CAS-03463-R2W9C2 - Kronospan Low Carbon CHP Facility

Environmental Statement

Vol2: Chapter 2.0 – EIA Methodology

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2.0 ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

2.1 Introduction

2.1.1 This chapter of the Environmental Statement (ES) describes the overarching environmental impact assessment (EIA) methodology used in the production of the ES. This chapter sets out the following:

- The EIA legislative requirement for this Development of National Significance (DNS) application to be accompanied by an ES.
- Overview of the EIA Scoping process, compliance with the EIA Scoping Direction, and broad scope of the EIA.
- The broad assessment approach that has been undertaken in relation to the topics that have been identified as being likely to result in significant environmental effects.
- The approach to mitigation.
- The approach to cumulative effects.
- The approach to transboundary effects.

2.1.2 EIA is the process of identifying, evaluating, and mitigating the likely significant environmental effects of a development. Early identification of significant effects enables appropriate mitigation to be incorporated into the design of development to avoid, prevent, reduce or offset those effects.

2.1.3 The EIA of the Proposed Development has been undertaken in parallel with the design process, thereby maximising opportunities to mitigate likely significant effects as they were identified. This approach ensures mitigation is embedded in the design of the Proposed Development, wherever practicable, and forms an integral component of it.

2.1.4 The results of the EIA, published in this ES allows Planning and Environment Decisions Wales (PEDW) and statutory consultees such as Wrexham County Borough Council (WCBC), Cadw and Natural Resources Wales (NRW), other interested parties, and the public, to be made aware of the environmental effects of the Proposed Development prior to determination of the application.

2.1.5 This ES has been prepared to satisfy the requirements of the EIA Regulations.

2.2 Need for EIA

Legislative Background

2.2.1 The requirement for EIA was prescribed by European law under Council Directive 85/337/EEC. This Directive has been amended four times, with the latest amendment, the Environmental Impact Assessment (EIA) Directive (2014/52/EU) entering into force on 15 May 2014.

2.2.2 In Wales, the Directive has been enacted most recently into law via the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 [SI 2017 No. 567 (W.136)] (the EIA Regulations). The EIA Regulations came into force on 16 May 2017.

2.2.3 The Environmental Assessment of Plans and Programmes and the Environmental Impact Assessment (Miscellaneous Amendments) (Wales) (EU Exit) Regulations 2019 made on 13 February 2019 ensure that the EIA Regulations continue to apply in Wales following Brexit.

Requirement for EIA

2.2.4 Schedule 1 of the EIA Regulations lists categories of developments for which EIA is mandatory, whilst Schedule 2 lists categories of development for which EIA may be required depending upon, inter alia, whether the development is likely to have significant environmental effects.

2.2.5 The Proposed Development is for the construction and operation of a Low Carbon Combined Heat and Power (CHP) Facility with the capacity to generate up to 40 megawatts (MW) of electricity and 125 MW of thermal energy for use in the existing manufacturing processes at the existing Kronospan Facility. The feedstock for the facility would utilise waste wood. Accordingly this is consistent with Schedule 1, Part 10 *'Waste disposal installations for the incineration or chemical treatment (as defined in Annex IIA to Council Directive 75/442/EEC under heading D9) of non-hazardous waste with a capacity exceeding 100 tonnes per day'* of the EIA Regulations; therefore, the Proposed Development is classed as EIA development, EIA is required and the planning application must be accompanied by an ES.

2.3 Overview of EIA Scoping Process

Introduction

2.3.1 Once a project is determined to require an EIA, the scoping phase begins. The purpose of scoping is to identify the key environmental issues that need to be assessed, ensuring that the EIA focuses on the likely significant impacts. This stage helps to outline the specific parameters and methodologies that will be used in the assessment, providing clarity on what will be included in the ES.

EIA Scoping Direction

2.3.2 An EIA Scoping Report, setting out the Applicant's proposed scope of the EIA was submitted to Planning and Environment Decisions Wales (PEDW) on 30 May 2024 (**Appendix 1C**). 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.

2.3.3 A response to the Scoping Direction setting out how each matter is addressed in the ES and details of where areas of disagreement are clarified and/or resolved is provided at **Appendix 1G**.

EIA Scoping Direction - Addendum

2.3.4 Following subsequent informal discussions with PEDW and 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. A summary of the main Proposed Development design changes made at this point is provided below:

- The status of the existing K7 Biomass Plant would change from 'remaining in operation' to 'remain in situ but be used as a back-up biomass plant only' – as a

result, the existing K7 Biomass Plant feedstock would be re-directed for use in the proposed Low Carbon CHP Facility.

- A detailed review of CHP Facility feedstock generated on-site was undertaken to understand the maximum wood residue feedstock that would be generated from existing and planned manufacturing operations.
- The proposed use of Refuse Derived Fuel (RDF) was removed.

2.3.5 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.

2.3.6 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.

2.3.7 A response to the Scoping Direction Addendum setting out how each matter is addressed in the ES and details of where resolution of areas of disagreement is provided at **Appendix 1G**.

Further Consultation Details

2.3.8 Further details of the consultation process (including EIA Scoping, pre-application consultation with PEDW and WCBC, other engagement with stakeholders, and the Pre-Application Consultation Report is provided at **Section 1.5, ES Chapter 1.0 (Introduction)**.

Scope of the EIA

2.3.9 The information required to be included within an ES is set out in Schedule 4 of the EIA Regulations**.** **Table 2.1** below indicates where information relevant to the requirements of Schedule 4 can be found in the ES.

Table 2.1 – Review of Schedule 4 Requirements

Sch 4. Para.	Requirement	Where Addressed in ES
1	Description of the development, including in particular: (a) a description of the location of the development; (b) a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works and the land-use requirements during the construction and operational phases; (c) a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used; and (d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, oil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operational phases	(a) Chapter 1.0 (b) Chapter 4.0 (c) Chapter 4.0 (d) Chapter 4.0 in relation to the description of the Proposed Development, and Chapters 5.0 - 11.0 in relation to individual topic areas
2	A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the applicant or appellant which are relevant to the proposed development and its specific characteristics and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects	Chapter 3.0
3	A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge	Chapters 5.0 - 11.0 as this relates to individual topic areas
4	A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape	Chapters 5.0 - 11.0 as this relates to individual topic areas
5	A description of the likely significant effects of the development on the environment resulting from, inter alia: the construction and existence of the development, including, where relevant, demolition works; the use of natural resources in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;	Chapter 4.0 in relation to the description of the Proposed Development, and Chapters 5.0 - 11.0 in relation to individual topic areas

Sch 4. Para.	Requirement	Where Addressed in ES
	the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances and the disposal and recovery of waste, the risks to human health, cultural heritage or the environment (for example due to accidents or disasters); the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources; the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change; the technologies and the substances used. The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at European Union level as they were immediately before IP completion day (including in particular those established under Council Directive 92/43/EECF3 and Directive 2009/147/ECF4) or at national level	
6	A description of the forecasting methods or evidence used to identify and assess the effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved	The overall EIA methodology and approach to assessment is described in Chapter 2.0. The specific technical methodologies used to identify and assess effects are fully described (or referenced) within Chapters 5.0 - 11.0 as they relate to individual topic areas.
7	A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases	The approach to mitigation (including implementation of the mitigation hierarchy) is provided at Section 2.5 of this ES chapter. Mitigation measures, as they apply to individual environmental topic areas, are described in

Sch 4. Para.	Requirement	Where Addressed in ES
		Chapters 5.0 - 11.0 as they relate to each topic.
8	A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to [F5retained EU law such as any law which implemented] Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of any law which implemented] the Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies	Chapter 2.0
9	A non-technical summary of the information provided under paragraphs 1 to 8	A separate Non-Technical Summary is provided as **Volume 1** of the ES
10	A reference list detailing the sources used for the descriptions and assessments included in the environmental statement	References are provided as footnotes and/or reference document lists within, or at the end of each ES chapter, as appropriate

2.3.10 The proposed scope of the ES is set out below and includes environmental topics where it was considered there was potential for significant environmental effects:

- ES Chapter 1.0: Introduction
- ES Chapter 2.0: EIA Methodology
- ES Chapter 3.0: Alternatives
- ES Chapter 4.0: Description of the Proposed Development
- ES Chapter 5.0: Noise and Vibration
- ES Chapter 6.0: Air Quality and Odour
- ES Chapter 7.0: Landscape and Visual Impact Assessment
- ES Chapter 8.0: Historic Environment
- ES Chapter 9.0: Climate Change
- ES Chapter 10.0: Waste

- ES Chapter 11.0: Population and Human Health
- ES Chapter 12.0: Mitigation Schedule and Summary of Residual Effects

2.3.11 The following environmental topics are scoped out of the EIA process:

Table 2.2 – Environmental Topics Scoped Out of the EIA Process

Topic	Reason for Scoping Out
Biodiversity	The Proposed Development will be undertaken entirely within the existing hardstanding areas within the existing Kronospan Facility. As such there would be no direct impacts on any ecological receptors from the physical construction of the Proposed Development. There is the potential for air quality impacts on off-site ecological receptors; these impacts are considered as an inherent part of **ES Chapter 6.0 (Air Quality and Odour)**. To this end, a baseline habitat condition survey (Woodland Survey) (**Appendix 6G**) of habitats at statutory and locally designated sites (in the vicinity of the existing Kronospan Facility) has been undertaken to assess sensitivity of habitats to air quality impacts, through identification of plant communities, and investigating any indications of existing air quality impacts on vegetation. Data collected from this survey is then utilised in the ecological interpretation of the air quality assessment and provided as a technical appendix (**Appendix 6H**) to **ES Chapter 6.0 (Air Quality and Odour)**. As there remains concern regarding the potential for adverse impacts on protected species, particularly those within and adjacent the canal, a Biodiversity Assessment Report (BAR) has been produced. The BAR is not provided as part of the ES but is provided as a supporting document to the planning application (**DNS4-007**). The BAR includes details of: • Sensitive receptors in vicinity, particularly locally designated sites and species (with cross reference to the Woodland Survey). • Biological data centre results (COFNOD) for North Wales sites and protected/priority species, and Telford Council/Shropshire records centre for any locally designated sites within the 2km Study Area. • Assessment of proximal impacts of noise etc. on birds/bats/other protected species. Note that the Proposed Development does not propose any new/additional permanent lighting as the existing Kronospan Facility already has sufficient lighting on and around the footprint of the Proposed Development. • Stage 1 Habitats Regulations Assessment (HRA) - statement of likely significant effect based on measures to avoid surface water pollution or excess nutrient loading to wastewater treatment system, including cross reference to air quality issues. • Consideration of Welsh biodiversity planning policy and assessment of requirements to offset predicted impacts (if there are any) and achieve net gain in particular in relation to ecological networks/green infrastructure targets. • Consideration of biodiversity enhancement measures proposed to meet policy aims.
Water Resources	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

Topic	Reason for Scoping Out
and Flood Risk	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 existing Kronospan Facility's Environmental Permit. No direct effects on water resources with water quality impacts are anticipated during construction subject to implementation of the Construction Environmental Management Plan (CEMP). A Framework CEMP (**DNS4-003**) is provided with this DNS application. The CEMP would still be subject to a planning condition at which point the Principal Contractor would take ownership of the CEMP and produce the detailed management plans that form part of it. Subsequently, the CEMP would be a 'live' document updated as required throughout the construction phase of the Proposed Development.
Major Accidents and Disasters	The Proposed Development is within a politically, geologically, and meteorologically stable part of Europe. Accordingly, the Proposed Development is not at material risk from, for example, civil unrest, war, earthquakes or extreme weather conditions (hurricanes etc.). The DNS application is for a type of development and technology that has been successfully deployed throughout the UK and Europe. The technology is therefore proven and well understood. Separate regulatory consents would be required to build and operate the proposed Low Carbon CHP Facility, perhaps the most significant of which is the Applicant's existing Environmental Permit which would require an amendment. The legislation that governs the Environmental Permitting regime is in place to protect human health and the environment. To successfully amend the Environmental Permit, sufficient information must be provided to NRW to satisfy them that the proposed Low Carbon CHP Facility can be operated within the regulatory requirements established by UK and European legislation. It also requires a Fire Prevention Plan. The proposed Low Carbon CHP Facility would be required to operate within the limits and conditions set out in the amended Environmental Permit; failure to do so may result in the proposed Low Carbon CHP Facility being closed and could lead to prosecution of the operator. There are no known localised environmental vulnerabilities (such as flood risk) specific to the location of the Proposed Development in relation to the potential for major accidents and disasters. See 'Water Resources and Flood Risk' section above for surface water and foul water drainage details. Climate change is scoped into the EIA process and is assessed in that ES chapter. The Proposed Development is not considered to be vulnerable to any other potential 'natural' events that could result in significant environmental effects.

Topic	Reason for Scoping Out
Geology, Hydrogeology and Contaminated Land	The document entitled 'EIA Scoping Direction Clarification Document and Notification of Formal Update to the Proposed Development Design' was issued to PEDW on 15 October 2024. Appended to that document was a Phase 1 Geo-Environmental Assessment Report which concluded that there is unlikely to be any significant effects associated with geology, hydrogeology, and contaminated land. The DNS application is also supported by a Framework CEMP which sets out the overall approach to the protection and management of the environment during the construction period (including measures relating to unexpected contamination). PEDW confirmed its acceptance that this topic could be scoped out of the EIA process in its EIA Scoping Direction Addendum (see **Appendix 1F**). The Phase 1 Geo-Environmental Assessment Report is provided with this DNS application at **DNS4-006**.
Lighting	The Proposed Development is to be sited in the middle of the existing Kronospan Facility which is already appropriately lit with low level and low glare lighting. No new lighting is proposed.

2.3.12 The following (non-EIA) assessments and other documents are provided as supporting documents to the DNS application:

- Planning Statement **(DNS4-001)**.
- Design and Access Statement **(DNS4-002)**.
- Framework CEMP **(DNS4-003)**.
- Heat and Power Plan (**DNS4-004**).
- Transport Statement **(DNS4-005)**.
- Phase 1 Geo-Environmental Assessment Report **(DNS4-006)**.
- Biodiversity Assessment Report **(DNS4-007)**.
- Green Infrastructure Statement **(DNS4-008)**.
- Pre-Application Consultation Report **(DNS4-009)**. NOT YET AVAILABLE

2.4 Core EIA Methodology

Introduction

2.4.1 The ES presents a description of the Proposed Development and its likely significant environmental effects on the environment during construction, operation (including maintenance where relevant) and decommissioning based on the design and environmental information currently available. It also details measures to avoid or reduce such effects.

2.4.2 The approach to EIA is not standardised, but there are established and recognised approaches set out by professional institutions about methods to be used for the assessment of environmental effects. Where appropriate, the environmental effects of the Proposed Development have been assessed using definitive standards, relevant legislation, and guidance applicable to each of the technical areas covered within this ES.

2.4.3 The information and knowledge required to produce this ES were acquired from several varied sources to ensure that all effects, whether explicit from the outset or likely to arise during the project's development, were assessed. These sources included:

- Discussions with technical consultees.
- Review of public files and records.
- Review of historical mapping and aerial photography.
- Site surveys undertaken by the Applicant.
- Surveys and assessments undertaken previously on the Site.
- Specialist studies, such as computer modelling of potential noise impacts.
- Expert knowledge from the consultancy team.

Approach

2.4.4 This ES summarises the outcomes to date of the following EIA activities:

- Establishing baseline conditions.
- Consultation with statutory and non-statutory consultees as appropriate.
- Consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to the EIA.

- Consideration of technical standards for the development of significance criteria and specialist assessment methodologies.
- Design review.
- Review of secondary information, previous environmental studies, publicly available information and databases.
- Expert opinion/professional judgement.
- Physical surveys and monitoring.
- Desk-top studies.
- Modelling and calculations.
- Reference to current guidance.

2.4.5 These activities have enabled the prediction of impacts in relation to the current and future baseline, and a prediction based on the information available of the level of effects on environmental receptors. The term ‘impact’ refers to changes arising from the Proposed Development, whereas the term ‘effect’ is used to describe the result of the impact on a receptor.

2.4.6 Each topic chapter within the ES follows the same broad structure for ease of reference, which is:

- Introduction
- Planning Policy, Legislation, and Guidance
- Consultation
- Assessment Methodology
- Baseline Environment
- Initial Development Design and Impact Avoidance/Reduction Measures.
- Assessment of Potential Effects
- Inter-relationship of Potential Effects
- Further Mitigation and Monitoring
- Summary of Potential Residual Effects
- Cumulative Effects
- Enhancement Measures
- Conclusions

Study Areas: Spatial Scope of Assessment

2.4.7 Chapters 5.0 - 11.0 of the ES describe the spatial scope of the respective assessment, (i.e. the Study Area for each assessment) including the rationale for determining the specific study area within which the assessment is focussed. The Study Areas are a function of the nature of the impacts and the locations of potentially affected environmental resources or receptors. Justification for the spatial scope considered appropriate is documented in each topic chapter.

Assessment Baseline

2.4.8 Each of ES Chapters 5.0 - 11.0 describes the environmental baseline as it relates to the respective topic being assessed. Baseline conditions have been established through consultation, collation and analysis of existing datasets and reports, and gathering of site-specific field data. The baseline assessment identifies any sensitive receptors that will need to be considered in the assessment of effects.

2.4.9 In accordance with Schedule 4, Paragraph 3 of the EIA Regulations an outline of the likely evolution of the environment is set out by predicting future natural change in the baseline conditions in the absence of the Proposed Development. The future baseline is then taken into account when assessing the likely effects of the project over its operational lifetime.

2.4.10 For the avoidance of doubt, the current, or existing baseline is considered to be the state of the environment during 2024 when the various surveys that informed the preparation of the ES were undertaken. For some environmental topics, baseline data collected before 2024 to inform previous Kronospan consents and/or Environmental Permit commitments has also been used where appropriate to inform the preparation of the ES.

2.4.11 The future baseline considers the likely natural evolution of the receiving environment over the operational phase (estimated 40-year lifespan) of the Proposed Development. Whilst 40 years is considered a reasonable lifespan to assume for the purpose of EIA, this DNS application is seeking the permanent construction and operation of the Proposed Development. Decommissioning effects are scoped into the ES for completeness in accordance with the EIA Regulations. **Section 4.2, ES Chapter 4.0 (Description of the Proposed Development)**

provides details of reasonable assumptions regarding the uncertainty of the estimated lifespan of the Proposed Development.

2.4.12 In relation to individual topics, any divergence from the dates set out above is stated clearly within ES Chapters 5.0 - 11.0.

Construction and Operational Stages of Development

2.4.13 The ES differentiates between those effects that may potentially result from construction activities, effects that would result from the presence of the Proposed Development once operational, and decommissioning activities.

2.4.14 It is anticipated that construction would last for approximately 25 months and would occur between Quarter 1 2027 and Quarter 1 2029. An indicative construction programme is set out in **ES Chapter 4.0 (Description of the Proposed Development).**

The 'Finch' Judgement

2.4.15 On 20 June 2024, the Supreme Court handed down a majority judgement on R (on the application of Finch on behalf of the Weald Action Group) v Surrey County Council and others[1] – hereafter referred to as the 'Finch' judgement. The implications of the Finch judgement have been subject to considerable public analysis by expert legal commentators. This analysis has distilled three questions to determine whether EIA is required to assess indirect upstream and/or downstream effects. If all the questions give rise to a positive response, then the EIA for the project must assess the upstream and/or downstream effects. If the answer to any of the questions is negative, then no such assessment is required. The three questions are:

- Would the development give rise to inevitable indirect upstream or downstream effects i.e. would there be inevitable causation?
- Is it possible to undertake evidence based meaningful assessment of the effects?
- Will an assessment reasonably conclude likely significant effect(s)?

[1] *R (on the application of Finch on behalf of Weald Action Group) (Appellant) v Surrey County Council and others (Respondents)* [2024] UKSC 20

2.4.16 The 'Finch' judgement has been applied, where practicable to the ES. Most notably, **ES Chapter 9.0 (Climate Change)** has considered the direct and indirect greenhouse gas (GHG) emissions associated with the Proposed Development including upstream and downstream sources of GHGs where it is possible to reasonably estimate the quantities. For example, the upstream GHG emissions associated with the transportation and production of Flue Gas Treatment (FGT) reagents has been included, as has the upstream GHG emissions associated with the transportation and treatment of FGT residues.

2.5 Mitigation

Overview

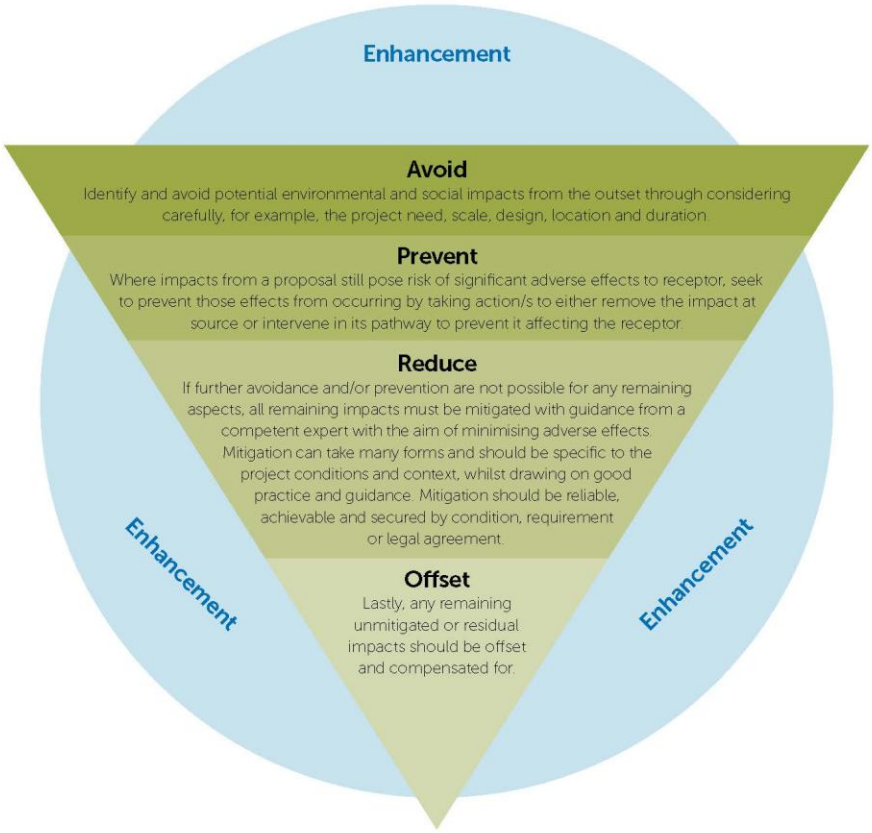
2.5.1 It is a requirement of the EIA Regulations to describe the measures envisaged to avoid, prevent, reduce and where possible offset any significant effects on the environment. Mitigation measures can be used to reduce or avoid any adverse effect, whether that effect is deemed to be 'significant' or not.

Mitigation Hierarchy

2.5.2 Mitigation can be achieved in several ways. The Institute of Environmental Management (IEMA) Impact Assessment Guidelines document 'Implementing the Mitigation Hierarchy from Concept to Construction (2024)' describes the concept and implementation of the 'mitigation hierarchy' as follows (illustrated at **Inset 2.1**):

"A systematic approach used to minimise adverse effects of a project or scheme on the environment and people. It is a series of steps or principles to guide decision-making and prioritise activity. The hierarchy comprises four stages, with the most desirable first: avoid, prevent, reduce and, finally, offset. The hierarchy indicates that avoidance is the priority and offsetting should only be relied on as a last resort. For definitions of these terms within the hierarchy."

Inset 2.1 – The Mitigation Hierarchy



Classified Mitigation

Guidance

Mitigation

2.5.3 The IEMA Impact Assessment Guidelines document 'Implementing the Mitigation Hierarchy from Concept to Construction (2024)' states that *"classifying mitigation measures into one of three key types helps to achieve a more proportionate ES, as it allows for some mitigation measures to be taken-as-read in assessing effects (i.e. these mitigations are embedded intrinsically into the project design as set out in the project description."* There are three distinct forms of mitigation as follows:

- Primary (inherent)
    - An inherent part of the project design and should be described in the design evolution narrative and included in the project description.
- Secondary (foreseeable)

- Requires further activity to achieve the anticipated outcome – typically, these will be described in the ES chapters but often secured through planning conditions, requirements, and/or management plans.

- Tertiary (inexorable)
  - Required regardless of any EIA assessment as it is imposed, for example, because of legislative requirements and/or standard sectoral practices.

Enhancement

2.5.4 The IEMA Impact Assessment Guidelines document 'Implementing the Mitigation Hierarchy from Concept to Construction (2024)' states that *"outside of specific requirements for biodiversity net gain……there is no regulatory driver for securing overall environmental gain through development. However, the EIA process is likely to gather information that could allow a develop to build effective and valuable environmental benefits into the design of their project. Such benefits can help enable development and provide reasons for communities and wider stakeholders to support the developer's aspirations for the site."*

Implementation

Initial Development Design and Impact Avoidance/Reduction Measures

2.5.5 Many of the Proposed Development mitigation measures have been identified and committed to at the early stages of the EIA process because of decisions made during the evolution of its design.

2.5.6 Additionally, each ES topic chapter (Chapters 5.0 - 11.0) contains a section entitled 'Initial Development Design and Impact Avoidance/Reduction Measures' which describes mitigation measures identified at the commencement of the EIA assessment process to avoid, prevent, reduce, or offset likely adverse effects from the Proposed Development.

2.5.7 Mitigation from all three mitigation classifications is identified as 'Initial Development Design and Impact Avoidance/Reduction Measures'; an example of each (specific to the Proposed Development) is provided below:

- Primary – careful siting of the proposed structures as far as reasonably practicable from the nearest residential receptors to minimise amenity effects together with reducing the proposed stack height from 95m to 75m.
- Secondary – provision of a (detailed) CEMP with detailed management plans for task and/or environmental receiver specific to be produced by the Principal Contractor (PC) post-consent. It should be noted that the requirement for a CEMP was identified at the EIA scoping stage (prior to the commencement of the EIA assessment process). As such, a Framework CEMP document has been produced for this DNS application, which will be subject to planning condition, adopted by the PC and expanded to include a series of detailed management plans. The Framework CEMP is therefore classified as primary mitigation, with the detailed CEMP (which will be a 'live' document) classified as secondary mitigation.
- Tertiary – compliance with the relevant aspects of Guidance for Pollution Prevention documents, and BS5228: 2009+A1 'Code of Practice for Noise and Vibration Control on Construction and Open Sites. It should be noted that tertiary mitigation typically (but not exclusively) apply to the construction phase; as such tertiary mitigation for this project is also detailed in the Framework CEMP, which means that such tertiary mitigation is also secondary mitigation.

2.5.8 Where relevant, primary mitigation is described in **ES Chapter 4.0 (Description of the Proposed Development)** where it is an inherent part of the Proposed Development design. **ES Chapter 3.0 (Alternatives)** also contains relevant information of feasible alternatives, and the evolution of the Proposed Development design where the identification of primary mitigation has influenced it throughout the EIA process.

2.5.9 Mitigation measures identified as 'Initial Development Design and Impact Avoidance/Reduction Measures' have been considered when arriving at a judgement of the likely significance of the effects of the Proposed Development.

Further Mitigation and Monitoring

2.5.10 Each ES topic chapter (Chapters 5.0 - 11.0) contains a section entitled 'Further Mitigation and Monitoring' which describes further mitigation measures identified after the completion of the initial EIA assessment process to avoid, prevent, reduce,

or offset likely adverse effects from the Proposed Development. Such mitigation measures can be classified as primary or secondary (they are not tertiary as such measures will be implemented regardless of the outcome of the EIA assessment process). An example of further mitigation (specific to the Proposed Development) is:

- Specific Proposed Development components/enclosures to be fitted/constructed with double skin acoustic cladding to further reduce noise effects. See **ES Chapter 5.0 (Noise and Vibration)** for further details.

2.5.11 Mitigation measures identified as 'Further Mitigation and Monitoring' include an explanation as to how their implementation would mitigate/reduce the identified effects of the Proposed Development.

2.5.12 The residual effects (after the implementation of 'Further Mitigation and Monitoring') are described in in each topic chapter. The likely significant residual effects are also summarised in **ES Chapter 12.0 (Mitigation Schedule and Summary of Residual Effects).**

Enhancement

2.5.13 Each ES topic chapter (Chapters 5.0 - 11.0) contains a section entitled 'Enhancement Measures' which, where relevant, describes enhancement measures deemed to be proportionate and relevant to the Proposed Development which would provide notable benefits.

2.5.14 Biodiversity mitigation and enhancement measures are proposed in the form of two distinct areas of woodland buffer planting on the former golf course west of the Proposed Development. This would provide effective interception mitigation for likely low levels of nitrogen, ammonia and acid deposition, and effective habitat enhancement (see the BAR at **DNS4-007** for further details).

2.6 Significance Criteria and Assessment Methodology

Establishing the Level of Effect

Overview

2.6.1 Impacts are defined as changes arising from the Proposed Development, and consideration of the result of these impacts on environmental receptors enables the assessment of the resulting effects, and their classification (e.g. whether for example major, moderate, minor and negligible, and whether adverse, neutral or beneficial). Each effect is assessed after (initial development design and impact avoidance/reduction) mitigation measures have been applied. Further mitigation and monitoring is subsequently identified as required; effects remaining after implementation of further mitigation and monitoring are referred to as 'residual effects', and conclusion is made in each topic chapter as to whether these residual effects are considered to be significant or not.

2.6.2 The EIA Regulations do not provide definitive methods for the assessment of significance, and a variety of methods are employed within ES documents. The method used to assess the effects is specific to each discipline. Where available and appropriate, the assessments follow impact assessment criteria and methodology set out by relevant professional institutions e.g., Institute of Ecology and Environmental Management (IEEM), Landscape Institute (LI), etc. Where such guidance is not available, or prescriptive methods are not set out by the relevant professional body, then assessment criteria have been developed by the technical specialists to enable a clear and structured assessment to be undertaken.

2.6.3 The level of the effect of the Proposed Development is, in general, derived by considering the magnitude of the impact and the sensitivity of the receptor to a change resulting from the Proposed Development.

Magnitude of Impact

2.6.4 Depending on the discipline there are several factors that need to be taken into account when establishing the type and magnitude of an impact, including:

- The scale/degree of change from baseline.

- Whether it is temporary or permanent, and if temporary the likely duration (i.e. short-term, medium-term or long-term).
- Whether it is direct or indirect.
- Extent or spatial scale of the effect.
- Duration of the effect.
- Whether the effect is reversible.
- Probability/likelihood of the effect.

Sensitivity of Receptor

2.6.5 Similarly, the sensitivity of a receptor is reflective of several elements dependent on the discipline and effect being assessed, these may include:

- Designation and legal status.
- Quality.
- Rarity.
- Ability to adapt to change.

Significance/Level of Effect

2.6.6 Having established the magnitude of the impact and the sensitivity of the receptor, the level of the effect will then be defined relevant to each environmental discipline and using the guidance pertinent to that topic. In general, the level of effect is established using the matrix shown at **Table 2.3** below.

Table 2.3 – Significance/Level of Effect

Magnitude of Impact	**Sensitivity/Importance of Receptor**			
	High	Medium	Low	Negligible
High	Major	Moderate to Major	Minor to Moderate	Negligible to Minor
Medium	Moderate to Major	Minor to Moderate	Minor	Negligible
Low	Minor to Moderate	Minor	Negligible to Minor	Negligible

Magnitude of Impact	Sensitivity/Importance of Receptor			
	High	Medium	Low	Negligible
Negligible	Negligible to Minor	Negligible	Negligible	Negligible

2.6.7 Where there are deviations away from this matrix (due to the technical guidance for a specific assessment topic), this is highlighted within the relevant technical Chapter and the reason for the variation explained.

2.6.8 Where a matrix is not used, the magnitude of change and the sensitivity of the receptor is used to make a reasoned judgement to establish the level of the effect and whether it is significant or not significant. For some topics an environmental risk assessment approach may be used to establish the potential environmental effects of the Proposed Development.

2.6.9 Generally, effects assessed as being of a Moderate or Major level are significant in EIA terms. However, there is no statutory definition of what level of effect is to be regarded as significant and there is often not a single, definitive, correct answer as to whether an effect is significant or not.

2.6.10 The determination of a significant effect may vary between assessment topics and the threshold is defined within each chapter. This approach is used to assist the decision maker, consultees and other interested parties in establishing the most important environmental effects of the Proposed Development. For example, **ES Appendix 7A (Landscape and Visual Impact Assessment Methodology)** states:

"The judgement for this particular assessment is that greater than 'moderate' effects are more likely to be significant. This is because they would generally result from larger magnitudes of change on higher sensitivity receptors. This does not preclude a 'moderate' effect or lower being significant or a greater than 'moderate' effect not being significant. This judgement will depend on the specific circumstances being considered."

2.6.11 A significant effect does not necessarily mean that such an effect is unacceptable to decision-makers nor that it results in a breach of any planning policy. This is a matter

to be weighed in the planning judgement/balance alongside other material considerations. What is important is that the likely significant environmental effects of any proposal are transparently assessed and described in sufficient detail to enable the determining authority to make a balanced and well-informed judgement as part of the decision-making process.

2.6.12 In all instances the assessment sets out the basis of the judgements made so that the readers of the ES can see the weight attached to the different factors and can understand the rationale of the assessment. In this sense the ES clearly explains how the level of effects has been derived.

2.6.13 Where it has not been possible to quantify effects, qualitative assessments have been undertaken, based on available knowledge and professional judgment. Where any uncertainty exists, this has been noted in the relevant topic chapter.

2.6.14 To enable comparison between technical topics and aid understanding of the EIA findings, standard terms are used wherever possible to classify effects throughout the ES (major, moderate, minor and negligible), and effects are also described as being adverse, neutral or beneficial. Where the guidance for each discipline requires any deviation from these terms, this is described in the relevant Chapters.

2.6.15 Definitions of the standard terms are provided indicatively below, recognising that how these relate to different topics or to the specific effects experienced by individual receptors may vary to a greater of lesser degree. The specific circumstances of the change experienced by an individual receptor is the ultimate determining factor in the level of effect that would occur:

- Negligible – imperceptible effect to an environmental resource or receptor.
- Minor – slight, very short or highly localised effect.
- Moderate – limited effect (by extent, duration or magnitude).
- Major – considerable effect (by extent, duration or magnitude) of more than a local scale or in breach of recognised acceptability, legislation, policy or standards.
- Adverse – detrimental or negative effects upon an environmental resource or receptor.
- Neutral – effects to an environmental resource or receptor that are neither advantageous nor detrimental.

- Beneficial – advantageous or positive effect upon an environmental resource or receptor.

2.6.16 Each of the topic chapters provides further description and definition of the assessment criteria relevant to each topic. Where possible, this has been based upon quantitative and accepted criteria (for example British Standards), together with the use of value judgement and professional judgement to classify effects.

2.7 Transboundary Effects

2.7.1 An initial transboundary screening exercise for the Proposed Development under Regulation 56 of the EIA Regulations has been undertaken. The Proposed Development is not likely to have a significant effect either alone or cumulatively on the environment in any European Economic Area (EEA) state.

2.7.2 The nearest EEA states are the Republic of Ireland at over 200km west and France at over 400km south-east of the Proposed Development Site. Taking into account the potential pollution impact pathways through air, land and water, and the effects predicted to arise from the Proposed Development, the likelihood of significant effects on the environment of another EEA state is considered negligible. Therefore, significant transboundary effects associated with the Proposed Development are not anticipated.

2.8 Cumulative Effects

Introduction

2.8.1 Schedule 4, Paragraph 5(e) of the EIA Regulations requires that the ES include:

'A description of the likely significant effects of the development on the environment resulting from…

… (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources'.

2.8.2 The EIA Regulations do not define cumulative effects. However, a commonly accepted description is:

'Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project' (European Commission, 1999).

2.8.3 Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (AN17)[2] is clear that the criteria by which schemes included in a cumulative assessment should be determined with regard to relevant guidance and is also clear that professional judgement may be used to supplement this. The inclusion/exclusion of schemes within the cumulative method and assessment, as set out below, accords with this approach.

Types of Cumulative Effect

2.8.4 Two major types of cumulative effect are generally recognised, '*Intra-project' and* '*Inter-project'* effects.

Intra-project Effects

2.8.5 Intra-Project cumulative effects (or the in-combination effects) between environmental disciplines are inherently considered in each environmental topic ES chapter. For example, topic areas such as biodiversity and noise and vibration cannot be considered in isolation since changes affecting one topic area also have the potential for implications for other topic areas. Additionally, effects upon the setting of heritage assets may derive from change in view (i.e. a visual effect) or change in noise levels (i.e. a noise effect). The ES identifies potential interactions between environmental topic areas where relevant (under the sub-heading 'Inter-Relationship of Potential Effects')

Inter-project Effects

2.8.6 Inter-project effects are those that occur because of the likely effects of the Proposed Development interacting with the likely effects of other development in the vicinity. For example, construction and/or operation traffic effects of the Proposed Development combined with the construction and/or operation traffic effects of

[2] Planning Inspectorate, 2024. last updated 25 Mar 2025. *National Significant Infrastructure Projects: Advice on Cumulative Effects Assessment* https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment [accessed 04 Jul 2025]

another major development using the same access routes may result in cumulative effects on the surrounding highway network.

2.8.7 For the purpose of this ES, inter-project effects are hereafter referred to as 'cumulative effects' and are considered in each of the environmental topic ES chapters (under the heading 'Cumulative Effects'). The method provided below describes how other projects have been identified for the consideration of cumulative effects.

Method

Introduction

2.8.8 There is no defined methodology in the UK as to how cumulative effects should be assessed. In determining the approach to be adopted to this element of the assessment, reference is made to the following guidance:

- Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions (European Commission 1999).
- Cumulative Effects Assessment Practitioners Guide (Canadian Environmental Assessment Agency 1999).
- Guidelines for Environmental Impact Assessment (Institute of Environmental Management and Assessment 2006).
- The State of Environmental Impact Assessment Practice in the UK (Institute of Environmental Management and Assessment 2011).
- DNS Guidance Appendix 3 (Environmental Impact Assessment).

Zone of Interaction

2.8.9 The maximum geographical extent (Zone of Interaction) (ZoI) outside of the Proposed Development Site has been identified where it is considered there is the potential for receptors within that geographical extent to experience significant cumulative effects. A 3km ZoI has been identified (see **Figure 2.1**); this is the same as the Study Area set out in **ES Chapter 6.0 (Air Quality and Odour)** and **ES Chapter 8.0 (Historic Environment)** and greater than the Study Area set out in **ES Chapter 5.0 (Noise and Vibration)** and **ES Chapter 7.0 (Landscape and Visual Impact Assessment)** and as such is deemed to represent a precautionary approach to the assessment of cumulative effects.

Identification of Other Projects

Consent Status

2.8.10 The EIA Regulations are specific about the projects that should be considered to result in cumulative effects i.e., existing and/or approved projects. However, it is also considered relevant to include projects that are currently awaiting determination as part of the planning/other consenting process, as there is a possibility that those projects could be approved whilst the application for the Proposed Development is being determined or implemented. Accordingly, the following criteria (Criterion A) has been used to identify other projects:

Criterion A – Consent Status

- Development proposals approved since 01 September 2019 currently under construction.
- Development proposals approved since 01 September 2019 awaiting implementation.
- Development proposals awaiting determination within the planning process with suitable design information in the public domain.
- Development proposals which have been refused planning permission and are currently subject to appeal.
- Development proposals where a formal request for an EIA Screening or Scoping Direction have been submitted since 01 September 2021 (but have not yet reached application submission stage).
- Relevant Local Development Plan (LDP) allocations.

Major Development

2.8.11 Whilst not always the case, the likelihood of significant cumulative effects arising from minor/small scale development is low. Therefore, only major development (as defined in the Town and Country Planning (Development Management Procedure) (Wales) Order 20212 (as amended) has been considered – this is presented as Criterion B below:

Criterion B – Major Development

- The winning and working of minerals or the use of land for mineral-working deposits.

- Waste development.
- The provision of dwellinghouses where:
    - the number of dwellinghouses to be provided is ten or more; or
    - the development to be carried out on a site having an area of 0.5 hectares or more.
- The provision of a building or buildings where the floor space to be created is 1,000 square metres or more.
- Development carried out on a site having an area of 1 hectare or more.

Final List of Cumulative Projects

2.8.12 As the WCBC planning website does not contain a 'map search' function to identify planning applications, Axis liaised directly with the WCBC Planning Department to agree a list of other projects within their administrative area that satisfied both Criterion A and Criterion B set out above.

2.8.13 The list of other projects within the 3km ZoI and adhering to both Criterion A and Criterion B are set out in **Table 2.4** below and shown at **Figure 2.2**. The consideration of the potential for cumulative effects is considered in each of the environmental topic ES chapters (under the heading 'Cumulative Effects').

2.8.14 To aid the cumulative assessment set out in **ES Chapter 7.0 (Landscape and Visual Impact Assessment)**, **Figure 7.4** has been produced to show the extent of existing and future landscaping to be implemented by the Applicant for its other consented projects.

Table 2.4 – Cumulative Projects

ID Ref	Application Ref and Local Authority Area	Project Detail	Status
1.1	P/2017/0699 WCBC	**Kronospan Ltd, Holyhead Road, Chirk, Wrexham** Development of a log delivery and transfer system and building to house a replacement wood chipping and flaking system and demolition of existing debarking and chipping facilities	Approved 01 May 2018 – chipping system is constructed but the log delivery and flaking system is awaiting construction
1.2	APP/H6955/A/19/3227571 of planning application P/2018/0551 WCBC	**Kronospan Ltd, Holyhead Road, Chirk, Wrexham** Development of an oriented strand board (OSB) Facility	Appeal allowed 09 October 2019 - extension to Particleboard Hall is constructed but the silos, sifters, and main building are awaiting construction
1.3	P/2022/0336 WCBC	**Kronospan Ltd, Holyhead Road, Chirk, Wrexham** Demolition of reception building and erection of covered loading yard, and associated fencing and ancillary works	Approved 04 July 2022 - awaiting construction
1.4	P/2022/0615 WCBC	**Kronospan Ltd, Holyhead Road, Chirk, Wrexham** Erection of engineering store and apprentice workshop (Use Class B2) and ancillary works	Approved 07 November 2022 - awaiting construction
1.5	P/2022/0765	**Kronospan Ltd, Holyhead Road, Chirk, Wrexham**	Approved 09 January 2023 -

ID Ref	Application Ref and Local Authority Area	Project Detail	Status
	WCBC	Erection of two raw material silos, extension to existing chip preparation building, and erection of three silos and associated works Important note – as the silos consented under planning reference P/2022/0765 are in a slightly different position than the silos proposed as part of the Proposed Development, an amendment to planning permission P/2022/0765 will be sought (should this DNS application be consented) to formalise the arrangement in planning terms.	awaiting construction
1.6	P/2022/1080 WCBC	**Kronospan Ltd, Holyhead Road, Chirk, Wrexham** Construction of new access road, lorry park, weighbridge and building, car park, facilities block, roundwood storage areas, 132kV substation and ancillary works	Approved 08 April 2024 subject to signed legal agreement for off-site enhancement measures (TBC) - awaiting construction
1.7	P/2022/0066 WCBC	**Caravan Site, Lady Margarets Park, Chirk, Wrexham** Extension of existing caravan site consisting of caravan pitches with tarmac road, glamping units, safari tents, car park, linen storage shed, and paths linking to units	Approved 16 October 2023

ID Ref	Application Ref and Local Authority Area	Project Detail	Status
		The number of new residential units is 15.	
1.8	N/A WCBC	Housing allocation (180 units) in the WCBC adopted Local Development Plan (LDP) – land off the B5070, Chirk	LDP Allocation
1.9	N/A WCBC	**Kronospan Ltd, Holyhead Road, Chirk, Wrexham** Indicative 132kV underground cable route between proposed (North Access Road) 132kV substation and existing Legacy/Oswestry overhead line	Indicative (assumed) – not yet submitted (assumed to be installed predominately in the road and undertaken by statutory undertaker using permitted development rights)
2.1	22/03924/FUL Shropshire Council (SC)	**R G Stones (Timber) Ltd, The Sawmills, Rhoswiel, Weston Rhyn, Oswestry, Shropshire** Proposed demolition of existing office, storage and industrial manufacturing buildings and redevelopment of site for 61 no. residential dwellings (10% affordable), means of vehicular access, Public Right of Way re-alignment, associated landscaping, open space, biodiversity net gain, parking, bin storage and pumping station	Approved 16 June 2023 – discharge of conditions underway

ID Ref	Application Ref and Local Authority Area	Project Detail	Status
		This planning permission is for the land allocated for residential development Local Plan allocation WRN016	
2.2	24/01380/FUL (App 1) 25/01572/FUL (App 2) SC	**Proposed Solar Installation North of Rhoswiel, Weston Rhyn, Shropshire** App 1 - Installation of 1.13MW ground-mounted solar panel array, erection of transformer housing building and connection hub building App 2 - Installation of 1.28MW ground-mounted solar panel array, erection of transformer housing building and connection hub building	App 1 - Refused 24 July 2024 App 2 – Approved 18 June 2025
2.3	21/01230/FUL SC	**Proposed Residential Development Land South of Aspen Grange, Weston Rhyn, Shropshire** Erection of 12 no. houses, 10 no. bungalows, 18 no. apartments and ancillary community room together with associated highways, parking, amenity spaces and landscaping This planning permission is for the land allocated for residential development Local Plan allocation WRN010	Approved 26 November 2021 – discharge of conditions underway