



Parc Ynni Calon y Gwynt

ENVIRONMENTAL STATEMENT

Chapter 12: Traffic and Transport





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12 TRAFFIC AND TRANSPORT

12.1 INTRODUCTION

12.1.1. This chapter presents the assessment of the likely significant effects of the Proposed Development with respect to traffic and transport. The assessment is based on information obtained to date. This chapter should be read in conjunction with the development description provided in **Chapter 4: Description of the Proposed Development** and with respect to relevant parts of **Chapter 11: Noise**.

12.1.2. This chapter describes:

- the legislation, policy and technical guidance that has informed the assessment (**Section 12.2**);
- consultation and engagement that has been undertaken and how comments from consultees relating to traffic and transport have been addressed (**Section 12.3**);
- the methods used for baseline data gathering (**Section 12.4**);
- overall baseline (**Section 12.5**);
- embedded measures relevant to traffic and transport (**Section 12.6**);
- the scope of the assessment for traffic and transport (**Section 12.7**);
- the methods used for the assessment (**Section 12.8**);
- the assessment of traffic and transport effects (**Section 12.9**);
- **12.9** traffic and transport residual effects assessments (**Section 12.9**);
- the assessment of cumulative (inter-project) effects (**Section 12.10**); and
- a summary of the significance conclusions (**Section 12.11**);

LIMITATIONS AND ASSUMPTIONS

12.1.3. There are no limitations relating to traffic and transport that affect the robustness of the assessment of the likely significant effects of the Proposed Development. It should be noted that post Scoping Direction consultation has not yet occurred with the Countryside Access and Recreation team in relation to proposed mitigation and management of Public Rights of Way (PRoW)s. This consultation is being sought and will inform the final proposals for PRoWs, however a response to a request for discussion has not yet been received. Commentary on the consultation discussion and agreement with the team will be provided within the Final Environmental Statement (ES) and the agreed management and mitigation will be included in the final PRoW Management Plan (PRoWMP).

12.2 RELEVANT LEGISLATION, PLANNING POLICY AND TECHNICAL GUIDANCE

12.2.1. This section identifies the legislation, planning policy and technical guidance that has informed the assessment of effects with respect to traffic and transport.

LEGISLATION

- 12.2.2. There is no specific legislation that needs to be considered when determining the scope of this assessment. Where legislation is relevant to the Outline PRoWMP or Outline Construction Traffic Management Plan (CTMP) these are listed within them (**Appendix 12A** and **12B** respectively).

PLANNING POLICY

- 12.2.3. A summary of the relevant national and local planning policy is provided in **Table 12-1** below.

Table 12-1 - Planning policy relevant to the traffic and transport assessment

Policy	Policy context
National Planning Policy	
Planning Policy Wales Section 4.1: Transport (2024) ¹	Section 4.1 - This policy provides guidance on the integration of land use, planning and transport matters to promote more sustainable transport choices for people and freight, thus reducing the need to travel, particularly by private transport.
Future Wales The National Plan 2040 (2021) ²	It specifies that development should focus on more sustainable forms of transport with reduced reliance on private vehicles. Policy 18 notes that renewable energy projects should ensure that there are no unacceptable adverse impacts on the transport network due to component transport or operational activities.
Planning Policy Wales Technical Advice Note 18: TRANSPORT (2007) ³	Provides information on assessment of transport impacts and managing their implementation.
Local Planning Policy	
Powys County Council (PCC): Powys Local Development Plan 2011-2026 (2018) ⁴	This is the local development plan for Powys setting out the vision and policies for the area to 2026. It includes transport policies including Policy T1 which states development proposals should manage any impacts to the transport network and local environment to acceptable levels, with any adverse impacts mitigated.
Mid Wales Corporate Joint Committee: Mid Wales Regional Transport Plan (MWRTP) ⁵	This plan covers the authority areas of Powys and Ceredigion and includes a framework to 2040, with a vision of an accessible, low carbon, efficient and connected transport system for the area. It notes the A470 as a notable route. It includes a range of transport policies including ensuring developments include provision for freight logistics requirements.

¹ Welsh Government (2024) Planning Policy Wales. (online). Available at: <https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf> (Accessed April 2026)

² Welsh Government (2021) Future Wales That National Plan 2040. (online). Available at: <https://www.gov.wales/sites/default/files/publications/2021-02/future-wales-the-national-plan-2040.pdf> (Accessed June 2026)

³ Welsh Government (2007) Planning Policy Wales Technical Advice Note 18: TRANSPORT. (online). Available at: <https://www.gov.wales/technical-advice-note-tan-18-transport> (Accessed April 2026)

⁴ Powys County Council (2018) Powys Local Development Plan 2011-2026 (online). Available at: <https://en.powys.gov.uk/article/4898/Adopted-LDP-2011---2026> (Accessed April 2026)

⁵ Mid Wales Corporate Joint Committee (2026) Mid Wales Regional Transport Plan (MWRTP). (online). Available at: <https://www.growingmid.wales/documents> (Accessed April 2026)

TECHNICAL GUIDANCE

12.2.4. A summary of the technical guidance for traffic and transport is provided in **Table 12-2** below.

Table 12-2 - Technical Guidance Relevant to the Traffic and Transport Assessment

Technical Guidance Document	Context
Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (EATM) ⁶	The current guidance for assessing potentially significant environmental traffic and transport impacts.

12.3 CONSULTATION AND ENGAGEMENT

OVERVIEW

12.3.1. The assessment has been informed by consultation responses and ongoing stakeholder engagement. An overview of the approach to consultation is provided in **Section 2.4 of Chapter 2: Approach to EIA**.

SCOPING DIRECTION

12.3.2. A Scoping Direction (**Appendix 1B**) was issued by Planning and Environment Decisions Wales (PEDW) on behalf of the Welsh Ministers, on 14 May 2025. A summary of the relevant responses received in the Scoping Direction in relation to traffic and transport and confirmation of how these have been addressed within the assessment to date is presented in **Table 12-3**.

Table 12-3 - Summary of EIA Scoping Direction responses for traffic and transport

Consultee	Consideration	How Addressed in this Draft ES
Powys County Council - Countryside Access and Recreation	In relation to the traffic and transport assessment, the following were set out: - There should be avoidance of siting turbines on PRow - Impacts of any PRow diversions must be included within the assessment and consultation with the PCC countryside service is required for any diversions - Details of interactions with access tracks should be provided - Reference should be made to the needs of equestrians	The siting of turbines on PRowS has been avoided. Section 12.9 of this Chapter sets out the assessment of traffic and transport effects on PRowS, Appendix 12A the Outline PRowMP identifies interactions between the Proposed Development, including construction traffic, and PRowS and OAL. Post Scoping Direction consultation with the Countryside Access and Recreation team, regarding the PRowS and OAL, has been requested. Commentary on the consultation will be provided within the Final ES. The management and mitigation agreed with the Countryside

⁶ Institute of Sustainability & Environmental Professionals (2023) Institute of Environmental Management and Assessment (IEMA) Guidelines: Environmental Assessment of Traffic and Movement (EATM).

Consultee	Consideration	How Addressed in this Draft ES
	- Protection and enhancement of Open Access Land (OAL) should be assessed. - AIL movement overrun impacts on PRow.	Access and Recreation team will be included in the final PRowMP. AIL movements would be managed; the route has been assessed within a route survey report, produced by Pell Frischmann (Appendix 12C of the ES) setting out the required mitigation and management measures to allow safe and efficient transport of AILs. The Outline CTMP included as Appendix 12B will form the basis of the final CTMP which will confirm the AIL delivery route and be accompanied by a route survey report.
Welsh Government Transport Directorate	Consideration should be given to the Welsh Government Motorway and Trunk Road Network 'Pulling Together' Best Practice for Transporting Abnormal Loads in Wales.	As set out in the Outline CTMP (Appendix 12B), the Welsh Government Motorway and Trunk Road Network 'Pulling Together' Best Practice for Transporting Abnormal Loads in Wales will be accorded with for the movement of abnormal loads unless otherwise agreed with the highway authorities.
Shropshire Council	A request for further consultation in relation to the impact of construction vehicles.	Shropshire is beyond the traffic and transport assessment study area. It is not anticipated that the general (non-abnormal load) construction traffic would have any significant impact beyond the traffic and transport study area. The abnormal load deliveries will route via the Birkenhead Port to the proposed new access route from the B4568 into the Site using the proposed new access route and the unnamed road (north of the proposed access road). The route would include Dock Road, the M53, A55, A483, Newton Bypass, A489 and B4568 to the Site, then onto the new access road and then the unnamed road to the north of the new access road. These routes are not on the local road network in Shropshire. Therefore, this request has not been considered further within the assessment.

12.4 DATA GATHERING METHODOLOGY

STUDY AREA

- 12.4.1. The traffic and transport study area is based on the proposed routeing to the Site from the trunk road network by the Proposed Development construction Heavy Goods Vehicle (HGV). Construction HGV traffic will route on the A470 trunk road from either the north or south, before turning onto the B4568 and then onto the proposed new access road between the B4568 and the existing unnamed road to the north leading to the entry point to the Energy Park Site; these roads are shown on **Figure 12.1**. The length of the A470 has been included within the study area because construction HGV traffic will utilise the A470 north and south of the B4568 to the A489. Beyond these roads, traffic from the Proposed Development would access the wider road network where its effect would be diluted by existing traffic on these routes or would distribute to a point where the effects from traffic would be minimal.
- 12.4.2. The roads within the study area form routes, south, northwest and east from the Proposed Development access point, which allow onward travel to various quarries and other destinations.
- 12.4.3. For the assessment of PRoWs, the study area consists of the Site.
- 12.4.4. In relation to abnormal loads, also referred to as abnormal indivisible load (AIL) movements, as these require specialist assessment of feasible routes for the delivery vehicle and load, and entails separate discussion with the highway authorities, the AIL routeing is not included in the traffic and transport assessment study area, the routing of the AIL is described in **Appendix 12C**.

DESK STUDY

- 12.4.5. **Table 12-4** outlines the desktop data sources used to inform the traffic and transport assessment.

Table 12-4 - Data Sources used to Inform the Traffic and Transport Assessment

Organisation	Data Source	Data Provided
Google Earth/Google Maps ⁷	www.google.co.uk/maps and Google Earth Pro	Online mapping and streetview information.
DataMapWales ⁸	https://datamap.gov.wales/layers/geonode:os_highways_roadlink	Adopted roads information.
Walk Wheel Cycle Trust ⁹	https://www.walkwheelcycletrust.org.uk/national-cycle-network/	National Cycle Network (NCN) information.

⁷ Google (2026) Google Maps and Google Earth Pro (online). Available at: www.google.co.uk/maps (Accessed May 2026)

⁸ DataMapWales (2021) OS Highways (online). Available at: https://datamap.gov.wales/layers/geonode:os_highways_roadlink (Accessed May 2026)

⁹ Walk Wheel Cycle Trust (2026) National Cycle Network (online). Available at: <https://www.walkwheelcycletrust.org.uk/national-cycle-network/> (Accessed May 2026)

Organisation	Data Source	Data Provided
Powys County Council ¹⁰	https://en.powys.gov.uk/article/13184/Public-Rights-of-Way-Map	PRoW information.
Welsh Government ¹¹	https://datamap.gov.wales/	OAL information
Department for Transport (DfT) ¹²	https://roadtraffic.dft.gov.uk/count-points	Traffic flow data.
Crashmap ¹³	DfT data published by www.crashmap.co.uk	Collision data.
Lloyds Coaches ¹⁴	https://lloydscoaches.com	Public transport data - bus.
National Rail ¹⁵	https://www.nationalrail.co.uk/	Public transport data - rail

SURVEY WORK

- 12.4.6. Automatic Traffic Count (ATC) surveys were undertaken at two locations on the local road network, where sufficient publicly available traffic data was not available. The ATC surveys were undertaken by Nationwide Data Collection for a seven-day period commencing on 13 April 2026. The ATC locations are shown on **Figure 12.2**.

¹⁰ Powys County Council (2026) Public Rights of Way Map (online). Available at: <https://en.powys.gov.uk/article/13184/Public-Rights-of-Way-Map> (Accessed April 2026)

¹¹ Welsh Government (2016 and 2017) DataMapWales. (online) Available at: https://datamap.gov.wales/search/?title__icontains=open%20access&abstract__icontains=open%20access&keywords__name__icontains=open%20access&purpose__icontains=open%20access&f_method=or&limit=20&offset=0 (Accessed April 2026)

¹² Department for Transport (2025) Road Traffic Statistics (online). Available at: <https://roadtraffic.dft.gov.uk/count-points> (Accessed May 2026)

¹³ Crashmap (DfT data published by www.crashmap.co.uk)

¹⁴ Lloyds Coaches (undated) Lloyds Coaches (online) Available at: <https://lloydscoaches.com> (Accessed May 2026)

¹⁵ National Rail (2026) National Rail (online). Available at: <https://www.nationalrail.co.uk/> (Accessed May 2026)

12.5 OVERALL BASELINE

- 12.5.1. This section summaries the baseline traffic and transport conditions determined through the course of desk-based investigations and traffic surveys.

CURRENT BASELINE

- 12.5.2. This section presents an overview of the existing transport network baseline within the traffic and transport Study Area (shown in **Figure 12.2** and **Figure 12.3**).

Road Network

Unnamed Roads

- 12.5.3. The proposed new access road from the B4568 joins the unnamed road at a point which is approximately 2.1km north of the unnamed road's junction with the A470. The unnamed road from this point northwards towards the Site access is a surfaced narrow road with passing places and is subject to the National Speed Limit (NSL). It provides access to a small number of properties and to farmland. The road section within the study area varies in width and does not have streetlighting or footways.

B4568

- 12.5.4. The section of the B4568 within the traffic and transport study area is approximately 225 m in length, extending east from the A470. The road section is single carriageway, without footway provision or streetlighting. This section of the B4568 is subject to the NSL.

A470¹⁶

- 12.5.5. The A470 south of the B4568 access connects to the A489 south of Caersws. It is a single carriageway road, approximately 6.5m wide. The speed limit on the section of road south of the B4568 is 50mph and there is no footway. On approach to Caersws the speed limit is 40mph and on the outskirts of the settlement there is intermittent lighting and pedestrian footways north and south of Caersws. Within the settlement of Caersws streetlighting and footways are present along both sides of the carriageway, there are pedestrian crossings, and the road is subject to a 20mph speed limit. Exiting Caersws southbound, the A470 crosses the River Severn via a narrow bridge (signed for oncoming vehicles in middle of road). The A470/A489 junction is a priority junction with a level crossing directly to the southwest of the junction on the A470.
- 12.5.6. The A470 north of the B4568 routes connects to the A489 near Glantwymyn. It is a single carriageway road which varies in width, typically being a minimum of approximately 5.8m or greater. North of the B4568, the A470 is subject to a 40mph speed limit and routes under a 4.4m (14'6") height restricted bridge and the road has no pedestrian footway. North of the bridge, in the settlement of Pontdolgoch, the A470 has pedestrian footway on the west of the carriageway but does not have streetlighting. North of Pontdolgoch, the road routes through a rural area and is subject to a 50mph speed limit and does not have pedestrian footways or streetlighting. On approach to the settlement of Clatter, the A470 is subject to a 40mph speed limit. Within the residential centre of Clatter, the A470 has streetlighting and a short section of footway on both sides

¹⁶ It should be noted that on Google Maps labelling of the A470 is inconsistent (with sections labelled as A489) for the avoidance of doubt this chapter refers to the A470 for the full section of trunk road between the A489 at Glantwymyn and the A489 south of Caersws.

of the carriageway. Northbound from Clatter, the A470 is subject to the national speed limit and does not have footway or streetlighting through rural areas. The A470 routes through the settlement of Carno, Plas Llyslyn, Dolfach and Llanbrynmair, and within these areas the A470 is typically subject to a 40mph speed limit and has streetlighting and footways on a minimum of one side of the carriageway. Through the settlement of Talerddig there is direct frontage of properties onto the A470 with no footway, north of the settlement there is an arc bridge signed for high vehicles (4.8m/16'0") to use the middle of the road. West of Llanbrynmair there is a settlement where the A470 is subject to a 20mph speed limit and there are no footways. On approach to the A489/A470 roundabout the A470 routes through the settlement of Glantwymyn, the A470 is typically subject to a 40mph speed limit and has intermittent streetlighting and footways, there is a school related part time 20mph speed limit.

Traffic Flow

- 12.5.7. Baseline traffic flow data has been obtained from publicly available DfT data (as identified in **Table 12-4**) and traffic survey data (as outlined in **Section 12.4**). **Table 12-5** summarises the traffic flow data, in terms of Average Annual Daily Traffic (AADT) for the data year, for 2026 AADT (24hr flow) and for 2026 12 hr flow and the locations are shown in **Figure 12.2**.
- 12.5.8. For the ATC data, the AADT and 12 hr flows were taken from the survey observed data. For the DfT data, a growth factor was applied to the 2024 data to forecast the 2026 AADT. The growth factor was derived using the DfT's Trip End Model Presentation Program (TEMPro) for the Core growth scenario for the average day, A-road in Powys. The 12 hr flows for this data was derived by using an adjustment factor calculated from the TRA 0307¹⁷ Traffic distribution by time of day and day of the week on all roads in Great Britain, annual from 2006 and TRA0308¹⁸: Traffic distribution on all roads by time of day and day of the week, for selected vehicle types in Great Britain, annual from 2006, one conversion factor was derived for all vehicles (0.8089) and one for HGVs only (0.7557).

Table 12-5 - Traffic Flow Data Summary

Road	Data Source and Year	Data Year AADT		2026 AADT		2026 12 hr	
		Total Vehicles	HGV Only	Total Vehicles	HGV Only	Total Vehicles	HGV Only
A470 (north of the road routing northeast from Carno)	DfT Count ID 40542; 2024 data year	2,395	158	2,418	159	1,956	121
A470 (south of the road routing)	DfT Count ID 20541; 2024 data year	3,634	188	3,668	190	2,967	143

¹⁷ Department for Transport (2026) Traffic distribution on all roads by time of day and day of the week in Great Britain (online). Available at: (Accessed April 2026)

¹⁸ Department for Transport (2026) Traffic distribution on all roads by time of day and day of the week, for selected vehicle types in Great Britain (online). Available at: (Accessed April 2026)

Road	Data Source and Year	Data Year AADT		2026 AADT		2026 12 hr	
		Total Vehicles	HGV Only	Total Vehicles	HGV Only	Total Vehicles	HGV Only
northeast from Carno)							
B4568	ATC 2026	870	31	870	31	755	28
Unnamed Road	ATC 2026	49	2	49	2	41	1

DfT data source: <https://roadtraffic.dft.gov.uk/count-points>

Personal Injury Accident

- 12.5.9. Personal Injury Accident (PIA) data has been sourced from Crashmap (DfT data published by www.crashmap.co.uk¹³). The latest available and verified five-year period of PIA data is 2020-2024 inclusive.
- 12.5.10. The purpose of assessing recorded PIAs is to determine if there is a history of accidents in proximity to the Site and to investigate any patterns or contributing factors to the accidents recorded. Clusters of accidents could indicate that improvements are required to enable development on the Site to come forward. Consideration, during this assessment, has been given to accidents involving vulnerable road users (cyclists / pedestrians).
- 12.5.11. The impact of casualties differs according to the severity of the injuries sustained:
- a) Fatal: any death that occurs within 30 days from causes arising out of the accident.
 - b) Serious: records casualties who require hospital treatment and have lasting injuries, but who do not die within the recording period for a fatality.
 - c) Slight: injury severity is defined as injuries that do not require hospital treatment, or, if they do, the effects of the injuries quickly subside.
- 12.5.12. **Table 12-6** summarises the recorded PIA within the traffic and transport study area, no PIAs were recorded on the unnamed road in the study area.

Table 12-6 - 2020 to 2024 PIA summary

Road Section/Junction	Slight	Serious	Fatal	Total	Average PIA per Annum	No. of PIA Involving Vulnerable Road User Casualties*
B4568	0	1	0	1	0.2	-
A470 - south of the B4568	2	0	0	2	0.4	1 x pedestrian (slight)
A470/A489 junction south of Caersws	3	0	0	3	0.6	-

Road Section/Junction	Slight	Serious	Fatal	Total	Average PIA per Annum	No. of PIA Involving Vulnerable Road User Casualties*
A470 - north of the B4568	16	11	0	27	5.4	1 x pedestrian (serious)
A470/A489 junction Glantwymyn	1	0	0	1	0.2	-

* Vulnerable road user casualties are pedestrian and cyclists in this summary.

Data source: DfT data published by www.crashmap.co.uk

Active Travel

12.5.13. The pedestrian provision on the road network roads in the traffic and transport study area is described above. The nearest NCN route to the Site is Route 81 which connects Aberystwyth and Wolverhampton, the A470 near Caersws is an on-road part of Route 81.

Public Rights of Way

12.5.14. There are 19 PRoW that have been identified as interacting with the Proposed Development, these, along with the nature of the interaction are set out in detail in the Outline PRoWMP (**Appendix 12A**). In summary the PRoWs are as follows:

- footpaths: 244/10/01; 244/57/4; 244/68/1; 246/28/1; 246/27/2; 244/73/2 and 244/73/1.
- bridleways: 244/71/1; 244/70/1; 236/81/1; 246/26/4; 244/72/1; 244/78/2; 244/74/2; 244/74/1; 244/70/2; 244/70/3 and 236/57/1; and
- Restricted Byways: 244/67/2.

12.5.15. **Figure 12.3** shows the PRoW network in the vicinity of the Site.

Public Transport

12.5.16. The nearest railway station to the Site is Caersws Railway Station (shown on **Figure 12.2**), which is approximately 7.4 km driving distance from the northern terminus of the unnamed road within the Site. The station is on the Cambrian railway line and is served by services to Birmingham International, Aberystwyth and Pwllheli.

12.5.17. The nearest bus stops to the Site are on the B4568 (marked by a bus flag and with seating on the westbound stop) and A470 (a southbound stop with a shelter). The local bus service that routes near to the Site routes to both sets of stops and is the X85, the route of this service is shown in **Figure 12.2**. The X85 (Lloyds Coaches) - operates between Machynlleth and Y Drenewydd / Newtown, with a minimum of eight services per day per direction Monday to Saturday and seven services on Sunday.

FUTURE BASELINE

12.5.18. The baseline 12 hr 2026 traffic flows (**Table 12-5**) need to have a growth factor applied to the existing traffic and transport baseline year in order to assess the future baseline which is based on the peak construction phase. As set out in detail in **Section 12.7** and **Section 12.9**, the assumed future year for the traffic and transport assessment is 2029. Therefore, growth factors derived from TEMPro have been applied to the 2026 12 hr traffic flows, for the Core scenario, for roads in Powys (a growth factor of 1.02634).

Table 12-7 - Future baseline traffic flow summary

Road	Data Source Reference	2029 12 hr	
		Total Vehicles	HGV Only
A470 (north of the road routing northeast from Carno)	DfT Count ID 40542	1,956	121
A470 (south of the road routing northeast from Carno)	DfT Count ID 20541	3,046	147
B4568	ATC	774	29
Unnamed Road	ATC	42	1

12.6 EMBEDDED MEASURES

12.6.1. A range of environmental measures have been embedded into the Proposed Development as outlined in **Section 4.6**. **Table 12-8** below outlines how these embedded measures influence the traffic and transport assessment.

Table 12-8 - Summary of the Embedded Environmental Measures

Receptor	Potential Changes and Effects	Embedded Measures	Compliance Mechanism
Construction Phase			
Occupants of land uses alongside a highway link and users of a highway link in the traffic and transport study area.	Severance, driver delay, non-motorised user amenity, non-motorised user delay, fear and intimidation and road safety: the risk of accidents occurring where the Proposed Development is expected to produce a change in the character of traffic.	An overview of likely standard measures are set out in the Outline CTMP (Appendix 12B), the finalised measures will be provided within a final CTMP. The final CTMP will confirm the AIL delivery route and be accompanied by a route survey report.	CTMP (final CTMP to be produced and submitted to the relevant highways authorities).
Users of PRowS	Non-motorised user delay and amenity.	Measures set out in the PRowWMP, the Outline PRowWMP (Appendix 12A) provides an overview of likely measures, the finalised measures will be provided within a final PRowWMP once final micro-siting of turbines is confirmed and in consultation with the relevant PRow officer.	PRowWMP (final PRowWMP to be produced and submitted to the relevant PRow officer).

12.7 SCOPE OF THE ASSESSMENT

OVERVIEW

- 12.7.1. The scope of the following assessment is based upon a review of the baseline information detailed in **Section 12.5** and the Proposed Development description set out within **Chapter 4 Description of the Proposed Development**.

SPATIAL SCOPE

- 12.7.2. The spatial scope of the assessment of traffic and transport covers the area of the Proposed Development, together with the roads that have formed the basis of the traffic and transport study area described in **Section 12.5** and shown in **Figure 12.1 a**. Beyond these roads, traffic from the Proposed Development would access the wider road network where its effect would be diluted as it disperses onto different roads, particularly highly trafficked routes.
- 12.7.3. The roads within the study area form routes, south, north-west and east from the Proposed Development access, which allow onward travel to various quarries and other destinations.

TEMPORAL SCOPE

- 12.7.4. The majority of traffic will be generated during the construction stage.
- 12.7.5. Relatively little traffic generation is anticipated during operation: occasional visits will be made to the Site for maintenance checks. The vehicles used for these visits are likely to be a 4x4 or similar and there may be an occasional need for an HGV to access the Site for maintenance and repairs. Therefore, as outlined in the Scoping Report, operational traffic would be expected to be negligible and thus operational traffic and transport effects were 'scoped out' of the assessment. The exception to this is that potential impacts on PRowS within the Proposed Development area during the operational period are included in the assessment.
- 12.7.6. The Proposed Development will be designed with an operational life of 40 years. On the assumption that access tracks will remain in situ or be covered by topsoil, less traffic will be generated during decommissioning than during construction. Therefore, decommissioning traffic would be expected to be significantly lower and thus, as outlined in the Scoping Report, decommissioning traffic and transport effects were 'scoped out' of the assessment.
- 12.7.7. Therefore, in line with EATM guidance, and the Scoping Report, the traffic and transport assessment focuses on the period of largest traffic flow change, the construction phase. As identified above, consideration is given also to the potential impacts on the PRowS during the operational phase.
- 12.7.8. As set out in detail in **Chapter 4: Description of the Proposed Development**, the anticipated construction programme would be approximately 24 months in duration. The commencement of the programme, the start date for construction, would depend on the date of consent and grid transmission availability. The assumed start of construction is 2029, though construction may commence in a later year, 2029 represents a realistic worst-case assessment in terms of traffic and transport impact. This is because the addition of background traffic growth each year will reduce the proportional increase in total traffic with the addition of the construction traffic.

POTENTIAL RECEPTORS

12.7.9. Transport receptors are the users or beneficiaries of the highways network assets and facilities, such as pedestrians, cyclists, equestrians, and drivers who travel within the vicinity of the Proposed Development. EATM identifies the following key user groups: non-motorised users (NMU), PRow users, motorists/freight vehicles, public transport and emergency services. It further identifies sensitive locations or users that may be affected:

- *“People at home;*
- *people at work;*
- *sensitive and/or vulnerable groups (including young age; older age; income; health status; social disadvantage; and access and geographic factors);*
- *locations with concentrations of vulnerable users (e.g. hospitals, places of worship, schools);*
- *retail areas;*
- *recreational areas;*
- *tourist attractions;*
- *collision clusters and routes with road safety concerns;*
- *junctions and highway links at (or over) capacity”.*

12.7.10. Potential receptors in the traffic and transport study area are set out in **Table 12-9**, these receptors will form the basis of the assessment in the following sections of this chapter.

Table 12-9 - Potential Traffic and Transport Receptors

Highway Link	Potential Receptor
Unnamed Roads	Small number of residential and agricultural properties and users of the roads.
B4568	Transport users of the road.
A470 - south of the B4568 to the junction of A470/A489 south of Caersws	Small number of residential and agricultural properties in the rural section, residential and retail properties within the settlement of Caersws and users of the road.
A470 - north of B4568 south of the road routing northeast from Carno)	Small number of residential, retail and agricultural properties in the rural sections, residential, retail and hospitality properties within the settlements of Clatter and Carno, and of recreation and playground facilities in Carno, and users of the road.
A470 - north of road routing northeast from Carno to the junction of the A470/A489 at Glantwymyn	Small number of residential, retail and agricultural properties in the rural sections, residential, retail and hospitality properties within settlements including Dolfach, Llanbrynmair and Glantwymyn and users of the road.

LIKELY SIGNIFICANT EFFECTS

12.7.11. The effects on traffic and transport receptors which have the potential to be significant and have been taken forward for detailed assessment are summarised in **Table 12-10**.

Table 12-10 - Likely Significant Effects on Traffic and Transport Receptors Scoped in for Further Assessment

Receptor Type	Likely Significant Effects
Construction	
Occupants of land uses alongside a highway link and users of a highway link.	- Severance: the separation of people from places and other people and places or impede pedestrian access to essential facilities. - Driver delay: traffic delays to non-development traffic. - Non-motorised user amenity: the effect of the relative pleasantness of a pedestrian journey resulting from changes in traffic flow, traffic composition and pavement width/separation. - Non-motorised user delay: the ability of people to cross roads as a result of changes in traffic volume, composition and speed, the level of pedestrian activity, visibility and general physical conditions of the Proposed Development. - Fear and intimidation: the change in fear and intimidation levels experienced by people as a result of an increase in traffic volume and its proximity or the lack of protection caused by such factors as narrow pavement widths. - Road safety: the risk of accidents occurring where the Proposed Development is expected to produce a change in the character of traffic.
Occupants of land uses alongside a highway link and users of a highway link.	Effects of AIL movements.
PRoW Users	Impacts to PRoW user amenity and delay.
Operation	
PRoW Users	Impacts to PRoW user amenity and delay.

12.7.12. As indicated within the Scoping Report, the effects detailed in **Table 12-11** have been scoped out from being subject to further assessment because the potential effects are not considered likely to be significant.

Table 12-11 - Summary of Pathways and Effects Scoped Out of this Assessment

Potential Effects	Justification
Effects of hazardous loads on occupants of land uses alongside a highway link and users of a highway link.	No hazardous load movements are anticipated to be required for the Proposed Development.
Operational traffic and transport effects (excluding effects relating to on-site PRoWs)	Operational traffic would be expected to be negligible, consisting of occasional visits may be made to the Site for maintenance checks.

Potential Effects	Justification
Decommissioning traffic and transport effects	Less traffic will be generated during decommissioning than during construction.

12.8 ASSESSMENT METHODOLOGY

OVERVIEW

- 12.8.1. The over-arching project-wide approach to the assessment methodology is set out in **Chapter 2: Approach to EIA**. However, whilst this has informed the approach that has used in this traffic and transport assessment, it is necessary to set out how this methodology has been applied, and adapted as appropriate, to address the specific needs of this traffic and transport assessment.

DETERMINATION OF SIGNIFICANCE

General Approach

- 12.8.2. The guidance in EATM outlines that the greatest environmental change will generally be when the Proposed Development traffic is at the largest proportion of the total flow. For the Proposed Development, this would occur during the construction phase. The peak week average daily 12 hr traffic flows (as a reasonably worst-case assessment of traffic and transport effects) are assessed for the future year without and without the Proposed Development construction traffic flows.
- 12.8.3. EATM states two rules to be used to establish the need for an environmental assessment of traffic and transport impacts on receptors based on the change to traffic flow with the Proposed Development traffic:
- “Rule 1: Include highway links where traffic flows will increase by more than 30% (or where the number of heavy goods vehicles will increase by more than 30%)*
- Rule 2: Include highway links of high sensitivity where traffic flows have increased by 10% or more”.*
- 12.8.4. EATM’s Rule 1 and Rule 2 will be used to identify highways within the study area that require detailed assessment i.e. assessment of the significance of effects.
- 12.8.5. The assessment of the effects of AIL movements and effects on PRow users follows a different approach:
- The AIL deliveries between Birkenhead Docks and the Proposed Development for construction will be relatively few in number and will be closely managed and undertaken in consultation with the relevant authorities. Furthermore, the route has been assessed within a route survey report submitted alongside this ES, produced by Pell Frischmann (**Appendix 12C**) setting out the required mitigation and management measures to allow safe and efficient transport of AILs.
 - The Proposed Development will impact on PRow within the Site area. These impacts may be temporary, during construction, or permanent, during operation, the interactions between the Proposed Development and the Site are set out in the assessment and an Outline PRowMP has been produced (**Appendix 12A**) to present proposed measures to mitigate and manage impacts on the PRow network.

Determination of Receptor Sensitivity

- 12.8.6. Each highway link included in the assessment has been assigned a sensitivity in accordance with EATM and informed by professional judgement based on factors including the proximity of sensitive

receptors to the highway link and the highway environment. EATM outlines that the impact of development traffic is dependent upon a wide range of factors which include the volume of traffic, traffic speeds and traffic composition (such as percentage of HGVs of total traffic).

12.8.7. **Table 12-12** summarises the classification of receptor sensitivity.

Table 12-12 - Receptor Sensitivity Summary

Sensitivity	Description/Reason	Receptor
High	Highway links with a high sensitivity to changes in traffic flows include routes: - with sensitive receptors alongside them (such as schools, colleges and playgrounds); and/or - where there are land uses which result in high volumes of pedestrian/cycle users and the road is narrow and/or footway provision is poor, or non-existent and/or existing traffic volumes are high for the type of road resulting in congestion and road safety issues.	Occupants of land uses alongside the highway link and users of the highway link.
Medium	Highway links with a medium sensitivity to changes in traffic flows include routes: - with some sensitive receptors alongside them (such as retail areas); and/or - where there are land uses which result in some pedestrian/cyclist users, road design and footway provision is adequate/appropriate and/or existing traffic volumes can be accommodated for the type of road but approaching capacity.	Occupants of land uses alongside the highway link and users of the highway link.
Low	Highway links with low sensitivity to changes in traffic flows include routes: with no sensitive receptors and some land uses alongside and no/very limited pedestrian/cyclist users and/or road design and footway provision is appropriate, and existing traffic volumes can be accommodated for the type of road.	Occupants of land uses alongside the highway link and users of the highway link.
Negligible	Highway links with negligible sensitivity to changes in traffic flows include routes: with no sensitive receptors and very few land uses alongside them, which have no direct access or are sufficiently set back from the carriageway, and no/very limited pedestrian/cyclist users and existing traffic volumes can be accommodated for the type of road.	Users of the highway link.

12.8.8. EATM details that the identified sensitive receptors should be assigned to the nearest highway link for assessment, with each highway link then assigned a sensitivity value. 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). Therefore, the highway is assigned the highest level of sensitivity identified along its length.

- 12.8.9. For highway links where the sensitivity is judged as 'High' or 'Medium', Rule 2 (sensitive areas where traffic flows are predicted to increase by 10% or more) is applied. For highway links where the sensitivity is judged as 'Low' or 'Negligible', Rule 1 (areas where traffic flows or HGVs are predicted to increase by more than 30%) is applied.

Determination of Magnitude of Change

- 12.8.10. The magnitude of impact will be determined in accordance with the advice provided in EATM and based on professional judgement. **Table 12-13** sets out the magnitude of impact (high, medium, low or negligible) criteria of potential significant impacts of transport set out in **Table 12-10**.

Table 12-13 - Magnitude of Change Summary

Traffic and Transport Impact	Magnitude of Change			
	High	Medium	Low	Negligible
Severance	Change in total traffic or HGV flows over 91%.	Change in total traffic or HGV flow of 61% to 90%.	Change in total traffic or HGV flows of 31 to 60%.	Change in total traffic or HGV flows of less than 30%.
	Context should, also, be considered including the local population and number of local facilities potentially impacted. EATM states caution should be applied with applying these thresholds to highway links with low baseline flows.			
Driver Delay	High increase in queuing at junctions and/or congestion on road links.	Medium increase in queuing at junctions and/or congestion on road links.	Low increase in queueing at junctions and/or congestion on road links.	Negligible or no increase in queuing at junctions and/or congestion on road links.
Non-motorised User Amenity	A halving or doubling of traffic flow (or HGV flow) can be used as a broad threshold when considered in the local context and applied with caution. Assignment of magnitude is based on a variety of factors including general level of pedestrian activity, visibility, and physical conditions such as traffic flow, traffic composition, crossing points and pavement width/separation from traffic.			
Non-motorised User Delay	Generally, increases in traffic may lead to greater delay, though is dependent on the level of non-motorised users' activity in the area. Magnitude is assigned on pedestrian delay experienced when crossing highways links considering a range of factors including crossing type, pedestrian flows, traffic levels, visibility and general highway condition.			
Fear and Intimidation	Magnitude is assigned based on the scoring system provided in EATM (which is dependent on 18hr average traffic flow; 18hr average HGV traffic flow and vehicle speed). The scores comprise extreme (71+); great (41 to 70); moderate (21 to 40) and small (0 to 20)			

Traffic and Transport Impact	Magnitude of Change			
	High	Medium	Low	Negligible
	Two step change in level score of fear and intimidation.	One step change in level score of fear and intimidation and >400 average 18hr vehicle increase or >500 HGV 18hr vehicle increase.	One step change in level score of fear and intimidation and <400 average 18hr vehicle increase or <500 HGV 18hr vehicle increase.	No step change in level score of fear and intimidation.
Road Safety	Magnitude is assigned by reviewing existing collision patterns and trends based upon existing personal injury accident records and the forecast increase in traffic that may change the risk of serious and fatal injuries.			

SIGNIFICANCE EVALUATION METHODOLOGY

12.8.11. The significance of traffic and transport-related effects is derived by considering both the sensitivity of the receptor and the magnitude of change. In this assessment, effects are considered to be significant or not significant according to the matrix in **Table 12-14**.

Table 12-14 - Traffic and Transport Significance Evaluation Matrix

Receptor Sensitivity	Magnitude of Change			
	High	Medium	Low	Negligible
High	Major (Significant)	Major (Significant)	Moderate (Significant)	Negligible (Not Significant)
Medium	Major (Significant)	Moderate (Significant)	Minor (Not Significant)	Negligible (Not Significant)
Low	Moderate (Significant)	Minor (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)
Negligible	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)

12.9 ASSESSMENT OF TRAFFIC AND TRANSPORT EFFECTS

12.9.1. This section provides an assessment of the likely significant traffic and transport effects of the Proposed Development during the construction phase.

RECEPTOR SENSITIVITY

12.9.2. **Table 12-15** sets out the sensitivity assigned to each of the traffic and transport Study Area roads and the rationale for the assignment.

Table 12-15 - Assignment of Sensitivity

Road Section	Assignment of Sensitivity	Rationale for Assignment of Sensitivity	Applicable Traffic Data Point Reference
Unnamed Roads within traffic and transport Study Area	Low	The road sections route through a rural area, the road is single-track, with some residential and agricultural properties adjacent and set back from the carriageway. There are no footways, however, negligible pedestrian movements along the road would be anticipated. As identified in Figure 12.3, there is a footway and a bridleway that crosses the road section within the Study Area.	Unnamed Road ATC
B4568 within traffic and transport Study Area	Low	The short section of the B4568 in the Study Area has open fields adjacent to it. There are not footways, but limited pedestrian movements would be anticipated due to a lack of destinations in the vicinity.	B4568 ATC
A470 - south of the B4568 to the junction of A470/A489 south of Caersws	Medium	The majority of the road routes through a rural area with limited or no footway provision but also limited destinations adjacent to the carriageway to attract pedestrian and cycle flows. Within Caersws areas there are residential and retail properties adjacent to the carriageway, with footway which is in some places narrow. The southern terminus of the road (south of Caersws) is part of the NCN Route 81 on-road.	DfT Count ID 20541
A470 - north of B4568 south of the road routing northeast from Carno	High	The majority of the road routes through a rural area with limited or no footway provision but also limited destinations adjacent to the carriageway to attract pedestrian and cycle flows. Within Clatter and Carno there are cemeteries adjacent to the carriageway, as well as residential properties, in Carno there is a playground, as part of a community centre adjacent to the and retail/hospitality properties adjacent to the carriageway. In both settlements, the footways,	DfT Count ID 20541

Road Section	Assignment of Sensitivity	Rationale for Assignment of Sensitivity	Applicable Traffic Data Point Reference
		where provided, is narrow in some places.	
A470 - north of road routing northeast from Carno to the junction of the A470/A489 at Glantwymyn	Medium	The majority of the road routes through a rural area with limited or no footway provision but also limited destinations adjacent to the carriageway to attract pedestrian and cycle flows. Within the settlement areas (predominantly residential and retail/hospitality land uses) there is typically some footway provision.	DfT Count ID 40542

RULE 1 AND RULE 2 SCREENING

- 12.9.3. Magnitude of change is, in large part, determined by the increase in traffic and changes to the traffic composition due to the Proposed Development. In line with EATM guidance the peak construction traffic is identified and assessed, first via screening for detailed assessment based on percentage change thresholds listed in Rule 1 and Rule 2. This section first sets out the Proposed Development construction traffic generation and distribution assumptions and then the screening exercise.

Construction Traffic Generation

- 12.9.4. A 24-month construction programme has been assumed for this assessment. This section outlines the anticipated construction traffic associated with each activity and the timing of those activities across the indicative programme, in order to identify the peak construction traffic movements, when these occur, and their duration.
- 12.9.5. The methodology for estimating the construction traffic movements has been based on the construction activities and their likely occurrence over the 24-month programme. The number of vehicles per activity has been estimated based on the following:
- required volume of materials such as road stone, sand, concrete, cables, steels, and HGV capacity; and
 - required plant and equipment assumed to be delivered on an individual basis.
- 12.9.6. While the actual programme may vary, this assessment is based on average daily 12-hour construction traffic in the peak month and the assumptions made allow for a robust assessment.
- 12.9.7. For a worst-case scenario, it is assumed that all aggregate would be sourced from off-site sources via road; in reality some aggregate may be sourced from on-site borrow pits. **Table 12-16** presents the estimated vehicle movements per activity assumed, noting that a movement is a vehicle moving to a destination, for example an HGV delivering to Site and then leaving Site to return to its origin would be two movements.

Table 12-16 - Estimated Vehicle Movements Per Construction Activity

Activity	Vehicles	Total Movements
Delivery of plant and equipment	30	60
Delivery of road stone for access tracks	2,560	5,120
Delivery of road stone for pre-site access route	1,152	2,304
Delivery of road stone for Wind Turbine Generator (WTG) hard standing areas (crane pads, blade laydown)	2,426	4,852
Delivery of road stone for control building and substation compounds	221	442
Delivery of road stone for BESS compound (if not reusing TCC)	113	226
Delivery of road stone for construction compound(s)	434	868
Delivery of backfill stone for turbines	681	1,362
Delivery of culvert and bridge materials	7	14
Delivery of geogrid for access tracks and hardstandings	11	22
Delivery of sand	231	462
Delivery of construction compound general equipment	28	56
Delivery of electrical equipment	72	144
Delivery of cabling	8	16
Delivery of concrete for control building and transformer / generator base	68	136
Delivery of concrete for substation	42	84
Delivery of concrete for turbines	1,761	3,522
Delivery of concrete for BESS plinths	71	142
Delivery of base anchors	4	8
Delivery of formwork / shuttering	11	22
Delivery of reinforcing steel	44	88
Delivery and removal of crane	4	8
Delivery of turbines [AIL deliveries]*	110	220
Removal of plant and equipment	30	60

*The movement of AILs is closely managed and therefore are excluded from this assessment as set out in **Section 12.8**.

- 12.9.8. **Appendix 12D: Indicative Construction Traffic Movements Across the 24-Month Construction Period** summarises the construction traffic movements across the 24-month construction period. All traffic movements generated are assumed to be using HGVs. While there would be some light vehicle (LV) movements, these are considered insignificant in terms of an increase in volume for a Proposed Development of this scale and is likely to vary through the different stages of the Proposed Development. Sharing of vehicles and the use of minibuses would be promoted and adopted where practicable. As indicated in **Appendix 12D**, the peak construction traffic, based on the 12-hour average, occurs in month 4 with 99 daily (12 hr) vehicle movements, a similar, but lower volume of traffic is generated in months 11 to 15. This corresponds to an average of slightly more than eight movements per hour, or approximately one vehicle movement every seven minutes.

Construction Traffic Distribution

- 12.9.9. As a worst-case scenario, it is assumed that aggregates will be sourced off-site; as shown in **Table 12-17**, stone deliveries therefore make up a significant proportion of total movements followed by concrete delivery. To determine likely construction traffic routes on the local road network from the Site access, the location of local quarries and/or concrete sources has been investigated. There are local quarries to both the north and southeast of the Proposed Development. It is assumed that all construction traffic HGVs will access the Site via the A470 then onto the B4568 and into the Site. There is the potential, therefore, for the Proposed Development traffic to route to the B4568 and the Site via the A470 north or via the A470 south. Due to the height restricted bridge on the A470 north approximately 250 m north of the B4568 (shown on **Figure 12. 2**) some construction traffic may only be able to route to the B4568 and the Site via the A470 south. Therefore, as a worst-case assessment for the A470 South it is possible for all construction traffic HGVs to route to the Site via the A470 south. For a realistic worst-case assessment of the A470 north it can be assumed that not all construction traffic HGVs could route to the Site via the A470 north, a realistic robust assumption would be that 75% of construction HGVs in a worst case would route via the A470 north. In summary, for a robust assessment the following has been assessed:
- 100% of construction traffic HGVs routing via B4568 to the A470 south; and
 - 75% of construction traffic HGVs routing via the B4568 to the A470 north (with the remaining 25% unable to route via the A470 north, due to the height restricted bridge, and using the A470 south instead).
- 12.9.10. This results in a double counting of the construction traffic and represents a robust assessment of likely significant traffic and transport effects.

Identifying Road Sections for Detailed Assessment

- 12.9.11. **Table 12-17** summarises the percentage changes resulting from the addition of construction traffic movements based on the peak daily construction traffic of 99 vehicle movements, rounded up to 100 movements to reflect equal vehicles entering and leaving the Site, in month 4. **Table 12-17** also identifies the relevant EATM threshold for each road section and if the EATM threshold for further detailed assessment has been reached, instances of thresholds crossed is highlighted in *red italics*.

Table 12-17 - Percentage Impact of Peak Construction Traffic Summary

Road Section	2029 12 hr Base Traffic Flow		Peak 12 hr Construction Traffic Flow		2029 12 hr Base Traffic Flow + Peak 12 hr Construction Traffic Flow		Percentage Change (2029 Base compared to 2029 Base + Construction)		Applicable EATM Rule	Further Assessment Required?
	Total Vehicles	HGVs	Total Vehicles	HGVs	Total Vehicles	HGVs	Total Vehicles	HGVs		
Unnamed Roads	42	1	100	100	142	101	237%	7,578%	Rule 1	Yes
B4568	774	29	100	100	874	129	13%	348%	Rule 1	Yes
A470 -south of the B4568 to the junction of A470/A489 south of Caersws	3,046	147	100	100	3,146	247	3%	68%	Rule 2	Yes
A470 -north of B4568 south of the road routing northeast from Carno	3,046	147	75	75	3,121	222	2%	51%	Rule 2	Yes
A470 -north of the road routing northeast from Carno to the junction of the A470/A489 at Glantwymyn	2,007	124	75	75	2,082	199	4%	61%	Rule 2	Yes

n.b. numbers in the table presented as rounded.

12.9.12. Given the percentage changes set out in **Table 12-17** and the sensitivity of the receptors, all the assessed road sections are shown to exceed the relevant EATM threshold and therefore are subject to further detailed assessment.

ASSESSMENT OF TRAFFIC AND TRANSPORT EFFECTS

Unnamed Roads

12.9.13. The section of the unnamed roads within the study area have been assessed as being of low sensitivity. This section assesses each traffic and transport effect in turn.

- Severance - the percentage increase in traffic due to the Proposed Development is greater than 100%, however using a percentage increase for a road with negligible baseline flows (12 hr flow of 42 vehicles, including one HGV) needs to be treated with caution. The peak increase of 100 HGVs within a 12 hr period results in the addition of one HGV every seven minutes, on average, which would not be enough to result in severe severance. In addition, this is a rural route without desire lines across the carriageway beyond PRow routes. Taking into account the low baseline and the implications of the additional traffic on severance, the magnitude of change is considered to be low, and the significance of effect is **Negligible, Not Significant**.
- Driver delay - The 12 hr baseline of 42 vehicles, including one HGV, is equivalent to an average of 3.5 vehicles per hour or one vehicle every 17 minutes, which is a negligible amount of traffic. Whilst the peak increase of 100 HGVs within a 12 hr period is more than double the baseline, given the baseline, an average of an additional eight HGVs per hour, or an additional HGV every seven minutes, would not be likely to affect junction capacity or result in significant driver delay. Taking into account the low baseline, the level of magnitude of change on driver delay is considered to be low. The significance of effect is therefore **Negligible, Not Significant**.
- Non-motorised user amenity - while there would be a more than doubling of traffic along this route which does not have pedestrian footway, low non-motorised user flows would be anticipated and (as set out in relation to severance) the percentage increase relating to low baseline flows should be treated with caution. Taking into account the low baseline, the level of magnitude of change on non-motorised user amenity is considered to be medium and the significance of effect therefore is **Minor, Not Significant**. It is also of note that using the proposed access route from the B4568 reduces the length of the unnamed roads sections required to be used by the Proposed Development construction traffic.
- Non-motorised user delay - as set out in detail regarding severance, the increase in HGV traffic would not be anticipated to impact on the delay experienced when crossing or using this road, which would likely be limited to a few users. The magnitude of change on non-motorised user delay is considered to be low, and the significance of effect therefore is **Negligible, Not Significant**.
- Fear and intimidation - with reference to **Table 12-13**, there is no step change in the EATM level of fear and intimidation on this road section. Therefore, the magnitude of impact on fear and intimidation is negligible. The significance of effect is **Negligible, Not Significant**.
- Road safety - There is no evidence of collisions on these road sections in the latest five years of data as recorded on Crashmap (DfT data published by Crashmap). There will be localised improvements to the road to accommodate the construction traffic. Drivers will be required to comply with the CTMP measures, including appropriate vehicle speeds, driver safety and awareness. There will be monitoring of vehicles on the route and driver behaviour. The peak increase of 100 HGVs within a 12 hr period is high compared to the baseline, however, with localised improvements and the implementation of the relevant CTMP measures, the addition of one HGV every seven minutes on average would not be likely to impact on road safety. The magnitude of change on road safety is considered to be low, and the significance of effect therefore is **Negligible, Not Significant**.

B4568

12.9.14. The section of the B4568 within the study area has been assessed as being of low sensitivity. This section assesses each traffic and transport effect in turn.

- Severance - the percentage increase in traffic due to the Proposed Development is greater than 13% for all vehicles and 345% for HGVs only (due to a low baseline 12 hr flow of HGVs of 29) Using a percentage increase for a road with low baseline flows needs to be treated with caution. The peak increase of 100 HGVs within a 12 hr period results in the addition of one HGV every seven minutes, on average, which would not be enough to result in severe severance as it would not be anticipated to remove gaps within traffic so as to inhibit crossing of the carriageway should that be required. Additionally, this is only a short section of the B4568 and there are no pedestrian desire lines on this section of the road. The magnitude of change is therefore negligible, and the significance of effect is **Negligible, Not Significant**.
- Driver delay - The peak increase of 100 HGVs within a 12 hr period, an average of one additional vehicle every seven minutes, would not be likely to affect junction capacity or result in significant driver delay. The level of magnitude of change is therefore negligible. The significance of effect is **Negligible, Not Significant**.
- Non-motorised user amenity - this is a very short section of the B4568; while not having footway it is in a rural area with no desire lines across the carriageway, would likely be few or no non-motorised users. While the percentage change in HGVs is more than a doubling, the percentage change in total traffic is only 13%. Given this context the magnitude of change would be low, and the significance of effect would be **Negligible, Not Significant**.
- Non-motorised user delay - as set out in detail regarding severance the increase in HGV traffic would not be anticipated to impact on the delay experienced when crossing this road, which would likely be limited to no or very few pedestrians. The magnitude of change is therefore negligible, and the significance of effect is **Negligible, Not Significant**.
- Fear and intimidation - there is no step change in the EATM level of fear and intimidation on this road section. Therefore, the magnitude of impact is negligible. The significance of effect is **Negligible, Not Significant**.
- Road safety - No collisions were recorded on the section of this road in the traffic and transport Study Area in the latest five years of data as recorded on Crashmap (DfT data published by Crashmap). The peak increase of 100 HGVs within a 12 hr period resulting in an addition of one HGV every seven minutes, turning into or out of the Site, would not be likely to impact on likelihood of collisions to a high degree. The magnitude of change is low and the significance of effect **Negligible, Not Significant**.

A470 - south of the B4568 to the junction of A470/A489 south of Caersws

12.9.15. This section of the A470 has been assessed as being of medium sensitivity. This section assesses each traffic and transport effect in turn.

- Severance - the increase in total traffic due to the Proposed Development peak construction traffic would be 3% (a negligible change) and in HGV traffic would be 68% (a medium change). The context of the route and traffic is therefore key to determining significance. The majority of the route does not have destinations on either side of the carriageway requiring crossing, within Caersws where crossing demand is likely higher there is a zebra crossing to facilitate controlled pedestrian crossing. The peak increase of 100 HGVs within a 12 hr period results in the addition of one HGV every seven minutes, on average. This level of frequency would not be likely to inhibit crossings. The magnitude of change is therefore low, and the significance of effect is **Minor, Not Significant**.

- Driver delay - The peak increase of 100 HGVs within a 12 hr period, an average increase of one HGV every seven minutes. This level of frequency would not be likely to affect junction capacity or result in significant driver delay. The level of magnitude of change is therefore for negligible. The significance of effect is **Negligible, Not Significant**.
- Non-motorised user amenity - there is not a doubling in total traffic or HGV traffic on this route section. A peak increase of 100 HGVs within a 12 hr period, and average of one additional HGV every seven minutes, would not be anticipated to impact on non-motorised user amenity. The magnitude of change is therefore **Negligible, Not Significant**.
- Non-motorised user delay - as noted there are minimal destinations on either side of the carriageway that would result in non-motorised users crossing, with the exception of within Caersws, where there is a zebra crossing. The peak month increase of one HGV every seven minutes on average during a 12 hr period would not be likely to impact on pedestrian delay. The magnitude of change is negligible, and the significance of effect is **Negligible, Not Significant**.
- Fear and intimidation - there is no step change in the EATM level of fear and intimidation on this road section. Therefore, the magnitude of impact is negligible. The significance of effect is **Negligible, Not Significant**.
- Road safety - This section of road does not exhibit severe collision hotspots which need to be targeted with specific casualty reduction measures. The peak increase of 100 HGVs within a 12 hr period resulting in an addition of one vehicle every seven minutes would be unlikely to increase the likelihood of collision occurrences. The magnitude of change is therefore low, the significance of effect is **Minor, Not Significant**.

A470 - north of B4568 south of the road routing northeast from Carno

12.9.16. This section of the A470 has been assessed as being of high sensitivity. This section assesses each traffic and transport effect in turn.

- Severance - the percentage change in traffic due to the Proposed Development, during the average 12 hr period in the peak week for construction traffic, would be 2% in total traffic which would be a negligible impact, it would be an increase in HGV traffic of 51% which would be a low impact. The peak increase of 75 HGVs within a 12 hr period results in the addition of one HGV every nine minutes, on average, which would not be enough to result in severe severance. The magnitude of change is therefore negligible, and the significance of effect is **Negligible, Not Significant**.
- Driver delay - The peak increase of 75 HGVs within a 12 hr period, an average of one additional HGV every nine minutes, would not be likely to affect junction capacity or result in significant driver delay. The level of magnitude of change is therefore for negligible. The significance of effect is **Negligible, Not Significant**.
- Non-motorised user amenity - there is not a doubling in total traffic or HGV traffic on this route section. An increase of 75 HGVs within a 12 hr period, an average of one additional HGV every nine minutes, would not be anticipated to impact on non-motorised user amenity. The magnitude of change is therefore **Negligible, Not Significant**.
- Non-motorised user delay - as noted there are minimal destinations on either side of the carriageway that would result in non-motorised users crossing, with the exception of within the small settlements along the route. While there are no controlled crossing points within these settlements on this route section the peak month increase of one HGV every nine minutes on average during a 12 hr period would not be likely to impact on pedestrian delay. The magnitude of change is negligible, and the significance of effect is **Negligible, Not Significant**.

- Fear and intimidation - there is no step change in the EATM level of fear and intimidation on this road section. Therefore, the magnitude of impact is negligible. The significance of effect is **Negligible, Not Significant**.
- Road safety - This section of road does not exhibit severe collision hotspots which need to be targeted with specific casualty reduction measures. The peak increase of 75 HGVs within a 12 hr period resulting in an addition of one vehicle every nine minutes would be unlikely to increase the likelihood of collision occurrences. The magnitude of change is therefore low, the significance of effect is **Moderate, Significant**.

A470 - north of the road routing northeast from Carno to the junction of the A470/A489 at Glantwymyn

12.9.17. This section of the A470 has been assessed as being of medium sensitivity. This section assesses each traffic and transport effect in turn.

- Severance - the percentage change in traffic due to the Proposed Development, during the average 12 hr period in the peak week for construction traffic, would be 4% in total traffic which would be a negligible impact, it would be an increase in HGV traffic of 61% which would be a medium impact. The peak increase of 75 HGVs within a 12 hr period results in the addition of one HGV every nine minutes, on average, which would not be enough to result in severe severance. The magnitude of change is therefore low, and the significance of effect is **Minor, Not Significant**.
- Driver delay - The peak increase of 75 HGVs within a 12 hr period, an average of one additional HGV every nine minutes, would not be likely to affect junction capacity or result in significant driver delay. The level of magnitude of change is therefore negligible. The significance of effect is **Negligible, Not Significant**.
- Non-motorised user amenity - there is not a doubling in total traffic or HGV traffic on this route section. An increase of 75 HGVs within a 12 hr period, an average of one additional HGV every nine minutes, would not be anticipated to impact on non-motorised user amenity. The magnitude of change is therefore **Negligible, Not Significant**.
- Non-motorised user delay - as noted there are minimal destinations on either side of the carriageway that would result in non-motorised users crossing, with the exception of within the small settlements along the route. While there are no controlled crossing points within these settlements on this route section the peak month increase of one HGV every nine minutes on average during a 12 hr period would not be likely to impact on pedestrian delay. The magnitude of change is negligible, and the significance of effect is **Negligible, Not Significant**.
- Fear and intimidation - there is no step change in the EATM level of fear and intimidation on this road section. Therefore, the magnitude of impact is negligible. The significance of effect is **Negligible, Not Significant**.
- Road safety - This section of road does not exhibit severe collision hotspots which need to be targeted with specific casualty reduction measures. The peak increase of 75 HGVs within a 12 hr period resulting in an addition of one vehicle every nine minutes would be unlikely to increase the likelihood of collision occurrences. The magnitude of change is therefore low, the significance of effect is **Minor, Not Significant**.

Summary

12.9.18. The detailed assessment identified one anticipated likely significant effect; this relates to road safety on the section of the A470 - north of B4568 south of the road routing northeast from Carno. This effect was assessed as significant due to the high sensitivity of the route. Drivers will be required to comply with the CTMP measures, including appropriate vehicle speeds and driver safety and monitoring of vehicles on the route and driver behaviour would reduce the potential for significant effects. As a result of the assessment, in addition to the standard CTMP measures the CTMP will also specifically raise awareness of this potentially sensitive section of route as an additional mitigation measure. Therefore, the Outline CTMP (**Appendix 12B**) notes information regarding this as a requirement relating to the content of the construction information pack.

ASSESSMENT OF IMPACTS ON PROWS

Construction Phase

12.9.19. As set out in detail in the Outline PRowMP (**Appendix 12A**), impacts of the Proposed Development during the construction phase are temporary in nature, and are likely to consist of minor delays to PRow user journeys. **Appendix 12A** identifies the PRowWs that are within the Site. The proposed mitigation and management measures (such as bankpersons, signage and inspections) are set out in **Appendix 12A**, the final mitigation and management measures will be set out in the final PRowMP which will be consulted on and agreed with the relevant PRow officer. The overall impact on PRow users during the construction phase, when PRowWs are appropriately managed as will be set out in the final PRowMP for agreement with the PRow officer, would be anticipated to be **Not Significant**.

Operational Phase

12.9.20. No turbines are proposed to be sited on the PRowWs and while there may be oversail of a single PRow by Turbine 4, there is up to 50 m availability relating to micro-siting of turbines and associated infrastructure therefore, the extent of any oversail and need for permanent diversions will be confirmed at detailed design, post consent. No significant permanent PRow diversions and/or closures are proposed during the operational phase of the Proposed Development, minor diversions may be required where oversail is identified following micro-siting, therefore there would be no impact on PRow user delay, any diversion would be agreed with the relevant PRow officer with the details of implementation measures secured through the relevant consenting process post-consent. There may be minor impacts on PRow user amenity, such as turbine noise, movement, shadows, visual effects, but this is for small sections of PRow routes and might not be perceived as negative effects.

12.9.21. The British Horse Society guidance¹⁹ identifies the separation distance between a turbine and an equestrian route of blade tip height plus 10%, listing potential sources of effects as turbine noise, movement and shadows. This this would amount to 220m separation required for the Proposed Development turbines, excluding one turbine where a smaller separation distance would be acceptable due to the smaller blade tip height (198m separation would be required). The British Horse Society advice note does indicate that not all equestrians would be equally impacted by

¹⁹ The British Horse Society (2025) Advice on Wind Turbines and Equestrian Access (online). Available at: <https://www.bhs.org.uk/media/lqwdpbphr/wind-turbines-0525.pdf> (Accessed May 2026)

turbines, with evidence of some horses being undisturbed and some able to be familiarised with the turbines it. Not all turbines are sited 220 m from the nearest bridleway, however, aside from one instance, there is no oversail of the turbines on the PRowWs (the extent of any oversail would be confirmed after detailed design) and there is no delay to users and no severance, therefore overall effects on PRow users during operation are likely to be restricted to minor amenity effects and are anticipated to be **Not Significant**.

ASSESSMENT OF IMPACTS RELATING TO AIL MOVEMENTS

12.9.22. AIL movements are only anticipated within the construction phase. While AIL movements can have a **Significant** effect as they are disruptive to other road users, the effects of the movement of AILs would be managed in line with highway authority requirements and guidance in legislation and requirements in order to minimise the impact of AIL movements. The highway authority and other key stakeholders and interested parties, would be consulted with and notified, as required, relating to the movement of AILs to ensure the most appropriate and suitable route is utilised and to minimise disruption to a reasonably practicable extent. Overall, the number of AIL movements are anticipated to form a minor part of the wider construction traffic flows, and with management in line with requirements and timing of these movements it would be expected that these movements would result in not significant effects

12.10 ASSESSMENT OF CUMULATIVE (INTER-PROJECT) EFFECTS

12.10.1. A cumulative effects assessment (CEA) has been undertaken for the Proposed Development which considers the combined impacts with other developments on the same single receptor or resource (inter-project effects). The detailed method followed in identifying and assessing potential cumulative effects is set out in **Section 2.8 of Chapter 2: Approach to EIA**.

12.10.2. **Table 12-18** summarises the need to include each of the developments within the traffic and transport assessment.

Table 12-18 - Traffic and Transport Cumulative Effects Summary

Development	Required to Include in Traffic and Transport Cumulative Assessment?	Rationale
Carno III Wind Farm	No	Construction period is identified as to start in 2026 and be 15 months in duration, therefore the construction traffic will not be anticipated to overlap with the Proposed Development construction traffic and therefore, no significant cumulative effects are anticipated.
Esgair Cwmowen Wind Farm	No	Based on the available information the construction traffic, routes for the development will not overlap with the Proposed Development traffic and transport study area and therefore no significant cumulative effects are anticipated.

Development	Required to Include in Traffic and Transport Cumulative Assessment?	Rationale
Green GEN Vyrnwy Frankton	No	There is limited information regarding traffic volumes and traffic routes. From the available information it is unlikely the traffic routes will overlap with the Proposed Development traffic and transport Study Area and therefore no significant cumulative effects are anticipated.
Land At Plas Maldwyn, Caersws Powys - residential development	No	There is no information available regarding traffic associated with this site that is at pre-application stage. As a small residential development, it is unlikely there would be any significant cumulative impacts when considered with the Proposed Development and unlikely their construction phases would overlap. No significant cumulative effects are anticipated.
Llanbrynmair Wind Farm 1	No	There is no up-to-date information on construction programme commencement, traffic routes or volumes, therefore a cumulative assessment cannot be undertaken.
Llanbrynmair Wind Farm 2	No	The scoping direction request identifies a peak construction traffic year of 2029 which would overlap with the peak construction traffic for the Proposed Development, however information regarding traffic volumes and routes is not available in order to undertake a cumulative assessment of traffic and transport effects.
Llyn Lort Energy Park	No	While construction traffic routes for each of the Proposed Developments are in the vicinity of each other, with shared routing for parts of the AIL routes, the Llyn Lort Energy Park has assumed a future worst-case traffic generation within 2027 (four months in to a 18 month construction programme). Therefore, the peak construction traffic for the two Sites is unlikely to overlap and additionally the construction programme in general are unlikely to have significant overlap. Therefore, no significant cumulative effects are assumed.

Development	Required to Include in Traffic and Transport Cumulative Assessment?	Rationale
Mynydd Lluest y Graig Energy Project	No	There is limited information regarding traffic volumes and traffic routes. From the available information it is unlikely the traffic routes will overlap with the Proposed Development traffic and transport Study Area and therefore no significant cumulative effects are anticipated.
SP Mid Wales (Electricity Connections Project (grid line))	No	There is no up to date information on construction programme commencement, traffic routes or volumes, therefore a cumulative assessment cannot be undertaken, and it is unlikely construction periods would overlap and therefore no significant cumulative effects are anticipated.
Rhiwlas Green Energy Network (Rhiwlas GEN)	No	While construction traffic routes may overlap (with the Rhiwlas GEN potential route including the A470) it is considered the peak construction traffic for the two Sites is unlikely to overlap and additionally the construction programme in general are unlikely to have significant overlap. Therefore, no significant cumulative effects are assumed.

12.11 SIGNIFICANCE CONCLUSIONS

12.11.1. A summary of the results of the traffic and transport assessment is provided in **Table 12-19** below.

Table 12-19 - Summary of Significance of Effects

Receptor and Summary of Predicted Effects	Sensitivity/Importance/ Value of Receptor	Magnitude of Change	Significance	Summary Rationale
Unnamed Road	Low	Severance: Negligible	Not significant	Based on the magnitude of change criteria set out in Table 12-13 and the sensitivity of the road link, as set out in detail in Section 12.9 .
		Driver Delay: Negligible	Not significant	
		Non-motorised user amenity: Low	Not significant	
		Non-motorised use delay: Negligible	Not significant	
		Fear and Intimidation: Negligible	Not significant	
		Road safety: Low	Not significant	
B4568	Low	Severance: Negligible	Not significant	Based on the magnitude of change criteria set out in Table 12-13 and the sensitivity of the road link, as set out in detail in Section 12.9 .
		Driver Delay: Negligible	Not significant	
		Non-motorised user amenity: Low	Not significant	
		Non-motorised use delay: Negligible	Not significant	
		Fear and Intimidation: Negligible	Not significant	
		Road safety: Low	Not significant	

Receptor and Summary of Predicted Effects	Sensitivity/Importance/ Value of Receptor	Magnitude of Change	Significance	Summary Rationale
A470 -south of the B4568 to the junction of A470/A489 south of Caersws	Medium	Severance: Low	Not significant	Based on the magnitude of change criteria set out in Table 12-13 and the sensitivity of the road link, as set out in detail in Section 12.9 .
		Driver Delay: Negligible	Not significant	
		Non-motorised user amenity: Negligible	Not significant	
		Non-motorised use delay: Negligible	Not significant	
		Fear and Intimidation: Negligible	Not significant	
		Road safety: Low	Not significant	
A470 -north of B4568 south of the road routing northeast from Carno	High	Severance: Negligible	Not significant	Based on the magnitude of change criteria set out in Table 12-13 and the sensitivity of the road link, as set out in detail in Section 12.9 .
		Driver Delay: Negligible	Not significant	
		Non-motorised user amenity: Negligible	Not significant	
		Non-motorised use delay: Negligible	Not significant	
		Fear and Intimidation: Negligible	Not significant	
		Road safety: Low	Moderate, Significant however with the CTMP measures this would be anticipated to be not significant, the information pack should make drivers aware of	

Receptor and Summary of Predicted Effects	Sensitivity/Importance/ Value of Receptor	Magnitude of Change	Significance	Summary Rationale
			the sensitivity of this route and potentially information regarding timings of movement along this route.	
A470 -north of the road to Rhy (Caersws) to the junction of the A470/A489 at Glantwymyn	Medium	Severance: Low	Not significant	Based on the magnitude of change criteria set out in Table 12-13 and the sensitivity of the road link, as set out in detail in Section 12.9 .
		Driver Delay: Negligible	Not significant	
		Non-motorised user amenity: Negligible	Not significant	
		Non-motorised use delay: Negligible	Not significant	
		Fear and Intimidation: Negligible	Not significant	
		Road safety: Low	Not significant	
Impacts on PRoW users during the construction phase	Effects on PRoWs would be managed and mitigated via the final PRoWMP. Impacts during the construction phase would be temporary in duration and may result in minor delays to PRoW user journeys. It is not anticipated that effects on PRoW users would be significant, given the implementation of the final PRoWMP which would be agreed with the PRoW officer.			
Impacts on PRoW users during the operational phase	Impacts during the operational phase would likely consist of minor impacts on PRoW user amenity, a permanently diverted PRoW may be required subject to final micro-siting of turbines and subsequently whether any PRoW are to be impacted by oversail. Once micro-siting and oversail have been confirmed through detailed design, the requirement and minor extent of permanent PRoW diversions within the Site will be confirmed and agreed with the PRoW Officer.. It is not anticipated that effects on PRoW users would be significant..			
Impacts of AIL movements	Effects of the movement of AILs would be managed in line with highway authority requirements and guidance in legislation and requirements in order to minimise the impact of AIL movements, the highway authority, and other key parties, would be consulted with and notified, as required, relating to the movement of AILs.			



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