



**ARCUS**

**TRANSPORT STATEMENT**

**SWANSEA NORTH ENERGY MANAGEMENT FACILITY**

**FOR STATKRAFT UK LTD**

**JUNE 2020**



Prepared By:

**Arcus Consultancy Services**

1C Swinegate Court East  
3 Swinegate  
York  
North Yorkshire  
YO1 8AJ

**T** +44 (0)1904 715 470 | **E** [info@arcusconsulting.co.uk](mailto:info@arcusconsulting.co.uk)  
**w** [www.arcusconsulting.co.uk](http://www.arcusconsulting.co.uk)

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### APPENDIX A – SITE LAYOUT

## 1 INTRODUCTION

### 1.1 Background

Arcus Consultancy Services (Arcus) has been commissioned by Statkraft UK Ltd (the Applicant) to prepare this Transport Statement as part of the planning application for a Energy Management Facility (the Development) located on agricultural land to the east of the existing Swansea North substation which is operated by National Grid (the Site). An existing access road runs from the substation west to a junction with the B4489. Furthermore, Abergelli Power Station has received consent but has yet to start construction, located to the east of the Development. Abergelli Power Station includes an access from the B4489, using the existing road to the substation and then a new road passing south of the Development.

### 1.2 Overview of the Development

The Development is intended to provide services supporting the flexible operation of the National Grid and decarbonisation of electricity supply e.g. by balancing electricity supply and demand. The Development will import and export electricity but will not generate and additional electricity. The proposed batteries will store surplus electricity to be fed into the grid when required, while the energy management modules will reduce fluctuations, thus improving stability and reducing the risk of power failures.

The Development consists of a compound containing a number of custom-designed shipping containers housing arrays of lithium ion batteries, two Energy Management Modules ('EMMs'), and associated plant including cooling plant, inverters and transformers.

It is the intention for the Development to utilise the same access road as Abergelli. In addition, an alternative section of access road may need to be constructed from the Abergelli access corridor into the Swansea substation area, shown on Planning Drawing 3b as Access Route Option 2.

### 1.3 Legislation Policy and Guidance

In preparing this Transport Statement the following guidance has been considered throughout:

- The Ministry of Housing Communities and Local Government (2014) - Guidance - Travel Plans, Transport Assessments and Statements<sup>1</sup>;
- Welsh Assembly Government (2007) - Technical Advice Note 18 - Transport<sup>2</sup>;
- Department for Transport - CD123 - Geometric design of at-grade priority and signal-controlled junctions<sup>3</sup>.

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<sup>1</sup> The Ministry of Housing Communities and Local Government (2014) - Guidance - Travel Plans, Transport Assessments and Statements - Available at: <https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements> [Accessed 19/02/20]

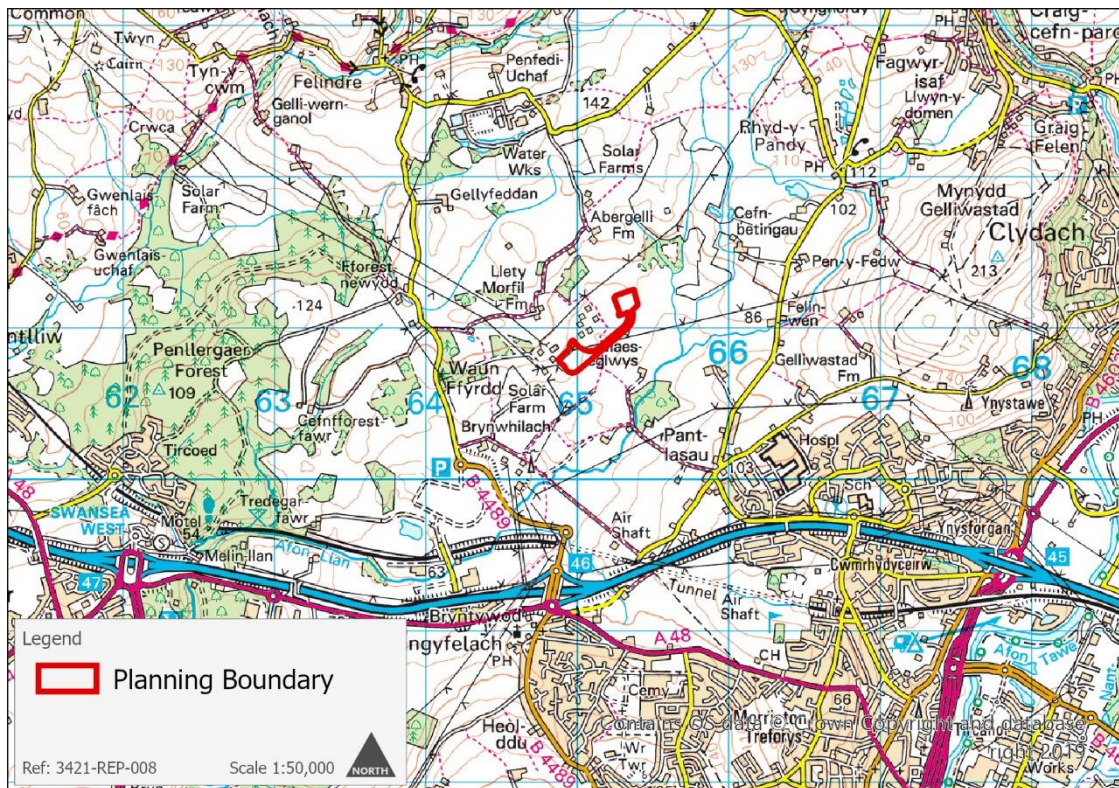
<sup>2</sup> Welsh Assembly Government (2007) - Technical Advice Note 18 - Transport - Available at: <https://gov.wales/sites/default/files/publications/2018-09/tan18-transport.pdf> [Accessed 19/02/20]

<sup>3</sup> Department for Transport - CD123 - Geometric design of at-grade priority and signal-controlled junctions - Available at: <http://www.standardsforhighways.co.uk/ha/standards/dmr/vol6/section2.htm>

## 2 DEVELOPMENT PROPOSAL

### 2.1 Site Location

**Figure 2.1 - Site Location Plan**



### 2.2 Development Elements

The Development will comprise the following elements:

- Battery storage units;
- Energy management building containing energy management modules, coolers, and e-houses;
- Electrical infrastructure including inverters, transformers, grid connection, switchgear and underground cabling;
- Diesel Generator for emergency back-up supply;
- Temporary site office and welfare area;
- Control room;
- New site entrance;
- On site access track and parking area;
- Security perimeter fencing; and
- Landscaping and planting.

A site layout figure is provided in Appendix A for reference.

The proposed access route will cross the existing watercourse and run through the land to the south of the substation to join with the main substation access. As identified in Section 1 much of the access will be shared with Abergelli Power Station.



### 3 REVIEW OF EXISTING TRANSPORT NETWORK

#### 3.1 Highways

The nearest public highway to the Development is the B4489, this will be reached via an existing road which serves the substation. The junction between the existing access and the B4489 is a simple priority junction. The visibility splays at this junction were improved in approximately 2011 by National Grid. Design drawing from the time indicate that the splays were improved to provide 70 m visibility in either direction along the B4489.

#### 3.2 Road Traffic Collision Assessment

A review of all reported historical road traffic collisions (RTCs) within the vicinity of access junction onto the B4489 was undertaken. Data was collected from publicly available RTC reports collated by crashmap.co.uk<sup>4</sup>.

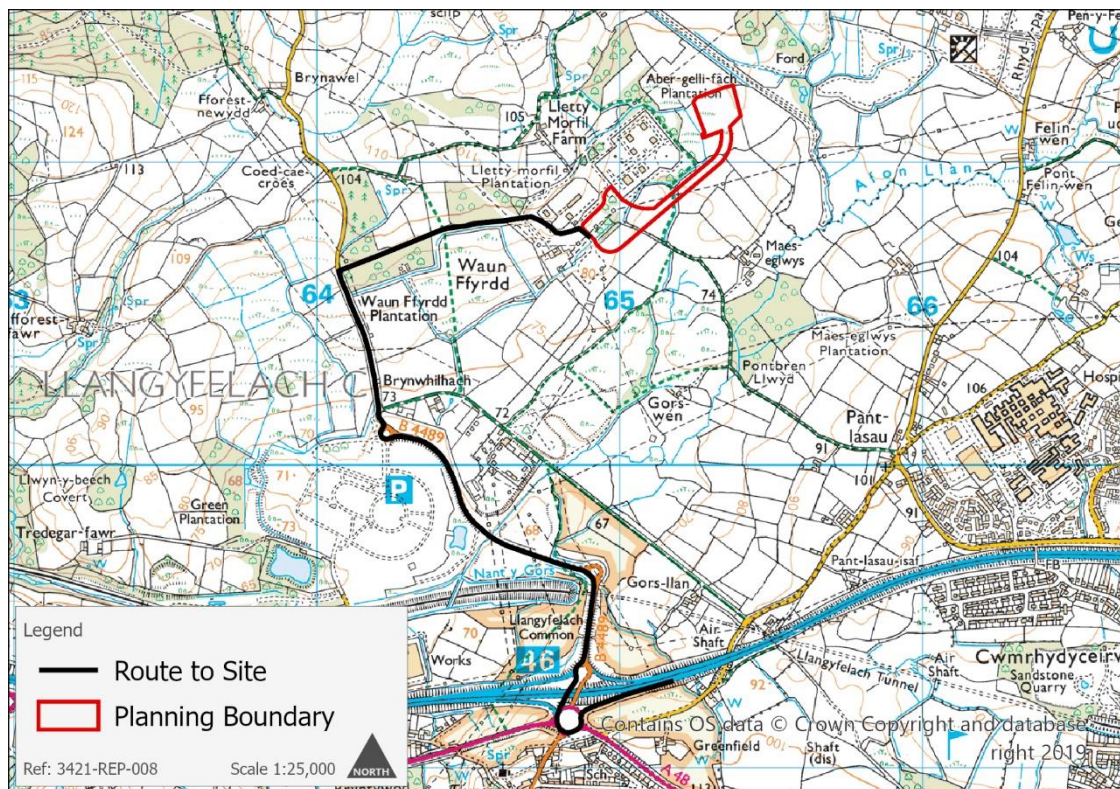
This review indicated that no RTCs were recorded on the B4489 within the vicinity of the access junction.

#### 3.3 Cycle and Walking Routes

The nearest cycle route to the Development is National Cycle Route 46 which is approximately 5 km east of the Development by Clydach. Vehicles associated with the Development are unlikely to cause any effect on this route.

There are a number of public rights of way (PROWs) within the area of the Development, these are shown in green on Figure 3.1 below. The access route is crossed by an existing PROW as shown on Figure 3.1. Access along the PROW will be maintained throughout construction of the Development, Section 6.2 of this Transport Statement details mitigation measures which have been considered in relation to this.

**Figure 3.1 - Public Rights of Way**



<sup>4</sup> [www.crashmap.co.uk](http://www.crashmap.co.uk) [accessed 19/02/20]

## 4 CONSTRUCTION VEHICLE ROUTING AND VOLUME

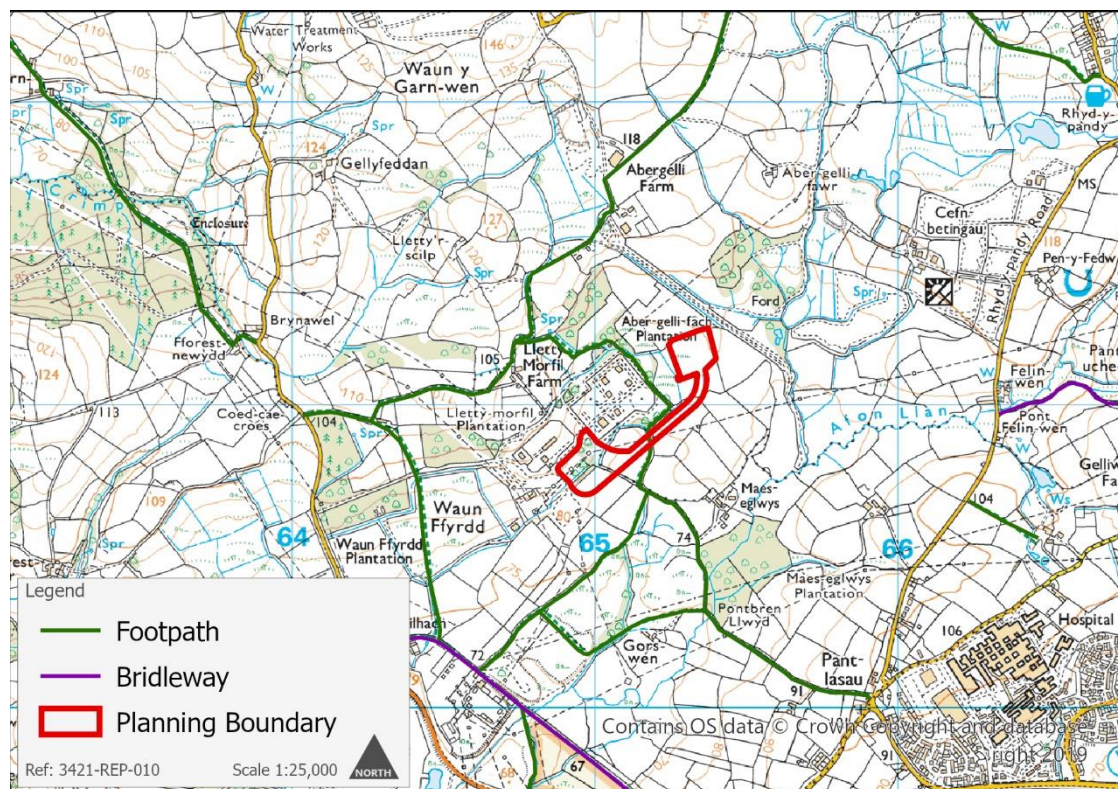
### 4.1 Route to Site

It is assumed that all deliveries will approach the Site from the M4. From the M4 the route to site will be as follows:

- Leave M4 at Junction 46;
- Turn onto B4489 north and continue through second roundabout;
- Turn left at roundabout to continue on B4489;
- Turn right at roundabout to continue on B4489;
- Turn right onto Abergelli access corridor; and
- Turn left into site.

Figure 4.1 indicates the delivery route.

**Figure 4.1 - Route to Site for Construction Vehicles**



### 4.2 Construction Vehicle Estimate

Construction of the Development is expected to occur over an 18-month period. The following subsections detail the anticipated traffic during this period.

#### 4.2.1 Tracks and Hardstandings

Aggregate for the formation of access tracks and hardstandings is required to be imported to the site during the initial stages of construction. This will be undertaken by HGV tipper lorry.

Foundations will be formed from concrete and will comprise a mixture of slab foundations and piles depending on the ground conditions encountered. Given the anticipated volume of concrete required concrete may be batched on site. Material imports for foundations are therefore likely to comprise sand, aggregates, cement, rebar, shuttering, the batching plant and other miscellaneous equipment. The above will be imported by HGV.



The Applicant anticipates the volume of delivery vehicles associated with the above elements of construction are expected to total approximately 20 vehicles per day during the peak period of construction.

#### **4.2.2 Transformers and Energy Management Modules**

Two transformers and Energy Management Modules (EMM) will be delivered to the Site. The transformers and the EMM will be classified as abnormal loads and will be transported on specialist vehicles under police escort. In order to minimise the effect of abnormal load convoys on the local highway network the transformers will be delivered outside of peak hours, likely to be overnight. A worst-case scenario in which each transformer is delivered separately has been assumed.

Two energy management modules will be imported to the Site, these will be delivered by abnormal load vehicles (ALVs). These loads are similar in size to the infrastructure delivered to the nearby substation.

Prior to the delivery of the transformers the contractor will apply for all of the relevant permits for the transportation of ALVs, and will undertake an assessment of the suitability of the route, including and structures, for the transportation of such loads. Consultation with the local highways authority, South Wales Trunk Road Agent and the police required will be undertaken prior to any abnormal load movements.

Table 4.2 summarises the anticipated type and volume of vehicles associated with transformer and EMM delivery.

**Table 4.2 - Number of Vehicle Movements – Transformers and EMM**

<b>Vehicle</b>	<b>Vehicle Type</b>	<b>No. Movements (one-way)</b>
2 No. Transformer	Abnormal Load Vehicle	4
2 No. EMM	Abnormal Load Vehicle	4
Escort	Car/Van	16

#### **4.2.3 Miscellaneous Items**

A number of lower volume miscellaneous items are required to be delivered to site at various stages of construction. Table 4.3 indicates the anticipated type and volume of traffic associated with the delivery of these items.

**Table 4.3 - Number of Vehicle Movements - Transformers**

<b>Item</b>	<b>Vehicle Type</b>	<b>No. Movements (one-way)</b>
Batteries & battery container	HGV Low Loader	24
Inverter	HGV Low Loader	6
Transformer (Small)	HGV Low Loader	2
E-House	HGV Low Loader	4
Transformer Cooler	HGV Low Loader	2
Main Control Room	HGV Low Loader	1



<b>Item</b>	<b>Vehicle Type</b>	<b>No. Movements (one-way)</b>
Switchgear	HGV Low Loader	1
Diesel Generator	HGV Low Loader	1
<b>Total</b>	-	<b>41</b>

#### **4.2.4 Staff and Fuel**

Staff will travel to the site throughout construction. The number of staff on site during each phase of the Development is expected to vary depending on the intensity of construction during that phase. The majority of staff are expected to arrive by private car or van.

Fuel will be delivered to site throughout construction for plant. This is anticipated to average around 2 fuel deliveries per week, resulting in 4 vehicle movements per week.

## **5 ASSESSMENT OF TRAFFIC EFFECTS**

### **5.1 Peak Increase in Traffic**

The peak increase in traffic is expected to be typically up to 20 vehicles per day, or 40 vehicle movements. This is the estimate for the peak period of construction and the daily traffic can be expected to be less than this during other periods.

### **5.2 Effect of Traffic Increase during Construction**

The predicted increase in traffic during the peak period of construction is considered to be negligible in terms of the likely existing traffic levels on the M4 and B4489. The route from the M4 does not pass through any settlements and the B4489 is considered to be suitable for the expected type and volume of traffic, with the exception of ALVs which will be considered under a separate assessment. The abnormal loads are similar in size to those delivered to the nearby substation and as such it is considered likely that they can be transported to the site with minimal effect on the transport network. The effect of the increased traffic during the 18-month construction is considered to be low.

### **5.3 Operational Traffic**

During operation of the Development traffic is expected to be minimal and can be expected to be limited to approximately 1 car or van visit per day average. The effect of this on the local road network is considered to be negligible.

## 6 TRAFFIC MANAGEMENT

Drivers of site and construction traffic vehicles will be aware of the route and contingency measures as explained during the site induction period. Emphasis will be made to Health & Safety with regards to traffic management. Site staff/operatives/visitors will fully be inducted by site management and will be present in daily briefings. Drivers of HGV's will be provided with the Traffic Management Plan in advance of their visit to site in addition to the induction they will receive once onsite and good road practice will be made clear prior to any traffic movements.

- The contractor will be required to implement induction procedures and promote road safety and awareness; and
- Where possible, arrangements will be made for site workers to share transport and minimise unnecessary traffic movements locally.

The site access junction will be kept clear at all times and on-site staff will ensure no vehicles attempt to use this for parking.

### 6.1 Temporary Warning Signage

The use of temporary traffic signs will be limited to advisory signage such as 'Heavy Plant Crossing' and 'Site Access' signs. These will be placed on approach to the site access junction onto the B4489.

### 6.2 Management of Approach Route to Site

The approach road from the B4489 is suitable for HGV access, and has been used previously for the construction of the substation and adjacent gas compressor station, and will be used for the consented Abergelli Power Station. Additionally, it is possible for HGVs to turn within the curtilage of the Site.

The access road (a section proposed for use also by Abergelli Power Station) is crossed by a PRow (as shown in Figure 3.1), access to which will be maintained throughout the construction and operational phases of the Development. The contractor will be responsible for installing appropriate signage, and any other pedestrian management measures considered necessary, to maintain safe access during construction and following construction will provide a permanent crossing point.

During construction the contractor should consider the frequency of vehicle movements, the forward visibility for approaching vehicles and the anticipated pedestrian demand when designing control measures, as a minimum this would involve installation of appropriate signage for pedestrians and vehicles.

Given the low overall volume of construction traffic and the suitability of the approach routes to site for carrying such traffic no other management measures other than those listed above and in the other sub-headings of this section are considered to be necessary.

Given the low volume of vehicles expected to use the access road during the operational phase an uncontrolled crossing point, with appropriate signage, is likely to be sufficient given adequate forward visibility for approaching vehicles.

### 6.3 Enforcement

All contractors will be monitored (through regular spot-checks) to ensure they follow correct routes. Routes identified will be clearly defined in all sub-contracts and clearly communicated to drivers. Any contractor not adhering to the relevant route guidance and any other measures detailed in the Traffic Management Plan will be disciplined and may be removed from the project; this will be contractually specified where practical to do so.

The site access junctions will be kept clear at all times during construction and the area will be monitored by on-site staff to ensure vehicles do not attempt use for parking.

#### **6.4 Wheel Washing**

If required in order to prevent the deposition of mud on the public highway, the Principal Contractor will install and operate wheel washing facilities at the site entrance junction. These facilities will remain in place for the duration of the construction phase of the Development.



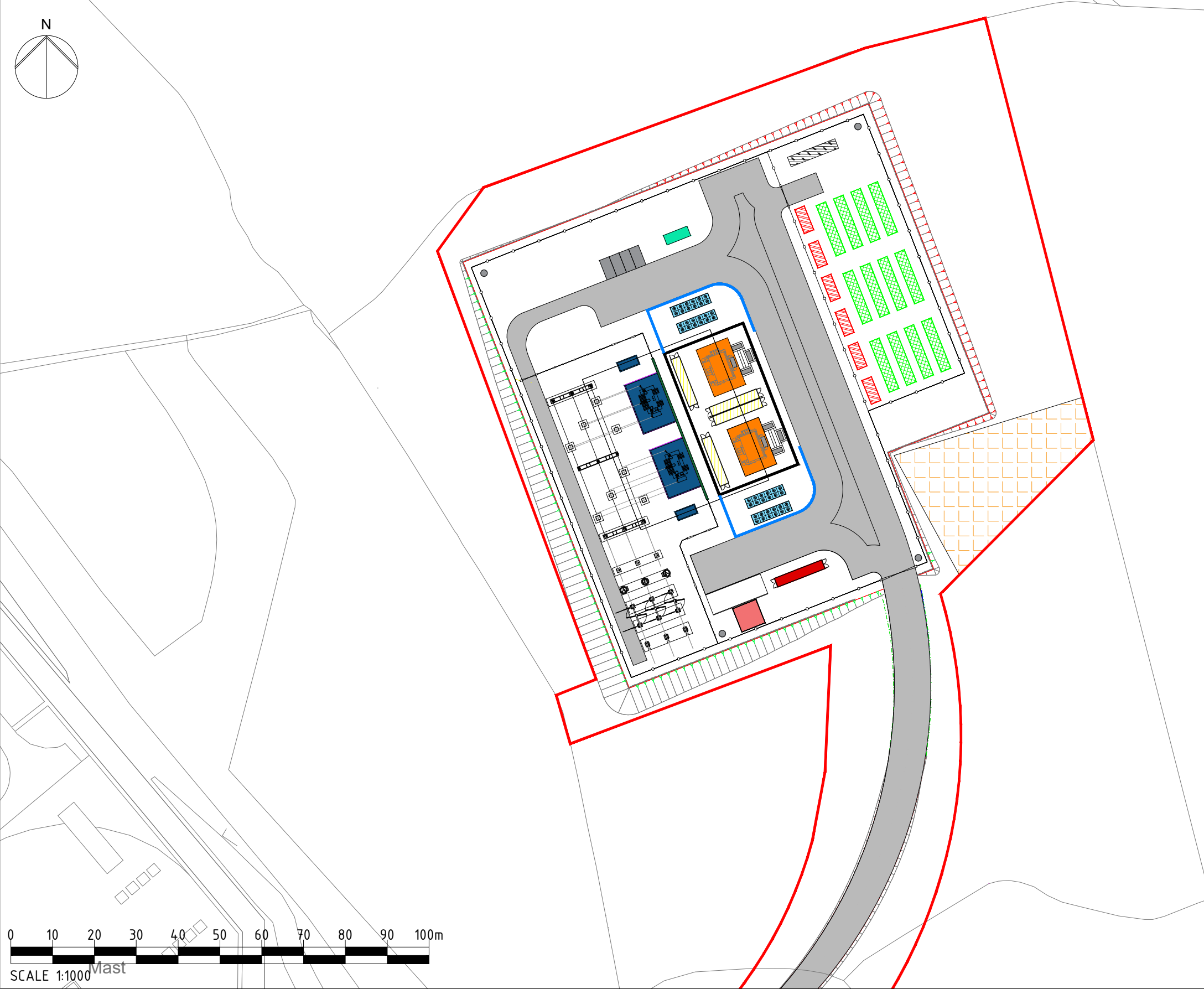
## **7 CONCLUSION**

This Transport Statement has considered the likely impact of traffic generated by the Development on the local transport network. A detailed review of the type and quantity of vehicles associated with each element of the construction project has been provided along with an approximate programme of construction. The route to site for all construction traffic has also been provided.

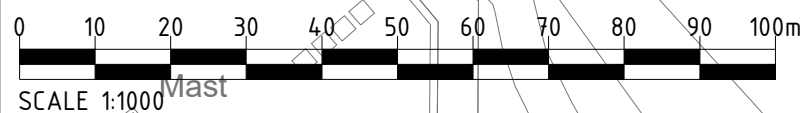
In conclusion the effect of increased traffic during the temporary 18-month construction phase of the Development is low and will not adversely affect transport routes within the vicinity of the Site. During operation the amount of traffic expected to access the site is minimal and would be of negligible effect on the local transport network.

A number of traffic management measures have been outlined which demonstrate how traffic would be managed at the site and on approach routes.

## **APPENDIX A – SITE LAYOUT**



- KEY:**
- SITE BOUNDARY (5.53 Hectares)
  - 2.40m HIGH WELDMESH FENCING
  - BATTERY (12.9m x 2.44 x 2.59m)
  - INVERTER (6.1m x 2.44m x 2.59m)
  - TRANSFORMER
  - LV SWITCH HOUSE (12.9m x 2.44m x 3.0m)
  - E-HOUSE (ENCLOSED IN BUILDING 20.7m x 36.7m x 10.0m TO ROOF PITCH)
  - COOLER (9.6m x 2.4m x 2.5m)
  - PROPOSED TRACK AREAS
  - MAIN CONTROL ROOM (6.1m x 2.44m x 3.0m)
  - ENERGY MANAGEMENT SYSTEM (ENCLOSED IN BUILDING 20.7m x 38.6m x 10.0m TO ROOF PITCH)
  - EMERGENCY DIESEL GENERATOR (6.0m x 6.0m)
  - BUILDING (20.7m x 38.6m x 10.0m TO ROOF PITCH)
  - SWITCHGEAR CONTAINER (12.2m x 2.44m x 3.0m)
  - TEMPORARY LAYDOWN
  - FIRE STOP WALL (36.2m X 0.4m x 10.0m)
  - ABERGELLI CORRIDOR
  - 6m SECURITY COLUMN
  - 4m HIGH WALL



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