

2 ASSESSMENT SCOPE AND METHODOLOGY

2.1 INTRODUCTION

2.1.1 This chapter explains the methodology used to prepare the technical chapters of this ES and describes its structure and content. In particular, it sets out the process of identifying and assessing the likely significant environmental effects of the development.

2.2 GENERAL APPROACH TO ENVIRONMENTAL STATEMENT

2.2.1 The Environmental Statement must contain the information specified in regulation 17(3) and must meet the requirements of Regulation 17(4). It must also include any additional information specified in Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (as amended)¹ (the "EIA Regulations") which is relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.

2.2.2 Regulation 17(3) and 17(4) states: -

- (3) An environmental statement is a statement which includes at least—
- (a) a description of the proposed development comprising information on the site, design, size and other relevant features of the development;
 - (b) a description of the likely significant effects of the proposed development on the environment;
 - (c) a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment;
 - (d) a description of the reasonable alternatives studied by the applicant or appellant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the significant effects of the development on the environment;
 - (e) a non-technical summary of the information referred to in subparagraphs (a) to (d); and
 - (f) any additional information specified in Schedule 4 relevant to the specific characteristics of the particular development or type of development and to the environmental features likely to be significantly affected.
- (4) An environmental statement must—

¹ The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 (Amended 2019, SI 2019 No.299 (W.76).

(a) be prepared by persons who in the opinion of the relevant planning authority or the Welsh Ministers, as appropriate, have sufficient expertise to ensure the completeness and quality of the statement;

(b) contain a statement by or on behalf of the applicant or appellant describing the expertise of the person who prepared the environmental statement;

(c) where a scoping opinion or direction has been issued in accordance with regulation 14 or 15, be based on the most recent scoping opinion or direction issued (so far as the proposed development remains materially the same as the proposed development which was the subject of that opinion or direction);

(d) include the information reasonably required for reaching a reasoned conclusion on the significant effects of the development on the environment, taking into account current knowledge and methods of assessment; and

(e) take into account other relevant environmental assessments required under Union legislation or any other provision of domestic legislation, with a view to avoiding duplication of assessment.

2.2.3 Schedule 4 states: -

Information for inclusion in environmental statements

1. Description of the development, including in particular—

(a) a description of the location of the development;

(b) a description of the physical characteristics of the whole development, including, where relevant, requisite demolition works and the land-use requirements during the construction and operational phases;

(c) a description of the main characteristics of the operational phase of the development (in particular any production process), for instance, energy demand and energy used, nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) used;

(d) an estimate, by type and quantity, of expected residues and emissions (such as water, air, oil and subsoil pollution, noise, vibration, light, heat, radiation) and quantities and types of waste produced during the construction and operational phases.

2. A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the applicant or appellant which are relevant to the proposed development and its specific characteristics and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.

3. A description of the relevant aspects of the current state of the environment (baseline scenario) and an outline of the likely evolution thereof without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.

4. A description of the factors specified in regulation 4(2) likely to be significantly affected by the development: population, human health, biodiversity (for example fauna and flora), land (for example land take), soil (for example organic matter, erosion, compaction, sealing), water (for example hydromorphological changes, quantity and quality), air, climate (for example greenhouse gas emissions, impacts relevant to adaptation), material assets, cultural heritage, including architectural and archaeological aspects, and landscape.

5. A description of the likely significant effects of the development on the environment resulting from, inter alia—

(a) the construction and existence of the development, including, where relevant, demolition works;

(b) the use of natural resources in particular land, soil, water and biodiversity, considering as far as possible the sustainable availability of these resources;

(c) the emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances and the disposal and recovery of waste,

(d) the risks to human health, cultural heritage or the environment (for example due to accidents or disasters);

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

(f) the impact of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change;

(g) the technologies and the substances used.

The description of the likely significant effects on the factors specified in regulation 4(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development. This description should take into account the environmental protection objectives established at European Union or Member State level which are relevant to the project, including in particular those established under Council Directive 92/43/EEC(1) and Directive 2009/147/EC(2).

6. A description of the forecasting methods or evidence used to identify and assess the effects on the environment, including details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.

7. A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment and, where appropriate, of any proposed monitoring arrangements (for example the preparation of a post-project analysis). That description should explain the extent, to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.

8. A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned. Relevant information available and obtained through risk assessments pursuant to European Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of the Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.

9. A non-technical summary of the information provided under paragraphs 1 to 8.

10. A reference list detailing the sources used for the descriptions and assessments included in the environmental statement.

2.2.4 Accordingly, this ES comprises the following information:

- A description of the development comprising information about the site including the nature, size and scale of the development;
- The data necessary to identify and assess the main effects which the development is likely to have on the environment;
- A description of the likely significant effects of the development covering, direct effects and any indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative effects, explained by reference to the development's possible effect on cultural and archaeological heritage, landscape and the interaction between any of the foregoing material assets (as appropriate).
- Where significant adverse effects are identified with respect to any of the foregoing, mitigation measures will be proposed in order to avoid, reduce or remedy those effects; and
- A summary in non-technical language of the information specified above.

- A statement outlining the relevant experience of the experts who have undertaken the assessment and drafted the technical chapters within the ES.

2.3 DESCRIPTION OF THE DEVELOPMENT

2.3.1 The development, which has been the subject of this ES is described in detail within **Chapter 4** which also sets out the parameters and controls defining those aspects of the development capable of having significant environmental effects, as defined by the EIA Regulations.

2.4 CONSIDERATION OF ALTERNATIVES

2.4.1 The ES provides a chapter which details the reasonable alternatives considered by the applicant. This is presented at **Chapter 4**.

2.5 SCOPE OF ENVIRONMENTAL IMPACT ASSESSMENT

2.5.1 The Applicant submitted a request for a scoping direction to the Welsh Ministers on 6th April 2020 with a response received on 3rd June 2020.

2.5.2 The scope of information and assessment supplied within the ES is considered to provide a clear understanding of the potential significant effects of the development upon its environment and the mitigation measures proposed to avoid or ameliorate those effects. The information, scope and knowledge required to undertake the EIA has been acquired from a number of varied sources to ensure that all impacts, whether explicit from the outset or coming to light during the projects development, were appropriately assessed as part of the Environmental Impact Assessment process or as standard technical documentation that support the wider planning application submission. These sources include: -

- Scoping Direction (See **Appendix 2.1**).
- Discussion with statutory consultees
- Specialist studies
- Expert knowledge of the Applicant and consultant team with regards to their technical subject and experience of renewable energy schemes of similar scale elsewhere in the United Kingdom.

2.5.3 The environmental themes scoped into or out of the ES are given in **Table 2.1**.

Table 2.1: Environmental Themes Scoped In / Out

Environmental Theme	Scoped In/Out	How/ Where Addressed / Reason for Scoping Out
Population	Out	<p>During construction, it is considered unlikely that the proposals will result in a significant change in population as workers are unlikely to relocate to the area on a permanent basis. The construction will have a temporary effect on employment provision through the creation of construction jobs. A minor beneficial effect is therefore anticipated.</p> <p>Once operational, the proposed development does not provide any permanent residential accommodation and accordingly will not have a significant effect on population. The only vehicle movements will be from the occasional maintenance vehicle that would have negligible influence on the surrounding population.</p>
Human Health	In	<p>Potential impacts during constructions works, on are addressed at Chapter 8.</p> <p>During operation there would be no unusual risk to human health. The development relies on well-established, safe modern technology and correct Health and Safety signage will be displayed on the site to inform of the potential risk from working near electrical equipment and to discourage trespass. Matters relating to residential visual amenity will be assessed in the Landscape and Visual Chapter (Chapter 5) and standalone glint and glare assessment.</p>
Biodiversity	In	Assessed within the Biodiversity Chapter (Chapter 6).
Land	Out	<p>The site comprises agricultural land which would be developed for a temporary period for the production of renewable energy. Subject to agreement with landowners, the site is capable of be able to be used for sheep grazing during the operational life to continue an agricultural use of the site. The agricultural potential of the site can be fully restored following the decommissioning and removal of the proposed development.</p> <p>Part of the site lies within a Mineral</p>

Environmental Theme	Scoped In/Out	How/ Where Addressed / Reason for Scoping Out
		<p>Safeguarding Area (Sand and Gravel), the development would not have a significant impact on the viability of the mineral being worked.</p> <p>Overall, the land will not be irreversibly developed and will remain in agricultural use as the grazing of sheep will be possible across areas of the site whilst the solar arrays are in place. This topic is therefore scoped out of the ES. Alterations to the current land use and any mitigation or enhancements (e.g. grassland, hedgerows & trees) will be considered in the relevant environmental assessments, for example Chapter 5 (Landscape and Visual) and Chapter 6 (Biodiversity).</p>
Soil	Out	<p>Given the existing / historic agricultural use of the site, as well as the geological and geo-environmental setting, there are not envisaged to be any significant sources of potential contaminative concern. Most of the soil will not be physically impacted from the development. Appropriate construction techniques will be implemented to reduce below ground works for the solar panels and supporting infrastructure, alongside suitable measures for the handling and storage of soils in the construction phase. Constructing and maintaining the site without compacting the earth will help mitigate the potential impact on the soil's capacity to store and infiltrate water.</p> <p>The proposed development is temporary and is a reversible feature, once decommissioned the site's former agricultural use can be restored, with no likely significant lasting adverse effects on the quality of the soil.</p>
Water	Out	<p>Natural Resources Wales (NRW) flood map indicates that the site lies within Flood Zones A-C1. River Elwy is located approximately 150m east from the eastern site boundary. The Site sits on Secondary A Superficial and Bedrock Aquifers with High Vulnerability to surface pollution. The nearest groundwater abstraction is at Bryn Gwyn Farm (NGR 302509, 376700), approximately 500 m north of the Site. A number of design features will be</p>

Environmental Theme	Scoped In/Out	How/ Where Addressed / Reason for Scoping Out
		<p>incorporated into the site design to help mitigate any potential effects. Adoption of construction best practice will be implemented to ensure that no pollutants enter the ground during or following construction activities, and that both surface water (including drainage ditches) and groundwaters are suitably protected. The installation of SuDS features have also be designed to protect drainage and minimise sediment run off.</p> <p>It is considered that potential impacts can be adequately addressed as part of the planning application process through the submission of standalone technical reports, namely a Flood Consequence Assessment (FCA) and Drainage Strategy and can therefore be scoped out of the ES.</p>
Air	In	Assessed in Air Quality (Chapter 9).
Climate	Out	<p>It is acknowledged that construction of the proposed development will result in the gaseous emissions associated with construction vehicles. Although, considering the temporary nature of construction it is considered that these emissions are unlikely to be significant.</p> <p>Due to the nature of the development, once operational the facility will be generating energy from renewable sources. A positive effect is therefore anticipated.</p> <p>Due to the low number of predicted operational maintenance traffic movements coupled with the low carbon nature of the proposed development, significant effects from greenhouse gas emissions during operation are unlikely to occur and as such can be scoped out of the ES.</p> <p>Climate change is however considered within Chapter 4 (Proposed Development and Alternatives Considered) and Chapter 6 (Biodiversity). The FCA and Drainage Strategy submitted separately as part of the planning application will also include relevant climatic</p>

Environmental Theme	Scoped In/Out	How/ Where Addressed / Reason for Scoping Out
		factors.
Material Assets	Out	<p>Construction would require the use of natural resources as is standard with construction works, i.e. power/water/construction materials. Due to the scale and nature of the proposed development these effects are not anticipated to be significant.</p> <p>Due to the nature of the development, no natural resources would be required for the operation of the facility once constructed. No significant effects are therefore anticipated.</p>
Cultural Heritage(including Architectural and Archaeological aspects)	Out	<p>The Site is not located within a designated area and no designated heritage assets form part of the Application Site, however there are a number of listed buildings and Scheduled Monuments in the surrounding area. Three non-designated archaeological sites are recorded within the Application Site.</p> <p>Having considered the potential impacts and historical data for the wider site, heritage and archaeological can be scoped out of the ES and can be adequately addressed as part of the planning application process through the submission of a standalone technical report and iterative design process.</p>
Landscape	In	Assessed in the Landscape and Visual chapter (Chapter 5).
Risks of Major Accidents and Disasters	In	Assessed in Risk of Major Accidents Chapter (Chapter 10).
Interrelationship between above factors	In	Assessed within each topic chapter under the heading Cumulative and In-Combination Effects.

2.5.4 The Scoping Direction issued by the Planning Inspectorate on behalf of the Welsh Ministers, including consultee responses, is reproduced in full at **Appendix 2.1**. Any subsequent discussions regarding the scope of the assessment that has been undertaken separately to the EIA scoping process, is discussed within the relevant technical chapters.

2.6 ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

2.6.1 The content of the ES is based on the following:

- Review of the baseline situation through existing information, including data, reports, site surveys and desktop studies;
- Consideration of Planning Policy Wales Edition 11 (2021) and accompanying Planning Guidance (Wales), Technical Advice Notes, Circulars and the statutory Development Plan;
- Consideration of potential sensitive receptors;
- Identification of likely significant environmental effects and an evaluation of their duration and magnitude;
- Expert opinion;
- Modelling;
- Use of relevant technical and good practice guidance; and
- Specific consultations with appropriate bodies.

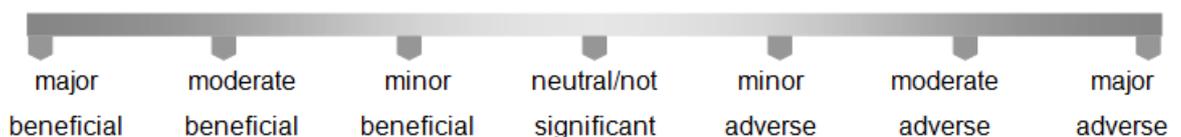
2.6.2 Environmental effects have been evaluated with reference to definitive standards and legislation where available. Where it has not been possible to quantify effects, assessments have been based on available knowledge and professional judgment.

2.7 DETERMINING SIGNIFICANCE

2.7.1 The purpose of the EIA is to identify the likely ‘significance’ of environmental effects (beneficial or adverse) arising from a development. In broad terms, environmental effects are described as:

- Adverse – detrimental or negative effects to an environmental resource or receptor;
- Beneficial – advantageous or positive effect to an environmental resource or receptor; or
- Negligible – a neutral effect to an environmental resource or receptor.

2.7.2 Each technical chapter defines discipline specific ‘likely significant effects’ by the use of pre-determined assessment criteria. Individual disciplines stipulate the specific assessment criteria used within their own technical chapters under Assessment Approach; however in broad terms, environmental effects can be described as adverse, beneficial or neutral on a sliding scale, for example, major-moderate-minor-negligible.



2.7.3 In many technical disciplines, significance reflects the relationship between two factors:

- The magnitude or severity of an effect (i.e. the actual change taking place to the environment); and

- The sensitivity, importance or value of the resource or receptor.

2.7.4 Specific separate criteria for determining the degree of 'magnitude' and the degree of 'sensitivity' (or importance or value) is clearly defined within each technical chapter, and again is often on a sliding scale (e.g. high-medium-low).

2.7.5 The broad criteria for determining magnitude are set out in **Table 2.3**

Table 2.3: Degrees of Magnitude and their Criteria

Magnitude of Effect	Criteria
High	Total loss or major/substantial alteration to elements/features of the baseline (pre-development) conditions such that the post development character/composition/attributes will be fundamentally changed.
Medium	Loss or alteration to one or more elements/features of the baseline conditions such that post development character/composition/attributes of the baseline will be materially changed.
Low	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible / detectable but the underlying character / composition / attributes of the baseline condition will be similar to the pre-development.
Negligible	Very little change from baseline conditions. Change not material, barely distinguishable or indistinguishable, approximating to a 'no change' situation.

2.7.6 The sensitivity of a receptor is based on the relative importance of the receptor using the scale in **Table 2.4**.

Table 2.4: Degrees of Sensitivity and their Criteria

Sensitivity	Criteria
High	The receptor / resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance.
Medium	The receptor / resource has moderate capacity to absorb change without significantly altering its present character, or is of high and more than local (but not national or international) importance.
Low	The receptor / resource is tolerant of change without detrimental effect, is of low or local importance.
Negligible	The receptor / resource can accommodate change without material effect, is of limited importance.

2.7.7 The significance of a particular effect can then be derived from the interaction of the receptor's sensitivity and the magnitude of change likely to be experienced.

2.7.8 An example of a 'matrix' process is indicated below in **Table 2.5**. However it should be noted that this is provided as a general guide only. Discipline-specific methodology is often used rather than generic criteria, as it is recognised that broad criteria does not always cater for particular disciplines, particularly where best practice and guidance require subtle differences. All significance criteria is clearly explained within each technical chapter under the heading of Assessment Approach.

Table 2.5: Example degrees of Significance based on Magnitude/Sensitivity

Magnitude of Change	Sensitivity of Receptor				
		High	Medium	Low	Negligible
High		Major	Major	Moderate	Negligible
Medium		Major	Moderate	Minor to Moderate	Negligible
Low		Moderate	Minor to Moderate	Minor	Negligible
Negligible		Negligible	Negligible	Negligible	Negligible

2.7.9 Significance of effects would be assigned both before and after mitigation where relevant.

2.8 MITIGATION

2.8.1 Standard measures and the adoption of construction best practice methods to avoid, minimise or manage adverse environmental effects, or to ensure realisation of beneficial effects, are assumed to have been incorporated into the design of the Proposed Development and the methods of its construction from the outset. Further information on the standard measures and construction best practice is detailed in **Chapter 4: The Proposed Development and Alternatives Considered**. Where outlined, the assessment is of the Proposed Development incorporating these measures.

2.8.2 Where mitigation measures are proposed that are specific to an environmental theme (e.g. ecological measures incorporated into the landscaping scheme etc) and are purposely incorporated into the design, these are highlighted within the relevant technical chapter as 'mitigation by design' (or 'integral/embedded mitigation') and may be subject to appropriate planning conditions or obligations.

2.8.3 Where the assessment of the Proposed Development has identified potential for adverse environmental effects, the scope for mitigation of those effects, for example by way of compensatory measures, has been considered

and is outlined in the appropriate technical chapter. It is assumed that such measures would be subject to appropriate planning conditions or obligations.

2.8.4 Where the effectiveness of the mitigation proposed has been considered uncertain, or where it depends upon assumptions of operating procedures, then data and/or professional judgment has been introduced to support these assumptions.

2.9 CUMULATIVE AND IN-COMBINATION EFFECTS

Cumulative Effects

2.9.1 Within EIA, cumulative effects are generally considered to arise from the combination of effects from the Proposed Development and from other proposed or permitted schemes in the vicinity, acting together to generate elevated levels of effects. Examples of these kinds of effects that can be readily appreciated could include:

- Traffic generated from developments, affecting the surrounding road network;
- Landscape and Visual effects; and
- Discharges to the water environment.

2.9.2 With respect to inter-project cumulative effects, the EIA Regulations state that consideration should be given to "other existing and/or approved projects" (Schedule 4, paragraph 5(e)).

2.9.3 There are no large scale ground mounted solar farms in proximity to the site. Research of Denbighshire County Council website indicates that there are a number of relatively small-scale applications as well as some applications relating to underground cabling associated with the Gwynt Y Mor and the Burbo Bank extension offshore windfarms. It is unlikely that these applications would result in a significant cumulation of impacts with the proposed development.

2.9.4 The site is not currently allocated for any specific type of development in the Local Plan. To the west of the site there is an area designated as Bodelwyddan Key Strategic Site in the Denbighshire County Council adopted Local Plan, with Nant-Y-Faenol Road running between the application site and Bodelwyddan Key Strategic Site. Additionally, to the south-west of the site there is an area allocated for employment uses (PSE2), located on the opposite side of the A55.

2.9.5 The Screening Direction from the Planning Inspectorate notes that "*The LPA highlight proximity to St Asaph, St Asaph Business Park (including existing energy infrastructure), and sites allocated in the Denbighshire LDP – Bodelwyddan Key Strategic Site and an extension to St Asaph Business Park*".

2.9.6 The Cumulative assessment will consider the in-combination effect of the proposal with other major development within the planning system (major allocations in the LDP, major development sites with extant planning permission and applications for major development proposals pending determination). With reference to the consultation response provided by Denbighshire County Council it is proposed that consideration will be given to the following developments:

- Bodelwyddan Key Strategic Site (KSS) for mixed use development which also benefits from extant outline consent;
- Extension to St. Asaph Business Park allocated for employment uses under the LDP (PSE2);
- Electrical transmission and distribution infrastructure (overhead lines and substations) in the vicinity of St. Asaph Business Park / Glascoed Road area; and
- Existing energy infrastructure (flexible gas fired power station) in the St. Asaph Business Park.

2.9.7 Cumulative developments in the vicinity of the Application Site are shown on **Figure 2.1**.

In-Combination Effects

2.9.8 In-combination effects arise where effects from one environmental element bring about changes in another environmental element. These effects are also reviewed in each of the technical chapters of this ES. Examples of interactive effects include hydrological considerations and ecology, or ecology and landscaping.

2.10 GENERAL ASSUMPTIONS & LIMITATIONS

2.10.1 The principal assumptions that have been made and any limitations that have been identified in preparing this ES are set out below:

- The principal land uses adjoining the Application Site remain as at the present day, except where redevelopment proposals have been granted planning consent. In those cases it is assumed the redevelopment proposals will be implemented or would but for the development being implemented;
- Information received from third parties is complete and up to date;
- The design, construction and completed stages of the Proposed Development will satisfy legislative requirements; and
- Conditions, or other legal obligations, will be attached to the planning permission to secure 'mitigation', where considered necessary to make the Proposed Development acceptable.

2.11 STRUCTURE OF TECHNICAL CHAPTER

2.11.1 Throughout the EIA process, the likely significant environmental effects of the development will be assessed. Within each of the technical chapters the information which will inform the EIA process has generally been set out in the following way:

- Introduction – to introduce the topic under consideration, state the purpose of undertaking the assessment and set out those aspects of the development material to the topic assessment;
- Assessment Approach – to describe the method and scope of the assessment undertaken and responses to consultation in relation to method and scope in each case pertinent to the topic under consideration;

- Baseline Conditions – a description of the baseline conditions pertinent to the topic under consideration including baseline survey information;
- Assessment of Likely Significant Effects - identifying the likely effects, evaluation of those effects and assessment of their significance, considering both construction and operational and direct and indirect effects;
- Mitigation and Enhancement - describing the mitigation strategies for the significant effects identified and noting any residual effects of the proposals;
- Cumulative and In-combination Effects - consideration of potential cumulative and in-combination effects with those of other developments; and
- Summary – a non-technical summary of the chapter, including baseline conditions, likely significant effects, mitigation and conclusion.