



Penycae Solar Farm

Construction Traffic Method Statement



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Project Quality Assurance Information Sheet



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Construction Traffic Method Statement (Revision 2)

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**PENYCAE SOLAR FARM
CONSTRUCTION TRAFFIC METHOD STATEMENT (REV 2)**

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1.0 INTRODUCTION

1.1 Scope & Background

- 1.1.1 This revised Construction Traffic Method Statement (CMS) has been prepared by Stratus Environmental Limited on behalf of Sirius SBC Renewables LLP to assist with the discharge of relevant conditions on the planning consent as issued for the development of a ground mounted solar farm.
- 1.1.2 The application site at Penycae covers two parcels of agricultural land (Site A and B) near the villages of Penycae and Acrefair, and 500m west of the village of Ruabon. The proposed development will consist of photovoltaic panels running east-west across the site alongside supporting ancillary infrastructure and it is expected that the proposed development will generate approximately 4.7GWh of electricity each year.
- 1.1.3 Access to both development areas will be provided via Plas Bennion Road (a single carriage way) which itself can be accessed from the south via its junction with the A593 (Llangollen Road). The eastern development area is situated to the east of Plas Bennion Road and can be accessed via an existing track between the 'The Grange' property and adjacent industrial/agricultural unit. Access to the western development area, which is located to the west of Plas Bennion Road, will be via a new access junction located approximately midway along the development areas eastern field boundary.
- 1.1.4 During the construction phase it is likely that HGV deliveries will approach the site from the A483 dual carriageway before exiting onto the slip road which allows access to A593 (Llangollen Road) from which Plas Bennion Road can be safely accessed.
- 1.1.5 Vehicles exiting the A483 from the north will turn right at the roundabout and continue onto the A593 whilst taking the second exits over two subsequent roundabouts. Vehicles exiting the A483 from the south will take the first exit at the roundabout and the second exit at the following roundabout. A clearly marked central turning lane is present at the junction between Llangollen Road and Plas Bennion Road which provides delivery drivers with a safe area to slow down and wait for an adequate gap in oncoming traffic before making the right-turn.

1.2 Purpose of this Report

- 1.2.1 This Construction Traffic Method Statement sets out the proposed access arrangements to the application site, the anticipated construction programme, construction vehicle numbers, construction worker numbers and the proposed construction hours. Solar farms have negligible associated traffic movements during operation (at most, generally a visit for maintenance purposes using a light van once a month). Consequently, only impacts relating to the construction of the development are considered under this document, as these will set the peak traffic movements.

1.3 Planning Conditions

- 1.3.1 The following traffic planning conditions apply to this project and have been stipulated by Wrexham County Borough Council (Planning Reference Number: P/2015/0546). The purpose of this revision is to discharge the following condition:

Condition 7: *Notwithstanding the submitted Construction Traffic Management Statement report number SBC1043/CMS, the development hereby permitted shall not be commenced until a revised management plan for the construction phase of the development has been submitted to and approved in writing by the local planning authority. The amendment shall include full details of the following matters:*

- *On site parking and turning for construction vehicles*
- *On site parking for staff*
- *Proposed operation of banksman to ensure safe exist from the site*
- *Signing and guarding proposals for Plas Bennion Road*
- *Proposed access route*
- *Details of wheel wash facilities*

The construction phase of the development shall be implemented in accordance with the details of the approved management plan.

Reason: In the interests of highway safety

2.0 CONSTRUCTION OPERATIONS

2.1 Introduction

- 2.1.1 The main traffic and transport related effects will be associated with the movement of HGVs to and from the site during the construction phase of the development. This statement therefore sets out the predicted impacts resulting from construction traffic related to the proposed development.

2.2 Access Arrangements

- 2.2.1 As previously discussed, the eastern development area can be accessed from the Plas Bennion Road by a track running adjacent to The Grange property (see **Figure CMS1**). A new site entrance is proposed along Plas Bennion Road for the western development area, which will be located to the north of The Grange (see **Figure CMS2**). Plas Bennion Road is a single carriageway with a 60mph speed limit within the vicinity of the entrance points of both sites. Full access details to the western and eastern development areas are presented in **Drawing Nos. SBC1043/4/13 and SBC1043/4/15**.

Figure CMS1: Access point to eastern development area adjacent to The Grange property



- 2.2.2 The existing access point to eastern development area consists of gated agricultural entrance. The gate and adjacent wooden stock fence to the north of the existing gate will be temporarily removed during the construction phase of the development to allow access for articulated HGVs.
- 2.2.3 A new entrance point will be installed midway along the eastern boundary of the western development area in order to provide improved visual splays north and south along Plas Bennion Road and improve the safety of vehicles as they exit the site which will involve crossing the highway in order to travel south to re-join the A593 (Llangollen Road).

- 2.2.4 Temporary signage will be provided on the approach routes to the site accesses. The proposed positions of warning signage are illustrated in **Drawing No SBC1043/CMS/01 rev1**. These signs will ensure that other highway users are made aware of the potential for HGV movements at the access during the construction period.
- 2.2.5 Service tracks are also proposed within the solar farm area which will provide vehicular access around the site for regular inspections and maintenance throughout the operational phase of the development. The tracks will be approximately 4.5m wide and will be finished with compacted stone.

Figure CMS2: View south toward proposed access point to the western development area



- 2.2.6 As part of the construction phase, a temporary set down area will be utilised for the delivery of materials, equipment and welfare facilities. The site access arrangements, track alignments and equipment set down areas are illustrated on **Drawing No. SBC1043/4/05 rev1**.
- 2.2.7 A footpath borders the south eastern edge of the western development area; this is not intended to be re-routed during the construction phase. The footpath corridor is to be widened by a further 4m creating an 8m buffer area between the existing hedgerow and security fence of the solar site. Signs will erected during the construction phase advising users that the footpath is still open to the public.

2.3 Vehicle Routing

- 2.3.1 Vehicles delivering equipment to the site will either be articulated heavy goods vehicles (44 tonnes and 16.5m in length) or rigid HGVs (18 or 26 tonnes, up to 9.5m in length). All HGV deliveries will travel to the site via the A483 exiting from the north of south via the slip roads before travelling westbound along A593 (Llangollen Road) where Plas Bennion Road can be

safely accessed via a central turning lane. All articulated HGVs will deliver their loads to the main eastern development compounds. Infrastructure for the western development area will be subsequently transferred via smaller HGV (i.e. rigid 18 or 26 tonne (gross weight, which the western site access has been designed to accommodate.

2.3.2 Vehicles will exit both sites via the entry routes, but only under the supervision of a banksman. Suitably surfaced turning heads are provided within the development areas to allow HGVs and other vehicles so that all vehicles exit the development sites in forward gear.

2.3.3 Light goods vehicles (LGV) accessing the site during the construction phase will not be subject to any routing restrictions, other than being to utilise major classified roads in the area. However, due to the proximity of the main arterial networks to the development site, the A593 and A483 are likely to form the primary routes of most contractor vehicles.

2.4 Hours of Operation

2.4.1 The construction work will take place between the hours of 08:00 – 18:00 Monday to Friday and 08:00 – 16:00 on Saturdays with no such working on a Sunday or on Bank or Public Holidays. Outside the above noted hours, work at the site will be limited to safety and environmental related emergency works and any dust suppression and street cleaning that may be necessary. Deliveries to the site will be carried out within the above times. Under exceptional circumstances, working/deliveries outside these hours may be required. In these cases, prior permission will be sought from Wrexham County Borough Council.

2.4.2 The indicative construction programme is set out in **Chapter 3** below. The Highways Department and Parish Council will be informed of when construction is due to begin.

2.5 Staff Movements and Parking

2.5.1 An estimated 30 staff will be on site during the construction period, depending on the phases of the construction schedule. It is envisaged that staff trips will be mainly made by private vehicles (i.e. LGVs).

2.5.2 All vehicle parking including construction vehicles and staff vehicles will be provided within the temporary set down areas as shown on **Drawing No. SBC1043/17/05 rev 2**. These areas are large enough to accommodate all vehicles associated with the construction of the proposed development, including those of site operatives and visitors. The temporary set down areas will comprise temporary surfacing such as gravel or a ground protection matt. There will be no staff parking allowed on the public highway.

2.5.3 A worst-case scenario of all staff members arriving by single-occupancy private vehicle during the peak construction period, a total of 30 vehicles will

arrive on site prior to the AM peak and an equal number will depart after the PM peak.

- 2.5.4 Once the site is operational, there will be no staff based on the site. However, routine monthly visits will be required (at most, a visit for maintenance purposes using a light van once a month). Staff parking during maintenance visits will be via the proposed internal access roads.

2.6 Loading and Unloading of Plant and Materials and Vehicle Turning

- 2.6.1 All deliveries made by articulated HGV will made to the eastern development area for unloading and temporary storage in the temporary set down area, as shown on **Drawing No. SBC1043/4/05 rev 1**. Infrastructure for the western development area will be subsequently transferred via smaller HGVs (i.e. rigid 18 or 26 tonnes) and unloaded into the temporary set-down areas.
- 2.6.2 Suitably surfaced turning heads are provided within the development areas to allow HGVs and other vehicles so that all vehicles exit each development site in forward gear.
- 2.6.3 Material will be offloaded into the designated delivery area by use of wheeled excavators with fork attachments or telehandlers. All vehicles will be operated by trained, competent, authorised, licenced and insured personnel. There will be other manual handling; however this will be for small items only.
- 2.6.4 Delivered material will be distributed within the site for installation according to the site layout. Material will be transported from the construction compound to the required area via suitable mobile plant.
- 2.6.5 Skips for recyclates and residual waste materials will be placed next to the turning/unloading area where waste carriers can easily access them without conflicting construction personnel.

2.7 Temporary Direction and Warning Signage

- 2.7.1 Temporary warning and routing signage will be provided in the locations indicated on **Drawing No. SBC1043/CMS/01 rev1**. The signage will ensure that HGV construction traffic keep to the designated routes to/from the site.
- 2.7.2 There will be two road signs stationed along Plas Bennion Road warning road users of the construction site entrances; these will be situated to the north and south of the site entrances. Additional signage will be position along Plas Bennion Road before the site to notifying road users that a construction site is ahead.
- 2.7.3 During the construction phase it is likely that HGV vehicles will approach the site from the A483 dual carriageway before exiting onto the slip road. Signage will be placed on both sides of the dual carriageway to inform vehicles approaching from both the north and south.

- 2.7.4 All signage will be bilingual with Welsh positioned above the English translation. These temporary signs will remain in place for the duration of the construction period and will also be used during the decommissioning period.

2.1 Operation of Banksman

- 2.1.1 All HGV vehicles will only exit the site under the direction and support of a banksman. The banksman will be attired in high visibility jackets and will be easily visible to road users.

2.2 Wheel wash facilities

- 2.2.1 It is proposed to create internal tracks and temporary set down areas with unbound, compacted stone in order to minimise the potential for mud and debris to be tracked onto public highways. Nonetheless wheel wash facilities will be stationed on site to further reduce this risk.
- 2.2.2 These facilities will be provided on site during the construction phase at the exit of the temporary set down compounds of the eastern and western development areas, as indicated upon **Drawing No. SBC1043/4/05rev1**.
- 2.2.3 The specific equipment employed will be dependent on availability during the construction period.
- 2.2.4 Should any mud be deposited on the road as a result of this development, the site manager will arrange for the road to be swept and kept clean.

2.3 Proposed Vehicle Movements

- 2.3.1 The construction of the solar farm is expected to last around 3 months. During this period, there would be journeys associated with the arrival and departure of site staff and the delivery of parts and construction materials.
- 2.3.2 **Table CMS1** provides a breakdown of expected vehicular movements and an indicative construction schedule. Expected HGV volumes (calculated utilising the following figures: 750 panels per HGV, 2000 frames per HGV and 2000 posts per HGV) and timings are based on best estimates at this stage and will be dependent on a number of factors, such as shipping schedules. The delivery of invertors, transformers and control equipment will be made via 18 or 26 tonne (gross weight) HGVs, which will be delivered direct to development area at which they will be sited.
- 2.3.3 Initial movements in weeks 1 and 2 would result from staff movements and deliveries of site security measures: security fencing, internal service road and compound construction materials. There would also be a number of other deliveries of cabling, machinery and a temporary site welfare cabin in weeks 2 and 3. This would be followed by items such as inverters, transformers, control room and the solar panel support frames in weeks 3 to 12.

- 2.3.4 Approximately 26 deliveries to the site would be required to deliver the panels. All the frames can be delivered by a single lorry load. The support posts can be delivered by 2 HGVs to the site. The transfer of a relevant portion of this infrastructure to the western development site will generate a subsequent 25 short movements.
- 2.3.5 Following these deliveries, it is envisaged that deliveries to the site will be fewer in number as the solar farm is constructed from material already delivered to site and stored within the existing set down areas. **Table CMS1** identifies the anticipated number commercial vehicle deliveries to site during the construction phase.

Table CMS1: Indicative Vehicle Deliveries during Construction Phase

Construction Activity	Month		
	1	2	3
Delivery of plant, equipment and materials	20		
Erection of security fencing and construction compound	5		
Cabling on site	2		
Delivery of inverters, transformer & control equipment		8	8
Delivery of frames & support posts		3	
Delivery of PV panels		26	
Removal of plant and equipment			10
Total	27	37	18

- 2.3.6 It is anticipated that the construction phase as a whole will generate approximately 82 deliveries to site, or 164 vehicle movements. Month 2 is likely to see the highest number of deliveries to site at 37 deliveries, which equates to an average of two HGV deliveries per day. As all deliveries will result in a return journey for the vehicle there will be an average of 4 vehicle movements per working day.

2.4 Traffic Management Measures

- 2.4.1 All vehicles will enter and exit each site via Plas Bennion Road. The largest vehicles accessing the site will be articulated Heavy Goods Vehicles (HGV's), although such vehicles will be restricted to the eastern development site.
- 2.4.2 The Plas Bennion Road is a single carriageway that runs in a broadly north/south direction which has a speed limit of 60mph. It is an unclassified, minor road that is unlikely to have significant traffic levels. The development is unlikely to have a significant impact on local traffic due to the low frequency of movements associated with the development (average of 2 HGV deliveries a day) and due to the short-term nature of the construction phase. Notwithstanding this, in order to minimise any disruption to vehicle users the following measures will be adopted:

- Temporary signage warning road users of potential construction traffic will be placed along the Plas Bennion Road;
- Drivers of construction vehicles exiting the development site will be instructed to always give way to any local traffic;
- All vehicles exiting the site will only do so under the supervision and guidance of a banksman;
- Site rules relating to access to/egress from site will be provided to hauliers for deliveries;
- Deliveries will be scheduled outside peak traffic times as much as possible and wherever possible there will be consolidation of deliveries;
- HGV's delivering materials and plant to the site will be required to use a defined route i.e. A483 and A539 (Llangollen Road);
- To minimise the volume of construction traffic congestion and nuisance to the surrounding areas, all suppliers and contractors will be made aware of the traffic routes;
- The site entrance will be maintained and kept clean and clear;
- The site entrance will be guarded to prevent unauthorised access and minimise congestion and nuisance;
- A turning circle for construction vehicles is provided within the development site in order to ensure that construction vehicles are able to access and egress the development area in forward gear. Further to this, construction vehicles will be prohibited from parking on the adjacent road network; and
- Anticipated delivery schedules will be provided to the Parish Council to install on parish notice boards, so that users of the A539 are aware; this will be updated regularly during the construction period.

2.4.3 Taking the above into consideration, the potential effects of the proposed development on the road network/general public are considered negligible.

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3.0 OPERATIONAL PHASE

- 3.1.1 Once operational, the solar farm will be unmanned and access for occasional periodic maintenance will be typically made by light goods vehicles. Maintenance and inspections will typically take place on a monthly basis.
- 3.1.2 There will be no public access to the site. A footpath borders the south eastern edge of western development area, however this will be separated from the development site by security fencing. This footpath corridor has been widened in order to allow an additional hedgerow to be planted beside the site security fence.
- 3.1.3 In designing the proposed development, emphasis will be placed on security. The design ensures the site is secure and not readily accessible to the public through the installation of appropriate perimeter fencing and infra-red (non-visible) CCTV.
- 3.1.4 Internal access roads will be maintained throughout the life of the solar farm.

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4.0 CONCLUSION

- 4.1.1 The construction of the solar farm would result in the temporary generation of construction and staff-related traffic over a 3 month construction period. During this period there will be approximately 82 deliveries to site, or 164 vehicle movements. The second month may see the highest deliveries to site at 37 deliveries, spread out over a 4-week period during which an average of two HGV deliveries will occur per day. As all deliveries will result in a return journey for the vehicle, there will be an average of 4 vehicle movements per working day.
- 4.1.2 It is considered that transport impacts related to the operational phase of the development would be minimal.
- 4.1.3 On the basis of the trip generation outlined above and given the temporary nature of the construction works, it is considered that all roads along the route are capable of accommodating the additional construction traffic over the temporary construction period and the construction of the proposed solar farm will have no significant impact on the local highway network.
- 4.1.4 The solar farm will involve the following components in relation to access and egress: use of temporary direction and warning signage, a banksman, wheel wash facilities and onsite parking for both staff and construction vehicles.