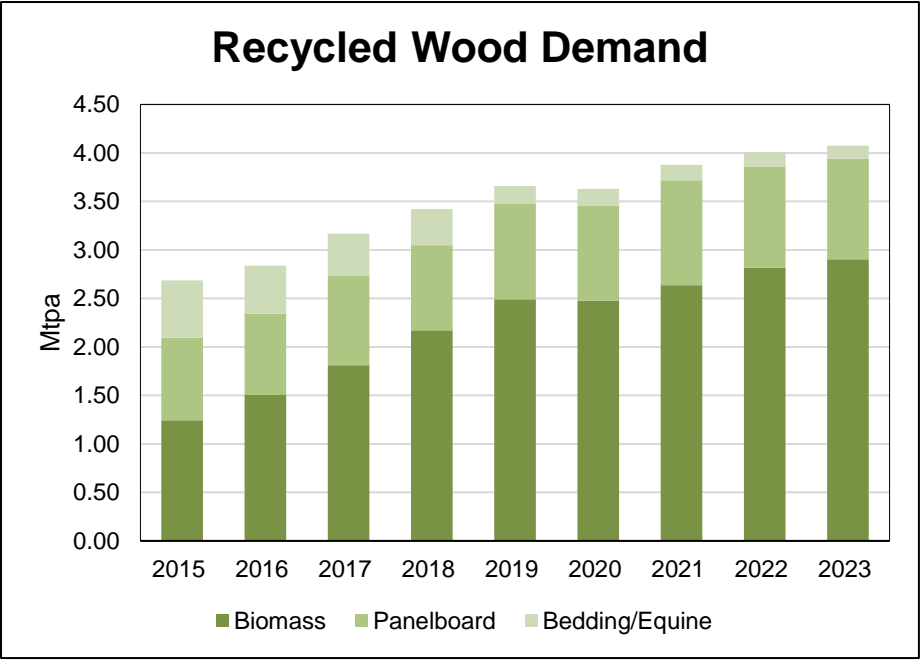


Figure 5: RCF – Wood demand (excluding imports/exports) Source: CES Analysis

2.7 Location and Transport Costs

There is a clear mismatch on a north-south basis between the supply of RCF and demand for RCF which, as Figure 6 shows, results in sliding scale of gate fees across the UK with Scotland charging the lowest fees (-£7.50/t to +£5.00/t) for Grade B/C wood) and London regions historically charging the highest gate fees (+£20 to £35/t).



Figure 6: RCF – a regional market

UK Biomass Assessment

The range in gate fees also reflects the cost of transport needed to balance supply and demand at a regional level – RCF generated from the London area has been transported as far away as Scotland either by truck or barge (to RWE's Markinch biomass power station) - i.e. there is a rationale in accepting c£30-£35/t to transport material across the UK to balance local supply.

The surpluses in the SE of England supports the rationale for some wood processors wanting to seek export markets rather than move product long distances over the UK. We are aware that the flows to Germany/Sweden were largely on the back of very high-power prices during the post Covid/Ukraine-Russia conflict which stimulated interest from Buyers from Germany offering higher than normal prices.

See table below showing the records (from FoI requests) for the main RCF exports from the UK.

Entity	2021	2022	2023
Enva (Hadfield)	100,120	108,146	114,109
Countrystyle	8,941	33,067	10,317
Geminor			24,742
PM Recycling			9,865
Other	0	6,445	7,461
Total	109,060	147,658	166,494

Figure 7: RCF exports from the UK

2.8 Regional waste wood arisings

The graphic below is a summary of waste wood arisings across GB, Northern and the Republic of Ireland shown separately – an assumed volume of 124ktpa produced from NI and 240ktpa from RoI, a total of **364ktpa**. This data was compiled by CES in 2023.

Estimated Recycled Wood 2023



Region	kt
1 South East	521
2 London	498
3 North West	431
4 East	374
5 Yorks/Humber	372
6 West Midlands	337
7 Scotland	336
8 South West	325
9 East Midlands	259
10 Wales	184
11 North East	155
12 Northern Ireland	124
Total UK	3,915
13 RoI	240
Total UK and RoI	4,155

UK Biomass Assessment

2.9 Waste Wood Gate Fees

Figure 8 shows Grade B/C Waste Wood gate fees (min, max and median) in the UK as reported by Letsrecycle⁴. These are in line with tightening market conditions; nationally the average gate fee has fallen since 2015. We expect prices to stabilise with fluctuations of +/- £6.50 over the next five years.

It is worth noting that when market conditions are as tight as they have been in some parts of the UK, gate fees can become relatively irrelevant – in so far as it does not matter the price offered if there simply is no suitable material available in the market.

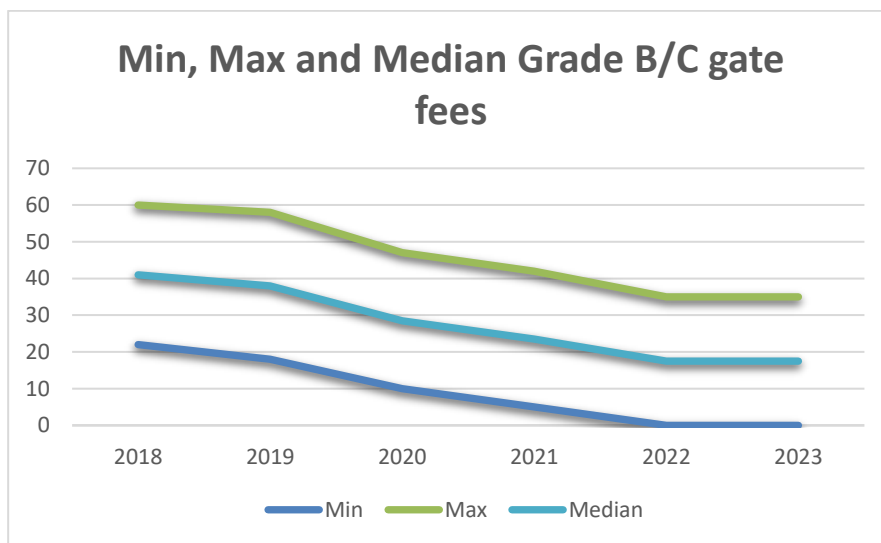


Figure 8: Waste Wood – Average Annual Median Gate Fee

The availability of waste wood from UK can outstrip demand during winter periods as stocks are depleted. Gate fees then reduce to reflect tightening supplies and the result of this has forced some smaller assets with poorer economics to close. Gate fees are often a good barometer for gauging supply availability – in recent years we have seen gates fees at £0/t in Scotland and at the same time c£30/t in the South-East.

We have seen consolidation amongst wood processors (the larger entities with long-term supply contracts acquiring smaller businesses) leading to market stability (in terms of price and availability). It is now understood which wood suppliers have an appetite and the ability to provide longer term supply agreements.

It is likely that any future shortages could be met via imports from mainland Europe (France and Germany). Ireland is not considered to be a viable option for imports to GB due to the cost of logistics and relatively small volumes of wood available from many locations on the island.

3. Report Summary

This report has attempted to provide industry-based knowledge and experience to provide Kronospan with support to understand the viability of being able to securely access c153ktpa for their new project. We have tried to highlight the levels of fluctuations that can and will occur impacting both supply and demand volumes – this needs to be understood when reviewing the high-level data.

The key question posed is “is there 153ktpa of the required grade of RCF available to supply the new project?” We believe it is available at the appropriate price point, but Kronospan must be cognisant of the

⁴ <https://www.letsrecycle.com/prices/>

UK Biomass Assessment


other factors indicated in this report to ensure the supply arrangement is robust over the term (15 years). Being a “good buyer” will enhance the success of the supply arrangement and mitigate some of the anticipated risks that are present in this sector. It is essential that Kronospan has a good understanding of how and where the waste wood is collected, processed, and delivered and relating how elements of the supply chain will be carried out for this specific arrangement. We would reiterate the requirement to have a dedicated storage facility assigned to this asset and a good management regime in place to ensure the storage/waste wood is properly maintained. Wood storage is also useful when the plant has an unexpected outage and wood that is in transit can be deposited at the wood storage. As Kronospan holds considerable experience in this field we do not anticipate any difficulties in moving forward with this arrangement.


Looking beyond 2028, there is a strong possibility that the closure of some biomass assets will release new volumes of waste wood into the market. As previously mentioned, some awareness of the level of likely UK Gov financial support and the impact this may have on waste wood volumes would be worth considering as part of the risk analysis for this project.

Appendices

Appendix One – WRA’s guide to segregation following the expiry of RPS 250

The below table provides the latest guide on waste wood types as agreed with the EA. To note that these latest amendments have impacted/prevented lower-grade waste wood being sent to assets that are not IEDx compliant. The key change is that more testing must be done in order to identify any Grade D type feedstock which may contaminate the whole consignment. The onus is now focused on avoiding any cross contamination and preventing contaminated feedstock being recycled. For biomass plants that are IEDx compliant this amendment may increase the availability of Grade B/C wood.

 Wood Recyclers' Association WRA Acceptable Materials Guide		
GRADE	Typical Wood Types	Typical Non-wood Content Prior to Processing
Grade A Pre-Consumer Waste Wood and untreated wooden packaging = Clean un-treated	Solid softwood and hardwood. Packaging waste, scrap pallets, packing cases and cable drums. Process off-cuts from the manufacture of virgin/sawn timber and untreated board products.	Nails and metal fixings. Minor amounts of non-hazardous surface coatings, such as water-soluble paint.
Grade B Business waste wood = Treated Non-hazardous	May contain Grade A material as above plus building and demolition materials and domestic furniture made from solid wood.	Nails and metal fixings. Some paints, plastics, glass, grit, non-hazardous coatings, binders and glues. Limits on treated or coated materials as defined by end users and IED.
Grade C Municipal waste wood = Treated Non-hazardous	All of the above plus flat pack furniture made from board products and DIY materials. HWRC generated waste wood	Nails and metal fixings. Paints, coatings and glues, paper, plastics and rubber, glass, grit. Coated and treated timber (non CCA or creosote).
Grade D Hazardous waste wood = Treated hazardous	Agricultural fencing, telegraph poles, railway sleepers. 1 Potentially hazardous waste wood items are: barge boards; external fascias; soffit boards; external joinery (wooden windows and conservatories); external doors; roof timbers; tiling and cladding battens; timber frames and joists from pre-2007 buildings	Copper chrome arsenic (CCA) preservation treatments and creosote Any of the items listed in the WRA Waste Wood Assessment as 'Potentially Hazardous' (*1) must be segregated and tested to prove that they are non-hazardous. Otherwise they must be categorised as Grade D – Hazardous requiring disposal at facilities licensed to accept hazardous waste.



TYPICAL UNACCEPTABLE MATERIALS

DO NOT ACCEPT – PAPER, PLASTIC, CARDBOARD, FELT, GLASS, BLACK BAGS, FOAM, FABRIC, PLASTIC COATED WIRE, GRADE D HAZARDOUS WOOD WASTE INCLUDING ANY CREOSOTE AND CCA TREATED RAILWAY SLEEPERS, TELEGRAPH POLES (AND OTHER ITEMS OBVIOUSLY TREATED WITH CREOSOTE), HARDWARE, FORMICA, GREENWASTE, SOIL, BURNT OR CHARRED MATERIAL OR BRICKS.

Excessive contamination of loads with unacceptable materials will result in the loads being rejected or excess charges being applied.

All wood processors will have acceptance criteria based on their permits so please check for specific requirements from your processor as this is just a guide.

Source: The Wood Recyclers' Association September 2023

UK Biomass Assessment

Appendix Two – Waste Wood Consumption from UK biomass assets

Facility	2023 Recycled Wood	2022 Recycled Wood	2021 Recycled Wood
Markinch	306,432	299,217	260,053
Stevens Croft	78,844	72,462	70,493
Thetford	73,222	62,297	51,882
Tilbury	238,831	232,999	256,622
Margam	241,950	233,952	257,376
Templeborough	206,986	251,678	297,951
Wilton 10	34,966	30,651	51,564
Blackburn Meadows	209,071	199,548	207,643
Goosey Lodge	18,240	0	22,271
Slough	124,911	102,767	109,506
Caledonian	65,085	74,463	72,698
Ridham Dock	175,847	152,623	175,076
Shotton	139,747	221,296	191,545
Mersey Bio	132,667	132,199	143,124
Ince	129,587	89,772	84,254
Lisahally	119,240	121,506	101,750
Chilton	113,353	108,610	108,601
Eye	47,326	44,478	50,617
Western Wood	41,578	25,983	36,598
Westfield	14,758	13,560	14,460
Birmingham Bio	65,736	57,714	49,055
Twinwoods	10,784	21,023	27,594
CoRDe	17,183	17,183	14,012
Holbrook	44,344	29,820	48,716
Widmerpool	52,029	49,134	49,199
Welland	67,718	56,301	42,472
Trackwork	0	8,732	17,823
Tyrone Energy	22,214	23,526	22,067
Hull	0	9,550	10,485
Barry	0	0	828
Boston	0	10,145	774
Bridge Farm	20,251	13,355	0
Total Returns	2,812,901	2,766,544	2,847,110
Est. Other Small	90,000	90,000	85,969
Total	2,902,901	2,856,544	2,933,079

UK Biomass Assessment

Appendix Three – Waste wood supply risk assessment

Below is a table was compiled to capture the collective risks that may impact waste wood availability – carried out as part of a technical group session with industry experts. A useful guide when considering new projects.

Headline	Description of Market Risk	Probability	Potential Impact on Market	Risk (Out of 25)	Comments/Mitigants
Supply	Significant structural reduction in Waste Wood Arisings	1	4	4	Short term variations in arisings expected as a result of the recession but fundamentals for long term demand for Waste Wood and hence arisings strong. Could be more supply once older ROC accredited plants close beyond 2028.
	Increased use of Waste Wood in unregulated wood burners as result of cost of living crisis	3	1	3	Impact of such a trend likely to be relatively marginal. This is being seen in the virgin log markets.
Demand	Development of WtF Solution with high demand for Waste Wood and greater ability to pay than biomass	2	5	10	It is unclear how any WtF facility could be developed without some security of supply and given current market conditions it seems unlikely. Subsidised new SAF plants may pose a small risk.
	New producer responsibility legislation results in increased financial support for panelboard which diverts Waste Wood from biomass to recycling activities	2	2	4	There is a limit to the tonnage of Waste Wood suitable for recycling. May impact on Grade B supply only.
	Distortion in European Waste Wood markets makes exporting to Europe more commercially attractive than domestic biomass	1	3	3	Assessed to be a low risk. Only South East area likely to be impacted if any.
	Biomass facilities with BECCs have greater purchasing power than those without - so distorting biomass market	2	3	6	Not clear that the scale of Waste Wood biomass facilities sufficient to justify investment in BECCs unless located in wider "cluster"
	Large scale Virgin Wood biomass pellet facilities look to switch to UK biomass stocks - including Waste Wood	1	5	5	Unlikely that the scale of UK Waste Wood market would be sufficient to have sufficient impact on their business model to make such a switch worthwhile
	High wholesale power prices provide incentive for increased optimisation of biomass assets and hence increased demand for Waste Wood eg Tansteme recommissioning	4	2	8	Relative ability to pay for individual biomass assets then becomes increasingly significant
	High wholesale power prices lead to investment in life extension of existing biomass assets beyond that modelled	3	1	3	Long term impact only. Correlation with wholesale power price being above c£110/MWh.
Other	Landfill ban results in material increase in tonnages of low quality Waste Wood in the market	3	2	6	Need to maintain suitable quality control systems in place
	RPS 249 is not renewed by EA and all waste wood from HWRCs characterised as hazardous	1	4	4	WRA does not see this to be a risk
	Further tightening of FPP increases operating costs.	1	3	3	Requirements in the UK amongst the strongest in Europe.
	Material new Wood Reprocessor enters the UK Market	1	3	3	Low probability given the size/maturity of the market

UK Biomass Assessment

Appendix Four – CES's view on forward waste wood delivered prices (under LT Agreements).

The chart below shows CES's medium-range price curve for delivered waste wood (Grade B-C) prices in central UK based upon reducing gate fees. This assumes a "fixed cost" of £39.50 for the processing and delivery of the feedstock. Prices that have been used assume some form of financial underwriting from the Supplier rather than simple low risk spot prices.

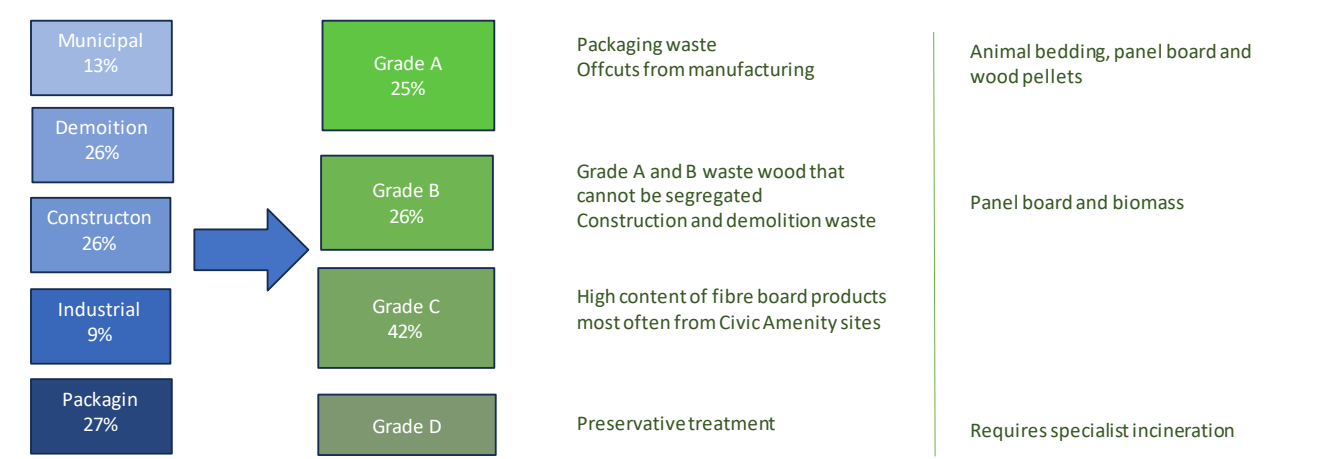
This curve needs to come with a health warning – as stated in this report there is a wide-spread between long term contracted prices and the spot market, regional differences and quality variations; this is not a commodity priced product, and the reader should understand this when reviewing the forecast below. These range of prices are simply predicated on biomass plants decommissioning and gate fees rising in response to the long market.



To note that there are many counter-arguments still taking place that opposes the above view, for example:

- What impact will the potential demand for SAF plants have?
- Will expired ROC accredited plants run beyond their 20 year subsidy period and if so for how long?
- What impact will wholesale electricity prices have on the viability of biomass assets? If wholesale prices exceed £110MWh then it is likely more assets will continue to operate, and the plant is decommissioned (25–35-year plant life).
- Impact of likely UK wide landfill ban for waste wood – will UK Government introduce new subsidies to ensure all waste wood is fully recycled or recovered (heat and power)?
- The extent to which UK Government will support BECC's (carbon capture) and how this may then extend the life of certain assets that could retrofit CCS.

Appendix Five – Waste wood make-up from market arisings



The above graphic provides an indication of the sources of waste wood and their uses for various markets. Kronospan will wish to source Grade A (+ B) for this panel board production and then mostly Grade C for their bioenergy production (heat and power).

Appendix Six – CES disclaimer

This report has been prepared by CES Ltd on an independent basis based on our knowledge of the current UK biomass market and with reference to any publicly available information from various sources of data, reports and studies and our own in-house analysis. This knowledge has been built up over time and in the context of our prior work in the biomass industry. We assume no responsibility or liability for any errors or omissions in the content of this report.

This report has been prepared by CES Ltd with all reasonable skill, care, and diligence as applicable within our Standard Terms and Conditions. We do not warrant the accuracy of information provided and all numbers contained within this report represent estimates developed from publicly available data. Whilst we have taken reasonable precautions to check the accuracy of information contained herein, CES Ltd shall not be responsible for the consequences (whether direct or indirect) of any decisions by the client arising from this presentation.

Unless we provide express prior written consent, no part of this report should be reproduced, distributed or communicated to any third party.

Copyright in this document is reserved to CES and the Client.

NOTE

The Author of this report (Neil Bailey) has been leading projects in the biomass sector in the UK for over 18 years; was formerly head of biomass for RWE Renewables, technical director to the WRA (Wood Recyclers Association, Director of Western Bio-Energy in Port Talbot, advisor to Centrica on UK biomass strategy, associate to Tolvik and supported many of the large scale biomass assets in the UK during their development and commissioning phases.