Galileo 03 Ltd.

Mynydd Ty-talwyn Energy Park - Environmental Statement Volume II

Main Written Statement – Chapter 12: Traffic and Movement

Project Reference: 663870

This chapter is summarised within the Non-Technical Summary in Volume I of this Environmental Statement. A Welsh translation of the Non-Technical Summary is also available as part of the application.

Crynhoir y bennod hon yng Nghrynodeb Annhechnegol y Datganiad Amgylcheddol hwn. Mae cyfieithiad Cymraeg o'r Crynodeb Annhechnegol hefyd ar gael fel rhan o'r cais.

NOVEMBER 2025

RSK

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK Environment Ltd.

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12 TRAFFIC AND MOVEMENT

12.1 Introduction

12.1.1 This chapter presents an assessment of likely significant effects on receptors along the transport routes arising from vehicle movements associated with the construction of the Proposed Development.

12.1.2 This chapter is supported by the following appendices presented in the **Environmental Statement (ES) Volume III**:

- **Appendix 12.1: Outline Construction Traffic Management Plan;**
- **Appendix 12.2: Route Feasibility Study;** and
- **Appendix 12.3: Highway Junctions General Arrangements.**

12.1.3 This chapter is supported by the following figures presented in **ES Volume IV:**

- **Figure 12.1: Study Area;**
- **Figure 12.2: Abnormal Load Routes;**
- **Figure 12.3: Traffic Count Points;**
- **Figure 12.4: Traffic Accident Data;**
- **Figure 12.5: Construction Traffic Distribution;**
- **Figure 12.6: Outline Signage Strategy, Sheet 1 of 2 ;** and
- **Figure 12.7: Outline Signage Strategy, Sheet 2 of 2.**

12.2 Consultation and Scope

Scoping Direction

12.2.1 The scope of this assessment has been established through an ongoing scoping process. This has involved the production of an EIA Scoping Report (provided in **ES Volume III, Appendix 1.1: EIA Scoping Report**), which was submitted to Planning and Environment Decision Wales (PEDW) in November 2023. Further information on the scoping process can be found in **ES Volume II, Chapter 4: Approach to the EIA**.

12.2.2 The Scoping Direction, a copy of which is included in **ES Volume III, Appendix 1.2: Scoping Direction**, was received on 11 April 2024. **Table 12.1** summarises the key Scoping Direction comments related to this assessment and sets out how these have been addressed by the Applicant.

Table 12.1 Summary of Scoping Direction Comments Relevant to this Traffic and Movement Assessment

ID No.	Issue	Comment raised	Applicant Response
ID.63	Data Sources	BCBC (Bridgend County Borough Council) state that the Department for Transport (DfT) traffic counters do not provide adequate data to inform the assessment, and that manual or automatic counters should be placed at locations agreed with the Highway Authorities. PEDW advises that the applicant should liaise with the relevant Highway Authorities on the data to inform the assessment, including traffic counters.	RSK has liaised with relevant Highways Authorities and additional traffic surveys have been undertaken. No DfT traffic counters have been utilised in the Traffic and Movement assessment. See **Table 12.2** for further detail.
ID.64	Construction Access	The EIA Scoping Report states that the proposed access route to the Site is yet to be determined, but that it may involve a route through NPT (Neath Port Talbot) which may necessitate highway works. NPTC (Neath Port Talbot Council), BCBC and Transport Directorate state that inadequate information has been provided at this stage to inform the assessment. Further information is required, and early pre-application consultation is strongly recommended. The applicant should refer to consultee comments and the draft guidance document 'Pulling Together – Best Practice for Transport Abnormal Loads in Wales'. In accordance with the advice from consultees, PEDW confirms the applicant should provide details of all required AIL (Abnormal Indivisible Load) movements along the trunk road network and should include documented trial runs demonstrating the suitability of the entire transport route to the Site (and in reverse for	An Abnormal Indivisible Load (AIL) Route Feasibility Study has been conducted for the Proposed Development (**ES Volume III, Appendix 12.2: Route Feasibility Study**) which has concluded two routes to Site, as illustrated in **ES Volume IV, Figure 12.2: Abnormal Load Routes**. Permission for the pinch points will be sought via S278 of the Highways Act 1980 or Town and Country Planning Act 1990 (TCPA) applications following the granting of consent for the Proposed Development. Full details of the swept path analysis and associated assessments for these junctions will be provided as part of the subsequent TCPA applications. A northern Site entrance is proposed which can accommodate both general construction traffic and abnormal load vehicles. A southern Site entrance is proposed which, following dialogue with the BCBC Highway Officer, is designed to accommodate

ID No.	Issue	Comment raised	Applicant Response
		decommissioning). In order to demonstrate that the route is fit for purpose, the weight and dimensions of AILs [Abnormal Indivisible Loads] should be provided, alongside a swept path analysis for junction. The applicant should also provide existing road condition surveys and details of any highway improvement works that would be necessary to facilitate the route. Should trees or hedgerows require removal as part of these works, this impact should also be assessed in the ES.	abnormal load delivery entry only. Both proposed junctions are illustrated in **ES Volume III, Appendix 12.3: Highway Junctions General Arrangements.** A trial run would be undertaken prior to turbine deliveries once suitable mitigation measures are in place which will accommodate the delivery vehicles and components.
ID.65	Operational Traffic	BCBC do not agree with the approach in the EIA Scoping Report to scope out traffic flow increases below 10% during operation. They highlight that the threshold for a material impact when considering a planning application is 5%. They also highlight that most of the major junctions in Bridgend are over capacity, and therefore even a 5% increase could result in a detrimental impact. This impact should be assessed as part of the ES. It is also noted that no information has been provided regarding the replacement or ongoing maintenance over the 50-year lifetime of development. PEDW therefore advise that inadequate information has been provided to demonstrate there will be no significant impact, therefore the operational and decommissioning phases are scoped in to the ES. Should the survey work and consultation Highway	An assessment of operational and decommissioning traffic has been provided in **Section 12.6**. This assessment considers the necessary replacement and maintenance requirements of the Proposed Development, as discussed in **ES Volume II, Chapter 2: Proposed Development Description**.

ID No.	Issue	Comment raised	Applicant Response
		Authorities find that this matter can be scoped out, the justification should be set out in the ES.	
ID.66	Topple Distance	NPTC's PRoW (Public Rights of Way) Officer raised concerns with the proximity of turbines 8 and 10 to the highway and PRoW network. The officer has stated that turbines should be located a minimum of tip height, in this case 230 m, plus 10% away from any PRoW to avoid users in the event of collapse. Both turbine 8 and 10 are significantly closer to the public highway and PRoW. PEDW refer to comments in the PRoW section above. In summary, the impact on PRoW should be addressed in the ES and is therefore scoped in. The applicant should consider the location of the turbines, and any potential impact, including topple distance, on the highway and PRoWs.	The comments raised relates to a previous design iteration which accompanied the EIA Scoping Report. BCBC PRoW and Highways Officer have been consulted on the revised proposed turbine locations via email, Teams meetings and site visit and have advised that they have no concerns with the proposed turbine locations. None of the proposed turbines are located within oversail (blade length) of existing PRoW or highways and are located a minimum of 200 m (revised maximum height of the turbines) from a bridleway. Turbine T06 is located within NPTC and is located slightly within topple distance (175 m) from the highway but would not oversail it. **ES Volume II, Chapter 2: Proposed Development Description** addresses the safety features of the technology and likelihood of injury to members of the public. A financial contribution (via a Section 106 agreement) towards PRoW enhancements is also proposed as part of the Proposed Development. The assessment reported in this chapter also includes the consideration of traffic and transport related effects on PRoW.

ID No.	Issue	Comment raised	Applicant Response
ID.67	Assessment Approach	With regard to the proposed factor-specific assessment approach, BCBC advise this is only accepted if the factors are based on collected real world data. If the factors are based on models, then this approach is not accepted. PEDW therefore advises that the applicant liaises with the Highway Authorities, initially to confirm if the factors are based on modelling or real world collected data, and to agree the methodology to inform the assessment.	RSK has liaised with BCBC Highways Department, following which, additional traffic surveys have been undertaken to inform the baseline of the assessment (see **Section 12.3**). No models have been utilised in the assessment.

Additional Consultation

12.2.3 **Table 12.2** provides a summary of the additional consultation activities undertaken in support of the preparation of this assessment outside of the EIA Scoping process.

12.2.4 The relevant Highways Authorities for the Proposed Development are BCBC and NPTC. A Planning Performance Agreement (PPA) was secured with BCBC enabling dialogue with the relevant highways and PRoW officers. Whilst a PPA was sought with NPTC, it was not concluded and therefore consultation advice from the relevant officers within that Council has not been provided; however, it is noted that there is only a stretch of 1.5 km of highway proposed to be utilised for delivery / construction within NPTC jurisdiction.

12.2.5 Consultation with the Welsh Government regarding the use of the M4 for the delivery of abnormal load routes has not been undertaken. The section of the M4 from the Port of Entry (PoE) to the local road network has been previously deemed acceptable for the transport of abnormal loads. Further detail on the abnormal load route is illustrated in **ES Volume IV, Figure 12.2: Abnormal Load Delivery Route** and provided in **Section 12.4**.

Table 12.2 Summary of Additional Consultation Undertaken

Consultee	Date of Engagement	Summary of Matters Discussed	Applicant Response
BCBC Highways Officer	26/09/24 Teams Meeting	Introductory Meeting	N/A
BCBC Highways Officer	11 November 2024 14 November 2024 Emails	Confirmation of the status of the gated unkept highway near T05 remains an adopted highway and would want the condition and status to remain the same. Advised that there was no policy or guidance to achieve topple distance from the adopted highway and no objection would be raised.	There is no proposal to amend the gated highway which passes through the Site. Two turbines are located within topple distance of the highway, as a balance of environmental impacts, but the turbines would not oversail the highway.

Consultee	Date of Engagement	Summary of Matters Discussed	Applicant Response
BCBC Highways Officer	15/01/25 Site Meeting	Visited the proposed southern entrance; concerns were raised regarding available visibility splays relevant to the speed of traffic. Drove Ffordd-Y-Gyfraith which passes through the Site and discussed junction arrangements to separate turbines and solar land parcels. Requested that consideration be given within the assessment as to the impact of any temporary road closures through the Site during construction.	Following the site visit, the Site design was revised so that the southern access is an entry point only for abnormal loads, which will be under supervision. Separate junction designs have been provided for the relevant turbine and solar access track junction with the adopted highway which passes through the Site; these are provided at **ES Volume III, Appendix 12.3: Highway Junctions General Arrangements**. Additional traffic surveys were undertaken in order to consider traffic diversion effects.
BCBC Highways Officer	21/01/25 Email	A summary of the abnormal load route options was provided.	The preferred option has been presented as one of the abnormal load routes to Site, as illustrated in **ES Volume IV, Figure 12.2: Abnormal Load Routes**.
Network Rail	Email dialogue and subsequent site meeting 20/03/25	Discussed the principle of AILs traversing the level crossing on Fountains Road, which is an unused level crossing maintained by Network Rail.	Agreement in principle secured with Network Rail during site meeting.

Statutory Pre-application Consultation (PAC)

12.2.6 **Table 12.3** provides a summary of the responses received, in relation to Traffic and Movement, following the statutory PAC process, and the necessary action taken to update the assessment, where relevant. Where appropriate the PAC responses have been summarised. The full consultee comments are set out in the standalone **Pre-application Consultation Report**.

Table 12.3 PAC Comments and Responses

Consultee	Date of Response	Summary of Consultee Comments	Applicant Response
Welsh Government as South Wales Trunk Road Agent (SWTRA) – Consultants WSP acting on their behalf.	06/06/25	Detail needs to be provided to prove access for transporting AILs is achievable from the point of entry to the Welsh trunk road network to the point of egress, that minimises any impact on the safety and free flow of trunk road traffic. This information will be required prior to any determination to ensure the proposed route is a viable option. Please supply the likely traveling weights and dimensions of AILs and swept path analysis for all junctions on the Trunk Road Strategic Network. Please note, to screen the proposals, the draft abnormal load notifications would be particularly helpful to the Welsh Government as highway authority. For our review to be meaningful we require the accompanying notification template to be filled out as much as possible. There may be many unknowns at this time, but the closer we get to a completed form the more meaningful feedback we will be able to provide. As an absolute minimum we need best estimates for: • Full route details. • Vehicle weight. • Vehicle length. • Vehicle width	This response is acknowledged. **ES Volume III, Appendix 12.2: Route Feasibility Study** has been updated to include details of AIL swept path assessments of Points of Interest on Route 2 (Northern Access) and Route 5 (Southern Access via Fountain Road) which are the routes being taken forwards as part of the Proposed Development. The updated report also includes AIL swept path assessment of Points of Interest on the M4 which are common to both routes. The assessment has been carried out for a Nordex N163 turbine product as a worst case. This does not preclude the selection of an alternative candidate turbine by the Applicant.

Consultee	Date of Response	Summary of Consultee Comments	Applicant Response
		• Vehicle height We would expect the haulier to fully screen the route and follow notification and road space booking procedures.	Details of the route, vehicle weight and vehicle dimensions is provided within the report. Additionally, a preferred haulier has not been selected by the Applicant at this stage for the transport of AIL. Taking all the above into consideration it is concluded that the completion of an Electronic Service Delivery for Abnormal Loads (ESDAL) application would be premature at this juncture, and could be secured via a planning condition.
SWTRA	07/06/25	SWRTA provided text for standard planning conditions to be attached to an emerging DNC Consent in respect to: • Structural assessment. • Condition surveys. • Liability for incidental damage. • Traffic Management Plan. • Highway works. • Road Safety Audit. • Section 278 Agreement.	This response is acknowledged. No changes to this chapter, its associated appendices in **ES Volume III** or its supporting figures in **ES Volume IV** were required in respect to this response.
NPTC	12/06/25	Chapter 12 makes refence to Replacement Local Development Plan 2023 - 2038: Transport Topic Paper (Neath Port Talbot Council, 2024), but no reference is made to the current adopted Neath Port Talbot Local Development Plan.	This response is acknowledged. This chapter has been updated to include reference to the adopted NPTC Local Development Plan (January 2016).

Consultee	Date of Response	Summary of Consultee Comments	Applicant Response
BCBC Highways	30/06/25	**Abnormal Loads** The applicant proposes to deliver abnormal loads from the Port of Swansea and two potential AIL delivery routes have been shortlisted Option 3 and Option 5 each accessing the Site via a newly formed southern access off New Road, with AILs exiting via the northern access onto the A4063. At this stage, the applicant has not identified a single preferred AIL route, instead deferring the final selection until a later stage, following further engagement and technical assessments. Both shortlisted routes involve extensive physical mitigation, including vegetation clearance, temporary removal of lighting and signage, and potential oversail of third-party land. At the full application stage, a single, clearly preferred AIL route must be presented with the full planning application, supported by swept path analysis, construction methodology, and detailed mitigation proposals. Swept path analysis is not currently provided for several key junctions of the highway network, particularly within Option 5 (e.g. Fountain Road and New Road junctions). This information will be required to assess the viability and safety of the route, particularly where oversail or road modifications are anticipated. The use of the southern access (New Road) is acceptable in principle for inbound AILs only, but must be strictly controlled, physically restricted to general construction traffic, and subject to agreed delivery windows and traffic management measures. It is noted that all AILs will exit via the northern access (A4063) after unloading. Any temporary modifications to this access	This response is acknowledged. As set out in **paragraphs 12.6.8** to **12.6.11**, both Route 2 (Northern Access) and Route 5 (Southern Access via Fountain Road) are both being progressed as the proposed routes to Site. **ES Volume III, Appendix 12.2: Route Feasibility Study** has been updated to include details of AIL swept path assessments of Points of Interest on Route 2 and Route 5. The updated report also includes AIL swept path assessment of Points of Interest on the M4 which are common to both routes. Once AILs have made their delivery, the vehicle will retract to a standard HGV dimension and exit via the northern access.

Consultee	Date of Response	Summary of Consultee Comments	Applicant Response
		point to accommodate these movements should be clearly defined and included in any future submission.	
	30/06/25	**Construction Traffic Management Plan** The applicant has submitted an Outline Construction Traffic Management Plan (CTMP) as Appendix 12.1 of the Environmental Statement. While it outlines the overall access strategy and projected construction traffic volumes, the document remains high level and lacks sufficient detail to assess the impact of the development on the local highway network or confirm the adequacy of mitigation measures. It is considered that the outline CTMP is insufficient for a development of this scale and sensitivity, and will therefore require the submission of a detailed, finalised CTMP to be secured via condition. The CTMP must be submitted to and approved in writing by the Local Planning Authority, in consultation with the Highway Authority, prior to any commencement of works including enabling or clearance activities. The full CTMP should include, as a minimum: • The routeing and timing of HGV construction traffic to/from the Site in order to avoid network peaks. • The parking of vehicles of site operatives and visitors. • Loading and unloading of plant and materials. • Storage of plant and materials used in constructing the development. • Wheel washing facilities on-site.	This response is acknowledged. A detailed CTMP, incorporating details of the measures set out in the Statutory Consultee's response will be prepared to discharge a planning condition.

Consultee	Date of Response	Summary of Consultee Comments	Applicant Response
		• Measures to control the emission of dust and dirt during construction. • The provision of temporary traffic and pedestrian management where required. • Identification of any required temporary traffic orders, parking suspensions, or road closures. • A strategy for HGV layover, waiting, and marshalling, particularly near the northern access. • Swept path analysis for all site access junctions and any constrained pinch points along the route. • Details of pre-commencement road condition surveys and monitoring arrangements. • Identification of abnormal weather or seasonal constraints affecting rural lanes.	
	30/06/25	**Northern Access and Visibility Splays** The access for general construction and operational traffic is proposed via a new priority junction on the A4063, approximately 200 m south of its junction with Ffordd-y-Gyfraith. This access is intended to serve all inbound and outbound general construction traffic as well as all post-construction operational access. The submitted design (Appendix 12.3) proposes a left-in, left-out arrangement and shows visibility splays of 2.4 m x 120 m, based on a recorded 85th percentile vehicle speed of 48 mph. However, this section of the A4063 is a single carriageway subject to the national speed limit, and no Temporary Traffic	This response is acknowledged. **ES Volume III, Appendix 12.2: Route Feasibility Study** has been updated to include details AIL swept path assessments of Points of Interest on Route 2 (Northern Access) and Route 5 (Southern Access via Fountain Road). The updated report also includes AIL swept path assessment of Points of Interest on the M4 which are common to both routes.

Consultee	Date of Response	Summary of Consultee Comments	Applicant Response
		Regulation Order (TTRO) has been proposed to formalise any reduction in design speed. The Highway Authority does not accept the use of reduced visibility splays based solely on recorded speeds where the national speed limit applies. In line with recognised design guidance (including TAN 18, DMRB, and MfS2), visibility splays must be based on the road's design speed, which in this case is 60 mph. As such, the access should provide visibility splays of 2.4 m x 215 m in both directions unless a formal TTRO is proposed and progressed to reduce the posted speed limit to 40 mph, alongside enforceable traffic-calming and signage. At present, neither option is referenced within the PAC submission, nor is a Stage 1 Road Safety Audit provided for the new access, therefore the Highway Authority requires the above at full planning application stage. A second access point is proposed off New Road forming the southern access to the Site. This access is intended to be used exclusively for inbound Abnormal Loads (AILs) during the turbine delivery phase, after which it will be physically restricted and not used for general construction or operational traffic. The Highway Authority accepts the principle of a dedicated AIL access however, a number of issues remain unresolved in the current submission: • No swept path analysis has been provided for key junctions along the southern route, including the New Road / Fountain Road junction, which is known to be geometrically constrained.	**Drawing 10109816_002** within **ES Volume III, Appendix 12.3: Highway Junctions General Arrangements**) submitted with the application shows a visibility splay of 2.4m x 160m. Posted speed limit along the A4063 in the vicinity of the Site is 50mph, therefore the visibility splay shown on the drawing is in line with the recognised design guidance (including TAN 18, DMRB and MfS2). There is no intention to propose a Temporary Traffic Regulation Order (TTRO). Given the above and, as the proposed access junction is an upgrade to an existing access, relevant visibility splays are met and the A4063 is not a Trunk Road, a Stage 1 Road Safety Audit is not considered necessary and can be conditioned; an approach advocated in the Welsh Government Transport Directorate response in relation to trunk roads. AILs will enter the Site from either the northern and southern access point. Once the AIL has made its delivery, it will retract to the size of a standard

Consultee	Date of Response	Summary of Consultee Comments	Applicant Response
		• The applicant proposes to enter via the southern access and exit via the northern access, which indicates that AILs will need to turn within the Site or complete a loop through internal roads. No detail is provided to confirm how this will be achieved or managed.	HGV and therefore will be capable of turning within the engineered area of each crane pad before proceeding to the northern access/exit point.
	30/06/25	**Temporary Road Closures** The applicant identifies the need for temporary road closures to facilitate construction traffic and AIL movements. Specifically, the following closures are referenced: • Ffordd-y-Gyfraith – anticipated closure of up to three weeks • Llangynwyd Mountain Road – anticipated closure of up to six weeks While the Highway Authority acknowledges the closures are necessary for safety and vehicle movement reasons, the full application should also include diversion route plans or traffic management layouts. In addition a clear strategy for maintaining pedestrian, cyclist, and emergency access throughout closure periods will be required.	This response is acknowledged. This **ES Volume II, Main Written Statement – Chapter 12: Traffic and Movement**, the **ES Volume III, Appendix 12.1, Outline Construction Traffic Management Plan** have been updated to include reference to the proposed road closures. An **Outline Signing Strategy** for the diversion routes has also been prepared and is illustrated by **ES Volume IV, Figures 12.6 and 12.7**. Comments regarding accessibility for pedestrians and cyclists are noted, and the Applicant will maintain access for users of the Ridgeway Walk Public Right of Way during construction. Cyclists will be required to use the signed diversion routes during these relatively short period of closures.

Scope of the Assessment

12.2.7 The technical scope of this assessment has been established through the ongoing scoping process. As a result, the technical scope of the assessment reported in this chapter comprises a:

- Construction traffic assessment of the likely effects of the Proposed Development relating to:
  - Severance;
  - Driver delay;
  - Pedestrian delay;
  - Pedestrian amenity;
  - Fear and intimidation; and
  - Accidents and safety.
- Assessment of operational traffic; and
- Assessment of decommissioning traffic.

12.3 Methodology

12.3.1 This assessment has been undertaken in accordance with the following legislation, and with regard to the following planning policy and guidance. It should be noted that this chapter does not assess the compliance of the Proposed Development against relevant planning policy. Such an assessment is presented in the **Planning, Design and Access Statement** which accompanies the application.

Legislation

- Highways Act 1980 (UK Government, 1980).

National Planning Policy

- Future Wales: the national plan 2040 (Welsh Government Llywodraeth Cymru, 2019)**;**
- Planning Policy Wales (Welsh Government Llywodraeth Cymru, 2024) – Technical Advice Note 18: Transport (TAN 18) (Welsh Assembly Government, 2007);
- The Wales Transport Strategy (Welsh Government Llywodraeth Cymru, 2021); and
- Welsh Transport Appraisal Guidance (WelTAG) (Welsh Government Llywodraeth Cymru, 2024).

Local Planning Policy

- Bridgend County Borough Council, Replacement Local Development Plan 2018 - 2033 (Bridgend County Borough Council, 2024)**;**

- Neath Port Talbot County Borough Council, Local Development Plan (2011-2026), Adopted January 2016 (Neath Port Talbot County Borough Council, 2016); and
- Neath Port Talbot Council, Replacement Local Development Plan 2023 - 2038: Transport Topic Paper (Neath Port Talbot Council, 2024).

12.3.2 Consideration has also been given to Bridgend County Borough Council, Local Transport Plan 2015-2030 (Bridgend County Borough Council, 2015).

Guidance

- Guidelines for the Environmental Assessment of Traffic and Movement (Insititute of Environmental Management and Assessment, 2023); and
- LA104, Environmental assessment and monitoring, Design Manual for Roads and Bridges (DMRB) (Standards for Highways, 2020).

Baseline Characterisation

Extent of the Study Area

12.3.3 The study area includes those roads that are expected to experience increased traffic flows associated with the construction of the Proposed Development. The geographic scope was determined through a review of other developments in the area, Ordnance Survey (OS) mapping and an assessment of the potential origin locations of staff, supply locations for construction materials and other movements for maintenance and replacement.

12.3.4 The following rules, taken from the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Traffic and Movement (Insititute of Environmental Management and Assessment, 2023) ('IEMA Guidelines'), were used to determine which links within the study area should be considered for detailed assessment:

- Rule 1 – Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles (HGV) will increase by more than 30%); and
- Rule 2 – Include highway links of high sensitivity where traffic flows have increased by 10% or more.

12.3.5 Abnormal Indivisible Loads (AIL) associated with wind turbines would be delivered from the PoE at Swansea. The anticipated delivery route is illustrated in **ES Volume IV, Figure 12.2: Abnormal Load Routes**. Any upgrade works requiring S278 agreements or planning permission for this route will be subject to a separate consenting and therefore fall outside the scope of this application.

Desk Study

12.3.6 The desk study included reviews and identification of the following:

- Relevant transport planning policy;
- Personal Injury and Accident (PIA) data (ESRI ArcGIS software has been used to interrogate and map the locations and severity of PIA data currently published by the DfT between 2019-2023);
- Sensitive locations (OS mapping);
- Any other traffic sensitive receptors in the area (e.g. core paths, routes, communities etc.) (OS mapping); and
- Potential origin locations of construction staff and supply locations for construction equipment / materials to inform the extent of local area roads network to be included in the assessment (OS mapping).

Field Study

12.3.7 Traffic surveys were specially commissioned and conducted between 29 January and 04 February 2025 in the study area to capture existing traffic volume and speed of traffic at these locations.

12.3.8 The locations of the commissioned Automatic Traffic Counters (ATCs) and Manual Turning Counts (MTCs) used in this assessment are illustrated in **ES Volume IV, Figure 12.3: Traffic Count Points.** The latter were carried out during the peak commuter periods only, for the purpose of understanding turning flows at key junctions / decision points on routes where temporary closures may be required during cabling works associated with the Proposed Development (assumed to be during the peak period of construction as a worst-case scenario) and the prediction of any diverted traffic that would result.

12.3.9 Additional speed surveys were undertaken between 24 and 30 June 2024 within the Site boundary (including along Ffordd-y-Gyfraith). The results of which have been used to determine appropriate visibility splays for internal junction design (see **Section 12.4**).

12.3.10 The locations of the commissioned traffic surveys used in this assessment are summarised in **Table 12.4.**

Table 12.4: Traffic Count Locations

Site	Location / Link
ATC 1	A4063 between B4281 and M4
ATC 2	A4063 between Bryn Road and B4281
ATC 3	A4063 between Derllwyn Road and Bryn Road
ATC 4	A4063 south of Site access to Derllwyn Road
ATC 5	A4063 north of Site access to Llangynwyd
ATC 6	Fountain Road between between New Road and Tycribwr Hill

Site	Location / Link
ATC 7	New Road between Fountain Road and A4063
ATC 8	B4281 between Tycribwr Hill and A4063
MTC 1	Heol Y Glo / Heol Y Glo to County Boundary Lane (Kenfig Hill)
MTC 2	Llangynwyd Mountain Road / Ffordd-Y-Gyfraith To Llangynwyd Mountain Road Junction
MTC 3	Fford-Y-Gyfraith Crossroads (Fford-Y-Gyfraith to Aberbaiden Farm Rd / Fford-Y-Gyfraith / Law Street / New Road)
2024 ATC 1	Piggery Lane
2024 ATC 2	Ffordd-Y-Gyfraith
2024 ATC 3	Llangynwyd Mountain Road

Assessment Methodology

12.3.11 An assessment of the effects of traffic movements has been undertaken in accordance with the IEMA Guidelines (Insititute of Environmental Management and Assessment, 2023). The assessment is based on the description of the Proposed Development as described in **ES Volume II, Chapter 2: Proposed Development.**

12.3.12 The methodology adopted in this assessment involved the following key stages:

- Determine baseline (and future baseline) conditions;
- Review the Proposed Development to identify potential effects including any cumulative effects;
- Evaluate significance of effects on sensitive receptors;
- Identify mitigation where required; and
- Assess residual effects.

12.3.13 Six assessment scenarios have been considered as part of the assessment of construction traffic:

- Construction Phase
  - Baseline scenario: Future baseline (2029);
  - Proposed Development scenario: Future baseline (2029) + Proposed Development construction phase trips; and
  - Cumulative scenario: Future baseline (2029) + Proposed Development construction phase trips + Committed Development trips.
- Operational Phase
  - Baseline scenario: Future baseline (2031); and
  - Proposed Development scenario scenario: Future baseline (2031) + Proposed Development operational phase trips.

- Decommissioning Phase
  - Overview of Proposed Development decommissioning phase trips.

12.3.14 The existing baseline information obtained through the traffic surveys in 2025 has been factored up to the proposed start of construction year (2029) and year of operation (2031) using Trip End Model Presentation Program (TEMPro) growth assumptions. This provides a robust future year assessment scenario to take account of trip generation that may occur as a result of future local development within the study area.

12.3.15 It is anticipated that sections of the Llangynwyd Mountain Road and Ffordd-Y-Gyfraith will require temporary closure during cabling works associated with the Proposed Development for up to six weeks. Temporary closure is required as these roads are single track and there is not enough space in the verge, nor passing places, to complete the works while allowing traffic to pass safely. Traffic being diverted, where these temporary closures may be required, has been redistributed throughout the study area as appropriate in the 2029 future baseline traffic data.

12.3.16 An **Outline Signing Strategy** for the diversion routes has been prepared and is illustrated in **ES Volume IV, Figures 12.6** and **12.7.** It is possible that temporary road closures may also be required during other construction activities, details of which would be provided in a detailed CTMP.

12.3.17 An assessment of the inter-project cumulative effect on the study area of all relevant major developments, including local wind farms, in respect to either submitted planning applications or consented developments pending construction, which may utilise the same access routes as the Proposed Development, has been undertaken.

Assessment Criteria

Receptor Sensitivity

12.3.18 In terms of Traffic and Movement impacts, the receptors are the users of the roads within the study area and locations through which those roads pass.

12.3.19 The IEMA Guidelines (Insititute of Environmental Management and Assessment, 2023) include guidance on how the sensitivity of receptors should be assessed. Using the IEMA Guidelines as a base, professional judgement has been used to develop a classification of sensitivity for users based on the characteristics of roads and locations. These criteria are summarised in **Table 12.5.**

Table 12.5: Classification of receptor sensitivity

Receptor	Sensitivity			
	High	Medium	Low	Negligible
Users of roads e.g. drivers and non-motorised users	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures.	Where the road is Trunk or A-road class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures.	Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for AILs and new strategic road junctions capable of accommodating AILs.
Residents / Users of locations and facilities e.g. Pedestrians, cyclists, sensitive locations (hospitals, churches, schools), rural properties adjacent to road.	Where a location is a large rural settlement containing a high number of community and public services and facilities.	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Where a location is a small rural settlement, few community or public facilities or services.	Where a location includes individual dwellings or scattered settlements with no facilities.

12.3.20 Where a road passes through a location, users are considered subject to the highest level of sensitivity defined by either the road or location characteristics.

Magnitude of Impact

12.3.21 The IEMA Guidelines (Insititute of Environmental Management and Assessment, 2023) identity the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development. A description of each of the likely impacts is provided in the following paragraphs. The magnitude of impact criteria is set out in **Table 12.6.**

12.3.22 **Severance of Communities** - The perceived division that can occur within a community when it becomes separated by major transport infrastructure. The term is used to describe a complex series of factors that separate people from places and other people. Severance may result from the difficulty of crossing a heavily trafficked road or a physical barrier created by infrastructure.

12.3.23 **Road Vehicle Driver and Passenger Delay -** Traffic delays impacting non-development traffic can occur at points on the road network surrounding a development site including site entrance, roads passing a development site where there is likely to be additional traffic and the flow might be affected by additional parked cars, key intersections along a road and side roads where the availability of gaps between vehicles to circumvent delay are reduced.

12.3.24 **Non-motorised User Delay** - Changes in volume, composition or speed of traffic may affect the ability of people to cross a road. In general, increases in traffic levels are likely to lead to greater increases in delay. This is also dependent on existing level of activity, visibility and general physical conditions of the Site.

12.3.25 **Non-motorised Amenity** - Defined as the relative pleasantness of a journey, and is considered to be affected by traffic flow, traffic composition and pavement width / separation from traffic.

12.3.26 **Fear and Intimidation On and By Road Users** - IEMA Guidelines state that measuring the extent of fear and intimidation as a result of development traffic is dependent on the following factors:

- The total volume of traffic;
- The heavy vehicle composition;
- The speed these vehicles are passing; and
- The proximity of traffic to people – and/or the feeling of the inherent lack of protection created by factors such as a narrow pavement median, a narrow path or a constraint (such as a wall or fence) preventing people stepping further away from moving vehicles.

12.3.27 IEMA Guidelines suggest defining the degree of hazard to pedestrians in three stages:

1. Fear & Intimidation (F&I) Degree of Hazard - By calculating average (a) 18hr total traffic flow, (b) 18hr heavy vehicle flow and (c) average speed (Mph). Each with suggested thresholds of traffic number flows and average vehicle speeds. These thresholds in-turn sort the assessment results into a ‘degree of hazard’ score of 0-30. This is calculated for baseline traffic flows and baseline + development traffic flows;
   - Levels of F&I – Levels of F&I are categorized as: ‘Extreme’, ‘Great’, ‘Moderate’ or ‘Small’ according to a total hazard score provided by combining the elements of stage 1 - (a)+(b)+(c);
2. F&I Magnitude of Impact – The level of impact is then approximated with reference to the changes in the level of fear and intimidation from baseline

conditions. Magnitude of impact is categorized according to 'change in step/traffic flows from baseline conditions as:

- 'high' (two step changes in level);
- 'medium' (One step change in level with >400 vehicle increase in average 18hr all traffic flow and/or >500 increase in total 18hr HGV flow);
- 'low' (one step change in level with <400 vehicle increase in average 18hr total vehicle flow and/or <500 HGV flow increase in total 18hr HGV flow); and
- 'negligible' (no step changes).

12.3.28 **Road User and Pedestrian Safety** – Consists of an approximation of the potential for road safety impacts through the calculation of collision rates (slight, serious and fatal). Collision clusters are identified by a detailed review of the baseline characteristics to determine the road safety sensitivity of discrete areas of the road network.

12.3.29 **Hazardous/Large Loads** – Some developments may involve the transportation of dangerous or hazardous loads by road. Such movements may involve specialist loads that might be involved in the construction or decommissioning phases of the development (e.g. wind turbine generator components).

12.3.30 The magnitude of impact has been considered according to the criteria defined in **Table 12.6** and professional judgement. Professional judgement has informed the selection of the magnitude of impact where the increase in HGVs (%) is not set out in the defined criteria (as per the below table) but would represent a material change to the receptor. Justification for the selected magnitude of impact is described in **Sections 12.6** and **12.7** as appropriate.

Table 12.6: Magnitude of Impact Assessment Criteria

Impact	Negligible	Low	Medium	High
Severance of Communities	Changes in total traffic flow of less than 30%	Changes in total traffic flow of 30%-60%	Changes in total traffic flow of 60%-90%	Change in total traffic flow over 90%
Road Vehicle Driver and Passenger Delay	< 10 % Increase in traffic	Quantitative assessment of road capacity based on existing traffic flows and predicted future levels.		
Non-Motorised / Pedestrian User Delay	< 10 % Increase in traffic	An increase in total hourly traffic of approximately 30% can double the delay experienced by pedestrians attempting to cross a road. Whether or not the increase in traffic results in a significant effect should be determined using professional judgement.		

Impact	Negligible	Low	Medium	High
Non-Motorised Amenity	Assessment of this is based on a desktop review of non-motorised user facilities on links used by construction traffic based on professional judgement.			
Fear and Intimidation on and by road users	Negligible - No step changes.	One step change in level, with • <400 vehicles increase in average 18 hr all vehicle two-way all vehicle flow; and/or • <500 heavy vehicle increase in total 18hr HV flow	One step change in level, but with • >400 vehicles increase in average 18 hr all vehicle two-way all vehicle flow; and/or • >500 heavy vehicle increase in total 18hr HV flow	Two step changes in level.
Road User and Pedestrian Safety	< 10 % increase in traffic	Professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. Collision cluster analysis is required. A cluster corresponds to a high concentration of accidents in a specific location (e.g. a specific junction) within the analysed time frame. This assessment has assumed a commonly used criterion of 5 accidents within a 100 m radius over a five-year period).		
Hazardous/ Large Loads	< 30 % increase in traffic	Quantitative assessment of road capacity based on existing traffic flows and predicted future levels based on professional judgement.		

Significance of Effect

12.3.31 The approach to determine the significance of effects has been as follows:

- Identify the relevant receptors;
- Derive their value (sensitivity) based on the criteria set out in **Table 12.5;**
- Identify and consider the likely impacts from each activity as set out in **Section 12.2**;
- Determine the magnitude of impact based on the criteria identified **Table 12.6**;

- Assess the significance of any effects. Where likely significant effects are identified, develop secondary mitigation measures to reduce the effects such that they are no longer significant; and
- Assess the significance of any residual effects following the implementation of secondary mitigation measures.

12.3.32 To determine the overall significance of effects, the results from the receptor sensitivity and magnitude of impact assessments are correlated and classified using a scale set out in LA 104 Revision 1 of the Design Manual for Roads and Bridges (DMRB) (Standards for Highways, 2020) and summarised in **Table 12.7**.

Table 12.7: Significance of Effect Matrix

Sensitivity	Magnitude of Impact			
	High	Medium	Low	Negligible
High	Major	Major / Moderate	Moderate / Minor	Minor
Medium	Major / Moderate	Moderate	Minor	Minor / Negligible
Low	Moderate / Minor	Minor	Minor	Minor / Negligible
Negligible	Minor	Minor	Minor / Negligible	Negligible

12.3.33 Effects are considered significant where they are assessed to be major, major / moderate or moderate, as greyed out in **Table 12.7.** Where an effect could be one of major / moderate or moderate / minor, professional judgement is used to determine which classification should be applicable.

Key Assumptions

12.3.34 Reasonable care has been used to identify the location of potential material suppliers that may be used during the construction of the Proposed Development and the routes that would be used by vehicles from those suppliers to the Site. In practice, selection of the supplier(s) would ultimately be determined by the principal contractor employed to carry out the works, post consent. Assumptions of construction traffic distribution are summarised in **Table 12.18.**

12.3.35 The construction working hours for the Proposed Development are proposed to be 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturdays. Therefore, the calculation of construction traffic movements used in this assessment has been based on this.

12.3.36 The delivery of materials to the Proposed Development is generally subject to the same construction working hours. However, AILs may be delivered outside these hours, when the road network is at its quietest, to reduce traffic disturbance. Delivery of the hubs / nacelles, towers and blades to the Site would require the use of abnormal sized and slow-moving load vehicles (AIL loads). These vehicles would require a police escort, and the timing of these deliveries may be dictated by the police. The timing of the delivery of abnormal loads would be agreed with the relevant authorities after detailed investigation through a detailed CTMP and necessary highway consents.

12.3.37 This assessment is based upon an assumed construction programme (**ES Volume II, Chapter 2: Proposed Development**) for the Proposed Development and is based upon average traffic flows in one-month periods. During the peak construction month there may be localised peak days where construction activity may be higher.

12.3.38 It should be noted that, in the scenario that the Proposed Development did not proceed, traffic growth on the local highway network is still forecast to occur (see **Table 12.13**).

12.3.39 These assumptions are typical for an assessment of this type, and the information presented within the assessment is sufficient to identify and assess the likely significant environmental effects of the Proposed Development on traffic and movement receptors.

12.3.40 It is anticipated that both of the Site access points would be used during the delivery of AILs and both junctions have been designed as such. The anticipated distribution of AILs between the junctions is not currently known and therefore, the assessments have considered a 'worst-case' scenario which routes all AILs along through both junctions. This is considered to be a robust approach.

12.4 Baseline conditions

Existing Environment and Traffic Conditions

12.4.1 The Site lies to the west of the A4063, an A-Road connecting Bridgend with Cymer. The A4063 in the vicinity of the Site is a high quality rural single carriageway, which changes to a more urban character with the provision of contiguous footways as it passes through settlements, such as Tondu, Coytrahen and Llangynwyd. To the southeast of the Proposed Development, the A4063 leaves the M4 motorway at Junction 36.

12.4.2 To the south of the Site lies more rural roads, namely New Road, Fountain Road and the B4281.

12.4.3 Roads forming the study area are shown in **ES Volume II, Figure 12.1: Study Area** and listed in **Table 12.4**. Output data from the counter locations allows the traffic flows to be split by vehicle class which has been summarised into Light Goods Vehicles (LGVs) and HGVs.

12.4.4 **Table 12.8** summarises the Annual Average Daily Traffic (AADT) traffic conditions for 2025 for the study area.

Table 12.8: Baseline AADT (2025)

Site	HGVs	Total Vehicles
ATC 1	356	15,719
ATC 2	169	17,697
ATC 3	95	13,781
ATC 4	56	13,457
ATC 5	71	15,750
ATC 6	3	1,520
ATC 7	3	1,512
ATC 8	9	4,954

Accident History

12.4.5 The time period for the accident analysis includes the five-year period between 2019-2023 (inclusive) and is applicable to the currently publicly available data from the DfT accident statistics website. f ArcGIS software has been used to interrogate and map the accident locations and severity within the study area. The locations of the recorded accidents are shown on **ES Volume IV, Figure 12.4: Traffic Accident Data**.

12.4.6 The accident analysis is used to inform the review of the proposed construction route where any deficiencies in the road layout and condition are identified.

12.4.7 Injuries are classed under the following categories:

- 'Slight' injury – e.g. slight shock with occurrences of sprains or bruises;
- 'Serious' injury – e.g. breakages, lacerations, concussion or hospital admittance; and
- 'Fatal' injury – e.g. resulted in a mortality / death within 30 days after the accident.

12.4.8 The number and severity of accidents recorded in the study area is provided in **Table 12.9**.

Table 12.9: Number and Severity of Accidents Summary

Link	Slight	Serious	Fatal
A4063 between B4281 and M4	8	3	1
A4063 between Bryn Road and B4281	2	0	0
A4063 between Derllwyn Road and Bryn Road	2	0	0
A4063 south of Site access to Derllwyn Road	1	2	1

Link	Slight	Serious	Fatal
A4063 north of Site access to Llangynwyd	5	4	1
Fountain Road between between New Road and Tycribwr Hill	1	0	0
New Road between Fountain Road and A4063	1	0	0
B4281 between Tycribwr Hill and A4063	1	0	0

Pedestrian and Cyclist Networks

12.4.9 There are a number of Public Right of Way (PRoW) footpaths and bridleways which travel through the Site. These are illustrated in **ES Volume IV**, **Figure 13.1: Public Rights of Way.**

12.4.10 The bridleways which are located within and in the vicinity of the Site are presented in **Table 12.10**.

Table 12.10: PRoW Bridleways

PRoW Reference	Length (m)
LDM/5/1	1546

12.4.11 The footpaths which are located within and in the vicinity of the Site are shown in **Table 12.11**.

Table 12.11: PRoW Footpaths

PRoW Reference	Length (m)
9/65.PT/1	573
9/65.PT/1	132
9/66.PT/1	413
9/67.PT/2	313
9/68.PT/1	899
9/68.PT/3	976
9/70.PT/0	1427
9/71.PT/1	797
9/72.PT/2	1643
LDL/10/3	879
LDL/10/6	228
LDL/11/3	172
LDL/12/1	1759
LDL/13/2	471
LDL/14/1	414
LDL/3/2	1784

PRoW Reference	Length (m)
LDL/4/1	739
LDL/4/4	1612
LDL/5/3	6247
LDL/5/5	509
LDL/7/2	491
LDL/7/2	613
LDL/8/2	659
LDL/9/1	280
LDM/21/3	1465
LDM/22/1	666
LDM/23/1	520
LDM/24/1	432
LDM/24/2	573
LDM/4/1	487
LDM/4/2	198
LDM/6/1	1068
LDM/6/2	402
LDM/7/1	634

12.4.12 **ES Volume IV, Figure 8.21: Principal Visual Receptors to 20 km Balde Tip ZTV and Viewpoints** illustrates the locations of National Cycle Network (NCN) routes in relation to the Site.

12.4.13 NCN Route 4 is a long-distance route connecting London and Fishguard via Reading, Bath, Bristol, Newport, Swansea, Tenby, Haverfordwest and St. Davids through a combination of on-road and traffic free routes. In the vicinity of the Site, the NCN Route 5 crosses the A4063 in Tondu via an on-road route and Fountain Road via a traffic free route, of which both of these routes are within the traffic and movement study area.

Sensitive Receptors

12.4.14 **Table 12.12** sets out the receptors scoped in as relevant to this assessment and their assigned sensitivity/value/importance.

Table 12.12 Sensitive Receptors

Receptor	Discussion	Sensitivity
Users of A4063	The A4063 is an A-road class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures.	Low

Receptor	Discussion	Sensitivity
Users of B4281	The B4281 is a B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures.	Medium
Users of Fountain Road	Fountain Road is a minor rural road, not structed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.	High
Users of New Road	New Road is a minor rural road, not structed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.	High
Residents in Aberkenfig	Aberkenfig is an intermediate sized rural settlement, containing some community or public facilities and services.	Medium
Residents in Tondu	Tondu is an intermediate sized rural settlement, containing some community or public facilities and services.	Medium
Residents in Coytrahen	Coytrahen is an intermediate sized rural settlement, containing some community or public facilities and services.	Medium
Residents in Llangynwyd	Llangynwyd is an intermediate sized rural settlement, containing some community or public facilities and services.	Medium
Public Rights of Way Users	Minor path used by walkers and cyclists, not constructed to accommodate HGV traffic flows.	High

Future Baseline in the Absence of the Proposed Development

12.4.15 Construction of the Proposed Development is anticipated to commence at the earliest in 2029, if consent is granted, and is anticipated to take approximately 24 months to complete. To assess the likely effects during the construction phase, the construction year baseline traffic flows were determined by applying a TEMPro growth factor to the 2025 flows summarised in **Table 12.8**. **Table 12.13** also includes the operational year baseline traffic flows determined for 2031.

12.4.16 **Table 12.13** summarises the AADT baseline flows for the year of construction (2029) and year of operation (2031) for the study area.

Table 12.13: Future Baseline AADT (2029* and 2031)

Site	HGVs		Total Vehicles	
	2029	2031	2029	2031
ATC 1	371	378	16348	16697
ATC 2	176	180	18405	18798
ATC 3	99	101	14332	14638
ATC 4	98	60	14056	14294
ATC 5	112	75	16441	16730
ATC 6	3	3	1584	1619
ATC 7	37	3	1628	1610
ATC 8	9	10	5161	5276

**2029 future baseline includes diverted traffic from temporary road closures during the peak construction phase.*

12.5 Mitigation Embedded into the Design

12.5.1 This assessment has been based on the principle that measures have been 'embedded' into the design of the Proposed Development to remove potential significant effects as far as practicable, for example by the considered placement and amount of infrastructure. The embedded mitigation relevant to this assessment is detailed in **Table 12.14**.

Table 12.14 Relevant Embedded Mitigation

Embedded mitigation measure	Function
Junction design	Both of the Site access junctions have been designed to accommodate the AILs and it is anticipated that both access points would be used as needed during the delivery of AILs. The northern access has been designed for a left-in, left-out arrangement for the access and egress of all construction vehicles as a means of improving road safety and reducing possible delays on the A4063.

12.6 Assessment of Likely Effects (Without Additional Mitigation)

Access Proposals

12.6.1 There are two external Site access points proposed into the Site; one located to the northeast from the Maesteg Road, and one to the south from New Road.

12.6.2 The northern access point is proposed to provide access for all construction material, abnormal loads and then operational traffic once the Proposed Development is complete. Its priority-controlled layout format will operate as a left-in, left-out only for all vehicles using the access. Visibility splays have been based

upon the posted speed limit for the road. However, vehicle speed surveys were undertaken in late January / early February 2025 at the northern access point. The recorded 85th percentile speed across the week was 48 mph, confirming that lower visibility splay requirements can be used subject to agreement with Highways Officers.

12.6.3 The southern access point to the Site will provide an additional access for abnormal loads only associated with the delivery of turbine equipment. Access only will be permitted, with all retracted (to near standard articulated HGV vehicle dimensions) abnormal load delivery vehicles leaving the Site through the northern access on Maesteg Road. During construction, the southern access will be closed off to general access using removable bollards placed across the entire width. These will be temporarily removed when needed to permit abnormal load vehicle access. Post construction completion, the access will be secured to prevent general vehicle access with a boundary fence and gate, with the latter set back from the carriageway.

12.6.4 The adopted highway, Ffordd-y-Gyfraith bisects the Site. This provides connectivity between turbine locations and the solar array areas via the internal Site tracks. Its use as the core route helps to minimise environmental impacts by reducing the need to build an extensive network of additional access tracks, requiring only widening it in sections as necessary. Visibility splays at the Site track access points have been based upon the posted speed limit for the road. However, vehicle speed surveys were undertaken in June 2024 on Ffordd-y-Gyfraith. The recorded 85th percentile speed across the week was 31 mph, confirming that lower visibility splay requirements can be used, subject to agreement with Highways Officers. During construction, a banksperson will be used within the Site to assist in the safe manoeuvre of construction vehicles.

12.6.5 The general arrangement of the proposed highway access junctions is provided in **ES Volume IV, Figure 2.1: Proposed Development Layout** and **ES Volume III, Appendix 12.3: Highway Junctions General Arrangements**.

12.6.6 Any areas of over-run required to facilitate the delivery of the abnormal load turbine components would remain in situ for the operational life of the Proposed Development. However, it is proposed to construct these areas using Grasscrete, or similar modular cellular product, to minimise the visual impact once the area has been allowed to revegetate.

12.6.7 The Site access points would be inspected and maintained during the operational life of the Proposed Development.

Abnormal Loads

12.6.8 The wind turbines are broken down into components for transport to the Site. The nacelle, blades and tower sections are classified as AIL due to their weight, length, width and height when loaded.

12.6.9 Escort vehicles (which may also include police traffic officers as necessary) would accompany the AIL convoys to support the traffic management measures. Up to three vehicles would be deployed, with three turbine components typically being delivered per convoy.

12.6.10 AILs would be routed from the M4 to enter the Site through either the northern or southern access point junctions. The anticipated delivery route is illustrated in **ES Volume IV, Figure 12.2: Abnormal Load Routes.** Both of the Site access junctions have been designed to accommodate the AILs and it is anticipated that both access points would be used as needed during the delivery of AILs.

12.6.11 At present the split of deliveries using either entrance is not known and therefore assessments have considered a 'worst-case' of all AIL deliveries accessing one or the other.

12.6.12 The route from the PoE (Swansea) to the Site is considered suitable for the movement of assumed abnormal loads (wind turbine generator components – nacelles, tower sections, blades etc.), subject to the potential need for localised temporary works at junctions to facilitate movements. Any modifications to junction layouts would be confirmed through trial run and further surveys, and any modifications or works required to accommodate abnormal loads would be discussed with the respective highway authority and the necessary agreements, consents and permits would be obtained in advance of any works or delivery periods.

Construction

12.6.13 During the construction phase, the following traffic would require access to the Site:

- Staff transport, either cars or staff minibuses;
- Construction equipment and materials, deliveries of machinery and supplies such as concrete raw materials;
- Components relating to the solar elements, substation components, construction compounds and associated infrastructure;
- Abnormal loads consisting of the wind turbine sections and a heavy lift crane(s); and
- Escort vehicles for AIL deliveries.

12.6.14 Apart from the turbine components, most traffic would be associated with the movement of normal construction plant and would include graders, excavators, high-capacity cranes, forklifts and dumper trucks. Most of these would arrive at the Site as a load on an articulated HGV (low loader). Deliveries associated with the solar elements will also arrive at the Site on HGVs.

12.6.15 The turbines would be delivered in component sections and assembled on-site. The nacelle, hub, drive train, blade sections and tower sections are classified as abnormal loads due to their weight and / or length, width and height when loaded.

12.6.16 In addition to the turbine deliveries, one high-capacity erection crane would be needed to offload a number of components and erect the turbines. The cranes are likely to be mobile cranes with a capacity up to 1,000 tonnes that are escorted by boom and ballast trucks to allow full mobilisation on-site. Smaller erector cranes (up to a capacity of 200 tonnes) would also be present to allow the assembly of the main crane and to assist with the overall erection of the turbines.

Construction Traffic Movements

12.6.17 All material required to construct the Proposed Development would be imported from off-site locations. To enable comparison between the estimated future year baseline scenario and the construction phase scenario, average daily two-way movement for each month, assuming a 22-day working month for deliveries, have been determined. Traffic movements have been split by vehicle type, in line with the baseline data, and the identified peak period for construction traffic. The final daily construction profile is shown in **Table 12.15** (boxes shaded grey indicate the peak months of construction)**.**

Table 12.15: Daily Construction Traffic Movements (Weekday Average Two-way Flows)

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Site mobilisation/ set up, access upgrading and river crossing works	333	333	333																					
Construction of new access tracks and crane hardstanding			1165	1165	1165	1165	1165	1165	1165	1165	1165	1165	1165	1165										
Turbine foundation construction				371	371	371	371	371	371	371	371	371	371	371	371									
Substation and electrical works				479	479	479	479	479	479	479	479	479	479	479	479	479	479	479	479					
Cable trenching and installation								90	90	90	90	90	90	90	90	90	90	90	90	90				
Crane delivery and demobilisation										12											12			
Turbine delivery, erection and commissioning											12	12	12	12	12	12	12	12	12	12				
Solar delivery, construction, erection and commissioning													114	114	114	114	114	114	114	114				
Site reinstatement and demobilisation																		3	3	3	3	3	3	3
General Site Traffic (Personnel)	660	660	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1980	1980	1980	1980	1980	1980	1980	1980	660	660	660	660
Monthly ALL Total	993	993	2598	3115	3115	3115	3115	3205	3205	3217	3217	3217	**4211**	**4211**	3045	2674	2674	2677	2677	2199	675	663	663	663
Daily ALL Total	46	46	120	142	142	142	142	146	146	148	148	148	**192**	**192**	140	122	122	122	122	100	32	32	32	32
Monthly HGV Total	333	333	1498	2015	2015	2015	2015	2105	2105	2117	2117	2117	**2231**	**2231**	1065	694	694	697	697	219	15	3	3	3
Daily HGV Total	16	16	70	92	92	92	92	96	96	98	98	98	**102**	**102**	50	32	32	32	32	10	2	2	2	2

12.6.18 The maximum traffic movements associated with construction of the Proposed Development are predicted to occur in months 13 and 14 in **Table 12.15.**

12.6.19 The average daily movements during the peak month are summarised for HGV, LGV and AIL movements in **Table 12.16**.

Table 12.16: Peak Daily Construction Traffic Movements[1]

Cars/LGVs (two-way)	HGV (two-way)	AIL	
		To Site as AILs	From Site as HGVs
90	96	6	6

Construction Traffic Distribution

12.6.20 The origin of vehicle traffic would depend on the location of staff accommodation and the source of materials being imported. It is likely that staff would be accommodated across a wide area and not to one specific location. The highest volume of traffic would be generated by the requirement for concrete source materials for the turbine foundations and other permanent structures, and aggregate associated with the access track construction.

12.6.21 Information on the potential sources of suitable materials near the Proposed Development is provided in **Table 12.17**.

Table 12.17: Nearby Quarries

Quarry	Location	Distance from Site
Cornelly Quarry	Cornelly, Porthcawl	17.5 km southwest from northern access

12.6.22 The choice of HGV route was based upon identifying the most suitable route between the access to the Proposed Development and the primary trunk or A-class road network. The choice of LGV route (staff origins) has been based on the locations of population centres outside the study area.

12.6.23 The assumed distribution of construction traffic is summarised in **Table 12.18** and illustrated in **ES Volume IV, Figure 12.5: Construction Traffic Distribution.**

[1] **Assumptions:** Turbine components will be delivered on AIL vehicles. After delivery, when the AIL vehicle leaves the Site, it is classed as an HGV. Calculations take this into account.

Table 12.18: Distribution of Construction Traffic (Two-way Movements)

No.	Link Description	Count Point ID	Cars/ LGVs	HGVs	AILs	
					To Site as AILs	Away from Site as HGVs
1	A4063 between B4281 and M4	ATC 1	90%	100%	50%	50%
2	A4063 between Bryn Road and B4281	ATC 2	100%	100%	50%	50%
3	A4063 between Derllwyn Road and Bryn Road	ATC 3	100%	100%	50%	50%
4	A4063 south of Site access to Derllwyn Road	ATC 4	100%	100%	50%	50%
5	A4063 north of Site access to Llangynwyd	ATC 5	100%	100%	0%	50%
6	Fountain Road between between New Road and Tycribwr Hill	ATC 6	0%	0%	50%	0%
7	New Road between Fountain Road and A4063	ATC 7	0%	0%	50%	0%
8	B4281 between Tycribwr Hill and A4063	ATC 8	0%	0%	50%	0%

Predicted Construction Effects

12.6.24 To estimate the total trips on the road network within the study area during the construction phase, daily construction traffic flows were combined with the future year baseline traffic data. The resulting total figures were then compared with the weekday future year baseline traffic to determine the relative increase in link flows associated with the temporary construction trips.

12.6.25 **Table 12.19** shows the increase in total traffic over future year baseline traffic, as a result of construction traffic.

Table 12.19: Increase in Traffic Generation – Construction Phase (Daily Average Two-way Flows)

Link Description			2029 Baseline		2029 Baseline + Development Traffic		Percentage Increase (%)	
No.	Link Descriptionas above	Count Point ID	HGVs	Total	HGVs	Total	HGVs	Total
1	A4063 between B4281 and M4	ATC 1	371	16348	473	16495	27.53%	1.12%
2	A4063 between Bryn Road and B4281	ATC 2	176	18405	278	18557	57.98%	1.04%
3	A4063 between Derllwyn Road and Bryn Road	ATC 3	99	14332	201	14484	103.08%	1.34%
4	A4063 south of Site access to Derllwyn Road	ATC 4	98	14056	200	14208	104.40%	1.37%
5	A4063 north of Site access to Llangynwyd	ATC 5	112	16441	208	16587	85.40%	1.13%
6	Fountain Road between between New Road and Tycribwr Hill	ATC 6	3	1584	9	1590	183.23%	0.38%
7	New Road between Fountain Road and A4063	ATC 7	37	1628	43	1634	16.20%	0.37%
8	B4281 between Tycribwr Hill and A4063	ATC 8	9	5161	15	5167	63.99%	0.12%

12.6.26 Any results in **Table 12.19** that are subject to 'Rule 1' or 'Rule 2' of the IEMA Guidelines, which requires a full assessment of effects if the locations breach these rules, are highlighted in grey.

12.6.27 Whilst the predicted increase in construction traffic would be temporary and short-term in duration, the following receptors, summarised in **Table 12.20**, have been taken forward to an assessment of the significance of effect.

Table 12.20: Receptors for Further Assessment

Link No.	Receptor	Sensitivity
Links 2 – 5	Users of A4063	Low
Link 8	Users of B4281	Medium
Link 6	Users of Fountain Road	High
Link 2	Residents in Aberkenfig	Medium
Link 3	Residents in Tondu	Medium
Link 3	Residents in Coytrahen	Medium
Link 5	Residents in Llangynwyd	Medium
N/A	Public Rights of Way Users	High

12.6.28 In this assessment, a review of the existing road capacity has been undertaken using the Design Manual for Roads and Bridges, Volume 15, Part 5 'The NESA Manual'. The theoretical road capacity has been estimated for each of the road links taken forward for further assessment for a 12-hour period. The results are summarised in **Table 12.21**.

Table 12.21: Peak Traffic Flow Capacity Review

Link No.	Link Description	2029 Baseline	2029 Baseline + Construction	Theoretical Road Capacity (12 hr)	Spare Road Capacity (%)
2	ATC 2	18405	18567	36000	48%
3	ATC 3	14332	14494	19200	25%
4	ATC 4	14056	14218	28800	51%
5	ATC 5	16441	16597	19200	14%
6	ATC 6	1584	1590	19200	92%
8	ATC 8	5161	5167	28800	82%

12.6.29 The results indicate there are no road capacity issues with the addition of construction traffic from the Proposed Development and ample spare capacity exists within the local road network to accommodate all construction phase traffic.

12.6.30 The significance of the predicted effects on the above receptors has been determined using the rules and thresholds previously outlined in **Section 12.3**.

Construction

12.6.31 **Table 12.22** summarises the assessment of likely effects (without additional mitigation) during the construction phase.

Table 12.22 Assessment of Likely Effects (Without Additional Mitigation) during the Construction Phase

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
1.	Users of A4063 – Low Sensitivity	**Severance** Percentage change in HGVs is over 90% on Links 3 and 4, however this is due to the fact that baseline HGV levels are low rather than there being high traffic volumes associated with the construction of the Proposed Development. Links 2 and 5 would experience a low to medium % change. Additionally, percentage change in total traffic is less than 10% on all Links assessed on the A4063.	Medium	**Minor adverse** The increase in HGVs along the A4063 (without mitigation) would likely not result in an increased perception of severance for users (e.g. those trying to cross).
2		**Driver Delay** During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Links 2, 3 and 4. This is equivalent to approximately an additional ten two-way HGVs per hour on those links. Furthermore, the proposed left-in left-out design of the Site access off the A4063 will assist in preventing delays on the A4063. Moreover, the percentage increase in total traffic is below 10% for all Links assessed on the A4063.	Medium	**Minor adverse** The IEMA Guidelines note that delays are only likely to be significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system. The increased movements associated with the Proposed Development is unlikely to lead to driver delay for existing road users (without mitigation). Furthermore, the proposed left-in left-out design of the Site access off the A4063 will assist in preventing delays on the A4063.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
3		**Pedestrian Delay** Pedestrian footpath on one side of the road to a minimum to the north of Tondu towards Coytrahen. Sections of the A4063 between Coytrahen and Llangynwyd have a pedestrian footpath to one side of the carriageway, separated by a grass embankment. Relatively wide pedestrian footpaths at either side of the road through Tondu. Few formal pedestrian crossings present through Tondu. No pedestrian footpaths present along the A4063 to the south of Tondu. During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Links 2, 3 and 4. This is equivalent to approximately an additional eight two-way HGVs per hour on those links. Moreover, the percentage increase in total traffic is below 10% for all Links assessed on the A4063.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in perceivable issues to existing users or in a material change to the provision offered to pedestrians (without mitigation) on the A4063.
4		**Non-motorised User Amenity** Maximum percentage increase in HGV traffic on the A4063 is 104% at the northern Site access (Link 4), however this is due to the small proportion of existing HGVs on this link. Amenities present on either side of the road within Tondu, Coytrahen and Llangynwyd. Footpaths are present on one side of the road	Medium	**Minor adverse** Based on professional judgement, it is considered that this would not result in perceivable issues to existing users or in a material change to existing non-motorised user amenity (without mitigation) on the A4063.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
		as a minimum through Tondu, Coytrahen and Llangynwyd, however between these locations, no footpaths are present along the A4063. No dedicated cycling infrastructure is present along the A4063. During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Links 2, 3 and 4. This is equivalent to approximately an additional eight two-way HGVs per hour on those links. Moreover, the percentage increase in total traffic is below 10% for all Links assessed on the A4063.		
5		**Fear and Intimidation** No change in step changes.	Negligible	**Negligible** No change in F&I level from baseline.
6		**Road User and Pedestrian Safety** Three fatal accidents occurred in the study period. One fatal accident occurred on the eastbound carriageway of the A4063 to the west of the Sarn Park Services access in 2021. One fatal accident occurred to the southeast of the Bridgend Paper Mill in 2019. One fatal accident occurred to the northwest of the Bridgend Paper Mill access in 2022. Nine serious accidents were recorded on the A4063 in the study area. No accident clusters have been identified.	High	**Minor adverse** The increase in HGVs along the A4063 (without mitigation) would likely not result in an increased risk to road safety. The northern access has been designed for a left-in, left-out arrangement for the access and egress of all construction vehicles as a means of improving road safety and reducing possible delays on the A4063.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
		A further 18 slight accidents recorded on the A4063 in the study area. Accident cluster identified at the A4063 / A4061 roundabout at Junction 36 of the M4. The Proposed Development would result in an increase in vehicles along the A4063 (Links 1-5) as shown in **Table 12.19.**		
7	Users of B4281 – Medium Sensitivity	**Severance** Percentage change in HGVs is between 60-90% on Link 8, however this is due to the fact that baseline HGV levels are low rather than there being high traffic volumes associated with the construction of the Proposed Development. On a peak day of construction, there would be an additional six HGVs (AIL delivery) on this link. Additionally, percentage change in total traffic is less than 10% on all Links assessed on the B4281.	Low	**Minor adverse** Despite an increase in HGVs along the B4281, the temporary change in the composition of traffic is unlikely to lead to an increased perception of severance for users (e.g. those trying to cross) (without mitigation).
8		**Driver Delay** During the peak of construction, there would be an additional six HGV (one-way) movements per day on Link 8 (AIL delivery). The percentage change in total traffic is less than 10% on all Links assessed on the B4281.	Low	**Minor adverse** Despite an increase in HGVs along the B4281, the temporary change in the composition of traffic is unlikely to lead to increased driver delay for users (without mitigation).

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
9		**Pedestrian Delay** Relatively wide pedestrian footpaths on one side of the road as a minimum as the B4281 passes through Aberkenfig. No formal pedestrian crossing infrastructure. No pedestrian footpaths present on the B4281 to the east or west of Aberkenfig. During the peak of construction, there would be an additional six HGV (one-way) movements per day on Link 8 and a total vehicle increase of less than 10%.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.
10		**Non-motorised User Amenity** Maximum percentage increase in HGV traffic on the B4281 is 64% (Link 8). However, this is due to the small proportion of existing HGVs on this link. During the peak of the construction phase, there would be an additional six HGVs on a peak day (one-way) on this link (AIL delivery). Moreover, the percentage increase in total traffic is below 10% for all Links assessed on the B4281.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in perceivable issues to existing users or in a material change to existing non-motorised user amenity (without mitigation) on the B4281.
11		**Fear and Intimidation** No change in step changes.	Negligible	**Minor adverse** No change in F&I level from baseline
12		**Road Safety** One slight accident occurred to the east of the B4281 / Fountain Road junction in 2023. No	Low	**Minor adverse**

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
		accident clusters identified. The percentage change in total traffic is less than 10% on all Links assessed on the B4281.		The increase in HGVs along the B4281 (without mitigation) would likely not result in an increased risk to road safety.
13	Users of Fountain Road – High Sensitivity	**Severance** Percentage change in HGVs is over 90% on Link 6, however this is due to the fact that baseline HGV levels are low rather than there being high traffic volumes associated with the construction of the Proposed Development. On a peak day of construction, there would be an additional six HGVs (AIL delivery) on this link. Additionally, percentage change in total traffic is less than 10% on Fountain Road.	Low	**Minor adverse** The increase in HGVs along Fountain Road (without mitigation) would likely not result in an increased perception of severance for users (e.g. those trying to cross).
14		**Driver Delay** During the peak of construction, there would be an additional six HGV (one-way) movements per day on Link 6 (AIL delivery).	Low	**Minor adverse** The increased movements associated with the Proposed Development is unlikely to lead to increased driver delay for existing road users (without mitigation).
15		**Pedestrian Delay** No pedestrian footpaths are present on Fountain Road. During the peak of construction, there would be an additional six HGV (one-way) movements per day on Link 6. Moreover, the percentage increase in total traffic is below 10% on Fountain Road.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
16		**Non-motorised User Amenity** Maximum percentage increase in HGV traffic on Fountain Road is 183% (Link 6). However, this is due to the small proportion of existing HGVs on this link. During the peak of the construction phase, there would be an additional six HGVs on a peak day (one-way) on this link (AIL delivery). Moreover, the percentage increase in total traffic is below 10% on Fountain Road.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in perceivable issues to existing users or in a material change to existing non-motorised user amenity (without mitigation) on Fountain Road.
17		**Fear and Intimidation** No change in step changes.	Negligible	**Minor adverse** No change in F&I level from baseline
18		**Road Safety** One slight accident occurred to the east of the B4281 / Fountain Road junction in 2023. No accident clusters identified. The percentage increase in total traffic is below 10% on Fountain Road.	Low	**Minor adverse** The increase in HGVs along Fountain Road (without mitigation) would likely not result in an increased risk to road safety.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
19	Residents in Aberkenfig – Medium Sensitivity	**Severance** Percentage change in HGVs is between 60-90% on Link 8, however this is due to the fact that baseline HGV levels are low rather than there being high traffic volumes associated with the construction of the Proposed Development. On a peak day of construction, there would be an additional six HGVs (AIL delivery) on this link. Additionally, percentage change in total traffic is less than 10% through Aberkenfig.	Low	**Minor adverse** The increase in HGVs along Link 8 (without mitigation) would likely not result in an increased perception of severance for users (e.g. those trying to cross).
20		**Driver Delay** During the peak of construction, there would be an additional six HGV (one-way) movements per day on Link 8 (AIL delivery).	Low	**Minor adverse** The increased movements associated with the Proposed Development is unlikely to lead to increased driver delay for existing road users (without mitigation).
21		**Pedestrian Delay** Relatively wide pedestrian footpaths on one side of the road as a minimum as the B4281 passes through Aberkenfig. No formal pedestrian crossing infrastructure. During the peak of construction, there would be an additional six HGV (one-way) movements per day on Link 8. Moreover, the percentage increase in total traffic is below 10% through Aberkenfig.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
22		**Non-motorised User Amenity** Maximum percentage increase in HGV traffic in Aberkenfig is 64% (Link 8). However, this is due to the small proportion of existing HGVs on this link. During the peak of the construction phase, there would be an additional six HGVs on a peak day (one-way) on this link (AIL delivery). Moreover, the percentage increase in total traffic is below 10% through Aberkenfig.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in perceivable issues to existing users or in a material change to existing non-motorised user amenity (without mitigation) through Aberkenfig.
23		**Fear and Intimidation** No change in step changes.	Negligible	**Minor adverse** No change in F&I level from baseline
24		**Road Safety** No accidents occurred on the B4281 to the south of Aberkenfig. Three slight accidents occurred to the north of Aberkenfig on the A4063. Two occurred in 2020 and one occurred in 2021. No accident clusters identified.	Low	**Minor adverse** The increase in HGVs along Fountain Road (without mitigation) would likely not result in an increased risk to road safety.
25	Residents in Tondu – Medium Sensitivity	**Severance** Percentage change in HGVs is over 90% on Link 3, however this is due to the fact that baseline HGV levels are low rather than there being high traffic volumes associated with the construction of the Proposed Development. Additionally, percentage change in total traffic is less than 10% on Link 3.	Medium	**Moderate adverse** The increase in HGVs along Link 3 (without mitigation) would result in an increased perception of severance for users (e.g. those trying to cross).

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
26		**Driver Delay** During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Link 3. This is equivalent to approximately an additional eight two-way HGVs per hour on those links. Furthermore, the proposed left-in left-out design of the Site access off the A4063 will assist in preventing delays on the A4063. Moreover, the percentage increase in total traffic is below 10% though Tondu.	Medium	**Moderate adverse** The increased movements associated with the Proposed Development would lead to increased delay for existing road users (without mitigation).
27		**Pedestrian Delay** Relatively wide pedestrian footpaths at either side of the road through Tondu. Few formal pedestrian crossings present through Tondu. During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Link 3. This is equivalent to approximately an additional eight two-way HGVs per hour on those links. Moreover, the percentage increase in total traffic is below 10% through Tondu.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.
28		**Non-motorised User Amenity** Maximum percentage increase in HGV traffic in Tondu is 103% (Link 3). Relatively wide pedestrian footpaths at either side of the road through Tondu. Few formal pedestrian	Medium	**Moderate adverse** Based on professional judgement, it is considered that this would result in perceivable issues to existing users or in a material change to existing non-motorised

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
		crossings present through Tondu. During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Link 3. This is equivalent to approximately an additional eight two-way HGVs per hour on those links. Moreover, the percentage increase in total traffic is below 10% through Tondu.		user amenity (without mitigation) through Tondu.
29		**Fear and Intimidation** No change in step changes.	Negligible	**Minor adverse** No change in F&I level from baseline
30		**Road Safety** No accidents occurred on the A4063 in Tondu in the study time period. No accident clusters identified. The Proposed Development would result in an increase in vehicles along the A4063 (Link 3) as shown in **Table 12.19.**	Low	**Minor adverse** The increase in HGVs through Tondu (without mitigation) would likely not result in an increased risk to road safety.
31	Residents in Coytrahen – Medium Sensitivity	**Severance** Percentage change in HGVs is over 90% on Link 4, however this is due to the fact that baseline HGV levels are low rather than there being high traffic volumes associated with the construction of the Proposed Development. Additionally, percentage change in total traffic is less than 10% on Link 4.	Medium	**Moderate adverse** The increase in HGVs along Link 3 (without mitigation) would result in an increased perception of severance for users (e.g. those trying to cross).

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
32		**Driver Delay** During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Link 4. This is equivalent to approximately an additional ten two-way HGVs per hour on those links. Furthermore, the proposed left-in left-out design of the Site access off the A4063 will assist in preventing delays on the A4063. Moreover, the percentage increase in total traffic is below 10% though Coytrahen.	Medium	**Moderate adverse** The increased movements associated with the Proposed Development would likely lead to increased delay for existing road users (without mitigation).
33		**Pedestrian Delay** Pedestrian footpath on one side of the road to a minimum to the north of Tondu towards Coytrahen. Sections of the A4063 between Coytrahen and Llangynwyd have a pedestrian footpath to one side of the carriageway, separated by a grass embankment. One pedestrian refuge island present within Coytrahen. During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Link 4. This is equivalent to approximately an additional eight two-way HGVs per hour on those links. Moreover, the percentage increase in total traffic is below 10% through Coytrahen.	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
34		**Non-motorised User Amenity** Maximum percentage increase in HGV traffic in Coytrahen is 104% (Link 4). Pedestrian footpath on one side of the road to a minimum to the north of Tondu towards Coytrahen. Sections of the A4063 between Coytrahen and Llangynwyd have a pedestrian footpath to one side of the carriageway, separated by a grass embankment. One pedestrian refuge island present within Coytrahen. During the peak of construction, there would be an additional 102 HGV (two-way) movements per day on Link 4. This is equivalent to approximately an additional eight two-way HGVs per hour on those links. Moreover, the percentage increase in total traffic is below 10% through Coytrahen.	Medium	**Moderate adverse** Based on professional judgement, it is considered that this would result in perceivable issues to existing users or in a material change to existing non-motorised user amenity (without mitigation) through Coytrahen.
35		**Fear and Intimidation** No change in step changes.	Negligible	**Minor adverse** No change in F&I level from baseline
36		**Road Safety** One slight accident occurred on the A4063 in 2020 as it passes through Coytrahen. No accident clusters identified. The Proposed Development would result in an increase in vehicles along the A4063 (Link 4 as shown in **Table 12.19.**	Low	**Minor adverse** The increase in HGVs through Coytrahen (without mitigation) would likely not result in an increased risk to road safety.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
37	Residents in Llangynwyd – Medium Sensitivity	**Severance** Percentage change in HGVs is over 90% on Link 5, however this is due to the fact that baseline HGV levels are low rather than there being high traffic volumes associated with the construction of the Proposed Development. Additionally, percentage change in total traffic is less than 10% on Link 5.	Medium	**Moderate adverse** The increase in HGVs along Link 5 (without mitigation) would result in an increased perception of severance for users (e.g. those trying to cross).
38		**Driver Delay** During the peak of construction, there would be an additional 96 HGV (two-way) movements per day on Link 5. This is equivalent to approximately an additional eight two-way HGVs per hour on those links. Furthermore, the proposed left-in left-out design of the Site access off the A4063 will assist in preventing delays on the A4063. Moreover, the percentage increase in total traffic is below 10% on Link 5.	Medium	**Moderate adverse** The increased movements associated with the Proposed Development would lead to increased delay for existing road users (without mitigation).
39		**Pedestrian Delay** Relatively wide pedestrian footpaths present along both sides of the carriageway through Llangynwyd. Few pedestrian refuge islands present. During the peak of construction, there would be an additional 96 HGV (two-way) movements per day on Link 5. This is equivalent to approximately an additional eight	Low	**Minor adverse** Based on professional judgement, it is considered that this would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
		two-way HGVs per hour on this links. Moreover, the percentage increase in total traffic is below 10% through Llangynwyd.		
40		**Non-motorised User Amenity** Maximum percentage increase in HGV traffic in Llangynwyd is 85% (Link 5). Relatively wide pedestrian footpaths present along both sides of the carriageway through Llangynwyd. Few pedestrian refuge islands present. During the peak of construction, there would be an additional 96 HGV (two-way) movements per day on Link 5. This is equivalent to approximately an additional eight two-way HGVs per hour on this link.	Medium	**Moderate adverse** Based on professional judgement, it is considered that this would result in perceivable issues to existing users or in a material change to existing non-motorised user amenity (without mitigation) through Llangynwyd.
41		**Fear and Intimidation** No change in step changes.	Negligible	**Minor adverse** No change in F&I level from baseline
42		**Road Safety** Two serious accidents occurred on the A4063 as it passes through Llangynwyd. One occurred in 2022 and the other in 2023. Two slight accidents occurred on the A4063 as it passes through Llangynwyd. One occurred in 2019 and the other in 2021. No accident clusters identified. The Proposed Development would result in an increase in vehicles along the A4063 (Link 5) as shown in **Table 12.19.**	Medium	**Moderate adverse** The increase in HGVs through Llangynwyd (without mitigation) would likely result in an increased risk to road safety.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
43	Public Rights of Way (PRoW) Users – High Sensitivity	**Severance** There are four locations within the Site where the proposed access tracks cross existing PRoWs. There may be a requirement for some PRoWs to be temporarily diverted or temporarily closed for short periods of time, however, this will be kept a minimum, and routes will be diverted where possible.	High	**Major adverse** The increase in traffic within the Site (without mitigation) would result in an increased perception of severance for users (e.g. those trying to cross). The impact on footpaths and bridleways during construction without mitigation would be significant and as such mitigation measures to address these impacts are required (See **Table 12.24**). Further details are also provided in **ES Volume III, Appendix 13.1: Outline Access Management Plan.**
44		**Driver Delay** N/A	N/A	N/A
45		**Pedestrian Delay** As above for Severance	Medium	**Major / moderate adverse** The increase in traffic within the Site (without mitigation) would result in increased pedestrian delay for users.
46		**Non-motorised User Amenity** As above for Severance	High	**Major adverse** The increase in traffic within the Site (without mitigation) would result in adverse changes to existing non-motorised user amenity for users.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
47		**Fear and Intimidation** As above for Severance	Medium	**Major / moderate adverse** The increase in traffic within the Site (without mitigation) would result in increased fear and intimidation of users.
48		**Road Safety** As above for Severance	Medium	**Major / moderate adverse** The increase in traffic within the Site (without mitigation) would result in increased risks of road safety for users.
49	Abnormal Load Route - Users of B4281, Users of Fountain Road and Residents in Aberkenfig	**Hazardous / large loads** The construction of the Proposed Development would require the delivery of AIL to the Site. The route for the AIL would be from the Port of Swansea to the Site (as shown in **ES Volume IV, Figure 12.2: Abnormal Load Delivery Route**). It is estimated that the delivery of turbines will generate six AIL deliveries per day.	Medium	**Moderate adverse** Transportation of wind turbine generator components would lead to the following effects: • The rolling closures of roads and footways causing temporary driver and pedestrian delay; • The perceived effect to pedestrians and vulnerable road users caused by the movement of large turbine components in proximity to property and infrastructure. The severity of these impacts is considered as follows: • Delays due to lane/road closures would be inevitable, although abnormal loads would be timed to avoid peak hours and, therefore, abnormal loads would

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
				have a temporary minor adverse effect; and • The perceived effect to residents is subjective and it is possible that the transport of abnormal loads close to properties could lead to local objection, fear and intimidation. Consideration would be given to abnormal load deliveries being undertaken overnight to reduce the potential for disruption and delay, subject to approval by SWTRA, Welsh Government and local police. However, this would depend on the type of transport vehicle used and only by agreement with the relevant authorities. At night, the impact of transporting the abnormal loads would not be significant.

Operation

12.6.32 Once operational, the level of traffic associated with the Proposed Development would be minimal. Regular monthly or weekly visits would be made to the Site for maintenance checks. The vehicles used are likely to be 4x4 vehicles and there may also be the occasional need for an HGV to access the Site for maintenance and/or repairs. Excluding abnormal loads, all operational traffic would utilise the northern Site entrance to access and egress the Site. In the event a blade needed replacing, both accesses can accommodate abnormal load vehicle delivery.

12.6.33 As a worst-case, the assessment of operational traffic, summarised in **Table 12.23,** has assumed six HGV movements per day (two-way) and 24 total vehicle movements per day (two-way) for a peak day including solar maintenance and replacement activities. To account for solar maintenance and replacement activities, the assessment has assumed this volume of traffic would be equivalent to 25% of construction traffic required for the delivery of: panels, inverters, frames, piles and transformers. This has then been distributed across two months.

Table 12.23: Increase in Traffic Generation – Operational Phase (Daily Average Two-way Flows)

Link Description			2031 Baseline		2031 Baseline + Operational Traffic		Percentage Increase (%)	
No.	Link Description	Count Point ID	HGVs	Total	HGVs	Total	HGVs	Total
1	A4063 between B4281 and M4	ATC 1	378	16697	384	16720	1.35%	0.14%
2	A4063 between Bryn Road and B4281	ATC 2	180	18798	185	18821	2.83%	0.12%
3	A4063 between Derllwyn Road and Bryn Road	ATC 3	101	14638	106	14661	5.04%	0.16%
4	A4063 south of Site access to Derllwyn Road	ATC 4	60	14294	65	14318	8.49%	0.16%
5	A4063 north of Site access to Llangynwyd	ATC 5	75	16730	80	16753	6.79%	0.14%
6	Fountain Road between between New Road and Tycribwr Hill	ATC 6	3	1619	3	1642	0.00%	1.43%
7	New Road between Fountain Road and A4063	ATC 7	3	1610	3	1633	0.00%	1.43%
8	B4281 between Tycribwr Hill and A4063	ATC 8	10	5276	10	5299	0.00%	0.44%

12.6.34 As shown in **Table 12.23,** the increase in traffic during the operational phase would be negligible and therefore no detailed assessment of the operational phase of the development is required.

Decommissioning

12.6.35 The traffic generation levels associated with the decommissioning phase would be less than those associated with the construction phase as some elements such as access tracks may be left in place and therefore would not need to be constructed again. Larger structural elements such as turbine bases are typically removed to approximately half a metre below ground level and then the former ground conditions reinstated. As such, the construction phase is a worst-case assessment from the Proposed Development and as no significant effects have been identified for this phase (see **Section 12.1**), no significant effects are anticipated for the decommissioning phase.

12.6.36 Additionally, the prediction of future traffic growth is beyond the reasonable scope of the traffic growth estimation software TEMPro which is based on the DfT's National Trip End Model which uses estimates of economic growth and planned development of allocated employment and residential sites from adopted Local Plans. Strategic planning decisions, including highway/transport infrastructure improvements in the local planning area 50 years from commencement of the Proposed Development post planning permission are not known as this juncture and cannot be reasonably extrapolated.

12.6.37 Therefore, a quantitative assessment of the decommissioning phase would be inappropriate for this subject matter ES Chapter to support this planning application.

12.6.38 However, the Applicant makes a commitment to mitigating the impact of this phase through an outline Decommissioning Environmental Management Plan, which is anticipated would be a secured by planning condition. Further details of this are provided in **Table 12.24.** This would include measures similar to those set out in the outline CTMP (**ES Volume III, Appendix 12.1: Outline Construction Traffic Management Plan**).

12.7 Additional Mitigation Measures

12.7.1 **Table 12.24** sets out the additional mitigation measures required to mitigate the likely effects identified in **Section 12.6**.

Table 12.24 Additional mitigation

Phase	Description of Additional Mitigation Measure	Securing Mechanism
Construction	A CTMP would be in place during the construction phase to actively mitigate the effects as discussed above. An outline CTMP has been prepared as part of the DNS Application which identifies the mitigation measures proposed during the construction phase. This is provided in **ES Volume IV, Appendix 12.1: Outline Construction Traffic Management Plan** and would be revised by the Principal Contractor to a detailed CTMP, to discharge a suitably worded planning condition. The detailed CTMP would be agreed with the Council prior to construction works commencing. The following measures would be implemented through the detailed CTMP during the construction phase. • Where possible, further detailed design processes would minimise the volume of material to be imported to Site to help reduce HGV trips; • A Site worker transport and travel arrangement plan, including transport modes to and from the Site (including pick up and drop off times); • A Traffic Management Plan to control the operation of the access junctions; • All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads; • Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway; • Should there be evidence of this following this commencement of construction, suitable measures would be implemented within the Site to ensure deleterious materials are not transferred onto the highway;	Planning Condition

Phase	Description of Additional Mitigation Measure	Securing Mechanism
	• Road cleaning would take place, if required, to remove any deleterious materials that are carried from the Site; • Normal Site working hours would be limited to between 07:00 - 19:00 Monday to Friday and 07:00 – 13:00 on Saturdays, unless otherwise agreed with the Council, though component delivery and turbine erection may take place outside these hours; • Should the construction phases of the Proposed Development and other relevant committed development occur concurrently, enhanced CTMP mitigation measures would be developed through liaison with stakeholders including the Council and relevant developers; • Construction updates on the project website and / or a newsletter would be distributed to residents within an agreed distance of the Site; and • All drivers would be required to attend a detailed induction prior to undertaking any works on the Site. Advance warning signs would be installed on the approaches to the affected road network. Information signage would be installed to help improve driver information and allow other road users to consider alternative routes or times for their journey (where such options exist). The location and numbers of signs would be agreed post-consent and would form part of the wider traffic management proposals for the Proposed Development. The Applicant would also ensure information would be distributed through its communication team via project website, local newsletters and social media.	
Construction	Post-consent, the Applicant would establish a Community Liaison Forum, in collaboration with the Council and local Community Councils. The forum would allow the community to be kept up to date with project progress and allow communication on the provision of transport-related mitigation and publicise the timings of turbine component deliveries. The Community Liaison Forum would be maintained until construction is complete and the Proposed Development is operational.	Planning Condition

Phase	Description of Additional Mitigation Measure	Securing Mechanism
Construction	The Applicant would enter into a Highway Wear and Tear Agreement or a suitable alternative for the local adopted roads / routes to be used by construction vehicles. A pre-construction works inspection of the roads would be carried out with both parties in attendance with their condition recorded. Following completion of construction of the Proposed Development, a further inspection would be carried out by both parties with repairs being agreed to return the roads to their pre-construction condition, to be carried out in a timely manner for approval by the Council. Notwithstanding this, the Applicant would carry out regular monitoring of the carriageway condition during the construction of the Proposed Development. Necessary repair works would be carried out in a timely manner to prevent further deterioration of the carriageway during the works. Priority would be given to any damage which would be dangerous to users of the road affected.	Planning Condition
Construction	An Abnormal Load Transport Management Plan (ALTMP) would be prepared in advance of any abnormal indivisible load deliveries to cater for all AIL movements to and from the Site. This would include: • Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking; • A diary of proposed delivery movements to liaise with the communities to avoid key dates such as popular local events, etc.; and • Proposals to establish a Community Liaison Group to ensure the smooth management of the project / public interface with the Applicant, the construction contractors, the local community and, if appropriate, the police forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising. A police escort would be required to facilitate the delivery of the AILs. The police escort would be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advance escort would warn oncoming vehicles ahead of the convoy, with one escort staying with	Planning Condition

Phase	Description of Additional Mitigation Measure	Securing Mechanism
	the convoy at all times. The escorts and convoy would remain in radio contact at all times, where possible. The AIL convoys would be no more than three vehicles long, or as advised by the police, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so. The times in which the convoys would travel would need to be agreed with local police who have sole discretion on when loads can be moved. Consideration should be given to abnormal load deliveries being undertaken overnight to reduce the potential for disruption and delay, subject to approval by SWTRA, Welsh Government and local police.	
Construction and Operation	The Outline Access Management Plan has been prepared as part of this DNS Application (**ES Volume III, Appendix 13.2: Outline Access Management Plan**) and includes a schedule of PRoWs within the Site and provides outline measures to manage public access during construction and operation. This will be developed into a detailed Access Management Plan by the Principal Contractor and will help to ensure that all management measures are safe and allow users to continue to use PRoW within the Site as normal.	Planning Condition
Decommissioning	An outline Decommissioning Environmental Management Plan will be developed to minimise potential transport effects associated with the decommissioning phase. This would include measures similar to those set out in the outline CTMP (**ES Volume III, Appendix 12.1: Outline Construction Traffic Management Plan**).	Planning Condition

12.8 Assessment of Residual Effects (With Additional Mitigation)

Construction

12.8.1 During construction there is the potential for the following effects:

- Severance;
- Driver delay;
- Pedestrian delay;
- Pedestrian amenity;
- Fear and intimidation; and
- Accidents and safety.

12.8.2 However, given the temporary nature of the construction programme, and with the implementation of mitigation measures through a CTMP, ALTMP and Access (PRoW) Management Plan, all effects associated with the following impacts can be effectively managed and no significant residual effects remain, as detailed in **Table 12.25.**

Table 12.25 Assessment of Residual Effects during the Construction Phase

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
1	Users of A4063 – Low Sensitivity	**Severance**	Low	**Minor adverse (not significant)** The increase in HGVs along the A4063 would likely not result in an increased perception of severance for users (e.g. those trying to cross).
2		**Driver Delay**	Medium	**Minor adverse (not significant)** The increased movements associated with the Proposed Development is unlikely to lead to driver delay for existing road. Furthermore, the proposed left-in left-out design of the Site access off the A4063 will assist in preventing delays on the A4063.
3		**Pedestrian Delay**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in perceivable issues to existing users or in a material change to the provision offered to pedestrians on the A4063.
4		**Non-motorised User Amenity**	Medium	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in perceivable issues to existing users or in a material change to existing non-motorised user on the A4063.
5		**Fear and Intimidation**	Negligible	**Negligible (not significant)** No change in F&I level from baseline.

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
6		**Road User and Pedestrian Safety**	High	**Minor adverse (not significant)** The increase in HGVs along the A4063 is not anticipated to result in an increased risk to road safety.
7	Users of B4281 – Medium Sensitivity	**Severance**	Low	**Minor adverse (not significant)** Despite an increase in HGVs along the B4281, the temporary change in the composition of traffic is unlikely to lead to an increased perception of severance for users (e.g. those trying to cross).
8		**Driver Delay**	Low	**Minor adverse (not significant)** Despite an increase in HGVs along the B4281, the temporary change in the composition of traffic is unlikely to lead to increased driver delay for users.
9		**Pedestrian Delay**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.
10		**Non-motorised User Amenity**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in perceivable issues to existing users or in a material change to existing non-motorised user amenity on the B4281.
11		**Fear and Intimidation**	Negligible	**Minor adverse (not significant)** No change in F&I level from baseline

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
12		**Road Safety**	Low	**Minor adverse (not significant)** The increase in HGVs along the B4281 is not anticipated to result in an increased risk to road safety.
13	Users of Fountain Road – High Sensitivity	**Severance**	Low	**Minor adverse (not significant)** The increase in HGVs along Fountain Road is not anticipated to result in an increased perception of severance for users (e.g. those trying to cross).
14		**Driver Delay**	Low	**Minor adverse (not significant)** The increased movements associated with the Proposed Development is not anticipated to lead to increased driver delay for existing road users.
15		**Pedestrian Delay**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.
16		**Non-motorised User Amenity**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in perceivable issues to existing users or in a material change to existing non-motorised user amenity on Fountain Road.
17		**Fear and Intimidation**	Negligible	**Minor adverse (not significant)** No change in F&I level from baseline

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
18		**Road Safety**	Low	**Minor adverse (not significant)** The increase in HGVs along Fountain Road is not anticipated to result in an increased risk to road safety.
19	Residents in Aberkenfig – Medium Sensitivity	**Severance**	Low	**Minor adverse (not significant)** The increase in HGVs along Link 8 would likely not result in an increased perception of severance for users (e.g. those trying to cross).
20		**Driver Delay**	Low	**Minor adverse (not significant)** The increased movements associated with the Proposed Development is not anticipated to lead to increased driver delay for existing road users.
21		**Pedestrian Delay**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.
22		**Non-motorised User Amenity**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in perceivable issues to existing users or in a material change to existing non-motorised user amenity through Aberkenfig.
23		**Fear and Intimidation**	Negligible	**Minor adverse (not significant)** No change in F&I level from baseline

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
24		**Road Safety**	Low	**Minor adverse (not significant)** The increase in HGVs along Fountain Road is not anticipated to result in an increased risk to road safety.
25	Residents in Tondu – Medium Sensitivity	**Severance**	Low	**Minor adverse (not significant**) Following the implementation of mitigation in the outline CTMP, it is not anticipated that the Proposed Development would lead to significant severance or the perception of severance (e.g. those trying to cross).
26		**Driver Delay**	Low	**Minor adverse (not significant)** Following the implementation of mitigation in the outline CTMP, it is not anticipated that the Proposed Development would lead to significant delays for existing road users.
27		**Pedestrian Delay**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.
28		**Non-motorised User Amenity**	Low	**Minor adverse (not significant)** Following the implementation of mitigation in the outline CTMP, based on professional judgement, it is not anticipated that there would be a material change to existing non-motorised user amenity through Tondu.
29		**Fear and Intimidation**	Negligible	**Minor adverse (not significant)** No change in F&I level from baseline

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
30		**Road Safety**	Low	**Minor adverse (not significant)** The increase in HGVs through Tondu is not anticipated to result in an increased risk to road safety.
31	Residents in Coytrahen – Medium Sensitivity	**Severance**	Low	**Minor adverse (not significant)** Following the implementation of mitigation in the outline CTMP, it is not anticipated that the Proposed Development would lead to significant severance or the perception of severance (e.g. those trying to cross).
32		**Driver Delay**	Low	**Minor adverse (not significant)** Following the implementation of mitigation in the outline CTMP, it is not anticipated that the Proposed Development would lead to significant delays for existing road users.
33		**Pedestrian Delay**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians in Coytrahen.
34		**Non-motorised User Amenity**	Low	**Minor adverse (not significant)** Following the implementation of mitigation in the outline CTMP, based on professional judgement, it is not anticipated that there would be a material change to existing non-motorised user amenity through Coytrahen.
35		**Fear and Intimidation**	Negligible	**Minor adverse (not significant)** No change in F&I level from baseline

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
36		**Road Safety**	Low	**Minor adverse (not significant)** The increase in HGVs through Coytrahen is not anticipated to result in an increased risk to road safety.
37	Residents in Llangynwyd – Medium Sensitivity	**Severance**	Low	**Minor adverse (not significant)** Following the implementation of mitigation in the outline CTMP, it is not anticipated that the Proposed Development would lead to significant severance or the perception of severance (e.g. those trying to cross).
38		**Driver Delay**	Low	**Minor adverse (not significant)** Following the implementation of mitigation in the outline CTMP, it is not anticipated that the Proposed Development would lead to significant delays for existing road users.
39		**Pedestrian Delay**	Low	**Minor adverse (not significant)** Based on professional judgement, it is considered that the Proposed Development would not result in a perceivable issue to existing users or in a material change to the provision offered to pedestrians.
40		**Non-motorised User Amenity**	Low	**Minor adverse (not significant)** Following the implementation of mitigation in the outline CTMP, based on professional judgement, it is not anticipated that there would be a material change to existing non-motorised user amenity through Llangynwyd.
41		**Fear and Intimidation**	Negligible	**Minor adverse (not significant)** No change in F&I level from baseline

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
42		**Road Safety**	Low	**Minor adverse (not significant)** Following the implementation of mitigation, based on professional judgement, it is not anticipated that the Proposed Development would result in an increased risk to road safety.
43	Public Rights of Way Users – High Sensitivity	**Severance**	Low	**Minor adverse (not significant)** Following the implementation of the mitigation set out in an Access Management Plan, with PRoW temporarily diverted where required, significant effects relating to severance for on-site PRoW users are not anticipated.
44		**Driver Delay**	N/A	N/A
45		**Pedestrian Delay**	Low	**Minor adverse (not significant)** Following the implementation of the mitigation set out in an Access Management Plan, with PRoW temporarily diverted kept to the minimum where required, significant effects relating to pedestrian delays for on-site PRoW users are not anticipated.
46		**Non-motorised User Amenity**	Low	**Minor adverse (not significant)** Following the implementation of the mitigation set out in an outline Access Management Plan and outline CTMP, it is anticipated that non-motorised user amenity would be minimised.
47		**Fear and Intimidation**	Low	**Minor adverse (not significant)** No change in F&I level from baseline
48		**Road Safety**	Low	**Minor adverse (not significant)** Following the implementation of mitigation and best practice, it is not anticipated that the Proposed Development would result in an increased risk to safety for users of the PRoW. As set out in

Ref	Receptor / Receptor Groups	Description of Impact	Magnitude of Impact	Description of Likely Effect
				ES Volume III, Appendix 13.1: Outline Access Management Plan measures will be put in place to effectively manage safe access to the PRoWs and safe crossing locations throughout the construction phase.
49	Abnormal Load Route - Users of B4281, Users of Fountain Road and Residents in Aberkenfig	**Hazardous / large loads**	Medium	**Minor adverse (not significant)** Following the implementation of mitigation in the ALTMP, it is anticipated that significant effects relating to the movement of abnormal loads would be minimised.

Operation

12.8.3 As demonstrated in **Table 12.23**, the increase in traffic during the operational phase would be negligible and no significant effects are anticipated.

Decommissioning

12.8.4 As set out in **Section 12.6**, the decommissioning phase would be no greater than the construction phase. All effects relating to severance; driver delay; pedestrian delay; pedestrian amenity; fear and intimidation; and accidents and safety could be suitably mitigated by the implementation of the Decommissioning Environmental Management Plan. Consequently, no significant effects are anticipated.

12.9 Opportunities for Environmental Enhancement

12.9.1 No opportunities for enhancement in relation to traffic and movement have been identified.

12.10 Difficulties and Uncertainties

12.10.1 The assessment of construction traffic is based upon average traffic flows during the peak month of construction. During that month, activities at the Site may fluctuate between one day and another and it is not possible to fully develop a day-by-day traffic flow estimate at this stage as no subcontractor has been appointed. Furthermore, external factors can impact upon activities on a day-by-day basis, such as the weather conditions, availability of materials, and the time of year. However, the assessment is considered to represent a worst-case assessment as it has been undertaken based on peak flows.

12.11 Inter-Project Cumulative Effects

Screening Cumulative Developments within the Zone of Influence

12.11.1 The inter-project cumulative effects assessment has been undertaken in accordance with Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment (Planning Inspectorate, 2024), as detailed in **ES Volume II, Chapter 4: Approach to the EIA**. **Table 12.26** sets out the other committed developments located within 10 km of the Site boundary. This Zone of Influence (ZoI) has been determined as appropriate for this cumulative assessment based on professional judgement.

12.11.2 The assessment of cumulative traffic and movement effects considers: wind farms; solar farms; other Developments of National Significance (DNS) that are consented but not yet under construction; submitted planning applications but pending decision; applications at appeal; and, DNS applications which have been through statutory Pre-Application Consultation. These applications are considered to provide sufficient information to undertake an assessment on.

12.11.3 There is no potential for significant cumulative effects to occur from wind farms which are operational due to the minimal vehicle trips attributable to the operational phase of a wind farm development.

12.11.4 Furthermore, a review of the BCBC and NPTC planning portals and the Welsh Government's Developments of National Significance Applications portal was undertaken to identify any developments within the ZoI which would likely generate significant traffic. Only developments which would impact on the same study area (road network) as the Proposed Development have been included in the cumulative assessment.

12.11.5 **Table 12.26** sets out the findings of a screening assessment undertaken to identify those other developments within the ZoI which have the potential to result in significant effects with the Proposed Development.

Table 12.26: Inter-Project Cumulative Effects: Screening

Other development	Development Description	Potential for Cumulative Effects?
CAS-02505-N3T6M4 Foel Trawsnant Wind Farm Connection	66 kV electricity network infrastructure comprising overhead lines and underground cables which will start at Foel Trawsnant Wind Farm (grid ref: 283941 , 194161) in the north, heading south through the western edge of Maesteg (grid ref: 284482 , 191458) to a connection point with the existing overhead line approximately 2 km south west of the settlement of Llangynwyd (grid ref: 284175 , 187428).	Yes Routes for construction vehicles overlap on the A4063. As construction is yet to start, this development has been included in the cumulative assessment.
DNS CAS-03613-S7Y6S4 Prosiect Egni Glan Llynfi (Modular Nuclear)	The project will include 4 PWR-20 Modular Nuclear Reactor units, which will provide clean, carbon-free baseload electricity and heat to local industrial users. There will also be Grid, as well as private electricity & steam connections. There will be no air or water emissions from the plant..	Unknown The development is within the ZoI and is likely to share similar construction routes to the Proposed Development. However, given the stage of planning that the development is at (scoping) it is not possible to determine the effects.

Other development	Development Description	Potential for Cumulative Effects?
P/24/753/SOR - WEPA Vesta (Paper Machine)	New plant machine producing tissue paper at Bridgend and decommissioning and dismantling of old machine.	Unknown The development is within the ZoI and is likely to share similar construction routes to the Proposed Development. However, given the stage of planning that the development is at (scoping) it is not possible to determine the effects.
CAS-01977-L5K6R7 Eirlys Solar Farm	Solar – 0.9 km from Proposed Development	No No planning application has been submitted to date, although an EIA Scoping Direction has been sought. No information is available on the likely construction routing and therefore the development has not been subject to further assessment.
DNS/32*64571* Y Bryn	Wind Farm – 18 turbines, 250 m in height, 1.8 km from Proposed Development	Yes Abnormal loads would depart the M4 and would continue to Site using private, purpose-built access tracks. General construction traffic and material deliveries will travel to Site via the A4107, B4282 and A4063 depending on their origin. Routes for construction vehicles overlap on the A4063. As construction is yet to start, this development has been included in the cumulative assessment.
P/23/218/FUL HyBont Green Hydrogen	Development of a green hydrogen production facility with electrolysers, hydrogen storage, hydrogen refuelling station, admin building, substation and back-up generator; with access, circulation,	No While it is in the ZoI, and construction traffic is anticipated to exit the M4 at Junction 36, the development does not share the same routes for construction vehicles as the Proposed

Other development	Development Description	Potential for Cumulative Effects?
	parking, lighting, 8-metre-high wall, security fencing, hard and soft landscaping, and drainage infrastructure, 2.6 km from Proposed Development	Development (as traffic then traverses to the A4061) and therefore there is no potential for significant effects.
DNS CAS-04421-B8S4Q5 Y Bryn Wind Farm Grid Connection	An up to 132 kV (kilovolt) electricity connection comprising underground cables and overhead lines between Y Bryn Wind Farm and the National Grid Substation at Margam.	Unknown The development is within the ZoI and is likely to share similar construction routes to the Proposed Development. However, given the stage of planning that the development is at (scoping) it is not possible to determine the effects.
P/22/225/FUL Great Western Avenue, Coity Road	Installation of a battery energy storage facility, substation, underground cabling and ancillary infrastructure & equipment to include security fence, cctv & gates, 4.2 km from Proposed Development	No While it is in the ZoI the development does not share the same routes for construction vehicles as the Proposed Development and therefore there is no potential for significant effects.
DNS/3279521 Ty'n Y Waun	Solar Farm and associated infrastructure – 40 MW, 4.7 km from Proposed Development	No While it is in the ZoI, and construction traffic is anticipated to exit the M4 at Junction 36, the development does not share the same routes for construction vehicles as the Proposed Development (as traffic then traverses to the A4061 / B4280) and therefore there is no potential for significant effects.
P2021/1255 Metal Processing Facility- Land West of Junction 38 M4	Full planning application of the development of a metal processing facility totalling 28,500 sq.m of floorspace comprising a powder processing plant (17,377	No While it is in the ZoI the development does not share the same routes for construction vehicles as the

Other development	Development Description	Potential for Cumulative Effects?
	sq.m), warehouse and store (5,428 sq.m) office building (1,442 sq.m), amenity building (776 sq.m), laboratory (200 sq.m), services building (470 sq.m), substation (107 sq.m), phase 2 (2,700 sq.m), CCTV, storage tanks and plant, parking, servicing and roads and associated works, from 4.8 km from Proposed Development	Proposed Development and therefore there is no potential for significant effects.
P/2022/0372 Land at Kenfig Industrial Estate Margam	Wind Farm – 1 turbine, 100 m in height, 5.3 km from Proposed Development	No While it is in the ZoI the development does not share the same routes for construction vehicles as the Proposed Development and therefore there is no potential for significant effects.
P2022/1048 Cefn Gwrgan Road	Wind Farm – 1 turbine, 21 m in height, 5.8 km from Proposed Development	No While it is in the ZoI the development does not share the same routes for construction vehicles as the Proposed Development and therefore there is no potential for significant effects.
P2018/0153 **P2022/0517** Foel Trawsnant	Wind Farm – 11 turbines, 145 m in height, 6 km from Proposed Development	Yes Routes for construction vehicles overlap on the A4063. As construction is yet to start, this development has been included in the cumulative assessment.
DNS CAS-03678-M4Y0G7 Upper Ogmore Wind Connection	Grid Connection - overhead line and underground cabling, 6 km from Proposed Development	Unknown The development is within the ZoI and may share construction routes with the Proposed Development.

Other development	Development Description	Potential for Cumulative Effects?
		However, given the stage of planning that the development is at (scoping) it is not possible to determine the effects.
CAS-01773-Z5L1D0 Mynydd y Gaer	Wind Farm - 9 turbines, 5.2 km from Proposed Development	No While it is in the ZoI the development does not share the same routes for construction vehicles as the Proposed Development and therefore there is no potential for significant effects.
DNS/3213662 Upper Ogmore	Wind Farm – 7 turbines, 130 m in height, 6.7 km from Proposed Development	No While it is in the ZoI the development does not share the same routes for construction vehicles as the Proposed Development and therefore there is no potential for significant effects.
DNS/3213704 Felindre Road - STOR	Installation of a stand-by energy generating station that when constructed will have an installed generating capacity of approximately 40 MW, 8 km from Proposed Development	No While it is in the ZoI the development does not share the same routes for construction vehicles as the Proposed Development and therefore there is no potential for significant effects.
P/20/42/FUL Pant y Wal Extension	Wind Farm – 2 turbines, 125 m in height, 8.4 km from Proposed Development	No While it is in the ZOI the development does not share the same routes for construction vehicles as the Proposed Development and therefore there is no potential for significant effects.
11/1468/10 Taff Ely (Repowering)	Wind Farm – 7 turbines, 110 m in height, 9 km from Proposed Development	No While it is in the ZoI the development does not share the same routes for construction vehicles as the

Other development	Development Description	Potential for Cumulative Effects?
		Proposed Development and therefore there is no potential for significant effects.

Assessment

12.11.6 The other developments determined to have the potential to result in likely significant cumulative effects with the Proposed Development, also known as the 'short list', are assessed in **Table 12.27**.

12.11.7 Details of the estimated peak construction (or operational, where applicable) vehicle trip generation and the affected road links were extracted for each development from the respective ES Chapter or Transport Assessment.

12.11.8 Combining these with the estimated peak vehicle trip generation for the Proposed Development and respective link flows from the assessment of effects in **Section 12.6** provides the following worst-case cumulative assessment.

Table 12.27: Inter-Project Cumulative Effects: Assessment

Count ID	Link	Baseline		Proposed Development		Foel Trawsnant Wind Farm		Y Bryn Wind Farm		Foel Trawsnant Wind Farm Connection		Cumulative		% Change	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
ATC 1	A4063 between B4281 and M4	16348	371	183	102	204	164	66	30	39	22	**16840**	**688**	**3.0**	**85.7**
ATC 2	A4063 between Bryn Road and B4281	18405	176	192	102	204	164	66	30	39	22	**18906**	**494**	**2.7**	**180.5**
ATC 3	A4063 between Derllwyn Road and Bryn Road	14332	99	192	102	204	164	66	30	39	22	**14834**	**417**	**3.5**	**321.0**
ATC 4	A4063 south of Site access to Derllwyn Road	14056	98	192	102	204	164	66	30	39	22	**14557**	**415**	**3.6**	**325.1**
ATC 5	A4063 north of Site access to Llangynwyd	16441	112	186	96	204	164	66	30	39	22	**16936**	**424**	**3.0**	**277.2**
ATC 6	Fountain Road between between New Road and Tycribwr Hill	1584	3	6	6	0	0	0	0	0	0	**1590**	**9**	**0.4**	**183.2**

Count ID	Link	Baseline		Proposed Development		Foel Trawsnant Wind Farm		Y Bryn Wind Farm		Foel Trawsnant Wind Farm Connection		Cumulative		% Change	
		Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs	Total	HGVs
ATC 7	New Road between Fountain Road and A4063	1628	37	6	6	0	0	0	0	0	0	**1634**	**43**	**0.4**	**16.2**
ATC 8	B4281 between Tycribwr Hill and A4063	5161	9	6	6	0	0	0	0	0	0	**5167**	**15**	**0.1**	**64.0**

12.11.9 When considering the cumulative construction phase, both the total traffic and HGV traffic slows assessment results indicate an increase on the A4063.

12.11.10 The greatest percentage increase in total traffic is estimated to be 3-4% on all links along the A4063 within the study area. The greatest percentage increase in HGV traffic is estimated to be 325% at Link 4 (ATC 4).

12.11.11 It is highly unlikely that the peak construction phase associated with the other developments in the area would overlap with the peak construction phase of the Proposed Development. Several factors can affect this, including:

- The respective planning applications are at different stages of the planning process;
- It cannot be assumed that all planning applications will secure permission;
- Not all consented developments will be constructed;
- Developments have differing grid connection dates which can influence the programming of their respective construction phase; and
- Duration of the construction phase of each development can vary.

12.11.12 Furthermore, during the construction phase the high traffic generating activities, such as the importation of stone and concrete, tend only to occur over a few months of the whole construction phase. It is also unlikely that the local capacity for concrete and stone production could supply several developments under construction at once, therefore, high traffic generating activities would inevitably be staggered.

12.11.13 It should be noted that the construction phase of a renewable development is transitory in nature and all impacts are short lived and temporary. The inclusion of additional traffic flows in the baseline would dilute the potential impact that the Proposed Development would have. The approach taken is therefore considered to be a suitably robust assessment.

12.11.14 Should the construction of other developments take place at the same time as the Proposed Development, it would be mitigated using an overarching Traffic Management Plan (TMP) for all of the Sites as well as by introducing a phased delivery plan which would be agreed with the respective Highway Authority and police. Police escort arrangements are a major limiting factor on the frequency and timing of abnormal load deliveries. Currently experienced issues with police escort capacity mean it is not possible for more than one abnormal load convoy to be on the same road network in any 24-hour period.

12.12 References

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