# Awel y Môr Offshore Wind Farm

# Category 6: Environmental Statement

## Volume 3, Chapter 2: Landscape and Visual Impact Assessment

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See Volume 6, Annex 6.2 for Landscape and Visual Figures

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# Glossary of terms

| TERM | DEFINITION |
|---|---|
| LANDMAP | LandMap is a unique national information system, allowing information about landscape in Wales to be collected and organised into a nationally consistent dataset. The LandMap database includes both objective and subjective information and is designed to enable landscape quality to be taken into account in decision making. |
| Landscape character | A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse. |
| Landscape effects | Effects on the landscape as a resource in its own right. |
| Seascape | Landscapes with views of the coast or seas, and coasts and adjacent marine environments with cultural, historical and archaeological links with each other. |
| Visual amenity | The overall pleasantness of the views people enjoy of their surroundings, which provides an attractive visual setting or backdrop for the enjoyment of activities of the people living, working, recreating or travelling through an area. |
| Visual effects | Effects on specific views and on the general visual amenity experienced by people. |

# Abbreviations and acronyms

| TERM | DEFINITION |
|---|---|
| AONB | Area of Outstanding Natural Beauty |
| AyM | Awel y Mor Offshore Wind Farm (AyM OWF) |
| CA | Conservation Areas |
| Cadw | National Agency for Conservation of the Historic Environment (NB: this is not an acronym so is not capitalised) |
| CEMP | Construction Environmental Management Plan |
| CCBC | Conwy County Borough Council |
| DCC | Denbighshire County Council |
| EIA | Environmental Impact Assessment |
| ES | Environmental Statement |
| ETG | Expert Topic Group |
| GIS | Gas Insulated Switchgear (substation technology) |
| GLVIA | Guidelines for Landscape and Visual Impact Assessment |
| HDD | Horizontal Directional Drilling |
| LCAs | Landscape Character Areas |
| LVIA | Landscape and Visual Impact Assessment |
| LEMP | Landscape and Ecological Management Plan |
| MDS | Maximum Design Scenario |
| NLCAs | National Landscape Character Areas |
| NRW | Natural Resources Wales |
| NSIP | Nationally Significant Infrastructure Project |

| TERM | DEFINITION |
|---|---|
| OLEMP | Outline Landscape and Ecological Management Plan |
| OnSS | Onshore Substation |
| OPEN | Optimised Environments |
| PEI | Preliminary Environmental Impact |
| PEIR | Preliminary Environmental Impact Report |
| PINS | The Planning Inspectorate |
| RHPG | Registered Historic Park and Gardens |
| SLAs | Special Landscape Areas |
| TCC | Temporary Construction Compound |
| TJB | Transition Joint Bay |
| ZTV | Zone of Theoretical Visibility |

# Units

| UNIT | DEFINITION |
|---|---|
| km | Kilometre |
| m | Metre |
| mm | Millimetre |

# 2 Landscape and Visual Impact Assessment (LVIA)

## 2.1 Introduction

1 This chapter of the Environmental Statement (ES) presents the Landscape and Visual Impact Assessment (LVIA) for the onshore elements of the proposed Awel y Môr Offshore Wind Farm (AyM OWF), hereafter referred to as AyM. The onshore elements of AyM assessed in the LVIA are described in Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1).

2 The key onshore elements of AyM include the proposed substation (OnSS), onshore export cable corridor (onshore ECC) and landfall (where the offshore export cables will meet the onshore export cables). The landfall for the purpose of this chapter refers to the intertidal area (Mean Low Water to Mean High Water Springs).

3 The LVIA has been undertaken in accordance with the LVIA methodology set out in Sections 2.4 and 2.5.

4 This chapter has been informed by the following ES chapters:

- Volume 1, Chapter 3: Environmental Impact Assessment Methodology (application ref: 6.1.3);
- Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (application ref: 6.14); and
- Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.3).

5 This chapter should be read in conjunction with the following ES documents:

- Volume 2, Chapter 10: Seascape, Landscape and Visual Impact Assessment (SLVIA) (application ref: 6.2.10);
- Volume 3, Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.3.5); and
- Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8).

6 The LVIA is supported by Annex 2.1 – LANDMAP Assessment (application ref: 6.5.2.1); along with plan graphics and visual representations within Volume 6, Annex 2: LVIA Figures and Visualisations. LVIA figures include Zone of Theoretical Visibility (ZTV) maps; reference photography; outline landscape mitigation and visual representations, including baseline panorama views, wirelines and photomontages.

## 2.2 Statutory and policy context

7 This section includes a summary of national and local policy of particular relevance to landscape and visual amenity that have been taken into account in this chapter.

8 The National Policy Statements (NPS) are the principal policy for determining Nationally Significant Infrastructure Projects (NSIP). As such, this assessment has made explicit reference to the relevant NPS requirements.

9 Those relevant to the landscape and visual aspects of the onshore elements of AyM are:

- Overarching National Policy Statement for Energy (EN-1, DECC 2011a);
- National Policy Statement for Renewable Energy Infrastructure (EN-3 (DECC 2011b).
- National Policy Statement for Electricity Networks Infrastructure (EN-5 (DECC 2011c).

10 The NPSs provide the main policy tests in relation to the Proposed Development. In addition to the current NPS, draft NPSs were consulted upon during September and November 2021. The draft NPSs have been reviewed to determine the emerging expectations and changes from previous iterations of the NPSs. This includes the Draft Overarching NPS EN-1 (DBEIS, 2021), Draft NPS EN-3 (DBEIS 2021) and Draft NPS EN-5 (DBEIS, 2021)

Table 1: Policy context.

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
|---|---|---|
| NPS EN-1<br>National Policy Statement for Energy | Paragraph 4.2.5 advises that when considering cumulative effects, the ES should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence). | Cumulative landscape and visual effects of the onshore infrastructure considered in section 2.14 |
| NPS EN-1 | Paragraph 4.2.7 advises that *'In some instances it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case.'*<br>At paragraph 4.2.8 it is stated that, where this is the case, the need to ensure that the likely worst-case environmental effects are set out and assessed. | Volume 3, Chapter 1 - Onshore Project Description (application ref 6.3.1), sets out the details of the project and which areas are and are not settled in precise detail.<br>Section 2.8 sets out the maximum design parameters that have been defined to ensure |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | that the worst-case landscape and visual effects are assessed. |
| NPS EN-1 | In relation to the topic of Criteria for Good Design' for Energy Infrastructure Paragraph 4.5.1 advises that *'The visual appearance of a building is sometimes considered to be the most important factor in good design. But high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object — be it a building or other type of infrastructure — including fitness for purpose and sustainability, is equally important. Applying "good design" to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.'* | Volume 3, Chapter 1 - Onshore Project Description (application ref: 6.3.1), sets out how AyM responds to this criteria. |
| NPS EN-1 | In relation to Good Design paragraph 4.5.3 advises that '*the IPC should satisfy itself that the applicant has taken into account both functionality (including fitness for purpose and sustainability) and* | Volume 3, Chapter 1 - Onshore Project Description (application |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | *aesthetics (including its contribution to the quality of the area in which it would be located) as far as possible'* | ref: 6.3.1), sets out how AyM has considered and balanced these criteria.<br>Section 2.9 of this Chapter sets out the embedded mitigation that is included for AyM and Section 2.12 assesses visual impacts. |
| NPS EN-1 | In relation to Good Design paragraph 4.5.4 sets out that the applicants should be able to demonstrate how the design process was conducted and how the design evolved and design decisions were made. This is in order for the Secretary of State (SoS) to consider the application. In doing so the SoS *'should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety and security requirements which the design has to satisfy'* | The evolution of the design is set out Volume 1, Chapter 4: Site Selection and Alternatives (application ref: 6.1.4) and Volume 3, Chapter 1 - Onshore Project Description (application ref 6.3.1). |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | How the design has evolved in relation to landscape impacts is included in Section 2.9 of this Chapter.<br>The duration of LVIA effects is explained in section 2.8.2. |
| NPS EN-1 | Paragraph 5.9.1 notes that landscape and visual effects will be varied and that *'references to landscape should be taken as covering seascape and townscape where appropriate.'* | The varied nature of landscape and visual receptors is explained in section 2.7 |
| NPS EN-1 | Paragraph 5.9.5advises that the applicant should carry out a landscape and visual assessment and makes reference to the following documents:<br>Landscape Institute and Institute of Environmental Management and Assessment (2002, 2nd edition): Guidelines for Landscape and Visual Impact Assessment; and Countryside Council for Wales/Cadw (2007) | Since NPS EN-1 was published the Guidelines for Landscape and Visual Impact Assessment' (GLVIA) (2002, 2nd edition) has been superseded by GLVIA Version 3. |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process. | Volume 3, Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8) refers to the use of the Countryside Council for Wales/Cadw (2007) guidance.<br>More recent reference documents, relevant to LVIA, are set out in section 2.5 |
| NPS EN-1 | Paragraph 5.9.5 advises that the landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development plans in Wales. | Published landscape character assessments and associated studies for the study area are referred to in section 2.7.2 of this chapter. |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| NPS EN-1 | Paragraph 5.9.6 of EN-1 advises – *'The applicant's assessment should include the effects during construction of the project and the effects of the completed development and its operation on landscape components and landscape character.'* | The effect on landscape components and landscape character are assessed in the LVIA in section 2.11. |
| NPS EN-1 | Paragraph 5.9.7 advises that the assessment should include the visibility and conspicuousness of the project during its construction and operation and potential impacts on views and visual amenity. | The visual effects resulting from the onshore elements of AyM during construction and operation are assessed in the LVIA in section 2.12. |
| NPS EN-1 | Paragraph 5.9.8 advises that landscape effects depend on the existing character of the local landscape, its current quality, how highly it is valued and its capacity to accommodate change. All of these factors need to be considered in judging the impact of a project on landscape. | The quality, value and capacity of the landscape to accommodate change are considerations of the landscape assessment set out in section 2.11 where they inform the assessment of |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | effects of the onshore infrastructure on the landscape. |
| NPS EN-1 | Paragraph 5.9.8 advises that *"virtually all nationally significant energy infrastructure projects will have effects on the landscape. 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 minimise harm to the landscape, providing reasonable mitigation where possible and appropriate."* | The design of AyM has considered and addressed the potential effects on landscape in order to minimise potentially significant effects through mitigation. See section 2.9 of this chapter. |
| NPS EN-1 | Paragraph 5.9.14 of EN-1 advises – *'Outside nationally designated areas, there are local landscapes that may be highly valued locally and protected by local designation. Where a local development document in Wales has policies based on landscape character assessment, these should be paid particular attention. However, local landscape designations should not be used in themselves to refuse consent, as this may unduly restrict acceptable development.'* | The value of the local landscape is a consideration within the LVIA. See Sections 2.10 and 2.11 |

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| NPS EN-1 | Paragraph 5.9.17 advises that *"The IPC [now the Planning Inspectorate and the Secretary of State] should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by reasonable mitigation."* | Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (application ref: 6.1.4) sets out the iterative process that has influenced the design of AyM. The mitigation of landscape effects set out in Section 2.9 has been considered in the LVIA, to minimise "harm to the landscape" where possible. |
| NPS EN-1 | Paragraph 5.9.18 relates to visual effects and in addition to those included in the current NPS EN-1 notes that *'Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast.'* | The visual effects resulting from the onshore elements of AyM during construction and operation are |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | assessed in the LVIA in section 2.12. |
| NPS EN-1 | Paragraph 5.9.21 advises that *'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, the 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 IPC may decide that the benefits of the mitigation to reduce the landscape and/or visual effects outweigh the marginal loss of function.'* | The balance between mitigation of visual and landscape effects and significant operational constraint/ reduction in function is considered in Volume 1, Chapter 4 (application ref 6.1.4). |
| NPS EN-1 | Paragraph 5.9.22 of EN-1 advises – *'Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration.'* | As described in Volume 3, Chapter 1 – Onshore Project Description (application ref: 6.3.1), the refinement of the OnSS and onshore ECC has been carefully considered alongside the |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | potential for landscape and visual effects and mitigation. See also section 2.9. |
| NPS EN-1 (draft) | Paragraph 4.2.5 advises that *'In some instances it may not be possible at the time of the application for development consent for all aspects of the proposal to have been settled in precise detail. Where this is the case, the applicant should explain in its application which elements of the proposal have yet to be finalised, and the reasons why this is the case.'*<br>At paragraph 4.2.6 it is stated that, where this is the case, the need to ensure that the likely worst-case environmental effects are set out and assessed. | Volume 3, Chapter 1 - Onshore Project Description (application ref 6.3.1), sets out the details of the project and which areas are and are not settled in precise detail.<br>Section 2.8 sets out the maximum design parameters that have been defined to ensure that the worst-case landscape and visual effects are assessed. |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| NPS EN-1 (draft) | In relation to the topic of Criteria for Good Design' for Energy Infrastructure Paragraph 4.6.1 advises that *'The visual appearance of a building, structure, or piece of infrastructure, and how it relates to the landscape it sits within, is sometimes considered to be the most important factor in good design. But high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object - be it a building or other type of infrastructure - including fitness for purpose and sustainability, is equally important. Applying "good design" to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.'* | Volume 3, Chapter 1 - Onshore Project Description (application ref: 6.3.1), sets out how AyM responds to this criteria. |
| NPS EN-1 (draft) | In relation to Good Design paragraph 4.6.3 advises that *'The Secretary of State should be satisfied that the applicant has taken into account both functionality (including fitness for purpose and sustainability) and aesthetics (including its contribution to the quality of the area in which* | Volume 3, Chapter 1 - Onshore Project Description (application ref: 6.3.1), sets out how AyM has considered |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | *it would be located, any potential amenity benefits, and visual impacts on the landscape or seascape) as far as possible'.* | and balanced these criteria.<br>Section 2.9 of this Chapter sets out the embedded mitigation that is included for AyM and Section 2.12 assesses visual impacts. |
| NPS EN-1 (draft) | Paragraph 4.6.4 sets out that the applicants should be able to demonstrate how the design process was conducted and how the design evolved and design decisions were made. This is in order for the Secretary of State (SoS) to consider the application. In doing so the SoS *'should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety and security requirements which the design has to satisfy.*<br>*Many of the wider impacts of a development, such as landscape and environmental impacts, will be important factors in the design process.'*<br>It is also noted that '*Assessment of impacts must be for the stated design life of the scheme rather than a shorter time period.'* | The evolution of the design is set out Volume 1, Chapter 4: Site Selection and Alternatives (application ref: 6.1.4) and Volume 3, Chapter 1 - Onshore Project Description (application ref 6.3.1).<br>How the design has evolved in relation to landscape impacts is |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | included in Section 2.9 of this Chapter.<br>The duration of LVIA effects is explained in section 2.8.2. |
| NPS EN-1 (draft) | Paragraph 5.10.1 notes that landscape and visual effects will be varied and that *'references to landscape should be taken as covering seascape and townscape where appropriate.'* | The varied nature of landscape and visual receptors is explained in section 2.7 |
| NPS EN-1 (draft) | Paragraph 5.10.5 sets out the need to carry out a landscape and visual assessment in accordance with published guides. Relevant guides are listed as The Landscape Institute and Institute of Environmental Management and Assessment: Guidelines for Landscape and Visual Impact Assessment (2013, 3rd edition); Landscape and Seascape Character Assessments – https://www.gov.uk/guidance/landscape-and-seascape-character-assessments; Countryside Council for Wales/Cadw (2007) Guide to Good Practice on Using the Register of Landscapes of Historic Interest in Wales in the Planning and Development Process; or any successor documents. | Reference documents and guidance, relevant to the LVIA, are set out in section 2.5 |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| NPS EN-1 (draft) | Paragraph 5.10.5 goes on to say that *'The landscape and visual assessment should include reference to any landscape character assessment and associated studies as a means of assessing landscape impacts relevant to the proposed project. The applicant's assessment should also take account of any relevant policies based on these assessments in local development documents in England and local development plans in Wales. For seascapes, applicants should consult the Seascape Character Assessment and the Marine Plan Seascape Character Assessments, and any successors to them.'* | Published landscape character assessments and associated studies for the study area are referred to in section 2.7.2 of this chapter. |
| NPS EN-1 (draft) | Paragraph 5.10.6 states that the ES should include assessment of the effects of the construction, the completed development and its operation on landscape components and landscape character. | The LVIA assesses effects at each of these development stages as highlighted in section 2.8.2 |
| NPS EN-1 (draft) | Paragraph 5.10.7 advises that the assessment should include the visibility and conspicuousness of the project during its construction and operation and potential impacts on views and visual amenity. | The visual effects resulting from the onshore elements of AyM during construction and operation are |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | assessed in the LVIA in section 2.12. |
| NPS EN-1 (draft) | At paragraph 5.10.8 the document also states that *'The assessment should also demonstrate how noise and light pollution from construction and operational activities on residential amenity and on sensitive locations, receptors and views, will be minimised.'* | The mitigation of landscape and visual effects through good design are considered within the LVIA. See section 2.9. |
| NPS EN-1 (draft) | Paragraph 5.10.10 introduces the potential for landscape management plans to be considered as they may help to enhance environmental assets. | The OLEMP describes measures to be employed during construction and restoration. It also provides longer term outline landscape and habitat management of the OnSS. |
| NPS EN-1 (draft) | Paragraph 5.10.16 of EN-1 advises – '*Outside nationally designated areas, there are local landscapes that may be highly valued locally* | The value of the local landscape is a |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | *and protected by local designation. 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, local landscape designations should not be used in themselves to refuse consent, as this may unduly restrict acceptable development.'* | consideration within the LVIA. See Sections 2.10 and 2.11 |
| NPS EN-1 (draft) | Paragraph 5.9.19 advises that *'The Secretary of State should consider whether the project has been designed carefully, taking account of environmental effects on the landscape and siting, operational and other relevant constraints, to minimise harm to the landscape, including by reasonable mitigation.'* | Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (application ref: 6.1.4) sets out the iterative process that has influenced the design of AyM. The mitigation of landscape effects set out in Section 2.9 has been considered in the LVIA, to minimise "harm to the landscape" where possible. |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| NPS EN-1 (draft) | Paragraph 5.10.20 relates to visual effects and in addition to those included in the current NPS EN-1 notes that *'Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast.'* | The visual effects resulting from the onshore elements of AyM during construction and operation are assessed in the LVIA in section 2.12. |
| NPS EN-1 (draft) | Paragraph 5.9.23 advises that *'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, the 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'.* | The balance between mitigation of visual and landscape effects and significant operational constraint/ reduction in function is considered in Volume 1, Chapter 4 (application ref 6.1.4). |
| NPS EN-1 (draft) | Paragraph 5.9.24 advises – *'Within a defined site, adverse landscape and visual effects may be minimised through appropriate siting of infrastructure within that site, design including colours and materials, and* | As described in Volume 3, Chapter 1 – Onshore Project Description |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | *landscaping schemes, depending on the size and type of the proposed project. Materials and designs of buildings should always be given careful consideration.'* | (application ref: 6.3.1), the refinement of the OnSS and onshore ECC has been carefully considered alongside the potential for landscape and visual effects and mitigation. See also section 2.9. |
| NPS EN-3<br><br>National Policy Statement for Renewable Energy Infrastructure | Paragraph 2.4.2 of NPS EN3 advises – *'Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology.'* | The mitigation of landscape and visual effects through good design are considered within the LVIA. See section 2.9. |
| NPS EN-3 | Paragraph 2.6.204 of NPS EN3 advises – *'As part of the SVIA, photomontages are likely to be required. Viewpoints to be used for the SVIA should be selected in consultation with the statutory consultees at the EIA Scoping stage.'* | Viewpoints were agreed in consultation with statutory consultees as described in Table 2. |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | Note: SVIA is an acronym *of 'seascape and visual impact assessment'* within NPS EN-3. | |
| NPS EN-3 | Paragraphs 2.6.42 and 2.6.43 relate to the need for flexibility in the project details owing to the complex nature of offshore wind farm development. It is recognised that this may include the location and configuration of turbines and associated development (including offshore substations), the exact turbine dimensions and the precise cable type and route.<br><br>In accordance with Section 4.2 of EN-1 and recognising there may be a need for flexibility in the consent it is stated that *'Where this is sought and the precise details are not known, then the applicant should assess the effects the project could have (as set out in EN-1 paragraph 4.2.8) to ensure that the project as it may be constructed has been properly assessed (the Rochdale Envelope). In this way the maximum adverse case scenario will be assessed and the IPC should allow for this uncertainty in its consideration of the application and consent.'* | Section 2.8 sets out the maximum design parameters that have been defined to ensure that the worst-case landscape and visual effects are assessed. |
| NPS EN-3 (draft) | Paragraph 2.4.2 advises – *'Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology.'* | The mitigation of landscape and visual effects through good design are considered |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | within the LVIA. See section 2.9. |
| NPS EN-3 (draft) | Paragraph 2.35.6 advises – *'As part of the SLVIA, photomontages will be required. Viewpoints to be used for the SLVIA should be selected in consultation with the statutory consultees at the EIA Scoping stage.'* | Viewpoints were agreed in consultation with statutory consultees as described in Table 2. |
| NPS EN-3 (draft) | Paragraphs 2.23.6 and 2.23.7 relate to the need for flexibility in the project details owing to the complex nature of offshore wind farm development. It is recognised that this may include the location and configuration of turbines and associated development (including offshore substations), the exact turbine dimensions and the precise cable type and route.<br>In accordance with Section 4.2 of EN-1 and recognising there may be a need for flexibility in the consent it is stated that *'Where this is sought and the precise details are not known, then the applicant should assess the effects the project could have (as set out in EN-1 paragraph 4.2.6) to ensure that the project as it may be constructed has been properly assessed (the Rochdale Envelope). In this way the maximum adverse case scenario will be assessed and the Secretary of State should allow for this uncertainty in its consideration of the application and consent.'* | Section 2.8 sets out the maximum design parameters that have been defined to ensure that the worst-case landscape and visual effects are assessed. |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| NPS EN-5<br>Electricity Networks Infrastructure | Paragraph 2.8.2 of NPS EN5 advises – *'New substations, sealing end compounds and other above ground installations that form connection, switching and voltage transformation points on the electricity networks can also give rise to landscape and visual impacts. Cumulative landscape and visual impacts can arise where new overhead lines are required along with other related developments such as substations, wind farms and/or other new sources of power generation'*. | The proposed onshore ECC is to be underground. The LVIA has assessed the effects of the underground onshore ECC and OnSS in sections 2.10, 2.11 and 2.12 |
| NPS EN-5 | Paragraph 2.8.3 recognises that '*Sometimes positive landscape and visual benefits can arise through the reconfiguration or rationalisation of existing electricity network infrastructure'* | The proposed onshore ECC is to be underground. The LVIA has assessed the effects of the underground onshore ECC and OnSS in sections 2.10, 2.11 and 2.12 |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| NPS EN-5 (draft) | Paragraph 2.11.3 of Draft NPS EN-5 advises – *'New substations, sealing end compounds, 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. Nonetheless, government does not believe that the development of these installations is incompatible in principle with developers' statutory duty under Schedule 9 of the Electricity Act 1989.'* | The proposed onshore ECC is to be underground. The LVIA has assessed the effects of the underground onshore ECC and OnSS in sections 2.10, 2.11 and 2.12 |
| NPS EN-5 (draft) | Paragraph 2.11.4 of Draft NPS EN-5 advises – '*Cumulative adverse landscape and visual impacts may arise where new overhead lines are required along with other related developments such as substations, wind farms, and/or other new sources of generation.'* | Cumulative landscape and visual effects of the onshore infrastructure considered in section 2.14 |
| NPS EN-5 (draft) | Paragraph 2.11.5 of Draft NPS EN-5 advises – *'Landscape and visual benefits may arise through the reconfiguration, rationalisation, or undergrounding of existing electricity network infrastructure.'*<br>Paragraph 2.11.6 of Draft NPS EN-5 advises – *'Though mitigation of the landscape and visual impacts arising from overhead lines and their* | The proposed onshore ECC is to be underground. The LVIA has assessed the effects of the underground onshore ECC and OnSS |

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| | *associated infrastructure is usually possible, it may not always be so, and the impossibility of full mitigation in these cases does not countermand the need for the infrastructure. However, in nationally designated landscapes (for instance, National Parks and Areas of Outstanding Natural Beauty) even residual impacts may well make an overhead line proposal unacceptable in planning terms.'* | in sections 2.10, 2.11 and 2.12<br>Section 2.9 of this Chapter sets out the embedded mitigation that is included for AyM and Section 2.12 assesses visual impacts. |
| Planning Policy Wales Edition 11 | Section 6.3 Landscape advises that: *"Landscape policy is guided by the European Landscape Convention."*<br>The landscape of Wales is stated as a key consideration when developing policies and when proposing development. | Effects on landscape character are assessed in section 2.11 of this chapter. |
| Planning Policy Wales Edition 11 | 6.3.3 notes that "*Collaboration and engagement with adjacent planning authorities, Natural Resources Wales (NRW), Cadw and the third sector will be necessary to draw on a wide range of expertise and evidence. This means:*<br>• *ensuring Wales contributes to meeting international responsibilities and obligations for landscapes;* | The LVIA includes consideration of effects on the characteristics of local landscapes including landscape features, landscape |

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| | *ensuring statutorily designated sites are properly protected and managed;*<br>• *ensuring that the value of all landscapes for their distinctive character and special qualities is protected; and*<br>• *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.*<br>*6.3.4 Where adverse effects on landscape character cannot be avoided, it will be necessary to refuse planning permission.*' | character areas and landscape designations.<br>Effects on landscape character and landscape designations are assessed in section 2.11 of this chapter. |
| Planning Policy Wales Edition 11 | 6.3.12 notes that in relation to the Characteristics of Local Landscapes "*Planning Authorities should provide for the conservation and, where appropriate, enhancement of local landscapes.*<br>*This may include policies for landscape features, characteristics and qualities of local significance, and the designation of Special Landscape Areas (SLAs). Planning authorities should state which features, characteristics or qualities require extra protection, and explain how the policy or designation will achieve this protection.*" | The LVIA includes consideration of effects on the characteristics of local landscapes including landscape features, landscape character areas and landscape designations.<br>Effects on landscape character and |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | landscape designations are assessed in section 2.11 of this chapter. |
| Planning Policy Wales Edition 11 | 6.3.20 notes the importance of LANDMAP as an *"information resource, methodology and monitoring baseline for the landscapes of Wales"* LANDMAP assessments "*can help to inform development management decisions"* | See section 2.7.2 of this chapter and Annex 2.1 - LANDMAP assessment (application ref: 6.5.2.1) |
| Future Wales – The National Plan 2040 | Policy 9 – Resilient Ecological Networks and Green Infrastructure<br>*'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:*<br>▲ 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 | The mitigation of landscape and visual effects through good design are considered within the LVIA. See section 2.9. |

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| | ▲ 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.' | |
| Future Wales – The National Plan 2040 | Policy 15 – National Forest<br>*'An increase in woodland cover is needed to help build the resilience of our ecosystems, to secure the delivery of our climate change and decarbonisation aspirations, to provide places for recreation and well-being and to ensure that the productive potential of Welsh woodlands is maintained.'* | The mitigation of landscape and visual effects through good design are considered within the LVIA. See section 2.9. |
| Future Wales – The National Plan 2040 | Policy 17 – Renewable and Low Carbon Energy and Associated Infrastructure<br>*'The Welsh Government strongly supports the principle of developing renewable and low carbon energy from all technologies and at all scales to meet our future energy needs. In determining planning applications for renewable and low carbon energy development, decision-makers must give significant weight to the need to meet Wales' international commitments and our target to generate 70% of consumed electricity by renewable means by 2030 in order to combat the climate emergency.'* | Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (application ref: 6.1.4) sets out the iterative process that has influenced the design of AyM. |

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| | *'New strategic grid infrastructure for the transmission and distribution of energy should be designed to minimise visual impact on nearby communities. The Welsh Government will work with stakeholders, including National Grid and Distribution Network Operators, to transition to a multi-vector grid network and reduce the barriers to the implementation of new grid infrastructure'* | As described in Volume 3, Chapter 1 – Onshore Project Description (application ref: 6.3.1), the refinement of the OnSS and onshore ECC has been carefully considered alongside the potential for landscape and visual effects and mitigation. See also section 2.9. |
| Future Wales – The National Plan 2040 | Policy 18 – Renewable and Low Carbon Energy Developments of National Significance<br>The following Policy 18 criteria relates to this LVIA<br>*'1. outside of the Pre-Assessed Areas for wind developments and everywhere for all other technologies, the proposal does not have an unacceptable adverse impact on the surrounding landscape (particularly on the setting of National Parks and Areas of Outstanding Natural Beauty);* | Effects on landscape character and landscape designations are assessed in section 2.11 of this chapter.<br>The visual effects resulting from the onshore elements of AyM during construction |

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| | *2. there are no unacceptable adverse visual impacts on nearby communities and individual dwellings;*<br>*The cumulative impacts of existing and consented renewable energy schemes should also be considered.'* | and operation are assessed in the LVIA in section 2.12.<br>Cumulative landscape and visual effects of the onshore infrastructure considered in section 2.14 |
| Denbighshire County Council adopted LDP 2006-2021 Policy VOE2 – Area of Outstanding Natural Beauty and Area of Outstanding Beauty | *'In determining development proposals within or affecting the Area of Outstanding Natural Beauty (AONB) and Area of Outstanding Beauty (AOB), development that would cause unacceptable harm to the character and appearance of the landscape and the reasons for designation will not be permitted.'* | The LVIA includes consideration of effects on landscape character including landscape designations.<br>Effects on landscape character and landscape designations are assessed in section 2.11 of this chapter. |

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| Denbighshire County Council adopted LDP 2006-2021 Objective - 16 Areas of Protection | *'The Local Development Plan will seek to protect and enhance the natural and built heritage of the County including aspects such as landscape, biodiversity, geo-diversity, designated sites and buildings and protected species. Environmental services and goods will additionally be enhanced and developed.'* | The LVIA includes consideration of effects on the characteristics of local landscapes including landscape features.<br>Physical effects on the landscape are assessed in section 2.10 of this chapter. |
| Denbighshire County Council adopted LDP 2006-2021 Policy VOE 1 – Key Areas of importance | *'The following areas will be protected from development that would adversely affect them. Development proposals should maintain and, wherever possible, enhance these areas for their characteristics, local distinctiveness, and value to local communities in Denbighshire:*<br>▲ Statutory designated sites for nature conservation;<br>▲ Local areas designated or identified because of their natural<br>▲ landscape or biodiversity value;<br>▲ Sites of built heritage; and<br>▲ Historic Landscape, Parks and Gardens.' | The LVIA includes consideration of effects on the characteristics of local landscapes including landscape features, landscape character areas and landscape designations.<br>Physical effects on the landscape are assessed |

| POLICY | KEY PROVISIONS | SECTION WHERE COMMENT ADDRESSED |
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| | | in section 2.10 of this chapter.<br>Effects on landscape character and landscape designations are assessed in section 2.11 of this chapter. |
| Policy VOE 10 Renewable energy technologies | Development proposals which promote the provision of renewable energy technologies may be supported providing they are located so as to minimise visual, noise and amenity impacts and demonstrate no unacceptable impact upon the interests of nature conservation, wildlife, natural and cultural heritage, landscape, public health and residential amenity. In areas that are visually sensitive, including the AONB, Conservation Areas, World Heritage Site and Buffer Zone and in close proximity to historic buildings, visually intrusive technologies will not be permitted unless it can be demonstrated that there is no negative impact on the designation or there is an overriding public need for the development.' | As described in Volume 3, Chapter 1 – Onshore Project Description (application ref: 6.3.1), the refinement of the OnSS zone and onshore ECC has been carefully considered alongside the potential for landscape and visual effects. See also section 2.9 - mitigation. |

## 2.3 Consultation and scoping

11 Consultation and scoping with stakeholders has helped to facilitate proportionate and efficient assessment in the LVIA, by identifying key significant issues and effects. Table 2 provides a summary of the principal issues from the PINS scoping opinion and further consultation with stakeholders. It also describes how issues raised by consultees have been addressed in the LVIA.

12 AyM statutory consultation, under Section 42 (s42) of the Planning Act 2008, ran from 31 August to 11 October 2021, a period of six weeks. A Preliminary Environmental Information Report (PEIR) was published as part of formal consultation which provided preliminary information on landscape and visual impacts within Volume 3, Chapter 2: Landscape and Visual Impact Assessment. Further consultation has taken place since October 2021 with NRW and Denbighshire County Council.

13 Further statutory consultation was undertaken in February 2022 on areas where the Order Limits (OL) extend beyond those included in the PEIR that were consulted on in Autumn 2021.

14 Full details of consultation and scoping are included in a separate consultation report which accompanies this final application (application ref: 5.1).

Table 2: Summary of consultation relating to the LVIA.

| DATE AND CONSULTATION PHASE/ TYPE | CONSULTATION AND KEY ISSUES RAISED | SECTION WHERE COMMENT ADDRESSED |
|---|---|---|
| Secretary of State Scoping Opinion dated July 2020 | *4.20.1 – 'The Inspectorate does not consider that sufficient evidence has been provided to support scoping out landscape and visual matters resulting from construction traffic.'* | Key routes in the LVIA study area are considered in the assessment of visual effects including those resulting from construction activities. See section 2.12 |
| Secretary of State Scoping Opinion dated July 2020 | 4.20.2 – '*The Inspectorate does not consider that sufficient evidence has been provided to support scoping out night-time landscape and visual effects during construction.'* | Construction effects during the hours of darkness are considered to the same or less than construction effects during the day. Construction during the hours of darkness will also be of limited duration.<br>See section 2.8.2 |
| Secretary of State Scoping Opinion dated July 2020 | 4.20.3 – '*The Scoping Report assumes that any effects from underground cables would not be significant once the land has been restored.* | The physical effects on landscape elements resulting from the introduction of the onshore infrastructure of AyM (including the undergrounding of the onshore ECC |

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| | *However, as it is not clear how long it would take for land restoration to be achieved after cables have been installed the Inspectorate is concerned that there is potential for significant effects to occur. The Inspectorate does not consider that sufficient evidence has been provided to support scoping these matters out from the assessment.*<br><br>*Accordingly, the ES should include an assessment of these matters where a likely significant effect may occur.'* | and land restoration) have been assessed in section 2.10 of this chapter. |
| Secretary of State Scoping Opinion dated July 2020 | 4.20.4 – '*The Inspectorate agrees that effects on landscape and visual receptors from maintenance during operation on the underground cables and onshore substation can be scoped out.'* | This is acknowledged |
| Secretary of State Scoping Opinion dated July 2020 | 4.20.5 – '*The Inspectorate agrees that night-time landscape and visual effects during operation can be scoped out.'* | This is acknowledged |

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| Secretary of State Scoping Opinion dated July 2020 | 4.20.6 – *'The Inspectorate does not consider that sufficient evidence has been provided to support scoping out residential visual amenity during operation.'* | Residential receptors including properties and settlements are considered in the visual assessment, see section 2.12 |
| Secretary of State Scoping Opinion dated July 2020 | 4.20.7 – '*The Inspectorate does not consider that sufficient evidence has been provided to support scoping out impacts during decommissioning*'. | Decommissioning effects are considered comparable but less than construction effects. See section 2.13 of this chapter. |
| Secretary of State Scoping Opinion dated July 2020 | 4.20.8 – '*The assessment in the ES should explain how the study area has taken the height of the equipment into account.'* | The parameters of the onshore infrastructure of AyM in relation to the LVIA are described in section 2.8. The study area is described in section 2.4.2 |
| Secretary of State Scoping Opinion dated July 2020 | 4.20.9 – '*The ES should ensure that, in order to assess the worst-case scenario, the photography used should include views taken when there are no leaves on the trees to provide screening.'* | The majority of photography was captured when trees not in full leaf. The exception to this is at viewpoint 6 where access to Bodelwyddan |

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| | | RHPG was restricted during that period. See section 2.6.2 |
| National Grid Scoping Response dated July 2020 | *'If a landscaping scheme is proposed as part of the proposal, we request that only slow and low growing species of trees and shrubs are planted beneath and adjacent to the existing overhead line to reduce the risk of growth to a height which compromises statutory safety clearances.'* | Mitigation principles for planting are described in section 2.9. Proposed tree planting is not proposed beneath or immediately adjacent to the existing overhead line. |
| Denbighshire County Council (DCC), pre-statutory consultation | Details of the proposed LVIA viewpoints were provided to DCC via email dated 18/02/21 and within a follow up email dated 17/03/21. A response has not been provided to date. | No amendments to proposed viewpoints as presented in the PEIR |
| Conwy County Borough Council (CCBC) email response dated 24/02/21, in relation to viewpoint consultation email dated | CCBC has confirmed that *'Given the limited visibility of the proposed substation from viewpoints in the County Borough of Conwy, we have no comments to make on the proposed viewpoint locations'*. | Limited visibility acknowledged. No amendments to proposed viewpoints as presented in the PEIR. |

| DATE AND CONSULTATION PHASE/ TYPE | CONSULTATION AND KEY ISSUES RAISED | SECTION WHERE COMMENT ADDRESSED |
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| 18/02/21 pre-statutory consultation | | |
| NRW email response dated 22/02/21, in relation to viewpoint consultation email dated 18/02/21 pre-statutory consultation | *'NRW's development management remit only relates to landscape, seascape and visual matters in relation to National Parks & AONBs.*<br>*The Substation proposal is potentially visible from elevated ground within the Clwydian Range & Dee Valley AONB to the east, just outside the 5km ZTV Study area. Moel Hiraddug/Y Foel lies approx. 6.5km from the site to the north east and Moel Maenefa approx. 6.5-7km to the east. The Offa's Dyke Path National Trail lies close to both of these features.*<br>*It is usual practice in the search area to identify high sensitivity receptors (e.g. AONB, viewers from elevated viewpoints, National Trail) and these may be included in the refined study area.* | It is acknowledged that at distance, receptors (in this case the AONB) at or beyond 5km, even when viewed from elevated locations are unlikely to have a significant effect. This correlates with the findings of this chapter which found no potential for significant visual effects at distant visual receptors e.g. demonstrated at Viewpoint 8 – Rhuddlan which is closer to the OnSS site (at 3.7km) than the AONB views described here. See section 2.12.1 of this chapter.<br>The relationship of the OnSS site with the industrial context of St Asaph Business Park (SABP) is also |

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| | *A viewpoint from the AONB could be included, if only to demonstrate that there are unlikely to be significant effects, however NRW consider significant visual effects on the AONB unlikely due to the distances involved and the location of the substation to the west of the existing industrial estate in views from the AONB. Therefore, NRW would not insist on a viewpoint from the AONB in this case and consider it can be scoped out.*<br><br>*NB* This is on the basis that the Substation would be of typical design, with no unusually tall or large buildings.'* | acknowledged and agreed to be a moderating factor in some views.<br><br>No amendments to proposed viewpoints were presented within the PEIR, however, a viewpoint at Y Foel on elevated land to the east of Dyserth, was agreed following Statutory consultation and a visualisation has been prepared for Y Foel as viewpoint 9, see s42 consultation notes below. |
| Denbighshire County Council, S42 11/10/21 | *'The Council accept adverse visual impacts associated with landfall and cable corridor will be restricted to the construction phase, and subject to landscaping being carried out to restore and enhance land after completion of works, this element of the onshore works will not have any permanent significant effects.* | The temporary nature of effects resulting from the onshore ECC and landfall are noted and agreed.<br><br>In relation to the second point regarding the OnSS, the LVIA is very clear that the rural character would be altered within the locality of the |

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| | *However, the Council has significant concerns with the proposed location of the substation, which is located on agricultural land to the north of Glascoed Road, and to the west of St. Asaph Business Park and immediately west of Glascoed nature reserve.*<br><br>*Whilst the site selected is close to the St Asaph business park, it is rural in character and it is clearly distinct from the St Asaph Business Park and is set away from existing substations and electricity infrastructure; the Council consider the rural character of the site has been underplayed in the PEIR, and that the proposal would result in industrial development encroaching into the open countryside.*<br><br>*It is noted that the impact on the Eastern Lowland (Cefn Meiriadog Vale Slopes) landscape area is identified as significant during construction and 1 year post construction, but not significant longer term as* | site and is therefore in agreement with DCC and so is not underplayed in the assessment of landscape character presented in Section 2.11.<br><br>The landscape planting is regarded to have a mitigating effect on the character of the Eastern Lowland (Cefn Meiriadog Vale Slopes) as it would moderate the effect on key characteristics of the wider area but also within the localised area immediately surrounding the site. |

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| | *it is assumed landscaping would have become established by this stage.'* | |
| Denbighshire County Council, S42 11/10/21 | *'Landscaping is put forward as necessary mitigation, and the substation site has in part been selected as it provides sufficient area around the site to allow for landscaping.*<br><br>*At this stage, the substation type is yet to be selected and the landscaping details have not been defined. However, from visualisations provided, owing to the likely height of substation infrastructure, it is clear that the landscaping would not fully screen the views of substation and adverse impacts cannot be fully mitigated.*<br><br>*Until the substation type is defined a landscaping scheme is developed, the Council cannot agree that the effects will not be significant in the longer term.* | Following Statutory consultation, the refinement of the design at ES stage has resulted in a more focussed understanding of the mitigating effect of landscape planting to the effect of the OnSS and has included further mitigating measures specifically in relation to the properties on Glascoed Road as set out in Section 2.9 and in the Outline Landscape and Ecological Management Plan (OLEMP) application ref: 8.4).<br><br>The SoS agreed that the effects of operational lighting of the OnSS should be scoped out of the assessment, the LVIA has therefore scoped it out. The effects of |

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| | *It is also not clear if operation lighting has been factored into the LVIA assessment of effect.*<br><br>*Significant effects are also identified for a number for visual receptors, including a number of residential properties along Glascoed Road, and again until the substation type is finalised, and landscaping defined, the Council cannot agree that significance of effect upon residential receptors will be mitigated longer term.'* | construction lighting are included in the LVIA. |
| Denbighshire County Council, S42 11/10/21 | *'The substation site is also opposite the Denbighshire Memorial Park and Crematorium, and the Council has concerns a substation in this location would affect the tranquil setting currently afforded to the crematorium.'* | The Denbighshire Memorial Park and Crematorium has been included as a visual receptor in the LVIA. See section 2.12. |
| Denbighshire County Council, S42 11/10/21 | *'The Council therefore do not support the proposal to site a substation in this location, and instead consider the substation should* | The development of AyM has been shaped by early engagement with a wide range of stakeholders |

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| | *be re-located to a site which better relates to the Business Park and existing substations and electricity infrastructure.'* | including DCC, landowners and people with interests in the land, together with a range of technical disciplines, including but not limited to electrical, engineering, heritage, human environment, ecological and socio-economic appraisal studies.<br>There are multiple technical and environmental reasons why alternative sites were not selected. Volume 1, Chapter 4: Site Selection and Consideration of Alternatives (application ref: 6.1.4) sets out the iterative process that has influenced the design and siting of the OnSS. |
| Denbighshire County Council, S42 11/10/21 | *'In terms of impact on the Clwyd Range and Dee Valley AONB, the onshore proposals do not directly affect the AONB but the Council would emphasise the need to reinstate and* | A viewpoint at Y Foel on elevated land to the east of Dyserth, was agreed during further consultation with NRW (see below) and a |

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| | *enhance all landscape features removed (trees/woodlands/hedges) to accommodate the export cables and/or compensatory planting with a view to retaining and strengthening the characteristic Vale of Clwyd landscape when viewed from the higher ground of the AONB.'* | visualisation has been prepared for Y Foel as viewpoint 9. This viewpoint is considered in section 2.12.<br>Reinstatement and enhancement is considered further in the OLEMP (application ref: 8.4). |
| NRW, S42 11/10/21 | *'Regarding the onshore substation, no viewpoint has been included from elevated ground to the east within the Clwydian Range and Dee Valley AONB. Whilst we consider significant visual effects unlikely, NRW previously suggested via the [Expert Topic Group] ETG that a viewpoint e.g. from Y Foel, would confirm this. The LVIA states that a viewpoint at Rhuddlan or St. Asaph confirms that visual effects from the AONB are unlikely. However, neither viewpoint is within the AONB; the Rhuddlan viewpoint is at low elevation,* | The AONB is outside the study area to the east of the Onshore ECC and OnSS. A meeting was held with NRW to discuss their s42 response and in particular their request for the AONB to be represented in the LVIA.<br>A viewpoint at Y Foel on elevated land to the east of Dyserth, was agreed during this consultation and a visualisation has been prepared for Y Foel as viewpoint 9. This viewpoint is considered in section |

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| | *adjacent to the River Clwyd and the St. Asaph viewpoint is within the urban area.*<br><br>*The substation buildings/plant would be up to 15m high with roofs and upper parts potentially visible from high ground. Therefore, NRW confirm that a viewpoint from elevated ground in the AONB would be helpful, if only to potentially scope out these effects.'* | 2.12, with the agreement recorded in the Evidence Plan Report (application ref: 8.2). |
| Welsh Government, S42 11/10/21 | *'The onshore development runs close to the boundaries of the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB). There is an aspiration by the Welsh Government to designate a new National Park in north-east Wales. This is subject to Natural Resources Wales carrying out the statutory designation process, part of which will be to examine where the boundaries of any new Park should lie.*<br><br>*While National Parks and AONBs enjoy similar protections in terms of major developments,* | At the time of writing this LVIA ES Chapter there is no information available on the proposed boundary of such a designation. A viewpoint at Y Foel on elevated land to the east of Dyserth, was agreed during further consultation with NRW (see below) and a visualisation has been prepared for Y Foel as viewpoint 9. This viewpoint is considered in section 2.12 |

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| | *there is a possibility that the boundary of a new National Park may not coincide with the current AONB (which would be de-designated). There may be future implications of the designation on the onshore development linked to Awel y Môr'* | |
| Martin Griffiths, s42 7/9/21 | *'I also note that the detriment to the view from the properties is scored as low because 'high' hedges are alongside the road, this may be the case during the brief period that the hedges are in full leaf (maximum 3 1/2 months per annum) but as they are not evergreen and are also regularly trimmed down to approx 4-5 foot high, therefore the substation shall be much more visible for the majority of the year than is reported. This is also the case with regard properties number 7 & 8, there is very few trees in the garden of the lodge opposite and as they are again only in full leaf for short periods of the year* | The assessment considers a worst case position in its assessment of effects i.e. trees and hedges not in leaf. Photography was captured when trees and hedgerows were not in leaf and therefore represents a worst case situation in relation to potential visual effects. It should also be noted that the hedgerows on Glascoed Rd appear to have been trimmed not long before the photography was captured. |

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| | *(none are evergreen) this will allow the substation to be seen for a substantial period of the year.'* | |
| Denbighshire County Council and LUC. Meeting 7/2/22 | Meeting held to discuss landscape mitigation proposals. The mitigation principles of the ONSS were presented on screen at the meeting along with the outline landscape mitigation proposals that are presented in the ES. | LUC comments received in LUC Draft Review dated March 2022 |
| LUC Draft Review dated March 2022 | 2.8 - There has been communication with consultees regarding whether effects on the Clwydian Range and Dee AONB should be considered, or whether a viewpoint should be included to illustrate potential effects (PEIR Table 2). Reasons provided as justification for scoping this out are considered appropriate. | A viewpoint at Y Foel on elevated land to the east of Dyserth, was agreed during further consultation with NRW (see below) and a visualisation has been prepared for Y Foel as viewpoint 9. This viewpoint is considered in section 2.12 |

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| LUC Draft Review dated March 2022 | 2.30 - The Developer should develop design of the OnSS and mitigation further, and agree this with the Council. It is acknowledged that a maximum design envelope or worst-case approach has been taken, and this is appropriate for PEIR stage. However, we suggest that further detail is required to allow consideration and illustration of potential effects on most sensitive landscape and visual receptors. | Further detail is provided in the ES visualisations with both AIS and GIS designs represented. The ES visualisations have been produced to Accurate Visual Representation (AVR) Level 4 in line with Landscape Institute (LI) guidance. |
| LUC Draft Review dated March 2022 | 2.31 - It is acknowledged that assessment of effects resulting from operational lighting have been scoped out of the LVIA, but the Developer should develop details of the operational lighting for the OnSS with a view to minimising effects, and agree these with the Council. | As acknowledged by LUC, operational lighting effects are not likely to be significant. There is a DCO Requirement for operational lighting to be approved by DCC prior to installation. |

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| LUC Draft Review dated March 2022 | 2.32 - Using more detailed design information, the Developer should provide visualisations from viewpoints which represent the most sensitive receptors (e.g. VP1, VP3 and VP5) to AVR Level 3. | The ES visualisations have been produced to AVR Level 4 in line with LI guidance. |
| LUC Draft Review dated March 2022 | 3.20 - The Developer should identify an alternative VP location, from which there would be visibility of the OnSS, within the Bodelwyddan Park RHPG. The Developer should also explain the implications of the Draft Order Limits extending into the RHPG and clarify the potential for direct effects, in addition to indirect visual effects, upon this designated landscape. | The OL has reduced from that presented in PEIR and is no longer within the RHPG boundary. Viewpoint 6 is located at the most elevated position within the publicly accessible area of the RHPG. The RHPG is also considered in the context of setting within the cultural heritage assessment in Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8) |
| LUC Draft Review dated March 2022 | 3.21 - The Developer should identify an alternative VP location, from which there would be visibility of the OnSS, within St | VPs were agreed under the auspices of the EIA Evidence Plan. Alternative locations were explored |

| DATE AND CONSULTATION PHASE/ TYPE | CONSULTATION AND KEY ISSUES RAISED | SECTION WHERE COMMENT ADDRESSED |
|---|---|---|
| | Asaph. The Developer should also describe the potential for visual effects upon residents of, and visitors to, the settlement. | as part of the initial field survey and VP 6 was agreed as having the least restricted view from an elevated position within St Asaph that has theoretical visibility. As described in the preliminary assessment (see Table 12) it is considered that there is no potential for significant effects from St Asaph due to distance and intervening landscape elements (hedges, woodlands and trees), which combine to limit visibility from of the OnSS. |
| LUC Draft Review dated March 2022 | 3.22 - With reference to VP1, the Developer should provide an assessment of potential visual effects on the residents of the Faenol-Bropor farmstead. | VPs were agreed under the auspices of the EIA Evidence Plan. The Faenol-Bropor farmstead is considered in detail in section 2.12 |
| LUC Draft Review dated March 2022 | 3.23 - With reference to VP2 (but acknowledging the difference in elevation | VPs were agreed under the auspices of the EIA Evidence Plan. |

| DATE AND CONSULTATION PHASE/ TYPE | CONSULTATION AND KEY ISSUES RAISED | SECTION WHERE COMMENT ADDRESSED |
|---|---|---|
| | and foreground screening), the Developer should provide an assessment of potential visual effects on visitors to the Glascoed Nature Reserve. | Visitors to the Nature Reserve are included in the sensitivity assessment at Viewpoint 2, see section 2.12. |
| LUC Draft Review dated March 2022 | 3.24 - The Council should inform the Developer of planning applications which would require consideration as part of a CLVIA prior to submission of the ES. | DCC provided a comprehensive list of potential cumulative sites in Oct 21 that have been considered along with an updated search of DCC's planning website to collate cumulative list. This approach has been signed off under auspices EIA Evidence Plan. |

## 2.4 Scope and methodology

15 The project characteristics for the onshore elements of AyM are set out in Volume 3, Chapter 1: Onshore Project Description (application ref 6.3.1).

16 For ES assessment the design of the onshore elements of AyM include some optionality in relation to the final size and locations of infrastructure being proposed. The design and options of the Onshore elements are described in detail within Volume 3, Chapter 1, Onshore Project Description (application ref 6.3.1). The LVIA assessment parameters are summarised in this chapter, in section 2.8.

### 2.4.1 Types of effect

17 The LVIA predicts, describes and assesses the likely significant effects that AyM will have on the landscape and visual resource, and covers the following types of effect which may arise during construction, decommissioning or operation of the onshore elements of the AyM.

#### Landscape Effects

18 Landscape effects potentially arise from the introduction of new onshore elements which may be visible and may therefore affect the perceived character of the landscape. This may also include effects on designated landscapes.

19 GLVIA 3, paragraph 5.4, advises that Landscape Character Assessment should be regarded as the main source for baseline studies and identifies the following factors which combine to create areas of distinct landscape character:

"the elements that make up the landscape in the study area including:

- *physical influences - geology, soils, landform, drainage and water bodies*;
- *landcover, including different types of vegetation and patterns and types of tree cover*; and
- *the influence of human activity, including landuse and management, the character of settlements and buildings, and pattern and type of fields and enclosure*.

- *The aesthetic and perceptual aspects of the landscape - such as, for example, its scale, complexity, openness, tranquillity or wildness*;
- *The overall character of the landscape in the study area, including any distinctive Landscape Character Types or Areas that can be identified, and the particular combinations of elements and aesthetic and perceptual aspects that make each distinctive, usually by identification as key characteristics of the landscape.*"

20 In Wales, LANDMAP data is used to provide further insight into the character and components of the landscape.

### Visual Receptors

21 Visual effects potentially arise from the introduction of onshore elements in views and the resultant effects on visual amenity experienced by people from principal visual receptors (for example groups of people, such as within settlements, using transport routes or recreational trails) and representative viewpoints.

### Cumulative Effects

22 In addition to the above, cumulative effects may arise where the study areas for two or more projects overlap so that they are experienced at a proximity where they may have a greater incremental effect, or where projects may combine to have a sequential effect. The LVIA assesses the cumulative effects that would arise through the development of AyM.

## 2.4.2 Study area

23 The initial step in the LVIA is the establishment of the study area for the assessment. The onshore LVIA study areas for the onshore elements of AyM extend to define a limit beyond which professional judgement considers it would be unlikely for significant effects to arise. This judgement is based on knowledge of similar projects, an understanding of the character of the local landscape and scale of the construction and development of the onshore components of AyM.

24 The study area for the LVIA of the onshore ECC and landfall extends to a 1 km buffer around the onshore ECC. This broadly consists of a 40-60m wide corridor along the cable route, however, the onshore ECC widens in some areas due to trenchless crossings and landfall and the study area is therefore wider in those areas. The proposed study area for the LVIA of the OnSS extends to a 5km radius around the OnSS. Together, these form the onshore LVIA study area for the onshore elements of AyM (Volume 6, Annex 2, Figure 2.1 (application ref 6.6.2.2.1)).

25 The onshore LVIA study area is not intended to provide a boundary beyond which the onshore elements of AyM would not be seen, but rather to define the area within which there is potential for significant landscape or visual effect. In addition, a significant effect is very unlikely to occur towards the edges of the onshore LVIA study area.

### 2.4.3 Field survey

26 Field survey work was undertaken during periods of clear visibility between March and June 2021 and also in January 2022. This has allowed the landscape character and the visual amenity of the study area to be experienced in a range of different conditions and seasonal variation. Field surveys were carried out throughout the LVIA study area from publicly accessible locations.

27 For the OnSS, the focus is on the areas shown on the ZTV (Volume 6, Annex 2, Figures 2.8a-c (application ref 6.6.2.2.9 to 6.6.2.2.11)) to have theoretical visibility. For the proposed onshore ECC and landfall the focus of the field survey is on the landscape which is physically affected, although visibility of these elements is also considered in the 1 km onshore ECC study area as part of the wider field survey analysis. The field survey allows the assessors to judge the likely scale, distance, extent and prominence of the onshore elements of AyM directly.

28 The landscape of the area surrounding the proposed onshore elements of AyM has been assessed for any particular features that contribute to landscape character or that are important to the wider landscape setting. The field surveys provided an experience of the character areas of the onshore LVIA study areas and verification of how these areas might be affected by the onshore elements of AyM.

29 The visual amenity of the onshore LVIA study area was surveyed from receptors representative of the range of views and viewer types likely to experience the onshore elements of AyM. Views from a variety of distances, aspects, elevations and extents are included.

### 2.4.4 Elements Scoped Out of Assessment

30 This LVIA includes a 'Preliminary Assessment' which identifies those aspects of the landscape and visual resource that do not have potential to undergo a significant effect as a result of the onshore elements of AyM. These aspects of the landscape and visual resource are then scoped out of the detailed assessment. The Preliminary Assessment is presented in Sections 2.11, 2.12 and 2.14 of this report. This 'Preliminary Assessment' carried out as part of the LVIA in the ES should not be confused with the 'Preliminary Environmental Information' presented within the PEIR.

31 In the Scoping Opinion, the Secretary of State (SoS) agreed that the operational impacts of the landfall and onshore cable route could be scoped out of the assessment once the land has been restored, but that consideration would be required of the impact of any vegetation loss and the mitigation through replanting. These considerations have been made in the assessment of effects during the construction phase. The SoS also agreed that the effects of operational lighting of the OnSS should be scoped out of the assessment.

### 2.4.5 Guidance

32 Guidance relevant to the LVIA is set out in the following documents:

- Landscape Institute and IEMA (2013) - Guidelines for Landscape and Visual Impact Assessment: Third Edition (GLVIA3);
- Natural England (2014). An Approach to Landscape Character Assessment;
- Planning Inspectorate (2018) Advice Note Nine: Rochdale Envelope;
- Planning Inspectorate (2019). Advice note seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects - Version 2

- Natural Resources Wales (2021). Guidance Note 046 - Using LANDMAP in Landscape and Visual Impact Assessments (LVIA);
- NatureScot (2021). Assessing the Cumulative Impact of Onshore Wind Energy Developments;
- Landscape Institute (2019). Visual Representation of Development Proposals; and
- NatureScot (2017) - Visual Representation of Windfarms, Guidance (Version 2.2) (herein referred to as 'NatureScot Visual Representation').

33 Although some of this guidance is from publications by bodies located in other UK nations it is commonly drawn on for work carried out in Wales where no equivalent guidance exists. The preparation of visual representations that accord with the NatureScot Visual Representation guidance has been agreed with stakeholders as part of the SLVIA Expert Topic Group (ETG) consultations.

## 2.5 Assessment criteria and assignment of significance

### 2.5.1 Approach to assessment

34 The LVIA is undertaken using the following steps:

- The features of the onshore elements of AyM that may result in landscape and visual effects are described;
- The overall scope of the assessment is defined, including the study area and range of possible landscape and visual effects;
- The landscape baseline is established using landscape character assessment and the ZTV maps, to identify landscape receptors that may be affected and their key characteristics and value;
- The visual baseline is established by identifying the extent of possible visibility, identifying the people who may be affected, identifying visual receptors and selecting viewpoints;
- A preliminary assessment is undertaken of landscape and visual receptors using ZTV analysis, to identify which landscape and visual receptors are unlikely to be significantly affected and those that are more likely to be significantly affected, which require to be assessed in more detail;
- Interactions are identified between the proposed onshore elements of AyM and landscape and visual receptors, to predict potentially significant effects arising and measures are proposed to mitigate effects;

- An assessment of the susceptibility of landscape and visual receptors to specific change and the value attached to landscape receptors and views is undertaken, combining these judgements to assess the sensitivity of the landscape and visual receptor to the proposed onshore elements of AyM;
- An assessment of the size/ scale of landscape effect, the degree to which landscape elements are altered and the extent to which the effects change the key characteristics of the landscape is undertaken, combining these judgements to assess the magnitude of change on the landscape receptor;
- An assessment of the size/ scale of visual effect, the extent to which the change would affect views, whether this is unique or representative of a wider area, and the position of the proposed onshore elements of AyM in relation to the principal orientation of the view and activity of the receptor. These judgements are combined to assess the magnitude of change on the visual receptor; and
- The assessments of sensitivity to change and magnitude of change are combined to assess the significance of landscape and visual effects.

35 GLVIA3 sets out an approach to the assessment of magnitude of change in which three separate considerations are combined within the magnitude of change rating. These are the size or scale of the effect, its geographical extent and its duration and reversibility. Notably GLVIA3 is not a prescriptive methodology but guidance. The guidance suggests that this approach is to be applied in respect of both landscape and visual receptors. It is considered that the process of combining all three considerations in one rating can distort the aim of identifying likely significant effects of development. For example, a high magnitude of change, based on size or scale, may be reduced to a lower rating if it occurred in a localised geographical area and for a short duration. This might mean that a potentially significant effect will be overlooked if effects are diluted down due to their limited geographical extents and/ or duration or reversibility.

36 As advocated by GLVIA3 the assessment has used professional judgement in defining the methodology for the LVIA. The consideration of the size or scale of the effect, its geographical extent and its duration and reversibility has therefore been undertaken separately, by basing the magnitude of change on size or scale to determine where significant and not significant effects occur, and then describing the geographical extents of these effects and their duration and reversibility separately. Duration and reversibility are stated separately in relation to the assessed effects (for example as short/medium/long-term and temporary/permanent) and are considered as part of drawing conclusions about likely significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.

37 The assessment methodology utilises six scales of magnitude of change - high, medium-high, medium, medium-low, low and negligible/none; which are preferred to the 'maximum of five categories' suggested in GLVIA3 as a means of clearly defining and summarising magnitude of change judgements.

### 2.5.2 Defining impact significance - landscape

#### Sensitivity of landscape receptor

38 The sensitivity of a landscape character receptor is a combination of the judgements made about the value associated with that receptor and the susceptibility of the receptor to the development proposed.

#### Value of the landscape receptor

39 The value of a landscape character receptor is a reflection of the value that society attaches to that landscape. The assessment of the landscape value is classified as high, medium-high, medium, medium-low or low and the basis for this assessment is made clear using evidence and professional judgement, based on the following range of factors.

40 Landscape designations - A receptor that lies within the boundary of a recognised landscape related planning designation is of increased value, depending on the proportion of the receptor that is affected and the level of importance of the designation which may be international, national, regional or local. The absence of designations does not however preclude value, as an undesignated landscape character receptor may be valued as a resource in the local or immediate environment. LANDMAP visual and sensory evaluation is also a consideration in relation to landscape value.

41 Landscape quality - The quality of a landscape character receptor is a reflection of its attributes, such as scenic quality, sense of place, rarity and representativeness and the extent to which its valued attributes have remained intact. A landscape with consistent, intact, well-defined and distinctive attributes is considered to be of higher quality and, in turn, higher value, than a landscape where the introduction of elements has detracted from its character.

42 Landscape experience - The experiential qualities that can be evoked by a landscape receptor can add to its value and relates to a number of factors including:

- the perceptual responses it evokes;
- the cultural associations that may exist in literature or history, or the iconic status of the landscape in its own right;
- the recreational value of the landscape; and
- the contribution of other values relating to the nature conservation or archaeology of the area.

## Landscape susceptibility to change

43 The susceptibility of a landscape character receptor to change is a reflection of its ability to accommodate the changes that will occur as a result of the addition of the proposed development. Some landscape receptors are better able to accommodate change as a result of the development than others due to certain characteristics that are indicative of capacity to accommodate change. These characteristics may or not also be special landscape qualities that underpin designated landscapes.

44 The assessment of the susceptibility of the landscape receptor to change is classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement. The following indicators of landscape susceptibility are considered in the context of the development proposed:

- **Overall strength and robustness:** Collectively the overall characteristics and qualities of a particular landscape result in a strong and robust landscape that is capable of reasonably accommodating the influence of the onshore elements of AyM without undue adverse effects on the special landscape qualities (in the case of a designated landscape) or the key characteristics.
- **Landscape scale and topography:** The scale and topography are large enough to physically accommodate the influence of the onshore elements of AyM. Topographical features such as more complex, distinctive or small-scale coastal landforms are likely to be more susceptible than simple, broad and homogenous coastal landforms.
- **Openness and enclosure:** Openness in the landscape may increase susceptibility to change because it can result in wider visibility, however an open landscape may also be larger scale and simple, which would decrease susceptibility. Conversely, enclosed landscapes can offer more screening potential, limiting visibility to a smaller area, however they may also be smaller scale and more complex which would increase susceptibility.
- **Skyline:** Prominent and distinctive skylines and horizons with important landmark features that are identified in the landscape character assessment, are generally considered to be more susceptible to development in comparison to broad, simple skylines which lack landmark features or contain other infrastructure features.
- **Relationship with other development and landmarks:** Contemporary landscapes where there are existing similar developments or other forms of development (industry, mineral extraction, masts, urban fringe / large settlement, major transport routes) that already have a characterising influence result in a lower susceptibility to development in comparison to areas characterised by limited development or smaller scale, historic development and landmarks.

- **Perceptual qualities:** Notable landscapes that are acknowledged to be particularly scenic, wild or tranquil are generally considered to be more susceptible to development in comparison to ordinary, cultivated or farmed / developed landscapes where perceptions of 'wildness' and tranquillity are less tangible. Landscapes which are either remote or appear natural may vary in their susceptibility to development.
- **Landscape context and association:** the extent to which the onshore elements of AyM will influence the character of landscape receptors across the study area relates to the associations that exist between the landscape receptor within which the onshore elements of AyM are located and the landscape receptor from which the onshore elements of AyM are experienced. In some situations, this association is strong, where the landscapes are directly related, and in other situations weak, where the landscape association is weak. The context and visual connection to areas of adjacent landscape character or designations has a bearing on the susceptibility to development.

## Landscape sensitivity rating

45 An overall sensitivity assessment of the landscape receptor is made by combining the assessment of the value of the landscape character receptor and its susceptibility to change. The evaluation of landscape sensitivity has been applied for each landscape receptor - high, medium-high, medium, medium-low and low - by combining individual assessments of the value of the receptor and its susceptibility to change.

## Landscape magnitude of change

46 The magnitude of change affecting landscape receptors is an expression of the scale of the change that will result from the onshore elements of AyM and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change would be experienced.

## Size or scale of change

47 This criterion relates to the size or scale of change to the landscape that will arise as a result of the onshore elements of AyM, based on the following factors.

- **Landscape elements:** The degree to which the pattern of elements that makes up the landscape character is altered by the onshore elements of AyM, by removal or addition of elements in the landscape. The magnitude of change will generally be higher if the features that make up the landscape character are extensively removed or altered, and/or if many new elements are added to the landscape.
- **Landscape characteristics:** The extent to which the effect of the onshore elements of AyM changes, physically or perceptually, the key characteristics of the landscape that may be important to its distinctive character. This may include, for example, the scale of the landform, its relative simplicity or irregularity, the nature of the landscape context, the grain or orientation of the landscape, the degree to which the receptor is influenced by external features and the juxtaposition of the onshore elements of AyM in relation to these key characteristics. If the onshore elements of AyM are located in a landscape receptor that is already affected by other similar development, this may reduce the magnitude of change, particularly if there is a high level of integration and the developments form a unified and cohesive feature in the landscape.
- **Landscape designation:** In the case of designated landscapes, the degree of change is considered in light of the effects on the special landscape qualities which underpin the designation and the effect on the integrity of the designation. All landscapes change over time and much of that change is managed or planned. Often landscapes will have management objectives for 'protection' or 'accommodation' of development. The scale of change may be localised, or occurring over parts of an area, or more widespread affecting whole landscape receptors and their overall integrity.
- **Distance**: The size and scale of change is also strongly influenced by the proximity of the onshore elements of AyM to the receptor. Distance may be an influential factor to the extent that over a long range the scale of the influence on landscape receptors may be small or very limited. Conversely, landscapes closest to the development are likely to be most affected. Where the development is located within a 'host' landscape character area this would be directly affected whilst adjacent areas of landscape character would be indirectly affected.

- **Amount and nature of change:** The amount of the onshore elements of AyM that is seen. Generally, the greater the amount of the onshore elements of AyM that can be seen, the higher the scale of change. Generally, the magnitude of change is likely to be lower where AyM is largely perceived to be at a distance, rather than 'within' the landscape being considered.

## Geographical extent

48 The geographic extent over which the landscape effects are experienced is also assessed, which is distinct from the size or scale of effect. This evaluation is not combined in the assessment of the level of magnitude, but instead expresses the extent of the receptor that will experience a particular magnitude of change and therefore the geographical extents of the significant and non-significant effects.

49 The extent of the effects will vary depending on the specific nature of the onshore elements of AyM and is principally assessed through analysis of the extent of perceived changes to the landscape character through visibility of the onshore elements of AyM.

## Duration and reversibility

50 The duration and reversibility of landscape effects is based on the period over which onshore elements of AyM are likely to exist (during construction and operation) and the extent to which these elements are removed (during decommissioning) and its effects reversed at the end of that period. Long-term, medium-term and short-term landscape effects are defined as follows:

- long-term - more than 10 years (may be defined as permanent or reversible);
- medium-term - 6 to 10 years; and
- short-term - 1 to 5 years.

## Landscape magnitude of change rating

51 The 'magnitude' or 'degree of change' resulting from the onshore elements of AyM is described as 'High', 'High-medium', 'Medium', 'Medium-low' 'Low' or 'Negligible'. In assessing magnitude of change, the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (for example as short / medium / long-term and temporary / permanent).

## Evaluating landscape effects and significance

52 The level of landscape effect is evaluated primarily through the combination of landscape sensitivity and magnitude of change. Once the level of effect has been assessed, a judgement is then made as to whether the level of effect is 'significant' or 'not significant' as required by the Environmental Impact Assessment (EIA) Regulations. This process is assisted by the matrix in Table 3 which is used to guide the assessment. Geographical extent and duration and reversibility are considered relevant in drawing conclusions about significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.

53 Further information is also provided about the nature of the effects (whether these would be direct / indirect; temporary / permanent / reversible; beneficial / neutral / adverse or cumulative).

54 A significant effect occurs where the combination of the variables results in the onshore elements of AyM having a defining effect on the landscape receptor, or where changes of a lower magnitude affect a landscape receptor that is of particularly high sensitivity. A major loss or irreversible effect over an extensive area or landscape character, affecting landscape elements, characteristics and / or perceptual aspects that are key to a nationally valued landscape are likely to be significant, particularly if they are of long duration and irreversible.

55 A non-significant effect would occur where the effect of the onshore elements of AyM is not defining, and the landscape character of the receptor continues to be characterised principally by its baseline characteristics. Equally a small-scale change experienced by a receptor of high sensitivity may not significantly affect the special landscape quality or integrity of a designation. Reversible effects, on elements, characteristics and character that are of small-scale or geographical extent or affecting lower value receptors, are unlikely to be significant.

### 2.5.3 Defining impact significance - visual

56 Visual Effects are concerned wholly with the effect of the onshore elements of AyM on views, and the general visual amenity. Visual Effects are defined by the Landscape Institute in GLVIA 3, paragraphs 6.1 as follows:

> "An assessment of visual effects deals with the effects of change and development on views available to people and their visual amenity. The concern ... is with assessing how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views."

57 Visual effects are identified for different receptors (people) who would experience the view at their place of residence, within their community, during recreational activities, at work, or when travelling through the area. The visual effects may include the following:

- **Visual effect:** a change to an existing static view, sequential views, or wider visual amenity as a result of development or the loss of particular landscape elements or features already present in the view;
- **Cumulative visual effects:** the cumulative or incremental visibility of similar types of development may combine to have a cumulative visual effect.

58 The level of visual effect (and whether this is significant) is determined through consideration of the sensitivity of the visual receptor and their view and the magnitude of change that would be brought about by the onshore elements of AyM.

## Zone of Theoretical Visibility (ZTV)

59 Plans mapping the ZTV are used to analyse the extent of theoretical visibility of the OnSS. The ZTVs provide a starting point in the assessment process and tend towards giving a 'worst case' or greatest calculation of the theoretical visibility. ZTV production for the LVIA, including limitations, is described in section 2.5.7 of this report.

## Viewpoint Analysis

60 Viewpoint analysis is used to assist the assessment and is conducted from selected viewpoints within the study area. The purpose of this is to assess both the level of visual effect for particular receptors and to help guide the design process and focus of the assessment. A range of viewpoints are examined in detail and analysed to determine whether a significant visual effect would occur.

61 The assessment involves visiting the viewpoint location and viewing visualisations prepared for each viewpoint location. The fieldwork is generally conducted in periods of fine weather with good visibility and considers seasonal changes such as reduced leaf cover or hedgerow maintenance. The viewpoint analysis is used to assist in the assessment of effects on visual receptor locations as well as landscape character effects reported in the LVIA.

## Evaluating visual sensitivity to change

62 In accordance with paragraphs 6.31-6.37 of GLVIA3, the sensitivity of visual receptors is determined by a combination of the value of the view and the susceptibility of the visual receptors to the change likely to result from the onshore elements of AyM on the view and visual amenity.

## Value of the view

63 The value of a view or series of views reflects the recognition and the importance attached either formally through identification on mapping or being subject to planning designations, or informally through the value which society attaches to the view(s). The value of a view has been classified as high, medium-high, medium, medium-low or low and the basis for this assessment has been made clear using evidence and professional judgement, based on the following criteria.

- **Formal recognition** - The value of views can be formally recognised through their identification on OS or tourist maps as formal viewpoints, sign-posted and with facilities provided to add to the enjoyment of the viewpoint such as parking, seating and interpretation boards. Specific views may be afforded protection in local planning policy and recognised as valued views. Specific views can also be cited as being of importance in relation to landscape or heritage planning designations, for example the value of a view has been increased if it presents an important vista from a designed landscape or lies within or overlooks a designated area, which implies a greater value to the visible landscape.
- **Informal recognition** - Views that are well-known at a local level and/or have particular scenic qualities can have an increased value, even if there is no formal recognition or designation. Views or viewpoints are sometimes informally recognised through references in art or literature and this can also add to their value. A viewpoint that is visited or appreciated by a large number of people will generally have greater importance than one gained by very few people.

## Susceptibility to change

64 Susceptibility relates to the nature of the viewer experiencing the view and how susceptible they are to the potential effects of the onshore elements of AyM. A judgement to determine the level of susceptibility therefore relates to the nature of the viewer and their experience from that particular viewpoint or series of viewpoints, classified as high, medium-high, medium, medium-low or low and based on the following criteria:

- **Nature of the viewer** - The nature of the viewer is defined by the occupation or activity of the viewer at the viewpoint or series of viewpoints. The most common groups of viewers considered in the visual assessment include residents, motorists, and people taking part in recreational activity or working. Viewers, whose attention is focused on the landscape, or with static long-term views, are likely to have a higher susceptibility. Viewers travelling in cars or on trains will tend to have a lower susceptibility as their view is transient and moving. The least sensitive viewers are usually people at their place of work as they are generally less susceptible to changes in views.
- **Experience of the viewer** - The experience of the visual receptor relates to the extent to which the viewer's attention or interest may be focused on the view and the visual amenity they experience at a particular location. The susceptibility of the viewer to change arising from the onshore elements of AyM may be influenced by the viewer's attention or interest in the view, which may be focused in a particular direction, from a static or transitory position, over a long or short duration, and with high or low clarity. For example, if the principal outlook from a settlement is aligned directly towards the onshore elements of AyM, the experience of the visual receptor is altered more notably than if the experience relates to a glimpsed view seen at an oblique angle from a car travelling at high speed. The visual amenity experienced by the viewer varies depending on the presence and relationship of visible elements, features or patterns experienced in the view and the degree to which the landscape in the view may accommodate the influence of the onshore elements of AyM.

## Visual sensitivity rating

65 An overall level of sensitivity is applied for each visual receptor or view - high, medium-high, medium, medium-low or low by combining individual assessments of the value of the view and the susceptibility of the visual receptor to change. Each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint, is assessed in terms of their sensitivity.

## Visual magnitude of change

66 The visual magnitude of change is an expression of the scale of the change that will result from the onshore elements of AyM and is dependent on a number of variables regarding the size or scale of the change and the geographical extent over which the change would be experienced. A separate assessment is also made of the duration and reversibility of visual effects.

## Size or scale of change

67 An assessment is made regarding the size or scale of change in the view that is likely to be experienced as a result of the onshore elements of AyM, based on the following criteria:

- **Distance:** the distance between the visual receptor/viewpoint and the onshore elements of AyM. Generally, the greater the distance, the lower the magnitude of change, as the onshore elements of AyM will constitute a smaller scale component of the view.
- **Size:** the amount and size of the onshore elements of AyM that is seen. Visibility may range from small or partial visibility of the onshore elements of AyM, to all of the onshore elements being visible. Generally, the larger and greater number of the onshore elements of AyM that appear in the view, the higher the magnitude of change. This is also related to the degree to which the onshore elements of AyM may be wholly or partly screened by landform, vegetation (seasonal) and / or built form. Conversely open views are likely to reveal more of the onshore elements of AyM, particularly where this is a key characteristic of the landscape context.
- **Scale:** the scale of the change in the view, with respect to the loss or addition of features in the view and changes in its composition. The scale of the onshore elements of AyM may appear larger or smaller relative to the scale of the receiving landscape.

- **Field of view:** the vertical / horizontal field of view (FoV) and the proportion of the view that is affected by the onshore elements of AyM. Generally, the more of the proportion of a view that is affected, the higher the magnitude of change. If the onshore elements of AyM extend across the whole of the open part of the outlook, the magnitude of change is higher as the full view has been affected. Conversely, if the onshore elements of AyM cover just a narrow part of an open, expansive and wide view, the magnitude of change is likely to be reduced as it will not affect the whole open part of the outlook. This can in part be described objectively by reference to the horizontal / vertical FoV affected, relative to the extent and proportion of the available view.
- **Contrast:** the character and context within which the onshore elements of AyM are seen and the degree of contrast or integration of any new features with existing landscape elements, in terms of scale, form, mass, line, height, colour, luminance and motion. Developments which contrast or appear incongruous in terms of colour, scale and form are likely to be more visible and have a higher magnitude of change.
- **Consistency of image:** the consistency of image of the onshore elements of AyM in relation to other developments. The magnitude of change of onshore elements of AyM is likely to be lower if its layout design is broadly similar to other developments in the landscape, in terms of its scale, form and general appearance. New development is more likely to appear as logical components of the landscape with a strong rationale for their location.
- **Skyline / background:** Whether the onshore elements of AyM would be viewed against the skyline or a background landscape may affect the level of contrast and magnitude. If the onshore elements of AyM add to an already developed skyline the magnitude of change would tend to be lower.
- **Number:** generally, the greater the number of separate onshore elements of AyM seen simultaneously or sequentially, the higher the magnitude of change. Further effects would occur in the case of separate developments and their spatial relationship to each other would affect the magnitude of change. For example, development that appears as an extension to an existing development would tend to result in a lower magnitude of change than a separate, new development.

- **Nature of visibility:** the nature of visibility is a further factor for consideration. The onshore elements of AyM may be subject to various phases of development change and the manner in which the onshore elements of AyM may be viewed could be intermittent or continuous and / or vary seasonally, due to periodic management or leaf fall.

## Geographical extent

68 The geographic extent over which the visual effects has been experienced is also assessed, which is distinct from the size or scale of effect and is described in terms of the physical area or location over which it is experienced (described as a linear or area measurement). The extent of the effects varies according to the specific nature of the onshore elements of AyM and is principally assessed through ZTV, field survey and viewpoint analysis of the extent of visibility likely to be experienced by visual receptors.

## Duration and reversibility

69 The duration and reversibility of visual effects are based on the period over which the onshore elements of AyM are likely to exist (during construction and operation) and the extent to which the onshore elements of AyM are removed (during decommissioning) and the effects reversed at the end of that period.

70 Long-term, medium-term and short-term visual effects are defined as follows:

- long-term - more than 10 years (may be defined as permanent or reversible);
- medium-term - 6 to 10 years; and
- short-term - 1 to 5 years.

## Visual magnitude of change rating

71 The 'magnitude' or 'degree of change' resulting from the onshore elements of AyM is described as 'High', 'High-medium', 'Medium', 'Medium-low' 'Low' and 'Negligible'. In assessing the magnitude of change the assessment focuses on the size or scale of change and its geographical extent. The duration and reversibility are stated separately in relation to the assessed effects (for example as short / medium / long-term and temporary / permanent). The basis for the assessment of magnitude for each receptor is made clear using evidence and professional judgement.

## Evaluating visual effects and significance

72 The level of visual effect is evaluated through the combination of visual sensitivity and magnitude of change. Once the level of effect has been assessed, a judgement is then made (using professional judgement) as to whether the level of effect is 'significant' or 'not significant' as required by the relevant EIA Regulations. This process is assisted by the matrix in Table 3 which is used to guide the assessment. Geographical extent and duration and reversibility are considered as part of drawing conclusions about significance, combining with other judgements on sensitivity and magnitude, to allow a final judgement to be made on whether each effect is significant or not significant.

73 Further information is also provided about the nature of the effects (whether these would be direct / indirect; temporary / permanent / reversible; beneficial / neutral / adverse or cumulative).

74 A significant effect is more likely to occur where a combination of the variables results in the onshore elements of AyM having a defining effect on the view or visual amenity or where changes affect a visual receptor that is of high sensitivity.

75 A non-significant effect is more likely to occur where a combination of the variables results in the onshore elements of AyM having a non-defining effect on the view or visual amenity or where changes affect a visual receptor that is of low sensitivity.

### 2.5.4 Defining impact significance - cumulative, landscape and visual

76 NatureScot's guidance, Assessing the Cumulative Impact of Onshore Wind Energy Developments (2021) is widely used across the UK to inform the specific assessment of the cumulative landscape and visual effects of different types of development. Both GLVIA3 and NatureScot's guidance provides the basis for the methodology for the cumulative LVIA. The NatureScot (2021) guidance defines:

- 'The purpose of a Cumulative Landscape and Visual Impact Assessment (CLVIA) is to describe, visually represent and assess the ways in which a proposed wind farm would have additional impacts when considered with other consented or proposed wind farms. It should identify the significant cumulative impacts arising from the proposed wind farm.
- The assessment should be proportionate to the likely impacts and all CLVIA should accord with the guidelines within GLVIA3. The emphasis should be on the production of relevant and useful information, highlighting why the proposals assessed have been included and why others have been excluded, rather than the provision of a large volume of information.' (NatureScot 2021, p8);
- 'Cumulative impacts can change either the physical fabric of character of the landscape, or any special values attached to it' (NatureScot 2021, p7); and
- 'Cumulative impacts on visual amenity can be caused by 'combined visibility' and/or 'sequential impacts'.' (NatureScot 2021, p7).

77 In line with this guidance therefore, the objective of the cumulative assessment is different from the assessment of effects of AyM itself. In the cumulative assessment the intention is to establish whether or not the addition of AyM, in combination with other relevant consented or proposed developments, may lead to a significant cumulative landscape or visual effect.

### 2.5.5 Evaluation of significance

78 The matrix presented in Table 3 is used as a guide to help inform the threshold of significance when combining sensitivity and magnitude to assess significance. On this basis potential effects are assessed as Negligible, Minor, Moderate-Minor, Moderate, Moderate-Major and Major. In those instances where the magnitude has been assessed as 'no change', the level of effect is recorded as 'No effect'.

79 For the purposes of this assessment, any effects with a significance level of Major and Moderate-Major have been deemed significant in EIA terms (dark shaded boxed in Table 3). 'Moderate' levels of effect have the potential, subject to the assessor's professional judgement, to be considered as significant or not significant, depending on the sensitivity and magnitude of change factors evaluated. These assessments are explained as part of the assessment, where they occur. Significance can therefore occur at a range of levels depending on the magnitude and sensitivity, however in all cases, a significant effect is considered more likely to occur where a combination of the variables results in the onshore elements of AyM having a defining effect on the landscape character or view. Definitions are not provided for the individual categories of significance shown in the matrix and the reader should refer to the detailed definitions provided for the factors that combine to inform sensitivity and magnitude

80 Effects assessed as being either Moderate-Minor, Minor or Negligible level are assessed as not-significant (white shaded boxes in Table 3).

81 In line with the emphasis placed in GLVIA3 upon the application of professional judgement, an overly mechanistic reliance upon a matrix is avoided through the provision of clear and accessible narrative explanations of the rationale underlying the assessment made for each landscape and visual receptor. Such narrative assessments provide a level of detail over and above the outline assessment provided by use of the matrix alone.

82 The landscape and visual assessment, unavoidably, involves a combination of quantitative and qualitative assessment and wherever possible cross reference has been made to objective evidence, baseline figures and / or to photomontage visualisations to support the assessment conclusions. Often a consensus of professional opinion has been sought through consultation, internal peer review, and the adoption of a systematic, impartial, and professional approach. Importantly, each effect results from its own unique set of circumstances and has been assessed on a case by case basis. The matrix as presented in Table 3 should therefore be considered as a guide and any deviation from this guide has been clearly explained in the assessment.

Table 3: Matrix used to guide determination of effect significance.

| | MAGNITUDE OF CHANGE | | | | | |
|---|---|---|---|---|---|---|
| **SENSITIVITY** | **HIGH** | **MEDIUM-HIGH** | **MEDIUM** | **MEDIUM-LOW** | **LOW** | **NEGLIGIBLE/ NO CHANGE** |
| **HIGH** | Major (Significant) | Major (Significant) | Moderate - Major (Significant) | Moderate (Significant / Not Significant) | Moderate – Minor (Not Significant) | Minor (Not Significant) |
| **MEDIUM-HIGH** | Major (Significant) | Moderate - Major (Significant) | Moderate (Significant / Not Significant) | Moderate (Significant / Not Significant) | Moderate – Minor (Not Significant) | Minor (Not Significant) |
| **MEDIUM** | Moderate - Major (Significant) | Moderate (Significant / Not Significant) | Moderate (Significant / Not Significant) | Moderate – Minor (Not Significant) | Minor (Not Significant) | Minor (Not Significant) |
| **MEDIUM-LOW** | Moderate (Significant / Not Significant) | Moderate (Significant / Not Significant) | Moderate – Minor (Not Significant) | Minor (Not Significant) | Minor (Not Significant) | Negligible (Not Significant) |
| **LOW** | Moderate (Significant / Not Significant) | Moderate – Minor (Not Significant) | Minor (Not Significant) | Minor (Not Significant) | Negligible (Not Significant) | Negligible (Not Significant) |

### 2.5.6 Nature of effects

83 The EIA Regulations 2017 state that the ES should define '*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*'.

84 In accordance with the EIA Regulations 2017, in this assessment the nature of effects refers to whether the landscape and / or visual effect of the onshore elements of AyM is positive or negative (herein referred to as 'beneficial' / 'neutral' or 'adverse').

85 Guidance provided in GLVIA3 on the nature of effect states that '*in the LVIA, thought must be given to whether the likely significant landscape and visual effects are judged to be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity*', but it does not provide guidance as to how that may be established in practice. The nature of effect is therefore one that requires interpretation and, where applied, this involves reasoned professional opinion.

86 In this LVIA a precautionary approach has been adopted, which assumes that significant landscape and visual effects are weighed on the adverse side of the planning balance, unless otherwise stated. Beneficial or neutral effects may, however, arise in certain situations and are stated in the assessment where relevant, based on the following definitions.

- **Beneficial effects** - contribute to the landscape and visual resource through the enhancement of desirable characteristics or the introduction of new, beneficial attributes. The development contributes to the landscape by virtue of good design or the introduction of new landscape planting. The removal of undesirable existing elements or characteristics can also be beneficial, as can their replacement with more appropriate components.

- **Neutral effects** - occur where the development fits with the existing landscape character or visual amenity. The development neither contributes to nor detracts from the landscape and visual resource and can be accommodated with neither beneficial or adverse effects, nor where the effects are so limited that the change is hardly noticeable. A change to the landscape and visual resource is not considered to be adverse simply because it constitutes an alteration to the existing situation.
- **Adverse effects** - are those that detract from the landscape character or quality of visual attributes experienced, through the introduction of elements that contrast, in a detrimental way, with the existing characteristics of the landscape and visual resource, or through the removal of elements that are key in its characterisation.

### 2.5.7 OnSS Theoretical Visibility Analysis

87 The ZTVs (Volume 6, Annex 2, Figures 2.8a-c (application ref 6.6.2.2.9 to 6.6.2.2.11)) have been generated using Geographic Information Systems software to demonstrate the extent to which the OnSS may theoretically be seen from any point in the study area.

88 The OnSS technology will employ either Air Insulated Switchgear (AIS) or Gas Insulated Switchgear (GIS). The choice of switchgear affects both the total land area required and the size and type of buildings which will be needed. If a GIS option is selected the land area needed for the OnSS will be up to 3 ha (30,000 sq m). The maximum height of the GIS building will be 15 m and the maximum height of other electrical equipment (excluding lightning masts) will be 12.5 m, both excluding any land raising.

89 The land area needed for the OnSS, if an AIS option is selected, will be up to 5 ha (50,000sq m) in area. The maximum height of electrical infrastructure will be 12.5 m and the maximum height of buildings will be 5 m, both excluding any land raising.

90 The maximum design scenario for the finished ground level of the OnSS has been established using a balanced cut and fil. l To account for potential differences in finished ground level relative to the position of the GIS OnSS within the larger footprint of the AIS platform, an additional 0.8m height has been added to the OnSS platform. This is derived from calculating the balanced cut and fill of the smaller footprint GIS OnSS platform in the highest elevated part of the site.

91 Taking this into account, ZTV analysis has been carried out for a maximum parameter model of 15.8m based on the maximum OnSS building height of 15m plus the additional 0.8m. This has been applied to the finished ground level calculation for the AIS option (34.175m AOD).

92 It should also be noted that the OnSS platform is based on the maximum design scenario AIS footprint and that as such the ZTV represents a highly precautionary worst-case position in terms of theoretical or likely actual visibility of the GIS option given the smaller GIS footprint required as explained above.

93 ZTVs are primarily calculated based on the visibility at 2m above the height of the landform relative to the height of the project (i.e. viewer height of 2m). The ZTV shown in Volume 6, Annex 2, Figure 2.8a (application ref 6.6.2.2.9) reflects bare ground theoretical visibility. The ZTV shown in Volume 6, Annex 2, Figures 2.8b&c (application ref 6.6.2.2.10 & 6.6.2.2.11) also factors in the potential screening effect of areas of woodland within the study area. An average height of 10m has been attributed to all woodlands apart from Bodelwyddan Park where a 20m height has been included to represent the taller trees of mature woodland blocks found within the park area. These woodland heights are based on observations during fieldwork and are considered to be a conservative average. The ZTVs do not take into account the screening effect of smaller groups of trees, hedgerows, hedgerow trees, buildings or other local features. As a result, the ZTVs present a conservative worst case assumption in respect of theoretical visibility.

94 There are limitations in the production of the ZTV, and these should be borne in mind in its consideration and use:

- The ZTVs are based on 5m data grid (Ordnance Survey Terrain 5) with a viewer height of 2m above ground level;

- The bare ground ZTV does not take into account the screening effects of woodlands, vegetation, buildings, or other local features that may prevent or reduce visibility;
- The screened ZTV illustrates the bare ground situation with major woodland blocks reflected, but does not take into account the screening effects of other vegetation, buildings, or other local features that may prevent or reduce visibility;
- The woodland blocks included in the screened ZTV may differ to the actual height of woodland in the study area. Following fieldwork, it is considered that the assumed heights used in the screened ZTV represent a conservative average;
- The ZTV does not indicate the decrease in visibility that occurs with increased distance from the OnSS. The nature of what is visible from 1 km away would differ markedly from what is visible from 5 km away, although both are indicated on the ZTV as having the same level of visibility; and
- There is a wide range of variation within the visibility shown on the ZTV. For example, an area shown as having visibility of the OnSS may only gain views of the smallest extremity rather than all of it as may be the case elsewhere.

95 These limitations mean that while the ZTV is used as a starting point in the assessment, providing an indication of where the OnSS would theoretically be visible, the information drawn from the ZTV is not completely relied upon to accurately represent visibility of the OnSS.

### 2.5.8 Visualisations

96 The viewpoint assessment of the OnSS is illustrated by a range of visualisations, including photographs and block model photomontages, which are in line with current best practice and the guidance provided in Landscape Institute – Visual Representation of Development Proposals (2019). Visualisations have a number of limitations when using them to form a judgement on a development. These include:

- The images provided give a reasonable impression of the scale of and distance to the OnSS, but can never be 100% accurate;
- The viewpoints illustrated are representative of views in the area but cannot represent visibility at all locations;
- To form the best impression of the visual impacts of the OnSS these images are best viewed at the viewpoint location shown;

- The visualisations must be printed at the right size to be viewed properly (A1 width) and viewed at a comfortable viewing distance;
- The first visualisation sheet for each of the viewpoints illustrates the existing view with a baseline photograph, the second visualisation sheet includes a photomontage view of the OnSS at year 0 once construction is completed and the third visualisation sheet includes proposed mitigation planting at year 15;
- The photomontage visualisations for all viewpoints show the OnSS maximum parameter as a black dashed line;
- The OnSS maximum parameter includes a maximum building height of 15m plus an additional 0.8m in height to account for potential differences in finished ground level relative to the position of the OnSS GIS option within the OnSS AIS platform. This results in an overestimation of the height of the block model in parts of the OnSS maximum parameter but represents the worst case LVIA Rochdale Envelope in terms of assessment;
- An example 3D block model of both GIS and AIS has been included in the visualisations for Viewpoints 1-5. The configuration of the 3D model and location within the OnSS platform is considered to represent a maximum design scenario arrangement for LVIA. For viewpoints 6&7 the example 3D block model is not visible and viewpoints 8&9 are considered too distant for legible illustration other than to show the maximum parameter; and
- The proposed mitigation planting has also been shown on viewpoints 1-5 representing the approximate height of mitigation planting after 15 years (estimated to be 7-10m as shown on the year 15 visualisations at an average of 8.5m in height).

97 The photographs used to produce the photomontages have been taken using Canon EOS 5D and 6D Digital SLR cameras, with a fixed lens and a full-frame (35 mm negative size) CMOS sensor. The photographs are taken on a tripod with a pano-head at a height of approximately 1.5 m above ground. To create the baseline panorama, the frames are individually cylindrically projected and then digitally joined to create a planar projected panorama with a 53.5-degree field of view. Tonal alterations are made using Adobe software to create an even range of tones across the photographs once joined.

98 The photographs and photomontages used in this assessment are for illustrative purposes only and, whilst useful tools in the assessment, are not considered to be completely representative of what will be apparent to the human eye. The assessments are carried out from observations in the field and therefore may include elements that are not visible in the photographs.

## 2.6 Uncertainty and technical difficulties encountered

### 2.6.1 Graphic production

99 ZTV and photomontage visualisations have specific limitations which are described in detail in section 2.5.7 above.

### 2.6.2 Fieldwork

100 It is not possible to visit every part of the study area when undertaking an LVIA and therefore some aspects of the assessment are based on desk based study and professional experience. Parts of the timeframe over which the LVIA has been undertaken has coincided with the restrictions put in place to reduce transmission of the COVID-19 virus. This reduced the period over which initial field work was possible. Access to the Bodelwyddan Park Registered Historic Park and Garden (RHPG) was not possible during this period as the Castle Hotel was closed and Bodelwyddan Castle itself has been closed to the public since 2019. Access to Viewpoint 6 located on the grass terrace within the grounds of Bodelwyddan Castle was since permitted through the Castle Hotel in May 2021.

## 2.7 Existing environment

### 2.7.1 Introduction

101 This section identifies aspects of the landscape and visual resource that may be significantly affected by the onshore elements of AyM and provides a description of the existing landscape and visual conditions in the area that may be affected (landscape and visual baseline).

102 Establishing the baseline will, when reviewed alongside the description of the onshore elements of AyM provided in Volume 3, Chapter 1 (application ref: 6.3.1), form the basis for the identification and description of landscape and visual effects.

103 The baseline description of the landscape and visual resource that may be affected is primarily determined by the physical footprint of the onshore elements of AyM and the OnSS ZTV (Volume 6, Annex 2, Figures 2.8a-c (application ref: 6.6.2.2.9 to 6.6.2.2.11).

104 The baseline also describes current pressures that may cause change in the landscape in the future, and which need to be considered cumulatively with AyM, in particular drawing on information for other developments that are not yet present in the landscape but are at other stages in the planning process.

105 A preliminary assessment has identified those landscape and visual receptors that may have the potential to experience significant effects, which require to be assessed in full (see sections 2.10.1, 2.11.1, 2.12.1 and 2.14.1). This section provides a baseline overview and a detailed baseline description is provided separately within the assessment section for each receptor that may be significantly affected.

### 2.7.2 Landscape baseline overview

#### Site Context

106 The onshore elements of AyM are located entirely within the administrative boundary of DCC, in North Wales, between the proposed export cable landfall to the east of Rhyl and National Grid's existing Bodelwyddan substation to the south of the SABP.

107 This part of North Wales has a distinct coastal landscape broadly characterised by the coastal towns and resorts which span its coastline of extensive beaches and dune landscapes. Inland from the coastline, the landscape of the study area is largely characterised by agricultural lowland landscapes which providing a rural backdrop to the coast. Further inland the landscape tends to be characterised by more elevated rolling hills of Rhos which transition to the upland areas of the Denbigh Hills further to the south. See Volume 6, Annex 2, Figure 2.2 – Landform (application ref 6.6.2.2.2).

108 Within the context of the Onshore ECC and associated LVIA study area, the landscape transitions from the beach and coastal landscape across a predominantly agricultural and rural landscape with the more elevated parts of the landscape context located at the fringes of the LVIA study area to the south and east. Whilst the landscape of the study area is rural in nature, it also has a busy and active feel with many transport routes traversing the area including the A55 and Chester to Holyhead railway. Seaside developments along this coastline are a draw for visitors and the area is a key linking route for coastline landscapes further to the west on the North Wales coastline.

109 The onshore cables will be installed underground. The onshore ECC represents a 40-60 m cable corridor that has been refined from the 100 m corridor that was presented within the PEIR (as presented in detail in the Site Selection and Alternatives chapter (application ref:6.1.4)). The OnSS would be located to the west of SABP and adjacent Nature Reserve.

110 Volume 3, Chapter 1 - Onshore Project Description (application ref: 6.3.1) splits the onshore ECC into 7 distinct sections (including the OnSS and landfall), as listed below and shown on Volume 6, Annex 2, Figure 2.6 (application ref 6.6.2.2.7):

- Route Section A: Intertidal Area;
- Route Section B: Intertidal to B5118;
- Route Section C: B5118 to A525;
- Route Section D: A525 to A547;
- Route Section E: A547 to A55;
- Route Section F: A55 to B5381 including OnSS; and

- Route Section G: B5381 to National Grid Connection.

111 Site context photographs along the onshore ECC and surrounding the OnSS zone are provided on Volume 6, Annex 2, Figures 2.7a-e (application ref 6.6.2.2.8).

## Landscape Character

112 The Welsh landscape is classified at the national level by National Landscape Character Areas (NLCAs). The 48 NLCAs are defined at a broad landscape scale, each with descriptive character profiles. The proposed onshore elements of AyM and the onshore study area more broadly lies within the following NLCAs:

- Landfall - Colwyn and Northern Coastline (NLCA 8);
- Onshore ECC - Colwyn and Northern Coastline (NLCA 8) and Rhos Hills (NLCA 9); and
- OnSS - Colwyn and Northern Coastline (NLCA 8).

113 NLCAs are mapped on Volume 6, Annex 2, Figure 2.3b (application ref 6.6.2.2.4).

114 LANDMAP, also referred to by NRW as 'the Welsh landscape baseline', is a Geographic Information System based landscape resource and dataset *'where landscape characteristics, qualities and influences on the landscape are recorded and evaluated into a nationally consistent dataset.'* A LANDMAP assessment has been carried out and is reported in Annex 2.1: Landmap Assessment (application ref: 6.5.2.1) of this LVIA. LANDMAP aspect areas are shown on Volume 6, Annex 2, Figures 2.9a – 2.13b (application refs: 6.6.2.2.12 to 6.6.2.2.21).

*115* LANDMAP guidance states that *'Assessors carrying out LVIA need to judge the appropriate scale of reporting for the development, which may not always be the reporting scale of LANDMAP. For example, a housing proposal may need smaller reporting units whereas a wind farm may need larger ones.'* The guidance goes on to recommend that LANDMAP is used as the starting point and *that 'reporting units may be LANDMAP visual and sensory aspect areas, where these are not entirely suitable, other LANDMAP aspect layers can be used to assist with the subdivision or amalgamation of visual and sensory aspect boundaries.'*

116 Landscape Character Areas (LCAs) were identified in the Conwy and Denbighshire Landscape Sensitivity and Capacity Assessment for Wind Energy Development, 2013. This study used LANDMAP in its baseline assessment, and it is considered that these LCAs represent the most appropriate scale 'reporting units' for the proposed onshore elements of AyM. The LCAs identified in the study have therefore been used as the basis for Landscape Character Assessment in the LVIA.

117 LCAs are mapped on Volume 6, Annex 2, Figure 2.3a (application ref 6.6.2.2.3) and with the OnSS Zone ZTV on Volume 6, Annex 2, Figure 2.14 (application ref 6.6.2.2.22).

## Landscape Designations

118 A landscape designation is an area of landscape identified as being of importance at international, national or local level, either defined by statute or identified in development plans or other documents. The landscapes are designated in relation to their special qualities or features which warrant special consideration through the planning system.

119 There are three ways in which such designations are relevant to the LVIA:

- The presence of a designation can provide an indication of a recognised value that may increase the sensitivity of a landscape character receptor, viewpoint or visual receptor, and may therefore affect the significance of the effect on that receptor;
- The presence of a relevant designation can lead to the selection of a representative viewpoint within the designated area, as the viewpoint will provide a representative outlook from that area; and
- Designated areas may be included as landscape character receptors so that the effects of the proposed onshore elements of AyM on the landscapes that have been accorded particular value can be specifically assessed.

120 In relation to the proposed onshore elements of AyM, landscape designations within the LVIA study area include:

- Conwy County Borough Council Special Landscape Areas (SLAs) – Betws yn Rhos SLA; and Elwy & Aled Valley SLA.

- Registered Historic Park and Gardens (RHPG) – Bodelwyddan Castle RHPG; Kinmel Park RHPG; Bodrhyddan RHPG; Llannerch Hall RHPG; Plas Heaton RHPG; and Plas Uchaf, Llannefydd.
- Conservation Areas (CA) – Bodelwyddan CA; St George CA; St Asaph CA; and Rhuddlan CA.

121 Landscape Designations are mapped on Volume 6, Annex 2, Figure 2.4 (application ref 6.6.2.2.5) and with the OnSS Zone ZTV on Volume 6, Annex 2, Figure 2.14 (application ref 6.6.2.2.22).

### 2.7.3 Visual Baseline Overview

122 Principal Visual Receptors within the study areas for the onshore ECC and OnSS are varied but are typical to the north Wales coast and its rural and agricultural backdrop. Principal visual receptors found within the LVIA Study Areas of the onshore ECC and OnSS include roads, railways, individual properties, settlements and recreational routes. Principal visual receptors are mapped on Volume 6, Annex 2, Figure 2.5 (application ref 6.6.2.2.6) and with the OnSS Zone ZTV on Volume 6, Annex 2, Figure 2.15 (application ref 6.6.2.2.23).

123 Settlements are varied in size within this part of North Wales, larger settlements are generally found closer to the coast with smaller towns and villages more typical within the rural landscapes inland from the coast. Key settlements within the study area include St Asaph, Bodelwyddan, Rhuddlan and Rhyl. Individual properties are also found along the route of onshore ECC. Key properties are considered to be those that lie within close proximity (approximately 100m) to the Onshore ECC, due to the potential for significant construction effects. Key properties are considered to include – in route section C: Bryn Cwnin Farmhouse, Bryn Celyn Cottages, Bryn-y-wal Farm, Cwybr Bach and Plas Lorna; in route section E: Fferm and Ty Isaf; in route section F: Faenol-Bropor and in route Section G - Waen Meredydd. Small hamlets and villages are also found within the study area such as the small group of properties on Glascoed Road to the south of the OnSS and those found at Groesffordd. Key properties and settlements are shown on Volume 6, Annex 2, Figure 2.6 F-J (application ref 6.6.2.2.7.1).

124 Roads are an integral feature of the landscape in the study area. Key roads include the A55, B5381, A525, A547 and A548. The Chester to Holyhead railway line crosses the onshore ECC to the south of the Rhyl Golf Course and Holiday Camps

125 Recreational walking and cycling routes are found within the study area. The Wales Coast Path crosses the onshore ECC at the landfall near Rhyl and the North Wales Path crosses the onshore ECC between Dyserth and Rhyl.

126 Public Rights of Way (PRoWs) provide further access across more rural parts of the study area. The PRoW of most relevance to the assessment is the Bridlepath (PRoW 201/9) which lies immediately to the north of the OnSS and therefore potentially affected by the construction activities of both the onshore ECC and OnSS but also during the operation of the OnSS. Other PRoWs that cross the rural landscape would only experience temporary disruption resulting from the construction of the onshore ECC. PRoWs are shown on Volume 6, Annex 2, Figure 2.6 F-J (application ref 6.6.2.2.7.1).

127 Cycle route NCR 84 follows the A525 north of St Asaph before diverting along the path that follows the banks of the River Clwyd to Kinmel Bay. Cycle route NCR 5 is found on the sea wall path at Ffrith Beach which passes the onshore ECC at landfall and the proposed TCC near the North Wales Bowls Centre.

## Onshore ECC

128 As the cables are proposed to be buried there would be little or no visual effects resulting from the onshore ECC once operational. In addition, the relatively discreet nature of the onshore ECC means that only the views of close range receptors would be affected during construction. Site context photographs along the onshore ECC are provided on Volume 6, Annex 2, Figures 2.7a-e (application ref 6.6.2.2.8).

## OnSS

129 The built infrastructure proposed for the OnSS has a greater extent of visibility and therefore visual receptors over a wider area would potentially be affected. Visual effects would also likely occur during operation, as well as construction and decommissioning.

130 The viewpoints identified for assessment of the OnSS have been selected to cover a variety of landscape character areas; roads; recreational routes; points from different directions and distances; and to inform the definition of the likely extent of significant visual effects from the identified principal visual receptors. Eight viewpoints for the landscape and visual assessment were selected through consultation and agreement with statutory consultees. An additional viewpoint, within the Clwydian Range and Dee Valley AONB was added in response to s42 feedback from NRW.

131 Representative viewpoints proposed for the visual assessment of the OnSS are identified in Table 4 below and mapped on Volume 6, Annex 2, Figures 2.8a-c (application ref 6.6.2.2.9 to 6.6.2.2.11). The precise viewpoint locations have been finalised based on site survey and potential visibility of the OnSS. Visualisations for the OnSS are provided on Volume 6, Annex 2, Figures 2.18a – 2.25c (application ref 6.6.2.3.1 to 6.6.2.3.9).

Table 4: Viewpoints.

| ID | NAME | ORDNANCE SURVEY GRID REFERENCE | | RECEPTOR TYPE |
|---|---|---|---|---|
| 1 | Bridlepath near Faenol-Bropor | 301158 | 374573 | Walkers / Horse Riders |
| 2 | St Asaph, Business Park | 301357 | 374072 | Workers |
| 3 | Glascoed Rd | 300667 | 373903 | Road Users / Residents |
| 4 | A55 | 301266 | 375044 | Road Users |

| ID | NAME | ORDNANCE SURVEY GRID REFERENCE | | RECEPTOR TYPE |
|---|---|---|---|---|
| 5 | Minor Rd, Groesffordd | 300467 | 373390 | Road Users / Residents |
| 6 | Bodelwyddan Castle | 299882 | 374774 | Visitors |
| 7 | St Asaph | 303970 | 374059 | Settlement / Visitors |
| 8 | Rhuddlan | 302637 | 377661 | Settlement / Visitors |
| 9 | Y Foel | 306357 | 378215 | Recreational Walkers |

### 2.7.4 Cumulative Baseline

132 Existing developments are included in the baseline for both the landscape and visual effects assessments. These developments have an existing influence on the baseline landscape and visual environment. The nearby SABP is an existing development to the east of the OnSS which has a number of large 1-3 storey office and warehousing buildings set within tree lined roads and car parking. The Gwynt y Môr and National Grid substations lie immediately to the south of the Business Park. A number of overhead electricity power lines cross the study area and overhead line towers are a common feature in the landscape of the study area with an overhead line passing through the Business Park and Nature Reserve before following Glascoed Road to the south of the OnSS.

133 Adjacent developments may complement one another, or may be discordant with one another, and it is the increased or reduced level of significance of effects which arises as a result of this change that is assessed. Where this occurs, the magnitude of change varies according to cumulative effect factors such as its consistency of image and degree of contrast or integration with the onshore elements of AyM, as well as other 'non-cumulative' factors, such as its distance, lateral spread and amount of visibility.

### 2.7.5 Cumulative sites for consideration in the LVIA

134 Cumulative effects refer to effects upon receptors arising from the onshore elements of AyM, when considered alongside other proposed developments and activities and any other reasonably foreseeable project(s) proposals.

135 GLVIA3 (Landscape Institute and IEMA, 2013, p120) defines cumulative landscape and visual effects as those that '*result from additional changes to the landscape and visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it), or actions that occurred in the past, present or are likely to occur in the foreseeable future.*'

136 Other proposed developments that have the potential for cumulative effects in combination with the Onshore elements of AyM are considered to be those developments that are found within the LVIA study areas. Beyond the LVIA study areas cumulative effects are limited by distance and lack of intervisibility with other proposed developments. This is in line with guidance (NatureScot 2021, p8) which states that '*The assessment should be proportionate to the likely impacts and all CLVIA should accord with the guidelines within GLVIA3. The emphasis should be on the production of relevant and useful information, highlighting why the proposals assessed have been included and why others have been excluded, rather than the provision of a large volume of information.*'

137 A comprehensive list of projects that have the potential to contribute to cumulative impacts of the onshore elements of AyM has been compiled and this 'long list' and the approach to compiling this list is described in Volume 1, Annex 3.1 (application ref: 6.1.3.1). Those cumulative projects listed within the 'long list' that lie within the LVIA study areas are listed below in Table 5 and shown on Volume 6, Annex 2, Figure 2.17 (application ref 6.6.2.2.25).

Table 5: Cumulative Developments.

| REFERENCE | COUNCIL AREA | TYPE | DESCRIPTION |
|---|---|---|---|
| Consented | | | |
| 40/2018/1036 | Denbighshire CC | Energy | Construction of a 5 MW flexible gas fired power plant |
| 45/2018/1197 | Denbighshire CC | Coastal protection works | Construction of coastal protection scheme, incorporating; interlocking rock revetment and recurved upstand sea wall to replace existing, raising of walkway, new and amended accesses and associated works (East Rhyl coastal defence improvement scheme). |
| 40/2021/0309 | Denbighshire CC | Building/housing developments | Care home |
| 40/2017/1232 | Denbighshire CC | Building/housing developments | Erection of 7 no. industrial units with associated parking, landscaping, |

| REFERENCE | COUNCIL AREA | TYPE | DESCRIPTION |
|---|---|---|---|
| | | | access road and external storage areas. |
| 43/2017/1121 | Denbighshire CC | Building/housing developments | 43/2017/1121 - Use of land for the siting of an additional 65 touring caravan pitches and 39 timber camping pods, storage building and associated works. |
| 45/2018/1215 | Denbighshire CC | Building/housing developments | 45/2018/1215 - Erection of 109 dwellings and associated works (Phase 5). |
| 44/2018/0855 | Denbighshire CC | Building/housing developments | 44/2018/0855 - Details of access, appearance, landscaping, layout and scale of 99 dwellings submitted in accordance with condition number 1 of outline permission code 44/2015/1075 (reserved matters application). |
| 44/2020/0346 | Denbighshire CC | Building/housing developments | 44/2020/0346 - Change of use of agricultural land to form extension to existing touring caravan site; siting of 3 no. glamping pods and camping facilities; construction of toilet, shower and laundry blocks and associated works. |

| REFERENCE | COUNCIL AREA | TYPE | DESCRIPTION |
|---|---|---|---|
| 40/2021/0796 | Denbighshire CC | Building/housing developments | 40/2021/0796 - Erection of a detached storage building. |
| 0/44022 - | Conwy CBC | National Grid enabling works | Erection of 11 kV overhead line |
| 31/2021/0724 | Denbighshire CC | National Grid enabling works | 11kv Overhead Line, supported by an existing 11kv Pole & Stay. The proposed 11kv Overhead line will replace an existing 11kv Overhead line approx 100m to the west |
| Application | | | |
| 45/2021/1248 | Denbighshire CC | Coastal protection works | Development of 5 Ha of land to form Coastal Defence scheme comprising of the formation of flood embankments ramps outfall structures and rock armour including landscaping habitat enhancements works |
| 46/2021/0159 | Denbighshire CC | Building/housing developments | Hybrid planning application for the redevelopment of 6.9ha of land incorporating the erection of a commercial vehicles sales unit (sui |

| REFERENCE | COUNCIL AREA | TYPE | DESCRIPTION |
|---|---|---|---|
| | | | generis) and formation of associated parking area, landscaping and associated works. |
| 45/2021/0738 | Denbighshire CC | Building/housing developments | Retrospective application for the change of use of dwelling (Use Class C3) to form a house of multiple occupancy (Use Class C4) for 4 people. |
| DNS/3247619 | Denbighshire CC | Energy | DNS application Elwy Solar Energy Farm |
| 40/2021/0825 | Denbighshire CC | Building/housing developments | Erection of 106 dwellings, construction of a new vehicular access and associated works. |
| 46/2019/0806 | Denbighshire CC | Building/housing developments | Development of 0.75 ha of land for residential purposes (outline application including access). |
| 40/2021/0730 | Denbighshire CC | Building/housing developments | Demolition of dwelling and erection of 28 new dwellings including new vehicular access, internal access road and associated works. |
| 46/2021/1161 | Denbighshire CC | Building/housing developments | Erection of 124 dwellings |

### 2.7.6 Evolution of the baseline

138 The baseline character of the landscapes associated with the study areas for the onshore elements of AyM could evolve in the future as a result of land use policy, environmental improvements and development pressures. This has the potential to alter the baseline assessment of the landscape and visual resource over time relating to the onshore elements of AyM.

139 The most likely evolution of the baseline that is predicted to occur over the time between the point of assessment and the time over which AyM will be built and become operational is through the introduction of future developments. Future developments are considered in the assessment of cumulative effects, see section 2.17.

## 2.8 Key parameters for assessment

### 2.8.1 Key Parameters

140 The LVIA is based on the Rochdale Envelope described in Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1). The parameters relevant to the LVIA are set out in this section. In compliance with Environmental Impact Assessment (EIA) regulations, the likely significant effects of the Maximum Design Scenario (MDS) which represents a worst-case assessment scenario are assessed and illustrated in the LVIA.

141 The finished ground level of the OnSS has been established using a balanced cut and fill in order to determine the ground level across the OnSS platform. To account for potential differences in finished ground level relative to the position of the GIS OnSS within the larger footprint of the AIS platform, an additional 0.8m height has been added to the OnSS platform. This is derived from calculating the balanced cut and fill of the smaller footprint GIS OnSS platform in the highest elevated part of the site.

142 Taking this into account the maximum parameter model of 15.8m (based on the maximum OnSS building height of 15m plus the additional 0.8m described above), has been applied to the finished ground level calculation for the AIS option (34.175m AOD).

143 In relation to the OnSS footprint, it should also be noted that other elements of external substation infrastructure vary in height, however, because the tallest OnSS buildings could potentially be located anywhere within the OnSS footprint, the maximum parameter height has been applied to the whole OnSS footprint to create the LVIA Rochdale envelope shown in the LVIA visualisations and used in ZTV calculations. This results in an overestimation of the height of the block model in parts of the OnSS maximum parameter but represents the MDS in terms of assessment. The exception to this will be Lightning masts which due to their slender design are not included in the overall consideration of maximum infrastructure height in the LVIA.

144 Visualisations of the LVIA MDS for the OnSS are provided on Volume 6, Annex 2, Figures 2.18a – 2.26c (application ref 6.6.2.3.1 to 6.6.2.3.9), in order to illustrate the maximum potential visual envelope of the OnSS from each of the agreed viewpoint locations. An example 3D block model of both GIS and AIS substation options has also been included in the visualisations for Viewpoints 1-5. The configuration of the 3D model and location within the OnSS platform is considered to represent a worst-case arrangement for LVIA in that it positions the largest and tallest buildings to the southeast corner of the OnSS platform, an area which is most visible from the most sensitive receptors on Glascoed Road. The proposed mitigation planting has also been shown on viewpoints 1-5 representing the approximate height of mitigation planting after 15 years (estimated to be 7-10m as shown on the year 15 visualisations at an average of 8.5m in height).

145 For viewpoints 6&7 the example 3D block model is not visible and viewpoints 8&9 are considered too distant for legible illustration of the 3D block model. As a result, these visualisations are therefore limited to showing the maximum parameter.

146 Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1) provides more detail on the OnSS, the onshore ECC and landfall including – OnSS location; temporary construction compounds; indicative transition joint bay (TJB) locations; horizontal directional drilling (HDD) compounds (including HDD options); construction access locations (including landfall access options); construction haul roads; permanent operational access; and visibility splay clearance.

147 The assessment of construction, operational and decommissioning effects is based on the following MDS for the LVIA:

Table 6: Maximum Design Scenario.

| POTENTIAL EFFECT | MAXIMUM DESIGN SCENARIO ASSESSED | JUSTIFICATION |
|---|---|---|
| **CONSTRUCTION** | | |
| Landfall<br>Landscape and Visual Effects | HDD Exit pit location on the beach Intertidal or shallow subtidal, between MHWS and 1,000 m seaward of MHWS. Up to 3 x cofferdams required, dimensions -10 x 75m area x 2.5m depth. | The MDS includes the maximum dimensions and number of construction compounds and therefore, the greatest area of land disturbance and visible construction activity. |
| Onshore ECC<br>Landscape and Visual Effects | The onshore ECC represents a corridor which is typically 40-60m wide, albeit that the corridor widens at Landfall and at the OnSS. It is approximately 12 km in length and 40 -60 m wide and consists of two trenches, each 5 m wide x 2 m depth along with haul road and stockpiling areas associated with cable construction. | The MDS includes the maximum width and therefore, the greatest area of disturbance and visible construction activity. The assessment considers the 40-60m wide cable route in relation to hedgerow and tree losses to ensure the worst case is being considered. |
| Onshore ECC Construction Compounds | 11 temporary construction compounds (TCCs) will be required along the route, see Volume 3, Chapter 1 (application ref 6.3.1) for further detail. | The MDS includes the maximum dimensions and number of construction compounds and therefore, the greatest area of land disturbance and visible construction activity. |

| POTENTIAL EFFECT | MAXIMUM DESIGN SCENARIO ASSESSED | JUSTIFICATION |
|---|---|---|
| Landscape and Visual Effects | 6 HDD crossings will be required along the route, see Volume 3, Chapter 1(application ref 6.3.1) for further detail. Maximum HDD compound dimensions are 100 X 80m. | |
| OnSS Construction activities<br>Landscape and Visual Effects | 1x OnSS temporary construction compound with an area of 37,500m$^2$.<br>OnSS access route from Glascoed Road which will become the permanent access to the OnSS. | The MDS includes the maximum area and number of construction compounds and therefore, the greatest area of land disturbance and visible construction activity. |
| Construction Period | 12 hour working day (7am-7pm Monday to Saturday)<br>18 months for Onshore ECC<br>27 months for OnSS | Construction lighting will be required during working hours in the winter months, the lights of construction vehicles will also add to the levels of lighting and a lower level of lighting will remain overnight for security purposes. |
| **OPERATION** | | |

| POTENTIAL EFFECT | MAXIMUM DESIGN SCENARIO ASSESSED | JUSTIFICATION |
|---|---|---|
| Onshore ECC and Landfall Landscape and Visual Effects | Joints pits will be required every 500m resulting in a maximum of 50 joint pits (including those at TJBs) each with indicative dimensions of 13x5m (65m$^2$ ) and 1.5m deep. Joint pits will include a manhole at ground level for access. | The MDS includes the maximum amount of visible above ground onshore ECC infrastructure. |
| OnSS Landscape and visual effects | Maximum area of AIS OnSS – 50,000m$^2$ on a platform of 250 x 200m.<br>Maximum area of GIS OnSS – 30,000m$^2$ on a platform measuring approximately 200 x 150m.<br>8 x indicative number of OnSS buildings –<br>▲ 1 x GIS building: 50 m x 15 m x 15 m high<br>▲ 2 x Static Var Compensator buildings: 55 m x 14 m x 5 m<br>▲ 1 x Control building: 50 m x 20 m x 5 m<br>▲ 2 x Storage/ backup power units: 15 m x 10 m x 4 m (possibly in the form of containers)<br>▲ 2 x Workshops: 15 m x 10 m x 4 m (possibly in the form of containers) | The final location of the buildings and infrastructure of the OnSS is not known at this stage, however, it will be located within the OnSS platform which is the same size as the AIS OnSS option. The LVIA Rochdale Envelope for the OnSS is therefore based on a maximum parameter that includes for this maximum footprint. An example 3D block model of both GIS and AIS has been included in the visualisations for Viewpoints 1-5 (application ref: 6.6.2.3.1 to 6.6.2.3.5). The configuration of the 3D model and location within the OnSS platform is considered to represent a worst-case arrangement for LVIA in that it positions the largest and tallest |

| POTENTIAL EFFECT | MAXIMUM DESIGN SCENARIO ASSESSED | JUSTIFICATION |
|---|---|---|
| | | buildings to the southeast corner of the OnSS platform, an area which is most visible from the most sensitive receptors on Glascoed Road. This is considered to be in line with the Rochdale Envelope approach. |
| OnSS Landscape and visual effects | The largest structure within the OnSS will be the OnSS building, with a maximum height of 15 m above existing ground level (assuming a GIS design). All other equipment (e.g. transformers, switchgear) will not exceed a height of 15 m above ground level.<br>The exception to this will be Lightning masts which due to their slender design are not included in the overall consideration of maximum infrastructure height in the LVIA.<br>The OnSS platform has a finished ground level of 34.175m based on balanced cut and fill across the larger footprint of the AIS design option. | The maximum parameter model of 15.8m (based on the maximum OnSS building height of 15m plus the additional 0.8m described here), is considered to represent the worst case parameter in line with the Rochdale Envelope Approach. |

| POTENTIAL EFFECT | MAXIMUM DESIGN SCENARIO ASSESSED | JUSTIFICATION |
|---|---|---|
| | The finished ground level of the OnSS has been established using a balanced cut and fill in order to determine the ground level across the OnSS platform. To account for potential differences in finished ground level relative to the position of the GIS OnSS within the larger footprint of the AIS platform, an additional 0.8m height has been added to the OnSS platform. This is derived from calculating the balanced cut and fill of the smaller footprint GIS OnSS platform in the highest elevated part of the site.<br><br>Taking this into account the maximum parameter model of 15.8m (based on the maximum OnSS building height of 15m plus the additional 0.8m described above), has been applied to the finished ground level calculation for the AIS option (34.175m AOD). | |
| **DECOMMISSIONING** | | |

| POTENTIAL EFFECT | MAXIMUM DESIGN SCENARIO ASSESSED | JUSTIFICATION |
|---|---|---|
| Onshore ECC and Landfall Landscape and Visual Effects | Cable ducts likely left in situ underground with cables removed. | Effects would relate principally to the decommissioning process, associated plant, materials, infrastructure and temporary structures, as well as the presence of dismantled structures, where they would be visible above ground. |
| OnSS Landscape and visual effects | Removal of the OnSS. | Effects would relate principally to the decommissioning process, associated plant, and materials to remove the OnSS. |
| **CUMULATIVE EFFECTS** | | |
| Cumulative Landscape and visual effects | The LVIA considers the potential for significant cumulative effects to arise as a result of the addition of the proposed development in the context of other large scale developments that are consented or at application stage, that are located or proposed within the onshore LVIA study area. | Cumulative landscape and visual effects are not considered to arise as a result of other development outwith the LVIA study area. |

### 2.8.2 Potential effects for assessment

148 This section sets out the potential effects that are then considered within the assessment sections 2.10, 2.11, 2.12, 2.13 and 2.14.

## Potential effects during construction

149 The potential effects of the onshore elements of AyM during construction would include effects on the physical elements of the sites where construction would take place, as well as effects on the landscape character and visual amenity of the construction works and surrounding area.

150 The effects would relate principally to the construction process, associated plant, construction compounds, materials, infrastructure and temporary structures. Construction effects also relate to the presence of emerging structures of the OnSS, where they would be visible above ground and the use of construction lighting during the hours of darkness (see Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1) for more detail). Details of the location, height, design and luminance of all lighting to be used during construction will be set out in the final Artificial Light and Emissions Plan (ALEP) that would be approved by DCC post consent. As stated in the outline ALEP that is provided as Appendix 10 (application ref 8.13.10) to the outline Code of Construction Practice (CoCP) (application ref 8.13), external lighting of the construction site will be of a low intensity and designed / positioned to: provide the necessary levels for safe working; minimise light spillage or pollution; and avoid disturbance to adjoining residents and occupiers. Construction working hours are proposed to be from 7am to 7pm. The use of construction lighting would therefore be limited to morning or early evening during winter months. Taking this into account, the effect of construction during the hours of darkness is considered to be the same or less than the effect of construction activities during daylight hours.

## Potential effects during Operation

151 The potential effects of the onshore elements of AyM during Operation relate principally to the presence of the OnSS. The LVIA assesses the potential effects of the OnSS in year 1, once construction activity has completed and in year 15 which allows for landscape mitigation planting to mature. Visible operational elements of the onshore cable route are limited to marker posts at field boundaries, the ground level concrete access hatches of TJBs at landfall and Cable Joint Pits along the route. Following the construction phase, the land will be reinstated to its former agricultural use and disrupted hedgerows will be replaced. On this basis, it is anticipated that once operational, the potential effects of the buried onshore cable would be negligible as a result of their presence largely under ground level. Where unplanned replacement or maintenance of onshore ECC infrastructure is required this would result in only very localised and temporary effects of a much reduced scale to the effects assessed for construction. Taking this into account, operational effects of the onshore ECC and landfall are not considered further in the assessment of operational effects, this is also in line with SoS consultation in section 4.20.4 of the scoping opinion, see Table 2.

## Potential effects during decommissioning

152 The potential effects of the proposed development during decommissioning would relate principally to the removal of the OnSS.

153 The decommissioning of the onshore ECC and landfall would have a lesser effect, as the ducts would be left in situ underground, while only the cables would be removed. Decommissioning would include potential effects on the landscape character and visual amenity of the sites and surrounding area. The effects would relate principally to the decommissioning process, associated plant, materials, infrastructure and temporary structures, as well as the presence of dismantled structures, where they would be visible above ground.

## Potential cumulative effects

154 Potential cumulative effects may arise due to the addition of the proposed development to the existing and proposed electrical grid infrastructure and energy developments in the area and the degree to which the OnSS has additional effects on views and landscape character. Potential effects of the onshore elements of AyM in combination with these existing baseline energy developments are considered in the main assessment.

155 The LVIA considers the potential for significant cumulative effects to arise as a result of the addition of the proposed development in the context of other large scale developments that are consented or at application stage that are located or proposed within the onshore LVIA study area.

## Potential Effects Summary

156 Table 7 sets out the potential landscape and visual effects that may arise from the introduction of the onshore elements of AyM (it should be noted that their inclusion does not imply that they would occur or be significant).

Table 7: Summary of Potential Effects to be assessed.

| SPECIFIC ELEMENT | POTENTIAL EFFECT | POTENTIAL SENSITIVE RECEPTORS |
|---|---|---|
| Construction | | |
| Construction plant, temporary construction facilities, construction cranes, construction of OnSS and OnSS building, trenching and cable laying construction activities, removal of landscape features, material stock piles, fences, movement of construction vehicles in and around the site, construction activities during hours of darkness including lighting and signage. | Temporary physical effects on landscape fabric<br>Permanent and temporary physical effects on landscape fabric (i.e. permanent/short term removal of vegetation / ground cover)<br>Temporary effects on landscape character<br>Temporary effects on views<br>Temporary cumulative effects | Physical landscape features<br>Landscape character receptors<br>Visual receptors |
| Operation | | |
| OnSS platform, OnSS structures and OnSS buildings | Long term effects on landscape character<br>Long term effects on views<br>Long term cumulative effects | Landscape character receptors<br>Visual receptors |
| Decommissioning | | |

| SPECIFIC ELEMENT | POTENTIAL EFFECT | POTENTIAL SENSITIVE RECEPTORS |
|---|---|---|
| Construction plant, temporary construction facilities, construction cranes, removal of OnSS platform, structures and buildings. | Temporary physical effects on landscape fabric<br>Temporary effects on landscape character<br>Temporary effects on views | Physical landscape features<br>Landscape character receptors<br>Visual receptors |

157 The effects of the construction, operation and decommissioning of the onshore elements of AyM on the landscape and visual resource would arise principally from the construction, operation and decommissioning of the OnSS and also the laying of the onshore cables. The temporary construction facilities, such as cranes, construction vehicles, construction compound, delivery vehicles and construction lighting required during the construction process would also have effects on the landscape and visual resource.

158 It is currently anticipated that the construction of the onshore ECC is likely to start in 2026 and anticipated to last approximately 18 months for the onshore ECC and approximately 27 months for the OnSS (see Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1) for more detail). The construction effects identified are therefore predicted to occur during this period and end at the start of the operational period with the restoration of the onshore ECC. It is anticipated that the onshore elements of AyM would be in operation for approximately 25 years.

## 2.9 Mitigation

159 Mitigation measures that were identified and adopted as part of the evolution of the project design (embedded into the project design) and that are relevant to LVIA are set out in the following sections. The mitigation includes embedded measures such as design changes and applied mitigation which is subject to further study or approval of details; these include avoidance measures that will be informed by pre-construction surveys, and necessary additional consents where relevant. The composite of embedded and applied mitigation measures apply to all parts of the AyM development works, including pre-construction, construction, O&M and decommissioning

### 2.9.1 Embedded Mitigation

160 Embedded mitigation in respect of the onshore elements of AyM has involved the sensitive siting and design of the onshore infrastructure during site selection, to ensure the potential impacts are avoided or reduced.

161 The site selection process considered constraints relating to physical landscape elements (such as woodlands, trees and hedgerows), landscape character and visual amenity, together with other environmental and technical constraints. The sensitivity of the surrounding landscape and of residents, road-users, workers and recreational users of the landscape was also a key consideration. The capacity of the landscape to accommodate the onshore elements of AyM is assessed in relation to the natural screening afforded by landform, woodlands and trees and the degree to which other surrounding infrastructure and buildings influence visual screening.

162 The close proximity of existing electricity overhead lines to the OnSS and the relatively close proximity of existing electrical infrastructure at the existing National Grid Bodelwyddan substation to the south east provide a context of electrical infrastructure in the area immediately surrounding the site. This context was considered in site selection and aligning with it is also considered to be embedded mitigation.

### 2.9.2 Construction Phase Mitigation

163 Mitigation opportunities during the construction phase of works will be limited and primarily relate to the restrictions imposed on the working areas and measures identified in the CoCP, an outline version of which is provided application document 8.13.

164 An OLEMP is provided with the DCO application (application ref: 8.4) and sets out the principles and key landscape and ecology elements for the onshore elements of AyM. The OLEMP is also accompanied by a Design Principles Document (application ref: 8.8) which provides further detail with regards the principles that will be applied to the design of the infrastructure. The OLEMP and outline CoCP seek to stipulate measures to avoid, reduce or offset environmental effects of the construction works, including those related to landscape and visual amenity. Both documents would be updated following detailed design and submitted to DCC for approval prior to the commencement of works.

165 Sensitive siting of construction compound areas away from more visible and larger numbers of receptors, will also be important to reduce the impact on the immediate views. It should be noted that multiple construction compounds, HDD compounds, onshore ECC routes and access routes were included in the design options at PEIR stage. These options have been refined following PEIR stage in line with the approach already taken in site selection in order to reduce the potential effects on the landscape and visual resource of the area.

### 2.9.3 Operational Mitigation

#### OnSS Mitigation

166 The existing woodland to the west and north of the OnSS zone is substantial and, together with other vegetation and built elements in the wider landscape, provides an element of visual screening for many visual receptors in the area. These would provide mitigation of landscape and visual effects from the outset.

167 Outline planting mitigation has been developed for the OnSS to compliment the existing landscape structures located around the OnSS and are described in the OLEMP (application ref: 8.4). These mitigation principles include areas of proposed woodland, areas identified for ecological mitigation and an area identified for SuDS. The extent of the indicative proposed woodland planting is presented on Volume 6, Annex 2, Figure 2.16 (application ref: 6.6.2.24) and is also shown at the predicted height after 15 years' establishment on the LVIA visualisations.

168 The proposed woodland mostly comprises indigenous woodland species and would be located around the OnSS. The mitigation woodland planting would be designed to comprise a mix of faster growing 'nurse' species and slower growing 'core' species. Nurse species, such as alder, birch, and black poplar would grow quicker so that after 15 years they would be approximately 7-10m in height. They would provide shelter to bring on core species, such as oak, elm and sycamore. Whilst the nurse species would be sufficiently fast growing to provide substantial screening of the OnSS after 15 years, the core species would outlive the nurse species and provide a preferred native woodland with a more robust structure closer in character to other nearby woodlands associated with the Bodelwyddan Park.

169 In locations where it is possible to undertake planting that would not interfere with construction works and where practical to do so, mitigation woodland could be planted during the early phases of the OnSS construction to ensure robust screening as quickly as possible. This woodland planting if implemented at the start of the construction phase would give the woodland in these areas additional growth prior to completion of construction and commencement of operation of the OnSS

170 Depending on the final design and size of the OnSS, earthworks used to create the OnSS platform may result in surplus soil and excavation material. If available, this could potentially be used in the creation of landscape bunding within the site area in areas of proposed woodland. This would further limit views of the OnSS and provide further landscape and visual mitigation.

## Cable Route and Landfall Mitigation

171 Mitigation measures seek to avoid, reduce or offset temporary and permanent environmental effects, including those related to the landscape and visual resource. Landscape and visual effects change over time as mitigation, such as planting and restoration of habitat types included as part of the proposed onshore elements of AyM, establish and mature and existing landscape evolves.

172 The onshore ECC assessed and presented in the ES, refines the Cable Corridor options presented at PEIR. A landscape mitigation strategy for the Cable Corridor was developed to help this refinement and distilling of the options to achieve the best environmental fit within the landscape. The landscape and visual strategy is as follows:

- Achievement of the best environmental fit of the preferred 40-60m cable route where practicable, particularly in relation to reducing hedgerow and tree loss along the cable route;
- Reinstatement of removed sections of hedgerows, or suitable replacement hedgerows provided for displaced or severed sections of hedgerows where practical;
- Sensitively siting construction compound and HDD compounds such that these are carefully selected taking into account landscape and visual receptors to reduce impacts during the construction period where practicable;
- Restoration of all temporary works and construction areas in relation to re-establishment of ground cover;
- Protection of all retained trees during the construction phase where practicable; and
- Footpaths or cycleways that are temporarily disrupted by the proposed Cable Route or landfall will be temporarily diverted and then reinstated as part of the mitigation strategy.

173 Following construction of the landfall and installation of the onshore cables disturbed landcover and habitats would be reinstated. The overall aim of the reinstatement would be the re-establishment of existing ground cover or returning the disturbed ground to its original agricultural use. Where possible, excavated soils will be carefully stored and reinstated as soon as possible.

## 2.10 Environmental assessment: Physical Landscape

### 2.10.1 Physical Landscape Preliminary Assessment

174 The proposed building of the OnSS and access road, open trenching relating to the onshore ECC and creation of temporary access and construction compounds would have physical landscape effects on trees, hedgerows, agricultural land and the coastal landscape. There are woodlands within the study area, however, direct impacts to these have been avoided through careful design of the onshore ECC or use of HDD drilling (or other trenchless crossing techniques) to install cables beneath woodlands and so avoid disturbance.

175 For assessment purposes therefore, the physical landscape elements with the potential for significant effects have been divided into four categories: Agricultural Land; Hedgerows and hedgerow trees; Trees and Coastal Landscape.

176 As described in section 2.8.2- Potential Effects, the onshore ECC is only considered to have potential for significant effects during the construction phase due to the disturbance of landscape features required to construct the underground infrastructure.

## 2.10.2 Physical Landscape Detailed Assessment

Table 8: Detailed Assessment Physical Landscape Effects (construction).

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| Agricultural Land | Agricultural farmland is the predominant land use along the length of the onshore ECC.<br>The land is constantly being disturbed through cultivation and / or reseeding. The changing appearance of the agricultural landscape and the activities associated with ploughing fields or | The onshore ECC does not cross any designated landscapes and the agricultural land has no special value in relation to its characteristics as a landscape element. The value of the agricultural land is considered to be medium - low.<br>Grass vegetation is easily replaced and due to the level of existing disruption as a result of crop | The level of change relating to cable route trenching, construction of running tracks, and presence of soil bunds within the onshore ECC would form a relatively small-scale, short-term and localised disturbance to the agricultural land.<br>After the cable has been laid, the trench would be backfilled and temporary working areas and haul roads removed. The agricultural land would then return to its previous use. Re-instatement is therefore considered relatively straightforward with minimal disruption required to return the | ***Minor and Not Significant***<br>The effect is adverse, short term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | planting and harvesting crops is therefore a common and integral characteristic of the agricultural landscape. The presence and activity of farm machinery is also a feature of the arable farmland and on the rural roads. (see context photos on Volume 6, Annex 2, Figures 2.7a-e (application ref: 6.6.2.2.8)) | cultivation, combined with the widespread occurrence of agricultural land as a landscape element, susceptibility is considered to be low.<br>Taking this into account the sensitivity of agricultural land is considered to be **medium - low.** | land to its previous uses and productivity.<br>Construction compounds would require a larger land take and may be there for a longer period (particularly HDD compounds), although still only occupying a small proportion of the wider agricultural landscape.<br>Taking this into account magnitude of change is considered to be **medium – low.** | |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| Hedgerows | Hedgerows are a common feature in the rural landscape in which the onshore ECC crosses, varying in height, continuity and condition. Some hedgerows appear more formally managed, others have a scrubbier form often with a fragmented appearance. (see context photos on Volume 6, Annex 2, Figures 2.7a-e (application ref: 6.6.2.2.8)) | Hedgerows form an important component of the rural and historic landscape character. Value is considered to be medium.<br>The sections of hedgerow lost to construction works would be reinstated post construction and as this can be achieved with relative ease this reduces their overall susceptibility to the onshore ECC. Susceptibility for hedgerows is | Careful consideration of cable routing has sought to reduce the amount of hedgerow removal along the onshore ECC.<br>Reinstatement of lost hedgerows would mitigate the effects of lost hedgerows by infilling gaps and completing the enclosure, taking 3-5 years for low hedgerows.<br>The magnitude of change for hedgerow losses would give rise to a **medium - low** magnitude of change as they are either low in height, fragmented or scrubby and as such would be easily replaced. | ***Moderate-Minor and Not Significant***<br>The effect is adverse, medium term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | considered to be medium-low.<br>Sensitivity is considered to be **medium** for hedgerows. | | |
| Taller hedgerows and hedgerow trees found along the onshore ECC. | Tall hedgerows and hedgerow trees are also a common feature in the rural landscape in which the onshore ECC crosses. Taller hedgerows tend to be more formally managed. Where trees are found within hedgerows they vary in size, age frequency | Hedgerows and hedgerow trees form an important component of the rural and historic landscape character. All trees but particularly mature trees are important in relation to the need to reduce carbon emissions increasing their value. Value is considered to be medium – high. | Careful consideration of cable routing has sought to reduce the amount of hedgerow and hedgerow tree removal along the onshore ECC.<br>Reinstatement of lost hedgerows would mitigate the effects of lost hedgerows by infilling gaps and completing the enclosure, taking 5-10 years for taller hedgerows.<br>Restrictions applied to planting over cable easements prevents hedgerow trees from being | ***Moderate and Significant***<br>The effect is adverse, long term and reversible.<br>Trees removed over the onshore ECC would be unable to be replanted within the 25 year project lifespan and |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | and condition. (see context photos on Volume 6, Annex 2, Figures 2.7a-e (application ref: 6.6.2.2.8)) | The susceptibility of hedgerow trees and better condition, taller hedgerows is higher than other hedgerows, as their loss would be more apparent and their reinstatement longer term. For these hedgerows and trees, susceptibility is considered to be medium.<br>Sensitivity is considered to be **medium-high** for hedgerow trees and better condition, taller hedgerows. | replanted within the onshore ECC.<br>Taking all of this into account, for better condition, taller hedgerows, often with hedgerow trees present, the magnitude of change is considered to be medium.<br>This includes hedgerows found at the following points along the onshore ECC:<br>• Field boundary hedgerow near Fferm north of Sarn Lane and roadside hedgerows at Sarn Lane haul road crossing (see context photo E3)<br>• Roadside hedgerows at Nant y Faenol Road crossing (see context photo E4) | only reversible following decommission. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | | • Hedgerow on Bridlepath (PRoW 201/9)<br>• Hedgerows within the OnSS site and OnSS construction compounds (see context photo F6)<br>• Hedgerows at Glascoed Road crossing and access options (see context photos G1 and G2)<br>• Hedgerows at minor road crossing near Waen Meredydd (see context photo G3) | |
| Trees within the OnSS site area. | Mature trees are found within the OnSS site area. The majority of these are hedgerow | Trees are of importance to the historical pattern and character of the landscape. All trees | The design of the OnSS site has adapted the areas in which potential disturbance could occur so that the larger of these two mature trees within the OnSS | ***Major and Significant***<br>The effect is adverse, long |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | trees (see context photo F6 (application ref: 6.6.2.2.8)) however there are also two parkland trees within the site area (see context photo F7 (application ref: 6.6.2.2.8)). These trees provide a notable contribution to the landscape character of the OnSS site area. | but particularly mature trees are important in relation to the need to reduce carbon emissions increasing their value. Value is considered to be **medium-high**.<br>Re-establishment of trees would take a long period of time to achieve which heightens their overall susceptibility. As such susceptibility is considered to be medium-high.<br>Taking all of this into account, sensitivity is | can be avoided by construction activity.<br>Depending on the specific design of the OnSS, there are around 20-26 mature hedgerow trees within the OnSS site that could be removed either by the creation of the OnSS platform or by the OnSS TCC.<br>The magnitude of change for the removal of these trees is considered to be **high** within this localised location. | term and reversible.<br>Trees removed over the onshore ECC would be unable to be replanted within the 25 year project lifespan and only reversible following decommission. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | considered to be **medium-high**. | | |
| Coastal Landscape | This landscape element is made up of several distinct elements that together create the coastal character found at the northern reaches of the onshore ECC and Landfall. The distinct elements include the beach, sea wall and footpath, links golf course and dune grassland. The coastal landscape is limited to | The area is not part of any designated landscapes although this coastal landscape is of importance within the overall character of the Rhyl and Prestatyn coastline. Value is therefore considered to be medium-high.<br>Reinstatement of the disrupted landscape can be achieved with relative ease. Susceptibility is considered to be medium-low. | The proposed HDD from the beach and under the A548, Golf Course and Robin Hood Holiday Park means that disruption of the coastal landscape is largely avoided other than the potential creation of temporary cofferdams.<br>The golf course, sea wall and remnant dune grassland would be unaffected apart from a very small amount of temporary disruption associated with the construction compound and access option adjacent to the North Wales Bowls Centre. | ***Minor and Not Significant***<br>The effect is adverse, short term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | Sections A and B of the onshore ECC and landfall.<br>(see context photos A1, A2, B1, B2 and B3 (application ref: 6.6.2.2.8)) | Taking this into account the sensitivity of the coastal landscape is considered to be **medium**. | Taking this into account, Magnitude of Change is considered to be **low**. | |

## 2.11 Environmental assessment: Landscape Character

### 2.11.1 Landscape Character Preliminary Assessment

177 Landscape character receptors within the Study Area (including LCAs and landscape designations) are assessed to identify which are likely to be influenced by the onshore elements of AyM.

### Preliminary Assessment Landscape Character– Onshore ECC and Landfall

178 The effects of the Landfall and onshore ECC are considered to be too small in scale and temporary in nature to give rise to significant landscape character effects. Whilst some permanent tree removal would occur as a result of the onshore ECC, the effect is limited when considered within the overall characteristics of the area. It is considered that whilst these effects have some association with the LCAs in which the proposed onshore ECC and landfall would occur, these LCAs are only likely to experience a low scale of change and/ or effects experienced over limited geographic areas. The onshore ECC does not lie within any of the identified designated landscapes.

179 As a result, it is considered that the proposed onshore ECC and Landfall would not become a prevailing or defining element/ characteristic within the context of their existing landscape character and are not assessed any further in the LVIA.

### Preliminary Assessments Landscape Character – OnSS

180 Table 9 identifies which landscape character receptors have the potential to undergo significant effects and require to be assessed in detail.

Table 9: Preliminary Assessment Landscape Character – OnSS.

| LANDSCAPE CHARACTER RECEPTOR | COMMENT |
|---|---|
| Status – Potential for significant effects and included in detailed assessment. | |

| LANDSCAPE CHARACTER RECEPTOR | COMMENT |
|---|---|
| A1. Eastern Lowlands (Cefn Meiriadog Vale Slopes) | The OnSS would be located within this LCA. |
| C4. Limestone Farmlands (Abergele to Denbigh Coastal/Vale Hills) | Neighbouring LCA to the west and south fringing the LCA within which the OnSS would be located. Whilst no potential for significant effects is considered for the onshore ECC from this area the larger scale of the OnSS elements requires further assessment in the LVIA. |
| Bodelwyddan Park RHPG | The OnSS lies immediately adjacent to Bodelwyddan Park and potential visibility is found within isolated parts of the parkland including at Bodelwyddan Castle. |
| Status – Considered further in preliminary assessment but found to have no potential for significant effects and not included in detailed assessment. | |
| A6. Vale Farmlands (Vale of Clwyd) | Whilst relatively large areas of theoretical visibility stretch across parts of this LCA to the north and east, actual visibility is restricted by distance and successive layers of trees, woodlands and built elements that intervene. |
| Status – Limited or no level of influence to the defining characteristics, due to limited / distant or no visibility of the proposed onshore elements of AyM, such that there is no potential for significant effects. | |

| LANDSCAPE CHARACTER RECEPTOR | COMMENT |
|---|---|
| A4. Coastal & Estuarine Flats (Prestatyn to Abergele);<br>A3. Lowland Hills;<br>B2. Deep Valleys (Aled and Elwy);<br>D1. Aled Hiraethog Hills (West);<br>Betws yn Rhos SLA;<br>Elwy & Aled Valley SLA;<br>Kinmel Park RHPG;<br>Bodrhyddan RHPG; | Llannerch Hall RHPG;<br>Plas Heaton RHPG;<br>Plas Uchaf, Llannefydd RHPG;<br>Bodelwyddan CA;<br>St George CA;<br>St Asaph CA;<br>Rhuddlan CA. |

### 2.11.2 Landscape Character Detailed Assessment

Table 10: Detailed Assessment Landscape Character Effects – OnSS (construction and operational).

<table>
<tr><th>RECEPTOR</th><th>BASELINE</th><th>SENSITIVITY</th><th>MAGNITUDE OF CHANGE</th><th>SIGNIFICANCE OF EFFECT</th></tr>
<tr>
<td rowspan="3">A1. Eastern Lowlands (Cefn Meiriadog Vale Slopes)</td>
<td rowspan="3">Gently undulating pastoral lowland, located along the western fringe of the Vale of Clwyd, just south-west of St Asaph. Man-made influence is evident in the managed landscape and frequency of dispersed farmsteads / rural properties. Modern development is most notable along the A55, at SABP, in the vicinity of large scale substations and where pylon lines cross the landscape. Skylines are occasionally punctuated by pylon lines and existing built development.<br><br>Views are typically enclosed and filtered by landform and vegetation. There are few outward views, other than eastwards towards the Clwydian Range from the higher parts of this landscape.</td>
<td>The vast majority of the LCA is undesignated apart from the western fringes of the LCA which overlap with the eastern edges of the Bodelwyddan Park RHPG.<br><br>LANDMAP evaluation within the LCA:<br><br>Geological Landscape:<br>DNBGHGL016 – moderate<br>DNBGHGL031 – high<br>Landscape Habitats:<br>DNBGHLH021 – moderate<br>DNBGHLH022 – moderate<br>DNBGHLH023 – moderate<br><br>Visual and Sensory:<br>DNBGHVS014 – moderate<br>DNBGHVS033 – moderate<br>Historic Landscape:<br>DNBGHHL005 – high<br>DNBGHHL041 – moderate<br><br>Taking this into account, value of the LCA is considered to be medium.<br><br>The OnSS would be located in this LCA, however, it would only occupy a localised part of the much wider LCA. Although there are parts of the landscape that are characterised by historic landscape estates the wider landscape has been modified by agricultural practices and modern influences, in particular SABP, transport links and electrical infrastructure moderating its susceptibility. Susceptibility to change is considered to be medium.<br><br>Sensitivity is considered to be medium.</td>
<td>The OnSS (both during construction and operation) would be evident from the north-western parts of the area or within the localised area immediately surrounding the OnSS and OnSS construction compound. Changes to landscape character would occur within the context of the man-made influence noted in the baseline, which includes existing substations, overhead electricity lines, a significant road junction and the existing business park.<br><br>The magnitude of change is considered to be high during construction reducing to medium-high once construction is completed. In year 15 once mitigation woodland has matured, the magnitude of change is considered to reduce to medium.<br><br>Magnitude of change for LANDMAP aspect areas within this LCA assessed in detail in annex 2.1:<br><br>Geological Landscape: DNBGHGL031 Cefn Meiriadog: (Onshore ECC) construction- low<br><br>Historic Landscape: DNBGHHL005 Bodelwyddan Park: (OnSS) Construction-medium; Operation year1: medium-low; Operation year15: low</td>
<td>Construction – Moderate – Major and Significant<br><br>Operational - year 1: Moderate and Significant<br><br>Operational - year 15: Moderate and Not Significant<br><br>Effects are adverse and localised to the areas immediately surrounding the OnSS and OnSS construction compound.<br><br>Construction effects are short term and reversible. Operational effects are long term and reversible with localised Moderate and Significant effect lasting for 15 years and once planting has established reducing to Moderate and Not Significant for remaining 10 years of the 25 year indicative design life.</td>
</tr>
</table>

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| C4. Limestone Farmlands (Abergele to Denbigh Coastal/Vale Hills) | Comprises land which runs from Colwyn Bay and Abergele, south past Henllan, to Denbigh.<br>Rolling landscape with Mosaic of pastures and woodland, including estate woodlands and designed parklands.<br>Man-made influence is evident in the road system, including the A55 and pylon lines which punctuate the skyline south of the B5831. The presence of traffic on the local road network brings frequent movement into this landscape, particularly around the larger settlements.<br>Elsewhere the landscape becomes more rural in character with a settlement pattern dispersed along a network of minor lanes. | Western parts of the LCA overlap with the eastern parts of the Betws yn Rhos SLA and the Bodelwyddan Park and Kinmel Park RHPG are within it.<br>LANDMAP evaluation within the LCA:<br>Geological Landscape:<br>DNBGHGL016 – moderate<br>DNBGHGL031 – high<br>Landscape Habitats:<br>DNBGHLH021 – moderate<br>DNBGHLH027 – moderate<br>DNBGHLH023 – moderate<br>Visual and Sensory:<br>CNWVS020 - high<br>DNBGHVS035 – high<br>DNBGHVS037 – high<br>Historic Landscape:<br>DNBGHHL005 – high<br>DNBGHHL043 – moderate<br>DNBGHHL041 – moderate<br>Taking this into account, value is considered to be medium-high.<br>The OnSS would be located in the neighbouring LCA to the east of Bodelwyddan and north of a central section of this LCA near Groesfford. Any changes to the character of this LCA would be as a result of the visibility of the OnSS only Susceptibility is moderated by the level of man made influence both in this area of the LCA but also within the neighbouring LCA to the north. Susceptibility to change is considered to be medium-low.<br>Sensitivity is considered to be **medium**. | The OnSS (both during construction and operation) would be evident from the elevated central parts of this LCA as a distant development within the context of the existing SABP and existing pylon lines. Visibility from Bodelwyddan in the north part of this LCA is restricted by intervening woodlands, field boundary and estate trees.<br>The magnitude of change is considered to be **Medium-Low** during construction and once construction is completed. In year 15 once mitigation woodland has matured, the magnitude of change is considered to reduce to **Low**.<br>Magnitude of change for LANDMAP aspect areas within this LCA assessed in detail in annex 2.1:<br>Geological Landscape: DNBGHGL031 Cefn Meiriadog: (Onshore ECC) construction- low<br>Visual and Sensory: DNBGHVS035: Wooded Parkland and Parkland Remnants: Construction- medium; Operation year1: medium-low; Operation year15: low<br>DNBGHVS037: Limestone Valley-Cefn: Construction- medium-low; Operation year1: medium-low; Operation year15: low<br>Historic Landscape: DNBGHHL005 Bodelwyddan Park: Construction- medium; Operation year1: medium-low; Operation year15: low | Construction – ***Moderate-Minor and Not Significant***<br>Operational - year 1: ***Moderate- Minor and Not Significant***<br>Operational - year 15: ***Minor and Not Significant***<br>Effects are adverse and localised to elevated central parts of the LCA.<br>Construction effects are short term and reversible. Operational effects are long term and reversible. |
| | Bodelwyddan Castle has a well-preserved landscape park that originated in the | The Bodelwyddan Pak RHPG is a designated park and garden.<br>LANDMAP evaluation within the LCA: | Changes to this RHPG would potentially be experienced as indirect visual effects from areas of theoretical visibility shown on the | Construction – ***Moderate and Not Significant*** |

| RECEPTOR | BASELINE | SENSITIVITY | | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|---|
| Bodelwyddan Park RHPG | 18th century. The parkland features large areas of mature woodland and extensive parkland trees. The boundaries of parkland are walled, these walls are larger to the west and south when adjacent to the local road network and smaller in size to the east and north. Other features include lodges, a walled garden, a maze, ponds and a grass terrace to the east of the Castle and paths into the wider landscape surrounding the Castle.<br><br>Extensive car parking for visitors is to the north of the Castle, although, the Castle and paths to the wider landscape are currently closed to the public. Much of the parkland landscape is used for grazing and had no public access when the grounds were open in the past. The Castle itself is a 3 storey castellated mansion, part of which operates as a hotel. | Geological Landscape:<br>DNBGHGL016 – moderate<br>DNBGHGL031 – high<br>Landscape Habitats:<br>DNBGHLH021 – moderate | Visual and Sensory:<br>DNBGHVS035 – high<br>Historic Landscape:<br>DNBGHHL005 – high | ZTV. These areas are limited in number and extent due the woodlands along the eastern boundary of Bodelwyddan Park and small woodlands and parkland trees providing existing visual screening from much of the parkland landscape. The OnSS would still be evident within the parkland in the south east corner which has less existing tree screening, however, the OnSS would be viewed within the context of the existing SABP and pylons, as filtered through the existing field boundary trees.<br><br>Taking these factors into account, the magnitude of change is considered to be **medium - low** during construction, in year 1 (once construction is completed), reducing to **low** in year 15 (once mitigation woodland has matured).<br><br>Magnitude of change for LANDMAP aspect areas within this LCA assessed in detail in Annex 2.1:<br><br>Geological Landscape: DNBGHGL031 Cefn Meiriadog: (Onshore ECC) construction- low<br><br>Visual and Sensory: DNBGHVS035: Wooded Parkland and Parkland Remnants: Construction- medium; Operation year1: medium-low; Operation year15: low<br><br>Historic Landscape: DNBGHHL005 Bodelwyddan Park: Construction- medium; Operation year1: medium-low; Operation year15: low | Operational - year 1: ***Moderate and Not Significant***<br><br>Operational - year 15: ***Moderate-Minor and Not Significant***<br><br>Effects are adverse and localised to the south east area of parkland.<br><br>Construction effects are short term and reversible. Operational effects are long term and reversible. |
| | | Taking this into account value is considered to be high.<br><br>The OnSS and OnSS construction compound lie immediately adjacent to Bodelwyddan Park. Only limited areas of potential visibility are found within isolated parts of the parkland including at Bodelwyddan Castle. Susceptibility to change is considered to be medium-low.<br><br>Sensitivity is considered to be **medium-high.** | | | |

## 2.12 Environmental assessment: Visual Effects

### 2.12.1 Visual Effects Preliminary Assessment

181 Principal visual receptors and viewpoints within the LVIA Study Areas are assessed to identify which are likely to be influenced by the onshore elements of AyM.

### Preliminary Assessment Visual Effects - Onshore ECC and Landfall

182 As described in section 2.8.2 Potential Effects, the effects of the onshore ECC and landfall would relate principally to the construction phase as a result of its underground nature. Table 11, therefore identifies those onshore ECC and landfall receptors that have the potential to undergo significant effects during construction and require to be assessed in detail.

Table 11: Preliminary Assessment Visual Effects During Construction – Onshore ECC and Landfall.

| VISUAL RECEPTOR | COMMENT |
|---|---|
| Status – Potential for significant effects and included in detailed assessment. | |
| B5381 Glascoed Road | Potential for significant effects for road users at close range, to the south of the OnSS. |
| Chester to Holyhead railway line | Potential for significant effects in views for passengers when passing the Robin Hood Holiday Park. |
| Wales Coast Path, NCR 5 | Potential for significant effects for recreational receptors in views close to the Landfall and beach access TCCs. |
| Bridlepath to the north of the OnSS (PRoW 201/9) | Potential for significant effects for recreational receptors due to the construction of the onshore ECC |

| VISUAL RECEPTOR | COMMENT |
|---|---|
| | experienced in combination with other construction activities related to OnSS. |
| Several PRoW to the south of Rhyl between the B5119 and A547 (including the North Wales Path) | Construction impacts of the onshore ECC would only be experienced for a very short duration, however, due to the frequency of PRoW that the onshore ECC crosses within this area, the potential for a significant effect for recreational receptors is increased. |
| Visitors to the Robin Hood Holiday Park | Within close proximity of the proposed HDD compounds beyond the railway line. Considered to have the potential for significant effects in relation to views of the onshore ECC construction activities. |
| Individual Properties: Route Section C: Bryn Cwnin Farmhouse, Bryn Celyn Cottages, Bryn-y-wal Farm, Cwybr Bach and Plas Lorna;<br>Route Section D - Cwybr Fawr; Route Section F - Faenol-Bropor; Section G - Waen Meredydd | These properties are within close proximity of the proposed onshore ECC and are considered to have the potential for significant effects in relation to views of the onshore ECC construction activities. |
| Status – Considered further in preliminary assessment but found to have no potential for significant effects and not included in detailed assessment. | |
| A55, A525, A547 | Potential visual effects as a result of construction activity are limited by the short duration of impacts and screening potential of roadside hedges / landform |

| VISUAL RECEPTOR | COMMENT |
|---|---|
| | and not therefore considered to have the potential for significant effects. |
| A458 | The Onshore ECC is underground via HDD at the A458 and the construction activity would not be visible from the road. No potential for significant effects. |
| Other PRoW including along the River Clwyd (including NCR 84), between the A547 and Sarn Lane and to the north of the A55. | The temporary disruption resulting from the construction of the onshore ECC for these PRoW would be very localised and not considered to have the potential for significant effects. |
| Users of the Rhyl Golf Course | Within close proximity to the proposed landfall with visibility of the Cofferdams, however, these visual effects would be very localised and not considered to have the potential for significant effects. |
| Settlements - Rhyl, Rhuddlan | Whilst there is potential visibility of the onshore ECC construction activity from the northern edges of Rhuddlan and the southern edges of Rhyl, potential significant effects are considered unlikely due to distance and intervening hedges, woodlands and trees, which combine to reduce the actual visibility experienced from the settlement edge. |
| Settlements - Prestatyn | There is potential visibility of the onshore ECC construction activity from the western edges of Prestatyn, however, views of construction activity and HDD compound would be limited by the intervening vegetated railway line and |

| VISUAL RECEPTOR | COMMENT |
|---|---|
| | not considered to have potential to lead to a significant effect. |
| Individual Properties: Route Section E: Ty Isaf | Whilst this property is 2 storeys with open views of the surrounding landscape, the orientation of the property is north to south with its principal aspect and views also to the north or the south. Views west towards the onshore ECC are therefore limited to garden views which would be limited by the hedgerow of an intervening field boundary and are not considered to have potential for significant effects. |
| Individual Properties: Route Section E: Fferm | The onshore ECC is located to the east of this property. Large farm buildings at Fferm intervene in views from the property towards the proposed onshore ECC. No potential for significant effects. |
| Status – Limited level of influence, due to limited / restricted or distant visibility, such that there is no potential for significant effects. | |
| Settlements - St Asaph, Bodelwyddan | |

## Preliminary Assessment Visual Effects - OnSS

183 Operational and construction effects for the OnSS are assessed and reported together to avoid repetition of detailed baseline and sensitivity assessments. As such the following preliminary assessment also considers these together. Table 12 identifies those OnSS receptors that have the potential to undergo significant effects and require to be assessed in detail.

Table 12: Preliminary Assessment Visual Effects During Construction and Operation – OnSS.

| VISUAL RECEPTOR | COMMENT |
|---|---|
| Status – Potential for significant effects and included in detailed assessment. | |
| Bridlepath to the north of the OnSS zone (PRoW 201/9) | Potential for significant effects due to the relatively close proximity of the OnSS. Assessed in detail from viewpoint 1. |
| St Asaph, Business Park | Potential for significant effects due to the relatively close proximity of the OnSS. Assessed in detail from viewpoint 2. |
| Glascoed Nature Reserve | Potential for significant effects due to the relatively close proximity of the OnSS. Assessed in detail from viewpoint 2. |
| Glascoed Rd | Potential for significant effects due to the relatively close proximity of the OnSS. Also includes the residential receptors on this road to the south west of the OnSS site. Assessed in detail from viewpoint 3. |
| The Denbighshire Memorial Park and Crematorium | Potential for significant effects due to the relatively close proximity of the OnSS. Assessed in detail within the LVIA. |
| A55 | Potential for significant effects due to the opportunity for views of the OnSS between existing landscape elements within close visual context of Faenol Bropor Farm. Assessed in detail from viewpoint 4. |
| Groesffordd | Potential for significant effects due to views of the OnSS from an elevated settled ridge. Assessed in detail from viewpoint 5. |

| VISUAL RECEPTOR | COMMENT |
|---|---|
| Status – Considered further in preliminary assessment but found to have no potential for significant effects and not included in detailed assessment. | |
| Bodelwyddan Park | No potential for significant effects due to the level of existing woodland planting that intervenes in views from the parkland and paths surrounding the Castle. See viewpoint 6 visualisation on Volume 6, Annex 2, Figure 2.23. |
| Settlements – Rhuddlan, St Asaph | No potential for significant effects due to distance and intervening landscape elements (hedges, woodlands and trees), which combine to limit visibility of the OnSS. See visualisations for viewpoint 7 – St Asaph (Volume 6, Annex 2, Figure 2.24) and viewpoint 8 – Rhuddlan (Volume 6, Annex 2, Figure 2.25). |
| Clwydian Range and Dee Valley AONB | The AONB is outside the study area to the east of the Onshore ECC and OnSS. NRW requested a viewpoint within its Statutory Consultation response to illustrate the visual effect from the elevated edges of the AONB. A viewpoint at Y Foel was agreed during this consultation and a visualisation has been prepared for Y Foel as viewpoint 9 (Volume 6, Annex 2, Figure 2.26a-c.<br><br>It is considered that there is no potential for significant effects from the AONB or viewpoint 9 due to distance and intervening landscape elements (woodlands, trees and SABP), which combine to limit visibility of the Onshore ECC and OnSS.<br><br>This view is shared by the Clwydian Range and Dee Valley AONB Joint Committee, and DCC who have both confirmed the onshore proposals do not directly affect the AONB. |

| VISUAL RECEPTOR | COMMENT |
|---|---|
| | NRWs earlier consultation is supportive of this view (see section 2.3) and it is considered that the visualisation produced for viewpoint 9 is clearly illustrative of this. - 'NRW consider significant visual effects on the AONB unlikely due to the distances involved and the location of the substation to the west of the existing industrial estate in views from the AONB. Therefore, NRW would not insist on a viewpoint from the AONB in this case and consider it can be scoped out.' |
| Status – Limited level of influence, due to limited / restricted or distant visibility of the proposed onshore elements of the AyM, such that there is no potential for significant effects. | |
| Settlements – Bodelwyddan, Trefnant and Nant y Patrick, Towyn, Kinmel Bay | |
| Other PRoWs including along the River Clwyd (including NCR 84), between the A547 and Sarn Lane and to the north of the A55. | |
| Roads - A525, A547 | |

### 2.12.2 Visual Effects Detailed Assessment

## Detailed visual effects of the onshore ECC and landfall

The detailed assessment of visual effects of the onshore ECC and landfall is provided in Table 13.

Table 13: Detailed Assessment Visual Effects – onshore ECC and landfall (construction).

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| Wales Coast Path, NCR 5 | The Wales Coast Path is a long distance walking route (approximately 1400km total length) that follows the coastline of Wales. This section also incorporates NCR5 and is a wide concrete footway alongside the sea wall with occasional stepped access points to the beach. Views are panoramic and include views out to sea (including views of the existing offshore wind farms), long views along the beaches and coastal landscapes of this part of North Wales and views south across the golf course and dune grassland. | The section of footpath and cycleway between Rhyl and Prestatyn is not subject to landscape designation for its scenic quality. However, views from this route are locally valued for their coastal character with panoramic views out to sea and views along the long sandy beaches. Value is considered to be medium.<br>Recreational walkers and cyclists are likely to be focused on their surroundings on this section of the route. Susceptibility is intensified by the close proximity of the onshore elements of AyM construction activities for a localised section of the route although the views experienced are transient. Susceptibility is considered to be medium – high.<br>Sensitivity to change is assessed as **medium - high** | Potential visual effects of the onshore ECC, landfall would occur on the section of route that passes the golf course and beach access TCCs would occur at the edges of Prestatyn and Rhyl. Potential visibility relates to landfall construction activities to the north of the route including visibility of the cofferdams and beach access TCCs.<br>Receptors on this route would experience some localised visual change in the view north across the beach when close to the onshore ECC. The effect is temporary and localised to approximately 200m east and west of the Onshore ECC. Receptors would also experience further localised change when close to the beach access TCCs at the edges of Prestatyn and Rhyl.<br>The construction magnitude of change is considered to be **low.** | Construction:<br>***Moderate-Minor and Not Significant***<br>Receptors on this route would only experience changes in the view for a very localised and short section of route (for approximately 600m in length when close to the Onshore ECC and for approximately 100m in length when close to the beach access TCCs at the edges of Prestatyn and Rhyl).<br>Construction effects are adverse, short term and reversible. |
| Visitors to the Robin Hood Holiday Park | The Robin Hood Holiday Park lies to the east of Rhyl between the A548 and the railway line.<br>The Holiday Park is largely occupied by static caravans with chalets fronting the A548 and a central amenity hub that includes shops, café, bar, crazy golf and indoor pools. | The Holiday Park is not subject to landscape designation for scenic quality and value is considered to be medium-low.<br>Visitors to the Holiday Park will have an appreciation of the surrounding landscape and susceptibility to change is therefore considered to be medium-high.<br>Sensitivity to change is assessed as **medium.** | Visibility of the onshore ECC and landfall construction activity would be restricted to the southern edges of the Holiday Park where the HDD compound to the south of the railway line would be visible. Visibility of this construction compound is moderated by the intervening railway line. The effect is temporary for the duration of the construction activity localised to the HDD compound.<br>The construction magnitude of change is considered to be **medium-low.** | Construction:<br>***Moderate-Minor and Not Significant***<br>Construction effects are adverse, short term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| Chester to Holyhead railway line | The Chester to Holyhead railway line provides a key transport link between Chester and the coastal towns of north Wales. The section between the settlement edges of Prestatyn and Rhyl, when passing the Robin Hood Holiday Park has views across the rural landscape to the south and into the Robin Hood Holiday Park to the north. | This section of Railway Line is not located within or close to any national, regional or local scenic designations or recognised scenic views and the value is considered to be medium.<br>The section between the settlement edges of Prestatyn and Rhyl passes the proposed HDD compound within the rural landscape to the south. The train will be moving at moderate speed through complex landscape of built development with some open areas between. Susceptibility to change is considered to be medium.<br>Sensitivity is considered to be **medium.** | Potential visual effects of the onshore ECC and landfall would occur on the section of railway that passes the Robin Hood Holiday Park. The Onshore ECC is proposed to cross the railway line using HDD crossing. The HDD compound to the south of the railway would be visible to passengers travelling on the railway. The visual effect is of a short duration and is limited to the construction activities closest to the railway.<br>The construction magnitude of change is considered to be **medium.** | Construction:<br>***Moderate and Not Significant***<br>Receptors on this route would only experience changes in the view for a short duration and at speed.<br>Construction effects are adverse, short term and reversible. |
| PRoW to the south of Rhyl between the B5119 and A547 (including the North Wales Path) | The PRoW in this area traverse the agricultural landscape occasionally connecting with the minor roads that link the farms and isolated properties in the area. The PRoW also provide linkage with the settlements of Rhyl and Rhuddlan. PRoW 206/12 and 206/13 follow the North Wales Path which connects Dyserth to Rhuddlan. Other PRoW in the area include - 206/3, 206/5, 206/17, 206/18, 206/20 and 206/44. | The PRoW are not subject to landscape designation for scenic quality although their context will be locally valued. Value is considered to be medium.<br>Users of the PRoW are likely to be focused on their surroundings and for the most part, views across the rural landscape is open apart from the occasional woodland or trees associated with the edge of settlement. Susceptibility is considered to be medium – high.<br>Sensitivity to change is assessed as **medium - high** | Construction effects of the onshore ECC would be experienced by users of these PRoW on localised sections of route where the Onshore ECC passes under them and close views of HDD compounds would be experienced (such as for PRoW 206/18 and 206/44). PRoW 206/20 is also in close proximity to the TCC immediately north of Rhuddlan.<br>Construction effects may also be experienced in sequence but would only be experienced for a short duration, localised to the crossing points, TCCs and HDD compounds.<br>Receptors on other PRoWs in this area would only experience distant visual effects, localised to where visibility of crossing points, TCCs and HDD compounds | Construction:<br>***Moderate and Significant***<br>Significant effects are found on sections of PRoW where the cable route is in close proximity to TCCs or HDD compounds. On other sections of these PRoW the effect would be Not Significant.<br>Construction effects are adverse short term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
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| | | | is possible beyond the surrounding network of tall hedgerows.<br>Taking all of this into account magnitude of change for these localised sections of PRoW during construction is considered to be **medium.** | |
| Bryn Celyn Cottages | 2 storey properties set within a perimeter of garden trees and hedges, however, views are available between these trees to the surrounding landscape. | Value is considered to be medium. The property overlooks agricultural landscape and is not designated for its scenic quality. Susceptibility to change is considered to be high and taking this into account sensitivity is assessed to be **high.** | Construction effects of the onshore ECC would be experienced at this property as a result of the trenching of the cable and HDD compound in the distant view to the north of the property.<br>The magnitude of change for this property during construction is considered to be **low**. | Construction:<br>***Moderate-Minor and Not Significant***<br>Construction effects are adverse, short term and reversible. |
| Bryn Cwnin Farmhouse | Large Grade II listed farmhouse set within a wooded context with large outbuildings. The property is 2 storeys with available views to the south and east away from the woods to the west and north. | Value is considered to be high-medium. The property overlooks agricultural landscape and is not designated for its scenic quality, however it is grade II listed. Susceptibility to change is considered to be high and taking this into account sensitivity is assessed to be **high.** | Construction effects of the onshore ECC would be experienced at this property as a result of the trenching of the cable in the area local to the property.<br>The Onshore ECC passes to the north beyond existing woodland that surrounds the property. The Onshore ECC is undergrounded via HDD at this section although the HDD compounds would not be visible due to intervening woods.<br>Taking this into account magnitude of change for this property during construction is considered to be **negligible**. | Construction:<br>***Minor and Not Significant***<br>Construction effects are adverse, short term and reversible. |
| Bryn-y-wal Farm, | 2 storey property with a north to south axis with the front of the property facing south. Small woods are found to the north east and west of this property which also has some large garden trees although views of | Value is considered to be medium. The property overlooks agricultural landscape and is not designated for its scenic quality. Susceptibility to change is considered to be high and taking this | Construction effects of the onshore ECC would be experienced at this property as a result of the trenching of the cable in the area local to the property. The Onshore ECC passes to the north of the property in the neighbouring field to the rear garden | Construction:<br>***Moderate and Not Significant*** |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | the surrounding landscape are relatively open to the north and south. | into account sensitivity is assessed to be **medium-high.** | with an HDD compound beyond this in the next field back. Views of the construction activity would be filtered by the rows of bushy hedgerows and trees.<br>Taking this into account magnitude of change for this property during construction is considered to be **medium-low**. | Construction effects are adverse, short term and reversible. |
| Cwybr Bach | 2 storey cottages with extensive gardens and mature trees, large shrubs and hedges found along the property boundaries. Outbuildings to the north of the properties limit views in that direction. Views of the surrounding landscape are available to the south across the large garden areas. | Value is considered to be medium. The property overlooks agricultural landscape and is not designated for its scenic quality. Susceptibility to change is considered to be high and taking this into account sensitivity is assessed to be **medium-high.** | The HDD compound for the A525 cable crossing would be located to the south of this property. The TCC to the west of the A525 would not be visible due to the amount of garden planting that intervenes, however, the TCC to the east of the A525 would be visible in combination with the HDD compound to the south of the property. Taking this into account magnitude of change for this property during construction is considered to be **medium-high.** | Construction: ***Moderate-Major and Significant***<br>Construction effects are adverse, short term and reversible. |
| Plas Lorna; | This property is a large 2 storey property currently is use as a care home. Views of the surrounding landscape are available to the south and west but are restricted in other directions by large garden trees and boundary fences. | Value is considered to be medium. The property overlooks agricultural landscape and is not designated for its scenic quality. Susceptibility to change is considered to be high-medium and taking this into account sensitivity is assessed to be **medium-high.** | The HDD compound for the A525 cable crossing would be located to the north of this property. Due to the planting and fencing along the northern boundary of the property, views of the HDD compound are restricted. However, the property would have clear views towards the TCC to the south. Taking this into account magnitude of change for this property during construction is considered to be **high.** | Construction: ***Major and Significant***<br>Construction effects are adverse, short term and reversible. |
| Cwybr Fawr | This property is a large 2 storey property which is orientated west to east with the front of the house and large bay windows facing east. It is located close to the A525 off a minor | Value is considered to be medium. The property overlooks agricultural landscape, the busy A525 road and is not designated for its scenic quality. Susceptibility to change is considered to | A large TCC and the HDD compound for the A525 cable crossing would be located to the south of this property.<br>The property would have views towards the TCC and construction access to the south. | Construction:<br>***Moderate and Not Significant*** |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | access road. There are large trees along the boundary of this access road limiting the openness of views to the south. | be medium and taking this into account sensitivity is assessed to be **medium.** | The views would be from the side of the house or from the garden area and the principal view to the east would be unaffected.<br>Taking this into account magnitude of change for this property during construction is considered to be **medium.** | Construction effects are adverse, short term and reversible. |
| Faenol-Bropor | Large Grade II listed farmhouse set within an open agricultural setting with several large farm building within its immediate context. The property is 2 storeys with available views to the surrounding fields. | Value is considered to be medium-high. The property overlooks agricultural landscape and is not designated for its scenic quality, however it is grade II listed. Susceptibility to change is considered to be high and taking this into account sensitivity is assessed to be **high.** | The HDD compounds for the A55 cable crossing would be located to the east of this property, the construction activity of cable route section F to the south of the A55 HDD compound would also be visible as it approaches the OnSS. Taking this into account magnitude of change for this property during construction is considered to be **high.** | Construction: ***Major and Significant***<br>Construction effects are adverse, short term and reversible. |
| Bridlepath (PRoW 201/9) to the north of the OnSS | Bridlepath (PRoW 201/9) provides connection between the eastern edges of the SABP and Felin y Gors Mill to the south of the A55. The Bridlepath is enclosed by tall scrub and trees for long sections with tall hedgerows and hedgerow trees on other sections. The representative viewpoint is located on the intersection of the Bridlepath with a farm track connected to Faenol Bropor where views are open for a short stretch. | The Bridlepath is not subject to landscape designation for its scenic quality. Value is considered to be medium.<br>Recreational walkers and horse riders are likely to be focused on their surroundings where views are available (such as at the viewpoint location). However views are transient and for the most part views are not open to the wider landscape from this bridlepath. Susceptibility is considered to be medium.<br>Sensitivity to change is assessed as **medium** | Magnitude of change results from the construction of the onshore ECC experienced in combination with other construction activities related to OnSS construction.<br>These construction activities would be visible in a localised section of route close to viewpoint 1 both towards the site of the OnSS and also to the north along the onshore ECC. At this location it is also noted that the vegetation removal to allow cable trenching would open up views for a longer section of the bridlepath than is currently experienced.<br>Construction activities may also be visible further to the west along this route, close to the Bodelwyddan Park boundary, where | Construction: ***Moderate-Major and Significant.***<br>Significant effects are isolated to locations where views of the surrounding landscape opens up at viewpoint 1 and further west close to the Bodelwyddan Park boundary. On other sections of this PRoW the effect would be Not Significant.<br>Construction effects are adverse, short term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
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| | | | open views can be had of the OnSS construction compound.<br>Taking all of this into account magnitude of change for these localised sections of the Bridlepath during construction is considered to be **high.** | |
| B5381 Glascoed Road | This road connects St Asaph to the small village of Glascoed. It is a busy road that also connects the rural road network of minor roads servicing the many other small villages and property clusters in the area. The SABP can also be accessed from this road. Much of the road is lined with high hedgerows, limiting views of the surrounding landscape. | The section of the B5381 immediately to the south of the OnSS site is not located within or close to any national, regional or local scenic designations or recognised scenic views and the value is considered to be medium-low.<br>This section of road has a speed limit of 60mph and road users have limited views of the surrounding landscape as a result of high roadside hedgerows. However, given the close proximity of the proposed construction activities to this section of road and the potential for direct disruption to the roadside vegetation, susceptibility to change is considered to be medium-high.<br>Sensitivity is considered to be **medium.** | Potential visual effects of the onshore ECC would occur on the section of road that lies between the Crematorium and the group of properties found opposite the southeast corner of Bodelwyddan Park. Within this section of road potential effects would be focused on the construction activities associated with section G of the onshore ECC which would be seen in the foreground of the OnSS construction activities. Of particular note would be where the construction activities are in close proximity to the road itself. The OnSS access road would be located on this road, to the east of the Glascoed road properties. Visual effects would be intensified close to this access due to the removal of existing hedgerows and movement of construction vehicles entering and exiting the OnSS construction compound.<br>Taking these factors into account, the construction magnitude of change is considered to be **high.** | Construction – ***Moderate-Major and Significant.***<br>Effects are adverse and localised to the section of road between the properties and Crematorium. On other sections of this road, the effect would be Not Significant.<br>Construction effects are short term and reversible. |
| Waen Meredydd | This is a 2 storey property which has an east to west orientation and conservatory on its eastern elevation. Views from the property are limited | Value is considered to be medium. The property overlooks agricultural landscape and is not designated for its scenic quality. Existing field boundary | Route section G of the Onshore ECC – passes this property in the neighbouring field to the south. The Onshore ECC widens considerably at this point and the northern | Construction: ***Moderate and Significant*** |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | to the west by outbuildings and views to the south (in the direction of the proposed onshore ECC) are limited to a small gable end window overlooking the road. | hedgerows limit more extensive views of route section G to the east and west and the potential view of construction activity would therefore be focused on the field immediately to the south. Susceptibility to change is considered to be medium due to the limited view potential in the direction of the site and taking this into account sensitivity is assessed to be **medium.** | edge of the corridor is in close proximity to the property. The Onshore ECC at its widest transitions into a large TCC that spans across 3 separate fields to the west of the National Grid Bodelwyddan Substation.<br>The view south from the property is of a limited nature, however, the construction activity is in close proximity, including the large TCC. On balance the magnitude of change during construction is considered to be **medium-high.** | Construction effects are adverse, short term and reversible. |

## Detailed visual effects of the OnSS

184 For each of the 9 viewpoints included in the assessment a visualisation has been provided. See section 2.5.8 Visualisations.

Table 14: Detailed Assessment Visual Effects – OnSS (construction and operational).

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| Viewpoint 1 - Bridlepath nr Faenol-Bropor<br><br>See Volume 6, Annex 2, Figures 2.18a-f | This viewpoint represents users of Bridlepath (PRoW 201/9). The Bridlepath provides connection between the eastern edges of the SABP and Felin y Gors Mill to the south of the A55. The Bridlepath is enclosed by tall scrub and trees for long sections with tall hedgerows and hedgerow trees on other sections. The viewpoint is located on the intersection of the Bridlepath with a farm track connected to Faenol Bropor Farm to the north. The existing view south towards the OnSS location is across a series of fields used for grazing. Field boundaries vary between post and wire, hedgerows and hedgerows with trees. The hedgerow trees are mature in this area. The roofs of buildings within the SABP can be seen to the east beyond the Glascoed Nature Reserve and the boundary wall and mature woodlands of the Bodelwyddan Park RHPG can be seen to the west. | The Bridlepath is not subject to landscape designation for its scenic quality. Value is considered to be medium.<br><br>Recreational walkers and horse riders are likely to be focused on their surroundings where views are available (such as at the viewpoint location). However, views are transient and for the most part views are not open to the wider landscape from this bridlepath. Susceptibility is considered to be medium.<br><br>Sensitivity to change is assessed as ***medium***. | As can be seen in the visualisation for this viewpoint (Volume 6, Annex 2, Figure 2.18), the maximum parameter of the OnSS occupies a wide extent of the view to the south at relatively close proximity. The example OnSS models for GIS and AIS included in the visualisations provide an indication of the potential scale of built development proposed, however the exact location of the OnSS infrastructure within the maximum parameter has not yet been finalised.<br><br>From this viewpoint, construction activities associated with the onshore ECC will be visible in combination with the construction of the OnSS. Construction lighting would be evident in winter months when working days would extend into hours of darkness.<br><br>The effects of the onshore ECC are described in Table 13 and are not repeated here, however, the resulting intensification of construction related effects is also taken into account in this assessment. Taking all of this into account magnitude of change during construction is considered to be ***high***.<br><br>Based on the potentially close proximity of the OnSS, the operational magnitude of change is considered to be ***high*** in year 1 reducing to ***medium-high*** in year 15 once mitigation planting matures. This is largely as a result of the close proximity | Construction: ***Moderate-Major and Significant***<br><br>Operational year 1: ***Moderate-Major and Significant***<br><br>Operational year 15: ***Moderate and Significant***<br><br>Significant effects are isolated to the section bridlepath close to this viewpoint where the views open up at viewpoint 1. Further to the west and closer to the Bodelwyddan Park boundary the proposed woodland within the TCC would screen the OnSS from view in year 15 resulting in a Not Significant Effect. On other sections of this PRoW the effect would also be Not Significant.<br><br>Construction effects are adverse, short term and reversible.<br><br>Operational effects are adverse long term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | | and due to the potential for increased elevation of the OnSS platform relative to existing ground level as a result of the cut and fill balance. This increased elevation would also result in a reduction of screening potential for the indicative proposed woodland. Due to the position of the Onshore ECC as it approaches the OnSS it would not be possible to completely screen the OnSS infrastructure from this viewpoint. | |
| Viewpoint 2 - St Asaph, Business Park.<br>See Volume 6, Annex 2, Figures 2.19a-f | This viewpoint represents views from the SABP. The location is in the southern part of the business park where a turning head in the network of access roads and car parks allows views to the west that are not obscured by the surrounding built developments. This location is also close to the access into the Glascoed Nature Reserve.<br>The existing view west towards the OnSS site is across scrub vegetation and small trees, found within and at the edges of the neighbouring Glascoed Nature Reserve. In other directions the view is dominated by the large warehouse buildings found in this part of the SABP. | The viewpoint is not subject to landscape designation for its scenic quality and it is located in a developed, industrial context although open countryside views may be locally valued. Value is considered to be low.<br>Intervening woodland reduces visibility and influences the potential susceptibility to change. The site of the OnSS is in relatively close proximity to the west, however, receptors in their workplace are not likely to have their attention focused on the surrounding landscape, reducing susceptibility. Receptors visiting the Nature Reserve are more susceptible to the changes proposed increasing susceptibility. On balance, susceptibility is considered to be medium.<br>Sensitivity to change is assessed as ***medium - low*** | As can be seen in the visualisation for this viewpoint (Volume 6, Annex 2, Figure 2.19), the OnSS maximum parameter occupies a wide extent of the view to the west at relatively close proximity beyond the nature reserve and overgrown wooded boundary edge to the west of the business park.<br>The example OnSS models for GIS and AIS included in the visualisations are substantially screened by this intervening boundary, despite the larger building being located to the south and east of the OnSS platform. The maximum parameter can be seen on the visualisation as following the treeline of the intervening wooded boundary. Whilst the exact location of the OnSS infrastructure within the maximum parameter has not yet been finalised it is clear from the visualisation that the level of visibility from this location would be minimal. The images shown on the visualisation were captured when trees | Construction: ***Minor and Not Significant***<br>Operational year 1: ***Minor and Not Significant***<br>Operational year 15: ***Minor and Not Significant***<br>Effects within other parts of the Business Park are considered to be more limited due to increased tree/scrub screening at the edges of the Business Park.<br>Construction effects are adverse, short term and reversible.<br>Operational effects are adverse long term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | | are not in full leaf and the screening effect in summer months would therefore be greater.<br>Construction lighting would only be partially visible in winter months when working days would extend into hours of darkness.<br>Taking these factors into account, the magnitude of change is considered to be ***low*** during construction, in year 1 and year 15. (proposed mitigation woodland would not be apparent from this location). | |
| Viewpoint 3 – Glascoed Rd .<br>See Volume 6, Annex 2, Figures 2.20a-c | This viewpoint represents road users on Glascoed Road and residential receptors at properties close to the viewpoint. It has been taken from a slightly elevated location at the pedestrian entrance to the parking and Welsh Water site and as such is beyond the eastern extent of the residential properties so is largely representative of worst case views from the eastern most properties. Not all of the properties in this cluster are predicted to be affected and the two westernmost properties are considered to be screened by intervening boundary trees found at the southeast corner of the Bodelwyddan Park RHPG.<br>The viewpoint location and nearby properties have views over the hedgerows across the rural landscape and towards the site area of the OnSS. Distant views of the hills of the Clwydian | Road Users -<br>This section of the B5381 is not located within or close to any national, regional or local scenic designations or recognised scenic views and the value is considered to be medium-low.<br>Road users have limited views of the surrounding landscape as a result of high roadside hedgerows. Susceptibility to change for road users to the OnSS is considered to be medium-low.<br>Sensitivity for road users is considered to be ***medium-low***. | As can be seen in the visualisation for this viewpoint (Volume 6, Annex 2, Figure 2.20), the maximum parameter of the OnSS would occupy a central part of the view to the northeast that overlooks the agricultural land to the north of Glascoed Road.<br>The example OnSS models for GIS and AIS included in the visualisations provide an indication of the potential scale of built development proposed, however the exact location of the OnSS infrastructure within the maximum parameter has not yet been finalised. These example OnSS models have been positioned specifically to illustrate the worst case positions for both AIS and GIS in views from Glascoed Road including this viewpoint.<br>From this viewpoint, construction activities associated with the onshore | Road Users -<br>Construction: ***Moderate and Significant***<br>Operational year 1: ***Moderate and Significant***<br>Operational year 15: ***Minor and Not Significant***<br>Effects are adverse and localised to the section of road between the properties and Crematorium. On other sections of this road, there would be no effect.<br>Construction effects are adverse, short term and reversible.<br>Operational effects are adverse long term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | Range form a distant backdrop and to the north east include views of Y Foel, Marian Ffrith, Mynydd y Cwm and Moel Maenefa.<br><br>Glascoed Road connects St Asaph to the small village of Glascoed. It is a busy road that also connects the rural road network of minor roads servicing the many other small villages and property clusters in the area. The SABP can also be accessed from this road. Much of the road is lined with high hedgerows, limiting views of the surrounding landscape. | Residential Receptors -<br><br>This viewpoint is not located within or close to any national, regional or local scenic designations or recognised scenic views however, views from this area have an informal, local value for nearby residents. Value is considered to be medium.<br><br>Residential receptors have views over the tops of nearby hedgerows on account of the slight elevation of the properties. The view north east from these properties is from the front of the properties and the view towards the OnSS is regarded to form a part of their principal view. Susceptibility to change for residential receptors to the OnSS is considered to be high.<br><br>Sensitivity for residential receptors is considered to be ***medium-high.*** | ECC will be visible in combination with the construction of the OnSS. Construction lighting would be evident in winter months when working days would extend into hours of darkness. Taking all of this into account magnitude of change during construction is considered to be ***high***.<br><br>The operational magnitude of change is considered to be ***medium-high*** in year 1 following the completion of construction activities and the reinstatement of the OnSS TCC.<br><br>At year 15 proposed woodland planting located close to Glascoed Road would screen the OnSS from view at this viewpoint. The proposed woodland itself obstructs part of the distant view, however, the woodland in this area has been specifically aligned to maintain an unrestricted view to the Clwydian Hills of Marian Ffrith, Mynydd y Cwm and Moel Maenefa.<br><br>Proposed woodland planting located closer to the OnSS would screen the majority of the OnSS from view from other sections of the road apart from the roofs of the taller OnSS buildings and taller infrastructure located in the north of the OnSS platform. The OnSS platform being cut into the existing slope provides an initial degree of screening adding the screening effect of the proposed woodland itself. | Residential Receptors -<br><br>Construction: ***Major and Significant***<br><br>Operational year 1: ***Moderate-Major and Significant***<br><br>Operational year 15: ***Moderate-Minor and Not Significant***<br><br>Significant effects would not extend to the westernmost two properties which do not have views towards the OnSS.<br><br>Construction effects are adverse, short term and reversible.<br><br>Operational effects are adverse long term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | | Taking all of this into account the magnitude of change at 15 years is considered to be ***low.***<br><br>For road users, similar changes in the view would be experienced between the viewpoint and the Crematorium, however, the hedgerows obscure the view for road users limiting the magnitude of change assessed to those sections of road where hedgerow removal is required for cable route works and the southern access option. | |
| The Denbighshire Memorial Park and Crematorium | This viewpoint represents visitors to the Memorial Park and Crematorium which is located on Glascoed Road. From this location there are views to the north across the OnSS site area.<br><br>Views north are over the tops of tall hedgerows that line the busy Glascoed road, across the rural landscape of the OnSS site area, the nearby nature reserve and the SABP.<br><br>The view north includes overhead electricity lines and pylons which pass close to the crematorium.<br><br>The hills of the Clwydian Range form a distant backdrop and to the northeast include views of Y Foel, Marian Ffrith, Mynydd y Cwm and Moel Maenefa. | This location is not located within or close to any national, regional or local scenic designations or recognised scenic views however, views from this area have an informal, local value for visitors. Value is considered to be medium.<br><br>Visitors have views over the tops of nearby hedgerows on account of their slight elevation to Glascoed Road. The view north towards the OnSS is regarded to form a part of their principal view, albeit with electricity infrastructure in close proximity. Susceptibility to change to the OnSS for visitors to the crematorium is considered to be high.<br><br>Sensitivity for residential receptors is considered to be **medium-high.** | The maximum parameter of the OnSS would occupy a central part of the view to the north that overlooks the agricultural land to the north of Glascoed Road.<br><br>From this location, construction activities associated with the onshore ECC will be visible in combination with the construction of the OnSS. Construction lighting would be evident in winter months when working days would extend into hours of darkness. Taking all of this into account magnitude of change during construction is considered to be ***high***.<br><br>The operational magnitude of change is considered to be ***medium-high*** in year 1 following the completion of construction activities and the reinstatement of the OnSS TCC.<br><br>At year 15 proposed woodland planting located close to Glascoed Road would | Construction: ***Major and Significant***<br><br>Operational year 1: ***Moderate-Major and Significant***<br><br>Operational year 15: ***Moderate-Minor and Not Significant***<br><br>Construction effects are adverse, short term and reversible.<br><br>Operational effects are adverse long term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | | screen the OnSS from view at this location. The proposed woodland itself obstructs part of the distant view, however, the views northeast to the Clwydian Hills are unobstructed.<br>Taking this into account the magnitude of change at 15 years is considered to be ***low.*** | |
| Viewpoint 4 - A55. See Volume 6, Annex 2, Figures 2.21a-c | This viewpoint represents road users on the A55, North Wales Expressway which connects key settlements in this part of North Wales.<br>Modern development is notable along the A55, including near the viewpoint location where pylon lines cross the landscape and the buildings of the SABP occupies part of the visual context to the north.<br>The existing views from this location are dominated by the busy dualled carriageway road. Hedgerows and roadside tree planting restricts views out of the road corridor to the surrounding landscape. The view south towards the site of the OnSS is restricted by woodland, field boundary trees and farm buildings at Faenol Bropor. | This section of the A55 is not located within or close to any national, regional or local scenic designations or recognised scenic views and the value is considered to be medium-low.<br>The A55 is a dualled road and has a speed limit of 70mph. Road users are transient and therefore have a very short duration in which to appreciate the available view towards the OnSS which is largely screened and filtered by roadside and other intervening vegetation. Susceptibility is considered to be low at this location as a result.<br>Sensitivity is considered to be ***medium-low.*** | As can be seen in the visualisation for this viewpoint (Volume 6, Annex 2, Figure 2.21), the maximum parameter of the OnSS would occupy a part of the view between existing woodland and farm buildings.<br>The example OnSS models for GIS and AIS included in the visualisations provide an indication of the potential scale of built development proposed. Whilst the exact location of the OnSS infrastructure within the maximum parameter has not yet been finalised it is clear that the intervening existing trees, woodlands and farm buildings obscure much of the OnSS in the AIS 3D model example. The GIS 3D model example is almost completely obscured from this location, however, allowing for a worst case situation that would position OnSS elements in the north east corner, it is considered that these would be visible between the trees and farm buildings in a similar way as the AIS example. Importantly the OnSS would not breach the skyline but would be backclothed by rising ground to the south. | Construction: ***Moderate-Minor and Not Significant***<br>Operational year 1: ***Moderate-Minor and Not Significant***<br>Operational year 15: ***Minor and Not Significant***<br>Effects are isolated to a short section of the A55 and represent a glimpsed view for road users at speed.<br>Construction effects are adverse, short term and reversible.<br>Operational effects are adverse long term and reversible. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | | The images shown on the visualisation were captured when trees are not in full leaf and the screening effect in summer months would therefore be greater.<br><br>The industrial nature of the OnSS would contrast to some degree with the settled farmland context, containing other grid-infrastructure and farm scale development. Construction lighting would be evident in winter months when working days would extend into hours of darkness.<br><br>The magnitude of change is considered to be ***medium*** during construction and in year 1, reducing to ***low*** in year 15 once planting mitigation matures and the main parts of the OnSS compound would be screened. | |
| Viewpoint 5 - Minor Rd, Groesfforddd.<br><br>See Volume 6, Annex 2, Figures 2.22a-c | This viewpoint represents views from the elevated settled ridge to the south of the OnSS on a minor road in the area of Groesfford. The existing view is across rural farmland and includes views across the lowland landscape of Denbighshire towards the distant coastline. Electricity transmission lines and pylons occupy the foreground view. Settlements can be picked out in this view but are hard to distinguish due to the successive layers of woodlands and field boundary trees that intervene. In the immediate context of the OnSS site area, the SABP can be clearly seen. | This viewpoint is not located within or close to any national, regional or local scenic designations or recognised scenic views however, views from this area have an informal value for nearby residents. Value is considered to be medium.<br><br>Residential receptors have elevated views to the north across the rural landscape in which the OnSS site is located. Susceptibility to change is considered to be high.<br><br>Sensitivity for is considered to be ***medium-high.*** | The visualisation for this viewpoint (Volume 6, Annex 2, Figure 2.22), shows that the maximum parameter of the OnSS would occupy a part of the distant view within close visual context with the SABP.<br><br>The example OnSS models for GIS and AIS included in the visualisations provide an indication of the potential scale of built development proposed. Whilst the exact location of the OnSS infrastructure within the maximum parameter has not yet been finalised it is clear that the intervening existing field boundary trees and woodlands would obscure much of the OnSS. The images shown on the visualisation were captured when trees | Construction: ***Moderate and Significant***<br><br>Operational year 1: ***Moderate and Significant***<br><br>Operational year 15: ***Moderate and Not Significant***<br><br>Similar effects would be experienced for other properties located on this elevated ridgeline to the east and west of this viewpoint. |

| RECEPTOR | BASELINE | SENSITIVITY | MAGNITUDE OF CHANGE | SIGNIFICANCE OF EFFECT |
|---|---|---|---|---|
| | | | are not in full leaf and the screening effect in summer months would therefore be greater.<br>The industrial nature of the OnSS compound is in partial contrast with the settled farmland character of the view which already has some electrical and built development. Construction lighting would be evident in winter months when working days would extend into hours of darkness.<br>The magnitude of change is considered to be ***medium*** during construction and in year 1 reducing to ***medium-low*** year 15. Whilst the proposed woodland is not entirely visible from this location and the elevated nature of the viewpoint means its screening potential is not fully appreciated, it would help to screen the lower parts of visible OnSS structures and therefore settle it into the surrounding landscape and minimise the visible extent to upper parts of buildings in a similar view to that of the Business Park buildings. | Construction effects are adverse, short term and reversible.<br>Operational effects are adverse long term and reversible. |

## 2.13 Environmental assessment: decommissioning phase

185 This section describes the potential impacts of the decommissioning of the onshore elements of AyM with regard to impacts on landscape and visual receptors.

186 No decision has been made regarding the final decommissioning policy for the onshore cables, as it is recognised that industry best practice, rules and legislation change over time. It is likely the onshore cables would be pulled through the ducts and removed, with the ducts themselves left in situ in order to minimise further ground disturbance.

187 In relation to the OnSS, the programme for decommissioning is expected to be similar in duration to the construction phase. The detailed activities and methodology would be determined later within the project lifetime, but are expected to include:

- Dismantling and removal from site of outside electrical equipment located within the OnSS compound and removal of cabling from site;
- Dismantling and removal of electrical equipment from within the OnSS buildings and removal of OnSS buildings; and
- Removal of areas of hard standing; and
- Reinstatement of the OnSS footprint and platform areas to agricultural land-uses and hedgerows.

188 Whilst details regarding the decommissioning of the OnSS are currently unknown, considering the worst-case assumption (which would be the removal and reinstatement of the current land use at the OnSS site) it is anticipated that the impacts would be similar to or less than those assessed during construction. The difference at the decommissioning phase would be that mitigation planting would have matured over the 25 years of the operational life of the onshore elements of AyM and would therefore screen the decommissioning works from many of the surrounding landscape and visual receptors.

189 The decommissioning methodology would need to be finalised nearer to the end of the lifetime of the onshore elements of AyM so as to reflect current guidance, policy and legislation at that point. Any such methodology would be agreed with the relevant authorities and statutory consultees. The decommissioning works could be subject to a separate licensing and consenting approach.

## 2.14 Environmental assessment: Cumulative Effects

### 2.14.1 Preliminary assessment: cumulative effects

190 As described in Section 2.7.4, a comprehensive list of projects that have the potential to contribute to cumulative impacts of the OnSS, Onshore ECC and landfall has been compiled and this list and the approach to compiling this list is described in Volume 1, Annex 3.1. The geographical extent of sites with the potential for cumulative effects is considered to be limited to the LVIA study areas.

191 The LVIA has undertaken a process of scoping out projects and activities from this list, based on professional judgement, assessment rationale and guidance relevant to landscape and visual impacts. The results of this are presented in the Preliminary Assessment of Cumulative Developments in Table 15. In addition to the Developments listed in Table 15, the Applicant is also aware of proposals to extend the existing National Grid Bodelwyddan Substation proposed to the southeast of the OnSS and immediately west of the existing substation.

192 A description of this development is included within Volume 3, Chapter 1: Onshore Project Description (application ref: 6.3.1). This description offers an indication that the substation extension could result in a very localised nature of the cumulative effect and that it wouldn't therefore likely lead to a significant cumulative effect, particularly given that the existing baseline already contains the existing substation. However, there is not sufficient detail at the time of writing this LVIA to know the full extent of what is proposed for this development and therefore a meaningful assessment of cumulative impacts has not been possible. Following the principles for cumulative assessment set out in Volume 1, Annex 3.1: Cumulative Effects Assessment, this development is not therefore considered any further in the LVIA.

Table 15: Preliminary Assessment of Cumulative Developments.

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| Energy | 40/2018/1036 - Construction of a 5 MW flexible gas fired power plant | Consented | This development is located to the southeast of the SABP south of Glascoed Rd and approximately 1km from the OnSS. The development is small in scale with a 10m high exhaust stack. Intervisibility between this and the onshore ECC and OnSS is limited by the buildings and tree planting of the business park which intervenes. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Coastal protection works | 45/2018/1197 - Construction of coastal protection scheme, (East Rhyl coastal defence improvement scheme). | Consented | This development is located to the west of the onshore AyM landfall. In itself it represents a relatively substantive disruption to the existing coastal path and sea wall and the associated construction activity would have visual effects on the northern edges of the Rhyl settlement and the Wales Coast path. The construction activity as a result of the onshore elements of the AyM at landfall would result in receptors | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | | | experiencing some localised visual change of a low magnitude in the view north across the beach on sections of the Wales Coast Path that are close to the onshore ECC, to the east of the coastal protection scheme. Taking this into account it is considered that the introduction of the onshore AyM construction activity to a situation that includes construction activity of the coastal protection scheme does not have the potential to result in significant cumulative effects. | |
| Building /housing developments | 40/2021/0309 - Care home | Consented | This development is located in the northwest corner of the SABP to the south of the A55. Cumulative interaction between this development and the onshore elements of the AyM is limited by the existing buildings and associated boundary and roadside tree planting and vegetation that separate this area from the proposed OnSS site and restrict intervisibility for landscape and visual receptors both in the immediate area and in the wider | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | | | landscape. No potential for significant effects and not considered further in the assessment. | |
| Industrial | 40/2017/1232 - Erection of 7 no. industrial units with associated parking, landscaping, access road and external storage areas. | Consented | This development is located on the western edge of the SABP. The proposals are for industrial units of a similar or scale to the existing units at the end of Carlton Court, immediately neighbouring this development plot. These existing units are relatively low in height and due to the boundary tree and shrub planting at the edges of the Glascoed nature reserve have limited visibility from key landscape and visual receptors that would be affected by the onshore elements of AyM. The proposed additional units would have similar visual limitations from these key receptors. As a result it is considered that there would be very limited landscape or visual cumulative interaction between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| Tourism and recreation | 43/2017/1121 additional 65 touring caravan pitches and 39 timber camping pods, storage building and associated works. | Consented | Extremely limited cumulative interaction with the onshore elements of AyM. No potential for significant effects and not considered further | Tier 1 |
| Building /housing developments | 45/2018/1215 - Erection of 109 dwellings and associated works (Phase 5). | Consented | The potential for cumulative effects is limited to construction activity.<br>Onshore ECC construction effects have been assessed as having a limited influence on landscape and visual receptors in this area. Onshore ECC construction effects will be of a short duration. There is no potential for significant cumulative effects as the additional influence of the onshore ECC construction activity when considered alongside the construction activity of this housing development would be limited within the | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | | | context of the more extensive construction activities of a large housing development. | |
| Building /housing developments | 44/2018/0855 99 dwellings 44/2015/1075 (reserved matters application). | Consented | No intervisibility between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Tourism and recreation | 44/2020/0346 - Change of use of agricultural land to form extension to existing touring caravan site | Consented | No intervisibility between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Building /housing developments | 40/2021/0796 - Erection of a detached storage building. | Consented | No intervisibility between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| Energy | 0/44022 - Erection of 11 kV overhead line | Consented | Extremely limited and distant intervisibility with the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Energy | 31/2021/0724 - 11kv Overhead Line | Consented | Extremely limited and distant intervisibility with the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Coastal protection works | 45/2021/1248 - Development of 5 Ha of land to form Coastal Defence scheme comprising of the formation of flood embankments ramps outfall structures and rock armour including landscaping | Application submitted and under consideration | This development is a coastal defence located around the Rhyl Golf course. In itself it will result in notable landscape and visual effects during construction including localised disruption along the boundary to the golf course and along the A548. There will also be longer term landscape and visual effects resulting in localised changes in coastal views and a greater degree of separation from the coast than currently experienced. The onshore ECC passes underneath the Rhyl Golf course and the area in which these coastal defences are proposed. | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | habitat enhancements works | | The construction activity as a result of the onshore elements of the AyM at landfall would result in receptors experiencing some localised visual change of a low magnitude in the view north across the beach on sections of the Wales Coast Path that are close to the onshore ECC, to the north of the coastal defence scheme. These visual changes are minimal in comparison to that which will be experienced by the proposed coastal defence scheme and would not be viewed together in simultaneous views from the Wales Coast path. Taking this into account it is considered that the introduction of the onshore AyM construction activity to a situation that includes construction activity of the coastal protection scheme does not have the potential to result in significant cumulative effects. | |
| Commercial | 46/2021/0159 - Hybrid planning application for the | Application submitted | This development is located to the southeast of the SABP to the south of Glascoed Rd. Intervisibility between this development and the | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | redevelopment of 6.9ha of land incorporating the erection of a commercial vehicles sales unit (sui generis) and formation of associated parking area, landscaping and associated works. | and under consideration | onshore elements of AyM is restricted by the intervening Business Park and associated boundary and roadside trees and vegetation. No potential for significant effects and not considered further in the assessment. | |
| Building /housing developments | 45/2021/0738 - Retrospective application for the change of use of dwelling (Use Class C3) to form a house of multiple occupancy (Use | Application submitted and under consideration | This development has no possible cumulative interaction with the onshore elements of AyM. Not considered further | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | Class C4) for 4 people. | | | |
| Energy | DNS/3247619 - DNS application Elwy Solar Energy Farm | Application submitted and under consideration | Located approximately 1.5km to the northeast of the proposed onshore OnSS and with the SABP in the intervening landscape, there is little intervisibility between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Building /housing developments | 40/2021/0825 - Erection of 106 dwellings, construction of a new vehicular access and associated works. | Application submitted and under consideration | Very limited and distant intervisibility between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Building /housing developments | 46/2019/0806 - Development of 0.75 ha of land for residential | Application submitted and under consideration | Very limited and distant intervisibility between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | purposes (outline application including access). | | | |
| Building /housing developments | 40/2021/0730 - Demolition of dwelling and erection of 28 new dwellings including new vehicular access, internal access road and associated works. | Application submitted and under consideration | No intervisibility between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Building /housing developments | 46/2021/1161 - Erection of 124 dwellings | Application submitted and under consideration | Very limited and distant intervisibility between this development and the onshore elements of AyM. No potential for significant effects and not considered further in the assessment. | Tier 1 |
| Coastal protection works | 45/2021/1248 - Development of 5 Ha of land to form Coastal Defence | Application submitted and under consideration | This development is a coastal defence located around the Rhyl Golf course. In itself it will result in notable landscape and visual effects during construction including localised disruption along | Tier 1 |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | scheme comprising of the formation of flood embankments ramps outfall structures and rock armour including landscaping habitat enhancements works | | the boundary to the golf course and along the A548. There will also be longer term landscape and visual effects resulting in localised changes in coastal views and a greater degree of separation from the coast than currently experienced. The onshore ECC passes underneath the Rhyl Golf course and the area in which these coastal defences are proposed. The construction activity as a result of the onshore elements of the AyM at landfall would result in receptors experiencing some localised visual change of a low magnitude in the view north across the beach on sections of the Wales Coast Path that are close to the onshore ECC, to the north of the coastal defence scheme. These visual changes are minimal in comparison to that which will be experienced by the proposed coastal defence scheme and would not be viewed together in simultaneous views from the Wales Coast path. Taking this into account it is considered that the introduction of the onshore AyM construction activity to a | |

| DEVELOPMENT TYPE | PROJECT | STATUS | DATA CONFIDENCE ASSESSMENT/ PHASE | TIER |
|---|---|---|---|---|
| | | | situation that includes construction activity of the coastal protection scheme does not have the potential to result in significant cumulative effects. | |

### 2.14.2 Cumulative Effects Summary

193 The preliminary cumulative assessment has determined that there are no future cumulative development scenarios that require detailed assessment in a Cumulative Landscape and Visual Assessment (CLVIA). The LVIA therefore focuses on the effects resulting from the onshore elements of AyM in conjunction with existing developments that form part of the baseline conditions.

## 2.15 Inter-relationships

Table 16:Inter-relationships between the LVIA and other chapters within the PEIR.

| TOPIC / CHAPTER | WHERE ADDRESSED IN THE LVIA | RATIONALE |
|---|---|---|
| Chapter 5: Onshore Biodiversity and Nature Conservation (application ref: 6.3.5) | Section 2.9 mitigation<br>Sections 2.10, 2.11 and 2.12 | Both chapters consider the potential effects of hedgerow and tree removal, the LVIA considering the impact on hedgerows and trees as landscape elements, and the Onshore Ecology assessment considering the impact on hedgerows and trees as ecological assets. Both chapters consider the mitigation of hedgerow and tree loss in respect of planting proposed as outline landscape mitigation principles. |
| Chapter 8: Onshore Archaeology and Cultural Heritage (application ref: 6.3.8) | Sections 2.11 and 2.12 | Both chapters consider the potential effects of the onshore elements of AyM on designated Registered Historic Parks and Gardens and their setting within the landscape. |
| Chapter 4: Tourism and | Section 2.12 | Both chapters consider the potential effects of the onshore elements of AyM |

| TOPIC / CHAPTER | WHERE ADDRESSED IN THE LVIA | RATIONALE |
|---|---|---|
| Recreation (application ref: 6.3.4) | | on the visual amenity of recreational users in the local area. |
| Volume 2, Chapter 10 SLVIA(application ref: 6.2.10) | Section 10.14 | The SLVIA considers the inter-relationship between the LVIA and the SLVIA. |

## 2.16 Transboundary effects

194 In relation to this chapter, it is considered that no transboundary effects will arise.

## 2.17 Summary of effects

### 2.17.1 Landscape

195 The landscape would be directly affected by the onshore elements of AyM. The siting and design of the onshore elements of AyM has sought to minimise the removal of landscape elements across the study area. As a result of this, physical landscape effects within the study area would be kept to a minimum to ensure that the character of the area is retained for future benefit. However, likely significant effects are found during construction and until the landscape reinstatement and additional planting has matured within localised areas related to the removal of higher sensitivity landscape elements such as several taller hedgerows and hedgerow trees along the Onshore ECC and hedgerow trees and individual trees within the OnSS site area.

196 Significant landscape character effects during construction and in year 1, are found for LCA – A1 Eastern Lowlands (Cefn Meiriadog Vale Slopes) as a result of the proposed OnSS, which is located within it. The significant landscape character effects are localised to the areas immediately surrounding the OnSS site and OnSS construction compounds. All other landscape character effects are found to be not significant.

197 Significant effects are found as a result of construction activities related to the OnSS within the following LANDMAP aspect areas: Cultural Services - DNBGHCLS015 Area North and East of Bodelwyddan, DNBGHCLS033 Wooded Parkland and Parkland Remnants; Visual and Sensory - DNBGHVS035 Wooded Parkland and Parkland Remnants; Historic Landscape - DNBGHHL005 Bodelwyddan Park. No significant effects are found as a result of the construction of the onshore ECC or at landfall or as a result of operational effects associated with any of the onshore infrastructure of AyM.

### 2.17.2 Visual

198 The proposed onshore elements of AyM may intrude into existing views experienced by users of the onshore LVIA study area, changing their view. Substantial tree vegetation and existing built development in the closely surrounding landscape restrict and limit the degree to which the OnSS is visible.

199 Significant visual effects as a result of the construction activities associated with the cable route and landfall are found on localised sections of the B5381, Glascoed Road, the Wales Coast Path, the bridlepath immediately north of the OnSS (PRoW 201/9) and the PRoW south of Rhyl (PRoW 206/18, 206/44 and 206/20). Significant visual effects are also found for properties at Cwybr Bach, Plas Lorna, Cwybr Fawr and Faenol Bropor. Viewpoints 1 (Bridlepath nr Faenol-Bropor), 3 (Glascoed Road) and 5 (Minor Road nr Groesfford) are also found to have significant visual effects during construction, as well as from the Denbighshire Memorial Park and Crematorium, as a result of the OnSS construction activities. It should be noted that for viewpoints 1 and 3 that the cable route construction activities contribute to the significant effects identified.

200 Significant visual effects are also found during operation in year 1 once construction activity is completed, for viewpoints 1, 3, 5 and from the Denbighshire Memorial Park and Crematorium (visual effects would be significant for both road user and residential receptors at viewpoint 3). In year 15 once mitigation planting has matured, residual significant effects are limited to the recreational receptors at viewpoint 1. This is largely due to the close proximity of these receptors, and the limited opportunities for planting mitigation in areas occupied by the Onshore ECC itself.

### 2.17.3 Cumulative

201 None of the cumulative developments in the study area are considered to have the potential to contribute to significant cumulative landscape or visual effects. This is largely due to distance or separation between the onshore elements of AyM and the cumulative development or due to landscape elements / built structures that limit the level of intervisibility and therefore cumulative effect.

### 2.17.4 Conclusion

202 This LVIA has considered the potential effects that the onshore elements of AyM may have on the existing landscape resource of the onshore LVIA study area and the visual amenity of its receptors.

203 The onshore elements of AyM will give rise to significant construction effects. For the onshore cable route these significant construction effects are limited to localised areas within close proximity of receptors or as a result of the physical disruption caused by the construction activities or vegetation removal. For the onshore OnSS these also tend to occur for receptors at close proximity although significant visual effects have been found at distances of up to 1km from the settled elevated ridgeline to the south of the OnSS site.

204 Whilst the onshore elements of AyM will give rise to significant residual landscape and visual effects as a result of the proposed onshore OnSS, this has been mitigated through the siting of the OnSS and the planting proposed within the OLEMP, In addition, the LVIA has assessed that there would be no residual significant effects to the landscape and visual resource as a result of the onshore ECC. All developments of this scale are likely to give rise to some effects on landscape character and visual amenity.

Table 17: Summary of construction effects.

| RECEPTOR | SENSITIVITY | MAGNITUDE OF CHANGE | EFFECT |
|---|---|---|---|
| PHYSICAL LANDSCAPE EFFECTS | | | |
| Agricultural Land | Medium – Low | Medium – Low | ***Minor and Not Significant*** |
| Hedgerows | Medium | Medium – Low | ***Moderate-Minor and Not Significant*** |
| Taller hedgerows and hedgerow trees found along the onshore ECC. | Medium – High | Medium | ***Moderate and Significant*** |
| Trees within the OnSS site area. | Medium – High | High | ***Major and Significant*** |
| Coastal Landscape | Medium | Low | ***Minor and Not Significant*** |
| LANDSCAPE CHARACTER EFFECTS (OnSS) | | | |

| RECEPTOR | SENSITIVITY | MAGNITUDE OF CHANGE | EFFECT |
|---|---|---|---|
| A1. Eastern Lowlands (Cefn Meiriadog Vale Slopes) | Medium | High | ***Moderate-Major and Significant*** |
| C4. Limestone Farmlands (Abergele to Denbigh Coastal/Vale Hills) | Medium | Medium - Low | ***Moderate-Minor and Not Significant*** |
| Bodelwyddan Park RHPG | Medium - High | Medium - Low | ***Moderate and Not Significant*** |
| VISUAL EFFECTS (cable route and landfall) | | | |
| Wales Coast Path, NCR 5 | Medium - High | Low | ***Moderate-Minor and Not Significant*** |
| Visitors to the Robin Hood Holiday Park | Medium | Medium - Low | ***Moderate-Minor and Not Significant*** |
| Chester to Holyhead railway line | Medium | Medium | ***Not Significant*** |
| PRoW to the south of Rhyl between the B5119 and A547 (including the North Wales Path) | Medium - High | Medium | ***Moderate and Significant*** |

| RECEPTOR | SENSITIVITY | MAGNITUDE OF CHANGE | EFFECT |
|---|---|---|---|
| Bryn Celyn Cottages | High | Low | ***Moderate-Minor and Not Significant*** |
| Bryn Cwnin Farmhouse | High | Negligible | ***Minor and Not Significant*** |
| Bryn-y-wal Farm, | Medium – High | Medium - Low | ***Moderate and Not Significant*** |
| Cwybr Bach | Medium – High | Medium - High | ***Moderate – Major and Significant*** |
| Plas Lorna; | Medium - High | High | ***Major and Significant*** |
| Cwybr Fawr | Medium | Medium | ***Moderate and Not Significant*** |
| Faenol-Bropor | High | High | ***Major and Significant*** |
| Bridlepath (PRoW 201/9) to the north of the OnSS zone | Medium | High | ***Moderate – Major and Significant*** |
| B5381 Glascoed Road | Medium | High | ***Moderate – Major and Significant*** |

| RECEPTOR | SENSITIVITY | MAGNITUDE OF CHANGE | EFFECT |
|---|---|---|---|
| Waen Meredydd | Medium | Medium-High | ***Moderate and Significant*** |
| VISUAL EFFECTS (OnSS) | | | |
| Viewpoint 1 - Bridlepath nr Faenol-Bropor | Medium | High | ***Moderate-Major and Significant*** |
| Viewpoint 2 - St Asaph, Business Park | Medium - Low | Medium - Low | ***Minor and Not Significant*** |
| Viewpoint 3 – Glascoed Rd | Road Users<br>Medium - Low | High | ***Moderate and Significant*** |
| | Residential<br>Medium – High | High | ***Major and Significant*** |
| The Denbighshire Memorial Park and Crematorium | Medium - High | High | ***Major and Significant*** |
| Viewpoint 4 - A55 | Medium - Low | Medium | ***Moderate-Minor and Not Significant*** |

| RECEPTOR | SENSITIVITY | MAGNITUDE OF CHANGE | EFFECT |
|---|---|---|---|
| Viewpoint 5 - Minor Rd, Groesffordd | Medium - High | Medium | ***Moderate and Significant*** |

Table 18: Summary of operational effects.

| RECEPTOR | SENSITIVITY | MAGNITUDE OF CHANGE | EFFECT | MAGNITUDE OF CHANGE | RESIDUAL EFFECT |
|---|---|---|---|---|---|
| | | YEAR 1 | YEAR 1 | YEAR 15 | YEAR 15 |
| LANDSCAPE CHARACTER EFFECTS (OnSS) | | | | | |
| A1. Eastern Lowlands (Cefn Meiriadog Vale Slopes) | Medium | Medium - High | ***Moderate and Significant*** | Medium | ***Moderate and Not Significant*** |
| C4. Limestone Farmlands (Abergele to Denbigh Coastal/Vale Hills) | Medium | Medium - Low | ***Moderate-Minor and Not Significant*** | Low | ***Minor and Not Significant*** |

| RECEPTOR | SENSITIVITY | MAGNITUDE OF CHANGE | EFFECT | MAGNITUDE OF CHANGE | RESIDUAL EFFECT |
|---|---|---|---|---|---|
| | | YEAR 1 | YEAR 1 | YEAR 15 | YEAR 15 |
| Bodelwyddan Park RHPG | Medium - High | Medium - Low | ***Moderate and Not Significant*** | Low | ***Moderate-Minor and Not Significant*** |
| VISUAL EFFECTS (OnSS) | | | | | |
| Viewpoint 1 - Bridlepath nr Faenol-Bropor | Medium | High | ***Moderate-Major and Significant*** | Medium - High | ***Moderate and Significant*** |
| Viewpoint 2 - St Asaph, Business Park | Medium - Low | Medium | ***Minor and Not Significant*** | Medium | ***Minor and Not Significant*** |
| Viewpoint 3 – Glascoed Rd | Road Users Medium - Low | Medium - High | ***Moderate and Significant*** | Low | ***Minor and Not Significant*** |
| | Residential Medium - High | Medium - High | ***Moderate-Major and Significant*** | Low | ***Moderate-Minor and Not Significant*** |

| RECEPTOR | SENSITIVITY | MAGNITUDE OF CHANGE | EFFECT | MAGNITUDE OF CHANGE | RESIDUAL EFFECT |
|---|---|---|---|---|---|
| | | YEAR 1 | YEAR 1 | YEAR 15 | YEAR 15 |
| The Denbighshire Memorial Park and Crematorium | Medium - High | Medium - High | ***Moderate-Major and Significant*** | Low | ***Moderate-Minor and Not Significant*** |
| Viewpoint 4 - A55 | Medium - Low | Medium | ***Moderate-Minor and Not Significant*** | Low | ***Minor and Not Significant*** |
| Viewpoint 5 - Minor Rd, Groesffordd | Medium - High | Medium | ***Moderate and Significant*** | Medium - Low | ***Moderate and Not Significant*** |

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