

Regener8 Rhigos

Transport Assessment **Rhigos Road Solar Farm**

Final report

Prepared by LUC

June 2023



Regener8 Rhigos

Transport Assessment Rhigos Road Solar Farm

Project Number
12057

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Chapter 1

Introduction

Purpose of this Report

1.1 LUC has been appointed by Regener8 Power to prepare a Transport Statement (TS) and Transport Implementation Strategy (TIS) to accompany a planning application for a proposed solar farm on land located approximately 800m to the east of Rhigos village, at Rhigos Road, Aberdare, Wales.

Report Structure

1.2 Following this short introductory chapter, the report is set out as follows:

- **Chapter 2** describes the relevant national, regional, and local policy documents;
- **Chapter 3** describes the site's location and identifies existing local transport infrastructure;
- **Chapter 4** details the development proposals including the means of access;
- **Chapter 5** sets out the magnitude of trips generated anticipated by the proposed development;
- **Chapter 6** provides the Transport Implementation Strategy; and
- **Chapter 7** provides a summary of the findings of the study.

Chapter 2

Planning Policy Review

Introduction

2.1 This chapter outlines the relevant local, regional and national planning policies relating to highways and transportation with respect to the proposed development. The proposals have been developed to fully align with the policies detailed below.

National Policy

Planning Policy Wales, 2021

2.2 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh government, the objective of which is to ensure that the planning system contributes towards developments in Wales that are sustainable and improve the economic, social, environmental, and cultural wellbeing of Wales.

2.3 PPW outlines a way of working in which development plans and proposal are assessed according to the following workflow:

1. Proposals are assessed against Strategic and Spatial Choices.
2. Assessment of the proposal's detailed impacts and contributions to:
 - a. Active and Social Places;
 - b. Productive and Enterprising Places; and
 - c. Distinctive and Natural Places.
3. The process results in a proposal which contributes to the creation of sustainable places and which deliver on the national sustainable placemaking outcomes.

2.4 With respect to movement, PPW states that good design should avoid the creation of car-based developments and existing infrastructure should be used and maximised wherever possible. New infrastructure should only be necessary to mitigate against a development's transport impacts and to maximise access via sustainable and active travel modes. This should be integrated within the development boundary and beyond as appropriate.

PPW Technical Advice Note 18: Transport, 2007

2.5 TAN 18 provides technical advice on the transport elements of new developments including how transport related planning issues should be incorporated into Local Development Plans and Regional Transport Plans.

2.6 TAN 18 states that whilst the car is important for accessibility in rural areas, new developments should “embody sustainability principles, balancing the need to support the rural economy, whilst maintaining and enhancing the environmental, social and cultural quality of rural areas.”

2.7 In terms of technical guidance applicable to the proposed development, the TAN sets out site access visibility requirements and potential traffic management measures.

2.8 The TAN also sets out the requirements of the transport statement (TS) including the Transport Implementation Strategy (TIS). In brief, the TS should provide all the information necessary to assess the suitability of an application in terms of travel demand and impact. The TIS should set objectives and targets relating to managing travel demand for the development and set out the infrastructure, demand management measures and financial contributions necessary to achieve them. The TIS should set a framework for monitoring the objectives and targets, including the future modal split of transport to the development. The TIS should also incorporate all the components of a travel plan and ensure that these are integrated with the design of the new development.

Llwybr Newydd A New Wales Transport Strategy 2021

2.9 Llwybr Newydd sets out the Welsh Government's vision for the transport system in Wales over the next 20 years and the policies and plans that will ensure that the vision is achieved.

2.10 The strategy will encourage people to use low-carbon and sustainable transport. To do this the Welsh Government will:

- Develop a range of behaviour-change projects to encourage people to make smarter travel choices to reduce congestion and increase use of sustainable modes of transport
- Transform the customer experience of public transport including reliability, punctuality and training for staff and drivers, so people are more confident about using services
- Move away from individual vehicle ownership to shared solutions, including car-sharing, car clubs, bike sharing and mobility as a service
- Develop a framework for fair and equitable road-user charging in Wales and explore other disincentives to car use, taking into account equality issues including the needs of people in rural areas, people who share protected characteristics and people on low incomes
- Use new revenue sources to fund large improvements in public transport services and active travel facilities
- Reduce the cost of sustainable travel through initiatives such as scrappage schemes for older vehicles, grants towards the cost of electric bikes, and by extending concessionary travel schemes to those who most need it
- Support digital innovation and look at options for a transport 'open data' store, to improve journey planning and booking, develop integrated ticketing, and improve real-time information for passengers
- Get buy-in at a local level by engaging with communities to design transport interventions that meet local needs and circumstances
- Use education, campaigning, marketing and other tools to transform the image of walking, cycling and public transport

Regional Policy

South East Wales Transport Alliance (Sewta) Regional Transport Plan, 2010

2.11 The Sewta RTP vision is for "A modern, accessible, integrated and sustainable transport system for South East Wales which increases opportunity, promotes prosperity for all and protects the environment; where walking, cycling, public transport, and sustainable freight provide real travel alternatives"

2.12 A set of wider goals support the vision including, developing the economy, promoting social inclusion and equality and reducing the impacts of transport on the environment.

2.13 The RTP sets out a range of policies and objectives which will help to achieve the vision and wider goals based around their priorities which are to:

- Improve access to services, facilities and employment, particularly by public transport, walking and cycling;
- Provide a transport system that increases the use of sustainable modes of travel;
- Reduce the demand for travel;
- Develop an efficient and reliable transport system with reduced levels of congestion and improved transport links within the Sewta region and to the rest of Wales, the UK and Europe;
- Provide a transport system that encourages healthy and active life styles, is safer and supports local communities;
- Reduces significantly the emission of greenhouse gases and air pollution from transportation;
- Ensure that land use development in South-East Wales is supported by sustainable transport measures; and
- Make better use of the transport system

Local Policy

Adopted Local Development Plan 2006-2021

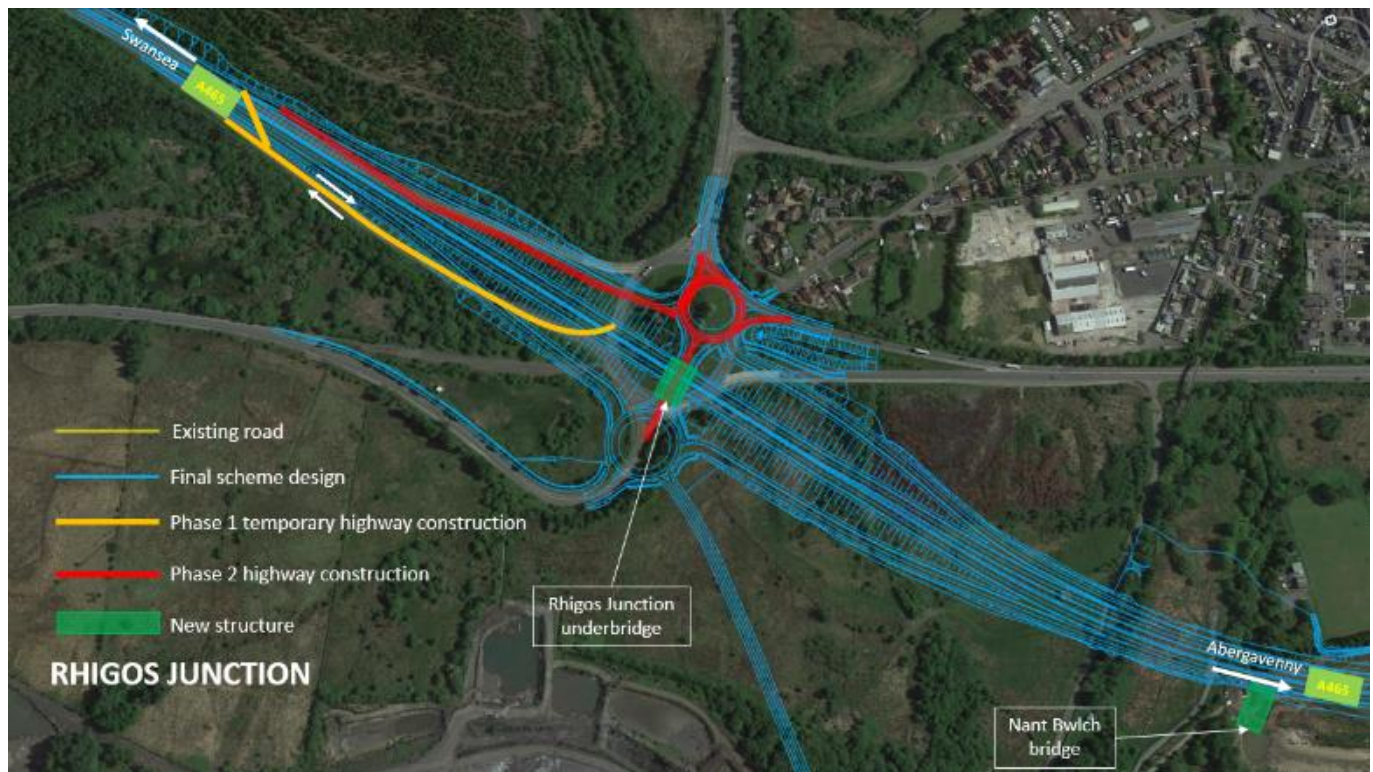
2.14 The policies in the LDP relevant to transport in relation to the proposed development include:

Policy CS8 - Transport

2.15 This policy states that the strategic transport network in Rhondda Cynon Taf will be improved through the dualling of the A465 between Abergavenny and Hirwaun, an A4059 Aberdare Bypass Extension and the implementation of a strategic transport corridor management system on the A4059/A465 corridor.

2.16 Work on the dualling of the A465 Section 2 between the Glanbaiden junction at Gilwern and the Brynmawr roundabout was completed in early 2022. Work is ongoing on Sections 5 and 6 between Dowlais Top and Hirwaun which is expected to be completed in 2025. This will include realignment of the existing A465 to pass south of Hirwaun and an upgrade the existing Rhigos Road junction to provide a dumbbell interchange.

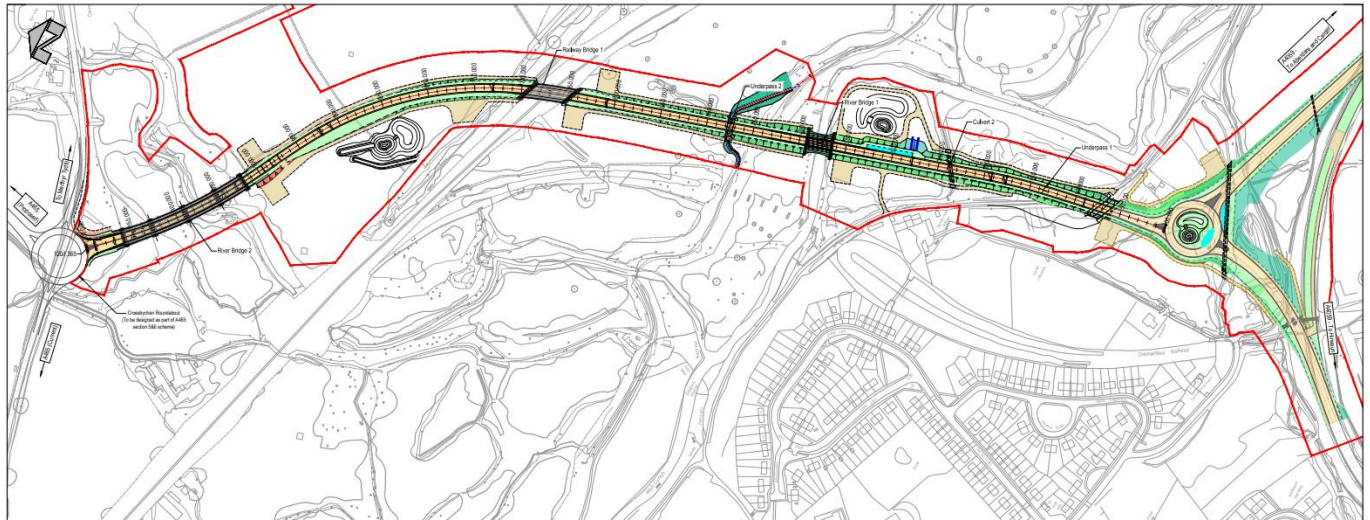
Figure 2.1: Rhigos Road Junction Upgrade Proposals



Welsh Government

2.17 The A4059 Aberdare Bypass Extension, now known as the Cynon Gateway North, was granted planning permission in May 2022 and will link the A465 with the A4059 east of Penywaun and west of Llwydcoed.

Figure 2.2: Proposed Cynon Gateway



RCT Planning Application 21/0273/08

2.18 The Strategic Corridor Management System remains in early development.

Policy AW12 – Renewable and Non-Renewable Energy

2.19 Development proposals which promote the provision of renewable and non-renewable energy such as schemes for energy from biomass, hydro-electricity, anaerobic digestion, on-shore oil and gas and small / medium sized wind turbines, will be permitted where it can be demonstrated that there is no unacceptable effect upon the interests of soil conservation, agriculture, nature conservation, wildlife, natural and cultural heritage, landscape importance, public health and residential amenity.

2.20 Development proposals should be designed to minimise resource use during construction, operation and maintenance.

Supplementary Planning Guidance

Access, Circulation and Parking Requirements

2.21 This SPG provides guidance on the preparation of a TA/TS and TIS within Rhondda Cynon Taf.

2.22 Additionally, guidance is provided on required carriageway widths, parking provision and access requirements.

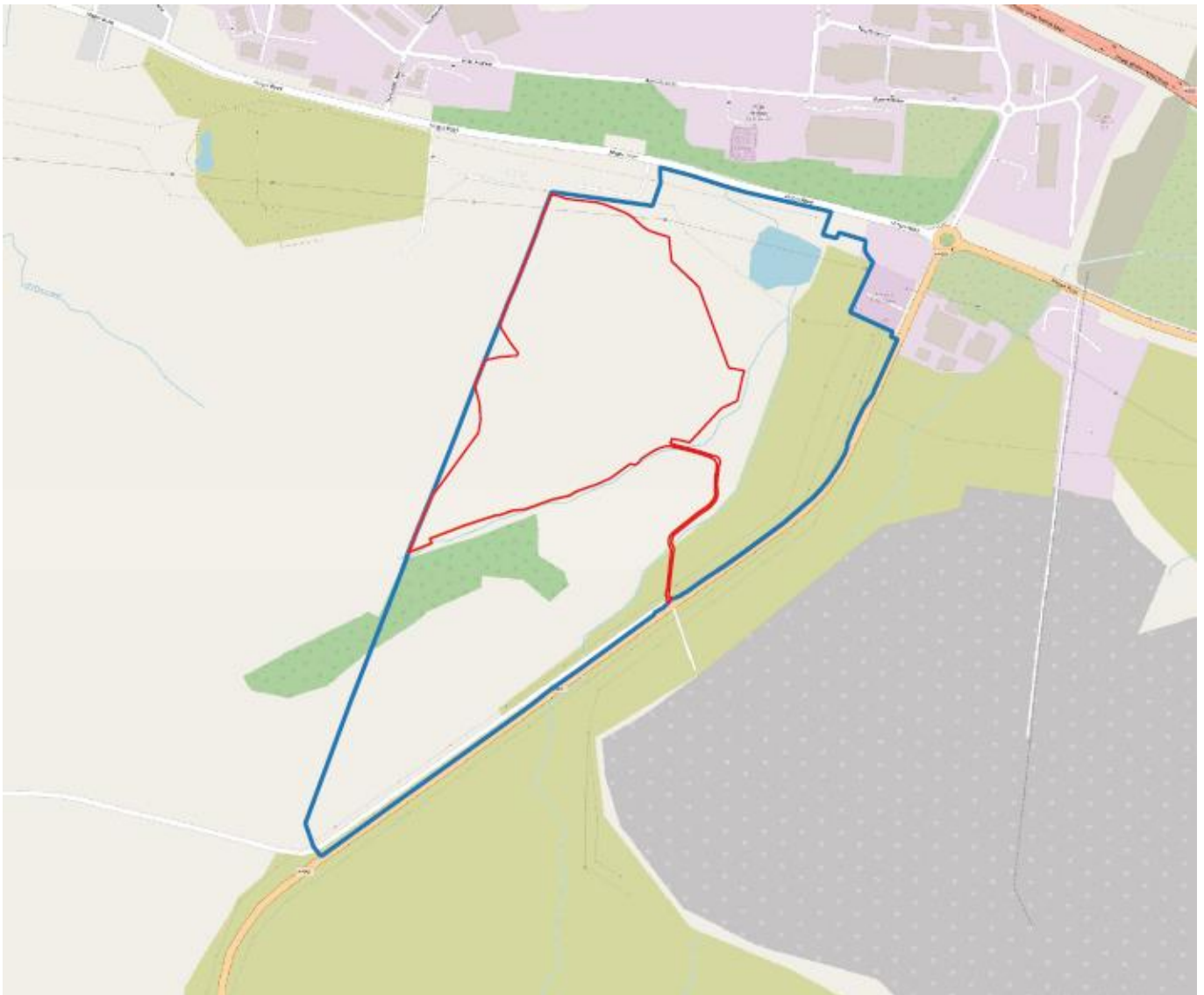
Chapter 3

Existing Development

Site Description

3.1 The site is located on land at Rhigos Road, Aberdare, Wales, approximately 800m east of Rhigos village and outside the defined settlement boundary. The site is centred on National Grid Reference 293494, 205633 (SN 93494 05633); the nearest postcode is CF44 9HX and is approximately 16Ha in size.

Figure 3.1: Site Location Plan and Red Line Boundary



3.2 The site is currently an area of agricultural land that is used for grazing purposes.

Existing Site Access

3.3 The land is currently accessed via farm tracks accessible from the public highway on Rhigos Road to the north and the A4061 Rhigos Road to the east. The site is not directly accessible from the public highway network and no Public Rights of Way provide access to the land. The site is not currently accessible to pedestrians or cyclists.

Local Road Network

3.4 The road network in the vicinity of the proposed development site includes the A4061 Rhigos Road, Rhigos Road, the A465, and the A4059.

3.5 The A4061 Rhigos Road is a 60mph single carriageway road that passes the site in the northeast-southwest direction approximately 250m to the southeast of the site. The road is approximately 7m in width and is considered suitable for HGV traffic. The A4061 links Rhigos with Treorchy passing through the mountainous terrain to the south of the site. Access to the site may be achieved from the A4061 via a private road and farm track, both of which are within the ownership of the site landowner.

3.6 Rhigos Road is a 30mph single carriageway that passes the site in an east-west direction approximately 120m to the north of the site. Rhigos Road provides links to the Hirwaun Industrial Estate and is therefore already used by larger vehicles and HGVs. Access to the site from Rhigos Road may be achieved via a farm track.

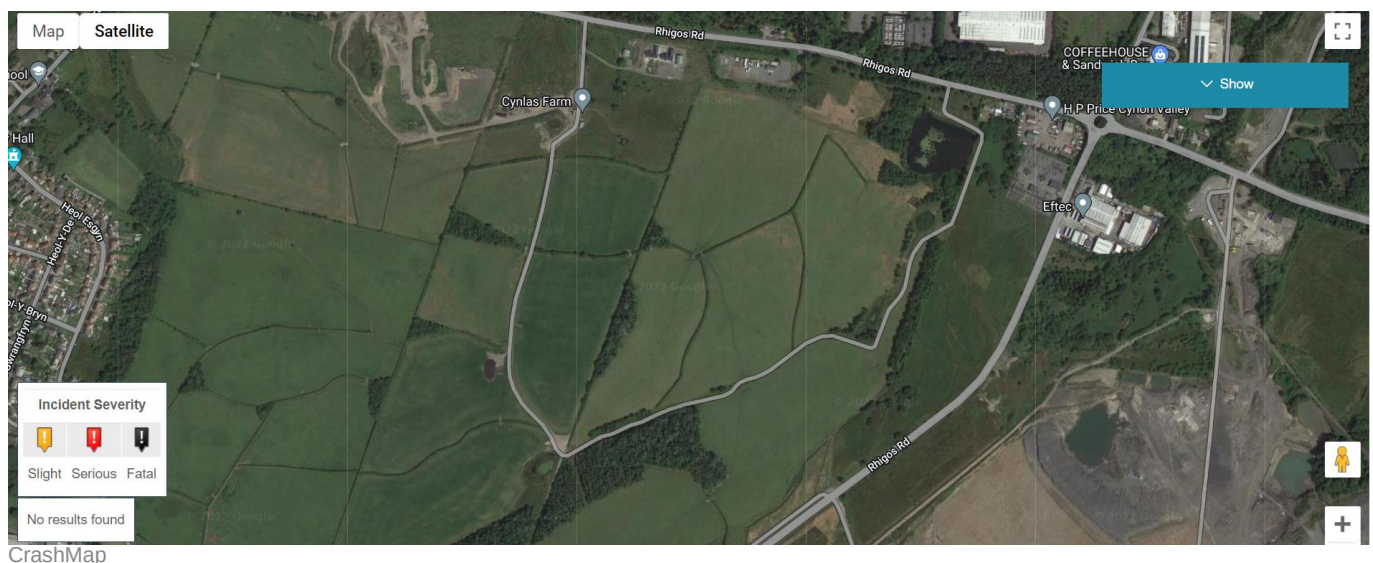
3.7 The A465 is 2+2 lane dual carriageway west of the Rhigos Road junction and a single carriageway to the east, providing east and west links to the north of the site. The closest point of access to the A465 from the site is via a roundabout with the A4061 to the east of the site. As part of the strategic road network, maintained by the Welsh Government, the A465 is suitable for accommodating the HGV traffic associated with the construction of the proposed development.

3.8 The A4059 is a 50mph single carriageway which provides links to the north via a roundabout junction with the A4061 and A465.

Accident Data Review

3.9 A review of Personal Injury Accident data on CrashMap found that there have been no PIAs on the road network adjacent to the site in the last 5 years of available data. There is therefore no indication that there is an existing road safety issue that could be exacerbated as a result of the development proposals.

Figure 3.2: PIA Map



Chapter 4

Proposed Development

Introduction

4.1 It is proposed that a solar farm and associated infrastructure will be constructed on the existing 16Ha of grazing land. The proposals will consist of ground mounted photovoltaic panels and associated infrastructure, with the farm expected to be operational for up to 40 years. The proposal will have a total generating capacity of up to 9MW when fully operational. Once the photovoltaic panels are removed the site will be virtually unchanged from its existing state.

Figure 4.1: Proposed Solar Farm Layout



Proposed Site Access

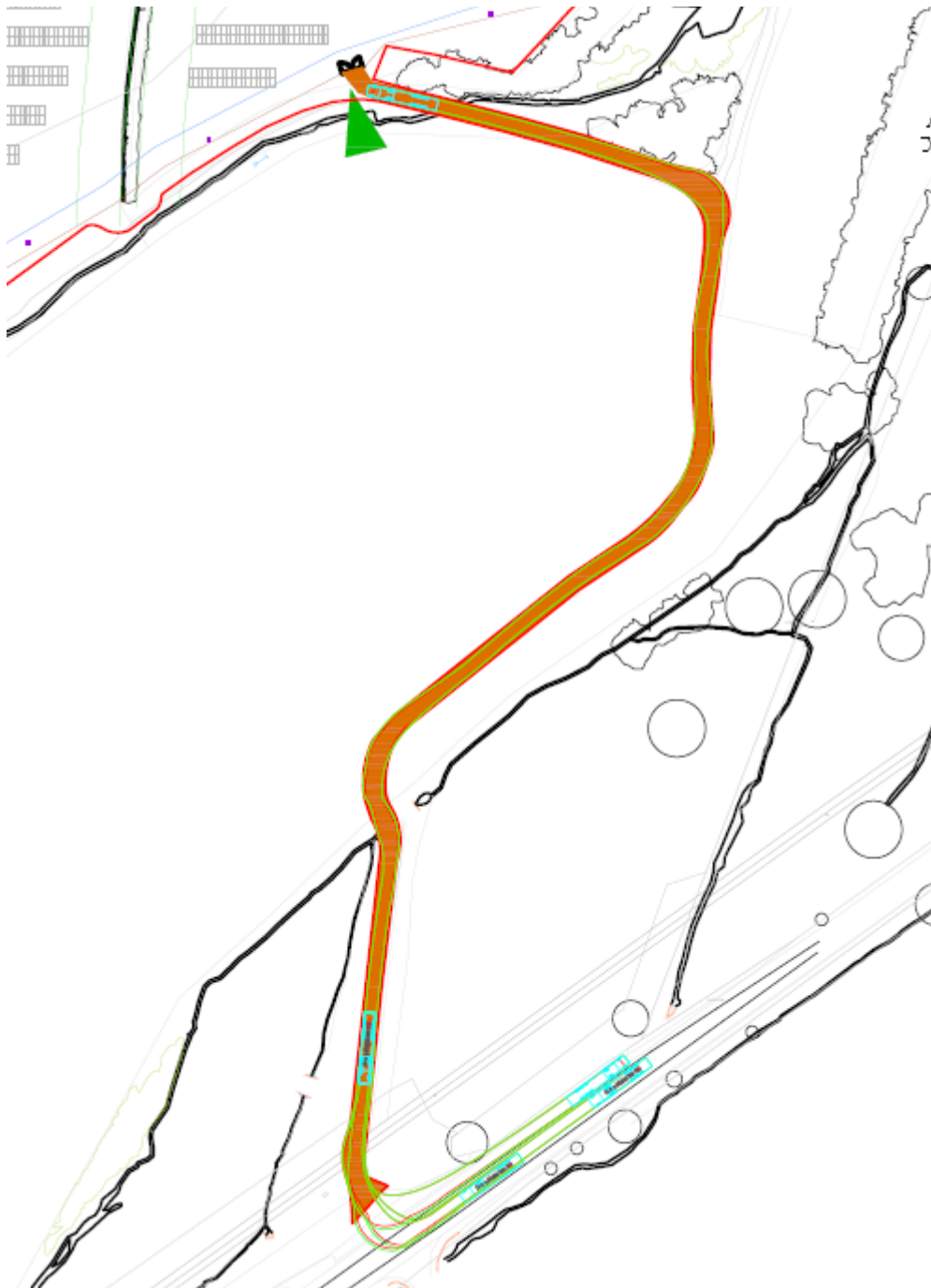
4.2 It is proposed that the site is accessed from the south via the existing farm track accessed off the A4061 Rhigos Road. At this location the A4061 is straight and flat, and subject to a 60mph speed limit, therefore no visibility or safety issues are

anticipated. A visibility splay drawing demonstrating that the access meets the TAN 18 visibility requirement is presented in Chapter 7.

4.3 The proposed access track linking the site to the highway network is currently proposed to be 4m in width and constructed using crushed stone. The proposed access track has been tracked using an articulated HGV.

4.4 Figure 4.2 shows the swept path analysis of the proposed access track. As shown in the figure, the swept path of the design vehicle has been considered appropriate track width through bends has been proposed to accommodate the swept path of an articulated vehicle. This will ensure that HGVs are able to access the site to make deliveries during the construction phase.

Figure 4.2: Access Track HGV Swept Path Analysis



4.5 The proposed access is off the A4061 via a right hand turning lane and via an existing farm access gate. A swept path analysis has been undertaken for the largest vehicle anticipated to access/egress the site, a 16.5m articulated vehicle. This is presented in Figure 4.3 below.

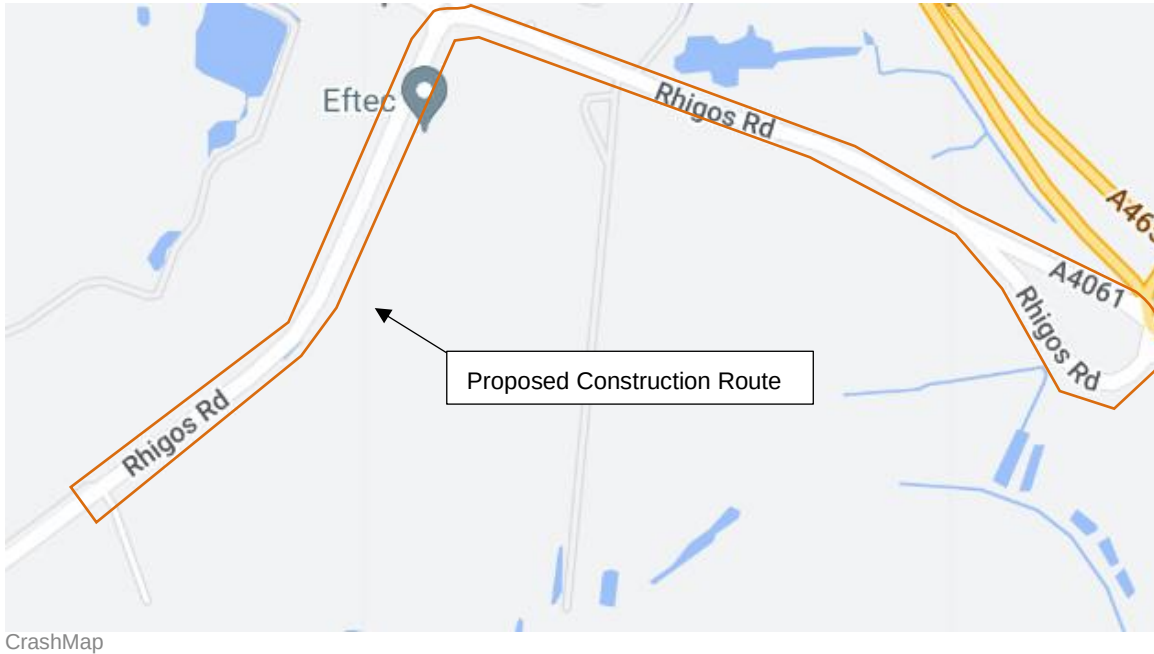
Figure 4.3: A4061 Access Swept Path Analysis



Road Safety Analysis

4.6 PIA data was obtained from the CrashMap database covering the anticipated construction traffic route from the A465 for the years 2017-2021.

Figure 4.4: Anticipated Construction Route PIAs



4.7 There are no PIAs recorded in the last five years of available data on the anticipated construction traffic route and, as the traffic generated by the solar farm during most of its lifetime will be limited to occasional maintenance and servicing, there is no anticipated risk of an increase in traffic collisions as a result of the proposed development.

Chapter 5

Sustainable Connectivity

Introduction

5.1 This section sets out the sustainable transport options for workers' travel to the site during the construction and dismantling phases of the site.

5.2 The proposed development will result in only a temporary increase in vehicle movements to and from the site during the construction and dismantling phases. Therefore, outside of these phases there is no need to support sustainable to and from the site.

5.3 This level of provision is considered to be appropriate given the semi-rural location.

Walking and Cycling

5.4 There is no existing footway on the A4061, so the site is not considered to be accessible for pedestrians.

5.5 However, the A4061 is considered to be accessible for cyclists and the National Cycle Route 46 runs along Rhigos Road to the north. This route links to Aberdare Train Station which is approximately 9km to the east which is considered to be an appropriate travel distance for some cyclists as part of a longer, multi-modal journey.

Public Transport

5.6 The closest bus stop to the site is located on Rhigos Road, approximately 1km, or a 10-minute walk, to the north of the proposed site access.

5.7 Whilst the lack of footway from the bus stop to the site limits the opportunity for potential contractors to travel to the site by bus, it is considered that a shuttle service could be provided from a location conveniently accessed from the existing bus stop to allow bus users to access the site.

Rail

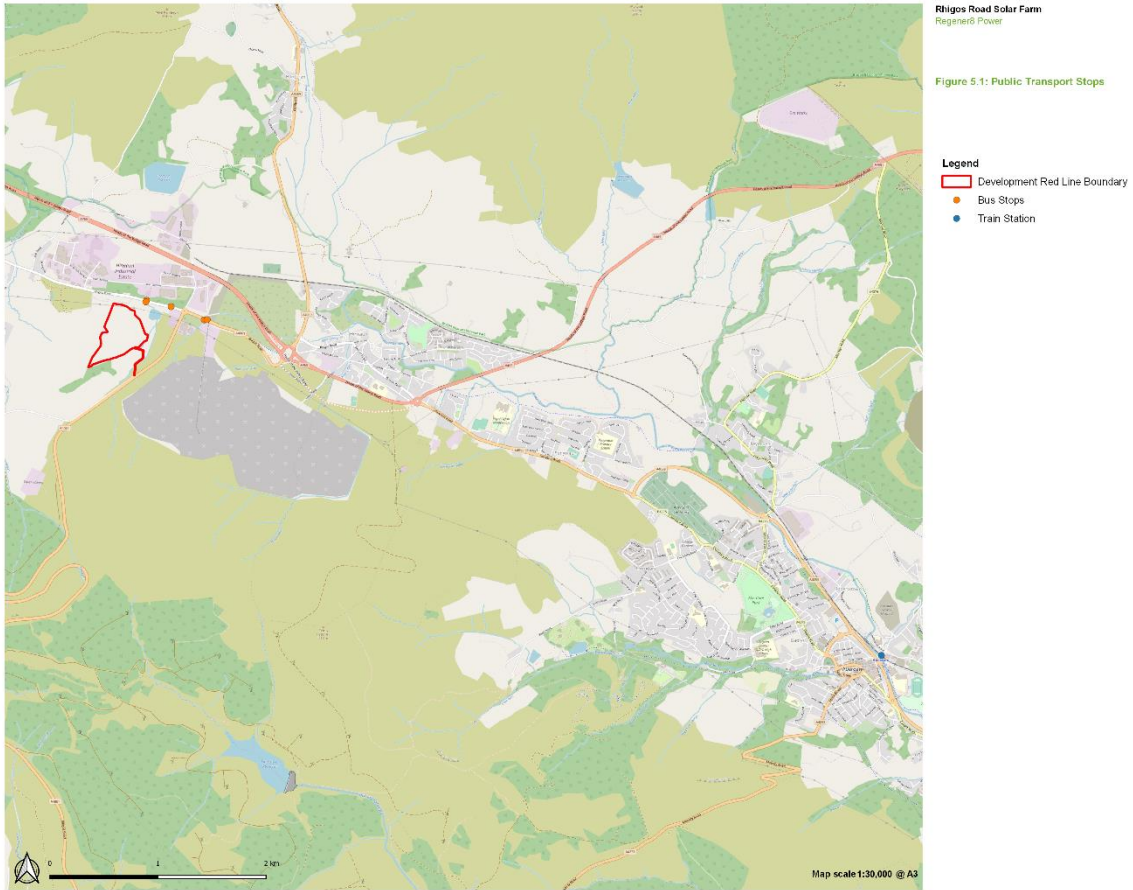
5.8 The nearest train station is Aberdare, which is located approximately 9km to the east of the site. Connectivity to the site from the rail network is provided by the number 8 bus service which stops at the aforementioned stop on Rhigos Road and National Cycle Route 46.

Summary

5.9 The site is located in a semi-rural location and whilst there are options for sustainable travel, the site is not considered to be easily accessible by these modes.

5.10 The map provided in figure 5.1 shows the location of the bus stops and rail station discussed above in relation to the proposed development site.

Figure 5.1: Public Transport Locations



5.11 Potential sustainable transport use could be maximised through the implementation of a shuttle bus from a convenient location to collect workers who make some of their journey by bus or rail, and through encouraging and promoting car sharing.

Chapter 6

Trip Generation

Introduction

6.1 Due to the nature of the proposed development the majority of trips will be generated during the construction and dismantling phases of the project. During the operational phase, only occasional access to the site will be required for maintenance and servicing.

Construction Phase

6.2 The construction period for the solar farm is expected to last for 16 weeks. During this time, there will be in the order of 314 HGV trips movements (i.e., to and from the site). The daily average number of HGV movements is expected to be 3 trips per day over the 16-week period (Monday – Saturday). In addition, there will be a number of light goods vehicle (including cars and vans) movements during this period.

6.3 To provide a comparison, existing traffic levels in the area were obtained from DfT count points to the west and east of the Rhigos Road junction for 2021. These locations show 2-way AADFs of between 16,594 and 18,981 vehicles.

Table 6.1: DfT Traffic Counts, 2021

Count Location	Annual Average Daily Flow	HGVs
A465 west of Rhigos Road	16594	847
A465 east of Rhigos Road	18981	1320

6.4 During the construction phase, there is anticipated to be an average of 3 vehicle movements per day which represents only a negligible average increase in the current AADF on the A465.

6.5 Table 6.2 shows the proposed construction delivery programme for the site.

Table 6.2: Construction Delivery Programme (Proposed), two-way movements

Activity	Total Number of HGV Movements
Modules	56
Contractors Compound	20
Matting	10
Stone	6
DNO Area	20
Frames	28
LV/HV Cable	18

Activity	Total Number of HGV Movements
Inverters	2
Transformers and Substations	8
Concrete	20
Miscellaneous	94
Plant	24
Fencing	8
Total	314

6.6 A Construction Traffic Management Plan has been produced to minimise disruption to the wider road network as result of the development's construction

Operational Phase

6.7 It is expected that the operational phase of the site will generate 10-15 trips by LGV for servicing and maintenance of the solar farm equipment per year.

Dismantling Phase

6.8 The dismantling phase of the development's lifetime is expected to last for 16 weeks and generate approximately 314 HGV movements (to and from the site) as per the construction phase. There will also be a number of LGV movements during this period.

Chapter 7

Transport Implementation Strategy

Introduction

7.1 A Transport Implementation Strategy (TIS) has been produced to set out how the site will be accessed during the construction, operational and dismantling phases of the development lifespan.

7.2 The TIS is intended to achieve three things:

- identify what policy objectives and requirements are set by the development plan in terms of access to the development and movements in and around the site.
- identify what access arrangements are required for a successful development (meeting the needs of the developer, end user, addressing impacts on neighbours and existing movements surrounding the site); and
- specify the package of physical, management and promotional measures needed to accommodate the requirements identified above, such as physical infrastructure, the design and location of buildings, parking management, financial incentives and dedicated travel plan co-ordinators.

Policy Objectives

7.3 Policy AW12 of the Local Development Plan states that the council will support renewable energy projects where they do not adversely impact residential amenity. In this case, residential amenity is taken to include the local highway network as it used by local resident to go about their daily business.

7.4 As detailed in the trip generation section of the TS above the adverse impacts of the site will be limited to the construction and dismantling phases of the project. The construction phase is anticipated to be a period of 16 weeks at the start of the project lifespan and the dismantling phase is anticipated to last 16 weeks at the end of the project lifespan in approximately 40 years.

7.5 The TIS will therefore set out a package of measures to mitigate against the transport impacts during these periods.

Access Arrangements

7.6 Access to the site will be achieved via a priority junction on the A4061 Rhigos Road to the east of the site. From this point site-related traffic will take a farm track which leads to the site itself. It is anticipated that the farm track will need to be upgraded in order to support the construction traffic that the site will generate.

Figure 7.1: Access Visibility Splay



7.7 At this point the proposed access is on a straight and flat section of the A4061 therefore there are no anticipated issues with safety and visibility. Existing visibility is in excess of the 215m for 60mph roads required by TAN 18. Additionally, the access location is 770m away from the nearest road network node at the roundabout with Rhigos Road, therefore impacts on the wider transport network are considered to be negligible during the construction and dismantling periods.

7.8 It is anticipated that construction traffic will access the site via the A465 which is part of the strategic road network.

7.9 From a desktop review there are no impediments to vehicles accessing the proposed development during the construction phase especially as abnormal loads are not anticipated.

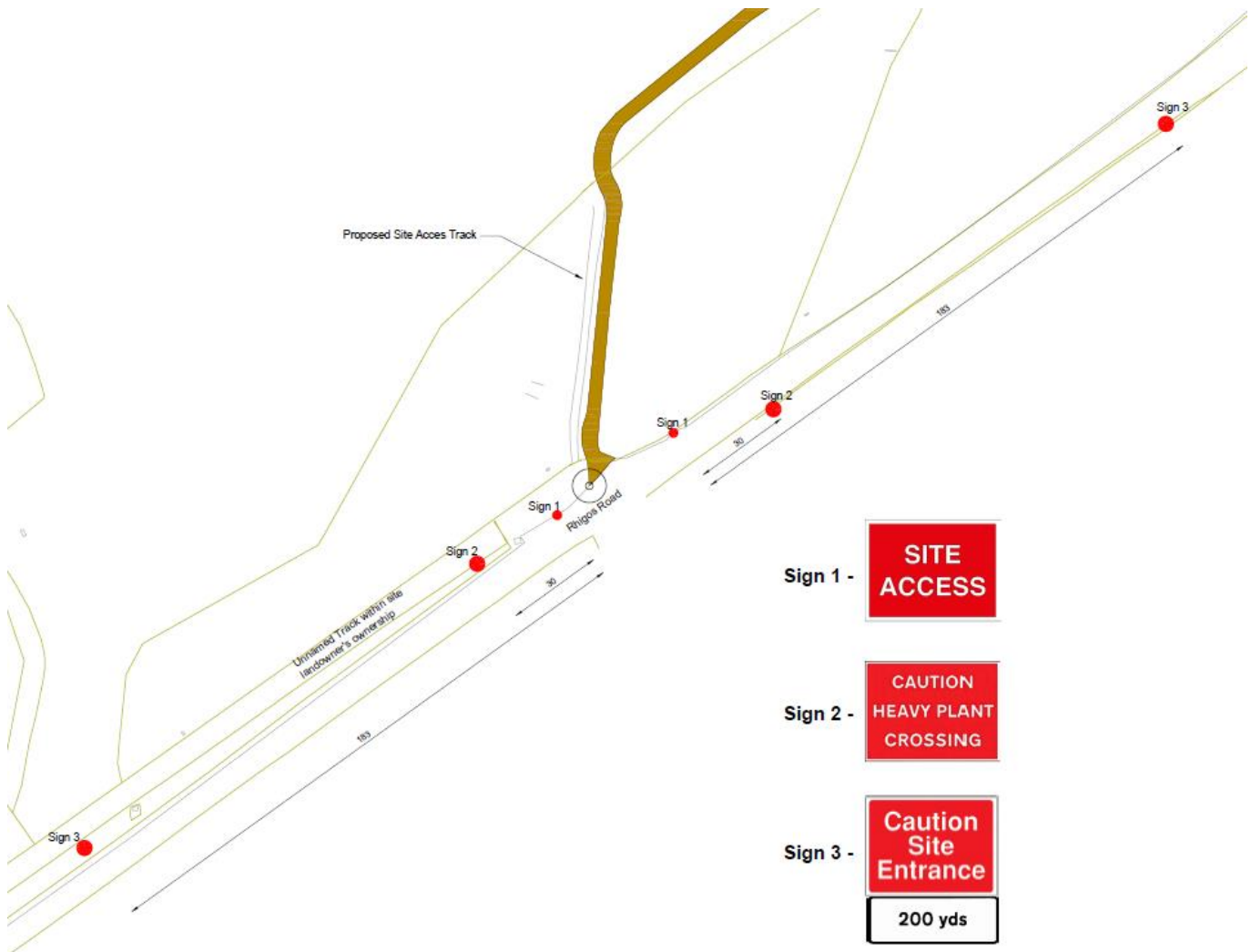
Proposed Measures

Construction Phase

7.10 A banksman will be present at the access junction with Rhigos Road to ensure that delivery vehicles are able to safely enter and exit the site

7.11 At the proposed site access / unnamed road junction it is proposed to provide temporary signage, warning local residents of the increase in construction traffic trips associated with the construction phase of the proposed development.

Figure 7.2: Temporary Signage Layout



7.12 All vehicles associated with the proposed development will access the site from the south. The proposed site access will be taken from the existing farm track linking directly to the proposed site.

7.13 A temporary storage area / compound will be located within the site to its southern boundary adjacent to the proposed site access, which will be used to store materials and components for the development. The construction compound will be designed to allow an HGV to unload and turn around in a forward gear.

7.14 Any new access track created at the site access junction will be, as far as possible, void of loose surface material to help prevent said material being tracked out onto the road by construction traffic. All measures to mitigate impacts would be agreed in advance with the Council's Roads Department.

7.15 A Road Condition Survey (RCS) on the proposed construction route will be undertaken. The RCS will identify points where the carriageway is in poor condition and include measures to protect these areas from further damage resulting from construction traffic. It would be proposed to undertake an RCS before and after construction, to ensure that any damage caused by construction vehicles associated with the development was recorded, thus allowing the Developer to fulfil their responsibilities by rectifying any damage.

7.16 The extent of the survey and the survey methodology will be undertaken in liaison with the Council's Roads Department and the reports would be prepared as a source of evidence should any damage claims arise.

7.17 The above works can be secured by way of a planning condition.

7.18 Consideration of car sharing, or an off-site minibus, is to be made to limit the overall number of vehicle trips to and from the site and maximise the potential for sustainable travel.

Operational Phase

7.19 No additional measures are required during the operational phase due the fact that minimal trips will be generated during the operational phase.

Dismantling Phase

7.20 Measures to be implemented during the dismantling phase will be the same as those implemented during the construction phase.

Chapter 8

Summary and Conclusions

Summary

8.1 The adverse transport impacts of the proposed development will be limited to the construction and dismantling phases of the proposed development's lifespan. This will be limited to approximately 314 HGV movements over a 16-week period during the construction phase, and approximately 314 HGV movements during the 16-week dismantling period.

8.2 The TIS completed as part of this transport statement lists the measures required during the construction and dismantling phases to reduce the impacts on the local highway network.

Chapter 8
Summary and Conclusions

Transport Assessment
June 2023