REPORT

Transport Statement (with Outline Construction Traffic Management Plan)

Knocknagael: Battery Energy Storage System

Client: Field Knocknagael Ltd

Reference: PC3506-RHD-07-XX-RP-Z-0002
Status: Final/1
Date: 28 June 2024

Royal HaskoningDHV
Enhancing Society Together

HASKONINGDHV UK LTD.

Westpoint
Peterborough Business Park
Lynch Wood
Peterborough
PE2 6FZ
United Kingdom
Mobility & Infrastructure

+44 1733 3344 55 **T**
info@uk.rhdhv.com **E**
royalhaskoningdhv.com **W**

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Subtitle: Knocknagael: Battery Energy Storage System
Reference: PC3506-RHD-07-XX-RP-Z-0002
Status: Final/1
Date: 28 June 2024
Project name: Knocknagael
Project number: PC3506
Author(s): SH

Drafted by: SH

Checked by: PM/ EM

Date: 26.06.24

Approved by: PM

Date: 26.06.24

Classification
Project related

Royal HaskoningDHV

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1 Introduction

1.1 Background

This Transport Statement (TS) with Outline Construction Traffic Management Plan (OCTMP) has been prepared by Royal HaskoningDHV (RHDHV) on behalf of Field Knocknagael Ltd (Field). The TS relates to the construction and operation of a Battery Energy Storage System (BESS) of up to 200 MW with associated infrastructure (including cable route to substation), access and ancillary works including landscaping and biodiversity enhancement. The Proposed Development is located on a parcel of land located to the west of the Knocknagael substation, approximately 8 kilometres (km) southwest of the city of Inverness, Scotland.

This TS is submitted in relation to a planning application to the Scottish Government Energy Consents Unit (ECU). The Highland Council is the local planning and roads authority.

This TS has been prepared in line with the principles of national and local policy and provides a high-level assessment of the quantum of anticipated Heavy Goods Vehicles (HGVs) associated with the Proposed Development. An OCTMP is included within the TS, considering measures to mitigate construction traffic impacts. This TS should be read in conjunction with other supporting documents submitted as part of this planning application.

1.2 Report Scope

Following this introductory section, the structure of the TS is as follows:

- Section 2 reviews relevant national and local policy;
- Section 3 reviews the existing conditions within the vicinity of the application site, including detail of the site location, a description of the surrounding highway network and details of site accessibility;
- Section 4 details the development proposal including vehicular and servicing access arrangements, active and sustainable travel strategy, and a car and cycle parking strategy for construction and operational vehicles;
- Section 5 provides an OCTMP which comprises the anticipated construction traffic generated by the development, delivery routes, management plan and mitigation measures; and
- Section 6 summarises and concludes the report.

2 Local Policy

2.1 Highland Council: Roads and Transport Guidelines for New Developments (May 2013)

This document sets out the Highland Council's requirements for the overall transport requirements for new developments and sets out the requirement that prior to the construction of any new road, the developer should obtain both Planning Permission and Road Construction Consent (obtained with detailed planning permission).

Table 2.1 of the guidance provides a Summary of the Planning Application Supporting Documentation required for inclusion in a Transport Statement/ Assessment. The elements of work required comprise:

- A site location plan;
- A site layout plan showing access arrangements (minimum scale 1:1,250);
- Access Arrangement plans showing details of the access onto the public road including carriageway width, bell mouth radii and visibility splays;
- Details of proposed offsite mitigation including road widening and junction upgrades; and
- General arrangement layout plans of roads, bellmouth, turning heads, in-curtilage parking, service trips, cut and embankment slopes, and drainage.

Section 2.1.5.2 of the guidance sets out the main transport considerations to be addressed in the planning application. The main transportation considerations are associated with the accessibility to the site for all modes of travel, as well as the adequacy of the proposals including the impact of the development on the surrounding public roads. As such, the Highland Council would assess:

- the suitability of the access arrangements for all modes of travel to and within the development;
- the adequacy of the proposals in respect of all relevant modes of transport including the impact of the development on the surrounding public road network;
- the volume and type of vehicular traffic likely to be generated by the Proposed Development, together with its envisaged distribution and impact;
- the proposed access locations, with any restrictions on locations, junction types, sight distances and gradients;
- accessibility within the site for all relevant modes of transport;
- the layout design for new roads, including vertical profile and junction arrangements;
- the safety of the road network and any associated mitigation measures including Road Safety Audit Stage 1 or 2 Reports, as required by the Council;
- location of services, both overhead and underground; and
- flooding and drainage requirements.

Section 2.1.5.2 also considers transport matters external to the site, and include the construction related issues of routing, timing, volume and size, and any problems or restrictions that may be anticipated and the known requirements of any other affected bodes in relation to transport issues.

Section 5.27.4 considers general construction traffic. This section states that where developments are likely to generate significant levels of construction traffic, these trips should be considered as part of the general

design process. Sites which present access issues should be agreed with the Highland Council, such as the use of haul roads and Temporary TROs. In such circumstance, the developer should seek to mitigate the impact of the construction traffic. Where a new development comprises a “special feature” which may have implications on the design of a development or its access arrangements, the developer must discuss the matter with the Highland Council.

It is anticipated that the highest level of traffic associated with the Proposed Development would be during the construction phase, and that operational trips would be negligible over the life span of the development. As such, a TS incorporating an OCTMP has been produced to consider the transport implications of the development. In line with the Highland Council: Roads and Transport guidance, this TS considers all transport elements set out in Table 2.1 and addresses the main transportation considerations including cumulative impacts, as set out in paragraph 2.1.5.2.

2.2 Highland-wide Local Development Plan (April 2012)

The Local Development Plan (LDP) sets out a vision statement and spatial strategy for the Highland area, ensuring that development is “directed to places with sufficient existing or planned infrastructure and facilities to support sustainable developments”.

Chapter 22 “Sustainable Development and Climate Change” notes that “*The Highland area has great potential for renewable energy production and to contribute towards meeting ambitious targets set internationally, nationally and regionally*”.

The LDP acknowledges that “*additional electricity transmission and distribution infrastructure will need to be developed in Highland in order to realise the region’s potential contribution to renewable electricity*”.

The Proposed Development would facilitate this potential for energy production in the Highland area, which would have benefits in tackling climate change and increasing Scotland’s energy security. This TS has been produced to ensure the transport impacts of the construction phase are minimised through appropriate mitigation measures.

3 Existing Highway Conditions

3.1 Introduction

This section of the TS provides an overview of the baseline highway conditions relevant to the application site, describing the site location, surrounding highway network, walking and cycling infrastructure and current local public transport provision, where applicable.

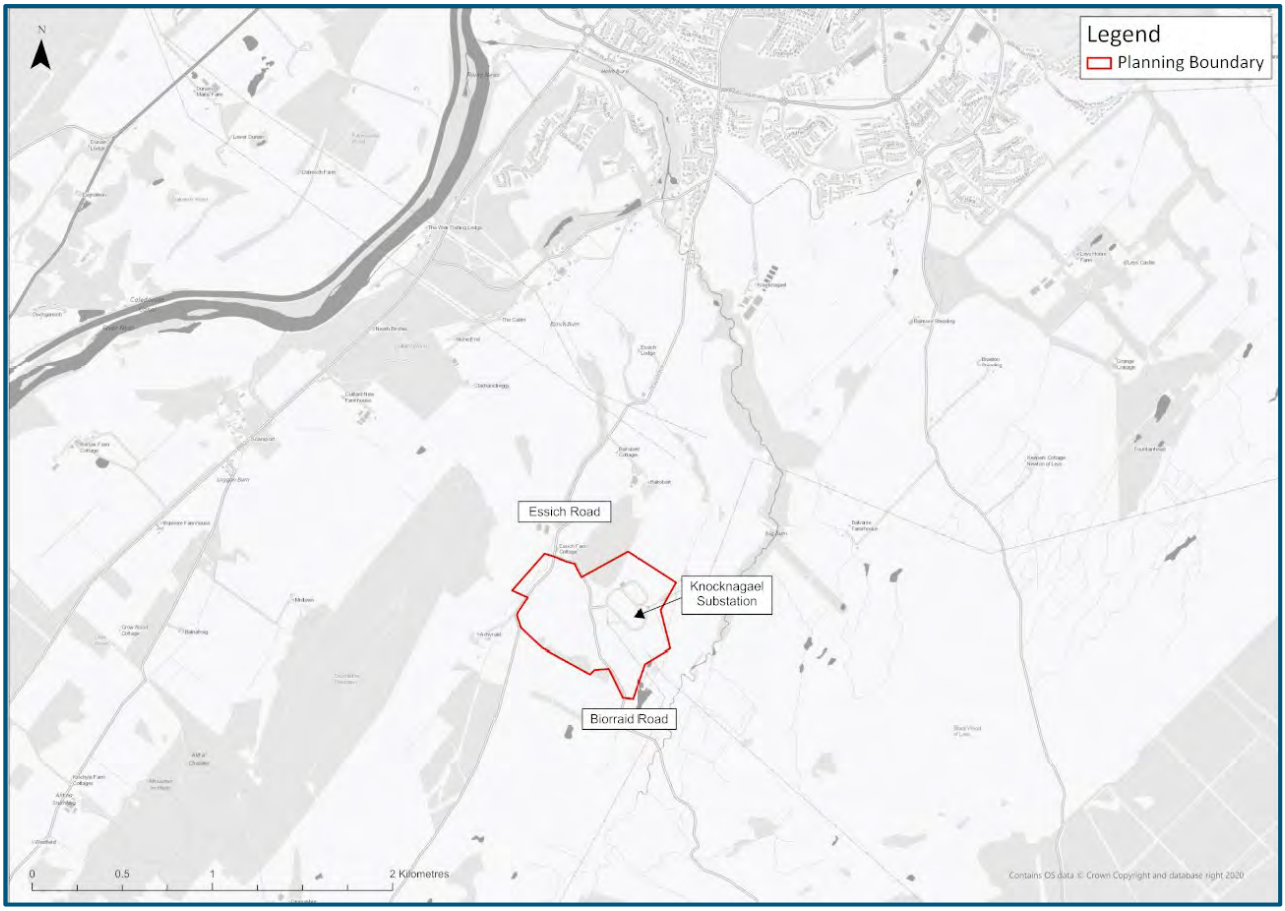
3.2 Site Location and Description

The site of the Proposed Development (hereafter referred to as “the site”) is located approximately 600 m to the south of the settlement of Essich and located opposite the Knocknagael Substation. The site is bounded by Essich Road to the northwest, agricultural land to the southwest and woodland to the south. Biorraid Road extends along the entire eastern boundary of the site and provides access to the settlement of Essich to the north, and the village of Bunachton approximately 10 km to the south of the site. The planning application red line boundary covers approximately 43 ha and includes the existing Knocknagael Substation and adjoining areas of land that are required to accommodate the underground electricity cable connection to the Proposed Development. The Proposed Development is approximately 6 ha in size and comprises pastureland.

In the vicinity of the site, Biorraid Road is a two-way single carriageway with passing places, subject to a 60 miles per hour (mph) speed limit. The existing access to the site is located to the southeast via a gated agricultural track off Biorraid Road. Approximately 650 m to the north of the existing site access, Biorraid Road links to Essich Road at a priority junction. To the northeast, Essich Road provides access to Inverness, and to the south Essich Road links with the B862 to provide access to the village of Dores and Loch Ness to the north, and the village of Achnabat to the south.

The site location plan indicates the area that would contain the main components of the BESS facility, whilst a wider area would be included as part of the application to facilitate the cable connection to the Knocknagael substation and for drainage purposes. A site location plan and planning boundary is provided in **Insert 3.1**.

Insert 3.1: Site Location and Planning Boundary



Source: OS Open data map (accessed 20.03.24)

3.3 Baseline Traffic Conditions

In order to understand baseline traffic conditions and provide an overview of the operation of the existing highway in the vicinity of the site, an Automatic Traffic Counter (ATC) survey was undertaken on the rural lane in the vicinity of the existing gated access to the site. The ATC was commissioned for a seven-day period from Saturday 9th March 2024 – Friday 15th March 2024.

The outputs of the ATC survey are summarised in **Table 3.1** with the full outputs provided in **Appendix A**.

Table 3.1: Summary of ATC on Biorraid Road

Direction of Travel	7-Day Total Number of Vehicles	7-Day Daily Vehicle Average	Weekday Daily Vehicle Average	Weekday 85th Percentile Speed
Northbound	212	30	32	32.2 mph
Southbound	209	30	31	33.8 mph
Two-Way	421	60	63	33.0 mph

The ATC results indicate that over the seven-day survey period a total of 421 two-way vehicles were recorded on Biorraid Road in the vicinity of the southern site access: 212 vehicles travelled northbound towards the settlement of Essich, and 209 vehicles travelled southbound. The ATC results demonstrate that the rural lane is subject to very light levels of daily vehicular traffic.

The ATC survey recorded the 85th percentile speed of 32.2 mph for vehicles travelling northbound and 33.8 mph for vehicles travelling southbound. The recorded speeds are considerably lower than the 60-mph national speed limit in place on the rural lane.

A review of Personal Injury Collisions (PICs) recorded located in the vicinity of the site, revealed no PICs were recorded on Biorraid Road or north of the Essich Road junction. As a result, there are no existing road safety concerns that would be exacerbated by the proposed construction or operational traffic at the site.

4 Development Proposals

4.1 Introduction

This section of the TS details the Proposed Development, access arrangements to the site, vehicle demand during construction and operational phases of the development, as well as describing the proposed car and cycle parking strategy, walking and cycling strategy and committed developments in the wider local area which will be considered for the high-level assessment of the cumulative impact of the Proposed Development.

4.2 Proposed Development

The Proposed Development comprises the installation of a BESS with up to 200MW capacity with associated ancillary infrastructure and two new points of access off Biorraid Road. The proposed new accesses would be designed to accommodate construction and operational traffic and would be used during the construction and operational phases of the development.

The development site is approximately five ha in size. The Proposed Development comprises:

- Battery Energy Storage Units (each storage unit is located on a skid and comprises 30 batteries);
- One transmission operator compound (contains circuit breaker);
- Two transmission operator transformers;
- Up to four auxiliary transformers;
- One SCADA building (housing welfare and site office);
- Two site accesses;
- Security fencing around the site perimeter and lighting;
- Landscaping; and
- Drainage.

The layout of the Proposed Development is located at **Appendix B**.

4.3 Vehicle Access Arrangement

It is proposed that construction and operational vehicles would access the site via two new site access junctions with Biorraid Road. The southern point of access is located in the vicinity of an existing gated access to the site, and the northern point of access is located in the vicinity of a gated access approximately 90 m north of the access to Knocknagael substation. The new site accesses comprise gated accesses with hard standing for 20 m set back from the edge of the carriageway to reduce the amount of sand, gravel and mud transferring from the site onto the public road.

The highest volume of traffic associated with the Proposed Development would be during the construction phase, and operational traffic would be very low. Access arrangements to the site have been designed to accommodate an Abnormal Indivisible Load (AIL) required to deliver two transformers to the site during the construction phase. It is anticipated that the AIL would be the largest vehicle to require access to the site during the operational phase, in the unlikely event that the transformer would require replacement.

It is proposed that the new vehicle access junctions would link to a single lane access track between the site access junctions and the site compound. This single lane access has been designed to accommodate

a maximum legal articulated HGV (required to deliver the batteries to the site). The access has been designed to accommodate a limited number of AIL deliveries during the construction phase. The specification details for AIL deliveries is set out in Wynns' AIL report[1], a copy of which is located at **Appendix C**. Details regarding AILs would be provided in a separate AIL-CTMP which would be provided prior to construction.

Preliminary access design drawings, indicating kerb radii and dimensions of the access junction and internal access road are located at **Appendix D**.

As described in Section 3.3, an ATC undertaken in the vicinity of the southern site access on Biorraid Road recorded 85th percentile speeds, which were significantly lower than the national speed limit (33.8 mph for southbound traffic and 32.2 mph for northbound traffic). The access visibility splays for both the northern and southern points of access have been informed by the recorded speeds and are in line with the Highland Council guidance[2]. Visibility splays for the northern access junction indicate that 4.5m x 90m and 2.4m x 90m visibility can be achieved to the north and south. All land within the visibility envelope is under the client's ownership or within the highway boundary. Visibility splays for the southern access junction indicate that 4.5m x 90m and 2.4m x 90m can be achieved to the north. The visibility to the south of the southern access is constrained by the vertical alignment of the road and width of carriageway. Visibility to the south of the southern access of 4.5m x 67.1m can be achieved for commercial vehicles, with visibility of 2.4m by 60.0m available for all vehicles. All visibility splays exceed Manual for Streets (MfS) standards for observed speeds.

Drawings indicating the visibility splays for both the northern and southern accesses are located at **Appendix E**.

Details of service and delivery vehicles which would require access to the site on a regular basis was provided by Field Knocknagael Ltd. Swept path analysis of key manoeuvres relevant to the proposed access and internal road layout were undertaken for a fire tender, a maximum length articulated vehicle 16.5m in length, and a 250 tonne crane 16m in length. The swept path analysis drawings indicate that large vehicles can be accommodated entering and exiting the site in forward gear, and are located at **Appendix F**.

4.4 Operational Traffic Demand

It is anticipated that operational traffic associated with the Proposed Development would be very low and as a result the impact on the local road network would be negligible. It is estimated that one Light Goods Vehicle (LGV) would require access to the site per month for routine checks and maintenance, and an occasional HGV would require access to replace batteries, as required.

During the operational phase, abnormal loads associated with the incidental removal and replacement of the transformers may be required. Refurbishment and replacement of batteries would be limited to specific time periods as required, resulting in a small increase in the number of maintenance vehicles and a HIAB.

It is reasonable to assume a slight increase in the number of LGV and HGV trips during the decommissioning stage, which would be managed within similar methods to construction of the site.

As such, it is anticipated that a low level of operational traffic would be associated with the Proposed Development. It is anticipated that the highest level of traffic associated with the scheme would be generated during the construction period. As such, Section 5 of this TS comprises an OCTMP which addresses

[1] *Wynns: Abnormal Indivisible Load Access Report for 88.4te Transformer for Proposed Knocknagael BESS Substation Site (June 2024)*
[2] *The Highland Council: Roads and Transport Guidelines for New Developments (May 2013)*

construction traffic generated by the scheme, provides a high-level assessment of the impact of the construction traffic on the surrounding highway network, and sets out a strategy to manage and mitigate the impacts of the construction traffic associated with the Proposed Development.

4.5 Walking, Cycling and Public Transport Strategy

Due to the remote rural location of the site, it is not anticipated that pedestrians would access the site. Should pedestrians require access to the site, access to the site would be available via the proposed north and south vehicular access. Cyclists would utilise the wider road network to access the site and enter and exit the site via the proposed new vehicular access points.

There are no public transport services provided within a three-mile radius of the site. As such, it is not anticipated that visitors or staff would access the site via public transport.

4.6 Parking Strategy

Due to the infrequent operational trips to the site, very limited car and cycle parking will be necessary. Visitors will be directed to designated car and cycle parking located in the vicinity of the welfare compound.

Operational staff will be able to park across the site, as appropriate. Secure staff cycle parking can be accommodated within the welfare compound, as required.

4.7 Cumulative Development

The project team has identified two potential developments in the wider local area that could result in cumulative traffic impacts to the Proposed Development.

4.7.1 Loch na Cathrach Pumped Storage

Loch na Cathrach Pumped Storage (formerly Red John) is a 450 MW hydro scheme, granted consent by Scottish Government ministers in June 2021 (REF: ECU00000728). The project was acquired by Statkraft in December 2023, with construction currently scheduled to occur between 2026 and 2029[3].

The access for all conventional construction vehicles is stated to be "*via the B851 from its junction with the A9 until its junction with the B862, then via the B862 until its junction with the C1064 and then via the site access*"[4].

An outline of the routes that would be undertaken for the Proposed Development are indicated in Section 5 of this TS, and states that construction traffic would access the site via Essich Road which links to the Inverness Southern Distributor Road (A8082). The proposed access route for Loch na Cathrach is hence entirely separate from that proposed for the development within this TS.

Consent for the Loch na Cathrach scheme is dependent on the discharge of a number of conditions, the most pertinent of which are the approval of a CTMP (condition 15), and approval of a Workforce Access Management Plan (condition 16). Condition 15 expects that the CTMP would address "*any and all cumulative traffic impacts of this scheme with any other large-scale construction project*". Condition 16 includes the provision of a 250-space park and ride facility to mitigate the traffic impacts of construction worker trips.

[3] *https://projects.statkraft.co.uk/loch-na-cathrach/*
[4] *Red John Environmental Statement, Volume 2, Chapter 15, Paragraph 15.4.9*

Paragraph 5.131 of the Report to Scottish Ministers regarding the scheme, the document states that "*…it is unlikely that both projects [Loch na Cathrach and Scottish Water proposals] would occur at the same time given the distinct nature of both, and the staged enabling works and preconstruction works needed. However, should they interact, the relevant management plans secured for both pre-construction and the construction phases of the development would ensure that cumulative impact would not occur over these phases. In the case of potential impacts on the transport network, this would be secured via the CTMP*"[5].

The approach of addressing potential cumulative impacts through CTMPs as schemes reach the construction phase has been adopted for this TS.

It is understood that the Loch na Cathrach scheme will require a connection to the National Grid, and the upgrade of Knocknagael substation.. Notably, the application for the Loch na Cathrach scheme did not include the cable connection, and hence it is expected that further consents will be sought to agree the cable route and appropriate mitigation. Until this information is available, it is not possible to assess the impact of constructing the cable route, or comment on the timings of the proposed works.

4.7.2 Knocknagael Substation Extension

It is understood that the Knocknagael Substation will need to be extended to facilitate the Loch na Cathrach scheme. Scottish and Southern Electricity Networks (SSEN) submitted an EIA screening application for an extension to the Knocknagael Substation to the Highland Council in November 2023. The Highland Council determined that the Proposed Development did not constitute EIA development on 10 May 2024.

The submitted screening request stated that construction was anticipated to occur over 32 months, completing in summer 2028. Limited details regarding the substation extension were provided within the screening request from a traffic and transport perspective; for example, it is stated that the access strategy had not yet been determined.

Whilst the screening request makes reference to *"access to the existing substation is from Essich Road"*, this is interpreted to refer to the existing access point off Biorraid Road. Likewise reference to *"A new temporary construction entrance to the Proposed Development off Essich Road located to the south of the existing substation main entrance"* is read to refer to Biorraid Road. It would be expected that when the SSEN proposals come forward that they would take account of the permanent accesses of the Proposed Development.

A commitment was made to produce a CTMP for the scheme in advance of construction.

Notably, the submitted screening request did not consider any cable connections between Knocknagael Substation and the Loch na Cathrach scheme. Further consents will therefore be required to facilitate the cable route, which will need to include consideration of crossing of public roads and necessary mitigation.

4.7.3 Approach to Cumulative Development

Consistent with the two larger scale schemes identified, it is proposed that potential cumulative traffic impacts would be considered at the pre-construction stage, in liaison with the other schemes and the Highland Council. This approach allows the impacts to be determined accurately and appropriate mitigation to be established once detailed information is available to all parties.

The anticipated construction traffic demand shows that the majority of deliveries would be within a six-week period associated with the delivery of stone to the site. In the event of an overlap in the construction works

[5] *Red John, PLI Report, Paragraph 5.131, 16 February 2021*

with other infrastructure schemes in the wider local area, consultation with other parties would be undertaken to avoid simultaneous intensive delivery periods, where practicable.

5 Outline Construction Traffic Management Plan

This section of the TS sets out the anticipated traffic associated with the construction phase of the Proposed Development. The measures proposed to mitigate the impact of the Proposed Development on the local road network are discussed, such as construction vehicle routing and delivery schedules. The roles and responsibilities of the Logistics Manager are also presented.

5.1 Construction Traffic Demand

It is anticipated that the construction phase of the Proposed Development would occur over a 24-month period:

- Year 1
  - Site establishment;
  - Groundworks; and
  - Main civils work (including stone and battery delivery).
- Year 2
  - Electrical installations and cabling;
  - Commissioning, testing and acceptance;
  - Demobilisation; and
  - Landscaping.

The quantum of anticipated deliveries associated with the construction phase has been derived from material quantities set out on the Site Finished Levels Plan 005.4 provided by Field Knocknagael Ltd, located at **Appendix G**. Assumptions which inform this OCTMP, are based on construction traffic and operations from similar sites. A final construction programme which accurately reflects the schedule of deliveries associated with the construction phase would be derived prior to the commencement of activities at the site and included in a final Construction Traffic Management Plan (CTMP).

The typical operating hours of the site during the construction phase (24-month period) would be 07:00 – 19:00 Monday to Friday and 07:00 – 13:00 on Saturdays.

It is anticipated that daily deliveries to the site would peak in Year 1 during the establishment of the site, which include the groundwork and main civils work associated with the construction of the internal roads and stone platform on which the batteries would be located. During the construction phase, HGV traffic on weekdays would peak at a maximum of three per hour for stone deliveries, which equates to six two-way trips per hour, and a total of 36 HGV deliveries (72 two-way trips) per weekday. HGV traffic on Saturdays would peak at a maximum of 36 two-way trips.

Deliveries of stone would typically be undertaken using 10 m long, eight-wheeled tipper trucks with approximately 1,111 vehicle loads of stone required to create the access road and platforms. As such, over an approximate six-week period during Year 1, it is estimated that a total of 2,222 HGV two-way vehicle trips would be associated with stone deliveries to the site.

Battery construction information has been provided by Field Knocknagael Ltd. The site has been designed to accommodate a range of battery systems from different suppliers, who will be selected against a performance specification in a final procurement activity prior to commencement of work at the site. The batteries would be delivered by HGV in skids of 3, 6 or 7 batteries, depending on the supplier.

It is anticipated that early in Year 2, following the completion of the stone platform, maximum length articulated HGVs would deliver the batteries to the site. A total of 1,560 batteries would be delivered on a total of 52 skids, in batches of either three, six or seven batteries per skid. During this phase of construction, it is anticipated that weekday HGV traffic would peak at a maximum of four deliveries per day. Assuming the worst-case scenario of three batteries per skid, a total of 520 HGV trips are required to deliver 1,560 batteries. At a rate of four deliveries per weekday, a total of 130 weekdays (26 weeks) are required for this phase of construction. It is anticipated that the batteries would be delivered at the end of Year 1/ beginning of Year 2.

The total estimated traffic associated with the construction period (24 months) is set out in **Table 5.1**.

AILs associated with the delivery of the transformers are anticipated during Year 1 of the construction phase. It is anticipated that requirements relating to the transportation and delivery of AILs would be addressed through a specific AIL-CTMP, which would be produced post planning consent.

It is not anticipated that street furniture or lining would be installed or removed during the construction phase for access to the site, and any road signs temporarily erected on the public roads would accord with the Traffic Signs Manual[6]. As such, the Proposed Development would generate a low level of traffic during the construction phase.

Due to the scale of the development, on-site car parking for construction staff would be possible within the site compound. Car parking spaces would likely relocate across the site as construction phases progress. Secure cycle parking will be provided within the welfare compound.

[6] *Department for Transport: Traffic Signs Manual, Chapter 8 (2018)*

Table 5.1: Estimated Trip Generation During Construction Phase (Years 1 and 2)

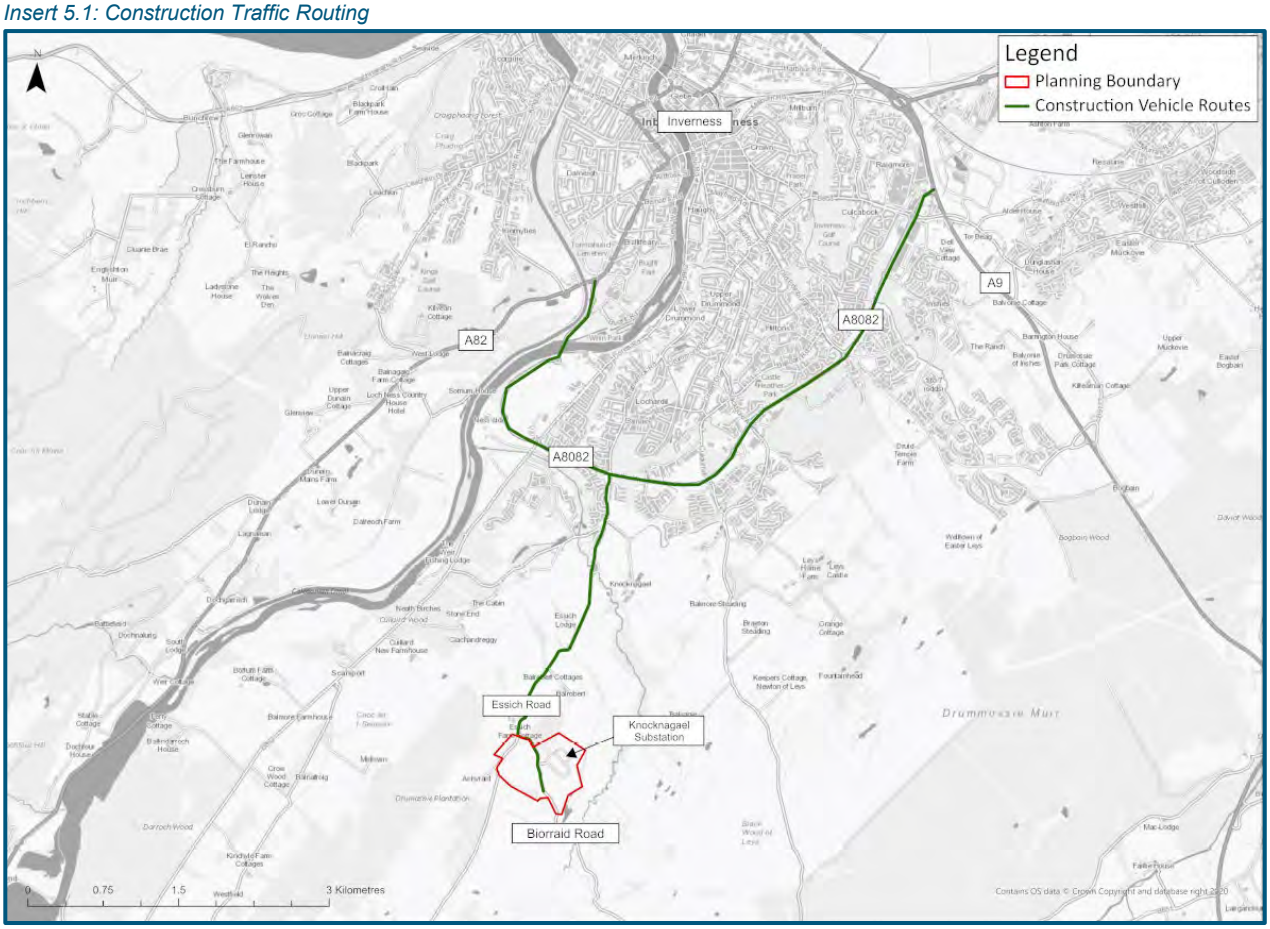
Phase	Task	Vehicle Type	Total Trips	Two-Way Vehicle Trips	Duration (weeks)*
Site Establishment	Site Office	Max Length Articulated HGV	1	2	2
	Equipment and Furniture for Site Office	Small Van Delivery	2	4	2
Main Construction Groundworks, Civil Works associated with Access Road and Platforms	Site Access and Construction of Internal Access Track	Excavator	1	2	6
	Removal of material from site	10m Rigid Tipper Truck	2	4	6
	Stone Delivery	10m Rigid Tipper Truck	1,111	2,222	6
	Generator Delivery	Max Length Articulated HGVs	2	4	5
	Transformer Delivery	Abnormal Indivisible Load	2	4	5
	Battery Storage Units (Inverter/ Transformer Skids)	HIAB	52	104	7
	Battery Delivery (assumption 3 batteries per skid as worst case)	Max Length Articulated HGVs	520	1,040	26
Electrical Installations	Electrical Installations and Cabling	Max Length Articulated HGVs	2	4	17
Commissioning, Testing and Acceptance	Testing	Small Van and Private Cars	10	20	6

Phase	Task	Vehicle Type	Total Trips	Two-Way Vehicle Trips	Duration (weeks)*
Demobilisation	Removal of Equipment from site	Max Length Articulated HGV	1	2	8
Landscaping	Deliveries	Small delivery van	2	4	8
Total Estimated Trips			1,708	3,416	
* Includes contingency to allow for statutory public holidays and unforeseen circumstances (e.g., inclement weather)					

5.2 Construction Vehicle Routing

It is proposed that all HGV deliveries would arrive at the site via Biorraid Road located to the east of the site. Beyond Biorraid Road, HGVs travelling to and from the site would utilise major roads on the road network to reach their destination. As a result, HGVs would access the site via Essich Road which links to the Inverness Southern Distributor Road (A8082). The A8082 links to the A9 trunk road to the northeast, and the A82 arterial route to the north and west, and as such HGVs would utilise the A-road network to bypass the town of Inverness, as indicated in **Insert 5.1**. Final HGV routings would be confirmed in the final CTMP, once suppliers are agreed.

Insert 5.1: Construction Traffic Routing



The distance from the site access on Biorraid Road to the Essich Road / A8082 junction at Lochardil (south of Inverness) is approximately 3.5 kilometres. HGVs travelling at an average speed of 40 mph would cover this distance in approximately 5-6 minutes. The average duration of stone deliveries whilst at the site is 15-20 minutes. As such, it is anticipated that in order to mitigate two-way HGV traffic on Essich Road and Biorraid Road, the maximum number of HGV trips would be limited to three deliveries per hour, as set out in Section 5.1.

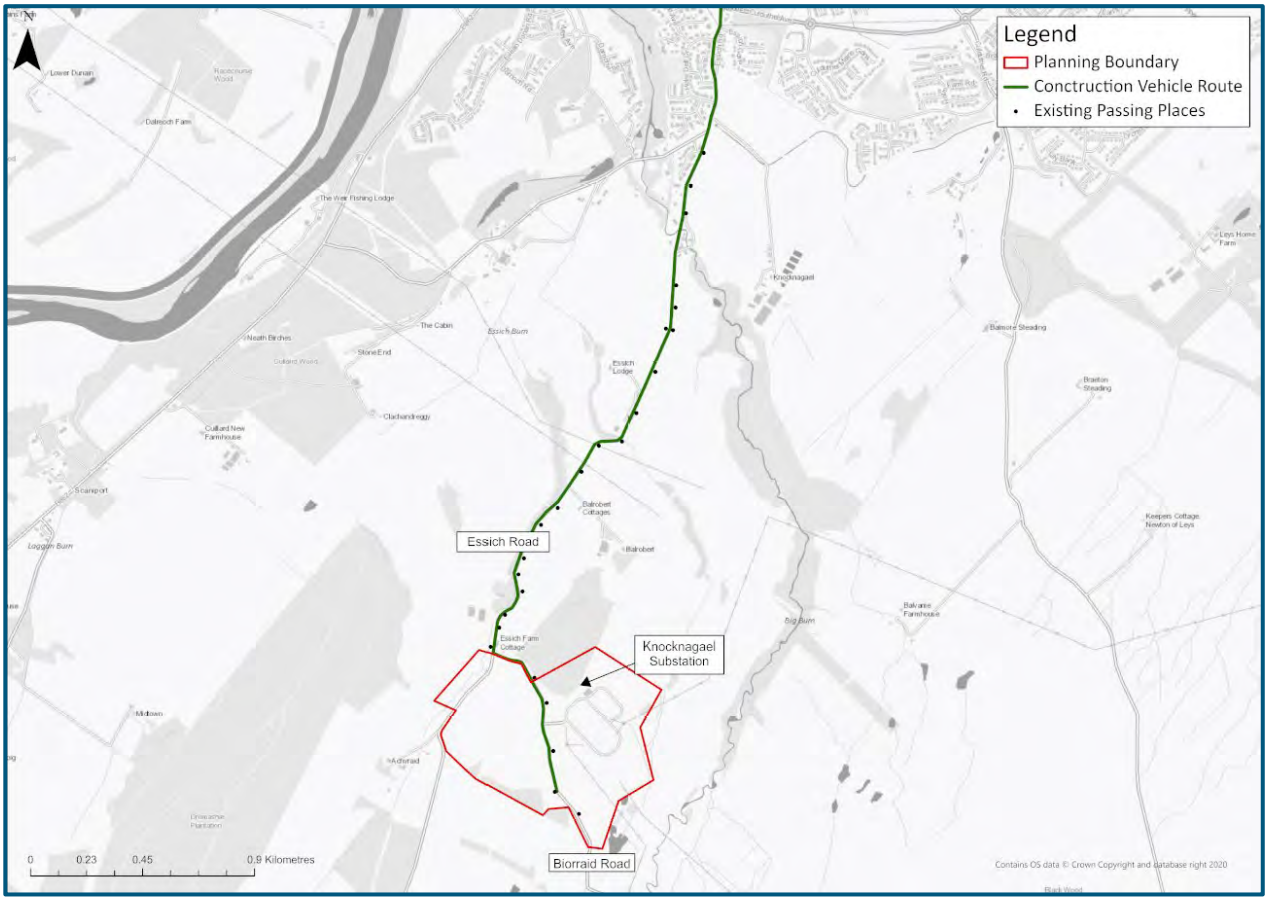
5.3 Construction Traffic Management

Traffic management works would comply with the provisions of the Traffic Signs Manual Chapter 8: Traffic Safety Measures and Signs for Road Works.

It is proposed that the Logistics Manager appointed by the Contractor would be responsible for the provision of traffic management at the site and would coordinate and manage construction traffic and deliveries arriving at and departing from the site during the construction phase of the Proposed Development. The Logistics Manager would set out the arrival time of deliveries at the site, the anticipated duration of stay and departure time. Deliveries would be scheduled throughout the day to reduce the potential "bunching" of trips associated with deliveries to the site during peak construction periods. This would ensure that deliveries are limited to a maximum of three deliveries per hour, providing sufficient time for the stone to be removed from the vehicles and placed before the next delivery arrives.

The existing road network in the vicinity of the site comprises single track rural roads with numerous designated passing places. The distance from the site to the A8082 is 3.6 km, which would take an HGV approximately 5 – 6 minutes to travel this distance. To mitigate potential conflict as a result of two-way HGV movements on the single-track section of Essich Road and Biorraid Road providing access to the site, the Logistics Manager would schedule deliveries and hold outbound vehicles on the site to allow inbound HGVs access to the site. The scheduling of HGVs and management of deliveries would seek to avoid HGVs passing each other on narrow rural roads and make use of all known designated passing places on Essich Road, and the holding areas or rest stops on the A8082, A9 and the wider local road network, where available. Inbound HGV drivers would be expected to stop at the available passing places as indicated in **Insert 5.2** and contact the Logistics Manager to confirm it was safe to proceed to the site.

Insert 5.2: Indicative Location of Passing Places between A8082 and the Site



Access for emergency vehicles would be well maintained at all times. Should an emergency vehicle require access to the site, the Logistics Manager would be responsible for redirecting incoming HGVs to the laybys

located on the rural lane in the vicinity of the site. This arrangement would restrict the number of HGVs on the site during an emergency.

As part of the traffic management associated with the construction phase at the site, the local community would receive prior notification of the commencement of construction works at the site, and ongoing community engagement throughout the construction phase is set out in **Section 5.4** of this report. Furthermore, as set out in **Section 4.4** of this TS, the potential cumulative development traffic impacts would be considered at the pre-construction stage. The contractor would liaise with other schemes and the Highland Council to allow the impacts to be determined accurately, and appropriate mitigation to be established once detailed information is available to all parties.

5.4 Engagement with Local Residents

The Logistics Manager would be responsible for briefing local residents and businesses prior to the commencement of construction work at the site. Notifications relating to the construction phase would comprise:

- the estimated commencement date;
- estimated duration of works;
- anticipated stone delivery schedule;
- operational hours;
- estimated delivery trip schedule; and
- anticipated end date.

The Logistics Manager appointed by the contractor would engage with local residents throughout the pre-construction and construction phase, and should complaints or concerns arise during the construction phase, the Logistics Manager would engage with stakeholders and implement appropriate mitigation as soon as practicable. Further details relating to the roles and responsibilities of the Logistics Manager are set out in **Section 5.6** of this report.

5.5 Maintenance and Repair of Public Roads

The contractor is responsible for any damage to the local road network caused by activities associated with the construction of the development. The contractor would comply with the agreed road maintenance regime in the vicinity of the site access and on local roads. As part of the Roads (Scotland) Act 1984, a “Wear and Tear” Agreement between the contractor and Highland Council would be entered into. Any damage to the existing road network as a consequence of the construction activities would be repaired by the contactor or a financial contribution made to the roads authority to cover the cost of remedial works.

A Coarse Visual Inspection (CVI) would be undertaken prior to the commencement of construction works to establish the current condition of the road. A further CVI would be undertaken following the completion of the construction phase to determine the impact of the construction vehicles on the local roads. The Highland Council would be given sufficient written notice of the intended timing of the CVIs, to facilitate a representative attending, if required.

Before commencing works on the new access junction which links to the public road, the contractor would obtain the consent of the Highland Council as the road authority, in line with Section 56 of the Roads (Scotland) Act 1984.

Temporary signage and damage to the local road network as a result of construction activities associated with the development would be addressed in line with the Roads (Scotland Act 1984) and would be removed and repaired by the contractor.

5.6 Monitoring, Enforcement and Governance

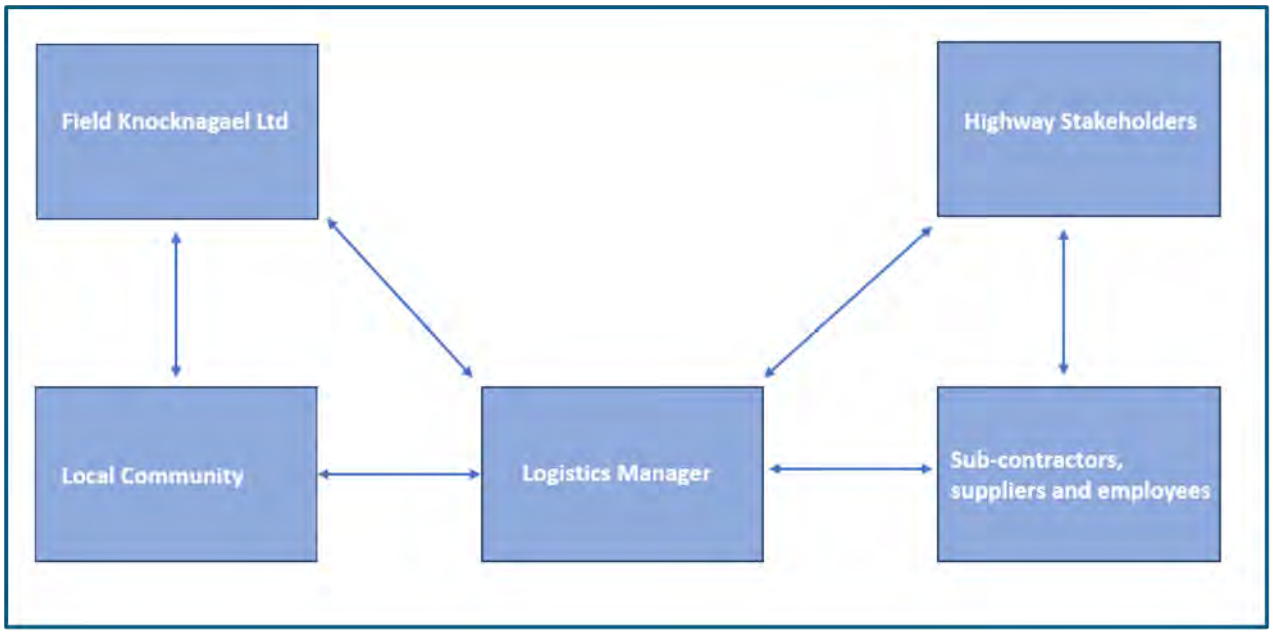
The implementation of the CTMP would be managed by the appointed contractor. The Logistics Manager, appointed by the contractor, would be responsible for the day-to-day organisation and monitoring of construction logistics and traffic management for the site for the duration of the construction phase.

The Logistics Manager's role and responsibilities would comprise:

- Regular liaison with key personnel at Highland Council, local residents and businesses;
- Undertake ongoing monitoring at the site, including the collection of data relating to the number of vehicle movements to and from the site on a daily basis;
- CTMP breaches and complaints; and
- Safety (logistics) related incidents.

The Logistics Manager would be appointed prior to the commencement of construction works, and their contact details provided to the Highland Council and the local community. The role of the Logistics Manager and their relationship with stakeholders is indicated in **Insert 5.3**.

Insert 5.3: Role of Logistics Manager



To ensure that the CTMP is effectively enforced, it is essential to define what constitutes a "breach". For the construction works, the following actions would constitute a breach of the CTMP and require the implementation of mitigation and/or corrective measures:

- Construction workers overspill parking on public roads;
- Construction HGVs not adhering to agreed routes and arrival/ departure times; and
- Construction vehicles being driven inappropriately (e.g., speeding).

Upon receipt of notification of a breach, the Logistics Manager would investigate the circumstances thoroughly and compile a report which would be issued to the Highland Council as the local roads' authority. The roads authority would review the report and request further information or clarification, if required, in order to determine whether a material breach has indeed occurred. The outcome of the review would be communicated to the Logistics Manager. It is the responsibility of the Logistics Manager to report all breach investigations to the road authority.

Should the road authority determine that a material breach has occurred, the following three-stage process would be implemented:

- Stage One – the roads authority highlights a potential breach and requests the Logistics Manger review the data and concerns. The Logistics Manager would then agree the extent of the breach of controls were indeed 'material' and agree an appropriate mitigation or action.
- Stage Two – should a further material breach be identified, the contractor/ supplier would be given a warning and required to provide an action plan to outline an appropriate course of action to rectify the matter, and implement additional mitigation measures, as required.
- Stage Three – should further breaches occur, the contractor/ supplier would be required to remove the offender from the site, and the contractor/ supplier would receive a formal warning. Any further breaches by individuals associated with the contractor/ supplier may result in the implementation of formal dispute procedures set out in the contract.

5.7 Safety and Environmental Standards

This section of the report outlines the measures that would be adopted to maintain high standards of construction safety and limit the disruption to other motorist, local residents and businesses.

5.7.1 Construction Logistics and Community Safety (CLOCS)

The CLOCS Guide[7] draws together evolving and applied best practice drawn from several individual standards, policies and codes of practice to form a single road risk standard. This guidance would be implemented and consistently adhered to by the contractor, suppliers, sub-contractors and fleet operators.

The CLOCS Standard[8] defines the primary requirements on all stakeholders associated with a construction project, to control the construction site and the entire supply chain including the operator of any vehicles servicing the site. CLOCS brings these stakeholders together to work collaboratively to maximise the many commercial and social benefits associated with safer, leaner and greener construction logistics. The CLOCS Standard aims to reduce the risk of harm to the local environment and community from construction vehicle journeys, and would be adhered to by the contractor, suppliers, sub-contractors and fleet operators.

The Logistics Manager is responsible for developing, monitoring and implementing a final CTMP. The contractor shall demonstrate that local community considerations have been considered within the CTMP, and that community engagement is ongoing throughout the construction phase. The final CTMP shall:

- Provide input from operators;
- Have considered, agreed and committed to planned measures where practical;
- Have risk-assessed and specified the safest vehicle routes and identified acceptable reasons for deviation;

[7] *Construction Logistics and Community Safety Guide: Managing work related road risk Version 1.2 (February 2016)*
[8] *CLOCS Standard Version 4 (August 2022): Ensuring the safest, leanest, and greenest construction vehicle journeys https://www.clocs.org.uk/page/clocs-standard*

- Define ‘last mile’ vehicle routes to and from the site, if required;
- Require use of a delivery management system;
- Require competent site access traffic marshals, if required; and
- Maintain the CTMP as a ‘live’ document.

The contractor shall include CLOCS requirements in:

- The procurement strategy;
- Core tender documentation;
- Contracts and/ or purchase order;
- Conditions of contract or equivalent; and
- Site management documentation.

The Logistics Manager’s responsibility is to ensure the compliance of operations against the CLOCS Standard and providing monthly reports on the performance of fleet and site operations, and where non-compliance is identified, provide a remedial action plan to address all key issues.

5.7.2 Fleet Operator Recognition Scheme (FORS)

FORS is a voluntary fleet accreditation scheme designed to improve fleet operator performance in key areas such as environmental performance, safety and operation efficiency. The purpose is to improve the quality of fleet operations and to recognise those operators that achieve environmental, safety and efficiency requirements of the FORS standard[9]. FORS membership would be promoted as part of the procurement process associated with construction vehicle operators, without being mandated.

5.7.3 Vehicle Maintenance

All construction vehicles would be required to be fully serviced and maintained to avoid fuel and oil leaks. All vehicle maintenance would be conducted off-site.

5.8 Site Specific Measures

This section of the report sets out a series of specific traffic mitigation measures that would be implemented by the contractor before works commence, in line with best practice. These measures aim to mitigate the potential impacts of construction traffic associated with the development.

5.8.1 Hours of Operation

The site would operate between:

- 07:00 – 17:00 Monday to Friday; and
- 07:00 – 13:00 Saturday

No construction work or deliveries to site would be undertaken on Sundays and/ or Bank Holidays.

[9] *https://www.fors-online.org.uk/cms/new-standard/*

5.8.2 Construction Worker Travel and Parking

Core construction staff would be encouraged to car share to the site. Sub-contractors would be encouraged to travel to the site in groups. All staff parking would be accommodated at the site.

5.8.3 Non-Motorised Access

Due to the remote rural location of the site, it is not anticipated that pedestrians would access the site. Should pedestrian access to the site be required, access would be available through the vehicular access.

Cyclists requiring access to the site would utilise the existing highway network and access the site through the vehicular access.

5.9 Impact of the Development

Basic traffic conditions on the wider highway network, as set out in Section 3.3 of the TS, have been used in a preliminary assessment of the potential impact of traffic associated with the Proposed Development on the local highway network.

It is anticipated that the highest quantum of trips associated with the Proposed Development are generated during the construction phase. Vehicle trips associated with the construction of the Proposed Development are based on operations at similar sites operated by the client and details of construction traffic demand associated with the Proposed Development is set out in Section 5.1 of the TS and summarised in Table 5.1.

Operational traffic generated by the Proposed Development is nominal and based on operations at similar sites operated by the client. Estimated operational traffic demand is set out in Section 4.4 of this TS. As such, this low quantum of operational trips would not have a detrimental impact on the local highway network.

6 Summary and Conclusions

This TS has been prepared on behalf of Field Knocknagael Ltd, as part of a planning application for the construction and operation of a BESS of up to 200 MW, together with associated infrastructure (including cable route to substation), access and ancillary works (landscaping and biodiversity enhancement). The proposed BESS scheme is located to the west of the Knocknagael Substation, to the southwest of Inverness, Scotland. The proposal comprises two new access junctions off Biorraid Road to the east of the site, linking to a single lane access track. Baseline traffic conditions on Biorraid Road demonstrate a low quantum of traffic, and a review of PICs in the vicinity of the site indicates that there are no road safety concerns that would be exacerbated by the proposed construction traffic associated with the scheme.

Two potential developments in the wider local area which could potentially result in cumulative traffic impacts to the Proposed Development were identified. The potential cumulative traffic impacts would be detailed at the pre-construction stage, in liaison with the other schemes and Highland Council. This approach provides opportunity for more detailed information to be available to all parties, and a more accurate assessment of potential impacts and required mitigation.

This TS addresses the anticipated construction and operational traffic generated during the Proposed Development. The preliminary access design drawings indicate that the proposed new accesses can accommodate a maximum length articulated HGV required to deliver the batteries to the site. The accesses have also been designed to accommodate a limited number of AIL deliveries to the site. An AIL report has been appended to this TS, and further details regarding the AILs would be provided in a separate AIL-CTMP which would be provided prior to construction.

Visibility in line with Highland Council guidance and the recorded speeds on Biorraid Road can be achieved to the north and south of the proposed northern access junction. Visibility in line with Highland Council guidance and the recorded speeds on Biorraid Road can be achieved to the north of the southern access, and visibility in line with recorded speeds on Biorraid Road and MfS can be achieved to the south of the southern access.

Swept path analysis drawings indicate that HGVs can enter and leave the site in forward gear.

Given the highest number of anticipated vehicle trips are associated with the construction phase, Section 5 of this TS comprises an OCTMP for the Proposed Development. Section 5.1 sets out the operational details and estimates the traffic associated with the construction phase of the scheme. It is estimated that a total of 3,416 two-way trips will be associated with the Proposed Development over a 24-month period. A maximum of 36 HGV deliveries (72 two-way trips) per day would be expected, during importation of stone to the site, over approximately a six-week period. The proposed quantum of HGV movements would not have a significant impact on the local road network, and to mitigate the impact of the construction traffic, Section 5.2 indicates the HGV routing required to access the site. HGVs associated with the construction phase will utilise A-roads to access the site, diverting away from the centre of Inverness, and a final routing plan would be confirmed subject to confirmation of suppliers. **Section 5** also addresses:

- the roles and responsibilities of the Logistics Manager, appointed by the contractor;
- the routing of HGVs and the management of delivery vehicle movements during the construction phase (and a detailed schedule of deliveries will be provided in the final CTMP);
- the monitoring, enforcement and governance of HGVs accessing the site;
- a strategy to maintain and repair public roads, if required;
- public engagement measures;

- environmental standards; and
- site specific mitigation measures.

The OCTMP outlines the measures that would be adopted to maintain high standards of construction safety and limit the disruption to other motorists, local residents and business. These measures include compliance with CLOCS requirements, FORS and vehicle maintenance. It also sets out that it is the responsibility of the Logistics Manager to producing, monitoring and implementing the final CTMP which would detail construction phases, delivery management schedules, final risk assessed AIL routing and operational data. A final CTMP would be provided post-planning consent and before commencement of construction.

Given the low quantum of operational traffic generated by the Proposed Development, it is concluded that operational HGV traffic associated with the ongoing routine maintenance at the site would not have a detrimental impact on the local highway network.