

Connah's Quay Low Carbon Power

Preliminary Environmental Information Report
Volume IV, Appendix 7-A: Legislative, Policy and
Guidance Framework for Technical Topics

Uniper

The Planning Act 2008
The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
PINS Reference: EN010166
September 2024

Prepared for:
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1. Air Quality

1.1 Introduction

- 1.1.1 The following sections identify specific legislation, policy and guidance that is applicable to the assessment of air quality. Further details on the wider legislation, policy and guidance relevant to this Preliminary Environmental Information Report (PEIR) is provided in **Chapter 8: Air Quality (PEIR Volume II)**.

1.2 Legislation

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the 'EIA Regulations')

- 1.2.1 The air quality assessment available in **Chapter 8: Air Quality (PEIR Volume II)** provides the information required to understand the anticipated air quality impacts and effects associated with the Proposed Development as required by the EIA Regulations (Ref 1).

European Union Ambient Air Quality Directive

- 1.2.2 The Clean Air for Europe programme revisited the management of air quality within the European Union (EU) and replaced much of the existing air quality legislation with a single legal act called the Directive 2008/50/EC on Ambient Air Quality and Cleaner Air for Europe (Ref 2). This Directive repealed and replaced the EU Framework Directive 96/62/EC on Ambient Air Quality Assessment and Management and its associated Daughter Directives 1999/30/EC, 2000/69/EC, 2002/3/EC, relating to limit values for ambient air pollutants and the Council Decision 97/101/EC which established a reciprocal exchange of information and data within Member States.
- 1.2.3 Directive 2008/50/EC is transcribed into United Kingdom (UK) legislation by the Air Quality Standards Regulations 2010 (Ref 3), which came into force on 11th June 2010 and as amended in 2016 (Ref 4) and the Air Quality Standards (Wales) Regulations 2010 (Ref 5). This sets binding limit values or objectives on pollutants with the aim of avoiding, preventing or reducing harmful effects on human health and on the environment.
- 1.2.4 Air pollution limits set by the EU remain in UK law post Brexit, as EU legislation that applied directly or indirectly to the UK before 11.00 p.m. on 31st December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'. This is set out in sections 2 and 3 of the EU (Withdrawal) Act 2018 (c. 16) (Ref 6). Section 4 of the Withdrawal Act 2018 ensures that any remaining EU rights and obligations, including directly effective rights within EU treaties, continue to be recognised and available in domestic law after exit. However, the EU will no longer have a role in enforcement.

National Air Quality Legislation

- 1.2.5 The Environment Act 1995 (Ref 7) requires the UK Government to produce a national Air Quality Strategy (AQS) for England, Scotland, Wales and Northern Ireland containing standards, objectives and measures for improving ambient air quality and to keep the policies identified under review.
- 1.2.6 The national air quality objectives of relevance to the air quality assessment, as well as to the local air quality management (LAQM) regime, were set by the Air Quality (Wales) Regulations 2000 (Ref 8) and the Air Quality (Wales) (Amendment) Regulations 2002 (Ref 9).
- 1.2.7 A further revision of the AQS in 2007 (Ref 10) set objective values to help local authorities manage local air quality improvements in accordance with the EU Air Quality Framework Directive. Some of these objective values have been laid out within the Air Quality Standards (Wales) Regulations 2010 (Ref 5).
- 1.2.8 The Environment Act 2021 (Ref 11) amends the Environment Act 1995. On 9th November 2021, the Environment Act 2021 was approved after being first introduced to Parliament in January 2020 to address environmental protection and the delivery of the Government's 25-year environment plan following Brexit. The Environment Act 2021 works in conjunction with the Environment (Wales) Act 2016 (Ref 12), in terms of target setting, however the role of enforcement of policy within Wales sits with the Welsh Government. The Environment Act 2021 includes provisions to establish a post-Brexit set of statutory environmental principles and ensure environmental governance through an environmental watchdog, the Office for Environmental Protection (OEP). The Environment Act 2021 establishes a legally binding duty on government to bring forward at least two new air quality targets in secondary legislation by 31 October 2022. This duty sits within the environmental targets framework outlined in the Environment Act (Part 1). The Environment (Air Quality and Soundscapes) (Wales) Act 2024 (Ref 13) places a duty on Ministers to set a target for PM_{2.5} (fine particulate matter that are 2.5 microns or less in diameter) and another air pollutant from a short list of six substances, by April 2027. At the time of writing, the PM_{2.5} target has not been set in regulations.
- 1.2.9 The AQS objective values have been set down in regulation for the purposes of LAQM. Under the LAQM regime, local authorities have a duty to carry out regular assessments of air quality against the AQS objective values and if it is unlikely that the AQS objective values will be met in the given timescale, they must designate an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) with the aim of achieving the objective values. The boundary of an AQMA is set by the local authority to define the geographical area that is to be subject to the management measures to be set out in a subsequent action plan. It is not unusual for the boundary of an AQMA to include within it relevant locations where air quality is not at risk of exceeding an AQS objective.
- 1.2.10 The principal air quality legislation within Wales is the 2010 Air Quality Standards (Wales) Regulations 2010, which transposes relevant EU Air Quality Directives into national legislation. The AQS objective values, Air Quality Assessment Levels (AQAL) as contained within the Air Quality Standards (Wales) Regulations 2010 or The Air Quality (Wales) Regulations

2000 (15-min SO₂ only) for the pollutants of relevance to the air quality assessment for the Proposed Development are presented in **Table 1**.

Table 1: Key National AQS Objectives

Pollutant	Averaging Period	Value	Maximum Permitted Exceedances
Nitrogen Dioxide (NO ₂)	Annual Mean	40 µg/m ³	N/A
	Hourly Mean	200 µg/m ³	18 times per year
Particulate Matter (PM ₁₀)	Annual Mean	40 µg/m ³	N/A
	Daily Mean	50 µg/m ³	35 times per year
Fine Particulate Matter (PM _{2.5})	Annual Mean	25 µg/m ³	N/A
Sulphur dioxide (SO ₂)	15-minute mean	266 µg/m ³	35 times a year (i.e. 99.9 th percentile)
	1-hour	350 µg/m ³	24 times a year (99.73 rd percentile)
	24-hour	125 µg/m ³	3 times a year, (99.18 th percentile)
Carbon monoxide (CO)	Running 8-hour average*	10,000 µg/m ³	N/A

* The maximum daily eight hour mean concentration of carbon monoxide must be selected by examining eight hour running averages, calculated from hourly data and updated each hour. Each eight hour average so calculated must be assigned to the day on which it ends, that is, the first calculation period for any one day will be from 17:00 on the previous day to 01:00 on that day, and the last calculation period for any one day will be the period from 16:00 to 24:00 on that day.

Clean Air Strategy

1.2.11 In 2019, the UK government released its Clean Air Strategy 2019 (Ref 14), which is part of its 25 Year Environment Plan. In recent years, air quality management has primarily focused on nitrogen dioxide (NO₂), and its principal source in the UK i.e. road traffic. However, the Clean Air Strategy broadens the focus to other areas, including domestic emissions from wood burning stoves and from agriculture. This shift in emphasis is part of a longer-term goal to reduce the levels of PM_{2.5} in the air that is also addressed in the Clean Air for Wales Plan (Ref 15), which in a similar manner to the UK's Clean Air Strategy satisfies the requirements of The National Emission Ceilings Regulations 2018 (Ref 16).

- Both the Clean Air Strategy and the Clean Air Plan for Wales include the provision of a clear effective guidance on how AQMAs, Clean Air Zones (CAZ) and Smoke Control Areas interrelate and how they can be used by local government to tackle air pollution.

1.2.12 It is noted within the Clean Air Strategy document that the '*current legislative framework has not driven sufficient action at a local level*'. New legislation will seek to shift the focus towards prevention of exceedances rather than tackling pollution when limits have been surpassed. The shift of focus encourages more of a proactive rather than a reactive policy framework at regional and local levels on air quality.

The Environmental Protection Act 1990 (Part III)

- 1.2.13 Part III of the Environmental Protection Act 1990 (Ref 17) defines matters that could be a private and public statutory nuisance. The prescribed matters of relevance to the Proposed Development assessment being any smoke, fumes, gases, steam or smell being prejudicial to health or a nuisance.

Well-being of Future Generations (Wales) Act 2015

- 1.2.14 Public bodies in Wales need to carry out air quality and noise management in accordance with the five ways of working as set out in the Well-being of Future Generations (Wales) Act 2015 (Ref 18).

Industrial Emissions Directive 2010/75/EU (IED) and Environmental Permitting (England and Wales) Regulations 2016

- 1.2.15 The EU's Industrial Emissions Directive 2010/75/EU (IED) (Ref 19) provides operational limits and controls to which regulated plant must comply, including Emission Limit Values (ELV) for pollutant releases into the air. The operator of a plant covered by the IED is required to employ Best Available Techniques (BAT) for the prevention or minimisation of emissions to the environment, to ensure a high level of protection of the environment as a whole. European BAT reference documents (BREF) are published for each industrial sector regulated under the IED, and they include BAT-Associated Emission Levels (BAT-AELs) which are expected to be met through the application of BAT. These levels may be the same as the ELV published in the IED, or they may be more stringent.
- 1.2.16 The Proposed Development will be designed and operated to comply with the relevant provisions of the IED and also the July 2017 BAT conclusions for large combustion plants (LCP BAT Conclusions) (Ref 20). The requirements of the IED were transposed into law via the Environmental Permitting (England and Wales) Regulations 2016 (as amended) (the EPR) (Ref 21).
- 1.2.17 The LCP BAT Conclusions specify BAT AELs for NO_x and CO that are considered to be achievable through the implementation of BAT within a generating station. The EPR requires that a combustion plant with a thermal input of 50 megawatt (MW) or greater must operate in accordance with an environmental permit issued by Natural Resources Wales (NRW). As part of the permit application process, an operator is required to demonstrate that BAT will be implemented and during permit determination, NRW will set ELV for pollutant releases, based on the IED ELV and the BAT AELs as appropriate.
- 1.2.18 Current BAT identifies carbon capture as an emerging technique in the LCP BREF, but does not address all the potential environmental effects of the carbon capture activity. This situation is addressed by Article 14(6) of the IED where regulators must set permit conditions (including ELV where applicable), based on their own determination of BAT using the criteria listed in Annex III of the IED. No BAT-AELs have been defined for the carbon capture activity to date. However, Guidance on Post-Combustion Carbon Dioxide Capture: Guidance on Emerging Techniques (GET) (Ref 22) has been published and this will form the basis for discussions with NRW to agree appropriate BAT and

AELs. This will be done as the environmental permit required for the operation of the Proposed Development is developed. The permit application is being made in parallel with the Development Consent Order (DCO) application submission.

- 1.2.19 Where legislative ambient air quality limits or objectives are not specified for the pollutant species potentially released from the Proposed Development, Environmental Assessment Levels (EAL), published in the Air Emissions Risk Assessment for Your Environmental Permit Guidance (Ref 23) can be used to assess potential health effects on the general population. This includes an EAL for hourly concentrations of CO and annual average and hourly EALs for ammonia (NH₃), which can result from the operational Proposed Development.
- 1.2.20 As well as the combustion emissions from the operational Proposed Development, emissions of amines and their breakdown products could occur directly from the carbon capture plant, and potentially their breakdown (oxidation) products could further occur in the atmosphere following release. Such pollutant species are generally not included in the latest version of the NRW's risk assessment guidance (Ref 23); however, the Environment Agency (EA) has recently derived an EAL for one amine species, mono-ethanolamine (MEA), that has been adopted by NRW. The amine species within the solvent used in the Proposed Development has not been confirmed, however in the absence of other suitable EALs, this EAL has been used for the purpose of assessment of amine emissions from the Proposed Development for the PEIR. It is also known that some amines can potentially degrade (chemically react with oxygen) and form nitrosamines and nitramines (collectively referred to as N-amines) both during the carbon capture process itself and also in the environment, following release to the atmosphere. Therefore, the impacts of both directly released N-amines and the N-amines produced through atmospheric degradation of released amines have also been considered in the assessment provided in **Chapter 8: Air Quality (PEIR Volume II)**.
- 1.2.21 The EA has recently adopted an EAL for N-nitrosodimethylamine (NDMA) of 0.2 nanograms (ng)/m³ and it is understood that NDMA has been used for the EAL, as this is considered to be one of the most toxic nitrosamines, and therefore results in a conservative EAL. In addition, it is understood that the EA propose to compare the total N-amine concentration from plant emissions with the NDMA EAL, although it should be recognised that some of the degradation products will be less harmful, and therefore this is a very conservative assumption.
- 1.2.22 The environmental regulators are looking to derive EALs for a number of other amine species (and associated N-amines) which are considered likely to be used within amine-based carbon capture solvents, with publication of an EAL consultation document detailing further EALs expected in the near future. This will be supported by a best practice methodology for deriving amine and N-amine specific EALs for air quality assessment using available literature and toxicology data. It is anticipated that following solvent selection and the publication of the guidance, more suitable EALs will be available, the assessment of amines and breakdown products for the ES and the Environmental Permit application process for the Proposed Development.

1.2.23 Small amounts of other degradation products will be emitted from the post combustion capture (PCC) plant, and therefore these have also been included in the assessment. These are represented within this assessment as formaldehyde. The EALs applicable for this assessment for the protection of human health are presented in **Table 2**.

Table 2: EAL – Human Health

Pollutant	Concentration ($\mu\text{g}/\text{m}^3$)	Measured as	Source of EAL
NH ₃	180	Annual mean	NRW Risk Assessment Guidance (Ref 23)
	2,500	Hourly mean	
Total Amines	400	Hourly mean	
	100	Daily mean	
Nitrosamines	0.2 ng/m ³	Annual mean	
CO	30,000	Hourly mean	
	10,000	Running eight-hour mean	
Formaldehyde	5	Annual Mean	
	100	30-minute mean	

1.2.24 Throughout **Chapter 8: Air Quality (PEIR Volume II)**, national AQS objectives, critical levels (CL) and EALs are collectively referred to as AQAL.

Sensitive Ecosystems

1.2.25 The UK has retained the terms of the European Birds Directive 2009 (Ref 24) and Habitats Directives (Ref 25) and the Ramsar Convention (Ref 26) following departure from the EU. The Conservation of Habitats and Species Regulations 2017 (as amended) (Ref 27) provide for the protection of European Sites created under these i.e. Special Areas of Conservation (SAC) designated pursuant to the Habitats Directive, Special Protection Areas (SPA) and provisional SPA (pSPA) classified under the Birds Directive. Specific provisions of the European Directives are also applied to SAC and candidate SAC (cSAC) which requires these sites to be given special consideration, and for further assessment to be undertaken for any development which is likely to lead to a significant effect upon them. Consideration has also been given to Ramsar sites, designated as wetlands of international importance.

1.2.26 The impact of air emissions from the Proposed Development on sensitive ecological receptors are quantified within the assessment in two ways:

- as direct impacts arising due to increases in atmospheric pollutant concentrations, assessed against defined 'critical levels'; and
- as indirect impacts arising through deposition of acids and nutrient nitrogen to the ground surface, assessed against defined 'critical loads'.

1.2.27 The CL for the protection of vegetation and ecosystems are defined as '*concentrations of pollutants in the atmosphere above which direct adverse effects on...plants [and] ecosystems...may occur according to present knowledge,*' and critical loads are defined as "*a quantitative estimate of exposure to one or more pollutants below which significant harmful effects on*

specified sensitive elements of the environment do not occur according to present knowledge' (Centre for Ecology and Hydrology (CEH) and Air Pollution Information System (APIS) website).

- 1.2.28 The CL applied in the assessment are set out in **Table 3** and apply regardless of the habitat type present at the habitat receptor. In the cases of sulphur dioxide and NH₃, the greater sensitivity of lichens and bryophytes to this pollutant is reflected in the application of two critical levels, with a stricter critical level to be applied to locations where such species are present.

Table 3: Critical Levels (CL) – Protection of Vegetation and Ecosystems

Pollutant	Source	Concentration (µg/m ³)	Measured as
Oxides of nitrogen (NO _x)	EU air quality limit value	30	Annual mean
	UK target value	75	Daily mean
Sulphur dioxide (SO ₂)	NRW Environmental Permit Guidance	20	Annual mean, for sensitive lichen communities & bryophytes and ecosystems where lichens and bryophytes are an important part of the ecosystem's integrity
	NRW Environmental Permit Guidance	10	Annual mean, For all higher plants (all other ecosystems)
Ammonia (NH ₃)	UK target value for lichen and bryophytes	1	Annual mean
	UK target value	3	Annual mean

- 1.2.29 Critical load criteria for the deposition of nutrient nitrogen and acidifying species are dependent on the habitat type and species present and are specific to the sensitive receptors considered within the assessment. The critical loads are detailed on the APIS website.

1.3 National Planning Policy

Overarching National Policy Statement for Energy (EN-1)

- 1.3.1 National Policy Statements (NPS) are, where in place, the primary basis for the assessment and determination of applications for Nationally Significant Infrastructure Projects (NSIP) such as the Proposed Development.
- 1.3.2 EN-1 (Ref 28) reflects the UK Government policies and strategic approach for the energy system that is set out in the Energy White Paper (December 2020), and to ensure that the planning policy framework enables the delivery of the infrastructure required for the country's transition to net zero carbon emissions. EN-1 states at paragraph 4.12.2 that:

'The planning and pollution control systems are separate but complementary. The planning system controls the development and use of land in the public interest... Pollution control is concerned with preventing pollution through the

use of measures to prohibit or limit the releases of substances to the environment from different sources to the lowest practicable level. It also ensures that ambient air and water quality meet standards that guard against impacts to the environment or human health'.

1.3.3 Paragraphs 4.12.9 and 4.12.10 state:

'In considering an application for development consent the Secretary of State should focus on whether the development itself is an acceptable use of the land or sea, and the impact of that use, rather than the control of processes, emissions or discharges themselves'.

'The Secretary of State should work on the assumption that the relevant pollution control regime and other environmental regulatory regimes...will be properly applied and enforced by the relevant regulator'.

1.3.4 Within Section 5.2, EN-1 requires the consideration of significant air emissions, their mitigation and any residual effects, the predicted absolute emission levels after application of mitigation, the relative change in air quality from existing concentrations and any potential eutrophication impacts as a result of a proposed development's project stages, including contributions from additional road traffic. All the above is covered within the air quality assessment for the Proposed Development (**Chapter 8: Air Quality (PEIR Volume II)**). Where a project could result in deterioration in air quality in an area where national air quality limits are not being met or may lead to a new area breaching national air quality limits, or where substantial changes in air quality concentrations are predicted, such effects would be expected to be given substantial weight in consideration of the acceptability of the proposal. Where a project is likely to lead to a breach of statutory air quality limits, the NPS sets out that the developer should work with the relevant authorities to secure appropriate mitigation measures to allow the proposal to proceed.

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

1.3.5 EN-2 (Ref 29) sets out planning policy specific to onshore natural gas-fired electricity generating infrastructure. The NPS states in paragraph 2.6.5:

'Natural gas generating stations are likely to emit nitrogen oxides (NOx). To meet the requirements of the Government's legislation on industrial emissions, including Schedule 15 to the Environmental Permitting Regulations 2016 and the Best Available Techniques Conclusions for Large Combustion Plant, natural gas generating stations must apply a range of mitigation to minimise NOx and other emissions.'

1.3.6 Paragraph 2.4.24 states: *'The applicant must carry out an assessment on air quality and greenhouse gas emissions, as required in EN-1, consulting the Environment Agency (EA), Natural Resources Wales (NRW) and other statutory authorities at the initial stages of developing their proposals, as set out Section 4.3 of EN-1.'*

1.3.7 Paragraph 2.5.1 states: *'Mitigations for air quality and greenhouse gas emissions will depend on the type and design of a generating station. However, Selective Catalytic Reduction (SCR) – which reduces NOx by the*

injection of a suitable reagent into flue gas over a catalyst – will have additional adverse impacts for noise and vibration, release of dust and handling of potentially hazardous materials, for example the ammonia used as a reagent.'

Planning Policy in Wales

- 1.3.8 Planning policy in Wales is set out by the Welsh Government in Planning Policy Wales (PPW), the most recent revision of which was published in February 2024 (Ref 30) and is supplemented by a series of Technical Advice Notes and Government Circulars. These documents detail planning policies for Wales, and how these are expected to be applied.
- 1.3.9 Air quality is considered an important element of the natural environment within PPW, setting out a stance on air quality for planning within the context of Welsh air quality standards.

National Development Framework

- 1.3.10 In conjunction with PPW, the National Development Framework (NDF) (published as Future Wales – the National Plan 2040) (Ref 31) set out how the planning system at a national, regional and local level can assist in delivering sustainable improvement.
- 1.3.11 The key policies and paragraphs that are relevant to air quality from PPW and the NDF are listed in **Table 4**.

Table 4: A Summary of National Planning Policy Relevant to Air Quality

Summary of policy	How and where it is considered in the chapter
Planning Policy Wales, Paragraph 6.7.2 states: <i>'National air quality objectives are not 'safe' levels of air pollution. Rather they represent a pragmatic threshold above which government considers the health risks associated with air pollution are unacceptable. Air just barely compliant with these objectives is not 'clean' and still carries long-term population health risks. Nitrogen dioxide and particulate matter, which are the pollutants of primary national concern from a public health perspective, currently have no safe threshold defined and therefore the lower the concentration of those pollutants the lower the risks of adverse health effects. It is desirable to keep levels of pollution as low as possible.'</i>	Throughout Chapter 8: Air Quality (PEIR Volume II) .
Planning Policy Wales, Paragraph 6.7.14 states: <i>'Proposed development should be designed wherever possible to prevent adverse effects to amenity, health and the environment but as a minimum to limit or constrain any effects that do occur. In circumstances where impacts are unacceptable, for example where adequate mitigation is unlikely to be sufficient to safeguard local amenity in terms of air quality and the acoustic environment it will be appropriate to refuse permission.'</i>	Throughout Chapter 8: Air Quality (PEIR Volume II) .
Planning Policy Wales, Paragraph 6.7.26, states: <i>'Planning authorities must consider the potential for temporary environmental risks, including airborne pollution and surface and subsurface risks, arising during the construction phases of development. Where appropriate planning authorities should require a construction management plan, covering pollution</i>	The construction phase assessment in Chapter 8: Air Quality (PEIR Volume II) .

Summary of policy	How and where it is considered in the chapter
<i>prevention, noisy plant, hours of operation, dust mitigation and details for keeping residents informed about temporary risks'</i>	
<p>With respect to air quality, the NDF states: <i>'Taking an integrated approach is also key to ensuring new development provides the critical mass of people needed to help fund and sustain infrastructure and services, as well as ensuring average levels of airborne pollution continue to be reduced'</i></p>	<p>Throughout Chapter 8: Air Quality (PEIR Volume II).</p>

1.4 Local Planning Policy

1.4.1 Local air quality planning policy may be something which the Secretary of State (SoS) considers is both important and relevant to the determination of the application for the Proposed Development. Local air quality planning policy has been reviewed for those authorities within which the Proposed Development is located and authorities which are included within the air quality zone of influence - this includes the Flintshire County Council (FCC) Local Development Plan 2015 – 2030 that was adopted in 2023 (Ref 32).

1.4.2 Policies STR14, PC2 and EN18 are considered to be relevant to the air quality assessment and will be followed.

1.4.3 Policy STR14: Climate Change and Environmental Protection states that *'The Council will seek to mitigate the effects of climate change and ensure appropriate environmental protection in the County through:*

[...]

v. Encouraging energy efficient development, environmentally acceptable renewable and zero/low carbon energy generation and combined heat and power and communal/district heating networks;

vi. Ensuring that new development has regard to the protection of the environment in terms of air, noise and light pollution, unstable and contaminated land and former landfill sites;

vii. Designing development to be adaptable and resilient to future effects of climate change.'

1.4.4 Policy PC2: General Requirements for Development states that *'All development should:*

[...]

b. not have a significant adverse impact on the safety and living conditions of nearby residents, other users of nearby land/property, or the community in general, through increased activity, disturbance, noise, dust, vibration, hazard, or the adverse effects of pollution;

c. take account of personal and community safety and security in its design and layout;

[...]

f. not result in or be susceptible to problems related to foul and surface water drainage, land stability, contamination, flooding, or pollution of light, air and water, either on or off site.'

1.4.5 Policy EN18: Pollution and Nuisance states that:

'New development which is sensitive to the effects of existing noise, vibration, odour, dust, light or other pollution or nuisance, will be permitted only if it can be demonstrated that appropriate measures can be taken to mitigate any potential adverse effects.

New development which would create an increased risk of noise, vibration, odour, dust, light or other pollution or hazard will only be permitted if:

- a. it would not unacceptably harm general amenity or living conditions; and*
- b. it would not impose significant restrictions on the use or development of surrounding land.'*

1.4.6 There is no supplementary planning guidance specific to air quality assessments for FCC.

1.5 Guidance

Statutory guidance

1.5.1 The environmental regulator's guidance on post-combustion carbon dioxide capture (Ref 33) advises that site operators applying for an environmental permit make reference to the following guidance and information. This information has been taken into account in the air quality assessment, but is not statutory guidance for the purposes of Environmental Impact Assessments.

- Air Quality Modelling and Assessment Unit (AQMAU) recommendations for the regulation of impacts to air quality from amine-based post-combustion carbon capture plant. AQMAU-C2025-RP01 (Ref 33);
- Toxicological advice on air pollutants Hazard Ranking of Substances for Development of EALs for Substance Emissions to Air from Carbon Capture Technologies (Ref 34);
- Air Emissions Risk Assessment for your Environmental Permit Guidance ('EPR Risk Assessment Guidance') (Ref 35);
- Environmental permitting: air dispersion modelling reports (Ref 36); and
- UKCCS Research Community - BAT information for Carbon Capture and Storage (CCS) (Ref 37) which includes:
 - BAT Review for New Build and Retrofit Post-Combustion Carbon Dioxide Capture Using Amine-Based Technologies for Power and CHP Plants Fuelled by Gas and Biomass as an Emerging Technology under the IED for the UK (Ref 38); and
 - AQMAU Proposed assessment method to include amines and degradation products in nutrient nitrogen deposition estimations at ecological sites AQMAU-C2600-RP01 (draft) (Ref 39).

- 1.5.2 The NRW EPR Risk Assessment Guidance is applied in relation to Environmental Permit applications in Wales. Though the EPR Risk Assessment Guidance relates to specifically to permitting, it provides useful supplementary information for interpreting the significance of air quality impacts on human health and ecology.

Non-statutory guidance

- 1.5.3 The Institute of Air Quality Management (IAQM) is a professional body that produces guidance on the assessment of air quality impacts. The IAQM guidance as follows has been used in the air quality assessment where statutory guidance is not available:
- Land-Use Planning & Development Control: Planning for Air Quality ('IAQM/EPUK Guidance') (Ref 40);
 - IAQM: A guide to the assessment of air quality impacts on designated nature conservation sites ('IAQM Nature Site Guidance') (Ref 41); and
 - Guidance on the assessment of dust from demolition and construction ('IAQM Construction Dust Guidance') (Ref 42), which provides a framework of methods for the assessment of air quality impacts on amenity.
- 1.5.4 The Department for Environment, Food and Rural Affairs (DEFRA) has published Local Air Quality Management (LAQM) Technical Guidance (TG22) (Ref 43) to assist local authorities in fulfilling their duties in relation to LAQM. Parts of this guidance, and associated tools, are also useful in assessing the impacts of individual developments within the planning process.

2. Noise and Vibration

2.1 Introduction

- 2.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of noise and vibration effects as reported in **Chapter 9: Noise and Vibration (PEIR Volume II)**.
- 2.1.2 The legislation, planning policy context and standards applicable to assessment of noise impacts upon ecological receptors are discussed in Section 4 and 5 of this appendix.

2.2 Legislation

The EIA Regulations

- 2.2.1 The EIA Regulations (Ref 1) state that *'A description of the development, including in particular..... an estimate, by type and quantity, of expected residues and emissions (such as water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases.'* The 'EIA Regulations' continue to state *'A description of the likely significant effects of the development on the environment resulting from, inter alia..... the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste.'*

Environmental Protection Act 1990

- 2.2.2 The Environmental Protection Act 1990 (Ref 17) Part 3 prescribes noise (and vibration) emitted from premises (including land) so as to be prejudicial to health or a nuisance as a statutory nuisance.
- 2.2.3 Local authorities are required to investigate any public complaints of noise and vibration if they are satisfied that a statutory nuisance exists, or is likely to occur or recur, and that they shall serve a noise abatement notice. A notice is served on the person responsible for the nuisance. It requires either simply the abatement of the nuisance or works to abate the nuisance to be undertaken, or it prohibits or restricts the activity. Contravention of a notice without reasonable excuse is an offence. Right of appeal to the Magistrates Court exists within 21 days of the serving of a noise abatement notice.
- 2.2.4 In determining if a noise complaint amounts to a statutory nuisance, the local authority can take account of various guidance documents and existing case law; no statutory noise limits exist. Demonstrating the use of 'Best Practicable Means' (BPM) to minimise noise levels is an accepted defence against a noise abatement notice.

Control of Pollution Act 1974

- 2.2.5 Sections 60 and 61 of the Control of Pollution Act 1974 (COPA) (Ref 44) provide the main legislation regarding demolition and construction site noise and vibration. If noise complaints are received, a Section 60 notice may be

issued by the Local Planning Authority (LPA) with instructions to cease work until specific conditions to reduce noise have been adopted.

- 2.2.6 Section 61 of the COPA provides a means for applying for prior consent to undertake noise generating activities during construction. Once prior consent has been agreed under Section 61, a Section 60 notice cannot be served provided the agreed conditions are maintained on-site.
- 2.2.7 The COPA requires that BPM (as defined in Section 72 of COPA) be adopted for construction noise on any given site. COPA makes reference to British Standard (BS) 5228 (British Standards Institute (BSI), 2014a and b) as BPM.

Environmental Permitting Regulations 2016 (Ref 45)

- 2.2.8 The Environmental Permitting Regulations require the application of BAT to activities performed within installations regulated by the legislation to manage the impact of these operations on the surrounding environment. This therefore just applies to the Proposed Development operational period and not the construction phase.
- 2.2.9 In terms of noise, the selection of BAT has to be considered and balanced with releases to different environmental media (air, land and water) and to give due consideration to issues such as the usage of energy and raw materials. Noise, therefore, cannot be considered in isolation from other potential impacts on the environment.
- 2.2.10 The definition of pollution includes “*emissions which may be harmful to human health or the quality of the environment, cause offence to human senses or impair or interfere with amenities and other legitimate uses of the environment*”. BAT is therefore likely to be similar, in practice, to the requirements of the Statutory Nuisance legislation which requires the use of BPM to prevent or minimise noise nuisance. In the case of noise, “*offence of any human senses*” may be judged by the likelihood of complaints. However, the lack of complaint should not necessarily imply the absence of a noise problem. In some cases, it may be possible, and desirable, to reduce noise emissions still further at reasonable costs and this may therefore be BAT for noise emissions. Consequently, the aim of BAT should be to ensure that there is no reasonable cause for annoyance to persons beyond the installation boundary.
- 2.2.11 Guidance regarding Environmental Permitting and noise is available in the EA's 'Noise and Vibration Management: Environmental Permits' (Ref 46) which was last updated in January 2022 and the Method Implementation Document (MID) for BS 4142 published 27 March 2023 (Ref 47). These have both been adopted by NRW.

2.3 National Planning Policy

Overarching NPS for Energy (EN-1)

- 2.3.1 Section 5.12 of EN-1 (Ref 28) relates to noise and vibration and retains the reference to the Noise Policy Statement for England. Paragraph 5.12.7 states that “*the nature and extent of the noise assessment should be proportionate to the likely noise impact*”.

- 2.3.2 At paragraph 5.12.15, with regards decision making, EN-1 states *“The project should demonstrate good design through selection of the quietest or most acceptable cost-effective plant available; containment of noise within buildings wherever possible, taking into account any other adverse impacts that such containment might cause (e.g. on landscape and visual impacts; optimisation of plant layout to minimise noise emissions; and, where possible, the use of landscaping, bunds or noise barriers to reduce noise transmission)”*.

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

- 2.3.3 Paragraph 2.5.10 of EN-2 states *“As described in Section 5.12 of EN-1, the primary mitigation for noise from natural gas electricity generating stations is through good design, including enclosure of plant and machinery in noise-reducing buildings wherever possible and to minimise the potential for operations to create noise. Noise from gas turbines should be mitigated by attenuation of exhausts to reduce any risk of low-frequency noise transmission.”*
- 2.3.4 Paragraph 2.5.11 of EN-2 states *“Noise from apparatus external to the main plant may be unavoidable. This can be mitigated through careful plant selection.”*

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

Liquefied Natural Gas (LNG) Import Facilities

- 2.3.5 Paragraph 2.13.8 of EN-4 (Ref 48) states *“LNG import facilities will be located in coastal regions. Noise sources will include process plant, including compressors”*.
- 2.3.6 Paragraph 2.13.9 states *“In addition, noise may be generated by the LNG pumps located on board the LNG tankers, and this source of noise, including its underwater noise impacts, should be included in a noise assessment”*.
- 2.3.7 Paragraph 2.13.10 states the Environmental Statement (ES) *“must include an assessment of noise and vibration effects including the specific issues outlined above, where they are relevant”*.

Natural Gas Reception Facilities

- 2.3.8 Paragraph 2.17.11 states *“Gas reception facilities may be located in coastal regions and sources of noise will include above ground pipework, compressors (usually located in buildings) and process equipment such as heaters and inter-stage coolers”*.
- 2.3.9 Paragraph 2.17.12 states *“The compressors may either be electric motor or gas turbine driven. Electric motors are preferable in terms of environmental noise considerations”*.
- 2.3.10 Paragraph 2.17.13 states *“Where gas turbines are used, the gas turbine exhausts may be a significant source of low frequency noise unless adequately controlled. Control valves may also be a source of noise which can be radiated by the associated pipework systems”*.

2.3.11 Paragraph 2.17.14 states *“The ES must include an assessment of noise and vibration effects including the specific issues outlined above, where they are relevant”*.

Natural Gas and Oil Pipelines

2.3.12 There are specific noise and vibration considerations in EN-4 which apply to gas and oil pipelines during the pre-construction and construction phases.

2.3.13 Paragraph 2.21.17 states *“The applicant will need to identify all the noise and vibration sensitive receptors likely to be affected during these phases and consider any associated pipeline maintenance or protection that may be additionally required”*.

2.3.14 Paragraph 2.21.18 states *“During the pre-construction phase there could be vibration effects from seismic surveys. During construction, tasks may include site clearance, soil movement, ground excavation, tunnelling, trenching, pipe laying and welding, and ground reinstatement”*.

2.3.15 Paragraph 2.21.19 states *“In addition, increased HGV traffic may be generated on local roads by the movement of materials. These types of noise and vibration impacts will need to be assessed”*.

2.3.16 Paragraph 2.21.20 states *“The commissioning of a new pipeline can involve extensive periods of drying after hydrotesting, using air compressors, and noise mitigation may be required for this type of activity”*.

2.3.17 Paragraph 2.21.21 states *“A new gas pipeline may require an above ground installation such as a gas compression station on the route of the pipeline to boost transmission line pressure; these should be outside of protected landscapes wherever possible”*.

2.3.18 Paragraph 2.21.22 states *“A new oil pipeline may require pumping stations. These may be located in quiet rural areas, and therefore the control of noise from these facilities is likely to be an important consideration”*.

2.3.19 With regard to mitigation, the EN-4 states that *“Applicants should consider the following design measures which are typically taken to mitigate noise for gas supply and storage infrastructure:*

- *acoustic cladding for buildings;*
- *the use of sound attenuators on ventilation systems;*
- *acoustic lagging on pipework, multi-stage (inherently quiet) control valves;*
- *gas turbine exhaust silencers; and*
- *acoustic enclosures on pumps and low-speed cooler fans.”*

NPS for Electricity Networks Infrastructure (EN-5)

2.3.20 EN-5 (Ref 49) states the following with regard to noise impacts from electricity network infrastructure.

2.3.21 Paragraph 2.9.26 states *“All high voltage transmission lines have the potential to generate noise under certain conditions”*.

- 2.3.22 Paragraph 2.9.39 states *“For the assessment of noise from substations, standard methods of assessment and interpretation using the principles of the relevant British Standards¹⁷ are satisfactory”*.
- 2.3.23 Paragraph 2.9.40 states *“For the assessment of noise from overhead lines, the applicant must use an appropriate method to determine the sound level produced by the line in both dry and wet weather conditions, in addition to assessing the impact on noise-sensitive receptors”*.
- 2.3.24 Paragraph 2.9.41 states *“For instance, the applicant may use an appropriate noise modelling tool or tools for the prediction of overhead line noise and its propagation over distance”*.
- 2.3.25 Paragraph 2.9.42 states *“When assessing the impact of noise generated by overhead lines in wet weather relative to existing background sound levels, the applicant should consider the effect of varying background sound levels due to rainfall”*.
- 2.3.26 With regard to mitigation for electricity infrastructure EN-5 states in paragraph 2.10.9 that *“Applicants must consider the following measures:*
- *the positioning of lines to help mitigate noise;*
 - *ensuring that the appropriately sized conductor arrangement is used to minimise potential noise;*
 - *quality assurance through manufacturing and transportation to avoid damage to overhead line conductors which can increase potential noise effects;*
 - *ensuring that conductors are kept clean and free of surface contaminants during stringing/installation; and*
 - *the selection of quieter cost-effective plants”*.

Noise and Soundscape Action Plan, 2018-2023

- 2.3.27 The Noise and Soundscape Action Plan (Ref 48) sets the plans to meet the obligations described in the Environmental Noise (Wales) Regulations 2006 as amended by the Environmental Noise (Wales) (Amendment) Regulations 2009 (Ref 51). The plan includes national well-being goals related to noise and soundscapes, including goals relating to industrial noise in Wales.

Planning Policy Wales, Edition 12 (February 2024)

- 2.3.28 PPW sets the land use policies of the Welsh Government. It is supplemented by the Technical Advice Notes (TANs) and other documents to provide a policy framework for Wales.
- 2.3.29 Paragraph 5.9.20 highlights the need to minimise impacts of Renewable and Low Carbon infrastructure on local communities, such as noise and air pollution, to safeguard the quality of life for existing and future generations.
- 2.3.30 Paragraph 6.7.18 states that early consideration is required to ascertain whether the location and design of proposed development is acceptable where air pollution or noise generating development is likely to affect a protected species or a tranquil urban green space.

- 2.3.31 Paragraph 6.7.21 states regard should be paid to current air quality and noise levels and the quality of the existing soundscape and account taken of any relevant local air quality action plan, noise action plan and/ or local or regional AQS as part of development strategies and proposals in development plans and before determining planning application.

Technical Advice Note (TAN) 11: Noise

- 2.3.32 TAN 11 (Ref 53) outlines some of the main considerations which local planning authorities should consider when determining planning applications for development, which will either generate noise or be exposed to existing noise sources.
- 2.3.33 TAN 11 was updated in a letter to Local Authorities in November 2016 to address the need to update the supporting legislation and underpinning British Standards to the latest and more up to date versions.
- 2.3.34 For the assessment of industrial noise TAN 11 makes reference to BS 4142:2014, Methods for rating and assessing industrial and commercial sound.
- 2.3.35 For the assessment of construction noise TAN 11 makes reference to BS 5228-1:2009+A1:2014, Code of practice for noise and vibration control on construction and open sites.
- 2.3.36 An update to TAN11 has undergone consultation. The draft version issued for consultation has been reviewed. The new draft TAN 11 supports the placemaking focus of PPW by elaborating on air quality, noise and soundscape in more detail.

2.4 Local Planning Policy

Flintshire Local Development Plan 2015 – 2030

- 2.4.1 Flintshire Local Development Plan is intended to promote sustainable development for 15 years. It contains policies relevant for the Proposed Development, namely Policy STR14 on Climate Change and Environmental Protection and EN18 on Pollution and Nuisance.
- 2.4.2 Policy STR14: Climate Change and Environmental Protection states that '*The Council will seek to mitigate the effects of climate change and ensure appropriate environmental protection in the County through:*

[...]

v. Encouraging energy efficient development, environmentally acceptable renewable and zero/low carbon energy generation and combined heat and power and communal/district heating networks;

vi. Ensuring that new development has regard to the protection of the environment in terms of air, noise and light pollution, unstable and contaminated land and former landfill sites;

vii. Designing development to be adaptable and resilient to future effects of climate change.'

- 2.4.3 With reference to new noise generating development, Policy EN18: Pollution and Nuisance states that:

“New development which would create an increased risk of noise, vibration, odour, dust, light or other pollution or hazard will only be permitted if:

- a. it would not unacceptably harm general amenity or living conditions; and*
- b. it would not impose significant restrictions on the use or development of surrounding land”.*

2.5 Guidance

British Standard 7445-1:2003 and 7445-2:1991

- 2.5.1 BS 7445 ‘Description and Measurement of Environmental Noise’ (Ref 54; Ref 55) defines parameters, procedures and instrumentation required for noise measurement and analysis.

British Standard 5228:2009+A1:2014

- 2.5.2 BS 5228-1 ‘Code of Practice for Noise and Vibration Control on Construction and Open Sites. Noise’ (Ref 56) provides a ‘best practice’ guide for noise control and includes sound power level (L_w) data for individual plant as well as a calculation method for noise from construction activities.
- 2.5.3 BS 5228-2 ‘Code of Practice for Noise and Vibration Control on Construction and Open Sites. Vibration’ (Ref 57) provides comparable ‘best practice’ for vibration control, including guidance on the human response to vibration.

British Standard 6472:2008

- 2.5.4 BS 6472-1 ‘Guide to Evaluation of Human Exposure to Vibration in Buildings Part 1: Vibration Sources other than Blasting’ (Ref 58) presents recommended frequency weighted vibration spectra (for continuous vibration) and vibration dose values (VDV) (for intermittent vibration) above which adverse comment is likely to occur in residential properties.

British Standard 7385:1993

- 2.5.5 BS 7385-2 ‘Evaluation and Measurement for Vibration in Buildings. Guide to Damage Levels from Groundborne Vibration’ (Ref 59) presents guide values for transient and continuous vibration, above which there is a likelihood of cosmetic damage. The standard establishes the basic principles for carrying out vibration measurements and processing the data, with regard to evaluating vibration effects on buildings.

British Standard 4142:2014+A1:2019

- 2.5.6 BS 4142 ‘Methods for Rating and Assessing Industrial and Commercial Sound’ (Ref 60) can be used for assessing the effect of noise of an industrial nature, including mechanical services plant noise. The method compares the difference between ‘rating level’ of the industrial noise, with the ‘background sound level’ at the receptor position.

ISO 9613-2:2024: Attenuation of Sound during Propagation Outdoors

- 2.5.7 'Attenuation of Sound during Propagation Outdoors, Part 2: General Method of Calculation' (Ref 61) specifies an engineering method for calculating the attenuation of sound during propagation outdoors to predict the levels of environmental noise at a distance from a variety of sources. ISO 9613-2:2024 is used in the noise modelling software used for the noise assessment as presented in **Chapter 9: Noise and Vibration (PEIR Volume II)**.

Calculation of Road Traffic Noise

- 2.5.8 Department for Transport (DfT)/Welsh Office Memorandum 'Calculation of Road Traffic Noise' (CRTN) (Ref 62) describes procedures for traffic noise calculation and measurement and is suitable for environmental assessments of schemes where road traffic noise may have an effect.

Design Manual for Road and Bridges LA 111

- 2.5.9 The National Highways 'Design Manual for Road and Bridges (DMRB) LA 111 (Revision 2) Noise and Vibration' (Ref 63) provides guidance on the appropriate level of assessment to be used when assessing the noise and vibration effects arising from road projects, including new construction, improvements and maintenance. The guidance is also useful for assessing changes in traffic noise levels as a result of non-road projects such as the Proposed Development.

World Health Organization Guidelines

- 2.5.10 The WHO 'Environmental Noise Guidelines for the European Region' (Ref 64) provides recommendations to protect human health from noise from transportation, wind turbines and leisure. These guidelines do not cover industrial noise however, the WHO recommends that 'Guidelines for Community Noise' (Ref 65) should remain valid. This recommends external daytime and evening environmental noise limits, and internal night-time limits to avoid sleep disturbance.
- 2.5.11 The WHO 'Night Noise Guidelines for Europe' (Ref 66) recommend updated guidelines on night-time noise limits to avoid sleep disturbance.

Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Noise Impact Assessment

- 2.5.12 The IEMA 'Guidelines for Environmental Noise Impact Assessment' (2014) (Ref 67) provide criteria for the assessment of magnitude of impacts due to noise level changes from a project.

3. Traffic and Transport

3.1 Introduction

- 3.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of traffic and transportation effects as reported in **Chapter 10: Traffic and Transport (PEIR Volume II)**.

3.2 Legislation

The EIA Regulations

- 3.2.1 The EIA Regulations (Ref 1) set out the EIA process which must identify, describe, and assess potential significant effects of proposed developments on a number of factors. Whilst not explicitly mentioning traffic and transport, it is common practice for these effects to be considered within an EIA.

Well-being of Future Generations (Wales) Act 2015

- 3.2.2 The Wellbeing of Future Generations (Wales) Act 2015 (Ref 68) has resulted in Welsh Government outlining seven goals in a 'wellbeing statement' (published in 2017) that contribute to sustainable development and details the aims to improve economic, social, environmental and cultural wellbeing of Wales for future generations. The Wellbeing of Future Generations (Wales) Act 2015 places a duty on local authorities to set wellbeing objectives and contribute to achieving the seven well-being goals, which are:

- a prosperous Wales;
- a resilient Wales;
- a healthier Wales;
- a more equal Wales;
- a Wales of cohesive communities;
- a Wales of vibrant culture and thriving Welsh language; and
- a globally responsible Wales.

- 3.2.3 The seven goals form the basis for twelve objectives, also detailed in the wellbeing statement. Several of these are directly relevant to transport as follows:

- drive sustainable growth and combat climate change;
- promote good health and well-being for everyone;
- build healthier communities and better environments; and
- deliver modern and connected infrastructure.

Active Travel (Wales) Act 2013

- 3.2.4 The Active Travel (Wales) Act 2013 (Ref 69) became law in Wales in November 2013. The Act makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel, and to build and

improve their infrastructure for walking and cycling every year. It also requires both the Welsh Government and local authorities to promote walking and cycling as a mode of transport.

- 3.2.5 The Act is accompanied by a statutory design guidance document, published in December 2014, which provides advice on the planning, design, construction and maintenance of active travel networks and infrastructure, and is to be used at all stages of the process.

3.3 National Planning Policy

Planning Policy Wales – Edition 12

- 3.3.1 PPW sets out the land use planning policies of the Welsh Government and aims 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, as required by the Planning (Wales) Act 2015, the Well-being of Future Generations (Wales) Act 2015 and other key legislation. The PPW sets out how the planning system at a national, regional and local level can assist in delivering these requirements through Strategic Development Plans (SDPs) and Local Development Plans (LDPs).
- 3.3.2 Paragraph 4.1.11 states “*Development proposals must seek to maximise accessibility by walking, cycling and public transport, by prioritising the provision of appropriate on-site infrastructure and, where necessary, mitigating transport impacts through the provision of off-site measures, such as the development of active travel routes, bus priority infrastructure and financial support for public transport services.*”
- 3.3.3 Paragraphs 4.1.56 to 4.1.57 identify the requirements for development proposals to be accompanied by an appropriate level of transport assessment. It directs professionals to the TAN 18 for guidance on the preparation and content of assessments.

Wales Transport Strategy (2021)

- 3.3.4 The Wales Transport Strategy 2021 (WTS) (Ref 70) was published in March 2021 and provides a long-term vision for transport over the next 20 years. The vision of the WTS is “*an accessible, sustainable and efficient transport system.*” In order to deliver its vision, the WTS sets out three priorities:
- Priority 1 – Bring services to people in order to reduce the need to travel;
 - Priority 2 – Allows people and goods to move easily from door to door by accessible, sustainable transport; and
 - Priority 3 – Encourage people to make the change to more sustainable transport.

Technical Advice Note (TAN) 18: Transport, Welsh Government (2007)

- 3.3.5 TAN 18 (Ref 71) was published in March 2007 and describes how to integrate land use and transport planning and explains how transport impacts should

be assessed and mitigated. It supports and should be read in conjunction with PPW.

- 3.3.6 The integration of land use and transport planning forms part of an overall sustainable development approach by the Welsh Government towards strategy and policy objectives. This is predominantly through maximising the accessibility of developments by sustainable modes of transport. This also includes reducing the need to travel and encouraging multi-purpose trips. Accessibility is defined in TAN 18 as *“the relative ability to take up services, markets or facilities”*.
- 3.3.7 Section 5 requires all new development to be designed in a way that is inclusive for all. The design of a development also plays an important role in providing genuine alternatives to car travel.
- 3.3.8 Section 6 highlights the ability for walking and cycling to replace shorter car journeys, as well as the ways in which developments can encourage this. This includes the creation and protection of safe and legible pedestrian and cycle routes along key desire lines, and the provision of cycle parking and facilities.
- 3.3.9 Paragraph 9.2 states that *“developers should be required by local authorities to submit transport assessments to accompany planning applications for developments that are likely to result in significant trip generation.”*

Overarching NPS for Energy (EN-1)

- 3.3.10 The most relevant paragraphs for the transport assessment within EN-1 are as follows:
- 5.14.5: *“If a project is likely to have significant transport implications, the applicant’s ES (see Section 4.3) should include a transport appraisal.”*
 - 5.14.7: *“The applicant should prepare a travel plan including demand management and monitoring measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by active, public and shared transport to:*
 - *reduce the need for parking associated with the proposal;*
 - *contribute to decarbonisation of the transport network;*
 - *reduce the need to travel; and*
 - *secure behavioural change and modal shift through an offer of genuine modal choice and to mitigate transport impacts.”*
 - 15.4.21: *“The Secretary of State should only consider refusing development on highways grounds if there would be an unacceptable impact on highway safety, residual cumulative impacts on the road network would be severe, or it does not show how consideration has been given to the provision of adequate active public or shared transport access and provision.”*

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

- 3.3.11 EN-2 sets out planning policy specific to onshore natural gas-fired electricity generating infrastructure. In relation to transport, EN-2 states that new natural gas electricity generating stations need to be accessible for the delivery and removal of construction materials. These stations should also be located in the vicinity of existing transport routes wherever possible and be suitably accessed from the main highway network.
- 3.3.12 The Main Site is located in good proximity to local transport networks and can be accessed directly via the strategic road network.

NPS for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

- 3.3.13 EN-4 should be read in conjunction with EN-1 and provides the primary basis for the decisions made regarding gas and oil infrastructure. There is no specific mention of the traffic and transport impacts within EN-4 beyond a reference back to EN-1 and an acknowledgment in Section 2.20 of increased heavy goods vehicle (HGV) traffic resulting in a potential noise and vibration impact.

NPS for Electricity Networks Infrastructure (EN-5)

- 3.3.14 EN-5 should be read in conjunction with EN-1 and sets out how applications for electricity networks are assessed, with no specific reference to traffic and transportation.

3.4 Local Planning Policy

Flintshire Local Development Plan (LDP) 2015-2030

- 3.4.1 The Flintshire LDP was adopted in 2023 and covers the period 2015 to 2030, providing a planning framework to address issues and opportunities within Flintshire, and enable the delivery of sustainable development. The area of Connah's Quay is outlined as a 'Main Service Centre' within the Plan Strategy for the LDP.
- 3.4.2 The LDP sets out the following vision "*The LDP is about people and places. It seeks to achieve a sustainable and lasting balance between the economic, social, and environmental needs of Flintshire and its residents, through realising its unique position as a regional gateway and area for economic investment, whilst protecting its strong historic cultural heritage and natural environment.*"
- 3.4.3 In order to achieve this vision, the LDP sets out a number of strategic objectives, the following of which are relevant to transport:
- "*Promote a sustainable and safe transport system that reduces reliance on the car.*"
 - "*Facilitate the provision of necessary transport, utility and social / community infrastructure.*"

- *Create places that are safe, accessible and encourage and support good health, well-being and equality.*
 - *Minimise the causes and impacts of climate change and pollution.”*
- 3.4.4 Policy STR5 ‘Transport and Accessibility’ sets out the following requirements for new development and associated transport infrastructure, in order to ensure sustainable economic growth and development can be delivered:
- *“Facilitate accessibility to employment, homes, services, and facilities by locating development in places with access to integrated transport infrastructure, thereby reducing the need to travel;*
 - *Promote the implementation of an integrated transport solution in Flintshire, involving road, rail, bus, park and ride / share and active travel improvements;*
 - *Promote road and rail improvements to support Flintshire’s sub-regional role as a strategic gateway and hub;*
 - *Ensure that the local highway network either has, or can be upgraded to provide capacity to accommodate sustainable levels of development;*
 - *Facilitate improvements to the quality, attractiveness and availability of public transport options;*
 - *Provide walking and cycling routes, linking in with active travel networks and green infrastructure networks;*
 - *Adopt a sustainable approach to the design, function and layout of new development, including providing appropriate levels of parking;*
 - *Support the movement of freight by rail or water.”*
- 3.4.5 Policy PC5 ‘Transport and Accessibility’ sets out similar requirements to that of Policy STR5, in relation to proposals for new development. Policy PC5 sets out the need for new developments to be supported by appropriate levels of transport infrastructure, including ensuring good access to more sustainable modes of travel.
- 3.4.6 Policy PC6 ‘Active Travel’ sets out the requirement for proposals to ensure people have access to employment, education, healthcare and other essential services and facilities, through the provision of appropriate walking and cycling routes, as well as incorporation of existing routes, such as the public rights of way (PRoW) network.

Cheshire West & Chester Council Local Plan 2015-2030

- 3.4.7 The Cheshire West and Chester Local Plan was adopted in January 2015 and covers the period 2015 to 2030, providing the overall vision, strategic objectives, spatial strategy and strategic planning policies for the area.
- 3.4.8 The Local Plan sets out a vision for Cheshire West and Chester to be a desirable and attractive place to live, work, learn and visit, with development reflecting the local area character whilst managing and enhancing the natural and historical environments. In relation to Ellesmere Port, the vision is for a *“confident industrial area, a hub for high quality industries and technologies including the green energy and waste sector, attracting inward investment.*

Perceptions of the town will be enhanced as a result of improvements to the image of the town as a prosperous area.”

3.4.9 In order to achieve this vision, the Local Plan sets out a number of strategic objectives, the following of which are relevant to transport:

- *“SO4: Provide and develop reliable, efficient transport networks that support sustainable growth and improve accessibility to jobs and services”*; and
- *“SO8: Create stronger, safer and healthier communities by enabling access to leisure, recreational and community facilities and promoting walking and cycling.”*

3.4.10 Policy STRAT 10 ‘Transport and Accessibility’ sets out the requirements for new development and associated transport infrastructure. Policy STRAT 10 highlights the need for new developments to be supported by appropriate levels of transport infrastructure, including ensuring good access to more sustainable modes of travel. Additional traffic should be accommodated safely and satisfactorily within the existing, or proposed, highway network.

North Wales Joint Local Transport Plan (LTP) 2015

3.4.11 The LTP (Ref 72) was published in January 2015. It sets out the vision and objectives for transport in North Wales area and provides a short and long term programme of interventions to work towards achieving these goals. The short-term programme sets out those schemes that are priorities for the next five years up to 2020. The longer-term programme identifies aspirations up to 2030.

3.4.12 The vision of the LTP is *“The North Wales Local Authorities aim to remove barriers to economic growth, prosperity and wellbeing by delivering safe, sustainable, affordable and effective transport networks.”*

3.5 Guidance

IEMA Guidelines on Environmental Assessment of Traffic and Movement, July 2023

3.5.1 IEMA published the Guidelines on: Environmental Assessment of Traffic and Movement in July 2023 (IEMA, 2023) (Ref 73) which set out two broad rules of thumb that are applied as criteria which can be used to assist in defining the scale and extent of environmental impacts:

- include highway links where traffic flows will increase by more than 30% (or the number of HGVs would increase by more than 30%); and
- include highway links of high sensitivity where traffic flows have increased by 10% or more.

Department for Transport, 2023; Transport Analysis Guidance (TAG) Unit M4 – Forecasting and Uncertainty

3.5.2 TAG Unit M4 – Forecasting and Uncertainty has been produced by the Department for Transport (DfT) with the purpose of providing practical

guidance for forecasting the impact of transport projects including option testing and appraisal.

- 3.5.3 The Guidance includes considerations regarding the production of forecast years, which sets out that forecast years should generally be chosen as far into the future as possible.
- 3.5.4 The Guidance also references the use of TEMPRO for the purpose of analysing traffic growth, to feed into future year assessments. Guidance is provided in relation to applying alternative assumptions, to exclude development sites which have been considered separately as committed development. The Transport and Traffic Chapter discusses use of TEMPRO, with reference to TAG Unit M4.

4. Terrestrial and Aquatic Ecology

4.1 Introduction

- 4.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of terrestrial and aquatic ecology effects as reported in **Chapter 11: Terrestrial and Aquatic Ecology (PEIR Volume II)**.

4.2 Legislation

Habitats Regulations (as amended) (Conservation of Habitats and Species Regulations 2017)

- 4.2.1 The Conservation of Habitats and Species Regulations 2017 (Habitats Regulations) (Ref 74) consolidate the Conservation of Habitats and Species Regulations 2010 (Ref 75) with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive) (Ref 76) into national law. They also transpose elements of Directive 2009/147/EC on the Conservation of Wild Birds (the Birds Directive) in England and Wales (Ref 77).
- 4.2.2 All species listed under Annex IV of the Habitats Directive require strict protection and are known as European Protected Species (EPS). Under Regulation 42 of the Habitats Regulations, it is unlawful to: deliberately kill, capture or disturb; deliberately take or destroy the eggs of; and damage or destroy the breeding site/resting place of any species protected under this legislation.

Wildlife and Countryside Act 1981 (as amended)

- 4.2.3 The Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref 78) is the primary legislation for the protection of animals, plant and habitats within the UK. It was enacted to comply with European and International conventions on wildlife conservation, regulating the introduction of non-native species, enhancing the protection of Sites of Special Scientific Interest (SSSIs) and builds on the national Parks and Access to the Countryside Act 1949 (Ref 79).
- 4.2.4 Part 1 of the WCA affords general protection to all species of wild bird, and specific protection to flora and fauna listed in Schedules 1 (birds protected by special penalties), five (other animals), and eight (flora, fungi and lichens). It is an offence (subject to exceptions) to:
- kill, injure, or take any wild bird;
 - take, damage or destroy the nest of any wild bird while that nest is in use or being built;
 - take or destroy an egg of any wild bird;
 - disturb any wild bird listed on Schedule 1 of the WCA while nesting, or disturb the dependent young of such a bird (e.g. quail);

- kill, injure or take any wild animal listed on Schedule 5 (e.g. bats, great crested newt (*Triturus cristatus*), common lizard (*Zootixa vivipara*));
 - damage, destroy or obstruct places used for shelter or protection by wild animals listed on Schedule 5 and covered by Part 4A of the WCA (e.g. bats and great crested newt);
 - intentionally disturb wild animals listed in Schedule 5, and covered by Part 4A of the WCA, that are occupying places of shelter and protection (e.g. bats and great crested newt); and
 - pick, uproot or destroy any plant, fungi or lichen listed in Schedule 8.
- 4.2.5 In certain circumstances, protected species licences can be granted to permit some actions prohibited under the WCA. Schedule 9 provides lists of non-native flora and fauna that it is an offence to release or cause to spread in the wild. Of primary relevance in the context of proposed developments are flora e.g. invasive non-native plant species.
- 4.2.6 Part 2 of the WCA details the law regarding SSSIs and other protected areas within Great Britain.

Environment Act 2021

- 4.2.7 The Environment Act 2021 is a UK law that sets out principles of environmental governance, waste and resource efficiency, air quality, water, nature, biodiversity and environment. It acts as the UK's framework on environmental protection. It strengthens the biodiversity duty set out in Section 40 of the Natural Environment and Rural Communities Act 2006 (NERC) (Ref 80) requiring authorities to both conserve and enhance biodiversity. The current biodiversity target is '*to halt the decline in species populations by 2030, and then increase populations by at least 10% to exceed current levels by 2042*'.
- 4.2.8 Biodiversity Net Gain will become a statutory requirement for NSIPs from November 2025. For the Proposed Development, the requirement for a Net Benefit to Biodiversity, as stipulated in PPW, is particularly relevant. Furthermore, it is essential to consider the Section 6 Duty in the Environment (Wales) Act 2016, which requires public bodies to seek to maintain and enhance biodiversity while carrying out their functions, further supporting the commitment to environmental protection and enhancement.

Environment (Wales) Act 2016

- 4.2.9 This Environment (Wales) Act 2016 looks at the planning and managing of Wales' natural resources at both a national and local level in a sustainable way. It supersedes the NERC Act 2006 in Wales. The Act provides an iterative framework that ensures that managing our natural resources sustainably will be a core consideration in decision-making. The Environment (Wales) Act 2016 introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty). This duty applies to public authorities in the exercise of their functions in relation to Wales and will help maximise contributions to achieving the wellbeing goals. Section 7 of the Act requires Welsh Ministers to publish and maintain lists of species and types of habitats that are regarded as of

'principal importance' for the purpose of maintaining and enhancing that biodiversity.

Countryside and Rights of Way Act 2000

- 4.2.10 The Countryside and Rights of Way (CRoW) Act 2000 for England and Wales (Ref 81) was put in place to help improve access to open countryside and registered common land. It strengthens the protection that was already established in the WCA allowing for prosecution of third parties for wildlife crime. It provides greater protection to wildlife and natural features by making provision for the conservation of biological diversity. Schedule 9 of the Act amends SSSI provisions by improving protection for SSSIs in Wales and Schedule 12 of the CRoW Act amends the species provisions strengthening the legal protection for threatened species allowing greater enforcement of wildlife legislation.
- 4.2.11 The Protection of Badgers Act 1992 (Ref 82) sets out animal welfare legislation to protect badgers and their setts. It makes it illegal to capture, injure or kill a badger, be in possession of a badger live or dead or destroy and/or obstruct access to an active badger sett.

The Hedgerows Regulations 1997

- 4.2.12 The Hedgerows Regulations 1997 (Ref 84) prohibit the removal of countryside hedgerows, or parts of them, without first seeking approval from the local authority. Owners and managers must request permission from their local authority to remove a hedgerow and permission may not be granted if it meets certain criteria set out in the Part II of Schedule 1 of the Hedgerows Regulations 1997. As of March 2024, an update states there must now be a 2 metre (m) buffer strip from the centre of hedgerows with no cultivation or application of pesticides or fertilisers, and a hedge cutting ban between 1 March and 31 August to protect nesting birds.

Wild Mammals (Protection) Act 1996

- 4.2.13 The Wild Mammals (Protection) Act 1996 (Ref 85) provides protection for wild mammals against certain acts of deliberate harm. "Wild mammal" means any mammal which is not a "protected animal" within the meaning of the Animal Welfare Act 2006 (Schedule 3, Section 13 of the 2006 Act). The following offences are specified in relation to any wild mammal: to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate. The offences require proof of intent to inflict unnecessary suffering

Protection of Badgers Act 1992 (as amended)

- 4.2.14 Badgers and their setts are protected under the Protection of Badgers Act 1992 (as amended) (Ref 82). This makes it an offence to wilfully kill, injure or take a badger; or intentionally or recklessly damage, destroy or obstruct access to a badger sett or disturb a badger in its sett.
- 4.2.15 It is not illegal to carry out disturbance activities near setts that are not occupied, i.e. those that do not show signs of current use.
- 4.2.16 Where required, licences for development activities involving disturbance or sett interference or closure are issued by Natural Resources Wales.

- 4.2.17 The badger Trust has provided guidance on working close to badger setts and the methods that can be employed to avoid or minimise impacts to active badger setts (Ref 83).

Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

- 4.2.18 The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (WFD Regulations 2017) Ref 86) transposes the EU Water Framework Directive (2000/60/EC) into UK legislation. The regulations provide a framework for improving and protecting the water environment in England and Wales and introduced a comprehensive river basin management system. The river basin management system protects and improves ecological and chemical health of estuaries and coastal waters (as well as rivers, lakes and groundwater). The regulations put in place specific objectives and measures for the environmental health of individual waterbodies in a 6-yearly planning process. At the heart of the Water Framework Directive (WFD) is the philosophy to "make waterbodies better" through sustainable development for the joint benefits of aquatic habitats and the human environment. These WFD Regulations 2017 apply to surface waters and groundwater to prevent the deterioration of aquatic ecosystems by protecting, enhancing and restoring water bodies to 'good' status and achieve compliance with standards and objectives for protected areas.
- 4.2.19 For surface water, overall status comprises two elements: "good ecological status" and "good chemical status". Ecological status is defined by the biological condition or health of a watercourse, in combination with water quality and physical conditions that underpin biological conditions. The classification of ecological status considers biological elements (the abundance of aquatic flora and fauna), physical habitat availability (hydromorphology), and water quality factors such as the availability of nutrients, salinity, temperature, and pollution by key chemical pollutants. The biological elements used as indicators of ecological quality include fish, macroinvertebrates, macrophytes and diatoms.
- 4.2.20 Compliance with the WFD means attainment of good ecological status, prevention of deterioration in status, and prevention of failure to achieve future attainment of good status where it is not already achieved within waterbodies. However, WFD Article 4.7 provides legislation for exemption conditions that could allow implementation of schemes that cause deterioration in ecological status, for example for reasons of overriding public interest.

The Water Framework Directive (Standards and Classifications) Directions (England and Wales) 2015

- 4.2.21 This legislation (Ref 87) provides the directions for classifying the ecological status of surface water and groundwater bodies.

Salmon and Freshwater Fisheries Act 1975 (as amended) (SAFFA)

- 4.2.22 The SAFFA (Ref 88) covers regulation of fisheries in England and Wales and includes legislation that covers the introduction of polluting effluents, the

obstruction of fish passage (screens, dams, weirs, culverts etc), illegal means of fishing, permitted times of legal fishing and fishing licencing (which covers electric fishing).

Eels (England and Wales) Regulations 2009 (Eels Regulations)

- 4.2.23 These regulations (Ref 89) implement Council Regulation (EC) No 1100/2007 of the Council of the EU, establishing measures for the recovery of the stock of European eel. It requires a notification to the EA for any construction, alteration or maintenance of any structure that is likely to affect the passage of eels. All 'existing structures' which contain an eel pass to allow free passage of eels and eel screens must be used to exclude eels from water abstraction and discharge points, following EA guidance 'Screening at intakes: measures to protect eel and elvers. 2022. Reference LIT 60516' (Ref 115).

The Invasive Alien Species (Enforcement and Permitting) Order 2019

- 4.2.24 The Invasive Alien Species (Enforcement and Permitting) Order 2019 (Ref 90), which brings EU legislation (Regulation 1143/2014) into UK law, for the implementation of management measures for invasive alien species.

4.3 National Planning Policy

Future Wales: the National Plan 2040

- 4.3.1 Future Wales: The National Plan 2040 (Ref 31) sets out Wales' NDF that details the Welsh Government's twenty-year plan for shaping the growth and development of the country. Policy 9 – Resilient Ecological Networks and Green Infrastructure sets out the following:
- 4.3.2 To ensure the enhancement of biodiversity, the resilience of ecosystems and the provision of green infrastructure, the Welsh Government will work with key partners to:
- identify areas which should be safeguarded and created as ecological networks for their importance for adaptation to climate change, for habitat protection, restoration, or creation, to protect species, or which provide key ecosystems services, to ensure they are not unduly compromised by future development; and
 - identify opportunities where existing and potential green infrastructure could be maximised as part of placemaking, requiring the use of nature-based solutions as a key mechanism for securing sustainable growth, ecological connectivity, social equality and well-being.
- 4.3.3 Planning authorities should include these areas and/or opportunities in their development plan strategies and policies in order to promote and safeguard the functions and opportunities they provide. In all cases, action towards securing the maintenance and enhancement of biodiversity (to provide a net benefit), the resilience of ecosystems and green infrastructure assets must be demonstrated as part of development proposals through innovative,

nature-based approaches to site planning and the design of the built environment.

Overarching NPS for Energy (EN-1)

- 4.3.4 Section 4.6 of EN-1 relates to 'Environmental and Biodiversity Net Gain', with paragraph 4.6.10 stating that "*Biodiversity net gain should be applied after compliance with the mitigation hierarchy and does not change or replace existing environmental obligation*".
- 4.3.5 Section 5.4 of EN-1 relates to biodiversity and geological conservation. Paragraph 5.4.17 states: "*Where the development is subject to EIA, the applicant should ensure that the ES clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance (Including those outside England), on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats*". Paragraph 5.4.18 further states "*The applicant should provide environmental information proportionate to the infrastructure where EIA is not required to help the Secretary of State consider thoroughly the potential effects of a proposed project*".
- 4.3.6 Paragraph 5.4.19 states: "*The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests*". Paragraph 5.4.20 further states "*Applicants should consider wider ecosystem services and benefits of natural capital when designing enhancement measures*". Paragraph 5.4.21 further states "*As set out in Section 4.6, the design process should embed opportunities for nature inclusive design. Energy infrastructure projects have the potential to deliver significant benefits and enhancements beyond Biodiversity Net Gain, which result in wider environmental gains (see Section 4.5 on Environmental and Biodiversity Net Gain). The scope of potential gains will be dependent on the type, scale, and location of each project*".

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

- 4.3.7 EN-2 Section 2.4.16 relates to terrestrial environments and states "*It is important to consider environmental impacts and mitigation measures holistically across terrestrial and marine environments. This is particularly important when considering new facilities as the siting of this infrastructure will likely be within already constrained and busy estuarine environments*".
- 4.3.8 The design of water-cooling systems for natural gas electricity generating stations will have additional impacts on water quality, abstraction and discharge. These include:
- discharging water at a higher temperature than the receiving water, affecting the biodiversity of aquatic flora and fauna;
 - use of resources may reduce the flow of water courses, affecting the rate at which sediment is deposited, conditions for aquatic flora and potentially affecting migratory fish species (for example salmon);

- 'fish impingement and/or entrainment' – i.e. being taken into the cooling system during abstraction; and
- chemical anti-fouling treatment of water for use in cooling systems may have adverse impacts on aquatic biodiversity.

4.3.9 There should also be specific measures to minimise fish impingement and/or entrainment and excessive heat from discharges to receiving waters.

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

4.3.10 EN-4 at paragraph 2.21.23 states: "*Sections 5.4 and 5.10 of EN-1 set out the general principles that should be applied in the assessment of biodiversity and landscape and visual impacts. Section 4.3.15 of EN-1 outlines how applicants should consider reasonable alternatives in an ES*".

4.3.11 Paragraph 2.21.24 further states that "*Additional considerations apply during the construction of a pipeline (which, without mitigation, can affect both landscape, visual amenity and ecology)*".

4.3.12 Paragraph 2.21.25 states that "*These comprise the effects upon specific landscape elements within and adjacent to the pipeline route, such as grasslands, field boundaries (hedgerows, hedge banks, drystone walls, fences), trees, woodlands, and watercourses*".

4.3.13 Paragraph 2.21.26 states that "*There will also be temporary visual and landscape impacts caused by the need to access the working corridor and to remove flora and soil*".

4.3.14 Paragraph 2.21.27 states that "*The working width of the pipeline will vary depending on the surrounding terrain. Temporary impacts could include large excavations where deep pits are needed for boring beneath rivers, roads, and sensitive features*".

4.3.15 Paragraph 2.21.29 states: "*Long term impacts upon the landscape for pipelines are likely to be limited, as once operational the main infrastructure is usually buried. They are likely to include:*

1. *limitations on the ability to replant landscape features such as hedgerows or deep-rooted trees over or adjacent to the pipeline;*
2. *the route of the pipeline clearly discernible in the landscape as a result of soil disturbance and altered drainage patterns producing changes to vegetation cover; and*
3. *structures and indication points necessary to identify the pipeline route and provide it with service access*".

4.3.16 Paragraph 2.21.30 states "*The ES must include an assessment of the biodiversity and landscape and visual effects of the proposed route and of the main alternative routes considered (see Section 5.10 of EN-1)*".

4.3.17 Paragraph 2.21.31 states that "*The application should also include proposals for reinstatement of the pipeline route as close to its original state as possible and take into account any requirements for agreements with the landowner to*

access areas for aftercare and management work. This is particularly important in designated landscapes”.

- 4.3.18 Paragraph 2.21.32 further states that *“Where it is unlikely to be possible to restore landscape to its original state, the applicant should set out measures to avoid, mitigate, or employ other landscape measures to compensate for, any adverse effect on the landscape”.*

NPS for Electricity Networks Infrastructure (EN-5)

- 4.3.19 EN-5 at paragraph 1.7.1 states: *“All the NPSs have been subject to an Appraisal of Sustainability (AoS) required by the 2008 Act and the Environmental Assessment of Plans and Programmes Regulations 2004. A Habitats Regulations Assessment (HRA) has also been prepared in accordance with the Conservation of Habitats and Species Regulations 2017 and the Conservation of Offshore Marine Habitats and Species Regulations 2017”.*

- 4.3.20 Paragraph 2.5.1 states: *“When planning and evaluating the proposed development's contribution to environmental and biodiversity net gain, it will be important - for both the applicant and the Secretary of State - to supplement the generic guidance set out in EN-1 (Section 4.6) with recognition that the linear nature of electricity networks infrastructure can allow for excellent opportunities to:*

- i. reconnect important habitats via green corridors, biodiversity stepping zones, and reestablishment of appropriate hedgerows; and/or*
- ii. connect people to the environment, for instance via footpaths and cycleways constructed in tandem with environmental enhancements”.*

Planning Policy Wales Edition 12

- 4.3.21 PPW sets out the land use planning policies of Welsh Government. It is supplemented by a series of Technical Advice Notes, Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework (NPPF) for Wales.
- 4.3.22 Chapter 6, Distinctive and Natural Places, outlines Welsh Government's objectives for the environmental and cultural components of placemaking. These components are complementary to those of the Active and Social and Productive and Enterprising themes and collectively the three themes come together to contribute towards the national sustainable placemaking outcomes.
- 4.3.23 The Environment (Wales) Act 2016 Part 1 – Section 6(1) ‘Biodiversity and resilience of ecosystems duty’ states that public authorities *“must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions”.* PPW expands on this by stating that *“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”.*

- 4.3.24 To facilitate the fulfilment of Section 6, a Net Benefit for Biodiversity (NBB) approach has been adopted by the Welsh Government. This approach has been included in the 12th edition of PPW and sets out the requirement for a Green Infrastructure Statement. Relevant sections of PPW are as follows.
- 4.3.25 Paragraph 6.2.11: The quality of the built environment should be enhanced by integrating green infrastructure into development through appropriate site selection and use of creative design. With careful planning and design, informed by an appropriate level of assessment, green infrastructure can embed the benefits of biodiversity and ecosystem services into new development and places, help to overcome the potential for conflicting objectives, and contribute to health and well-being outcomes.
- 4.3.26 Paragraph 6.2.12: A green infrastructure statement should be submitted with all planning applications. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal... The green infrastructure statement will be an effective way of demonstrating positive multi-functional outcomes which are appropriate to the site in question and must be used for demonstrating how the step-wise approach (see 'Method of Approach' below) has been applied.
- 4.3.27 Paragraph 6.2.13: There are multiple ways of incorporating green infrastructure, depending on the needs and opportunities a site presents, and the green infrastructure assessment should be referred to, as appropriate, in order to ascertain local priorities... In most cases the green infrastructure statement should highlight any baseline data considered and surveys and assessments undertaken, including but not limited to, habitats and species surveys, arboricultural surveys and assessments, sustainable drainage statements, landscape and ecological management plans, open space assessments and green space provision and active travel links.
- 4.3.28 Section 6.4 addresses Biodiversity and Ecological Networks. The policy includes the duties and requirements set out in Section 6 the Environment Wales Act (2016) and pays due regard to the State of Natural Resources Report (NRW, 2016) by taking all reasonable steps to maintain and enhance biodiversity. There is a focus on ecosystem services and the benefits of protecting and enhancing biodiversity.
- 4.3.29 The relevant measures in place to conserve landscape and biodiversity include:
- statutory designations;
 - non-statutory designations;
 - maintaining and enhancing biodiversity;
 - ecosystem resilience and connectivity of ecological networks; and
 - protection and consideration of protected and notable species and habitats.
- 4.3.30 Sections relevant to a Green Infrastructure Statement are detailed below.
- 4.3.31 Paragraph 6.4.5: 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 (not including non-native invasive species), locally or nationally and must work alongside nature and it must provide a NBB and improve, or enable the improvement, of the resilience of ecosystems. A NBB 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:

- **diversity** between and within ecosystems;
- the **extent** or scale of ecosystems;
- the **condition** of ecosystems including their structure and functioning;
- the **connections** between and within ecosystems; and
- **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.

4.3.32 Paragraph 6.4.21: Planning authorities must follow a step wise approach to maintain and enhance biodiversity, build resilient ecological networks and deliver net benefits for biodiversity by ensuring that any adverse environmental effects are firstly avoided, then minimised, mitigated, and as a last resort compensated for. Enhancement must be secured by delivering a biodiversity benefit primarily on site or immediately adjacent to the site, over and above that required to mitigate or compensate for any negative impact.

4.3.33 Paragraph 6.4.12: Having worked iteratively through the stages of the step-wise approach (see 'Method of Approach' below), and providing evidence in the Green Infrastructure Statement that the step-wise approach has been followed, a scheme of enhancements must be provided to ensure a NBB. Where biodiversity enhancement proportionate to the scale and nature of the development is not proposed as part of an application, significant weight will be given to its absence, and unless other significant material considerations indicate otherwise, it will be necessary to refuse permission.

4.3.34 Paragraph 6.4.13: Improving ecosystem resilience, particularly improving connectivity to the immediate surroundings, would be a key contribution to on-site avoidance, minimisation, and mitigation strategies and enhancement. How a development would improve the attributes of resilience should be demonstrated as far as this is reasonably practical.

4.3.35 Paragraph 6.4.20: Statutorily designated sites must be protected from damage and deterioration, with their important features conserved and enhanced by appropriate management. The contribution of the designated site to wider resilient ecological networks should be recognised and captured as part of a strategic approach to planning policy and decision making. The links between planning and wider management activity for the restoration and recovery of nature should be made. Complementary, and joint, action between all sectors and beyond the boundaries of the designated sites themselves is necessary

to improve extent, connectivity and adaptability and address the nature emergency.

- 4.3.36 Paragraph 6.4.29: SACs and SPAs are of European importance. Under the Habitats Regulations, all public bodies (including planning authorities) must have regard to the requirements of the EC Habitats and Birds Directives when carrying out their functions. SACs and SPAs on land are underpinned by notification as SSSIs and hence subject to protection afforded by the SSSI provisions. Before authorising development or adopting a land use plan which is likely to have a significant effect on a SAC or SPA (including where outside the boundary of the SAC or SPA), planning authorities must carry out an appropriate assessment of the implications for the designated features, consult NRW and have regard to NRW's representations. The development can normally only be authorised, or the plan adopted, if the planning authority ascertains that it will not adversely affect the integrity of the site, if necessary taking into account any additional measures, planning conditions or obligations.
- 4.3.37 Paragraph 6.4.31: Although non-statutory designations do not have a statutory process for their protection, Sites of Importance for Nature Conservation, Local Wildlife Sites, Local Nature Reserves, and Regionally Importance Geodiversity Sites make a vital contribution to delivering an ecological network for biodiversity and resilient ecosystems, and they should be given protection in development plans and the development management process.
- 4.3.38 Paragraph 6.4.35: The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained.
- 4.3.39 Paragraph 6.4.39: Planning authorities should protect trees, hedges, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial green infrastructure function.
- 4.3.40 Paragraph 6.4.26: Ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are irreplaceable natural resources, and have significant landscape, biodiversity and cultural value. Such trees, woodlands and hedgerows are to be afforded protection from development which would result in their loss or deterioration unless very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss.
- 4.3.41 Paragraph 6.4.44: the protection and planting of trees and hedges should be delivered, where appropriate, through locally specific strategies and policies, through imposing conditions when granting planning permission, and/or by making Tree Preservation Orders (TPO).

4.4 Local Planning Policy

FCC Local Development Plan

4.4.1 Relevant policies in the FCC LDP include:

- Policy STR13: Natural and Built Environment, Green Networks and Infrastructure;
- Policy EN2: Green Infrastructure;
- Policy EN3: Undeveloped Coast and Dee Estuary Corridor;
- Policy EN6: Site of Biodiversity Importance; and
- Policy EN7: Development Affecting Trees, Woodland and Hedgerows.

FCC Biodiversity Plan 'Supporting Nature in Flintshire 2020-23'

4.4.2 Supporting Nature in Flintshire (Ref 91) has been produced in response to the enhanced biodiversity and resilience of ecosystems duty under Section 6 of the Environment (Wales) Act 2016. All major threats to nature including climate change, over-exploitation, habitat loss, pollution, land management and invasive species can be addressed by living more sustainably which is at the heart of the Well-being of Future Generations (Wales) Act 2015. Complying with the Section 6 duty will help us maximise our contributions to the Well-being goals and will also support delivery of other key plans and policies.

Habitat Regulations Assessment (HRA) to inform the assessment of the FCC LDP

4.4.3 The Flintshire LDP HRA (Ref 92) was prepared to consider the impacts of the September 2019 Deposit LDP on European sites, as required under the Habitats Regulations.

4.5 Guidance

Chartered Institute of Ecology and Environmental Management (CIEEM) Good Practice Guidelines

4.5.1 The CIEEM Guidelines (Ref 93) provides a list of key references for species and habitat survey, mitigation, management and monitoring in the UK and Ireland.

CIEEM Preliminary Ecological Appraisal (PEA) Guidance

4.5.2 The purpose of the CIEEM PEA Guidance (Ref 94) is to set out the appropriate approach to undertaking PEAs and the appropriate application of such assessments within the planning process.

CIEEM Ecological Impact Assessment (EclA) Guidance

4.5.3 The CIEEM EclA Guidance (Ref 95) provide practical advice for all professionals involved with ecological evaluation and assessment for

proposed developments in terrestrial, freshwater, marine and coastal environments.

Statutory Biodiversity Metric Guidance

- 4.5.4 Statutory Biodiversity Metric Guidance (Ref 96) provides tools and guides for measuring the biodiversity value of habitat for biodiversity net gain (BNG).

Specific Technical Guidance for Protected and Notable Species

- 4.5.5 Other specific technical guidance for protected and notable species is detailed within the separate individual appendices (where applicable).

5. Marine Ecology

5.1 Introduction

- 5.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of marine ecology effects as reported in **Chapter 12: Marine Ecology (PEIR Volume II)**.

5.2 Legislation

Marine and Coastal Access Act 2009 (MCAA)

- 5.2.1 The MCAA (Ref 97) provides the legal mechanism to help ensure clean, healthy, safe, and productive and biological diverse oceans and seas. The implementation of the Act provided a new marine management system under the Marine Management Organisation (MMO). Section 41 of the MCAA allowed the designation of an Exclusive Economic Zone in the UK and a new Welsh inshore and offshore marine planning regions for sea waters adjacent to Wales. The act also allowed for the designation of conservation zones, and the provision of the Marine Policy Statement (MPS) with a new marine planning system.

Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

- 5.2.2 The Habitats Regulations were amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which allowed the Habitats and Wild Birds Directives to be operable in the UK from 1st January 2021 when the UK left the EU (Ref 98). This involved the transfer of functions from the European Commission to appropriate authorities in England and Wales. Several changes were made to the Habitats Regulations when they were amended in 2019, including:
- the creation of a national site network within UK territory which included sites already designated under the Nature Directives;
 - management objectives for the national site network; and
 - amended processes for the designated of SACs.

Marine Strategy Regulations 2010

- 5.2.3 The Marine Strategy Regulations 2010 (Ref 99) transpose the Marine Strategy Framework Directive (2008/56/EC) (Ref 100) into UK legislation. The Marine Strategy Regulations 2010 implemented measures required for the UK to achieve Good Environmental Status (GES) by 2020 (Ref 101). There are three main elements of the strategy:
- **The Initial Assessment of the State of the UK's Seas Cover Paper**, which provides analysis of essential characteristics, features and the environmental status of the UK's waters;

- **Characteristics of GES for the UK's seas**, which provides a qualitative, high-level description of how the UK's marine environment will look once GES has been achieved; and
- **GES targets and indicators of GES**, which have been developed based on the high-level description. The targets and indicators help develop a quantitative framework for achieving GES.

The Ramsar Convention

- 5.2.4 'The Convention on Wetlands of International Importance especially as waterfowl habitat' (known as the 'Ramsar Convention') designates wetlands of international importance as Ramsar sites under criteria for providing representative, unique and rare wetland types (Ref 102). The convention protects marine habitats which fall under the Ramsar criteria, including estuaries, tidal flats, and coral reefs. Criteria also include the importance of the wetland in conserving biological diversity. The Convention is the only international mechanism for protecting globally important sites and it covers all aspects of wetland conservation. The convention was ratified by the UK in 1976 when the first UK Ramsar sites were designated.

Conservation of European Wildlife and Natural Habitats Convention (Bern convention) 1979

- 5.2.5 The Bern Convention was put in place as the first international treaty to provide protection for both species and habitats, and to bring countries together in decision making on nature conservation (Ref 103). The Convention recognises the intrinsic value of wild flora and fauna which require preservation so that they can be passed onto future generations.

Convention for the Protection of the Marine Environment of the North-East Atlantic (the 'OSPAR Convention')

- 5.2.6 The OSPAR Convention was adopted in 1998 and amended in 2007 and consists of fifteen governments, to provide the protection of marine biodiversity and ecosystems from polluting and non-polluting human activities (Ref 104). The convention contains a series of annexes dealing with the following areas:
- Annex I: Prevention and elimination of pollution from land-based sources;
 - Annex II: Prevention and elimination of pollution by dumping or incineration;
 - Annex III: Prevention and elimination of pollution from offshore sources;
 - Annex IV: Assessment of the quality of the marine environment;
 - Annex V: On the protection and conservation of the ecosystems and biological diversity of the maritime area.
- 5.2.7 The OSPAR Commission has also developed a List of Threatened and/or Declining Species and Habitats, based on species and habitats in need of priority protection (Ref 105). The list includes several marine species and habitats which are of relevance to marine ecology impact assessments.

Wildlife and Countryside Act 1981 (as amended) (WCA)

- 5.2.8 The WCA includes provisions relating to nature conservation. It is the primary piece of legislation for the protection of wildlife in England and Wales. Through the WCA, it is an offence to deliberately take, kill or injure a wild animal, or to intentionally, or recklessly, disturb such an animal in its place of shelter, or to damage, destroy or obstruct access to its place of shelter. The WCA also makes it an offence to be in possession of a live or dead protected animal.
- 5.2.9 The WCA is split into four parts, including a list of protected and threatened native birds, animals and plants, and measures to prevent the establishment of non-native species which could be detrimental to native wildlife (Joint Nature Conservation Committee (JNCC, 2020)).
- 5.2.10 Under the WCA, land which is of special interest due to flora, fauna, or geological or physiographical interest must be notified by nature conservation bodies as SSSIs.

Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

- 5.2.11 The WFD Regulations 2017 transposes the EU Water Framework Directive (2000/60/EC) into UK legislation. The regulations provide a framework for improving and protecting the water environment in England and Wales and introduced a comprehensive river basin management system. The river basin management system protects and improves ecological and chemical health of estuaries and coastal waters (as well as rivers, lakes and groundwater). The regulations put in place specific objectives and measures for the environmental health of individual waterbodies in a 6-yearly planning process.

Environment Act 2021

- 5.2.12 The Environment Act 2021 sets clear statutory targets for the recovery of the natural world in four priority areas:
- air quality;
 - biodiversity;
 - water; and
 - waste.
- 5.2.13 The Environment Act 2021 also includes mandatory BNG for new built development, requiring all new developments to improve or create habitats for nature which will result in at least a 10% increase in biodiversity. BNG will become a statutory requirement for NSIPs from November 2025. The Environment Act 2021 introduces Local Nature Recovery Strategies to support a Nature Recovery Network, and also aims to halt species decline by 2030, to tackle deforestation overseas, to clean up air and to protect the health of rivers. It implements new legally binding environmental targets on species abundance for 2030, which will hold governments and public bodies to account on environmental obligations. For the Proposed Development, the requirement for a Net Benefit to Biodiversity, as stipulated in PPW, is particularly relevant. Furthermore, it is essential to consider the Section 6 Duty in the Environment (Wales) Act 2016, which requires public bodies to seek to

maintain and enhance biodiversity while carrying out their functions, further supporting the commitment to environmental protection and enhancement.

- 5.2.14 BNG requirements fall under local planning authorities and therefore in the marine environment, BNG requirements are only currently applicable to the intertidal zone.

Environment (Wales) Act 2016

- 5.2.15 The Environment (Wales) Act 2016 allows provision for managing Wales' natural resources at a national and local level. This Act has superseded the NERC Act 2006. Section 7 of the Environment (Wales) Act 2016 includes a list of Species and Habitats of Principal Importance for the purpose of maintaining and enhancing biodiversity in relation to Wales, replacing the duty in Section 42 of the NERC Act 2006.

Salmon and Freshwater Fisheries Act 1975 (as amended) (SAFFA)

- 5.2.16 The SAFFA provides protection to salmon and freshwater fisheries from commercial poaching, obstruction of migratory passages, wilful vandalism, fishery neglect, incorrect licensing and absence of water authority approval. Measures include the prohibition of certain modes of taking or destroying fish (salmon, trout, eels, lampreys, smelt, shad, freshwater fish and any specific fish in any waters) through the use of measures including an otter lath, wire, snare, crossline, spear or light. The SAFFA also makes it an offence, amongst other activities, to:

- knowingly, or attempt to, take, kill or injure any fish mentioned above which is immature;
- release any liquid or solid matter into waters containing fish or any tributaries of waters containing fish that could be poisonous or injurious to fish, spawning grounds, spawn, or fish food; and
- obstruct or not maintain a passage for salmon or migratory trout.

Eels (England and Wales) Regulations 2009

- 5.2.17 The Eels (England and Wales) Regulations 2009 implement Council Regulation (EC) No 1100/2007, establishing measures for the recovery of the stock of European eel including providing for the free passage of eels. The regulations require the provision of eel passes at in river structures and the screening of intakes where water is abstracted, and that no new infrastructure be constructed, or existing structures modified, without provision for eel. They also require that appropriate physical exclusion or alternative measures be provided at all potentially harmful water abstraction or flow points ($\geq 20 \text{ m}^3$ per day) following EA guidance 'Screening at intakes: measures to protect eel and elvers. 2022. Reference LIT 60516' (Ref 115).

Conservation of Seals Act 1970

- 5.2.18 The Conservation of Seals Act 1970 (Ref 106) provides protection and conservation for seals in England, Wales and Scotland, and adjacent territorial waters. This Act makes it an offence to take, injure or capture a seal. Some

exceptions exist, including if a seal is disabled and is taken solely for the purpose of for rehabilitation for future release, and that a person will not be guilty of an offence if killing is required where a seal is seriously disabled beyond reasonable chance of recovery.

Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas 1992 (ASCOBANS)

- 5.2.19 ASCOBANS promotes cooperation between countries to achieve and maintain favourable conservation status for small cetaceans throughout the Agreement Area (Ref 107). The Agreement Area covers the marine environment of the Baltic and North Sea and contiguous waters of the North-East Atlantic.

Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES)

- 5.2.20 CITES was adopted in 1963 and is an international agreement between governments which aims to ensure the international trade of in specimens of wild animals and plants does not threaten the survival of the species (Ref 108). Of relevance to the Proposed Development, the convention lists more than 40,000 species of endangered wild animals and plants which informs ecological impact assessments.

Invasive Alien Species (Enforcement and Permitting) Order 2019

- 5.2.21 The Invasive Alien Species (Enforcement and Permitting) Order 2019 brings EU legislation into UK law, for the implementation of management measures for invasive alien species. The Order makes it an offence to import, keep, breed, purchase, sell and release an invasive species. Invasive species are those which are not ordinarily resident and are not regular visitors to Great Britain in a wild state, and have a negative effect on native species and habitats.

The EIA Regulations

- 5.2.22 The EIA Regulations (Ref 1) outline the procedures for assessing the environmental impact of certain infrastructure projects in the UK. Key aspects include the EIA process, screening and scoping to determine the need and scope an EIA, preparation of detailed Environmental Statements, public consultation to involve the public and relevant authorities, and requirements for monitoring and compliance during and after the project. These regulations ensure environmental consideration are integrated into the planning and decision-making process for major infrastructure projects.

5.3 National Planning Policy

Future Wales: The National Plan 2040

- 5.3.1 The Future Wales National Plan 2040 sets out a development strategy for key national priorities, which includes developing strong ecosystems and climate-resilience in Wales' marine environment, and policies for development which

inform marine ecological impact assessments. The Plan has been informed by the Welsh National Marine Plan.

UK Marine Policy Statement (MPS)

- 5.3.2 The UK MPS was adopted in March 2011 and provides a policy framework for taking decisions affecting the marine environment, based on marine plans (Ref 109). The MPS was prepared and adopted in line with Section 44 of the MCAA and contributes towards achieving sustainable marine development in the UK. The MPS was subject to updates in September 2020 relating to how references to EU law should be interpreted from 1 January 2021 following the UK's withdrawal from the EU.
- 5.3.3 The UK MPS ensures that marine resources are used in a sustainable way by ensuring biodiversity is protected and conserved during development by using the precautionary principle and relying on sound evidence. This includes ensuring loss of the marine environment is halted during development and putting measures in place to conserve the biodiversity during impact assessments. It provides a framework to ensure policy goals, principles and considerations are taken into consideration during decision making and identifies activities which should be given priority.
- 5.3.4 The marine plan for Wales is the Welsh National Marine Plan.

Welsh National Marine Plan

- 5.3.5 The Welsh National Marine Plan (WNMP) sets out a single framework for sustainable development within the Wales marine area, including the requirement to maintain seafloor integrity and safeguard marine ecosystems during development (Ref 110). This framework informs marine ecological impact assessments, including through the provision of policies against which to help shape proposals and data such as contextual maps of natural resources. It has been developed and adopted under the MCAA and in conformity with the UK MPS.

Planning Policy Wales

- 5.3.6 PPW highlights the importance of biodiversity for natural services, sustainability and the Welsh economy. It includes objectives to achieve efficient use and protection of natural resources and enhancing biodiversity. The latest edition, Edition 12, was released in February 2024. PPW ensures that the planning system contributes towards the delivery of sustainable development, whilst improving the environmental wellbeing of Wales, including in coastal areas.

NPSs for Energy

Overarching NPS for Energy (EN-1)

- 5.3.7 Several sections of EN-1 are of relevance to development applications in the marine environment:
- Paragraph 4.4.7 states that “... *Applicants are encouraged to approach the marine licensing regulator (MMO in England and Natural Resources Wales (NRW) in Wales) in pre-application, to ensure that they are aware*

of any needs for additional marine licences alongside their DCO application”.

- Paragraph 4.4.9 states “...*Applicants are encouraged to refer to Marine Plans at an early stage, such as in preapplication, to inform project planning, for example to avoid less favourable locations as a result of other uses or environmental constraints”.*
- Paragraph 5.4.17 states (part) “...*Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance (including those outside England), on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats”.*
- Paragraph 5.4.19 states “... *The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests”.*
- Paragraph 5.4.23 states “*Energy projects will need to ensure vessels used by the project follow existing regulations and guidelines to manage ballast water.”*

5.3.8 The NPS also provides guidance on considering protected areas:

- Paragraph 5.4.10: “*Marine Protected Area (MPA) is a term used to describe the network of HRA sites, SSSIs and MCZs in the English and Welsh marine environment”;* and
- Paragraph 5.4.11: “*It is important that relevant guidance on managing environmental impacts of infrastructure in marine protected areas is followed, and that equal consideration of the effect of proposals should be given to all MPAs regardless of the legislation they were designated under. This is because all sites contribute to the network of MPAs and therefore to overall network integrity.”*

5.3.9 Adherence to these policies must be demonstrated through robust application of the mitigation hierarchy and can be achieved by project applicants developing appropriate mitigation, to ensure that, verbatim of those outlined in paragraph 5.4.35 of EN-1:

- “*during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works;*
- *the timing of construction has been planned to avoid or limit disturbance;*
- *during construction and operation best practice will be followed to ensure that risk of disturbance or damage to species or habitats is minimised, including as a consequence of transport access arrangements;*
- *habitats will, where practicable, be restored after construction works have finished;*
- *opportunities will be taken to enhance existing habitats rather than replace them, and where practicable, create new habitats of value within the site landscaping proposals. Where habitat creation is required as mitigation, compensation, or enhancement, the location and quality will be of key*

importance. In this regard habitat creation should be focused on areas where the most ecological and ecosystems benefits can be realised; and mitigations required as a result of legal protection of habitats or species will be complied with”.

NPS for Natural Gas and Electricity Generating Infrastructure (EN-2)

5.3.10 Several sections of EN-2 are of relevance to development applications in the marine environment:

- Paragraph 2.4.29 of EN-2 states *“The ES must include a noise assessment...including an assessment of the effect of underwater or subterranean noise.”*
- Paragraph 2.4.30 states *“Where the project is likely to have effects on water quality or resources the applicant must undertake an assessment....The assessment should particularly demonstrate that appropriate measures will be put in place to avoid or minimise adverse impacts of abstraction and discharge of cooling water.”*
- Paragraph 2.4.31 states *“The design of water-cooling systems for natural gas electricity generating stations will have additional impacts on water quality, abstraction and discharge. These include:*
 - *discharging water at a higher temperature than the receiving water, affecting the biodiversity of aquatic flora and fauna;*
 - *use of resources may reduce the flow of water courses, affecting the rate at which sediment is deposited, conditions for aquatic flora and potentially affecting migratory fish species (for example salmon);*
 - *‘fish impingement and/or entrainment’ – i.e. being taken into the cooling system during abstraction; and*
 - *chemical anti-fouling treatment of water for use in cooling systems may have adverse impacts on aquatic biodiversity.”*
- Paragraph 2.5.13 states *“There should also be specific measures to minimise fish impingement and/or entrainment and excessive heat from discharges to receiving waters.”*

NPS for Natural Gas Supply Infrastructure (EN-4)

5.3.11 Several sections of EN-4 are of relevance to development applications in the marine environment.

- Paragraph 2.21.24 states *“Additional considerations apply during the construction of a pipeline (which, without mitigation, can affect both landscape, visual amenity and ecology).”*
- Paragraph 2.21.38 states *“Impacts during construction should be avoided as far as possible through route selection or mitigated if unavoidable and ground should be reinstated after construction.”*
- Paragraph 2.22.6 states *“Mitigation measures to protect the landscape, visual amenity and ecology could include reducing the working width required for the installation of the pipeline to reduce the impact on the landscape where it will not be possible to fully reinstate the route.”*

NPS for Electrical Networks Infrastructure (EN-5)

5.3.12 Several sections of EN-5 are of relevance to development applications in the marine environment:

- Paragraph 2.5.1 states *“When planning and evaluating the proposed development’s contribution to environmental and biodiversity net gain, it will be important – for both the applicant and the Secretary of State – to supplement the generic guidance set out in EN-1 (Section 4.6) with recognition that the linear nature of electricity networks infrastructure can allow for excellent opportunities to:*
 - *reconnect important habitats via green corridors, biodiversity stepping zones.....”*
- Paragraph 2.9.6 states *“Particular consideration should be given to feeding and hunting grounds, migration corridors and breeding grounds, where they are functionally linked to sites designated or allocated under the ‘national site network’ provisions of the Conservation of Habitats and Species Regulations.”*
- Paragraph 2.9.19 states *“... applicants should:*
 - *...consider environmental issues from the earliest stage to balance the technical benefits and capital cost requirements for new developments against the consequential environmental effects in order to keep adverse effects to a reasonably practicable minimum;*
 - *seek to avoid altogether internationally and nationally designated areas of the highest amenity, cultural or scientific value by the overall planning of the system connections;*
 - *protect as far as reasonably practicable....important existing habitats and landscape features including....nature conservation areas; and*
 - *keep the visual, noise and other environmental effects to a reasonably practicable minimum.”*
- Paragraph 2.11.1 states *“Where biodiversity impacts are identified....the Secretary of State should be satisfied that all feasible options for mitigation have been considered and evaluated appropriately.”*

5.4 Local Planning Policy

FCC Local Development Plan (LDP)

5.4.1 The FCC LDP forms part of a statutory development plan alongside Future Wales: The National Plan 2040. These two plans form the primary basis upon which the council make decisions on development proposals and planning applications. The FCC LDP contains several policies of relevance to development in the marine environment which are outlined below.

Policy STR13: Natural and Built Environment, Green Networks and Infrastructure

5.4.2 Policy STR13 puts measures in place to respect, protect, enhance and connect environmental assets during development, with those of relevance to the marine environment including:

- Protecting open countryside and undeveloped coastline;
- Conserve, protect and enhance the quality and diversity of Flintshire's natural environment including landscape, biodiversity, the Dee Estuary and the Clwydian Range and Dee Valley Areas of Outstanding Natural Beauty (AONB);
- Promote opportunities to enhance biodiversity and ensure resilience; and
- Support measures to minimise the consequences of climate change.

Policy EN2: Green Infrastructure

5.4.3 Policy EN2 requires development to protect, maintain and enhance the extent, quality and connectivity of green infrastructure networks, which includes designated and non-designated green space. Development proposals are required, where appropriate, to:

- create new green infrastructure linkages from the proposed development to the existing local network; and
- fill in gaps in the existing network to improve connectivity.

5.4.4 Where loss or damage to green infrastructure is unavoidable, development proposals are required to mitigate and compensate.

Policy EN3: Underdeveloped Coast and Dee Estuary Corridor

5.4.5 Policy EN3 defines underdeveloped coast and the Dee Estuary corridor as the undeveloped land north of the A548 (where the Proposed Development is located) which is parallel with the coast. Development is only permitted within this area where:

- it can be demonstrated a coastal location is essential;
- it conserves and enhances the open character of the coast;
- it would not unacceptably harm areas of nature conservation, landscape or biodiversity;
- it would not harm existing or proposed recreational or active travel routes;
- extensive coastal protection measures are not required; and
- it would not be potentially at risk of flooding nor unacceptably increase erosion or flooding or interfere with natural coastal processes.

Policy EN6: Site of Biodiversity Importance

5.4.6 Policy EN6 states that developments resulting in adverse effects on the integrity of sites of international nature conservation importance will not be supported. Developments likely to have a significant adverse effect on designated sites or sites with biodiversity interest including priority species are only permitted where:

- it can be demonstrated that the need for the development outweighs the biodiversity or geological importance of the site;
- it can be demonstrated that the development cannot reasonably be located elsewhere; and

- any unavoidable harm is minimised by effective mitigation to ensure that there is no reduction in the overall biodiversity value of the area. Where this is not feasible compensation measures designed to create, restore and enhance biodiversity must be provided.

HRA to Inform the Assessment of the FCC LDP

- 5.4.7 As part of a review of FCC LDP, an HRA Report was created in 2020 to identify effects on local European sites. This assessment determined the effectiveness of the FCC LDP as a framework against which decisions on planning applications are taken. An addendum to the HRA was created in 2021 (Ref 111) to address new NRW policies and to consider potential adverse effects of additional development on operational water quality, with regard to phosphate levels.
- 5.4.8 As part of the HRA, several mitigation measures were recommended including those set out in Policy EN-15 of the FCC LDP, which aims to reduce phosphorous levels in the Dee catchment as a result of discharge of wastewater.

FCC Biodiversity Plan 'Supporting Nature in Flintshire 2020-2023'

- 5.4.9 The FCC Biodiversity Plan was created in line with enhanced duty to biodiversity and ecosystem resilience under Section 6 of the Environment (Wales) Act 2016, which requires public authorities to maintain and enhance biodiversity in Wales. This allows support of the delivery of other key plans and policies, and maximises contribution to goals.

5.5 Guidance

CIEEM Guidelines of EclA

- 5.5.1 The CIEEM Guidelines can be used for implementing specific EclA in Britain and Ireland for terrestrial, freshwater, coastal and marine habitats. The EclA can be tailored to consider the interconnectivity of marine ecology receptors and the impacts likely to occur. CIEEM recommend following a non-matrix approach for ecological assessments which reflects a lack of quantitative thresholds for ecological disciplines and the need to apply professional judgement to the assessment of effects. The CIEEM assessment approach first considers the importance of the ecological features which will be affected by the Proposed Development using research, surveys and publicly available information before assessing the impacts which could affect the important features, and characterising the impacts based on extent, magnitude, duration, reversibility, timing (for example if the impact is to occur during important seasonal timeframes such as spawning) and frequency.
- 5.5.2 The CIEEM guidelines also provide advice on defining Zones of Influence (Zoi) and study areas for the purpose of ecological impact assessments.

Canadian sediment quality guidelines

- 5.5.3 Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (Ref 112) are applied to contaminants where no other regional threshold value is

available. The Canadian Sediment quality guidelines were developed by the Canadian Council of Ministers of the Environment as broadly protective tools to support the functioning of healthy aquatic ecosystems. Although created in a Canadian context, the guidelines are relevant to the Proposed Development because they provide a comprehensive, science-based framework applicable to similar environmental conditions and concerns, ensuring the protection of aquatic life where specific regional guidelines are absent.

OSPAR Background Concentrations and Background Assessment Concentrations (BAC) and Effect Range Low (ERL) and Effect Range Median (ERM) Concentrations for Contaminants

- 5.5.4 The OSPAR BACs represent contaminant concentrations in the marine environment below which no chronic effects are expected to occur within marine species (Ref 113). For assessments where sediment is likely to be disturbed, contaminants present can be assessed against BAC values to determine likely effects to marine habitats and species. ERL and ERM have been defined to assess the quality of estuarine and coastal environments and the potential ecological effects of hazardous substance concentrations in sediment. The ERL represents the lower 10th-percentile of sediment contaminant concentrations, whereas the ERM represents the median of the sediment contaminant concentrations.

Statutory Nature Conservation Agency Protocol for Minimising the Risk of Injury to Marine Mammals from Piling Noise

- 5.5.5 The JNCC, Natural England and NRW have produced guidelines to outline measures for minimising any potential injuries to marine mammals from noise generated by pile driving during industrial construction (Ref 114). The guidance includes best practice for piling operations including the implementation of a 'soft-start', the use of acoustic deterrent 'devices' and marine mammal observers .

Screening for Intakes: measures to protect eel and elvers

- 5.5.6 The Best Practice Guide developed by the EA (Ref 115) provides descriptions of legal responsibilities for the operation of water intakes and outfalls with methods provided for different species and fish life stages. This includes technologies used for effective fish screening, and how technology can be diversified to suit and protect a wide range of species.

Planning Inspectorate (PINS) Advice Note 10: Habitats Regulations Assessment Relevant to Nationally Significant Infrastructure Projects

- 5.5.7 The PINS Advice Note 10 provides guidance on the stages of the HRA process and provides clarification on information which should be provided within a DCO application in relation to HRA (Ref 116). The Advice Note also provides brief descriptions of the legal context and obligations which are placed upon the decision maker and the DCO applicant under the Habitats Regulations.

- 5.5.8 As part of the HRA stages guidance, it is considered not appropriate to take account of mitigation measures which intend to avoid or reduce adverse effects of the project in HRA Stage 1: Screening. These measures should instead be considered in HRA Stage 2: Appropriate Assessment. However, it is possible to consider whether any aspects of a project or plan, or by undertaking a proponent, might be an essential project element which is not simply concerned with avoiding impacts to European Sites.
- 5.5.9 Any mitigation measures relied on should be secured through the DCO, with information provided on how such measures will be implemented and monitored. It may also be asserted whether such measures are embedded within the DCO application, or as a precautionary approach, measures may be progressed to HRA Stage 2 for further consideration on the efficacy of the measure as additional mitigation.

PINS Advice Note 17: Cumulative Effects Assessment Relevant to Nationally Significant Infrastructure Projects

- 5.5.10 PINS Advice Note 17 provides guidance on assessing cumulative effects of NSIPs (Ref 117). The Advice Note provides a staged approach to identifying and assessing cumulative effects within an ES.

6. Water Environment and Flood Risk

6.1 Introduction

- 6.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of water environment and flood risk effects as reported in **Chapter 13: Water Environment and Flood Risk (PEIR Volume II)**.

6.2 Legislation

Environment Act 2021

- 6.2.1 The Environment Act 2021 is the UK's new framework of environmental protection. The update was issued following the departure of the UK from the EU. The Environment Act 2021 includes the requirements for developments to consider and achieve biodiversity net gain targets.

Environment Act 1995

- 6.2.2 The Environment Act 1995 established the Environment Agency for England and Wales. The Act outlines the agency's role in environmental protection, pollution control, and water management.

The EIA Regulations

- 6.2.3 The EIA Regulations (Ref 1) outline the procedures for assessing the environmental impact of certain infrastructure projects in the UK. Key aspects include the EIA process, screening and scoping to determine the need and scope an EIA, preparation of detailed Environmental Statements, public consultation to involve the public and relevant authorities, and requirements for monitoring and compliance during and after the project. These regulations ensure environmental consideration are integrated into the planning and decision-making process for major infrastructure projects.

Environment (Wales) Act 2016

- 6.2.4 The key function of this Environment (Wales) Act 2016 is to promote sustainable management of natural resources. This involves considering the resilience of ecosystems, the benefits that natural resources provide, and the impact of climate change.

Environmental Damage (Prevention and Remediation) Regulations 2015

- 6.2.5 The regulations focus on preventing and addressing environmental damage, including water pollution. Operators must take preventive measures to avoid water contamination. The regulations outline liability and remediation processes to ensure that those responsible for water pollution take the necessary actions to remediate the damage and prevent future incidents.

Flood and Water Management Act 2010

- 6.2.6 The Flood and Water Management Act 2010 (Ref 119) extends the role of the Lead Local Flood Authorities (LLFA) to take responsibility for leading and co-ordination of local flood risk management. In accordance with the Act, the EA is responsible for the management of risk associated with main rivers, the sea and reservoirs.

Eels (England and Wales) Regulations 2009

- 6.2.7 These regulations apply to England and Wales and aim to protect and recover eel populations by managing fishing efforts and improving habitat connectivity. They establish requirements for eel passes and screens to ensure the free passage around obstructions, and set out enforcement measures.

Climate Change Act 2008

- 6.2.8 The Climate Change Act 2008 establishes a legally binding framework for the UK to reduce emissions and adapt to climate change. It encourages sustainable water management practices and infrastructure improvements to enhance resilience against climate-related impacts. This Act also establishes the Committee on Climate Change, which provide independent advice on setting and meeting emission reduction targets.

Water Resources (Abstraction and Impounding) Regulations 2006

- 6.2.9 These Regulations govern the licensing of water abstraction and impounding in England and Wales. These regulations, updated by the Water Act 2003, outline the procedural requirements for apply for and managing licenses to abstract and impound water. They ensure that water resources are managed sustainably, protecting both the environment and rights of water users.

Water Act 2003

- 6.2.10 This Water Act 2003 (Ref 121) is an update to the Water Resources Act 1991 and aims to provide a modern, efficient and robust legislative framework to facilitate both sustainable water resources management and economic growth through the new provisions it contains.

Control of Substances Hazardous to Health Regulations 2002

- 6.2.11 These regulations require employers to assess the risk, implement control measures to reduce exposure, conduct health surveillance, and provide information and training to employees. They also include specific provisions for monitoring exposure and dealing with incidents and emergencies.

Water Resources Act 1991

- 6.2.12 The Water Resources Act 1991 (Ref 122) governs the quality and quantity of water by outlining the functions of the EA. The Water Resources Act 1991 sets out offences relating to water and discharge consents. The EA has the

power to bring criminal charges against people or companies responsible for crimes concerning water.

Environmental Protection Act 1990

- 6.2.13 This legislation aimed at controlling pollution and protecting the environment in the UK. The Act provides framework for preventing and controlling pollution in the water environment, ensuring that activities do not harm the water environment.

Control of Pollution Act 1974

- 6.2.14 The Act includes provisions specifically aimed at preventing and controlling water pollution. Part II of the Act addresses the pollution of water, setting out general duties to maintain water quality, control the entry of polluting matter and effluent into water, and establish water quality objectives. It also outlines offences related to water pollution and the necessary precautions to prevent pollution.

Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 and the Groundwater (Water Framework Directive) (Wales) Direction 2016

- 6.2.15 The WFD Regulations 2017 transpose the EU Water Framework Directive (2000/60/EC) into UK legislation. The regulations provide a framework for improving and protecting the water environment in England and Wales and introduced a comprehensive river basin management system. The river basin management system protects and improves ecological and chemical health of estuaries and coastal waters (as well as rivers, lakes and groundwater). These regulations put in place specific objectives and measures for the environmental health of individual waterbodies in a 6-yearly planning process.

Water Resources (Control of Pollution) (Oil Storage) (Wales) Regulations 2016

- 6.2.16 The Water Resources (Control of Pollution) (Oil Storage) (Wales) Regulations 2016 (Ref 124) govern the storage and handling of oil in Wales. They set out the requirements for any relevant development that may involve the storage of oil during construction and operation.

Environmental Permitting (England and Wales) Regulations 2016

- 6.2.17 This is the key legislation for water pollution in the UK. Under the Environmental Permitting (England and Wales) Regulations 2016, it is an offence to cause or knowingly permit a water discharge of polluting materials to freshwater, coastal waters, relevant territorial waters or groundwater, unless complying with an exemption or an environmental permit. An environmental permit is obtained from the EA or NRW.

Groundwater (Water Framework Directive) (Wales) Directions 2016

- 6.2.18 These regulations provide guidance to Natural Resources Wales on implementing the Water Framework Directive and the Groundwater Directive in Wales. These directions aim to protect groundwater from pollution and deterioration by setting standards and monitoring requirements. They include provisions for assessing groundwater quality, establishing baseline and background levels, and ensuring compliance with directives. The regulations ensure that groundwater management aligns with broad environmental goals and sustainable water resource management.

Land Drainage Act 1991

- 6.2.19 The Land Drainage Act 1991 regulates the internal drainage of land in England and Wales. It establishes the functions, powers, duties and finances of internal drainage boards and local authorities. The Act includes provisions for the protection and improvement of watercourses, flood risk management, and environmental duties.

Wildlife and Countryside Act 1981

- 6.2.20 This legislation is aimed at protecting wildlife and natural habitats. It provides protection for various species of birds, animals, and plants, restricts the release of non-native species to prevent ecological imbalance, and enhances the protection of Sites of Special Scientific Interest (SSSIs).

National Planning Policy

- 6.2.21 The national planning policy which is relevant to the water environment and flood risk assessment is the Overarching NPS for energy (EN-1).
- 6.2.22 EN1 paragraph 4.10.13 states *“The Secretary of State should be satisfied that applicants for new energy infrastructure have taken into account the potential impacts of climate change using the latest UK Climate Projections and associated research and expert guidance (such as the EA’s Climate Change Allowances for Flood Risk Assessments or the Welsh Government’s Climate change allowances and flood consequence assessments) available at the time the ES was prepared to ensure they have identified appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure, including any decommissioning period.”*
- 6.2.23 EN1 paragraph 5.8.6 states *“The aims of planning policy on development and flood risk are to ensure that flood risk from all sources of flooding is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to steer new development to areas with the lowest risk of flooding”*
- 6.2.24 EN1 paragraph 5.8.7 states *“Where new energy infrastructure is, exceptionally, necessary in flood risk areas (for example where there are no reasonably available sites in areas at lower risk), policy aims to make it safe for its lifetime without increasing flood risk elsewhere and, where possible, by reducing flood risk overall. It should also be designed and constructed to remain operational in times of flood.”*

- 6.2.25 EN1 paragraph 5.8.8 states *“Proposals that aim to facilitate the relocation of existing energy infrastructure from unsustainable locations which are or will be at unacceptable risk of flooding, should be supported where it would result in climate-resilient infrastructure.”*
- 6.2.26 EN1 paragraph 5.8.9 states *“If, following application of the Sequential Test, it is not possible, (taking into account wider sustainable development objectives), for the project to be located in areas of lower flood risk the Exception Test can be applied as defined <https://www.gov.uk/guidance/flood-risk-and-coastal-change#para77>. The test provides a method of allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.”*
- 6.2.27 EN1 paragraph 5.8.10 states *“The Exception Test is only appropriate for use where the Sequential Test alone cannot deliver an acceptable site. It would only be appropriate to move onto the Exception Test when the Sequential Test has identified reasonably available, lower risk sites appropriate for the proposed development where, accounting for wider sustainable development objectives, application of relevant policies would provide a clear reason for refusing development in any alternative locations identified. Examples could include alternative site(s) that are subject to national designations such as landscape, heritage and nature conservation designations, for example Areas of Outstanding Natural Beauty (AONBs), SSSIs and World Heritage Sites (WHS) which would not usually be considered appropriate.”*
- 6.2.28 EN1 paragraph 5.8.11 states *“Both elements of the Exception Test will have to be satisfied for development to be consented. To pass the Exception Test it should be demonstrated that:*
- *the project would provide wider sustainability benefits to the community that outweigh flood risk; and*
 - *the project will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible will reduce flood risk overall.”*
- 6.2.29 EN1 paragraph 5.8.12 states *“Development should be designed to ensure there is no increase in flood risk elsewhere, accounting for the predicted impacts of climate change throughout the lifetime of the development. There should be no net loss of floodplain storage and any deflection or constriction of flood flow routes should be safely managed within the site. Mitigation measures should make as much use as possible of natural flood management techniques.”*

Planning Policy Wales

- 6.2.30 Section 6.6 of PPW provides the current guidance for planning with respect to flood risk. PPW advocates that planning authorities should take a strategic approach to flood risk and consider the catchment as a whole by providing a preliminary representation of flood risks. It is stated that development should reduce, and must not increase, flood risk arising from fluvial and/or tidal flooding on and off the development site itself. The priority should be to protect the undeveloped or unobstructed floodplain from development and to prevent the cumulative effects of incremental development.

TAN 15

6.2.31 TAN 15 (Ref 126) provides guidance which supplements the policy set out in the PPW in relation to development and flooding. A precautionary framework is set out which advises caution in respect of new development in areas at high risk of flooding and this is used as a guide for planning decisions. The overall aim of the precautionary framework is to direct new development away from those areas that have a high risk of flooding; and development will only be justified in these areas if it meets the criteria and tests specified in this guidance. The operation of the precautionary framework is governed by development advice maps (DAMs) which consist of several zones (refer to **Table 5**), used to trigger the appropriate planning test and definitions of vulnerable developments. The DAM zones are based on the best available information to determine when flood risk needs to be taken into consideration with future development.

Table 5: DAM Zone Designations, their Associated Flood Risk Definition and Use within the Precautionary Framework

DAM Zone	Definition	Use within the Precautionary Framework
A	Little or no risk of fluvial/ tidal flooding	Justification test is not applied and do not need to consider further
B	Areas known to have flooded historically evidenced by sedimentary deposits.	Used as part of the precautionary approach to indicate where site levels should be checked against the extreme (0.1% annual exceedance probability (AEP)) flood. No need to consider flood risks further if site levels are greater than the extreme flood level
C	Based on NRW extreme flood outline (0.1% AEP)	Indicates that flooding issues should be considered as an integral part of the decision making by the application of the justification test, including Flood Consequence Assessment (FCA)
C1	Areas of Zone C which are developed and served by significant infrastructure, including flood defences	Indicates that development can take place subject to the application of the justification test, including acceptability of consequences
C2	Areas of Zone C without significant flood defence infrastructure	Indicates that only 'less vulnerable' development should be considered, subject to the application of the justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.

6.2.32 The precautionary framework identifies the vulnerability of different land uses to flooding and classifies proposed uses accordingly as detailed in **Table 6**. This is because certain flooding consequences may not be acceptable for particular development types.

Table 6: Development Categories

Flood Zone Definition	Use within the precautionary framework
Emergency services	Hospitals, ambulance stations, fire stations, police stations, coastguard stations, command centres, emergency depots and buildings used to provide emergency shelter in time of flood.

Flood Zone Definition	Use within the precautionary framework
Highly vulnerable development	All residential premises (including hotels and caravan parks), public buildings (e.g. schools, libraries, leisure centres), especially vulnerable industrial development (e.g. power stations, chemical plants), and waste disposal sites.
Less vulnerable development	General industrial, employment, commercial and retail development, transport and utilities infrastructure, car parks, mineral extraction sites and associated processing facilities, excluding waste disposal sites.

6.2.33 According to TAN 15, new development should be directed away from DAM Zone C and towards more suitable land in DAM Zone A, otherwise to DAM Zone B, where fluvial or tidal flooding will be less of an issue. The Proposed Development is classified as 'highly vulnerable' development as a power station. The majority of the Proposed Development is located within DAM Zone C1 and according to TAN 15, 'highly vulnerable' development is acceptable within DAM Zone C1 subject to application of the justification test, including acceptability of consequences.

Justification Test

6.2.34 The Proposed Development is located in DAM Zone C1 and because it is classified as 'highly vulnerable', the development must be determined by the planning authority to be justified in that location. According to TAN 15, the Proposed Development will only be justified if it can be demonstrated that:

- i. its location in Zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement; or,
- ii. its location in Zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region; and
- iii. it concurs with the aims of PPW and meets the definition of previously developed land (PPW fig 2.1); and
- iv. the potential consequences of a flooding event for the particular type of development have been considered, and in terms of the criteria contained in Sections 5 and 7 and Appendix 1 found to be acceptable.

Future Wales: The National Plan 2040

6.2.35 'Futures Wales – the National Plan 2040' is the Welsh Government's NDF which sets out the direction for development in Wales to 2040. It is a development plan with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonization and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities. It includes policies on flooding (Policy 8) and resilient ecological networks and green infrastructure (Policy 9).

The UK Government's 25 Year Environment Plan

6.2.36 In 2018, Defra published the 25 Year Plan to Improve the Environment, updated in 2023 (25YEP) (Ref 127), setting out the UK Governments goals

for improving the environment within a generation and leaving it in a better state than we found it. The plan covers the provision of clean air and water; protection and enhancement of habitats, wildlife, and biosecurity; reducing the risk from environmental hazards and mitigating and adapting to climate change; using resources more sustainably and efficiently, minimising waste and managing exposure to chemicals; enhancing beauty, heritage, and engagement with the natural environment.

- 6.2.37 The plan includes specific goals to achieve GES in our seas, reduce the environmental impact of water abstraction, meet the objectives of River Basin Management Plans (RBMP) under the WFD, reduce leakage from water mains, improve the quality of bathing waters, restore protected freshwater sites to a favourable condition, and do more to protect communities and businesses from the impact of flooding, coastal erosion and drought. At the heart of the Plan's delivery is the natural capital approach with the aspiring goal of a net gain in biodiversity from new development.

Environmental Improvement Plan 2023

- 6.2.38 The Environmental Improvement Plan 2023 (EIP 2023) (Ref 128) is the first revision of the 25 Year Environmental Plan, published in 2018. It outlines the UK Government's strategy to improve the natural environment over the next 25 years. Key goals include thriving plants and wildlife, clean air, clean and plentiful water, sustainable use of resources, and mitigating climate change. The plan also emphasizes reducing environmental pollution, enhancing biosecurity, and increasing public engagement with the natural environment.
- 6.2.39 One of their goals is to upgrade 160 wastewater treatment works by 2027 and provide increased advice and incentives to support a shift to sustainable agricultural techniques to mitigate nutrient pollution. They have also set out a goal to restore approximately 643 km of river through the first round of Landscape Recovery projects and establish 3,000 hectares (ha) of new woodlands along England's rivers.

UK Government's Plan for Water: Our Integrated Plan for Delivering Clean and Plentiful 2023

- 6.2.40 In the UK Government's Plan for Water (Ref 129), more investments, tighter regulation and effective enforcement are being made to transform and integrate the water system, address sources of pollution and boost water supply. A few of the key actions include giving the EA the power to issue bigger penalties for when water companies pollute, and authorising Ofwat under the new powers in the Environment Act 2021 to link the dividends of water company to their environmental performance.
- 6.2.41 Besides setting new legally binding targets to significantly reduce pollution from farming, wastewater, and abandoned metal mines, the UK Government have also initiated a significant investment in water infrastructure improvements. Monitoring of storm overflows has also been substantially increased from only 10% in 2015 to over 90% today (Defra, 2023b). Further actions are listed within the plan to address multiple sources of pollution impacting water bodies.

- 6.2.42 With almost £500 million of additional investment in new large-scale water infrastructure, water companies are required to develop plans to meet water demands in a changing climate. Key actions to reduce drought impacts on water reliant business and farmers has also been addressed.

River Basin Management Plan

- 6.2.43 RBMP are prepared by the EA for six-year cycles and set out how organizations, stakeholders and communities will work together to improve the water environment. The most recent plans were published in 2022 and will remain in place until reviewed and updated by 2027. The waterbodies within the water environment study area for the Proposed Development fall under the Dee Management Catchment.

Water Strategy for Wales 2015

- 6.2.44 The Water Strategy for Wales (Ref 130) outlines the approach of managing, protecting and improving water services and quality. The strategy was first published in May 2015 and sets out long-term direction on water. The aim to promote the coordinated management of water, land and resources, which will help maximize economic and social benefits while protecting vital ecosystems and the environment.

6.3 Local Planning Policy

Flintshire Strategic Flood Consequence Assessment 2018

- 6.3.1 The Strategic FCA (Ref 131) was published in 2018 and informs FCC's LDP and was carried out in accordance with the PPW TAN 15. The main purpose of the assessment is to identify key flood risks to communities in Flintshire.

Flintshire Council Plan (2017 – 2023)

- 6.3.2 The Flintshire Council Plan (Ref 132) sets a number of priorities, some of which will have land use implications for the LDP: Resilient communities; sustainable development and environmental management; Safe and sustainable travel services; High performing education; Effective resource management; Business sector growth and regeneration; Appropriate and affordable homes; Modern, efficient and adapted homes; Protecting people from poverty.

Deeside Plan 2017

- 6.3.3 The Deeside Plan (Ref 133) provides an overarching framework to guide actions over the next thirty years and pulls together a wide variety of objectives, plans and strategies grouped according to the key themes of economic growth, transport, housing skills and employment and the environment.

Flintshire Local Flood Risk Management Strategy 2013

The purpose of the strategy (Ref 134) is to address potential flood risk arising from local sources within Flintshire and to ensure that communities are aware of the risk that exist and the responsibilities of risk management.

Supplementary Planning Guidance Note (SPGN No 29) 2017

- 6.3.4 This guidance (Ref 135) relates to the management of surface water for new development. It advocates that surface water run-off should be controlled as near to its source as possible, preferably using sustainable drainage systems (SuDS).

6.4 Guidance

Environment Agency Approach to Groundwater Protection 2018

- 6.4.1 This document (Ref 136) contains non-statutory position statements which provide information about the Environment Agency's approach to managing and protecting groundwater and adopts a risk-based approach where legislation allows.

Non-Statutory Technical Standards for Sustainable Drainage Systems 2015

- 6.4.2 The Non-Statutory Technical Standards for SuDS (Ref 137), published by Defra in 2015, sets out the core technical standards for SuDS proposed within England. These standards should be used in accordance with the NPPF (Ref 138) and Planning Guidance on Controlling Flood Risk and Coastal Change (Ref 139) The standards include guidance on controlling flood risk within a development boundary and elsewhere, peak flow and runoff volume control, and the structural integrity of SuDS.

Clearing the Waters for All 2016

- 6.4.3 Clearing the Waters for All is a guidance document published by the Environment Agency in December 2016. It provides a process for assessing the impact of activities in estuarine and coastal waters under the Water Framework Directive. The guidance outlines a three-stage assessment process: screening, scoping, and impact assessment.

7. Geology and Ground Conditions

7.1 Introduction

- 7.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of geology and ground condition effects as reported in **Chapter 14: Geology and Ground Conditions (PEIR Volume II)**.

7.2 Legislation

The EIA Regulations

- 7.2.1 The EIA Regulations (Ref 1) set out the EIA process which must identify, describe, and assess potential significant effects of proposed developments on a number of factors, including geology and ground conditions.

Environmental Liability Directive (2004/35/EC)

- 7.2.2 This Directive (Ref 140) enforces claims against occupational activities which damage the environment. Its objective is to create "*a more uniform regime for the prevention and remediation of environmental damage*" across the EU. Post Brexit, the Directive itself no longer applies directly to the UK. However, the domestic legislation that was based on the Directive continues to apply. The relevant domestic legislation is the Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009 (Ref 147) and these are summarised later in this chapter.

WFD (2000/60/EC)

- 7.2.3 A fundamental requirement of the WFD is to attain Good Ecological Status, or Good Ecological Potential within each defined water body, by December 2027 at the latest and to ensure that any deterioration in status is prevented. The Directive requires Member States to put in place systems for managing their water environments based on natural river basin districts and underpinned by extensive environmental monitoring and scientific investigation called "river basin management". It further requires Member States to take account of the need to recover the costs of water services as a means of encouraging sustainable use of water resources. Post Brexit, the Directive itself no longer applies directly to the UK. However, the domestic legislation that was based on the Directive continues to apply. The relevant domestic legislation is the WFD Regulations 2017 and these are summarised later in this chapter.

Groundwater Directive (2006/118/EC)

- 7.2.4 This Directive (Ref 141) sets out general provisions for the protection and conservation of groundwater. As provided for in Article 17, measures to prevent and control groundwater pollution should be adopted, including criteria for assessing good groundwater chemical status and criteria for the identification of significant and sustained upward trends and for the definition of starting points for trend reversals. Post Brexit, the Directive itself no longer applies directly to the UK. However, the domestic legislation that was based on the Directive continues to apply. The relevant domestic legislation is the

Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 86) and these are summarised elsewhere in this chapter.

Environmental Quality Standards (EQS) Directive (2008/105/EC)

- 7.2.5 This Directive related to EQSs (Ref 142) in the field of water policy. Post Brexit, the Directive itself no longer applies directly to the UK. However, the domestic legislation that was based on the Directive continues to apply. The relevant domestic legislation is the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref 86) and these are summarised later in this chapter.

Environment Act 2021

- 7.2.6 The Environment Act 2021 aims to improve air and water quality, protect wildlife, increase recycling and reduce plastic waste.

Environmental Protection Act 1990

- 7.2.7 The Environmental Protection Act 1990 succeeded the COPA and introduced new regulations for improved management systems relating to waste and pollution. The Act establishes legal responsibilities for pollution control for land, air and water. In respect of waste, the Act defines the fundamental structure and authority for waste management and control of emissions into the environment. The contaminated land regime under Part 2A of the Act is one of the main policy measures used to deal with this legacy; for more information on the Part 2A guidance, see Section 7.5.

Water Act 2003

- 7.2.8 The Water Act 2003 sets out regulatory controls for water abstraction, water impoundment and protection of water resources.

Water Resources Act 1991

- 7.2.9 The Water Resources Act 1991 (Ref 122) states that it is an offence to cause or knowingly permit polluting, noxious, poisonous or any solid waste matter to enter controlled waters. The Act was revised by the Water Act 2003.

Building Act 1984 and Building (Amendment) Regulations 2016

- 7.2.10 The Building Act 1984 (Ref 143) and in particular the associated Building (Amendment) Regulations 2016 (Ref 144) are key when considering structural and design aspects of a development in terms of the geotechnical properties of the ground. The Building Act 1984 requires that buildings are constructed so that ground movement caused by swelling, shrinkage, freezing, landslip or subsidence of the sub-soils will not impair the stability of any part of the building. Notably, the Building (Amendment) Regulations 2016 also control ground gas mitigation which is a particularly pertinent consideration when considering land contamination.

Environment Act 1995

- 7.2.11 The Environment Act 1995 (Ref 7) sets out provisions with respect to contaminated land, control of pollution, conservation of natural resources and the conservation or enhancement of the environment.

Environmental Permitting (England and Wales) Regulations 2016

- 7.2.12 These Regulations streamline the legislative system for industrial and waste installations into a single permitting structure for those activities which have the potential to cause harm to human health or the environment supporting implementation of the WFD (2006/60/EC).

Hazardous Waste (England and Wales) (Amendment) Regulations 2016

- 7.2.13 These Regulations (Ref 145) make provision for the controlled management of hazardous waste, which could include excavated soil waste, from the point of production to the final point of disposal or recovery.

Contaminated Land (Wales) Regulations 2006

- 7.2.14 These Regulations (Ref 146) set out provisions in Wales relating to the identification and remediation of contaminated land under Part 2A of the Environmental Protection Act.

Environmental Damage (Prevention and Remediation) (Wales) Regulations 2009

- 7.2.15 These Regulations (Ref 147) require that proposed development will not cause damage to ecosystems, controlled waters or land.

The Anti-Pollution Works Regulations 1999

- 7.2.16 These Regulations (Ref 148) supplement the Water Resources Act 1991 defining the contents that the anti-pollution works notice should contain, and the procedure to follow to appeal against the notice.

Construction (Design and Management) Regulations 2015 (CDM Regulations)

- 7.2.17 The CDM Regulations (Ref 149) cover the management of health, safety and welfare when carrying out construction projects. CDM 2015 aims to improve health and safety in the industry by helping to:

- sensibly plan the work so the risks involved are managed from start to finish;
- have the right people for the right job at the right time;
- cooperate and coordinate your work with others;
- have the right information about the risks and how they are being managed;

- communicate this information effectively to those who need to know; and
- consult and engage with workers about the risks and how they are being managed.

Water Environment (Water Framework Directive) (England and Wales Regulations 2017 ('WFD Regulations 2017'))

7.2.18 The WFD Regulations 2017 (Ref 86) introduced a comprehensive river basin management planning system to protect and improve the ecological and chemical health of our rivers, lakes, estuaries, coastal waters and groundwater.

7.3 National Planning Policy

Overarching NPS for Energy (EN-1)

- 7.3.1 EN-1 paragraph 5.4.17 states '*Where the development is subject to EIA, the applicant should ensure that the Environmental Statement (ES) clearly sets out any effects on internationally, nationally and locally designated sites of ecological or geological conservation importance...*'
- 7.3.2 EN-1 paragraph 5.4.19 states '*The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.*'
- 7.3.3 EN-1 paragraph 5.11.8 states '*For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination and how it is proposed to address this.*'
- 7.3.4 EN-1 paragraph 5.11.4 states '*Development of land will affect soil resources, including physical loss of and damage to soil resources, through land contamination and structural damage. Indirect impacts may also arise from changes in the local water regime, organic matter content, soil biodiversity and soil process.*'
- 7.3.5 EN-1 paragraph 5.11.12 states '*Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5).*'
- 7.3.6 EN-1 paragraph 5.11.13 states '*Applicants should also identify any effects and seek to minimise impacts on soil health and protect and improve soil quality taking into account any mitigation measures proposed.*'
- 7.3.7 EN-1 paragraph 5.11.14 states '*Applicants are encouraged to develop and implement a Soil Management Plan which could help minimise potential land contamination. The sustainable reuse of soils needs to be carefully considered in line with good practice guidance where large quantities of soils are surplus to requirements or are affected by contamination.*'
- 7.3.8 EN-1 paragraph 5.11.17 states '*Applicants should ensure that a site is suitable for its proposed use, taking account of ground conditions and any risks arising from land instability and contamination.*'

- 7.3.9 EN-1 paragraph 5.11.18 states *'For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination, and where contamination is present, applicants should consider opportunities for remediation where possible.'*
- 7.3.10 EN-1 paragraph 5.11.19 states *'Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place.'*
- 7.3.11 EN-1 paragraph 5.11.28 states *'Where a proposed development has an impact upon a Mineral Safeguarding Area (MSA), the Secretary of State should ensure that appropriate mitigation measures have been put in place to safeguard mineral resources.'*
- 7.3.12 EN-1 paragraph 5.16.3 states *'Where the project is likely to have effects on the water environment, the applicant should undertake an assessment of the existing status of, and impacts of the proposed project on, water quality, water resources and physical characteristics of the water environment, ... as part of the ES or equivalent.'*
- 7.3.13 EN-1 paragraph 5.16.7 states *'The ES should in particular describe:*
- the existing quality of waters affected by the proposed project and the impacts of the proposed project on water quality...;*
 - existing water resources affected by the proposed project and the impacts of the proposed project on water resources...; and*
 - any impacts of the proposed project on water bodies or protected areas under the WFD and source protection zones (SPZ) around potable groundwater abstractions.'*

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

- 7.3.14 EN-2 paragraph 2.4.30 states that *'Where a project is likely to have effects on water quality or resources, the applicant must undertake an assessment as required in Section 5.16 of EN-1.'*

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

- 7.3.15 EN-4 paragraph 2.21.37 states *'Constructing pipelines creates corridors of surface clearance and excavation that can potentially affect watercourses, aquifers, water abstraction and discharge points, areas prone to flooding and ecological receptors. Pipeline impacts could include:*
- mobilisation of contaminants already in the ground;*
 - the introduction of new pollutants;*
 - disturbance to water ecology; and*
 - pollution due to silt from construction.'*

- 7.3.16 EN-4 paragraph 2.21.42 states *'New pipelines will be installed in a variety of geological conditions. It will be important for applicants to understand the soil types and the nature of the underlying strata, as well as the organic content of different soils.'*
- 7.3.17 EN-4 paragraph 2.21.43 states *'Underground cavities and unstable ground conditions may present particular risks to pipeline projects. Impacts could include sterilisation of mineral resources or loss of soil quality.'*
- 7.3.18 EN-4 paragraph 2.21.44 states *'Applicants must assess the stability of the ground conditions associated with the pipeline route and incorporate the findings of that assessment in the ES as appropriate.'*
- 7.3.19 EN-4 paragraph 2.21.45 states *'Desktop studies, which include known geology and previous borehole data, can form the basis of the applicant's assessment.'*
- 7.3.20 EN-4 paragraph 2.21.46 states *'The applicant may find it necessary to sink new boreholes along the preferred route to better understand the ground conditions present.'*
- 7.3.21 EN-4 paragraph 2.21.47 states *'The assessment should cover the options considered for installing the pipeline and weigh up the impacts of the means of installation.'*
- 7.3.22 EN-4 paragraph 2.21.48 states *'Where the applicant proposes to use horizontal directional drilling (HDD) as the means of installing a pipeline under a National or International Site and mitigating the impacts, the assessment should cover whether the geological conditions are suitable for HDD.'*
- 7.3.23 EN-4 paragraph 2.21.49 states *'When considering any application where the pipeline goes under a designated area of geological or geomorphological interest, the applicant should submit details of alternative routes, which either bypass the designated area or reduce the length of pipeline through the designated area to the minimum possible, and the reasons why they were discounted.'*
- 7.3.24 EN-4 paragraph 2.21.50 states *'Applicants should consult with the relevant statutory consultees at an early stage.'*
- 7.3.25 EN-4 paragraph 2.22.13 states *'Applicants are encouraged to develop and implement a Soil Resources and Management Plan which could help to use and manage soils sustainably and minimise adverse impacts on soil health and potential land contamination.'*

NPS for Electricity Networks Infrastructure (EN-5)

- 7.3.26 EN-5 paragraph 2.2.10 states *'new electricity networks infrastructure must have regard to ... conserving geological features of special interest; and ...do what [they] reasonably can to mitigate any effect which the proposals would have on the features or sites.'*

Planning Policy Wales

- 7.3.27 The PPW sets out the land use planning policies of the Welsh Government, including minerals, land contamination, geological features and soils.

Future Wales: The National Plan 2040

- 7.3.28 The Future Wales National Plan 2040 sets out a development strategy for key national priorities.

7.4 Local Planning Policy

- 7.4.1 Local planning policy which is relevant to geology and ground conditions is contained within the FCC LDP (2015-2030).

7.5 Guidance

Environment Agency's Guidance for the Management of Land Contamination 'Land Contamination: Risk Management' (LCRM), 2020 (updated 2023), adopted by NRW in 2021

- 7.5.1 This guidance (Ref 150) provides the technical framework for applying a risk management process when dealing with land impacted by contamination. The technical approach presented is designed to be applicable to a range of non-regulatory and regulatory contexts.

Welsh Land Contamination Working Group (2023): The Development of Land Affected by Contamination: A Guide for Developers

- 7.5.2 This guidance document (Ref 151) for developers and advisers involved in assessment and management of land affected by land contamination in Wales; outlines the requirements by the local authorities and describes good practices.

Contaminated Land Statutory Guidance for Wales 2012

- 7.5.3 This guidance (Ref 152) should be read and applied alongside the Part 2A guidance (Ref 153) and establishes a legal framework for dealing with contaminated land in Wales.

The Environmental Protection Act: Part 2A Contaminated Land Statutory Guidance (2012)

- 7.5.4 This guidance (Ref 154) sets out how local authorities should implement the Part 2A regime, including how they should go about deciding whether land is contaminated land in the legal sense of the term. It also elaborates on the remediation provisions of Part 2A, such as the goals of remediation, and how regulators should ensure that remediation requirements are reasonable.

BS 10175 (2011 + A2 2017), Investigation of Potentially Contaminated Sites - Code of Practice (Ref 155) and BS 5930 (2015 + A1 2020), Code of Practice for Site Investigations (Ref 156)

- 7.5.5 These documents provide guidance and recommendations for the investigation of potentially contaminated sites.

BS 8576 (2013), Guidance on Investigations for Ground Gas. Permanent Gases and Volatile Organic Compounds (VOC)

- 7.5.6 This guidance (Ref 157) provides guidance on the monitoring and sampling of ground gases, covering VOC and permanent gases such as carbon dioxide, methane and oxygen.

BS 8485 (2019), Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings

- 7.5.7 This Code of Practice (Ref 158) describes how to characterise sites and prevent the entry of toxic, asphyxiating or explosive ground gases.

CIRIA C665, Assessing Risks Posed by Hazardous Ground Gases to Buildings, 2007

- 7.5.8 The guidance (Ref 159) consolidates good practice in investigation, the collection of relevant data and monitoring programmes in a risk-based approach to gas contaminated land. A stepwise approach to risk assessment is described.

CIRIA C811, Environmental Good Practice On Site Guide (fifth edition), 2023

- 7.5.9 This guidance (Ref 160) provides practical advice about managing construction on site to minimise environmental impacts.

Environment Agency, Guidance Note on Piling/ Penetrative Ground Improvement Methods on Land Affected by Contamination, NC/99/73, 2001

- 7.5.10 This report (Ref 161) presents initial technical guidance on the potential impact that intrusive ground improvement and piling techniques can have on the environment. It focuses, in particular, on the potential for pollution of groundwater.

DMRB, LA109 Geology and Soils (2019)

- 7.5.11 This guidance document (Ref 162) sets out the requirements for assessing and reporting the environmental effects of highway projects on geology and soils. Some aspects of the methodology have been used to define the methodology presented for geology and ground conditions in **Chapter 14:**

Geology and Ground Conditions (PEIR Volume II) and in the absence of more specific guidance for this topic area.

DMRB, LA104 Environmental Assessment and Monitoring (2020)

- 7.5.12 This guidance document (Ref 163) sets out the requirements for environmental assessment of projects, including reporting and monitoring of significant adverse environmental effects.

DMRB, LA113 Road Drainage and the Water Environment (2020)

- 7.5.13 This guidance document (Ref 164) sets out the requirements for assessing and reporting the environmental effects of highway projects on the water environment.

National House Building Council (NHBC), Environment Agency and Chartered Institute of Environmental Health (CIEH) report R&D66, Guidance for the Safe Development of Housing on Land Affected by Contamination, 2008

- 7.5.14 The guidance (Ref 165), whilst written to be relevant to housing development, is also generally applicable to other forms of development, to existing developments and to undeveloped land, where such sites are on land affected by contamination. It was designed to accord with the Model Procedures in Contaminated Land Report 11 (CLR11), and it describes the processes and activities involved in hazard identification and assessment, risk estimation and evaluation and remediation (design, implementation and verification). CLR11 has been withdrawn and replaced by the EA LCRM guidance, 2020, however the approach to risk management remains consistent.

CL:AIRE, Framework for Assessing the Sustainability of Soil and Groundwater Remediation, 2010

- 7.5.15 This guidance (Ref 166) provides a framework for assessing the sustainability of remediation and informing the decision-making process where remediation measures are required.

CL:AIRE, Control of Asbestos Regulations (CAR-SOIL) 2012: Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials, 2016

- 7.5.16 This guidance (Ref 167) provides interpretation and guidance to all involved in the management of asbestos in both soils and construction and demolition arisings in accordance with CAR 2012.

CL:AIRE, Definition of Waste Code of Practice (DoW), 2011

- 7.5.17 The DoW Code of Practice (Ref 168) sets out good practice for developers to use when: assessing on a site-specific basis whether excavated materials are

classified as waste or not; and, determining on a site-specific basis when treated excavated waste can cease to be waste for a particular use.

Ministry of Agriculture, Fisheries and Food, Agricultural Land Classification, 1988

- 7.5.18 The report (Ref 169) provides revised criteria for grading the quality of agricultural land using the Agricultural Land Classification (ALC) of England and Wales. This provides a framework for classifying land according to the extent to which its physical or chemical characteristics impose long-term limitations on agricultural use.

Defra, Construction Code of Practice for the Sustainable Use of Soils on Construction Sites, 2009

- 7.5.19 The Code of Practice (Ref 170) was developed to assist anyone involved in the construction sector to better protect the soil resources with which they work through pre-construction planning and soil management during construction.

IEMA, A New Perspective on Land and Soil in EIA, 2022

- 7.5.20 A handbook (Ref 171) on the current state of land and soil in EIA, it is part position paper, part educational resource and part methodological guidance it provides a framework rather than rigid approach to assessing soil functions and services.

Institute of Quarrying, Good Practice Guide for Handling Soils in Mineral Workings, 2021

- 7.5.21 This guidance (Ref 172) was produced for mineral planners and restoration specialists when using combinations of earth-moving machinery for soil stripping, storage and replacement. The guidance succeeds Defra guidance and is also applicable to civil engineering and the wider construction sectors.

Welsh Assembly Government, TAN 6 Planning for Sustainable Rural Communities, 2010

- 7.5.22 Purpose of TAN 6 (Ref 173) is to provide practical guidance on the role of the planning system in supporting the delivery of sustainable rural communities, including development involving agricultural land.

Welsh Assembly Government, The Code of Good Agricultural Practice for the Protection of Water, Soil and Air for Wales No. 20, 2011

- 7.5.23 The Code (Ref 174) draws together advice on good agricultural practice to reduce the risk of pollution to air, soil and water.

British Society of Soil Science, Guidance Document 3 Working with Soil Guidance Note on Benefitting from Soil Management in Development and Construction, 2022

- 7.5.24 This guidance (Ref 175) recommends that planning consents for the development of green field sites are conditional on the production and implementation of a comprehensive and site-specific Soil Resource Survey and Soil Management Plan, the results of which are a consideration at the design stage of a development.

8. Landscape and Visual Amenity

8.1 Introduction

8.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of landscape and visual amenity effects as reported in **Chapter 15: Landscape and Visual Amenity (PEIR Volume II)**.

8.2 Legislation

The European Landscape Convention (2020)

8.2.1 The landscape and visual impact assessment presented in in **Chapter 15: Landscape and Visual Amenity (PEIR Volume II)** takes account of the legislation relevant to landscape and visual issues, including the aims of the European Landscape Convention (Ref 176).

The EIA Regulations

8.2.2 The EIA Regulations (Ref 1) set out the EIA process which must identify, describe and assess potential significant effects of the Proposed Development on a number of factors, including landscape, and environmental factors.

8.3 National Planning Policy

Overarching NPS for Energy (EN-1)

8.3.1 Section 5.10 of the EN-1 contains statements which are relevant to landscape and visual amenity and the assessment of impacts to this. The relevant paragraphs are outlined below.

8.3.2 EN1 paragraph 5.10.6 states *'Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimize harm to the landscape, providing reasonable mitigation where possible and appropriate'*.

8.3.3 EN1 paragraph 5.10.12 states *'Outside nationally designated areas, there are local landscapes that may be highly valued locally. Where a local development document in England or a local development plan in Wales has policies based on landscape or waterscape character assessment, these should be paid particular attention. However, locally valued landscapes should not be used in themselves to refuse consent, as this may unduly restrict acceptable development'*.

8.3.4 Paragraphs 5.10.26 to 5.10.28 of EN-1 state:

- *'Reducing the scale of a project can help to mitigate the visual and landscape effects of a proposed project. However, reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function – for example, electricity generation output. There may, however, be exceptional circumstances, where mitigation could have a very*

significant benefit and warrant a small reduction in function. In these circumstances, the Secretary of State may decide that the benefits of the mitigation to reduce the landscape and/or visual effects outweigh the marginal loss of function.'

- *'Adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within its development site and wider setting. The careful consideration of colours and materials will support the delivery of a well-designed scheme, as will sympathetic landscaping and management of its immediate surroundings'.*
- *'Depending on the topography of the surrounding terrain and areas of population it may be appropriate to undertake landscaping off site. For example, filling in gaps in existing tree and hedge lines may mitigate the impact when viewed from a more distant vista.'*

8.3.5 Paragraph 5.10.35 states:

- *'The scale of energy projects means that they will often be visible across a very wide area. The Secretary of State should judge whether any adverse impact on the landscape would be so damaging that it is not offset by the benefits (including need) of the project.'*

8.3.6 Section 5.11 of EN-1 establishes the requirements for identifying and mitigating impacts of energy infrastructure projects on open space, including green infrastructure.

8.3.7 An energy infrastructure project will have direct effects on the existing use of the proposed site and may have indirect effects on the use, or planned use, of land in the vicinity for other types of development. Given the likely locations of energy infrastructure projects there may be particular effects on open space and green infrastructure.

8.3.8 The EN-1 goes on to state that where green infrastructure is affected, the SoS should consider imposing requirements to ensure the connectivity of the green infrastructure network is maintained in the vicinity of the development and that any necessary works are undertaken, where possible, to mitigate any adverse effects.

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

8.3.9 Paragraphs 2.4.26 to 2.4.28 of EN-2 state:

- *'The main structures for a natural gas generating station, including the turbine and boiler halls, exhaust gas stacks, storage facilities, cooling towers, and water processing plant, are large. They will have an impact on the surrounding landscape and visual amenity. The overall size of the development will inevitably be dependent on technology and design. Night-time lighting for continuous operation will also have an impact on visual amenity.'*
- *'The applicant must include a landscape and visual impact assessment as part of the ES, as set out in Section 5.10 of EN-1.'*

- *'The applicant must also consider the design of the plant, including the materials to be used, and the visual impact of the plant, as set out in Section 5.10 of EN-1 in the context of the local landscape. The need for good design will be particularly important where a national designated landscape is affected.'*

8.3.10 Paragraphs 2.5.4 to 2.5.5 state:

- *'Mitigation should be implemented to reduce the visual intrusion of the buildings in the landscape and minimise impact on visual amenity as far as reasonably practicable. For proposals affecting designated landscapes the applicant should also consider how the scheme will further the purposes of the designation through its design, delivery, and operation. These measures may go beyond the mitigation measures needed to minimise the effects of the scheme.'*
- *'Applicants should design natural gas electricity generating stations with the aim of providing the best fit with the existing local landscape so as to reduce visual and landscape impacts. This may include design of buildings to minimise negative aspects of their appearance through decisions in areas such as size, external finish and colour of the plant as far as compliance with engineering and environmental requirements permit.'*

8.3.11 Paragraphs 2.5.7 to 2.5.9 state:

- *'Reduction of visual and landscape impacts may often involve enclosing buildings at low level as seen from surrounding external viewpoints. This makes the scale of the plant less apparent, and helps conceal the lower level, smaller scale features of the plant.'*
- *'Earth bunds and mounds, tree planting, or both may be used for softening the visual intrusion and may also help to attenuate noise from site activities.'*
- *'Where the existing landscape is more industrial, design may involve other forms of visual impact mitigation.'*

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

8.3.12 Paragraphs 2.21.24 to 2.21.26 of EN-4 state:

- *'Additional considerations apply during the construction of a pipeline (which, without mitigation, can affect both landscape, visual amenity and ecology).'*
- *'These comprise the effects upon specific landscape elements within and adjacent to the pipeline route, such as grasslands, field boundaries (hedgerows, hedge banks, drystone walls, fences), trees, woodlands, and watercourses.'*
- *'There will also be temporary visual and landscape impacts caused by the need to access the working corridor and to remove flora and soil'.*

8.3.13 Paragraphs 2.21.29 to 2.21.32 state:

- *'Long term impacts upon the landscape for pipelines are likely to be limited, as once operational the main infrastructure is usually buried. They are likely to include:*
 - *limitations on the ability to replant landscape features such as hedgerows or deep-rooted trees over or adjacent to the pipeline;*
 - *the route of the pipeline clearly discernible in the landscape as a result of soil disturbance and altered drainage patterns producing changes to vegetation cover; and*
 - *structures and indication points necessary to identify the pipeline route and provide it with service access.'*
- *'The ES must include an assessment of the biodiversity and landscape and visual effects of the proposed route and of the main alternative routes considered (see Section 5.10 of EN-1).'*
- *'The application should also include proposals for reinstatement of the pipeline route as close to its original state as possible and take into account any requirements for agreements with the landowner to access areas for aftercare and management work. This is particularly important in designated landscapes.'*
- *'Where it is unlikely to be possible to restore landscape to its original state, the applicant should set out measures to avoid, mitigate, or employ other landscape measures to compensate for, any adverse effect on the landscape.'*

NPS for Electricity Networks Infrastructure (EN-5)

8.3.14 Paragraph 2.9.9 of EN-5 states:

- *'New substations, sealing end compounds (including terminal towers), and other above-ground installations that serve as connection, switching, and voltage transformation points on the electricity network may also give rise to adverse landscape and visual impacts.'*

8.3.15 Paragraph 2.9.11 states:

- *'Landscape and visual benefits may arise through the reconfiguration, rationalisation, or undergrounding of existing electricity network infrastructure.'*

Planning Policy Wales

8.3.16 Paragraph 6.3.1 of PPW states:

- *'Landscape is an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. Landscape policy is guided by the European Landscape Convention.'*

8.3.17 Paragraph 6.3.2 of PPW states:

- *'The landscapes of Wales are rich and varied. Many Welsh landscapes are iconic, and a quarter of the land area of Wales is designated as either a National Park or AONB. The character and special qualities of all our places and landscapes, both urban and rural, can provide a strong sense*

of place, inspiration and belonging, and contribute to the distinctive cultural identity of Wales.'

8.3.18 Paragraph 6.3.3 of PPW states:

- *'All the landscapes of Wales are valued for their intrinsic contribution to a sense of place, and local authorities should protect and enhance their special characteristics, whilst paying due regard to the social, economic, environmental and cultural benefits they provide, and to their role in creating valued places. Considering landscape at the outset of formulating strategies and policies in development plans and when proposing development is key to sustaining and enhancing their special qualities, and delivering the maximum well-being benefits for present and future generations as well as helping to deliver an effective and integrated approach to natural resource management over the long term. Collaboration and engagement with adjacent planning authorities, NRW, Cadw and the third sector will be necessary to draw on a wide range of expertise and evidence. This means:*
 - *ensuring Wales contributes to meeting international responsibilities and obligations for landscapes;*
 - *ensuring statutorily designated sites are properly protected and managed;*
 - *ensuring that the value of all landscapes for their distinctive character and special qualities is protected; and*
 - *ensuring the opportunities landscapes provide for tourism, outdoor recreation, local employment, renewable energy and physical and mental health and well-being are taken into account and multiple well-being benefits for people and communities secured.'*

Welsh National Marine Plan 2019

8.3.19 Policy SOC_06: Designated Landscapes of the WNMP states:

- *'Proposals should demonstrate how potential impacts on the purposes and special qualities for which National Parks or Areas of Outstanding Natural Beauty have been designated have been taken into consideration and should, in order of preference:*
 - *avoid adverse impacts on designated landscapes; and/or*
 - *minimise impacts where they cannot be avoided; and/or*
 - *mitigate impacts where they cannot be minimised.*
- *If significant adverse impacts cannot be avoided, minimised or mitigated, proposals must present a clear and convincing case for proceeding.*
- *Opportunities to enhance designated landscapes are encouraged.'*

8.3.20 Paragraph 130 of the WNMP states:

- *'Under this policy, proposals should demonstrate appropriate consideration of the potential impacts of developments and activities on designated landscapes...'*

8.3.21 Policy SOC_07: Seascapes of the WNMP states:

- *'Proposals should demonstrate how potential impacts on seascapes have been taken into consideration and should, in order of preference:*
 - *avoid adverse impacts on seascapes; and/or*
 - *minimise impacts where they cannot be avoided; and/or*
 - *mitigate impacts where they cannot be minimized.*
- *If significant adverse impacts cannot be avoided, minimised or mitigated, proposals must present a clear and convincing case for proceeding. Opportunities to enhance seascapes are encouraged.'*

8.3.22 Paragraph 134 of the WNMP states:

- *'Developments, activities and management measures have the potential to change the character and visual resources of an area. All seascapes are of value, providing an important role in terms of both local and visitor perceptions of an area and forming a key part of the unique selling point of coastal areas that support our coastal communities. Policy SOC_07 therefore aims to ensure appropriate consideration of the potential impacts of developments and activities on seascapes whilst also encouraging opportunities to contribute positively to the protection or enhancement of these areas.'*

8.3.23 Section 'Energy – Oil and Gas', within the WNMP (2019) Sector Objective states:

- *'Maximising the sustainable recovery of UK oil and gas in order to provide commercial and domestic consumers with a secure, affordable and resilient supply of energy whilst meeting UK decarbonisation goals'.*

8.3.24 Paragraph 371, CCS of the WNMP states:

- *'The Energy Generation in Wales 2017 report recognises that gas, as a flexible, reliable, responsive energy source with lower emissions than other fossil fuels, is expected to continue to play a gradually diminishing role in the energy mix. However, it is unlikely to be a long-term basis for the energy economy of Wales without measures to mitigate the environmental effects, such as carbon capture and storage (CCS)'.*

8.4 Local Planning Policy

FCC LDP (2015-2030)

8.4.1 Within the FCC Policy PC3 Design states:

- *'All new development should:*
 - a. be of a high quality, distinctive and inclusive design which respects and enhances the site and its surroundings in terms of its siting, layout, scale, height, design, density, use of materials and landscaping, and creates a sense of place;*
 - b. retain existing landscape and nature conservation features and incorporate opportunities to enhance biodiversity and ecological connectivity;*

- c. *ensure that new materials are appropriate, durable and sympathetic to the character and context of the site...*

8.4.2 Policy EN2 Green Infrastructure states:

- *'Development proposals will be required to protect, maintain and enhance the extent, quality and connectivity of the green infrastructure network, including designated and non-designated green spaces... Where the loss or damage of existing green infrastructure is unavoidable, appropriate mitigation and compensation will be required.'*

8.4.3 Policy EN4 Landscape Character states:

- *'New development, either individually or cumulatively, must not have a significant adverse impact on the character and appearance of the landscape. Landscaping and other mitigation measures should seek to reduce landscape impact and where possible bring about enhancement.'*

8.4.4 Policy EN5 AONB states:

- *'Within the Clwydian Range and Dee Valley AONB and its setting, development will only be permitted where it conserves or enhances the natural beauty of the designated area and its setting. In assessing the likely impact of development proposals on the natural beauty of the AONB, cumulative impact will also be taken into consideration.'*

8.4.5 Policy EN7 Development Affecting Trees, Woodlands and Hedgerows states:

- *'Development proposals that will result in significant loss of, or harm to, trees, woodlands or hedgerows of biodiversity, historic, and amenity value will not be permitted.'*
- *'Where the impact of development affecting trees, woodlands or hedgerows is considered acceptable, development will only be permitted where:*
 - a) *the development maximises their retention through sensitive design measures; and*
 - b) *where the removal of trees is considered necessary, suitable replacements shall be provided elsewhere within the site; and*
 - c) *it results in a net benefit in biodiversity.'*

8.4.6 Policy EN13 Renewable and Low Carbon Energy Development states:

- *'All renewable or low carbon energy proposals will be permitted provided that:*
- *v. ...there would be no individual or cumulative significant adverse effect on the landscape, particularly the AONB and its setting;*
- *vi. any associated ancillary buildings or structures are sensitively sited and designed to minimize their impact on the character and quality of the locality;*
- *vii. in sensitive areas where above ground connections will have an unacceptable adverse effect on the landscape, connection lines and pipes should be located underground;'*

8.5 Guidance

Guidelines for Landscape and Visual Impact Assessment, Third Edition 2013 (GLVIA3)

- 8.5.1 Ref 177 The Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3), published in 2013 (Ref 175) provide a comprehensive framework for assessing the potential effects of a Proposed Development on the receiving landscape character and the available visual resource and amenity. The guidelines emphasise a clear distinction between landscape impact (changes to the landscape's physical and aesthetic characteristics) and visual impact (effects on specific viewpoints and the people experiencing them). GLVIA3 also offers best practice approaches for baseline studies, assessment methodologies, and the communication of findings in environmental assessments, tailored to a project's scale.

Visual Representation of Development Proposals, Technical Guidance Note 06/19

- 8.5.2 The Visual Representation of Development Proposals, Technical Guidance Note 06/19 (Ref 178) provides detailed guidance on producing accurate and consistent visual representations for use in planning and landscape assessments. Issued by the Landscape Institute, the guidance focuses on the methods and standards for creating visualizations such as photomontages, 3D models, and computer-generated imagery to depict proposed developments. It emphasises the importance of transparency in methodology, appropriate viewpoint selection, image accuracy, and the communication of visual impact to stakeholders. The guidance aims to improve the quality and reliability of visual materials used in environmental and planning processes, ensuring they accurately reflect potential landscape and visual changes.

Assessing landscape value outside national designations, Technical Guidance Note 02/21

- 8.5.3 The Assessing Landscape Value Outside National Designations, Technical Guidance Note 02/21 (Ref 179) provides a structured approach for evaluating landscape value in areas that are not covered by formal national designations, such as National Parks or National Landscapes (previously Areas of Outstanding Natural Beauty (AONBs)). Issued by the Landscape Institute, this guidance outlines criteria for assessing landscape value, including factors such as scenic quality, cultural associations, naturalness, and recreational value. It aims to provide consistency and clarity in assessments for areas that, while lacking formal designation, still possess significant landscape qualities that may be affected by a Proposed Development. This technical note is particularly relevant in the planning and development context, helping to ensure that non-designated landscapes are given appropriate consideration in decision-making processes.

Infrastructure, Technical Guidance Note 04/2020

- 8.5.4 The Infrastructure, Technical Guidance Note 04/2020 (Ref 180) provides guidance on addressing the landscape and visual impacts associated with

major infrastructure projects, such as transportation networks, energy installations, and utilities. Issued by the Landscape Institute, this note emphasises the importance of early-stage landscape-led planning and design to mitigate potential adverse effects on both the physical environment and visual aesthetics. It highlights key considerations, including site selection, route alignment, design integration, and mitigation strategies such as planting and screening. The guidance aims to ensure that infrastructure developments are sensitively and sustainably integrated into the landscape, balancing the need for development with environmental stewardship and public amenity.

Tranquillity – An overview, Technical Guidance Note Tranquillity 01/17, Landscape Institute, 2021

- 8.5.5 The Tranquillity – An Overview, Technical Guidance Note Tranquillity 01/17, published by the Landscape Institute in 2021 (Ref 181), offers insights into assessing and preserving tranquillity within landscapes. This guidance focuses on the key factors that contribute to tranquil environments, such as natural sounds, visual simplicity, remoteness, and the absence of human-made disturbances like traffic and urban development. The note outlines methods for measuring tranquillity through both subjective perceptions and objective criteria, providing a framework for incorporating tranquillity into landscape planning and assessments. It highlights the importance of safeguarding tranquil spaces, particularly in areas where tranquillity is a valued landscape attribute, helping ensure that development and land management practices maintain or enhance these qualities.

9. Physical Processes

9.1 Introduction

- 9.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of water environment physical process effects as reported in **Chapter 16: Physical Processes (PEIR Volume II)**.

9.2 Legislation

The EIA Regulations

- 9.2.1 The EIA Regulations (Ref 1) set out the EIA process which must identify, describe and assess potential significant effects of the Proposed Development on a number of factors, including the physical environment.

Marine Coastal Access Act 2009 (MCAA)

- 9.2.2 The MCAA aims to create a more integrated approach to effective marine management; enable the sustainable use and protection of marine resources and provide a clearer framework for consistent decision-making which affects the use of the marine environment. It also provides the legal mechanism to help ensure clean, healthy, safe and productive and biological diverse oceans and seas.

The Marine Strategy Regulations 2010

- 9.2.3 The Marine Strategy Regulations 2010 transpose the Marine Strategy Framework Directive (2008/56/EC) into UK legislation.
- 9.2.4 The regulations implemented measures required for the UK to achieve GES by 2020. There are three main elements of the strategy:
- the Initial Assessment of the State of the UK's Seas Cover Paper, which provides analysis of essential characteristics, features and the environmental status of the UK's waters;
 - characteristics of GES for the UK's seas, which provides a qualitative, high-level description of how the UK's marine environment will look once GES has been achieved; and
 - GES targets and indicators of GES, which have been developed based on the high-level description. The targets and indicators help develop a quantitative framework for achieving GES.

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

- 9.2.5 These regulations transpose the EU WFD (2000/60/EC) into UK legislation.
- 9.2.6 Compliance with the WFD means attainment of good ecological status, prevention of deterioration in status, and prevention of failure to achieve future attainment of good status where it is not already achieved within waterbodies. However, WFD Article 4.7 provides legislation for exemption conditions that

could allow implementation of schemes that cause deterioration in ecological status, for example for reasons of overriding public interest.

9.3 National Planning Policy

Overarching NPS for Energy (EN-1)

9.3.1 Several sections of EN-1 are of relevance to development applications in the marine physical environment, including:

- paragraph 4.5.7 states “... Applicants are encouraged to approach the marine licensing regulator (MMO in England and Natural Resources Wales (NRW) in Wales) in pre-application, to ensure that they are aware of any needs for additional marine licences alongside their DCO application”.
- paragraph 4.5.9 states “...Applicants are encouraged to refer to Marine Plans at an early stage, such as in preapplication, to inform project planning, for example to avoid less favourable locations as a result of other uses or environmental constraints”.
- paragraph 5.6.11 states “...Where relevant, applicants should undertake coastal geomorphological and sediment transfer modelling to predict and understand impacts and help identify relevant mitigating or compensatory measures.”
- paragraph 5.4.17 (part) states “...Where the development is subject to EIA the applicant should ensure that the ES clearly sets out any effects on internationally, nationally, and locally designated sites of ecological or geological conservation importance ... on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity, including irreplaceable habitats”.
- paragraph 5.6.12 (part) states “...The ES (see Section 4.2) should include an assessment of the effects on the coast. In particular, applicants should assess the impact of the proposed project on coastal processes and geomorphology, including by taking account of potential impacts from climate change. If the development will have an impact on coastal processes the applicant must demonstrate how the impacts will be managed to minimise adverse impacts on other parts of the coast; and the implications of the proposed project on strategies for managing the coast as set out in Shoreline Management Plans (SMPs) (which provide a large-scale assessment of the physical risks associated with coastal processes and present a long term policy framework to reduce these risks to people and the developed, historic and natural environment in a sustainable manner), any relevant Marine Plans, River Basin Management Plans, and capital programmes for maintaining flood and coastal defences and Coastal Change Management Areas.”
- paragraph 5.6.13 states “...For any projects involving dredging or deposit of any substance or object into the sea, the applicant should consult the MMO and Historic England, or the NRW in Wales. Where a project has the potential to have a major impact in this respect, this is covered in the technology specific NPSs.”

- paragraph 5.6.14 states “...*The applicant should be particularly careful to identify any effects of physical changes on the integrity and special features of Marine Conservation Zones, candidate marine Special Areas of Conservation (SACs), coastal SACs and candidate coastal SACs, coastal Special Protection Areas (SPAs) and potential coastal SPAs, Ramsar sites, Sites of Community Importance (SCIs) and potential SCIs and Sites of Special Scientific Interest.*”
- paragraph 5.6.16 states “...*Applicants should propose appropriate mitigation measures to address adverse physical changes to the coast, in consultation with the MMO, the EA, LPAs, other statutory consultees, Coastal partnerships and other coastal groups, as it considers appropriate. Where this is not the case the Planning Inspectorate should consider what appropriate mitigation requirements might be attached to any grant of development consent.*”

NPS for Natural Gas Electricity Generating infrastructure (EN-2)

9.3.2 EN-2 includes a number of paragraphs of relevance to development applications in the marine physical environment, including:

- paragraph 2.4.30 states “*Where the project is likely to have effects on water quality or resources the applicant must undertake an assessment. The assessment should particularly demonstrate that appropriate measures will be put in place to avoid or minimise adverse impacts of abstraction and discharge of cooling water.*”
- paragraph 2.431 states “*Where the project is likely to have effects on water quality or resources the applicant must undertake an assessment as required in Section 5.16 of EN-1. The assessment should particularly demonstrate that appropriate measures will be put in place to avoid or minimise adverse impacts of abstraction and discharge of cooling water.*”
- paragraph 2.4.31 states “*The design of water-cooling systems for natural gas electricity generating stations will have additional impacts on water quality, abstraction and discharge. These include:*
 - *discharging water at a higher temperature than the receiving water, affecting the biodiversity of aquatic flora and fauna*
 - *use of resources may reduce the flow of water courses, affecting the rate at which sediment is deposited...*”
- paragraph 2.5.12 states “*In addition to the mitigation measures set out in Section 5.16 of EN-1, design of the cooling system should include intake and outfall locations that avoid or minimise adverse impacts.*”

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

9.3.3 EN-4 includes a number of paragraphs of relevance to development applications in the marine physical environment, including:

- paragraph 2.21.24 states “*Additional considerations apply during the construction of a pipeline (which, without mitigation, can affect both landscape, visual amenity and ecology).*”
- paragraph 2.21.38 states “*Impacts during construction should be avoided as far as possible through route selection or mitigated if unavoidable and ground should be reinstated after construction.*”
- paragraph 2.22.6 states “*Mitigation measures to protect the landscape, visual amenity and ecology could include reducing the working width required for the installation of the pipeline to reduce the impact on the landscape where it will not be possible to fully reinstate the route.*”

NPS for Electricity Networks Infrastructure (EN-5)

9.3.4 EN-5 includes a number of paragraphs of relevance to development applications in the marine physical environment, including:

- paragraph 2.2.10 states “*...As well as having duties under Section 9 of the Electricity Act 1989, (in relation to developing and maintaining an economical and efficient network), applicants must take into account Schedule 9 to the Electricity Act 1989, which places a duty on all transmission and distribution licence holders, in formulating proposals for new electricity networks infrastructure, to “have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and ...do what [they] reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects”.*
- paragraph 2.13.15 states “*...The sensitivities of many coastal locations and of the marine environment as well as the potential environmental, community and other impacts in neighbouring onshore areas must be considered in the identification onshore connection points.*”

UK Marine Policy Statement (MPS)

9.3.5 The UK MPS was adopted in 2011 and provides a policy framework for taking decisions affecting the marine environment, based on marine plans. The MPS was prepared and adopted in line with Section 44 of the MCAA and contributes towards achieving sustainable marine development in the UK. The MPS was subject to updates in September 2020 relating to how references to EU law should be interpreted from 1 January 2021 following the UK’s withdrawal from the EU.

9.3.6 The UK MPS ensures that marine resources are used in a sustainable way by ensuring biodiversity is protected and conserved during development by using the precautionary principle and relying on sound evidence. This includes ensuring loss of the marine environment is halted during development and putting measures in place to conserve the natural environment during impact assessments. It provides a framework to ensure policy goals, principles and considerations are taken into consideration during decision making and identifies activities which should be given priority.

Welsh National Marine Plan

- 9.3.7 The WNMP sets out a single framework for sustainable development within the Wales marine area, including the requirement to maintain seafloor integrity and safeguard marine ecosystems during development. This framework informs marine impact assessments, including through the provision of policies to help shape proposals that recognise the importance of hydrodynamic and geomorphological parameters, and data such as contextual maps of natural resources, erosion and flooding.
- 9.3.8 The WNMP has been developed and adopted under the MCAA and in conformity with the UK MPS.

Planning Policy Wales

- 9.3.9 PPW ensures that the planning system contributes towards a sustainable development that improves the natural and built environments. It sets out planning policies relating to development in coastal and estuarine environments, highlighting the challenges resulting from the dynamic interaction of natural processes and the development and the impact of future climate change and associated sea level rise.
- 9.3.10 The policy states that development plan strategies should be ecologically and physically resilient and socially and economically adaptable to change.

Future Wales: The National Plan 2040

- 9.3.11 The Future Wales National Plan 2040 sets out a development strategy for key national priorities, which includes developing strong ecosystems and climate-resilience in Wales' marine environment, and policies for development which inform marine ecological impact assessments. The Plan has been informed by the Welsh National Marine Plan.

National Planning Policy Framework (NPPF)¹

- 9.3.1 The National Planning Policy Framework (NPPF) (Ref 306) sets out the Government's planning policies for England and how these should be applied to contribute to the achievement of sustainable development.

9.4 Local Planning Policy

FCC LDP (2015-2030)

- 9.4.1 The FCC LDP relevant policies include: Policy STR13: Natural and Built Environment, Green Networks and Infrastructure; Policy EN2: Green Infrastructure; Policy EN3: Undeveloped Coast and Dee Estuary Corridor; and Policy EN6: Site of Biodiversity Importance.

¹ A consultation on proposed reforms to the NPPF and other changes to the planning system was launched in July of 2024. No changes to the NPPF are anticipated to take place prior to submission of this PEIR, but will be considered as necessary and where relevant in the ES.

Shoreline Management Plans

- 9.4.2 The Proposed Development is located within the North West England and North Wales Coastal Group area called the Great Ormes Head to Solway Firth (SMP22) (Ref 182).

9.5 Guidance

Natural Resources Wales, Guidance Note and Marine Physical Processes Guidance to inform EIA

- 9.5.1 The NRW guidance (Ref 183) provides advice to developers to inform EIA of marine, coastal and estuarine based projects with respect to physical processes. The guidance note refers to two evidence reports that detail the best practice for developing the baseline using monitoring and surveying methodologies. The second provides advice on numerical modelling assessments.

Flood risk assessments: climate change allowances, Guidance - Environment Agency (2016) and Climate change allowances and flood consequence assessments - Welsh Government (2021)

- 9.5.2 These documents set out climate change allowances that help to understand how flood or coastal erosion risk may change over time and the associated future evolution of the coastline.

Marine sediment quality guidelines

- 9.5.3 The following guidelines have been used to inform the assessment:
- Cefas Guideline Action Levels – the CEFAS action levels guidelines are used by the MMO to decide how suitable it is to dispose of dredged sediments at sea.
 - Canadian Sediment quality guidelines – see section 5.5 above.

10. Terrestrial Heritage

10.1 Introduction

- 10.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of terrestrial heritage effects as reported in **Chapter 17: Terrestrial Heritage (PEIR Volume II)**.

10.2 Legislation

Ancient Monuments and Archaeological Areas Act 1979

- 10.2.1 The Ancient Monument and Archaeological Areas Act 1979, as amended by the Historic Environment (Wales) Act 2016 (Ref 184) requires the Welsh Government and Cadw to compile and maintain a Schedule of monuments considered to be of national importance. The statutory consent of Cadw is required before any works are carried out which would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up a Scheduled Monument. In addition, impacts of development works upon the setting of a Scheduled Monument form an important planning consent consideration.
- 10.2.2 There is a set of criteria laid out in this Act to assist in the decision-making process as to whether an asset is deemed of national importance, and so best managed by scheduling. The criteria list defines the following: survival/condition, period, rarity, fragility/vulnerability, diversity, documentation, group value and potential.

Planning (Listed buildings and Conservation Areas) Act 1990

- 10.2.3 The Planning (Listed Buildings and Conservation Areas) Act 1990 (as amended) (Ref 185) is the principal statutory instrument which must be considered in the determination of any application affecting listed buildings and conservation areas. Under this legislation, local planning authorities must have special regard to the desirability of preserving a listed building, its setting, or any features of special architectural or historic interest that it possesses. It also places a duty on local planning authorities to publish proposals for their conservation areas and exercise their planning functions in a manner that gives regard to the desirability of preserving and enhancing the character or appearance of these areas. The effects of the Proposed Development on conservation areas, listed buildings and their settings have been considered as part of the assessment of built heritage effects reported in **Chapter 17: Terrestrial Heritage (PEIR Volume II)**. This too has since been amended by the Historic Environment (Wales) Act 2016.

Historic Environment (Wales) Act 2016

- 10.2.4 This Act (Ref 186) is the primary legislation for protecting heritage assets in Wales. Cadw, the Welsh Government's historic environment service, define the purpose of the Act as to:

- give more effective protection to listed buildings and scheduled monuments;
- improve the sustainable management of the historic environment; and
- introduce greater transparency and accountability into decisions taken on the historic environment.

Historic Environment (Wales) Act 2023

10.2.5 The Historic Environment (Wales) Act 2023 (Ref 311) received Royal Assent in June 2023 and will be brought into force in the latter part of 2024, becoming the primary legislation for protecting heritage assets in Wales.

The Hedgerow Regulations 1997

10.2.6 The Hedgerow Regulations 1997 (Ref 305), made under section 97 of the Environment Act 1995, set out the requirements for the protection of 'important' hedgerows through legislative mechanisms of the National Planning Policy Framework (NPPF) and local planning authorities. The Regulations define a hedgerow as 'important' if it has existed for at least 30 years and, for the purposes of this assessment, if it, or the hedgerows with which it is a stretch, satisfies at least one other criterion identified in Schedule 1 Part II pertaining to archaeology and history. These criteria include the following:

- The hedgerow marks the boundary, or part of the boundary, of at least one historic parish or township predating 1850;
- The hedgerow incorporates an archaeological feature which is either under scheduled protection as per the 1979 Act already discussed, or which has been recorded as a historic monument prior to the Regulations taking effect on 24 March 1997;
- The hedgerow marks the boundary of a pre-1600 AD estate or manor recorded prior to 24 March 1997 or is visibly related to any building or other feature of such an estate or manor;
- The hedgerow is recorded in a document held at a Record Office on 24 March 1997 as an integral part of a field system pre-dating the Enclosure Acts; or
- The hedgerow is part of, or visibly related to, any building or other feature associated with such a system, and that system is either substantially complete or recorded as being a key landscape characteristic by the local planning authority prior to 24 March 1997.

10.2.7 Other criteria relating to wildlife and landscape are set out in Schedule 1 Part II of the regulation, but these are not within the scope of this terrestrial heritage assessment.

10.3 National Planning Policy

Planning Policy Wales

10.3.1 PPW ensures that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental

and cultural well-being of Wales, as required by the Planning (Wales) Act 2015 and the Well-being of Future Generations (Wales) Act 2015. The planning system must take into account the Welsh Government's objectives to protect, conserve, promote and enhance the historic environment as a resource of present and future generations.

Future Wales: The National Plan to 2040

- 10.3.2 The National Plan is in line with the Well Being of Future Generations (Wales) Act 2015. According to Policy 18 on Renewable and Low Carbon Energy Developments of National Significance, development will be permitted if there are no unacceptable adverse impacts on statutorily protected built heritage assets. Also, according to Policy 32 – Haven Waterway and Energy, in determining any applications for energy proposals, consideration should be given to the contribution it will make to decarbonising energy supplies, the impacts on the landscape, seascapes, natural and historic environment and the economic benefits they would bring to the region.

TAN 24: The Historic Environment

- 10.3.3 TAN 24: The Historic Environment (2017) supplements PPW (Ref 187). This provides guidance on considering the historic environment in the planning system, including World Heritage Sites, scheduled monuments, archaeological remains, listed buildings, conservation areas, historic parks and gardens, historic landscapes and historic assets of special local interest. This recommends the use of the Conservation Principles for the Sustainable Management of the Historic Environment in Wales (Ref 188) in assessing potential impacts of development upon the historic environment.
- 10.3.4 Cadw has also published additional guidance for assessing impacts upon designated assets in the form of Heritage Impact Assessment in Wales (2017) (Ref 189) and Setting of Historic Assets in Wales (2017) (Ref 190).

Overarching NPS for Energy (EN-1)

- 10.3.5 Section 5.9 of EN-1 is relevant to the historic environment, which is described in paragraph 5.9.2 of the NPS as including all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, landscaped and planted or managed flora.
- 10.3.6 Paragraph 5.9.10 of EN-1 states that as part of an ES, the applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset. As a minimum the applicant should have consulted the relevant Historic Environment Record and assessed the heritage assets themselves using expertise where necessary according to the proposed development's impact.
- 10.3.7 Paragraph 5.9.11 states that where a development site includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate

desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation.

- 10.3.8 Paragraph 5.9.12 goes on to state that the applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents.

NPS for Electricity Networks Infrastructure (EN-5)

- 10.3.9 EN-5 states that the environmental and archaeological consequences of both overhead and underground components of electricity infrastructure should be considered as part of project proposals. The NPS does not contain a specific section on cultural heritage, but does state at paragraph 2.2.10 that when designing new electricity networks, applicants must *'have regard to the desirability of preserving natural beauty, of conserving flora, fauna and geological or physiographical features of special interest and of protecting sites, buildings and objects of architectural, historic or archaeological interest; and ...do what [they] reasonably can to mitigate any effect which the proposals would have'*. The NPS also recognizes that the undergrounding of cables could have potentially disruptive effects on archaeological sites (paragraph 2.9.25).

National Planning Policy Framework (NPPF)

- 10.3.10 The National Planning Policy Framework (NPPF) (Ref 306) sets out the Government's planning policies for England and how these should be applied to contribute to the achievement of sustainable development. Section 16 of the NPPF deals specifically with the historic environment. Where changes are proposed, the NPPF sets out a clear framework to ensure that heritage assets are conserved, and where appropriate enhanced, in a manner that is consistent with their significance.
- 10.3.11 Paragraph 200 of the NPPF states that *"In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation."*
- 10.3.12 Paragraph 201 includes a requirement on local planning authorities, having assessed the particular significance of any heritage asset that may be affected by a proposal, including development affecting its setting, to take this into account when considering the impact of a proposal on a heritage asset.
- 10.3.13 Paragraph 205 states that *"When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset,*

the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.”

10.3.14 Paragraph 206 states that *“Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of:*

- a. grade II listed buildings, or grade II registered parks or gardens, should be exceptional;*
- b. assets of the highest significant, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.*

10.3.15 Paragraph 207 states that *“Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:*

- a. the nature of the heritage asset prevents all reasonable uses of the site;*
- b. no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation;*
- c. conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and*
- d. the harm or loss is outweighed by the benefit of bringing the site back into use.”*

10.3.16 Paragraph 208 states that *“Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.”*

10.3.17 Paragraph 211 states that *“Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.”*

10.4 Local Planning Policy

FCC LDP 2015-2030

10.4.1 The detailed policies of the FCC LDP fall within the umbrella of strategic policy STR13: Natural and Built Environment, Green Networks and Infrastructure, and comprise:

- EN4 Landscape Character;

- EN8 Built Historic Environment and Listed Buildings;
- EN9 Development in or Adjacent to Conservation Areas; and
- EN10 Buildings of Local Interest.

10.4.2 Paragraph 5.12 of strategic policy STR13 recognizes that the conservation of historic assets, which can range from historic landscapes and castles through to smaller features such as water pumps which provide a sense of history and character to places, is essential, and also states that historic assets are irreplaceable resources and their conservation provides social, cultural, economic and environmental benefits.

10.4.3 The policy recognises that the historic environment can also be susceptible to the impacts of climate change and taking action to minimise the potential damaging effects of this is essential. Development which affects the historic environment should enhance and protect both historic assets and their settings. Taken together, the various elements which make up the natural and built environment can ensure that local distinctiveness, character and sense of place are retained, or created in new developments.

10.4.4 Policy EN4 highlights the protection of Flintshire's landscape. The policy states:

"New development, either individually or cumulatively, must not have a significance adverse impact on the character and appearance of the landscape. Landscaping and other mitigation measures should seek to reduce landscape impact and where possible bring about enhancement."

10.4.5 Policy EN8 highlights the local authority's commitment to protecting and enhancing Built Heritage and Listed Buildings. The policy states:

e. *"Development proposals affecting listed buildings will be permitted only where:*

- i. the alteration and/or extension to a listed building or its curtilage ensures that the special architectural character or historic interest is preserved;
- ii. the change of use of a listed building or its curtilage contributes towards the retention of a building or its sustainable re-use without having an adverse effect on its character, special interest or structural integrity;
- iii. the total or substantial demolition of a listed building, is accompanied by the strongest justification and convincing evidence that the proposal is necessary and unavoidable.

f. *Development should preserve Scheduled Ancient Monuments and their settings and where appropriate the preservation of other archaeological remains, having regard to the intrinsic importance of the remains and the need for the proposed development.*

g. *Development should protect and conserve historic landscapes, parks and gardens"*

10.4.6 The policy also further highlights:

"Listed buildings are designated by Cadw who maintain the statutory 'List of Buildings with Special Architectural or Historic Interest'. National Planning Policy and Guidance contains a general presumption in favour of the

preservation of listed buildings. Works (internal and external) that 176 Flintshire County Council Local Development Plan 2015-2030 9 Development Management Policies - Valuing the Environment would affect the character or historic fabric of a listed building and its curtilage must not be implemented without authorisation of a listed building consent. Listed buildings are shown on the Constraints Map. 9.35 The Policy seeks to ensure that where a development proposal affects a listed building or its setting, the primary material consideration is the statutory requirement to have special regard to the desirability of preserving the building, or its setting, or any features of special architectural or historic interest which it possesses. Applications should be fully justified by means of a Heritage Impact Assessment and Statement in accordance with National Planning Policy and Guidance.” In regards to Scheduled Ancient Monuments (SAM), paragraph 9.36 states:

“Scheduled Monuments consent is required for all proposals that would potentially damage, demolish, remove, repair, alter, add to, flood or cover up a SAM. The policy highlights the desirability of preserving a Scheduled Ancient Monument and its setting and also sets out the approach to considering development proposals which potentially affect other ‘lesser’ archaeological remains. The Council will consult and work with Clwyd Powys Archaeological Trust (CPAT) on all development proposals affecting archaeological remains.” In regards to Historic Parks and Gardens, paragraph 9.37 states:

“The policy seeks to ensure that they are given appropriate consideration when development is proposed which affects these assets.

The Register of Historic Landscapes in Wales should be taken into account in considering the implications of developments, which meet the criteria for Environmental Impact Assessment, or are of a sufficient scale to have more than a local impact on the historic landscape.”

10.4.7 Policy EN9 highlights the protection of Conservation Areas within the county stating:

“Development within or adjacent to a conservation area will only be permitted if it would preserve or enhance the character and appearance of the conservation area or its setting. New development in such locations must also be of a high standard of design, respond to the area’s special characteristics, and pay particular regard to:

- a. important views, vistas, street scenes, roofscapes, trees, open spaces, gaps and other features that contribute to the character or appearance of the conservation area;*
- b. the retention of historically significant boundaries or other elements that contribute to the established form of development;*
- c. the relationship to existing buildings and spaces, and pattern of development;*
- d. scale, height and massing, architectural design and detailing, the use of materials, boundary treatment, and public realm materials.”*

10.4.8 Policy EN10 highlights the local authorities commitment to protecting locally listed buildings, stating:

“The demolition or alteration of a Building of Local Interest will only be permitted where:

- a. in the case of demolition that the building is structurally unsound, it cannot be made safe without extensive alteration or rebuilding and is incapable of refurbishment at a cost which is reasonable in relation to its degree of interest. The design and quality of the replacement building should be equivalent to that which has been demolished; or, in the case of alteration and extension that the works do not adversely affect the architectural or historic character of the building.”*

10.5 Guidance

Conservation Principles for the Sustainable Management of the Historic Environment in Wales (2011)

10.5.1 This guidance (Ref 188) sets out six principles that, collectively, provide a framework for an integrated approach to the management of the Welsh historic environment. The principles are:

- historic assets will be managed to sustain their value. This principle recognizes that change and decay of heritage assets through natural processes is inevitable, but conservation actions can manage that change;
- understanding the significance of historic assets is vital, and will provide key information to inform its conservation. In order to understand an asset's significance its evidential, historical, aesthetic and communal values must be considered;
- the historic environment is a shared resource. Conservation projects recognize the need to promote greater access, understanding and enjoyment of the historic environment for all groups in society and projects, and owners and occupiers need to recognize and understand the significance of their historic assets, and seek advice and assistance from public sources to help them sustain the heritage in their stewardship;
- everyone will be able to participate in sustaining the historic environment and to contribute their knowledge of the heritage value of different sites, and to participate in decisions about their future, by means that are accessible, inclusive and informed. This will enable decisions about an important historic asset to be undertaken in an open and transparent manner;
- decisions about change (in the historic environment) must be reasonable, transparent and consistent which means that owners and managers of historic assets will be encouraged to seek advice and examples of good practice in preparing their proposals for change; and
- documenting and learning from decisions. The information and documentation gathered in understanding and assessing the significance of an historic asset should be retained by the owner and manager of that place, and a copy be placed in a public archive. This will ensure that future generations will benefit from the knowledge gained.

Heritage Impact Assessment in Wales (2017)

10.5.2 Heritage Impact Assessment in Wales (Ref 189) sets out the general principles to consider when planning changes to historic assets and applying for listed building, conservation area and scheduled monument consent. This best-practice guide is aimed principally at owners, occupiers and agents of historic assets to help them understand why, when and how to use the heritage impact assessment process and the key stages of assessment and information required including:

- explaining the objectives;
- understanding significance;
- identifying proposed change;
- assessing the impact; and
- getting the best solution in order to minimize harm to historic assets.

Managing Change to Listed Buildings in Wales (2017)

10.5.3 Managing Change to Listed Buildings in Wales (Ref 191) sets out general principles to consider when making changes to listed buildings and explains how to apply for listed building consent, including the roles and responsibilities of owners, local planning authorities and Cadw. It provides guidance for understanding the significance of listed buildings and advice on how to manage change.

Managing Change to Registered Historic Parks and Gardens in Wales (2017)

10.5.4 Managing Change to Registered Historic Parks and Gardens in Wales (Ref 192) sets out the general principles to follow when considering changes that may have an impact on registered historic parks and gardens. It explains the status of the register of historic parks and gardens in Wales and its place in the planning system, including the roles and responsibilities of owners, local planning authorities, amenity societies and Cadw.

Managing Conservation Areas in Wales (2017)

10.5.5 Managing Conservation Areas in Wales (Ref 193) sets out the policy context and duties for local planning authorities to designate and manage conservation areas.

10.5.6 The guidance identifies key aspects of good practice for their designation and appraisal, including the scope of appraisals and management plans, the importance of the participation of stakeholders, and the development of local policies for positive management and enhancement so that their character and appearance are preserved and enhanced.

Managing Historic Character in Wales (2017)

10.5.7 Managing Historic Character in Wales (Ref 194) explains why it is important to recognise historic character and use it as an evidence base for conservation, regeneration and planning work. It shows how policies and

programmes to manage change can take inspiration from the past to help create and sustain distinctive places for the future.

Managing Lists of Historic Assets of Special Local Interest (2017)

- 10.5.8 This document (Ref 195) provides guidance on preparing and managing lists of local historic assets and their use in the planning system in Wales. It sets out general principles and good practice for preparing and managing these lists, including criteria, nomination, consultation, validation, appeals and monitoring. Principally for local authorities, the guidance is useful in highlighting the potential value of the local heritage resource and ensuring these assets are recognised in heritage assessments.

Setting of Historic Assets in Wales (2017)

- 10.5.9 The Setting of Historic Assets in Wales (Ref 190) explains what setting is, how it contributes to the significance of a historic asset and why it is important. It also outlines the principles used to assess the potential impact of development or land management proposals within the settings of World Heritage Sites, ancient monuments (scheduled and unscheduled), listed buildings, registered historic parks and gardens, and conservation areas. These principles, however, are equally applicable to all individual historic assets, irrespective of their designation.
- 10.5.10 The guidance explains setting and advises how this should be assessed. It also provides guidance on how to assess the impact of change on the setting and significance of a historic asset, along with options for mitigating and/ or offsetting impacts, as well as opportunities for enhancing setting.

Planning Practice Guidance (2019)

- 10.5.11 The Planning Practice Guidance (PPG) (Ref 307) provides further advice and guidance that expands the policy outlined in the NPPF. It expands on terms such as 'significance' and its importance in decision making. The PPG states that in relation to setting a thorough assessment of the impact on setting needs to take in to account, and be proportionate to, the significance of the heritage asset under consideration and the degree to which proposed changes enhance or detract from that significance and the ability to appreciate it (paragraph 013; Reference ID: 18a-013-20190723).
- 10.5.12 The PPG discusses how to assess if there is substantial harm. It states that what matters in assessing if a proposal causes substantial harm is the impact on the significance of the asset. It is the degree of harm to the asset's significance rather than the scale of the development that is to be assessed (paragraph 018; Reference ID: 18a-018-20190723).
- 10.5.13 The NPPF indicates that the degree of harm should be considered alongside any public benefits that can be delivered by development. The PPG states that these benefits should flow from the proposed development and should be of a nature and scale to be of benefit to the public and not just a private benefit and would include securing the optimum viable use of an asset in support of its long-term conservation (paragraph 020; Reference ID: 18a-020-20190723).

Historic Environment Good Practice Advice in Planning Note 2. Managing Significance in Decision Taking in the Historic Environment; Historic England (2015)

- 10.5.14 Good Practice Advice (GPA) Planning Note 2 (Ref 308) emphasises the importance of having a knowledge and understanding of the significance of heritage assets likely to be affected by the development and that the 'first step for all applicants is to understand the significance of any affected heritage asset and, if relevant the contribution of its setting to its significance'.

Historic Environment Good Practice Advice in Planning Note 3. The Setting of Heritage Assets; Historic England (2017)

- 10.5.15 GPA Planning Note 3 (Ref 309) provides detail on the setting of heritage assets and provides general advice on understanding setting, and how it may contribute to the significance of heritage assets and allow that significance to be appreciated. The document provides advice on how views contribute to setting and provides a broad approach to assessing the impact of a Proposed Development on the setting of heritage assets, by outlining a series of steps that can be applied proportionately to the complexity of the case.

Statements of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12; Historic England (2019)

- 10.5.16 Advice Note 12 (Ref 310) outlines a recommended approach to assessing the significance of heritage assets in line with the requirements of NPPF. It includes a suggested reporting structure for a 'Statement of Heritage Significance', as well as guidance on creating a statement that is proportionate to the asset's significance (heritage value) and the potential degree of impact of a Proposed Development. The Advice Note also offers an interpretation of the various forms of heritage interest that an asset can possess, i.e., its archaeological, architectural, artistic and historic interest, based on the terms provided in the NPPF Glossary.

Chartered Institute for Archaeologists (CIfA) (2020) Standard and Guidance for Historic Environment Desk- based Assessment

- 10.5.17 This guidance (Ref 196) has been used to establish the baseline conditions for cultural heritage which is set out in **Appendix 17-A: Terrestrial Heritage Desk-based Assessment (PEIR Volume IV)**. The guidance defines a standard that must be achieved within a desk-based assessment. The standard states that a '*Desk-based assessment will determine, as far as is reasonably possible from existing records, the nature, extent and significance of the historic environment within a specified area. Desk-based assessment will be undertaken using appropriate methods and practices that satisfy the stated aims of the project, and that comply with the Code of conduct and other relevant regulations of CIfA. In a development context, desk-based assessment will establish the impact of the proposed development on the*

significance of the historic environment (or will identify the need for further evaluation to do so), and will enable reasoned proposals and decisions to be made on whether to mitigate, offset or accept without further intervention that impact.'

11. Marine Heritage

11.1 Introduction

- 11.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of marine heritage effects as reported in **Chapter 18: Marine Heritage (PEIR Volume II)**.

11.2 Legislation

Protection of Wrecks Act 1973: Section One and Two

- 11.2.1 The Protection of Wrecks Act 1973 (Ref 197) protects wrecks in territorial waters and wreck sites from interference. In section one and two of the Protection of Wrecks Act 1973 it is described that it is an offence to carry out certain activities in a defined area surrounding a wreck that has been designated, unless a license for those activities has been obtained from the Government.

Ancient Monuments and Archaeological Areas Act 1979

- 11.2.2 The Act (Ref 198) makes it a criminal offence to carry out any works on, or near to, a Scheduled Monument without Scheduled Monument Consent. Both terrestrial and maritime sites, including wrecks, may be designated under this Act.

Protection of Military Remains Act 1986

- 11.2.3 This Act (Ref 199) provides protection for the wreckage of military aircraft and designated military vessels. The Act provides for two types of protection: 'protected places' and 'controlled sites'. Aircraft lost while in military service are automatically protected, although vessels have to be specifically designated. The primary reason for designation is to protect as a 'war grave' the last resting place of servicemen; however, the Act does not require the loss of the vessel to have occurred during the war.

Merchant Shipping Act 1995

- 11.2.4 This Act (Ref 200) states that all wreck material recovered from UK waters must be declared to the Receiver of Wreck who acts to settle questions of ownership and salvage. 'Wreck' refers to all items of flotsam, jetsam, derelict, and lagan found in or on the shores of the sea or any tidal water.

Historic Environment (Wales) Act 2016 , and 2023

- 11.2.5 The 2016 Act is the primary legislation for protecting heritage assets in Wales. Cadw, the Welsh Government's historic environment service, define the purpose of the Act as to:
- give more effective protection to listed buildings and scheduled monuments;
 - improve the sustainable management of the historic environment; and

- introduce greater transparency and accountability into decisions taken on the historic environment.

11.2.6 The 2016 Act will be replaced by the Historic Environment (Wales) Act 2023, which has received Royal Assent, but will not come into force until supporting secondary legislation has been made and guidance and administrative documents have been revised and updated. Cadw has indicated that it expects the 2023 Act to come into force in the latter part of 2024.

Marine and Coastal Access Act 2009 (MCAA)

11.2.7 The MCAA received Royal Assent on 12 November 2009 and introduced new planning and management systems for overseeing the marine environment, most notably through the requirement to obtain marine licenses for works at sea (including the deposition or removal of any substance or object from the sea below Mean High Water). It created a strategic marine planning system that seeks to promote the efficient, sustainable use and protection of the marine environment, guided by the MPS and a series of Marine Plans.

11.2.8 The MCAA provides the framework for a marine licensing system, which is administered by NRW in Wales, a statutory consultee within the DCO application process. The MCAA also amended certain provisions of the Planning Act 2008.

United Nations Educational, Scientific and Cultural Organisation (UNESCO) Convention 2001

11.2.9 The United Nations Educational, Scientific and Cultural Organisation (UNESCO) Convention (Ref 201) was concluded in 2001 and is a comprehensive attempt to codify the law internationally, with regards to underwater cultural heritage. The UK abstained in the vote on the final draft of the Convention, however it has stated that it has adopted the Annex of the Convention, which governs the conduct of archaeological investigations, as best practice for archaeology. Although the UK is not a signatory, the Convention entered into force on 2 January 2009, having been signed or ratified by 20 member states. To date, the 2001 Convention has been ratified by 72 countries.

The EIA Regulations

11.2.10 The EIA Regulations (Ref 1) set out the process for Environmental Impact Assessment, which includes cultural heritage, including archaeological aspects, as a material consideration. The EIA must give consideration to aspects of a proposed development that may directly or indirectly significantly affect cultural heritage assets (Regulation 5(2)(d) and be included in Environmental Statements (Schedule 4 (Regulation 4(2): 4 and 5d).

The United Convention on the Law of the Sea (UNCLOS)

11.2.11 The United Convention on the Law of the Sea (UNCLOS) was concluded in 1982. This law sets out traditional rules for the usage of the worldwide oceans. Furthermore, this law also provides new concerns about the wellbeing of the oceans and introduces new legal concepts and regimes. Lastly, the law sets out a framework for further development of laws about the seas.

11.3 National Planning Policy

Planning Policy Wales

- 11.3.1 PPW sets out the land use planning policies of the Welsh Government. It describes the planning system as managing the use of land in the public interest, and states that the system *'must reconcile the needs of development and conservation [...] and protecting, promoting, conserving and enhancing the built and historic environment'*. The importance of the historic environment in Welsh planning policy is interwoven throughout the document.
- 11.3.2 The section on 'Conserving and Enhancing the Historic Environment and its Assets' states that *'The historic environment is a finite, non-renewable and shared resource and a vital and integral part of the historical and cultural identity of Wales [...] The historic environment can only be maintained as a resource for future generations if the individual historic assets are protected and conserved.'*
- 11.3.3 The Welsh Government's specific objectives for the historic environment include conserving archaeological remains, *'both for their own sake and for their role in education, leisure and the economy'*.
- 11.3.4 The Planning Policy notes *'that the protection, conservation and enhancement of historic assets is most effective when considered at the earliest stage of plan preparation or when designing new proposals'*.
- 11.3.5 It also states that *'any decisions made through the planning system must fully consider the impact on the historic environment and on the significance and heritage values of individual historic assets and their contribution to the character of place.'*

Welsh National Marine Plan 2019

- 11.3.6 The WNMP (2019) is the first marine plan for Wales and is intended to guide the sustainable development of the marine area by setting out how proposals will be considered by decision makers.
- 11.3.7 SOC_04: Welsh language and culture states that proposals that contribute to the promotion and facilitation of the use of the Welsh language and culture are encouraged. This policy seeks to ensure that all developers consider their impact on Welsh Culture, including heritage and the historic environment.
- 11.3.8 SOC_05: Historic assets states that proposals should demonstrate how potential impacts on historic assets and their setting have been taken into consideration and should, in order of preference:
- avoid adverse impacts on historic assets and their settings; and/or
 - minimise impacts where they cannot be avoided; and/or
 - mitigate impacts where they cannot be minimised; and
 - if significant adverse impacts cannot be avoided, minimised or mitigated proposals must present a clear and convincing case for proceeding.

Future Wales: The National Plan to 2040

11.3.9 Future Wales – The National Plan 2040 (2021) sets out the national development framework. It provides a development plan with a strategy for addressing key national priorities through the planning system. It recognises that landscape and heritage are key motivators for people to visit Wales.

TAN 24: The Historic Environment

11.3.10 TAN 24: The Historic Environment (2017) supplements PPW. This provides guidance on considering the historic environment in the planning system, including World Heritage Sites, scheduled monuments, archaeological remains, wrecks, listed buildings, conservation areas, historic parks and gardens, historic landscapes and historic assets of special local interest.

Overarching NPS for Energy (EN-1)

11.3.11 Section 5.9 of EN-1 is relevant to the historic environment, which is described as including all aspects of the environment, resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged. Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called 'heritage assets', which include buildings, monuments, sites, places, areas and landscapes. The significance of a heritage asset derives not only from its physical presence but also from its setting.

11.3.12 Paragraph 5.9.4 to 5.9.6 note heritage assets of a level of significance for official designation, but also that there are heritage assets that are not currently designated, but which have been demonstrated to be of equivalent significance to designated heritage assets of highest significance. Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to Scheduled Monuments or Protected Wreck Sites should be considered subject to the policies for designated heritage assets.

11.3.13 Paragraphs 5.9.9 to 5.9.15 detail how an applicant should undertake assessment of any likely significant heritage impacts of the proposed development as part of the EIA, including consideration of heritage assets above, at and below the surface of the ground.

11.3.14 Paragraphs 5.9.16 to 5.9.21 describe mitigation measures. It notes that a documentary record of the past is not as valuable as retaining the heritage asset. However, if the loss is justified, the SoS will require the applicant to record and advance understanding of the significance of the heritage asset before it is lost.

11.3.15 Paragraphs 5.9.22 to 5.9.36 describe the SoS's decision making process with regard to the significance of heritage assets.

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

11.3.16 EN-2 highlights potential impacts to: air quality and greenhouse gas emissions; landscape and visual impacts; noise and vibration; and water quality and resources. While marine heritage is not specifically mentioned,

should design affect historic seascape or cause visual impacts, it should be considered.

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

11.3.17 EN-4 states that dredging can cause adverse effects on heritage assets, such as marine archaeology. If there are likely to be impacts, the ES must set out any effects on designated and non-designated heritage assets and the wider historic environment.

NPS for Electricity Networks Infrastructure (EN-5)

11.3.18 Paragraph 2.9.5 of the EN-5 states that the SoS should only grant development consent if it is satisfied that the benefits outweigh any extra economic, social or environmental impacts if presents. The following should be considered: the potentially very disruptive effects of undergrounding on local communities, habitats, archaeological and heritage sites, soil, geology, and landscape and visual amenity.

11.3.19 Paragraph 2.9.19 states that applicants should seek to avoid internationally and nationally designated areas of the highest amenity, cultural or scientific value (including Heritage Coasts, World Heritage Sites, Special Protection Areas, etc. and care should be taken in relation to all historic sites with statutory protection, such as Ancient Monuments and Listed Buildings) by the overall planning of the system connections.

11.4 Local Planning Policy

11.4.1 There are no local planning policies applicable to marine heritage, however the FCC LDP 2015-2030 does include policies for landscape character (EN4) and the built historic environment and listed buildings (EN8).

11.5 Guidance

Heritage Impact Assessment in Wales (2017)

11.5.1 Although not specifically related to marine archaeology, this guidance sets out the general principles to consider when planning changes to historic assets and applying for listed buildings, conservation areas and scheduled monuments consents. This best-practice guide is aimed principally at owners, occupiers and agents of historic assets to help them understand why, when and how to use the heritage impact assessment process and the key stages of assessment and information required including:

- determining when a Heritage Impact Assessment is needed;
- what should be included in the Heritage Impact Assessment;
- the process of Heritage Impact Assessment;
- offsetting;
- Access Statement; and
- presenting a Heritage Impact Assessment.

Managing Historic Character in Wales (2017)

- 11.5.2 This guidance explains why it is important to recognise historic character and use it as an evidence base for conservation, regeneration and planning work. It shows how policies and programmes to manage change can take inspiration from the past to help create and sustain distinctive places for the future.

Caring for Coastal Heritage (1999)

- 11.5.3 This document (Ref 203) draws on results from an archaeological survey of the entire Welsh coastline. In the document advice is provided on the care of Welsh coastal heritage and the most principal historical developments in ancient monuments are set out.

Caring for Military Sites of the Twentieth Century (2009)

- 11.5.4 This booklet (Ref 204) provides information about different twentieth-century military sites, which can be found in Wales. Also, this booklet sets out guidelines for the protection and care of these sites.

Conservation Principles for the Sustainable Management of the Historic Environment in Wales (2011)

- 11.5.5 This guidance sets out principles for the conservation and care of Wales heritage. The outlined principles in this document are also used by the Government of Wales and Cadw by maintaining their historic assets.

Setting of Historic Assets in Wales (2017)

- 11.5.6 This guidance helps determine the setting of an historic asset. According to this document setting refers to: '*the surroundings in which your historic asset is understood, experienced and appreciated, including present and past relationships to the surrounding landscape*'. The understanding of the setting of an historic asset leads to the establishment of significant development proposals.

Managing the Marine Historic Environment of Wales (2020)

- 11.5.7 This document (Ref 205) explains the approach of the government of Wales to maintain the marine historic environment. It also provides best-practice guidance for protection and management of the marine historic environment.

Dredging and Port Construction: Interaction with Features of Archaeological Interest (PIANC) (2014)

- 11.5.8 This document (Ref 206) provides advice and guidance on the protection of archaeology during dredging and port construction. It also shows best practice for planning and implementing commercial schemes that may affect archaeological material or features.

Assessment and Management of Marine Archaeology in Port and Harbour Development (2016)

- 11.5.9 Although developed for English ports and harbours, this guidance (Ref 207) can also be used as best practice for Welsh developments. This document explains the guidance and advice for organizations and individuals to assess impacts on maritime historic environment through port and harbour development and construction.

ClfA Standard and Guidance for Archaeological Advice by Historic Environment Services (2020)

- 11.5.10 The ClfA provides guidance and archaeological advice on the application of archaeological knowledge and techniques (Ref 208). This knowledge will create understanding and therefore lead to the rightful heritage management. The document also covers primarily advice on the undesignated maritime historic environment.

ClfA Standard and Guidance for Historic Environment Desk-based Assessment (2020)

- 11.5.11 This guidance (Ref 209) has been used to establish the baseline conditions for Marine Heritage, which is set out in **Appendix 18-A: Marine Heritage Desk-based Assessment (PEIR Volume IV)**. The guidance sets out the standard that must be achieved by a desk-based assessment. Desk-based assessments will determine, as far as is reasonably possible from existing records, the nature, extent and significance of the historic environment within a specific area. The assessment will be undertaken using methodologies and practices that comply with the Code of Conduct and other relevant regulations of the ClfA.

Marine Character Areas (MCA)

- 11.5.12 In Wales the inshore waters are divided in 29 Marine Character Areas (Ref 210). Each area represents a different seascape with their unique natural, cultural and perceptual influences. The Marine Character Areas inform the Welsh National Marine Plan.

The International Council on Monuments and Sites (ICOMOS)

- 11.5.13 The International Council on Monuments and Sites (ICOMOS). ICOMOS contains a Charter on the protection and management of underwater cultural heritage (1996). The aim of the Charter is to protect and manage underwater cultural heritages inshore and offshore.

12. Socio-economics, Recreation and Tourism

12.1 Introduction

12.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of socio-economics, recreation and tourism effects as reported in **Chapter 19: Socio-economics, Recreation and Tourism (PEIR Volume II)**.

12.2 Legislation

The EIA Regulations

12.2.1 The EIA Regulations (Ref 1) set out the EIA process which must identify, describe and assess potential significant effects of the Proposed Development on a number of factors, including socio-economics, recreation and tourism.

Environment (Wales) Act 2016

12.2.2 The Environment (Wales) Act 2016 was introduced by the Welsh Government in the aim of managing the natural resources in Wales more sustainably. A key policy within the Act is the need to adopt a more integrated approach to managing natural resources to achieve long-term sustainability. The legislation placed new regulations on plastic bags, waste, use of fisheries, and marine licensing. The Act also placed a duty on Welsh Ministers to set targets for reducing greenhouse emissions and to set carbon budgets, to help transition Wales to a low-carbon economy.

12.2.3 Through this Act, the Welsh Government established a framework which includes producing:

- the State of Natural Resources Report – NRW must produce a report that gives an assessment of natural resources and how well they are being managed;
- a National Natural Resources Policy – the Welsh Government must produce a national policy that sets out the priorities, risks and opportunities for managing natural resources sustainably. The policy will consider the findings of the State of Natural Resources report; and
- area statements – NRW will produce a local evidence base, which helps to implement the priorities, risks and opportunities identified in the National Policy and how NRW intends to address these.

The Planning (Wales) Act 2015

12.2.4 The Planning (Wales) Act 2015 was introduced by the Welsh Government to strengthen the 'plan-led' approach to planning in Wales. The key purposes of the Act include:

- strengthen the plan-led approach to planning. The Act introduces a new legal framework for the Welsh Ministers to prepare a national land use

- plan, to be known as the NDF for Wales. The framework will set out national land use priorities and infrastructure requirements for Wales; and
- make provision for the production of SDP, to tackle larger-than-local cross-boundary issues, such as housing supply and areas for economic growth and regeneration.
 - make provision for pre-application consultation, and to require local planning authorities to provide pre-application services;
 - provide for planning applications for nationally-significant projects to be made to the Welsh Ministers; and
 - reform the development management system to streamline procedures, to ensure that applications are dealt with promptly, providing certainty for developers and communities.

Well-being of Future Generations (Wales) Act 2015

12.2.5 The Well-being of Future Generations (Wales) Act 2015 was established by the Welsh Government with the intention to improve the social, economic, environmental, and cultural well-being of Wales. The Act places a statutory duty on public bodies in relation to sustainable development, based on seven well-being goals. The key goals of the Act in the context of the Proposed Development are to become:

- *'Prosperous – An innovative, productive and low carbon society which recognises the limits of the global environment and, therefore, uses resources efficiently and proportionately (including acting on climate change); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work'.*
- *'Resilient – A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience.'*
- *'Globally Responsible – A nation which, when doing anything to improve the economic, social environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.'*
-

Welsh Language (Wales) Measure 2011

12.2.6 The Welsh Language (Wales) Measure 2011 (Ref 215) ensures that the Welsh Language has official status in Wales.

12.2.7 Duties on bodies to use the Welsh language, and the rights which arise from the enforceability of those duties, which enable Welsh speakers to use the language in dealings with those bodies (such as the provision of services by those bodies):

- the treatment of the Welsh language no less favourably than the English language;

- the validity of the use of the Welsh language;
- the promotion and facilitation of the use of the Welsh language;
- the freedom of persons wishing to use the Welsh language to do so with one another;
- the creation of the Welsh Language Commissioner; and
- other matters relating to the Welsh language.

12.2.8 These measures ensure that the Welsh and English languages are treated 'on a basis of equality' and are given equal standing on other Measures and Acts of the National Assembly for Wales and subordinate legislation.

Climate Change Act (2008)

12.2.9 The Climate Change Act 2008 (Ref 222) is the basis for the UK's approach to tackling and responding to climate change. It requires that emissions of carbon dioxide and other greenhouse gases are reduced and that climate change risks are adapted to. This Act also establishes the framework to deliver on these requirements. The Act supports the UK's commitment to urgent international action to tackle climate change.

12.2.10 Through the Climate Change Act 2008, the UK government has set a target to significantly reduce UK greenhouse gas emissions by 2050. The Act requires the Government to assess the risks and opportunities from climate change for the UK, and to adapt to them. The Committee on Climate Change advises on these climate change risks and assesses progress towards tackling them.

12.3 National Planning Policy

Overarching NPS for Energy (EN-1)

12.3.1 EN-1 sets out the relevant socio-economic impacts which should be considered within an assessment. Paragraph 5.13.4 states that engagement with relevant local authorities should be undertaken during early stages of project development and should describe the existing socio-economic conditions in the areas surrounding the proposed development and refer to how the development's socio-economic impacts correlate with local planning policies. Paragraph 5.13.4 states that the applicant's assessment should consider all relevant socio-economic impacts, which may include:

- the creation of jobs and training opportunities, particularly the sustainability of the jobs created, including where they will help to develop the skills needed for the UK's transition to Net Zero;
- the contribution to the development of low-carbon industries at the local and regional level as well as nationally;
- the provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities;
- any indirect beneficial impacts for the region hosting the infrastructure, in particular in relation to use of local support services and supply chains.
- effects on tourism;

- the impact of a changing influx of workers during the different construction, operation and decommissioning phases of the energy infrastructure. This could change the local population dynamics and could alter the demand for services and facilities in the settlements nearest to the construction work (including community facilities and physical infrastructure such as energy, water, transport and waste). There could also be effects on social cohesion depending on how populations and service provision change as a result of the development;
- effects on existing and proposed land uses near the project, by replacing an existing development or use of the site with the proposed project or preventing a development or use on a neighbouring site from continuing. Effects on the existing use of the proposed site should be minimised, through the application of good design principles, including the layout of the project and protection of soils during construction;
- impact on public rights of way, national trails, and other rights of access to land. These are important recreational facilities for example for walkers, cyclists and horse riders and applicants should take appropriate mitigation measures to address adverse effects on coastal access, national trails, other rights of way and open access land and, where appropriate, to consider what opportunities there may be to improve or create new access. In considering revisions to an existing right of way, consideration should be given to the use, character, attractiveness, and convenience of the right of way;
- impacts on accommodation supply, especially during construction and decommissioning phases; and
- cumulative effects - if development consent were to be granted to for a number of projects within a region and these were developed in a similar timeframe, there could be some short-term negative effects, for example a potential shortage of construction workers to meet the needs of other industries and major projects within the region.

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

- 12.3.2 EN-2 sets out planning policy specific to onshore natural gas-fired electricity generating infrastructure. EN-2 does not introduce any additional requirements for socio-economics, recreation, and tourism assessments.

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

- 12.3.3 EN-4 sets out planning policy specific to gas supply infrastructure and gas and oil pipelines. EN-4 does not introduce any additional requirements for socio-economics, recreation, and tourism assessments.

NPS for Electricity Networks Infrastructure (EN-5)

- 12.3.4 EN-5 sets out planning policy specific to electricity network infrastructure projects. Section 2.13.1 sets out how within holistic and strategic network design and planning exercise, infrastructure will need to be subject to the

appropriate environmental (including community/socio-economic) impact assessments.

Planning Policy Wales

- 12.3.5 PPW gives substantial importance to the sustainable development and the vision for Wales to become economically, socially and environmentally sustainable. PPW plays a significant contribution to the improvement of well-being in all its aspects as defined by the statutory well-being goals. The policies show a clear plan for future resilient urban areas and rural communities, embracing technology and innovation, including smart working, which also anticipates progress to ensure that Wales is proactive in planning decisions.
- 12.3.6 The Welsh Government has a set target for Wales to generate 70% of its electricity consumption from renewable energy by 2030. PPW Section 5.5.11 refers to tourism and states it is 'vital to economic prosperity and job creation in many parts of Wales'. PPW also covers Active and Social Places, which promote social, economic, environmental, and cultural well-being (Section 4), and emphasises that Low carbon electricity must become the main source of energy in Wales (Section 5).

Build Back Better: our plan for growth (UK Government 2021)

- 12.3.7 The Build Back Better publication (Ref 216) sets out the UK Government policy for supporting economic growth through investment. A key objective to achieve growth is through supporting the transition to net-zero, and to embrace net zero industries. In particular, the UK Government commits to:
- invest in net zero to create new opportunities for economic growth and jobs across the country, including supporting up to 60,000 jobs in the offshore wind sector, 50,000 jobs in Carbon Capture, Usage and Storage (CCUS) in our industrial clusters; and
 - grow the current net zero industries and encourage new ones to emerge. This includes working with industry, aiming to capture 10Mt CO₂/year using CCUS by 2030.

Building Better Places (Welsh Government 2020)

- 12.3.8 The Building Better Places publication (Ref 217) aims to support improvements in placemaking in Wales as a direct response to the COVID-19 pandemic. It sets out the following relevant issues to address:
- staying local: creating neighbourhoods;
 - changing working practices: our future need for employment land;
 - reawakening Wales' tourism and cultural sectors; and
 - green infrastructure, health and well-being and ecological resilience.

Ten Point Plan for a Green Industrial Revolution (2020)

12.3.9 The UK Government has explicitly set out plans to meet net zero targets by 2050 through their Ten Point Plan (Ref 218). Within this policy paper, the first key objective is to quadruple the UK offshore wind capacity, stating that *'by 2030, we aim to produce 40GW of offshore wind, including 1GW of innovative floating offshore wind in the windiest parts of our seas...To support this enlarging industry, we will invest £160 million into modern ports and manufacturing infrastructure, providing high quality employment in coastal regions. We will also enable the delivery of 60% UK content in offshore wind projects'*.

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

12.3.10 The Energy White Paper – Powering Our Net Zero Future (Ref 219) was published by the UK Government setting out the Ten Point Plan with respect to the areas of focus for green energy in the UK. Among these key points, the CCUS sector is considered important emerging green sectors for the UK. For CCUS, the paper states that “our ambition is to capture 10Mt of carbon dioxide a year by 2030”. Given the intended future use of the Proposed Development, **Chapter 19: Socio-economics, Recreation and Tourism (PEIR Volume II)** takes into account these national goals, which the Proposed Development supports.

Future Wales: The National Plan 2040 (2020)

12.3.11 The Future Wales – The National Plan 2040 (2020) is the NDF for Wales up to 2040. It seeks to address key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate resilience, and improving the health and well-being of our communities. Policies 17 and 18 set out Future Wales' approach to renewable energy generation across Wales and highlight that proposals should describe the net benefits the proposed project will bring in terms of social, economic, environmental and cultural improvements to local communities, whilst having no adverse impacts on the surrounding environment.

Stronger, Fairer, Greener Wales - Net Zero Skills Action Plan (2023)

12.3.12 The Net Zero Skills Action Plan (Ref 220) sets out seven key areas of action to support the Welsh economy whilst simultaneously transitioning away from a fossil-fuelled economy. The seven key areas are as follows:

- gain an understanding of the current skills position for each emission sector;
- build a shared understanding of net zero skills across Wales;
- grow a skilled workforce to meet our net zero commitments;
- strengthen the skills system;

- promote opportunities for early years and young people to realise their potential;
- cross-government and partnership approach to meet our skills commitment; and
- just transition.

12.3.13 Within this, the Welsh Government has outlined 36 key actions, for the short, medium and long term, in order to transition to a net zero economy.

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

12.3.14 The Welsh Government released the Carbon Budget 2 (Ref 221) in 2021 following the declaration of a climate emergency in Wales in 2019. Among the policy areas covered in the carbon budget, policy 17 and 18 are focused on advancing CCUS in terms of its evidence base and clustering in Wales.

Welcome to Wales - Priorities for the Visitor Economy 2020-25 (2017)

12.3.15 The Welcome to Wales - Priorities for the visitor economy 2020-25 (Welsh Government 2017) (Ref 222) sets out the plan for tourism in Wales to drive sustainable growth and for harnessing the visitor economy for wider gain, and the aims on how to get there. The document states that *'More than 9% of the workforce in Wales is now employed in tourism. It is one of the country's fastest growing sectors and benefits many rural areas as the main driver of the economy and source of employment'*. Given this, the policy focuses on economic growth that delivers benefits for people and places, including environmental sustainability, social and cultural enrichment and health benefits.

Welsh Government Economic Resilience and Reconstruction Mission (2021)

12.3.16 The Economic Resilience and Reconstruction Mission (Ref 224) sets out how Welsh Government is to address the socio-economic impact of the coronavirus pandemic, to recover from the economic damage of the pandemic and reconstruct the economy to help its people, businesses, and communities to prosper.

12.3.17 The Mission is underpinned by five beacons to help achieve its vision of a well-being economy which drives prosperity, is environmentally sound, and helps everyone realise their potential:

- strengthening the foundational economy;
- protecting and enabling skills and employment;
- accelerating adaptation for recovery and future prosperity;
- magnetising investment in a green recovery; and
- fortifying the pursuit of social value.

12.3.18 'Strengthening the Foundational Economy' relates to the need to champion and support the sectors that provide the infrastructure of everyday life, such

as care and health services, childcare, food, housing, energy, construction, waste and recycling. Tourism, including sporting and recreational activities, has been identified as one of Welsh Government's four priority foundational economy sectors alongside care, retail and food. Through 'Protecting and Enabling Skills and Employment', Welsh Government aims to support people across Wales into work and to prepare the workforce for the immediate and long-term challenges through access to support, training, higher and further education.

UK's Integrated National Energy and Climate Plan (2020)

12.3.19 To realise the opportunities presented by the transition to net-zero, the UK Government has placed Clean Growth as one of the four 'Grand Challenges' in the Industrial Strategy (Ref 225). The Integrated National Energy and Climate plan (INECP) published by the Department for Business, Energy and Industrial Strategy (now the Department for Energy Security and Net Zero (DESNZ)) in 2020 sets out the Government's targets relative to climate change. Two of the aims are related to socio-economics:

- support the growth of the UK low-carbon economy: Between 2015 and 2030, the UK low-carbon economy could grow more than four times faster than the rest of the economy, supporting up to 2 million jobs; and.
- invest in the UK workforce: ensure people have the right skills to deliver the net-zero transition and thrive in the high-value jobs that it will create. Substantial spending commitments to develop relevant skills in STEM, digital and technical industries have been proposed to the education system.

12.4 Regional Planning Policy

A Growth Vision for the Economy of North Wales (2016)

12.4.1 North Wales Economic Ambition Board produced A Growth Vision for the Economy of North Wales (2016) (Ref 226) with the purpose to identify our vision for growth for North Wales, and to set out the strategy and package of projects to realise that vision. The aims behind the vision are:

- to improve the economic, social, environmental, and cultural wellbeing of North Wales;
- to support and retain young people in the region's communities;
- to address worklessness and inactivity across the region;
- to support and enable private sector investment in the region to boost economic productivity and to improve the economic and employment performance of North Wales.

12.4.2 The vision seeks to create the conditions to support the delivery of the UK Governments' National Infrastructure priorities in North Wales. The policy also references the energy cluster as a high-value economic cluster, setting out the vision to increase expertise around energy generation, low carbon technology and processes.

North Wales Regional Economic Framework (REF) (2021)

12.4.3 The Regional REF (Ref 227) sets out a plan to boost productivity and accelerate sustainable economic and inclusive prosperity. The REF priorities are framed to facilitate decarbonisation of the economy, adapting and mitigating to climate change and improve the resilience of ecological networks, and include:

- skills and workforce;
- investment in magnets, hubs, supply chains, research and development, innovation and entrepreneurship;
- balanced support for indigenous and inward investors;
- language, culture, place and heritage;
- foundational economy and a vibrant Micro/SME base;
- empowering communities for the benefit of our future generations;
- connectivity (transport and digital);
- leverage benefits of public sector;
- low carbon energy; and
- food and drink industry.

North Wales Energy Strategy (2020)

12.4.4 The Welsh Government (with support from the North Wales Economic Ambition Board and regional stakeholders) delivered the North Wales Energy Strategy (2020) (Ref 228) to define a pathway identifying key interventions to deliver on the region's ambitions for decarbonising its energy system and ensure the region benefits from the transition. Its priorities are:

- to harness the abundance of local low carbon resource to become a green powerhouse and diversify the energy mix;
- to become a world-leader in offshore wind and marine technologies;
- to improve the energy efficiency of the region's housing and accelerate the decarbonisation of North Wales' building stock; and
- to achieve a shift to lower carbon transport.

12.4.5 The policy sets out the vision for North Wales of '*Delivering maximum local economic, social, ecological and wellbeing benefits from transitioning to a net zero economy and becoming a net exporter of low carbon electricity through cross-border and regional cooperation*'.

12.5 Local Planning Policy

FCC LDP (Theme: Delivering Growth and Prosperity) (2015-2030)

12.5.1 FCC's LDP provides the framework for decisions on how land is used and developed within the local authority, which includes decisions on new energy infrastructure. For example this includes Policy EN12: New Development and

Renewable Low Carbon Energy Technology. This sets out that '*New development will be required to maximise the potential for renewable or low carbon energy technology to meet energy needs*'. Policy EN13: Renewable and Low Carbon Energy Development sets out that all renewable or low carbon energy proposals will be permitted provided that:

- the development does not prejudice the purpose of the ISLAs to maximise opportunities for large scale solar PV development;
- the siting, design, layout, type of installation and materials used do not have a significant adverse effect on the character and features of the proposed location;
- there would not be unacceptable loss of public amenity or accessibility to the area;
- the impact of the development upon agriculture, forestry, recreation and other land uses is minimised to permit existing uses to continue unhindered;
- there would be no individual or cumulative significant adverse effect on the landscape, particularly the AONB and its setting;
- any associated ancillary buildings or structures are sensitively sited and designed to minimize their impact on the character and quality of the locality;
- in sensitive areas where above ground connections will have an unacceptable adverse effect on the landscape, connection lines and pipes should be located underground; and
- adequate provision has been made in the scheme for the restoration and aftercare of the site on the cessation of use.

FCC: Council Plan (2022)

12.5.2 The Council Plan (Ref 229) sets out the priorities for 2023 under six themes: Poverty, Affordable and Accessible Housing, Green Society and Environment, Economy, Personal and Community Wellbeing, and Education and Skills.

12.5.3 The Green Society and Environment theme is defined as "*...supporting the wider communities of Flintshire to reduce its carbon footprint*". The priorities within this theme are relevant to the Proposed Development and include:

- carbon neutrality;
- climate change and adaptation;
- fleet strategy;
- green environment;
- green access;
- renewable energy;
- active and sustainable travel options; and
- circular economy.

The Deeside Plan (2017)

- 12.5.4 The Deeside Plan sets out a vision for economic growth for the next 30 years from the plan period. It articulates how the growth aspirations for North Wales and for the Mersey Dee area can be realised and, vitally, how they can be harnessed for the greatest benefit for local people.
- 12.5.5 The plan sets out five objectives: Economic Growth, Transport, Housing, Skills and Employment, and Environment. The purpose of the Plan is to:
- create an ambitious high-level vision for economic growth in Deeside over the next 30 years;
 - set the principles for identifying future sites for development after Northern Gateway and Warren Hall, recognising the long timescales needed to do so;
 - ensure that transport infrastructure, economic development and land use planning are considered in parallel;
 - align future regional and local strategies and programmes;
 - build understanding of the needs of the area among decision-makers and businesses to encourage support; and
 - provide a tool for the Deeside Partnership, the Council and others to monitor progress.

12.6 Guidance

TAN 13: Tourism (1997)

- 12.6.1 TANs have been produced by the Welsh Government, and all are to be read in conjunction with Planning Policy guidance from the Welsh Government. For TAN 13: Tourism (Ref 230), it is stated that *'While it cannot be regarded as a single or distinct category of land use, the issues it raises should be addressed in preparing or revising development plans and may feature in development control decisions. Development plans may provide guidance on opportunities for larger scale or innovative projects, appropriate facilities for the countryside or designated areas and the provision of facilities in historic towns and seaside resorts.'*

TAN 16: Sport Recreation and Open Space (2009)

- 12.6.2 TAN 16: Sport Recreation and Open Space (2009) (Ref 231) focuses on the impact of Planning Policy on these subjects. The TAN notes that *'Planning conditions and obligations (Section 106 Agreements) can be used to provide open space, sport and recreational facilities, to safeguard and enhance existing provisions, and to provide for their management. PPW indicates that planning obligations should only be sought where they are necessary to make a proposal acceptable in land use planning terms. Local planning authorities will usually be justified in seeking planning obligations where the quantity or quality of provision for recreation is inadequate or under threat, or where new development increases local needs.'*

TAN 23: Economic Development (2015)

12.6.3 TAN 23: Economic Development (2015) (Ref 232) reflects the intersection of economic development with planning policy guidelines. The TAN states that *'Where economic development would cause environmental or social harm which cannot be fully mitigated, careful consideration of the economic benefits will be necessary. There will of course be occasions when social and environmental considerations will outweigh economic benefit. The decision in each case will depend on the specific circumstances and the planning authority's priorities'. Regarding low carbon initiatives, the TAN states that 'the planning system should particularly support the low-carbon economy, innovative business / technology clusters and social enterprises which are defined as businesses that are particularly important in providing opportunities for social groups disadvantaged in the labour market.'*

12.6.4 The preliminary socio-economic assessment is based upon a range of other relevant guidance. This includes:

Additionality Guide (4th Edition) (2014)

12.6.5 The Additionality Guide (4th Edition) (Homes and Communities Agency (HCA), 2014) (Ref 233) explains how to assess the additional impact or additionality of local economic growth and housing interventions. Additionality is the extent to which something happens as a result of an intervention that would not have occurred in the absence of the intervention.

12.6.6 The guidance includes best-practice benchmark evidence on the scale of each of the additionality factors, reference to new research, additional information and links to guidance on valuing benefits and further sources of helpful guidance.

12.6.7 Although this document was officially withdrawn on 24th May 2022, without a replacement, it continues to serve as a cornerstone of best practice guidance for additionality benchmarks. The guide, while no longer officially endorsed, remains highly regarded within the industry due to its comprehensive framework and established benchmarks for assessing additionality. Its use ensures understanding of additional benefits beyond what would have happened without intervention, thereby maintaining standards of accountability and effectiveness in public and private sector initiatives alike.

Research to Improve the Assessment of Additionality (2009)

12.6.8 The Research to Improve the Assessment of Additionality published by the Department for Business, Innovation and Skills (BIS) (2009) (Ref 234) collates and analyses evidence gathered on additionality from evaluations that have sought to define deadweight, leakage and additionality in a consistent and transparent fashion. The study provides a substantially large database of benchmarks covering a wide range of economic development and regeneration themes.

The Green Book – Appraisal and Evaluation in Central Government (2022)

- 12.6.9 The HM Treasury Green Book (2022) is the guidance for appraisal and evaluation in Central Government (Ref 235). It sets out the foundations for consistency in economic evaluation on how to appraise policies, programmes and projects. HM Treasury Green Book gives guidance to ensure that policies, programs and projects adopted are the best ways to achieve policy objectives and make the best use of public resources.
- 12.6.10 The Guidance uses the five-case model, the government's recommended framework for developing business cases, including the strategic, economic, commercial, financial, and management cases.

The Magenta Book – Guidance for Evaluation (2020)

- 12.6.11 The HM Treasury Magenta Book (2020) (Ref 236) has been written for government decision-makers and government analysts to help them understand the role of evaluation and the processes and methods for conducting an evaluation.
- 12.6.12 The Guidance is to be used alongside complementary resources, such as the Green Book, it helps with the development of transparent, objective, evidence-based appraisal and evaluation of proposals, to inform decision making and business cases. It can also help place stakeholders to evaluate the effectiveness and impacts of any place interventions.

13. Climate Change

13.1 Introduction

- 13.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of climate effects as reported in **Chapter 20: Climate Change (PEIR Volume II)**.

13.2 Legislation

The EIA Regulations

The EIA Regulations (Ref 1) state that an EIA (where relevant): must include *“a description of the likely significant effects of the development on the environment resulting from ... the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and vulnerability of the project to climate change”*.

- 13.2.1 This requirement is addressed in **Sections 20.8** and **20.14** of **Chapter 20: Climate Change (PEIR Volume II)**.

Kyoto Protocol (1997)

- 13.2.2 An international agreement linked to the United Nations Framework Convention on Climate Change (UNFCCC) which commits its Parties by setting internationally binding emission reduction targets (Ref 237). Under Article 4 of the Kyoto Protocol, the EU created an Effort Sharing Regulation that requires the setting of individual binding greenhouse gas (GHG) emission reduction targets for each of its Member States. The current Effort Sharing Decision (ESD) commits the UK to a 37% reduction in GHG emissions for the period 2021 to 2030 (Regulation (EU) 2018/842, 2018). This ambition is addressed in **Section 20.4** of **Chapter 20: Climate Change (PEIR Volume II)**.

UNFCCC Paris Agreement (2016)

- 13.2.3 The Paris Agreement is an agreement under the UNFCCC dealing with GHG emissions mitigation, adaptation and finance starting in the year 2020. It requires all signatories to strengthen their climate change mitigation efforts to keep the increase in global average temperature to well below 2°C this century above pre-industrial levels and to pursue efforts to limit the increase to 1.5°C (Ref 238).

Climate Change Act 2008 (Part 1)

- 13.2.4 The Climate Change Act 2008 (Ref 239) set a legally binding target for the UK to reduce its GHG emissions from 1990 levels by at least 80% by 2050. This target is supported by a system of legally binding five-year 'carbon budgets' and an independent body to monitor progress, the Climate Change Committee (CCC). The UK carbon budgets restrict the amount of GHG emissions the UK can legally emit in a defined five-year period.

The Climate Change Act (2050 Target Amendment) Order 2019 (Article 2)

- 13.2.5 The Climate Change Act was amended in 2019 to revise the existing 80% reduction target and legislate for a net zero emissions by 2050 (through the Climate Change Act 2008 (2050 Target Amendment) Order 2019) (Ref 240).
- 13.2.6 In 2020, the 6th carbon budget was published by the Committee on Climate Change for consideration by Government and is the first budget to reflect the amended trajectory to net zero by 2050.
- 13.2.7 The existing UK carbon budgets are used to determine significance of GHG emissions from the Proposed Development, as described and used in **Sections 20.4 and 20.7 of Chapter 20: Climate Change (PEIR Volume II)**.

The Carbon Budget Order 2021 (Article 2)

- 13.2.8 This Order (Ref 241) sets out the 2033-37 budgetary period at 965 million tonnes of carbon dioxide equivalent. Each carbon budget sets a limit on the maximum level of net UK carbon account for each five-year budgetary period. This is aligned to the requirement set out in the Climate Change Act (2008), which ensures that this budget supports the aim to reduce emissions to net zero by 2050.

The Climate Change (Interim Emissions Targets) (Wales) Regulations 2018

- 13.2.9 In December 2018, Senedd Cymru approved new regulations that enforced a carbon net-zero target for 2050. Based on advice from the CCC, Senedd Cymru set an interim target of a 45% reduction from the 1990 baseline in GHG emissions for 2030 (Ref 243). Following the 2030 target, an interim 2040 target imposed an 67% reduction in GHG emissions from the 1990 baseline.

The Climate Change (Interim Emissions Targets) (Wales) (Amendment) Regulations 2021 (Article 2)

- 13.2.10 In March 2021, Senedd Cymru approved new regulations that enforce a carbon net-zero target for 2050. Based on advice from the CCC, Senedd Cymru has set an interim target of a 63% reduction from the 1990 baseline in GHG emissions for 2030 (Ref 244). Following the 2030 target, an interim 2040 target imposes an 89% reduction in GHG emissions from the 1990 baseline.

Environment (Wales) Act 2016 (Part 2)

- 13.2.11 The Environment (Wales) Act 2016 provides the Welsh Ministers with powers to put statutory emission reduction targets in place, including at least a 100% reduction in emissions by 2050 and carbon budgeting to support their delivery.
- 13.2.12 This Act sets a clear pathway for decarbonisation within the context of existing UK and EU obligations.

Well-being of Future Generations (Wales) Act 2015 (Part 2)

- 13.2.13 The Well-being of Future Generations (Wales) Act (2015) was established by the Welsh Government in the intention to improve social, economic,

environmental, and cultural well-being of Wales. The Act places a statutory duty on public bodies in relation to sustainable development, based on seven well-being goals.

13.2.14 The key goals of the Act in the context of the proposed Project, and future climate change trends, include:

- 'a prosperous Wales' – 'An innovative, productive and low carbon society which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (including acting on climate change)'; and
- 'a resilient Wales' – 'A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic ecological resilience and the capacity to adapt to change (for example climate change)'.

13.3 National Planning Policy

Overarching NPS for Energy (EN-1)

13.3.1 EN-1 describes the national policy for energy infrastructure in relation to climate impacts and adaptation; adverse effects and benefits; in relation to the EU Directive and ES requirements; and in relation to adaptation measures in response to climate projections; in relation to climate projections, flood risk and the importance of relevant mitigation.

13.3.2 EN-1 promotes CCS as an emerging technology that the Government is aiming to facilitate and encourage, including for gas-fired generating stations. Paragraph 3.5.2 discusses '*the need for CCS in the clean energy transition.*'

13.3.3 EN-1 further states the benefits of having a diverse mix of power generation, including energy supply security as fossil-fuel generation that can be brought online quickly to meet demand and can complement baseload supply from nuclear and renewables. However, these fossil-fuel power generators will need CCS to be low carbon.

13.3.4 EN-1 states that the consenting of new fossil-fueled power stations at or over 300 MW must be constructed Carbon Capture Ready (CCR), as described in Section 3.6 and 4.7 of EN-1.

13.3.5 EN-1 states that all proposals for energy infrastructure projects should include a GHG assessment as part of their ES, with such including:

- a whole life GHG assessment showing construction, operational and decommissioning GHG impacts, including impacts from change of land use;
- an explanation of the steps that have been taken to drive down the climate change impacts at each of those stages;
- measurement of embodied GHG impact from the construction stage;
- how reduction in energy demand and consumption during operation has been prioritised in comparison with other measures;

- how operational emissions have been reduced as much as possible through the application of best available techniques for that type of technology;
- calculation of operational energy consumption and associated carbon emissions;
- whether, and how, any residual GHG emissions will be (voluntarily) offset or removed using a recognised framework; and
- where there are residual emissions, the level of emissions and the impact of those on national and international efforts to limit climate change, both alone and where relevant in combination with other developments at a regional or national level, or sector level, if sectoral targets are developed.

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

- 13.3.6 EN-2 describes the need for all new fossil fuel electricity generating plants to assess the viability for supporting CCS technologies.

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

- 13.3.7 EN-4 sets out planning policy specific to gas supply infrastructure and gas and oil pipelines. EN-4 does not introduce any additional requirements for assessments related to carbon or climate change.

NPS for Electricity Networks Infrastructure (EN-5)

- 13.3.8 EN-5 sets out planning policy specific to electricity network infrastructure projects. Sections 2.3.1 and 2.3.2 state that generic considerations must be made to ensure that electricity networks infrastructure are climate resilient and requires that these are assessed in the ES.

Planning Policy Wales

- 13.3.9 The Welsh Government has a set target for Wales to generate 70% of its electricity consumption from renewable energy by 2030 PPW section 5.7.13 refers to the Energy Hierarchy of planning which aims for '*all new development to mitigate the causes of climate change*'. The policies show a clear plan for climate resilient urban spaces and rural communities, which aligns to the climate emergency which was declared by the Welsh Government in 2019.
- 13.3.10 Section 5 clearly indicates that low carbon electricity and the use of renewables must become the main source of energy in Wales.

Our Green Future: Our 25-year Plan to Improve the Environment (2018)

- 13.3.11 Our Green Future: Our 25-year Plan to Improve the Environment sets out government action to help the natural world regain and retain good health. It aims to deliver cleaner air and water in our cities and rural landscapes, protect threatened species and provide richer wildlife habitats.

Net Zero Strategy: Build Back Greener (2021)

13.3.12 The UK Government has published a Net Zero Strategy: Build Back Greener, which outlines its plans to achieve net zero emissions by 2050. The strategy includes the following key elements relevant to the Proposed Development:

- reducing emissions in power generation: The Government plans to increase the use of renewable energy sources, such as wind and solar power, to generate electricity, and to phase out the use of unabated coal power by 2024;
- supporting industry to reduce emissions: The strategy includes measures to support industries such as steel and cement to reduce their emissions, including through the development of new low carbon technologies; and
- encouraging innovation and research: The strategy includes measures to support innovation, research, and the development of low-carbon technologies, such as hydrogen and CCS.

13.3.13 Overall, the Net Zero Strategy: Build Back Greener reflects the UK Government's commitment to achieving net zero emissions by 2050 and to building a greener, more sustainable economy.

British Energy Security Strategy (2021)

13.3.14 Published in 2021, The British Energy Security Strategy (Ref 245) sets out the UK government's plan to ensure secure, affordable, and clean energy for the country. The strategy includes several climate-related sections with specific relevance to the development of CCUS within the UK. These include:

- achieving net zero emissions: The Government has committed to achieving net zero emissions by 2050, and the strategy outlines the role that clean energy technologies, such as renewable energy and CCUS, will play in reaching this goal;
- supporting innovation and research: The strategy includes measures to support innovation and research in low-carbon energy technologies, such as hydrogen and CCUS; and
- international cooperation: The Government aims to work with international partners to promote the transition to a low-carbon energy system and to support developing countries in their efforts to reduce emissions and adapt to the impacts of climate change.

13.3.15 Overall, the British Energy Security Strategy reflects the Government's commitment to addressing the climate crisis by promoting the transition to a low-carbon energy system, supporting innovation and research into clean energy technologies.

Clean Growth The UK CCUS Deployment Pathway: An Action Plan

The UK Government (Ref 246) has identified CCUS as having a significant part to play in the UK's transition to a low carbon economy. CCUS has been identified as a least cost energy system decarbonisation pathway to 2050. In their Clean Growth CCUS action plan it is stated that: *'CCUS has economy-wide qualities which could be very valuable to delivering clean industrial*

growth. It could deliver tangible results in tackling some of the biggest challenges we face in decarbonising our economy, contributing to industrial competitiveness and generating new economic opportunities – a key part of our modern Industrial Strategy'. This strategy has been used to develop this Chapter and the wider submission.

The Clean Growth Strategy

13.3.16 In 2017, the UK government published The Clean Growth Strategy (Ref 247). This Strategy details the increased investment and collaboration in CCUS in the UK to drive industrial innovation and its importance in long-term emissions reduction.

Prosperity for All: A Climate Conscious Wales (Welsh Climate Change Adaptation Plan) 2019

13.3.17 In 2019, the Welsh Government published the Prosperity for All: A Climate Conscious Wales (Welsh Climate Change Adaptation Plan) (Ref 242). This is the first statutory climate mitigation plan, which sets out a five-year strategy to address the climate change impacts in Wales. This Plan will enable the Welsh Government to comply with the first carbon budget and create the foundations for further emission reduction.

13.4 Local Planning Policy

FCC LDP (2015-2030)

13.4.1 The LDP for FCC informs planning decisions and future development of the area. Matters of relevance to the climate change assessment include:

- Policy EN2: Green Infrastructure;
- Policy STR14: Climate Change and Environmental Protection;
- Policy STR13: Natural and Built Environment, Green Networks and Infrastructure;
- Policy PC4: Sustainability and Resilience of New Development;
- Policy EN12: New Development and Renewable and Low Carbon Energy Technology; and
- Policy EN13: Renewable and Low Carbon Energy Development.

FCC Climate Change Strategy 2022/23 – 2029/30

13.4.2 This strategy (Ref 248) sets out the ambition for the FCC to become carbon neutral by 2030, which supports the Welsh Government's vision for a net zero Public Sector. In relation to the Proposed Development, Section 7.5 states that *"some of this gap can be filled by utilizing carbon offsetting to absorb and store carbon so investment in this area is crucial"*.

13.5 Guidance

IEMA: EIA Guide to: Assessing GHG Emissions and Evaluating their Significance (2022) (IEMA Guidance (Climate Change))

- 13.5.1 The IEMA Guidance for Climate Change (Ref 249) provides an approach to assess the significance of GHG emissions against the global climate. An assessment of the significance of GHG emissions from the Proposed Development has been undertaken in accordance with this guidance (see **Section 20.4 of Chapter 20: Climate Change (PEIR Volume II)**).

IEMA EIA Guide to Climate Change Resilience and Adaptation (2020)

- 13.5.2 The approach (Ref 250) for assessing the significance of climate change risks on the Proposed Development has been undertaken in accordance with this guidance (see **Section 20.11 of Chapter 20: Climate Change (PEIR Volume II)**).

GHG Protocol

- 13.5.3 The GHG Protocol (Ref 251) is a widely used standard for measuring and managing GHG emissions. Developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD), the protocol provides guidance on identifying, measuring, reporting, and verifying GHG emissions from various sources, such as energy use, transportation, and waste.
- 13.5.4 The GHG Protocol includes two main standards: the Corporate Standard, which outlines how to measure and report emissions from business activities, and the Product Standard, which provides guidance on how to measure the lifecycle emissions of a product or service (Ref 252). The GHG Protocol has been adopted by governments, businesses, and organisations worldwide to help them manage their emissions and track progress towards climate goals.

Carbon Management in Infrastructure (PAS 2080)

- 13.5.5 PAS 2080 (Ref 253) is a standard developed by the BSI that provides guidance on managing carbon emissions and promoting sustainability in infrastructure projects. The standard outlines a framework for the management of GHG emissions throughout the project lifecycle, from planning and design to construction and operation. It encourages collaboration between project stakeholders, such as investors, designers, and contractors, and provides guidance on identifying and prioritising opportunities to reduce emissions and promote sustainability.
- 13.5.6 PAS 2080 is intended to help infrastructure projects achieve net zero emissions and promote sustainable development while reducing costs and increasing efficiency. It is applicable to a wide range of infrastructure projects, including transportation, buildings, and energy systems.

DESNZ Emission Factors (2024)

- 13.5.7 The DESNZ Emissions Factors (Ref 254) are a set of factors developed by the UK government's DESNZ to calculate GHG emissions from various sources, such as electricity and fuel consumption.
- 13.5.8 The factors consider the emissions associated with the production and distribution of energy, as well as the emissions associated with combustion or use of the energy source.
- 13.5.9 The DESNZ Emissions Factors are updated annually to reflect changes in the UK energy mix and to ensure that they remain up to date with the latest emissions data. They are used by businesses, organisations, and government agencies in the UK to report their GHG emissions and to track progress towards climate goals.

Inventory of Carbon and Energy (ICE) v.3, 2019

- 13.5.10 The ICE database (Ref 255) developed by the University of Bath provides embodied energy and CO₂ emissions data for a wide range of materials and building components.
- 13.5.11 The ICE database enables architects, engineers, and designers to calculate the embodied energy and CO₂ emissions associated with a building or construction project, considering the materials used, manufacturing processes, and transportation. The data in the ICE database is based on rigorous life cycle assessment methodology and is regularly updated to reflect changes in manufacturing processes and materials.
- 13.5.12 The ICE database is widely used in the construction industry to help reduce buildings' environmental impact and promote sustainable construction practices.

Think Hazard

- 13.5.13 Think Hazard (Ref 256) is an online tool developed by the United Nations Office for Disaster Risk Reduction (UNDRR) that provides information on natural hazards such as floods, earthquakes, and landslides.
- 13.5.14 The tool aims to help communities and decision-makers assess and manage the risks of natural hazards. It provides hazard information, including maps, descriptions, and hazard profiles, as well as guidance on preparing for and responding to natural disasters.
- 13.5.15 The tool is designed to be used by a wide range of stakeholders, including governments, non-governmental organisations, and community groups, to help them understand the risks posed by natural hazards and to develop effective strategies for risk reduction and disaster management.

14. Human Health

14.1 Introduction

- 14.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of human health effects as reported in **Chapter 21: Human Health (PEIR Volume II)**.

14.2 Legislation

Public Health (Wales) Act 2017

- 14.2.1 The Public Health (Wales) Act 2017 (Ref 257) was passed on 3 July 2017. The overarching aim of the Act is to address specific health concerns and to create social conditions that are favourable to good health. The Act is formed of nine parts: obesity, tobacco and nicotine products, special procedures, intimate piercing, Health Impact Assessments (HIA), pharmaceutical services, provision of toilets, miscellaneous, and general.
- 14.2.2 Part 6: Health Impact Assessment outlines that policies, plans, or programmes that will have outcomes of national or major significance, or which have a significant effect at the local level on public health will require a HIA in specified circumstances. As a result, physical and mental health are integrated into the decision making and planning processes.

Planning (Wales) Act 2015

- 14.2.3 The Planning (Wales) Act was adopted in 2015 and provides a legislative framework for the operation of the planning system. The Act sets out a statutory purpose for planning functions and clarifies the requirement to carry out sustainable development in line with the Well-being of Future Generations Act. Thus, a key objective of the Act is to create “*a healthier Wales*” through considering health and wellbeing within the planning system.

Well-being of Future Generations (Wales) Act 2015

- 14.2.4 The Well-being of Future Generations (Wales) Act was passed on 29 April 2015. The Act is targeted at specified public authorities and its main aim is to ensure that needs of the current generation are met without compromising the ability of future generations to meet their own needs.
- 14.2.5 The Act outlines a number of actions to enable sustainable development, including requirement for public bodies to take actions that promote economic, social, environmental, and cultural wellbeing; requiring reporting on such actions; establishing a Commissioner for Future Generations to advise and assist public bodies to comply with the Act; and establishing public services boards in the local authority area.
- 14.2.6 To achieve the intended aims of the Act, seven wellbeing goals are set out:
- **a prosperous Wales** – innovative, productive, and low carbon society that is aware of the limits of the global environment and which develops a skilled and well-educated population;

- **a resilient Wales** – maintaining and enhancing a biodiverse natural environment that supports social, economic, and ecological resilience;
- **a healthier Wales** – society that maximises people's physical and mental wellbeing and enables them to make informed healthy choices;
- **a more equal Wales** – enabling people to fulfil their potential no matter their background or circumstances;
- **a Wales of cohesive communities** – attractive, viable, safe, and well-connected communities;
- **a Wales of vibrant culture and thriving Welsh language** – a society that promotes and protects Welsh culture and which encourages people to participate in the art, and sport and recreation; and
- **a globally responsible Wales** – a nation that considers global wellbeing when doing anything to improve the economic, social, environmental, and cultural wellbeing of Wales.

14.2.7 Public bodies and public sector partners must work together to achieve the goals set out above.

Control of Electromagnetic Fields at Work Regulations 2016

14.2.8 Electromagnetic Field (EMF) effects must be controlled in accordance with the Health and Safety Executive's (HSE) Control of Electromagnetic Fields at Work Regulations 2016 (Ref 312), which sets out how employers must make and implement action plans to ensure compliance with the defined exposure limits (in Part 2 of the Schedule). Regulation 7(2) states that "the action plan must include consideration of, where relevant –

- other working methods that entail lower exposure to electromagnetic fields;
- replacement equipment designed to reduce the level of exposure;
- technical measures to reduce the emission of electromagnetic fields, including, where necessary, the use of interlocks, screening or similar health protection mechanisms;
- demarcation and access control measures;
- maintenance programmes for work equipment, workplaces and workstation systems;
- the design and layout of workplaces and workstations;
- limitations on the duration and intensity of exposure; and
- the availability of suitable personal protective equipment.

14.3 National Planning Policy

Overarching NPS for Energy (EN-1)

- 14.3.1 EN-1 requires the decision maker to consider potential benefits of development proposals including *'the potential to impact on the health and wellbeing of the population'*.
- 14.3.2 Paragraph 4.4.3 of EN-1 notes that *"New energy infrastructure may also affect the composition and size of the local population, and in doing so have indirect health impacts, for example if it in some way affects access to key public services, transport, or the use of open space for recreation and physical activity"*.
- 14.3.3 Section 4.4 'Health' states that an assessment should consider all relevant human health impacts, which may include the following:
- the direct impacts on health including increased traffic, air or water pollution, dust, odour, hazardous waste and substance, noise, exposure to radiation, and increases in pests; and
 - the indirect health impacts of new energy infrastructure, such as if it in some way affects access to key public services, transport, or the use of open space for recreation and physical activity.

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

- 14.3.4 EN-2, taken together with EN-1, provides the primary policy for decisions by the SoS on applications they receive for nationally significant natural gas electricity generating stations.
- 14.3.5 Section 2.6 outlines that applicants must provide information and mitigation measures about topics relating to human health such as air quality and GHG emissions, landscape and visual, noise and vibration, water quality and resources.

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

- 14.3.6 EN-4 taken together with the EN-1, provides the primary policy for decisions by the SoS on applications it receives for natural gas supply infrastructure and gas and oil pipelines.
- 14.3.7 In regard to human health, it advises that developments should follow generic considerations on gas emissions set out in EN-1. In particular, Section 5.2 of EN-1 which provides guidance on the effects of emissions on air quality (which can have implications for human health).

NPS for Electricity Networks Infrastructure (EN-5)

- 14.3.8 EN-5 provides specific policy in relation to electromagnetic fields (EMFs) resulting from electricity networks and their known and potential effects on health, stating in at paragraphs 2.9.46 and 2.9.47: *"All overhead power lines produce EMFs. These tend to be highest directly under a line, and decrease*

to the sides at increasing distance. Although putting cables underground eliminates the electric field, they still produce magnetic fields, which are highest directly above the cable. EMFs can have both direct and indirect effects on human health, aquatic and terrestrial organisms... The direct effects occur in terms of impacts on the central nervous system resulting in its normal functioning being affected. Indirect effects occur through electric charges building up on the surface of the body producing a microshock on contact with a grounded object, or vice versa, which, depending on the field strength and other exposure factors, can range from barely perceptible to being an annoyance or even painful.”

Future Wales: The National Plan 2040

14.3.9 The Future Wales: The National Plan 2040 was first published in February 2021. The National Plan sets out a NDF for Wales with a strategy for addressing key national priorities through the planning system. SDP at a regional level and LDP at a local authority level must be in conformity with the framework set out in the National Plan.

14.3.10 Below are the most relevant objectives of the National Plan which aim to create a Wales where people:

- live and work in connected, inclusive, and healthy places;
- live in vibrant rural places with access to homes, jobs, and services;
- live in distinctive regions that tackle health and socio-economic inequality through sustainable growth;
- live and work in towns and cities which are a focus and springboard for sustainable growth;
- live in places where travel is sustainable;
- live in places that sustainably manage their natural resources and reduce pollution;
- live in places with biodiverse and connected ecosystems; and
- live in places which are decarbonised and climate-resilient.

14.3.11 Regarding the Proposed Development, the National Plan highlights the importance of Flintshire, together with Wrexham, to the Welsh and UK economy.

Planning Policy Wales

14.3.12 PPW was first published on 5 December 2018, however it was revised most recently in 2024 (Edition 12). PPW is supplemented by a series of TANs, Welsh Government Circulars, and policy clarification letters, which together provide the national planning policy framework for Wales.

14.3.13 The main role of PPW is to set out what must be achieved by plans and decisions taken by the planning system, and how development should be shaped to deliver the best outcome. PPW also works to ensure that the planning system reflects the objectives and outcomes of the Planning (Wales) Act 2015 and the Well-being of Future Generations (Wales) Act 2015 to ensure the delivery of sustainable development.

14.3.14 Chapter 2: People and Places: Achieving Wellbeing Through Placemaking argues that planning decisions should be made at all levels and consider factors from a global scale (e.g. climate change) through to a local scale (e.g. impacts of local communities and properties). Chapter 2 also advocates for a 'placemaking' approach to planning and design which can be defined as a holistic framework that focuses on creating high quality developments and public spaces that promote people's prosperity, health, happiness, and wellbeing.

14.3.15 Chapter 3 Strategic Spatial Choices relates to placemaking in action and argues that good design makes places better. It outlines that good design within the planning system should work to create healthier place, reduce health inequalities, maximise the provision of community facilities, and promote active travel and green infrastructure. In addition, there should be a strong focus on the sustainable management of natural resource and decarbonisation. **Plate 14-1** highlights the key aspects of good design.

Plate 14-1: Objectives of Good Design



Source: Welsh Government (2024); 'Planning Policy Wales: Edition 12'.

14.3.16 Chapter 5: Productive Enterprising Places states that low carbon energy will become the main source of energy in Wales for heating, transport, and power. Regarding renewable energy and low carbon development; social, economic, environmental, and cultural impacts and opportunities should be assessed. Chapter 5 also states the importance of the circular economy and sustainable waste management.

14.3.17 Chapter 6: Distinctive and Natural Places outlines the importance of protecting the natural environment in relation to economic, social, environmental, and cultural activities. In relation to energy, Chapter 6 states that a de-risking approach, where natural and man-made hazards, as well as environmental hazards are assessed, should be adopted to reduce harm when considering sites for development.

Public Health Wales Long Term Strategy 2023 – 2035

14.3.18 Public Health Wales is the national Public Health Organisation for Wales. Its purpose is to work together for a healthier Wales. This strategy (Ref 313) sets out the vision for achieving a healthier Wales by 2035. The aim is for people to live longer, healthier lives and to have fair and equal access to good health and wellbeing. To do this, Public Health Wales is focusing on the delivery of six strategic priorities:

- Influencing the wider determinants of health;
- Promoting mental and social well-being;
- Promoting healthy behaviours;
- Supporting the development of a sustainable health and care system focused on prevention and early intervention;
- Delivering excellent public health services to protect the public and maximise population health outcomes; and
- Tackling the public health effects of climate change.

14.4 Local Planning Policy

FCC LDP

14.4.1 FCC's LDP was adopted on 24 January 2023 and covers the period 2015 to 2030. The Future Wales Plan, the Strategic Development Plan for North Wales (once prepared and adopted), and the LDP will provide the primary basis for making decisions on planning applications and future development proposals. The central aim of the LDP vision is to achieve a *“sustainable and lasting balance between the economic, social, and environmental needs of Flintshire and its residents, through realizing its unique position as a regional gateway and area for economic investment, whilst protecting its strong historic cultural heritage and natural environment”*.

14.4.2 The following themed approaches and related strategic policies are considered to be relevant to the Proposed Development:

- Creating Sustainable Places and Communities:
 - Policy STR2 The Location of Development defines Connah's Quay as a 'main service centre' that has a strategic role in the delivery of services and facilities within Flintshire;
 - Policy STR4 Principles of Sustainable Development, Design, and Placemaking seeks to promote and create sustainable places which achieve local distinctiveness, are inclusive and accessible, and mitigate and adapt to climate change;
 - Policy STR5 Transport and Accessibility argues that sustainable economic growth and development can only be achieved through delivering, maintain, and enhancing an integrated, accessible, reliable transport network; and
 - Policy STR6 Services, Facilities, and Infrastructure states that sustainable places require suitable physical and social infrastructure.

Infrastructure related to the Proposed Development in the policy includes green infrastructure, transport infrastructure (highways, walking cycling, public transport etc.), ecological mitigation, water management, and electricity and gas.

- Supporting a Prosperous Economy:
 - Policy STR7 Economic Development, Enterprise, and Employment aims to sustain Flintshire's role as sub-regional economic hub through providing the opportunity to realise the creation of 8,000-10,000 jobs.
- Valuing the Environment:
 - Policy STR13 Natural and Built Environment, Green Networks, and Infrastructure states that development should “*identify, respect, protect, enhance and connect Flintshire's environmental assets, to create a multifunctional network of natural and historic resources*”;
 - Policy STR14 Climate Change and Environmental Protection aims to mitigate the effects of climate change and ensure appropriate environmental protection. This includes encouraging zero/low carbon energy generation and combined heat and power and communal district/ heating networks; and
 - Policy STR15 Waste Management seeks to “*minimise the production of waste in all development and ensuring the sustainable management of waste once it has been produced*”.

Flintshire and Wrexham Public Services Board: Our Well-being Plan 2023-2028

- 14.4.3 The Well-being of Future Generations Wales Act 2015 (Ref 258) places a duty on local authorities to create a Public Services Board to improve local wellbeing in their area. In 2023, the Public Services Boards of Flintshire and Wrexham published their joint Well-Being Plan for 2023-2028.
- 14.4.4 The Plan has two main wellbeing objectives and six outcomes which are brought together through three key themes: children and young people, our communities, and where we work:
- Build flourishing communities by reducing inequalities across environment, education, employment, income, and housing:
 - *children and young people* – opportunities for new skills, training, and learning;
 - *our communities* – utilise skills and talents to tackle climate change to build a strong, fair sustainable local economy; *and*
 - *where we work* – strengthen connection between Public Services Board and their staff who work and live in our community.
 - Improve community wellbeing by enabling people of all ages to live healthy and independent lives:
 - *children and young people* – ensure public sector takes a joint approach to prevention and early intervention for children and families;

- *our communities* – work with communities to build good mental health and wellbeing;
- *where we work* – understanding of needs and resources of our community.

14.5 Guidance

IEMA Guide to Effective Scoping of Human Health in EIA (IEMA Health Guidance)

- 14.5.1 Where a project is subject to statutory or voluntary EIA, an HIA may be merged into the EIA or undertaken as a stand-alone reporting process.
- 14.5.2 In November 2022, IEMA published guidance on the effective scoping of human health as part of the scoping phase of the EIA process (Ref 259). The guidance updates and provides further context on the position from the previous 2017 IEMA Primer on health in EIA (Ref 260).
- 14.5.3 The human health assessment undertaken for the Proposed Development is based on IEMA guidance. Likely and potentially significant population health effects of the Proposed Development have been scoped for each phase of the development – construction, operation, and decommissioning.

IEMA Guide to: Determining Significance for Human Health in EIA (IEMA Health Guidance)

- 14.5.4 In November 2022, IEMA published guidance on assessing human health as part of EIA (Ref 261). Previously, there was no consolidated methodology or practice for the assessment of effects on human health. The IEMA guidance sets out health sensitivity and health magnitude tables. For the human health assessment, potential health inequalities should be articulated in 'significance conclusions' to determine if any mitigation should be put in place or if monitoring is required.
- 14.5.5 The human health assessment undertaken for the Proposed Development is based on IEMA guidance.

Wales Health Impact Assessment Support Unit Guidance

- 14.5.6 The Wales Health Impact Assessment Support Unit (WHIASU) (Ref 262) was created in 2004 to assist the development of HIA practices in Wales. The unit is based in the WHO Collaborating Centre on Investment for Health and Well-being at Public Health Wales.
- 14.5.7 The WHIASU assists public bodies to understand the circumstances in which a HIA must be complete and to understand how to carry out and assess HIAs.

Public Health England: Advice on the Content of ESs Accompanying an Application under the NSIP Planning Regime

- 14.5.8 In 2020, Public Health England (PHE) (now the UK Health Security Agency (UKHSA)) published this guidance (Ref 264) on information to be included in

assessments of NSIPs. Advice and recommendations from this document should be reflected in any ES.

- 14.5.9 It suggests that any assessments undertaken to inform the ES should be proportionate to the potential impacts of the proposal. It therefore accepts that, in some circumstances particular assessments may not be relevant to an application, or that an assessment may be adequately completed using a qualitative rather than quantitative methodology.
- 14.5.10 The guidance states that the Applicant should identify and consider impacts on residential areas and sensitive receptors (such as schools, nursing homes and healthcare facilities, as well as other vulnerable population groups such as those who are young, older, with disabilities or long-term conditions, or on low incomes).
- 14.5.11 The Applicant is expected to follow best practice guidance during all phases from construction to decommissioning to ensure appropriate measures are in place to mitigate any potential negative impact on health from emissions and activities. An effective Construction Environmental Management Plan (CEMP) (and Decommissioning Environmental Management Plan (DEMP)) is recommended to provide reassurance that activities are well managed.

15. Major Accidents and Disasters

15.1 Introduction

15.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of effects resulting from potential major accidents and disasters (MA&Ds) as reported in **Chapter 22: Major Accidents and Disasters (PEIR Volume II)**.

15.2 Legislation

The EIA Directive 2014/ 52/ EU

15.2.1 The topic of MA&Ds was introduced into the EIA Regulations as a result of EU Directive 2014/ 52/ EU, which states *"In order to ensure a high level of protection of the environment, precautionary actions need to be taken for certain projects which, because of their vulnerability to major accidents, and/or natural disasters (such as flooding, sea level rise, or earthquakes) are likely to have significant adverse effects on the environment. For such projects, it is important to consider their vulnerability (exposure and resilience) to major accidents and/or disasters, the risk of those accidents and/or disasters occurring and the implications for the likelihood of significant adverse effects on the environment."*

The EIA Regulations

15.2.2 Regulation 5, paragraph 4 of the EIA Regulations (Ref 1) states that *"The significant effects to be identified, described and assessed... include, where relevant, the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to that development."*

15.2.3 Schedule 4, paragraph 8 requires an ES to provide *"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..."*

The Health and Safety at Work etc. Act 1974 (HSWA)

15.2.4 The HSWA provides a regulatory framework to ensure the provision of a safe working environment of those in the UK (Ref 264). It also includes provision for those visiting a worksite and those who may be affected offsite by workplace emergencies. It includes the requirement to undertake a risk assessment of occupational hazards, apply the hierarchy of controls to mitigate identified risks such that the residual risks are reduced to a level that is As Low As Reasonably Practicable ('the ALARP principle').

15.2.5 Many associated regulations have been made under the HSWA including the following of relevance to the control of MA&Ds of the Proposed Development:

- Pipelines Safety Regulations 1996 (PSR) (SI 1996 No. 825) (Ref 265);

- Gas Safety (Management) Regulations 1996 (GSMR) (SI 1996 No. 551) (Ref 266);
- Management of Health and Safety at Work Regulations 1999 (SI 1999 No. 3242) (Ref 267);
- Dangerous Substances and Explosive Atmospheres Regulations 2002 (DSEAR) (SI 2002 No. 2776) (Ref 268);
- The Control of Substances Hazardous to Health Regulations 2002 (COSHH) (SI 2002 No. 2677) (Ref 269);
- Construction (Design and Management) Regulations 2015 (CDM) (SI 2015 No. 51) (Ref 270); and
- Control of Major Accident Hazards Regulations 2015 (COMAH) (SI 2015 No. 483) (Ref 271).

15.2.6 The Proposed Development will be subject to the HSWA and associated regulations including those listed in paragraph 15.2.5. These regulations will be referenced where appropriate throughout the assessment, however, this assessment does not seek to duplicate the assessment of matters covered by these regulatory regimes. Instead, it assumes that they are embedded in the design and operation of the Proposed Development and are effective in their intent of reducing residual risks to ALARP.

Other Relevant Legislation

15.2.7 The following regulations form the legislative basis for issues which may influence the control of, or responsibility for MA&Ds, in the UK. This guidance is referenced where appropriate in the course of this assessment, but as above, this assessment does not substitute for the appropriate assessment of matters required by these regulations:

- The Workplace (Health, Safety and Welfare) Regulations 1992 (SI 1992 No. 3004) (Ref 272);
- Lifting Operations and Lifting Equipment Regulations 1998 (SI 1998 No. 2307) (Ref 273);
- Civil Contingencies Act 2004 (SI 2004 No. 36) (Ref 274);
- The Regulatory Reform (Fire Safety) Order 2005 (SI 2005 No. 1541) (Ref 275);
- The Supply of Machinery (Safety) Regulations 2008 (SI 2008 No. 1597) (Ref 276);
- The Building Regulations 2010 (SI 2010 No. 2214) (Ref 277);
- Classification, Labelling and Packaging (CLP) Regulations 2015 (SI 2015 No. 21) (Ref 278), which have been retained in law with modifications due to the UK exit from the EU within:
- The Planning (Hazardous Substances) Regulations 2015 (SI 2015 No. 627) (Ref 279);
- The Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016 (SI 2016 No. 1107) (Ref 280);

- Pressure Equipment (Safety) Regulations 2016 (SI 2016 No. 1105) (Ref 281); and
- Environmental Permitting (England and Wales) Regulations 2016 (EPR) (SI 2016 No. 1154) (Ref 282).

15.3 National Planning Policy

Overarching NPS for Energy (EN-1)

- 15.3.1 EN-1 provides the primary policy framework within which the Proposed Development will be considered, i.e. application of COMAH regulations. EN-1 does not contain any specific requirements in relation to MA&D assessment, however, Paragraph 4.16.2 states that the DESNZ works closely with UK Government security agencies to reduce the vulnerability of the most 'critical' infrastructure assets in the sector to terrorism and other national security threats.
- 15.3.2 NPS EN-2 to EN-5 also mention policies of relevance to MA&Ds, but only in reference to EN-1. No policies, not already mentioned in EN-1, or requirements for a MA&Ds assessment are provided within the other policy statements.

National Planning Policy Framework (NPPF)

- 15.3.3 The NPPF refers to hazards in the context of planning decision making in paragraphs 45 and 101 as follows:

“Local planning authorities should consult the appropriate bodies when considering applications for the siting of, or changes to, major hazard sites, installations or pipelines, or for development around them.”

“Planning policies and decisions should promote public safety and take into account wider security and defence requirements by ... anticipating and addressing possible malicious threats and natural hazards, especially in locations where large numbers of people are expected to congregate...this includes appropriate and proportionate steps that can be taken to reduce vulnerability, increase resilience and ensure public safety and security.”

- 15.3.4 The Planning Practice Guidance (PPG) for Hazardous Substances explains land use planning controls relating to the storage of hazardous substances in England and how to handle development proposals around hazardous establishments. This includes guidance on:
- hazardous substances consent;
 - dealing with hazardous substances in plan-making; and
 - handling development proposals around hazardous installations.

15.4 Local Planning Policy

FCC LDP (2015-2030)

- 15.4.1 The FCC LDP does not set out any principles for the assessment of MA&Ds. However, it does consider public safety within the context of local development within PC2: General Requirements for Development:

“All development should not have a significant adverse impact on the safety and living conditions of nearby residents, other users of nearby land/property, or the community in general, through increased activity, disturbance, noise, dust, vibration, hazard, or the adverse effects of pollution.”

15.5 Guidance

- 15.5.1 There is no specific guidance available which sets out the approach for undertaking a MA&Ds assessment within an EIA. However, the scope of the assessment has been developed with reference to “Major Accidents and Disasters in EIA: An IEMA Primer” (Ref 283) which lays out emerging best practice. In addition to this guidance, there is a considerable amount of information and guidance available to developers on the identification and control of major hazards associated with industrial chemical processes, the storage and use of chemicals, and major accident hazard pipelines conveying hazardous fluids.

- 15.5.2 The Health and Safety Executive (HSE) publishes a number of applicable guidance notes on its website, including:

- Emergency Planning for Major Accidents: COMAH Regulations 2015 (Ref 284);
- Further Guidance on Emergency Plans for Major Accident Hazard Pipelines 1996 (Ref 285);
- Reducing Risks, Protecting People: HSE’s Decision Making Process 2001 (Ref 286); and
- Major Hazard Regulatory Model: Safety Management in Major Hazard Sectors (Ref 287).

- 15.5.3 Other guidance that is of relevance to the assessment of MA&Ds includes:

- Chemicals and Downstream Oil Industries Forum Guidelines, Environmental Risk Tolerability for COMAH Establishments (Ref 288);
- Defra, The Green Leaves III Guidelines for Environmental Risk Assessment (Ref 289);
- ISO 31000:2018 Risk Management – Guidelines (Ref 290);
- Department for the Environment, Guidance on the Interpretation of Major Accidents to the Environment for the purposes of COMAH Regulations 2023 (Ref 291); and
- Chapter 4 of the Cabinet Office’s Emergency Preparedness Guidance on Part 1 of the Civil Contingencies Act 2004 (Ref 292).

16. Materials and Waste

16.1 Introduction

- 16.1.1 This section identifies and describes legislation, planning policy and guidance relevant to the assessment of material and waste effects as reported in **Chapter 23: Materials and Waste (PEIR Volume II)**.

16.2 Legislation

The EIA Regulations

- 16.2.1 The EIA Regulations (Ref 1) set out the EIA process which must identify, describe, and assess potential significant effects of the Proposed Development on several factors, including waste.

Environmental Protection Act 1990 (as amended)

- 16.2.2 The Environmental Protection Act 1990 (as amended) sets out the duty of care for waste management (Section 34). It requires anyone who produces, imports, keeps, stores, transports, treats, or disposes of waste to take all reasonable steps to ensure that waste is managed properly.

Hazardous Waste (England and Wales) Regulations 2005 (as amended)

- 16.2.3 The Hazardous Waste (England and Wales) Regulations 2005 (as amended) (Ref 145) set out the regime for the control and tracking of the movement of hazardous waste for the purpose of transposing the requirements of the Hazardous Waste Directive (Directive 91/689/EC). The Regulations extend to England and Wales although the only provisions that apply to Wales are modifications to the Environmental Protection Act 1990 contained in Part 11.

Hazardous Waste (Wales) Regulations 2005 (as amended)

- 16.2.4 1.1.1 The Hazardous Waste (Wales) Regulations 2005 (as amended) (Ref 293) set out the regime for the control and tracking of the movement of hazardous waste for the purpose of transposing the requirements of the Hazardous Waste Directive (Directive 91/689/EC). The Regulations apply in relation to Wales.

EU Waste Framework Directive (2008)

- 16.2.5 The EU Waste Framework Directive (Ref 293) established the wider regulatory context for waste management across Europe. In addition to defining waste, it also introduced the concept of the waste hierarchy and established landfill diversion targets for Member States. The requirements of the Waste Framework Directive are transposed into applicable national law through the Waste (England and Wales) Regulations 2011 (as amended) (Ref 295) (see below) and via the Waste (Miscellaneous Amendments) (EU Exit) Regulations 2019 (Ref 296).

Waste (England and Wales) Regulations 2011 (as amended)

- 16.2.6 The Waste (England and Wales) Regulations 2011 (as amended) transpose the requirements of the above Waste Framework Directive in England and Wales and requires the SoS to establish waste prevention programmes and waste management plans that apply the waste hierarchy. The waste hierarchy is defined in the Waste Framework Directive and prioritises waste prevention, followed by preparing for reuse, recycling, recovery and finally disposal as means of management of waste.
- 16.2.7 The Waste (England and Wales) Regulations 2011 (as amended) also require businesses to apply the waste hierarchy when managing waste, and require that measures are taken to ensure that, by the year 2020 and beyond, at least 70% by weight of non-hazardous construction and demolition waste is subjected to material recovery. The target specifically excludes naturally occurring materials with European Waste Catalogue (EWC) Code 17 05 04 (17 05 04 soil and stones other than those mentioned in 17 05 03* (soils and stone containing dangerous substances)).
- 16.2.8 The assessment of materials and waste for the Proposed Development has taken account of the waste hierarchy in the management of waste, and of the targets for recovery of non-hazardous C&D waste.

Environmental Permitting (England and Wales) Regulations 2016 (EPR)

- 16.2.9 The EPR require sites where waste is processed, treated, or disposed of to hold a valid Environmental Permit issued by NRW. The EPR also include a schedule of activities that are exempt from the requirements of permitting. However, to comply with the EPR, an exempt activity must generally be registered with NRW before commencing.

Environment Act 2021

- 16.2.10 The Environment Act 2021 makes provision about targets, plans and policies for improving the natural environment; for statements and reports about environmental protection; for the establishment of the OEP; about waste and resource efficiency; about air quality; for the recall of products that fail to meet environmental standards; about water; about nature and biodiversity; for conservation covenants; about the regulation of chemicals; and for connected purposes. The Act will deliver:
- an extension of producer responsibility to make producers pay for 100% of the cost of disposal of products, starting with plastic packaging;
 - a Deposit Return Scheme for single use drinks containers;
 - charges for single use plastics;
 - greater consistency in recycling collections in England;
 - an electronic waste tracking to monitor waste movements and tackle fly-tipping;
 - further tackling of waste crime;

- the power to introduce new resource efficiency information (labelling on the recyclability and durability of products);
- the regulation of the shipment of hazardous waste; and
- a ban or export restriction of waste to non-OECD (Organization for Economic Co-operation and Development) countries.

16.2.11 Key sections of the Environment Act, including Part 3 Waste and Resource Efficiency (producer responsibility, resource efficiency, managing waste and waste enforcement), have been considered in **Chapter 23: Materials and Waste (PEIR Volume II)**.

Environment (Wales) Act 2016

16.2.12 The Environment (Wales) Act 2016 aims to promote the sustainable management of natural resources; to provide for targets for reducing emissions of GHGs; to reform the law on charges for carrier bags; to provide for the separate collection of waste, prohibit disposal of food waste to sewers and provide for prohibiting or regulating disposal of waste by incineration.

16.2.13 Part 4 of the Act describes the “principles of sustainable management of natural resources”. The outlined principles relevant to this chapter include:

- manage adaptively, by planning, monitoring, reviewing and, where appropriate, changing action;
- consider the appropriate spatial scale for action;
- take account of all relevant evidence and gather evidence in respect of uncertainties;
- take account of the benefits and intrinsic value of natural resources and ecosystems; and
- take account of the short-, medium- and long-term consequences of actions.

The Waste Separation Requirements (Wales) Regulations 2023

16.2.14 The Waste Separation Requirements (Wales) Regulations 2023 (Ref 297) mandate all workplaces, including businesses, public sector organisations, and charities, to separate their recyclable materials. All mentioned entities must sort their waste for recycling, which includes food, paper and card, glass, metal, plastic, cartons, unsold textiles, and small waste electrical and electronic equipment (sWEEE).

16.2.15 The Waste Separation Requirements (Wales) Regulations 2023 also include bans on:

- sending all food waste to sewers (any amount);
- any waste that has been separated for recycling going to landfill or incineration plants (except most textiles which may go to incineration plants, apart from unsold textiles that cannot go to incineration (or landfill)); and

- sending any wood waste to landfill.

16.2.16 These regulations aim to improve the quality and quantity of recycling, reduce carbon emissions, and support Wales' circular economy strategy (Beyond Recycling: A strategy to Make the Circular Economy in Wales a Reality) (Ref 298).

16.3 National Planning Policy

Overarching NPS for Energy (EN-1)

16.3.1 EN-1 is of relevance to the materials and waste assessment. EN-1 outlines the requirements for an applicant's materials and waste assessment which includes the following (refer to Section 5.15 Resource and Waste Management):

- paragraph 5.15.6 states "*Applicants must demonstrate that development proposals are in line with Defra's policy position on the role of energy from waste in treating municipal waste*";
- paragraph 5.15.7 states "*The proposed plant must not compete with greater waste prevention, re-use, or recycling, or result in over-capacity of EfW or similar processes for the treatment of residual waste at a national or local level*";
- paragraph 5.15.8 states "*The applicant should set out the arrangements that are proposed for managing any waste produced and prepare a report that sets out the sustainable management of waste and use of resources throughout any relevant demolition, excavation, and construction activities*";
- paragraph 5.15.9 states "*The arrangements described and a report setting out the sustainable management of waste and use of resources should include information on how re-use and recycling will be maximised in addition to the proposed waste recovery and disposal system for all waste generated by the development. They should also include an assessment of the impact of the waste arising from development on the capacity of waste management facilities to deal with other waste arising in the area for at least five years of operation*";
- paragraph 5.15.10 states "*The applicant is encouraged to refer to the 'Towards Zero Waste: Our Waste Strategy for Wales' and should seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that this is the best overall environmental outcome*";
- paragraph 5.15.11 states "*If the applicant's assessment includes dredged material, the assessment should include other uses of such material before disposal to sea, for example through reuse in the construction process*";
- paragraph 5.15.12 states "*The UK is committed to moving towards a more 'circular economy'. Where possible, applicants are encouraged to source materials from recycled or reused sources and use low carbon materials, sustainable sources, and local suppliers. Construction best practices*

should be used to ensure that material is reused or recycled onsite where possible”; and

- paragraph 5.15.13 states “*Applicants are encouraged to use construction best practices in relation to storing materials in an adequate and protected place on site to prevent waste, for example, from damage or vandalism. The use of Building Information Management tools (or similar) to record the materials used in construction can help to reduce waste in future decommissioning of facilities, by identifying materials that can be recycled or reused*”.

NPS for Natural Gas Electricity Generating Infrastructure (EN-2)

- 16.3.2 EN-2 does not seek to repeat the material set out in EN-1, which applies to all applications covered by this NPS unless stated otherwise.

NPS for Natural Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4)

- 16.3.3 EN-4 does not seek to repeat the material set out in EN-1, which applies to all applications covered by this NPS unless stated otherwise.

NPS for Electricity Networks Infrastructure (EN-5)

- 16.3.4 NPS EN-5 does not seek to repeat the material set out in EN-1, which applies to all applications covered by this NPS unless stated otherwise.

Planning Policy Wales

- 16.3.5 Matters of relevance to materials and waste include the section of the PPW “Making Best Use of Material Resources and Promoting the Circular Economy”. This section outlines guidance for the best use of material resources and promotes the principles of circular economy within the following:

- Section 5.12 of the PPW “Design Choices to Prevent Waste” encourages planning authorities to consider design choices and site selection and treatment to embed principles of circular economy in development proposals;
- Section 5.13 of the PPW “Sustainable Waste Management Facilities” outlines the role of the planning system in facilitating sustainable waste management and introduces the waste hierarchy; and
- Section 5.14 “Minerals” introduces key principles for planning authorities to ensure the adequate supply of minerals in balance with the protection of amenity and the environment. It also outlines efficient use of minerals and the importance of mineral safeguarding.

Future Wales: the National Plan 2040 (2021)

- 16.3.6 Future Wales – the National Plan 2040 is the Welsh Government’s NDF which sets out the direction for development in Wales to 2040.
- 16.3.7 Matters of relevance to the materials and waste assessment include:

- Policy 19 – Strategic Policies for Regional Planning. “*Strategic Development Plans should embed placemaking as an overarching principle and should establish for the region (and where required constituent Local Development Plans): 11. a coordinated framework for minerals extraction and the circular economy, including waste treatment and disposal*”.

Beyond Recycling: A Strategy to Make the Circular Economy in Wales a Reality (2021)

- 16.3.8 The Beyond Recycling strategy sets out a long-term strategy for an enhanced adoption of Circular Economy practice within Wales up to 2050.
- 16.3.9 The strategy sets key targets for the 33% and 60% reduction in waste and avoidable food waste by 2030, and the 62% reduction in waste by 2050.

Towards Zero Waste One Wales: One Planet – The Overarching Waste Strategy for Wales (2010)

- 16.3.10 The Overarching Waste Strategy for Wales (Ref 299) sets out a long-term framework for resource efficiency and waste management between now and 2050. It additionally identifies the outcome the Welsh Assembly Government wish to achieve, sets high level targets, and lays out a general approach to delivering these targets and other key actions.
- 16.3.11 The strategy sets a target for a minimum of 90% recovery by weight of non-hazardous construction and demolition waste by 2019/2020. The target specifically excludes naturally occurring materials with EWC Code 17 05 04 (17 05 04 soil and stones other than those mentioned in 17 05 03* (soils and stone containing dangerous substances)). Recovery is deemed to include reuse, recycling, and other recovery e.g. energy recovery.
- 16.3.12 There is also a target for a 75% reduction of the amount of construction and demolition waste produced in Wales sent to landfill. This is compared to the 2007 baseline of landfilled waste.

Towards Zero Waste One Wales: One Planet – Collections, Infrastructure and Markets Sector Plan (CIMP) (2012)

- 16.3.13 The CIMP (Ref 300) supports the Overarching Waste Strategy for Wales, by detailing outcomes, policies and delivery actions for organisations, companies and individuals involved with the collection and management of waste resources, and the use of waste-derived products.

Towards Zero Waste One Wales: One Planet – The Waste Prevention Programme for Wales Local Planning Policy (2013)

- 16.3.14 This Programme (Ref 301) describes what the Welsh Assembly Government are doing to deliver on their commitment of supporting businesses to improve productivity and use resources sustainably and helping to reduce poverty by wasting less and making more of the food and other goods people buy.

16.3.15 The Waste Prevention Programme supports The Overarching Waste Strategy for Wales (above) by describing the outcomes, policies, targets, and work programme to address waste prevention in Wales.

16.4 Local Planning Policy

FCC LDP 2015-2030 (2023)

16.4.1 The FCC LDP was adopted by the FCC in January 2023 with the plan covering the period 2015-2030. The LDP forms part of the statutory development plan alongside Future Wales: The National Plan 2040 to form the primary basis for making decisions on planning applications and development proposals.

16.4.2 Matters of relevance to the materials and waste assessment include:

- Policy STR4: Principles of Sustainable Development, Design and Placemaking;
- Policy STR14: Climate Change and Environmental Protection;
- Policy STR15: Waste Management;
- Policy STR16: Strategic Planning for Minerals;
- Policy EN19: Managing Waste Sustainably;
- Policy EN20: Landfill Buffer Zone;
- Policy EN21: Locations for Waste Management Facilities;
- Policy EN23: Minerals Safeguarding;
- Policy EN24: Minerals Buffer Zones; and
- Policy EN25: Sustainable Minerals Development.

FCC LDP Proposal Maps (2023)

16.4.3 The adopted LDP (above) identifies proposals for development (allocations) or where land should be protected (designations), all of which are illustrated and annotated on the Proposals Map.

Flintshire Waste Management Strategy (FWMS) 2009-2025 (2009)

16.4.4 The FWMS (Ref 302) outlines how Flintshire will manage the collection, treatment, and disposal of municipal waste over the period 2009-2025. A key aim of the FWMS is to improve Flintshire's environmental performance and to reduce their ecological footprint, whilst maximising the use of waste.

16.4.5 According to the FWMS, FCC is committed to a future where waste is utilised as a valuable resource.

16.5 Guidance

IEMA Guide to: Materials and Waste in Environment Impact Assessment, Guidance for a Proportionate Approach (2020)

- 16.5.1 The IEMA Guide (Ref 303) offers guidance and recommendations for EIA practitioners and stakeholders concerned with the impacts and effects of materials and waste on the environment. The guidance provides considerations for screening, scoping, consultation, assessment and subsequent reporting and monitoring.
- 16.5.2 The materials and waste assessment has been completed in accordance with the IEMA guidance as outlined in **Chapter 23: Materials and Waste (PEIR Volume II)**.

Contaminated Land: Applications in Real Environments (CL:AIRE) Definition of Waste: Development Industry Code of Practice v2 (2011)

- 16.5.3 The DoW: Development Industry Code of Practice provides a process which enables the reuse of excavated materials on-site or their movement between sites. Use of the DoW CoP supports the sustainable and cost-effective development of land. It can provide an alternative to Environmental Permits or Waste Exemptions.

Waste and Resources Action Programme (WRAP) Designing Out Waste: A Design Team Guide for Civil Engineering (2009)

The Design Team Guide for Civil Engineering (Ref 304) outlines the case for taking action to designing out waste, provides a detailed explanation of the key principles that designers can use during the design process and how these principles can be applied to civil engineering and building projects to maximise opportunities to reduce construction waste and use materials more efficiently. It gives examples of technical solutions and how, in practice, designers have helped achieve significant waste reductions.

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