Appendix LV2 – Viewpoint Analysis

Table LV2_1: Viewpoint Locations

Vp No	Location	Easting	Northing	Elevation (approx)	Distance to turbine (km)	Bearing (approx) to site	Landmap Character Area	Landscape Designations	Recreational and Transport Routes	Visual receptors
1	Hafod Road near junction with B5426	331205	345765	101m AOD	0.08	N	LCA7C	None	Local Road	Motorists
2	Footpath northeast of site near A483	331395	346105	100m AOD	0.1	S	LCA7C	None	Public Right of Way	Walkers
3	Wat's Dyke Way near Pentre-clawdd	331520	344645	107m AOD	1.2	N	LCA13A	None	Public Right of Way	Walkers
4	Cemetery in Rhosllanerchrugog	329315	345935	167m AOD	1.9	E	LCA7C	None	Local open space	Nearby residents, Cemetery visitors
5	Erddig National Trust property	332755	348090	90m AOD	2.5	SW	LCA13A	None	Public Right of Way	Tourists, Walkers

Prediction Methodology

1. The following viewpoint analysis has identified the visual receptor sensitivity and landscape sensitivity at each viewpoint location and combined these with the predicted magnitude of change in the view in order to determine the overall impact for each visual receptor type and landscape character unit at each location.
2. In accordance with GLVIA3, the sensitivity of each visual receptor group at each location is a function of the susceptibility of visual receptors to change at that location and the value attached to these views.
3. All visual receptors are people and are assumed to be equally sensitive to change. However, the location and activities of visual receptors influence the way in which they currently experience the landscape and views, the extent to which views of the surrounding landscape may contribute to their existing visual amenity, the value they place on these views and their susceptibility to changes in these views. Accordingly, at any one location there may be different levels of sensitivity for the different receptor groups, the sensitivity may vary depending on the direction of the view, and any one receptor group may be accorded different levels of sensitivity at different locations.
4. Receptor susceptibility levels of very susceptible, susceptible, moderate susceptibility, slight susceptibility and negligible susceptibility are used taking into account the following factors:
    - Receptor location, occupation or activity,
    - Movement of receptor and duration and frequency of view experienced,
    - Focus of attention and interest.
5. The judgement of value is based on a five point scale – National value, County/Borough/District value, Community value, private value, unvalued. The value attached to a location or to a particular view at a location can influence the purpose and expectation of receptors at the location and the judgement of value takes into account:
    - Recognised value – for example by the presence of planning designations or designated heritage assets,
    - Indicators of value – to individuals, communities and society generally, such as the popularity of a location.
6. Accordingly, visual receptor sensitivity is determined in terms of the sensitivity of each location for each receptor type (rather than the sensitivity of the receptors *per se*), using a five point relative scale – high, high/medium, medium, medium/low and low.
7. In accordance with GLVIA3, the sensitivity of each landscape unit is judged on the basis of its value and its susceptibility to change arising from the specific type, scale and location of development proposed.
8. The susceptibility to change of a landscape unit is based on a five point scale (very susceptible, susceptible, moderate susceptibility, slight susceptibility and negligible susceptibility)and depends on:
    - The key characteristics of the landscape, and the clarity and robustness of these characteristics,
    - Nature of views (visual enclosure/openness of views and extent to which views contribute to landscape character),
    - Landscape planning policies and strategies for the landscape unit,
    - The nature of the changes to landscape character and views that could be brought about by the type, scale and location of the proposed development and the compatibility of these with the above factors.
9. The same five point value scale is used for landscape units as for visual receptors. Judgements on landscape value are based on those given in published landscape character assessments (where given) and/or checked in the field from fieldwork observations.

10. Accordingly, the assessment of landscape sensitivity for each landscape unit is derived from the judgement of value and combined with the judgement of susceptibility to give a level of landscape sensitivity as part of a five point scale – high, high/medium, medium, medium/low or low sensitivity.

11. The magnitude of the change in the views and in landscape character from the viewpoints has been assessed using a four point scale – substantial, moderate, slight and negligible. This magnitude of change scale is a relative scale and is not an absolute scale. It is based on the assessor's interpretation of largely quantifiable parameters, including:

    - Distance and direction of the viewpoint from the development.
    - Extent of the development visible from the viewpoint.
    - Field of view occupied by the development (horizontal and vertical angles of view) and proportion of view (as a percentage of the panorama).
    - Context of the view and degree of contrast with the existing landscape and built elements (background, form, composition, pattern, scale and mass, line, movement, colour, texture, etc).
    - Scale of change with respect to the loss or addition of features in the view. For the addition of built form, this includes the relative scale of the development and whether the development would be overwhelming, overbearing, dominant, prominent, visible, noticeable, discernible or barely discernible.
    - Duration and nature of the effect, eg direct/ indirect, secondary, cumulative, temporary/ permanent, short term/ long term, intermittent/ continuous, reversible/ irreversible, etc (as related to the nature of the development).

12. The sensitivity and magnitude of change have then been combined as per the matrix in **Table LV2_2** below.

Table LV2_2 – Assessment of Overall Impact

Location sensitivity	Magnitude of change			
	Substantial	Moderate	Slight	Negligible
High	Major	Major/ moderate	Moderate	Moderate/ minor
High/ medium	Major/ moderate	Moderate	Moderate/ minor	Minor
Medium	Moderate	Moderate/ minor	Minor	Minor/ negligible
Medium/ low	Moderate/ minor	Minor	Minor/ negligible	Negligible
Low	Minor	Minor/ negligible	Negligible	Imperceptible

13. Effects on landscape character may be beneficial or adverse:

    - Beneficial effects on landscape character - are likely to occur where the proposed development would materially enhance the quality (condition) of the landscape, would complement the existing character and/or where particularly valued characteristics, previously lost or degraded, would be reinstated.
    - Adverse effects on landscape character - are likely to occur where the proposed development would become a key characteristics of the landscape, would contrast with the existing character,

and/or where existing key characteristics would be permanently (or long-term temporarily) lost or changed and cannot be adequately mitigated.

14. The polarisation of public opinion on renewable energy developments is such that effects on views can be considered beneficial by some observers and adverse by others. Accordingly, in order to consider a worst case scenario, it is recommended that the predicted effects on views are considered to be adverse.

Viewpoint Analysis

15. The findings of the viewpoint analysis are provided in **Table LV2_3** below. This analysis was undertaken in the field in February 2024. It is illustrated by the images in **Viewpoints 1** to **5** which were photographed in February 2024, showing the existing and predicted views in the direction of the proposal. In these figures, photographs illustrate the existing views from each viewpoint (as at February 2024). Computer-generated wirelines illustrate the predicted views of the proposed solar array along with photomontages to indicate where the proposal would be entirely screened from view. These viewpoint illustrations are printed at A3 and guidance is contained on each sheet as to the appropriate viewing distances or principal distance in order for the scale of the elements in the images to match those in the field when viewed from these viewpoint locations. However, as a rule of thumb, these images can be held at a comfortable arm's length to be viewed. These are Type 3 illustrations.

Table LV2_3: Viewpoint Analysis

Vp 1: Hafod Road near junction with B5426					
Distance to Hafod Road Solar Array	**NGR**	**Elevation (approx)**	**Landscape designation**	**Recreational area or route**	**Existing View**
0.08km	331205 345765	101mAOD	None	Local road	Located on Hafod Road close to the junction with the B5426 Bangor Road and New Hall Road, looking northeast over an existing hedgerow to an agricultural field. The woodland belt alongside the A483 dual carriageway is evident, with the bridge over the road discernible in the background of the view. Further woodland is also visible within the left of this view. This is a simple and enclosed view.
Assessment of Effects on Landscape Character					
LCA	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**
7C: Rhosllannerchrugog – Rhostyllen – Ruabon – Penycae	Local Moderate susceptibility	Medium	Moderate	Moderate/ minor adverse	An undesignated landscape of local value that could have moderate susceptibility with a medium sensitivity to the type, scale and location of development proposed. The proposed solar array would be clearly visible and would contrast with the landscape context, being a visible additional feature which would be present for a long, albeit temporary and reversible, time frame. This would result in a moderate magnitude of change and a moderate/ minor adverse effect on landscape character at this location.
Assessment of Effects on Views					
Receptor	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**
Motorists	Community Moderately susceptible	Medium	Moderate	Moderate/ minor	A local road with community value, along which receptors would be moving slowly to steadily, could use the route frequently, with views in several different directions and so would be moderately susceptible and with a medium sensitivity to changes in the view. The proposed solar array would be clearly visible in the near distance occupying approx. 48^{o} of the view, resulting in a moderate magnitude of change and a moderate/ minor effect on the visual amenity of motorists and their passengers at this point.

Vp 2: Footpath northeast of site near A483					
Distance to Hafod Road Solar Array	**NGR**	**Elevation (approx)**	**Landscape designation**	**Recreational area or route**	**Existing View**
0.1km	331395 346105	100mAOD	None	Public right of way	Located on Footpath ESC/31 at a field gate entrance, looking south across a nearby agricultural field. A mature woodland belt adjacent to the A483 is visible within the left of the view and blocks much of the southern site field from view. However, some mature vegetation along Bangor Road to the south of the site is visible along with vegetation to the right hand side of the viewpoint. In the distance a pylon to the south of Bangor Road and higher ground further to the south are discernible.
Assessment of Effects on Landscape Character					
LCA	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**
7C: Rhosllannerchrugog – Rhostyllen – Ruabon – Penycae	Local Moderate susceptibility	Medium	End of construction:		An undesignated landscape of local value that could have moderate susceptibility with a medium sensitivity to the type, scale and location of development proposed. The proposed solar array would be discernible and would contrast with the landscape context, being a noticeable/ apparent additional feature which would be present for a long, albeit temporary and reversible, time frame. This would result in a slight magnitude of change and a minor adverse effect on landscape character at this location.
			Slight	Minor adverse	
			10 years post construction:		An undesignated landscape of local value that could have moderate susceptibility with a medium sensitivity to the type, scale and location of development proposed. The proposed solar array would be discernible and may contrast with the landscape context, being a barely discernible additional feature which would be present for a long, albeit temporary and reversible, time frame. This would result in a negligible magnitude of change and a minor/ negligible adverse effect on landscape character at this location.
			Negligible	Minor/ negligible adverse	
Assessment of Effects on Views					
Receptor	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**
Walkers	Community		End of construction:		

	Susceptible	High/ medium	Slight	Moderate/ minor	A public footpath with community value, along which receptors would be moving slowly, could use the route frequently, with views in several directions (although mainly open to the north and more enclosed to the south) and so would be susceptible and with a high/medium sensitivity to changes in the view. The proposed solar array would be partially visible in the middle distance to the side of the direction of travel, occupying approx. 15° of the view, and would be backgrounded by surrounding vegetation. This limited visibility would result in a slight magnitude of change and a moderate/ minor effect on the visual amenity of walkers at this point.
			10 years post construction:		A public footpath with community value, along which receptors would be moving slowly, could use the route frequently, with views in several directions (although mainly open to the north and more enclosed to the south) and so would be susceptible and with a high/medium sensitivity to changes in the view. The proposed solar array would be very partially visible in the middle distance to the side of the direction of travel, occupying approx. 7° of the view, and would be backgrounded by surrounding vegetation. This limited visibility would result in a negligible magnitude of change and a minor effect on the visual amenity of walkers at this point.
			Negligible	Minor	

Vp 3: Wat's Dyke Way near Pentre-clawdd					
Distance to Hafod Road Solar Array	**NGR**	**Elevation (approx)**	**Landscape designation**	**Recreational area or route**	**Existing View**
1.2km	331520 344645	107mAOD	None	Public right of way	Located on Wat's Dyke Way, a long distance walking route, near Pentre-clawdd, looking north through a break in the foreground vegetation. The view looks down the route of the twin pylon lines with the higher ground of Bonc-yr-Hafod Country Park in the background. A wind turbine and various cement silos at Eco-Readymix concrete on Hafod Road are also discernible amongst a wealth of mature vegetation in the intervening landscape.
Assessment of Effects on Landscape Character					
LCA	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**

13A: Welsh Maelor	Local Moderate susceptibility	Medium	None	No effect	An undesignated landscape of local value that could have moderate susceptibility with a medium sensitivity to the type, scale and location of development proposed. The proposed solar array would be entirely screened from view by intervening vegetation, even in winter months. Therefore, there would be no effect on landscape character at this location.
Assessment of Effects on Views					
Receptor	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**
Walkers	Community Susceptible	High/ medium	None	No effect	A long distance public footpath with community value, along which receptors would be moving slowly, could use the route frequently, with views in several directions (although mainly contained to the north by high field boundary vegetation) and so would be susceptible and with a high/medium sensitivity to changes in the view. The proposed solar array would be entirely screened from view by intervening vegetation, even in winter months. Therefore, there would be no effect on the visual amenity of walkers at this location.

Vp 4: Cemetery in Rhosllanerchrugog					
Distance to Hafod Road Solar Array	**NGR**	**Elevation (approx)**	**Landscape designation**	**Recreational area or route**	**Existing View**
1.9km	329315 345935	167mAOD	None	Public open space	Located within an elevated section of the settlement, the cemetery has some open views out to the east. Nearby residential properties can be seen beyond the edge of the cemetery with more distant banks of vegetation also discernible with occasional pylons interspersed. However, the detail of these distant elements is not discernible.
Assessment of Effects on Landscape Character					
LCA	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**

7C: Rhosllannerchrugog – Rhostyllen – Ruabon – Penycae	Local Moderate susceptibility	Medium	None	No effect	An undesignated landscape of local value that could have moderate susceptibility with a medium sensitivity to the type, scale and location of development proposed. The proposed solar array would be entirely screened from view by intervening vegetation, even in winter months. Therefore, there would be no effect on landscape character at this location.
Assessment of Effects on Views					
Receptor	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**
Nearby residents	Private view Very susceptible	High	None	No effect	A private residential view, which nearby receptors may gain from parts of their property, depending on orientation, including views from windows and garden areas. Views in other directions would also be available. High sensitivity to changes in the view. The proposed solar array would be entirely screened from view by intervening vegetation, even in winter months. Therefore, there would be no effect on the visual amenity of residents at this location.
Cemetery visitors	Community Moderately susceptible	Medium	None	No effect	A cemetery with community value, around which receptors would be stationary or moving slowly, could use the area frequently, with views in several different directions and so would be moderately susceptible and with a medium sensitivity to changes in the view. The proposed solar array would be entirely screened from view by intervening vegetation, even in winter months. Therefore, there would be no effect on the visual amenity of receptors at this location.

Vp 5: Erddig National Trust Property					
Distance to Hafod Road Solar Array	**NGR**	**Elevation (approx)**	**Landscape designation**	**Recreational area or route**	**Existing View**
2.5km	332755 348090	90mAOD	None	Public right of way	Located on public footpath ERD/2 within the ground of Erddig, looking southwest across the parkland landscape. Even in winter months the mature trees layer across the view to create a rather enclosed parkland vista.

Assessment of Effects on Landscape Character					
LCA	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**
13A: Welsh Maelor	Local Moderate susceptibility	Medium	None	No effect	An undesignated landscape of local value that could have moderate susceptibility with a medium sensitivity to the type, scale and location of development proposed. The proposed solar array would be entirely screened from view by intervening vegetation, even in winter months. Therefore, there would be no effect on landscape character at this location.
Assessment of Effects on Views					
Receptor	**Value Susceptibility**	**Sensitivity**	**Magnitude**	**Predicted effects**	**Assessment**
Tourists	National Very susceptible	High	None	No effect	A tourist attraction with national value, , around which receptors would be moving slowly, could visit the area frequently, may specifically visit for the views, with views in several directions available. Receptors would be very susceptible and with a high sensitivity to changes in the view. The proposed solar array would be entirely screened from view by intervening vegetation, even in winter months. Therefore, there would be no effect on the visual amenity of tourists at this location.
Walkers	Community Susceptible	High/ medium	None	No effect	A public footpath with community value, along which receptors would be moving slowly, could use the route frequently, with views in several directions and so would be susceptible and with a high/medium sensitivity to changes in the view. The proposed solar array would be entirely screened from view by intervening vegetation, even in winter months. Therefore, there would be no effect on the visual amenity of walkers at this location.