TA9.1: Transport Statement

Ben Sca Redesign Wind Farm

Ben Sca Wind Farm Limited

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Basis of Report

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Executive Summary

Ben Sca Wind Farm Limited intends to apply to The Highland Council (THC) for planning permission to amend the consented development, including changes to the turbine dimensions of the consented seven turbines of the Ben Sca Wind Farm (20/00013/FUL) and consented two turbines of the Ben Sca Extension Wind Farm (21/05767/FUL) and minor amendments to the associated infrastructure (the Ben Sca Wind Farm Redesign referred to as the Proposed Development).

The consented Ben Sca Wind Farm application (20/00013/FUL) was supported by an Environmental Impact Assessment Report (EIA Report) (SLR, January 2020), which included a Site Access, Traffic and Transport Chapter (Chapter 12). This is referred to as the 'consented development'. The assessment within the EIA Report considered the impacts associated with nine turbines and so represents a worst case assessment of the possible maximum traffic flows generated during construction.

The following updated assessment sets out the predicted traffic generation for the Proposed Development, as described above, and presents a comparison of the potential impacts against those assessed for the consented development.

Taking account of all the potential traffic and transport effects that were likely to arise due to the construction of the consented development, it was considered that the development would lead to an insignificant adverse effect in terms of site access, traffic and transportation for both assessment scenarios (Scenario 1 where all materials were imported; and Scenario 2 where all aggregate was won onsite from borrow pits).

As Scenario 1 was included to test the very worst case scenario expected, it was also confirmed that a more realistic Scenario 2 would result in a lesser effect on the road network. The onsite borrow pits had been identified to be able to supply the site with the majority of aggregate required to construct the access tracks which would greatly reduce the amount of HGV movements required to construct the wind farm.

As per the consented development, the Proposed Development would be accessed via the existing Ben Aketil Wind Farm track, a purpose-built track linking into the site from the A850 and so the access arrangements would not change from that already consented.

The Proposed Development changes which are likely to result in a change to the traffic generation during the construction phase relate to the additional aggregate required for the increased hardstanding area and the increased lengths of tracks; the increased turbine blade tip height has also been considered in relation to transportation of turbine blades to site. The proposed larger hardstanding areas and the additional lengths of tracks would result in a slight increase to the volume of aggregate required for construction and so the materials calculator has been updated to take account of the increase.

It is confirmed that during an 18 month construction period there would be a key 12 months when aggregates would be transported to site. Assuming a 5.5 day week, the proposed changes to the consented development would not result in an increase in the average daily HGV trip generation, which would remain at 24 trips (48 movements).

Since there would be no additional daily HGV traffic resulting from the Proposed Development it can be confirmed that the assessment of the effects and conclusions would not change from the consented development. As such, it is concluded that no further assessment work is required.

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Acronyms and Abbreviations

AILRS	Abnormal Indivisible Load Route Survey
ALRA	Abnormal Load Route Assessment
ATC	Automatic Traffic Count
CTMP	Construction Traffic Management Plan
DfT	Department for Transport
EIA	Environmental Impact Assessment
IEMA	Institute of Environmental Management and Assessment
MTC	Manual traffic count
PIA	Personal Injury Accident
THC	The Highland Council
RTC	Road Traffic Collision
WTC	Wind Turbine Components

1.0 Introduction

Ben Sca Wind Farm Limited intends to apply to The Highland Council (THC) for planning permission to amend the consented development, including changes to the turbine dimensions of the consented seven turbines of the Ben Sca Wind Farm (20/00013/FUL) and consented two turbines of the Ben Sca Extension Wind Farm (21/05767/FUL) and minor amendments to the associated infrastructure (the Ben Sca Wind Farm Redesign referred to as the Proposed Development).

The site is located approximately 2.5km to the southwest of Edinbane and 7km to the east of Dunvegan in the northwest of the Isle of Skye as shown on **Figure 1.1**.

It is proposed that the consented development is amended as follows:

- 7 Ben Sca turbines (20/00013/FUL) – increase blade tip height by up to 14.9m (from 135m to 149.9m);
- all 9 turbines (Ben Sca 20/00013/FUL and Ben Sca Extension 21/05767/FUL) – increase the rotor size by up to 23m (from 115m to 138m);
- 7 Ben Sca turbines (20/00013/FUL) – increase spacing to improve yield and efficiency, minor adjustment to locations, maximum up to 132m movement from consented positions (Ben Sca Extension turbines remain in same locations as consented) with associated adjustments to the access tracks and crane hardstanding to accommodate the new locations;
- re-location of the onsite substation to the southern area of the site;
- addition of a second temporary construction compound;
- increase of generation capacity from consented 37.8MW to up to 40.8MW; and
- increase operational life from 30 years to 40 years.

The original Ben Sca Wind Farm application (20/00013/FUL) was supported by an Environmental Impact Assessment Report (EIA Report), which included the Site Access, Traffic and Transport Chapter (Chapter 12), included here as **Annex 9.1A**. This is referred to as the ‘consented development’.

The following updated assessment sets out the predicted traffic generation for the Proposed Development, as described above, and presents a comparison of the potential impacts against those assessed for the consented development.

2.0 Consented Development

The transport assessment set out in Chapter 12 of the Ben Sca EIA Report (January 2020), as submitted with the original application for the nine turbines at the Ben Sca Wind Farm is considered to be representative of the seven consented turbines of the Ben Sca Wind Farm and the two consented turbines of the Ben Sca Wind Farm Extension; comprising of nine turbines in total (as set out in Ben Sca Wind Farm Extension EIA Report, November 2021). Therefore, the effects of the consented development are considered to be as per the assessment presented in Chapter 12. The full Chapter 12 is attached as **Annex 9.1A** and is summarised below.

2.1 Assessment Approach and Methods

The effects of the construction phase traffic were assessed against the baseline, with the decommissioning and operational phases scoped out of the assessment.

The assessment was detailed against two worst case assumptions:

- all construction materials were assumed to be sourced from offsite locations (i.e. outside of the application boundary), including all aggregate required for track construction, thus ensuring that the estimated level of trip generation considered the worst case. This is an unlikely situation but was included to ensure a robust assessment; and
- future traffic increases associated with the consented development were measured against existing traffic flows, with no allowance for any growth in baseline traffic, thus ensuring that the highest level of impact was assessed.

A second scenario was assessed where it is assumed that a realistic proportion of aggregate would be won from the onsite borrow pits with all additional construction materials assumed to be sourced offsite. The borrow pit assessment (Technical Appendix 10.3 of Ben Sca Wind Farm EIA Report, January 2020) does confirm that the majority of aggregate required for the construction of the wind farm could be won onsite.

2.1.1 Study Area

The site (as defined by the application boundary) is located within the administrative boundary of THC, approximately 2.5km to the south west of Edinbane and approximately 7km to the east of Dunvegan and is accessed via a purpose built track from the A850 which is situated approximately 365m east of and opposite the road to Greshornish.

The study area defined in the assessment comprises the A850 to the east of the site access junction, past the settlement of Edinbane to the junction with the A87.

The study area defined was based on the sections of road network likely to see the greatest effects associated with traffic generated by the consented development. The study area included the sections of road nearest to the site access junction. As vehicles travel away from the site, they would be distributed across the wider highway network.

Beyond the study area, professional judgement suggested that effects relating to site access, traffic and transport would be unlikely to be significant.

To determine the baseline conditions against which the effects of the consented development were assessed, open data from the Department for Transport (DfT) website[1] was obtained in September 2019. The DfT annual traffic statistics are accrued via 12 hour manual traffic counts (MTCs), continuous data from automatic traffic counters (ATCs), data

[1] https://roadtraffic.dft.gov.uk/#6/55.254/-11.107/basemap-regions-countpoints

on road lengths as well as robust estimation based upon previous data. Additionally, road traffic collision (RTC) data from 2014 to 2018 was obtained from Transport Scotland. The description of the baseline conditions at that time can be seen in paragraphs 12.45 to 12.61 of the EIA Report Chapter 12, in **Annex 9.1A**.

2.1.2 Cumulative Assessment

The following cumulative wind farm sites were agreed with THC (May 2019) and were reviewed at the time to determine whether the construction periods coincide with the consented development construction timetable.

- Glen Ullinish Wind Farm
- Ben Aketil Wind Farm
- Edinbane Wind Farm
- Beinn Mheadhonach Wind Farm

The review of the permitted and pending wind farms (as of May 2019) in combination with the consented development identified that there will be no cumulative effects anticipated as a result of the combined construction impacts.

2.2 Consented Development Future Baseline

The assessment set out in Chapter 12 of the Ben Sca Wind Farm EIA Report (January 2020) included a robust assessment of two different scenarios:

- Scenario 1: All construction materials were assumed to be sourced from offsite locations, including all aggregate required for concrete and track construction and upgrade, thus ensuring that the estimated level of trip generation was considered as a worst case; and
- Scenario 2: All aggregate was assumed to be sourced from the three onsite borrow pits with all remaining construction materials assumed to be sourced from offsite locations.

The estimated material quantities for all elements of the development were set out within the Chapter and the vehicle numbers were calculated, as summarised in Table 2-1. The vehicle numbers were confirmed for heavy goods vehicles (HGVs), abnormal indivisible loads (AILs), with the total including the number of light vehicles generated by construction staff traveling to the site. These numbers were reported for the worst case month.

Table 2-1: Consented Development Trip Generation Summary (Two-Way)

Trips	Scenario 1		Scenario 2	
	HGV/AIL	Total	HGV/AIL	Total
Daily	85	151	25	65
Average Hour	7	13	2	5

2.3 Assessment of Effects

The predicted increases in traffic levels against the baseline levels were calculated and then an assessment of the significance of the effect was made against the criteria set out within the IEMA guidelines[2].

The IEMA guidelines provide two thresholds when considering predicted increases in traffic, whereby a full assessment of impact would be required:

- where the total traffic would increase by 30% or more (10% in sensitive areas); and/or
- where the HGV traffic would increase by 30% or more (10% in sensitive areas).

Taking account of all the potential traffic and transport effects that were likely to arise due to the construction of the consented development, it was considered that the development would lead to an insignificant adverse effect in terms of site access, traffic and transportation for both assessment scenarios (Scenario 1 where all materials were imported; and Scenario 2 where all aggregate was won onsite from borrow pits).

As Scenario 1 was included to test the worst case scenario expected, it was also confirmed that a more realistic Scenario 2 would result in a lesser effect on the road network. Chapter 12 of the EIA Report for the consented development (SLR, 2020) (**Annex 9.1A**), noted that the onsite borrow pits were identified to be able to supply the site with all aggregate required to construct the access tracks which would greatly reduce the amount of HGV movements required to build the wind farm.

[2] Institute of Environmental Management and Assessment (IEMA) 'Guidelines for the Environmental Assessment of Traffic and Movement' (IEMA, 2023)

3.0 Proposed Development

An EIA Screening and Scoping Report (dated 20 September 2023) was submitted to THC for consideration. Section 5.8, Site Access, Traffic and Transport, confirms the likely potential impacts and sets out the approach for the updated traffic and transport assessment of the Proposed Development.

A consultation response was received from Transport Planning, dated 17 October 2023 (also included in THC Scoping Response of 17 November 2023), which confirmed that there was no objection in principle to the use of the previous traffic and transport related assessments to support the planning application for the Proposed Development. It was also confirmed that there was no objection in principle to the scope of works set out in the Screening and Scoping Report (20 September 2023). Reference was made to the requirements as set out in previous advice and planning conditions issued in response to the consented development.

3.1 Design Changes

As per the consented development, the Proposed Development would be accessed via the existing Ben Aketil Wind Farm track, a purpose-built track linking into the site from the A850 and so the access arrangements will not change from that already consented. The study area is shown in **Figure 9.1.1**.

The Proposed Development changes which are likely to result in a change to the traffic generation during the construction phase are summarised as follows:

- Larger turbines – the length of the potential turbine blade to be used for the Proposed Development would be slightly longer than that previously assessed for the consented development. While the number of turbines is not going to change from that consented, the increase in blade tip height requires an updated review of impacts associated with the transport of the wind turbine components (WTC). The Abnormal Indivisible Load Route Survey (AILRS) included with the Balmeanach Wind Farm EIA assessed the route for a Vestas V136 turbine with a blade length of 66.7m. The AILRS is included as **Annex 9.1B**. It should also be noted that the number of vehicles required to deliver the turbine components was determined to be eight. This would result in an additional one vehicle trip per turbine (when compared to the consented development), however the number of delivery vehicles per day would remain the same as assessed for the consented development. As such, no further assessment is included for the abnormal loads.
- Increased hardstanding area – the area required for the crane hardstanding and laydown areas for the proposed turbines is slightly larger than the previously consented area. This is to ensure that the turbines can be constructed safely in accordance with the manufacturer specifications. Please note that the blade storage and crane assembly areas will be temporary additions to the site layout and will be removed and reinstated once the construction works are completed.
- Increased lengths of tracks – the length of track required will also increase slightly due to the minor alterations to the placement of the turbines.
- Second construction compound – this temporary compound will also result in additional aggregates.

The larger hardstanding areas and the additional tracks will result in an increase to the quantities of aggregates required for construction and so the updated materials calculator has been used to assess the increase. This is included as **Annex 9.1C**.

3.2 Updated Baseline

This section provides a brief description of the traffic flow data and injury accident data obtained to provide a more current description of the existing baseline situation.

3.2.1 Existing Traffic Flows

Baseline traffic flows have been obtained using ATCs for two locations. The first was located on the A850 east of the site access from the 28 January to 03 February 2023. The second ATC was obtained between 20 and 26 January 2023 along the A87, approximately 1km from the junction with the A850. Both locations can be seen in **Figure 9.1.2.**

The data from the traffic surveys are provided in **Annex 9.1D**. A summary of the average weekday (07:00 to 19:00) traffic obtained from ATCs is provided in **Table 3-1** and **Table 3-2**. The data includes directional and two-way flows.

Table 3-1: A87 Average Weekday 24 Hour Traffic Flows

Northbound			Southbound			Two-Way		
Total	HGV	% HGV	Total	HGV	% HGV	Total	HGV	% HGV
1,336	20	2%	1,340	24	2%	2,676	44	2%

Table 3-2: A850 Average Weekday 24 Hour Traffic Flows

Eastbound			Westbound			Two-Way		
Total	HGV	% HGV	Total	HGV	% HGV	Total	HGV	% HGV
399	5	1%	400	5	1%	799	10	1%

Table 3-1 shows that the A87 east of the site access junction supports an almost equal number of vehicles travelling both southbound and northbound during an average weekday; HGVs make up 2% of the total traffic on the A87 on an average weekday. Further to this as shown in **Table 3-2**, the flows on the A850 have been recorded to show that there are also similar levels of total traffic in each direction; HGVs make up 1% of the total recorded traffic.

The capacity performance of the A850 and the A87 have been calculated from Design Manual for Roads and Bridges, Volume 5, Section 1 TA 46/97, and compared against the existing 24-hour baseline traffic flows. The spare capacity has then been calculated and presented in **Table 3-3**. The A850 has been calculated to have a theoretical spare capacity of 94% while the A87 has been calculated to have a theoretical capacity of 85%.

Table 3-3: Existing Road Capacity

Road	Baseline Flow (24-hr)	Capacity	Spare Capacity	Spare Capacity %
A850	799	14,891	14,092	94%
A87	2,676	18,360	15,684	85%

3.2.2 Accident Records

A review of the Personal Injury Accident (PIA) records within the study area has been carried out using data obtained from Transport Scotland for the most recent five-year period covering 2018 to 2022. The data are included as **Annex 9.1E** and the accident locations can be seen in **Figure 9.1.3**.

The data includes the location, severity and number of vehicles and casualties involved in each accident; additional details including the vehicle type, weather/road conditions and the potential reasoning for cause of accident have not been provided. The accident analysis is used to inform the review of the proposed route where any deficiencies in the road layout and condition may be identified.

For clarification, those accidents recorded which result in slight injury indicate that the victim was likely to suffer from slight shock with occurrences of sprains or bruises from the accident, whereas a serious accident accounts for breakages, lacerations, concussion, or hospital admittance. **Table 3-4** presents a summary of accident data obtained for the A850.

Table 3-4: Five Year Accident Data Summary (2018-2022)

Location	Severity			No. of Casualties	No. of Vehicles involved	Date
	Slight	Serious	Fatal			
A850/ A87 Junction	1			1	2	06/11/20
Along A850 opposite Skeabost Golf course	1			2	1	14/05/22
Along A850 between Skeabost Bridge & A850/ Glen Bernisdale Road priority junction	1			2	2	29/10/19
Along A850 between Skeabost Bridge & A850/ Glen Bernisdale Road priority junction	1			3	3	01/11/21
A850/ Bernisdale Road priority junction		1		1	1	07/02/20
Along A850 between A850/ Glen Bernisdale Road priority junction & A850/ Park Bernisdale Road priority junction		1		1	1	22/09/18
Along A850 between Treaslane River Bridge and A850/ Park Bernisdale Road priority junction	1			1	1	23/01/19
Along A850 300 meters north of the Treaslane River Bridge	1			2	1	23/01/19
Along A850 near Arnisort Church	1			1	1	09/08/18
Along A850 1.9km southwest of the junction of Ben Aketil Forest Trail (site Access) with A850	1			1	1	23/06/20
Along A850 2km southwest of the junction of Ben Aketil Forest Trail (site Access) with A850	1			1	1	02/02/20
TOTAL	**9**	**2**	**0**	**16**	**15**	

A total of 11 PIA were recorded along A850 within the period considered. Nine of these PIAs resulted in slight injury and two resulted in serious injury. No fatal accidents were recorded within the study area.

Two injury accidents were within proximity of the site access along A850. Both incidents were classified as slight injury accidents and occurred approximately 2km from the priority junction of the site access road with the A850 in the southwestern direction towards Dunvegan.

In both of these accidents located close to the site access, no other vehicle was involved and the incident resulted in slight injury to the casualty. The first incident was recorded on 02 February 2020 and the second was recorded on 23 June 2020. Whereas no clear inferences can be made regarding causative factors, the fact that a single vehicle was involved may relate to a range of factors, to include mechanical issues, human error, technical issues or weather related problems.

4.0 Proposed Development Traffic Generation

The Proposed Development would result in changes to the material quantities required for construction of the wind farm, primarily with an increase to the aggregate required for the longer tracks, the larger areas of hardstanding and the additional construction compound.

The following section comprises a new assessment for the Proposed Development, using the updated material calculation figures, provided as **Annex 9.1C** As with the assessment completed for the consented development, a worst case scenario (Scenario A) is considered where it is assumed that all aggregate would be imported to the site from external sources.

The purpose of the assessment is to establish the potential impact of the Proposed Development in context of the increased area of hardstanding and access tracks now proposed. The increased area of hardstanding and access tracks would require additional aggregate materials compared to the volumes considered within the previous assessment, and therefore additional vehicular trips during construction are anticipated to be required.

4.1 Abnormal Loads

An Abnormal Load Route Assessment (ALRA) was undertaken for the adjacent Balmeanach Wind Farm application and submitted as Technical Appendix 12.1 of the EIA Report in August 2023 (SLR, 2023). The ALRA confirmed that a blade length of up to 66.77m can be safely delivered to the site via the same route previously consented for the Ben Sca and Extension Wind Farm (as shown on **Figure 1.8b**). Some slight widening of the bellmouth junction where the Ben Aketil access track meets the A850 would be required and the full detail of this is included in the ALRA (Technical Appendix 12.1) of the Balmeanach Wind Farm EIA Report. It is confirmed that this required widening is included in the application boundary for the Proposed Development.

Therefore, it has been proven already that the turbine components would be able to be transported to the site, with the minor upgrades already identified to be required for the proposed Balmeanach Wind Farm. No significant effects in regard to the abnormal loads are therefore anticipated for the Proposed Development subject to the implementation of the Construction Traffic Management Plan (CTMP) (an updated draft version of which is provided as **Technical Appendix 9.2**) which would be delivered via a planning condition.

4.2 Baseline Assumptions

4.2.1 Construction Programme

An indicative 18 month construction programme has been prepared and is set out in **Table 4-1**; this is a longer timeline than that considered for the consented development. The main construction activities would take place during a key 12 month period, specifically from month 3 to month 9 and from month 12 to month 16.

Table 4-1: Indicative Construction Programme & Activities

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Site Establishment																		
Access track construction																		
Substation construction																		
Cement (for all concrete)																		
Cabling																		
Erection of turbines																		
Wind Farm Commissioning																		

4.2.2 Aggregate Volumes

Table 4-2 provides a breakdown and comparison of the volumes of aggregate required for the various components of the construction for both the consented development and the Proposed Development.

Table 4-2: Comparison of Aggregate Volumes

Component	Volume of Aggregate (m^3)		Net Balance (m^3)	Percentage Change
	Consented	Proposed		
Excavated Tracks	17326	18236	+910	+5%
Floated Tracks (>1m)	1994	701	-1293	-65%
Existing Track Upgrade	1253	2498	+1245	+99%
Passing Places	1680	0	-1680	-100%
Turning Heads	576	1399	+823	+243%
Turbine Bases - formation only	1800	1772	-28	-2%
Fill above Turbine Bases	10062	11979	+1917	+19%
Crane Pads	25200	25007	-193	-1%
Additional Laydown	2250	0	-2250	-100%
Substation 1	900	1050	+150	+17%
Construction Compound 1	2500	2500	0	0%
Construction Compound 2	N/A	1500	+1500	+100%
Total	**65,541**	**66,642**	**+1,101**	**+2%**

Table 4-2 shows that the Proposed Development will result in a small overall increase of 2% to the aggregate imported to the site during the construction phase.

4.2.2.1 HGV Requirements

The predictions of HGVs from the aggregate volumes are based on the following assumptions:

- One cubic metre can, on average, contain two metric tonnes of aggregate.
- A typical Tipper Truck used for transporting aggregate from a quarry site has a maximum laden weight of 32 tonnes, with a typical maximum capacity of 20 tonnes of aggregate.
- An 18 month programme of construction works. The main construction activities would take place from month 3 to month 9 and from month 12 to month 16.

The figures calculated within the following tables are based on the above assumptions.

Consented Development

Table 4-3 forecasts the number of HGV trips required to complete the consented development.

Table 4-3: Forecast HGV Trips – Consented Development

Component	Volume of Aggregate (m^3)	Equivalent Tonnage	HGV Trips
Excavated Tracks	17,326	34,652	1,733
Floated Tracks (>1m)	1,994	3,988	199
Existing Track	1,253	2,506	125
Passing Places	1,680	3,360	168
Turning Heads	576	1,152	58
Turbine Bases - formation only	1,800	3,600	180
Fill above Turbine Bases	10,062	20,124	1,006
Crane Pads	25,200	50,400	2,520
Additional Laydown	2,250	4,500	225
Substation 1	900	1,800	90
Construction Compound 1	2,500	5,000	250
Construction Compound 2	N/A	N/A	N/A
Total	**65,541**	**131,082**	**6,554**

Table 4-3 shows that the volume of aggregate required for the construction of the consented development will result in approximately 6,554 HGV trips (13,108 two-way movements) across the forecast period of construction. The key activities that require aggregate materials will be concentrated over 12 months, from month three to nine and from month 12 to 16. Based on this 12 month (50 week) period in which the bulk of deliveries would take place, assuming a 5.5 day week (275 working days), this period will see an average daily HGV trip generation of 24 trips or 48 two-way movements.

A typical working day will begin circa 07:00 and conclude circa 19:00, equating to 12 hours; therefore, it is reasonable to forecast an average of two HGV trips (four two-way movements) per hour.

The number of HGVs has been allocated to the proposed construction phases as set out in the indicative 18 month construction programme (**Table 4-1**), in order to determine a more realistic prediction of the likely maximum movements, as shown in **Table 4-4**. The numbers have been applied to the construction activities that will require aggregate materials and it has been assumed that there are four weeks per month, with 5.5 working days per week.

Table 4-4: Consented Development - Aggregate HGVs by Construction Activity (daily, two-way)

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Site Establishment	11	11																
Access track construction			30	30	30	30	30	30	30									
Substation construction						2	2	2	2	2	2							
Erection of turbines												72	72	72	72	72		
Total	**11**	**11**	**30**	**30**	**30**	**32**	**32**	**32**	**32**	**2**	**2**	**72**	**72**	**72**	**72**	**72**	**-**	**-**

Table 4-4 shows that the maximum number of HGVs associated with the transport of aggregate would be seen during the construction of the turbine bases, crane pads and additional laydown areas in months 12 to 16 with 72 two-way HGV movements per day if the consented development were constructed over an 18 month programme.

Proposed Development

Table 4-5 forecasts the number of HGV trips required to complete the construction phase for the Proposed Development, based on the amended infrastructure and updated material calculations (**Annex 9.1C**).

Table 4-5: Forecast HGV Trips – Proposed Development

Component	Volume of Aggregate (m^3)	Equivalent Tonnage	HGV Trips
Excavated Tracks	18,236	36,472	1,824
Floated Tracks (>1m)	701	1,402	70
Existing Track	2,498	4,996	250
Turning Heads	1,399	2,798	140
Turbine Bases – formation only	1,772	3,544	177
Fill above Turbine Bases	11,979	23,958	1,198
Crane Pads	25,007	50,014	2,501
Substation 1	1,050	2,100	105
Construction Compound 1	2,500	5,000	250
Construction Compound 2	1,500	3,000	150
Total	**66,642**	**133,284**	**6,665**

Table 4-5 shows that the volume of aggregate necessary to complete the construction of the Proposed Development would result in approximately 6,665 HGV trips (13,330 two-way movements).

If this level of HGV movements were applied across the same 12 months (or 50 weeks) during which the bulk of deliveries would occur, this would also result in an average of 24 HGV trips per day or 48 two-way movements per day.

A typical working day will begin circa 07:00 and conclude circa 19:00, equating to 12 hours; therefore, it is reasonable to forecast an average of two HGV trips (four two-way movements) per hour.

As above in **Table 4-4,** the aggregate HGV movements for the Proposed Development have also been applied to the relevant construction activities through the proposed 18 month construction period to present a more realistic maximum number.

Table 4-6: Proposed Development - Aggregate HGVs by Construction Activity (daily, two-way)

Activity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Site Establishment	18	18																
Access track construction			30	30	30	30	30	30	30									
Substation construction						2	2	2	2	2	2							
Erection of turbines												70	70	70	70	70		
Total	**18**	**18**	**30**	**30**	**30**	**32**	**32**	**32**	**32**	**2**	**2**	**70**	**70**	**70**	**70**	**70**	**-**	**-**

Table 4-6 shows that the maximum number of HGVs associated with the transport of aggregate to site for the Proposed Development would occur in months 12 to 16, with 70 two-way HGVs per day. This is a decrease of two HGV two-way movements compared to the consented development as shown in **Table 4-4**.

4.2.3 Impact Assessment

Table 4-7 presents the numbers of HGVs anticipated to be generated by both the consented development and Proposed Development in terms of tonnage of aggregate and number of HGV trips.

Table 4-7: Comparison of HGV trips

Development	Volume of Aggregate (m^3)	Equivalent Tonnage	HGV Trips
Consented Development	65,541	131,082	6,554
Proposed Development	66,642	133,284	6,665
Balance	**+1,101m^3**	**+2,202t**	**+111**

A 12 month (50 week) delivery period, assuming a 5.5 day week, would see no change to the average daily HGV trip generation, with 24 daily trips or 48 two-way movements for the Proposed Development, the same as the consented development.

Through a typical working day of 12 hours, the Proposed Development would see an additional 0.3 HGV trips per hour or less than one HGV two-way movements per hour compared to the consented development. This is not considered to be a significant increase.

The application of the aggregate HGVs to the key activities within the proposed 18 month construction programme identified that during the peak months, the two-way HGV movements would reduce by two per day. This confirms that there would not be any increase to the daily HGV movements as a result of the Proposed Development.

Since there would be no additional daily HGV traffic resulting from the Proposed Development it can be confirmed that the impact on the highways network local to the site would be no different to that assessed for the consented development.

The assessment of the consented development, as presented in Chapter 12 (Site Access, Traffic and Transport) of the EIA Report (SLR, January 2020), concluded that all effects resulting from the additional traffic would not be significant. There will be no change to the number of daily HGVs required to construct the Proposed Development.

As such, it can be concluded that no further assessment work is required for the Proposed Development.

4.2.4 Cumulative Impact Assessment

The original cumulative assessment, as agreed with THC in May 2019, has been superseded as a number of additional wind development sites have come forward since 2019 and require inclusion in the updated assessment. The additional sites which require consideration are as follows:

- Glen Ullinish II Wind Farm (application)
- Ben Aketil Repowering Wind Farm (application)
- Edinbane Repowering Wind Farm (scoping)
- Waternish Wind Farm (scoping)
- Beinn Mheadhonach Redesign Wind Farm (scoping)
- Breakish Wind Farm (scoping)

A review of the pending wind farms identifies that there would be no cumulative effects anticipated as a result of the combined construction impacts from all but the Ben Aketil Repowering Wind Farm; since the other wind farms are unlikely to use the same transportation route along the A850.

Both Edinbane Repowering Wind Farm and Waternish Wind Farm may use the A850 route to site, although since these schemes are at scoping no traffic information is currently known.

The traffic associated with the Ben Aketil Repowering Wind Farm worst-case scenario (access option route 1A) would result in an additional 232 HGVs per day during the peak construction period on the A850 (Ben Aketil Repowering EIA Report, Regeneris 2023).

If the construction phase for the Proposed Development was to coincide with the construction phase for the Ben Aketil Repowering Wind Farm then an additional 309 HGVs would be seen per day on the A850 during the peak construction period.

Table 3-3 confirms that the A850 has a spare capacity of 85% and so it is noted that an additional 309 HGVs per day would not have a negative impact on the capacity of the A850.

A framework CTMP has been prepared (**Technical Appendix 9.2**) to outline the mitigation measures that would be suitable to apply during the construction phase. These measures would serve to mitigate any potential cumulative traffic impacts with Ben Aketil Repowering

Wind Farm or any other wind farm developments in the event construction of the Proposed Development and any of the identified cumulative wind farm schemes occur concurrently. Measures include:

- programming of abnormal load movements in conjunction with Police Scotland and the Roads Authorities (THC and Transport Scotland) so as not to occur on the same day; and
- programming of days of specific high density traffic movement (e.g. concrete pour days) so as not to occur on the same day (to be enforced through inclusion as a factor within the CTMP, and to be agreed with Police Scotland and the Roads Authority accordingly).

4.2.5 Summary of Effects

The assessment of the consented development, as presented in Chapter 12 (Site Access, Traffic and Transport) of the EIA Report (SLR, January 2020), concluded that all effects resulting from the additional traffic would not be significant. No significant effects would result for the Proposed Development.

In terms of cumulative wind developments, no significant negative effects are identified on the A850 and the measures outlined in the CTMP will ensure that this is managed.

Annex 9.1A Consented Development Ben Sca Wind Farm EIA Report Chapter 12: Site Access, Traffic and Transport (January 2020)

Transport Statement

Ben Sca Wind Farm Redesign

Ben Sca Wind Farm Limited

SLR Project No.: 405.064982.00001

Annex 9.1B Balmeanach Abnormal Indivisible Load Route Survey (AILRS)

TA9.1: Transport Statement

Ben Sca Redesign Wind Farm

Ben Sca Wind Farm Limited

SLR Project No.: 405.064982.00001

Annex 9.1C Materials Calculator

TA9.1: Transport Statement

Ben Sca Redesign Wind Farm

Ben Sca Wind Farm Limited

SLR Project No.: 405.064982.00001

Annex 9.1D Traffic Count Data

TA9.1: Transport Statement

Ben Sca Redesign Wind Farm

Ben Sca Wind Farm Limited

SLR Project No.: 405.064982.00001

Annex 9.1E Personal Injury Accident Data

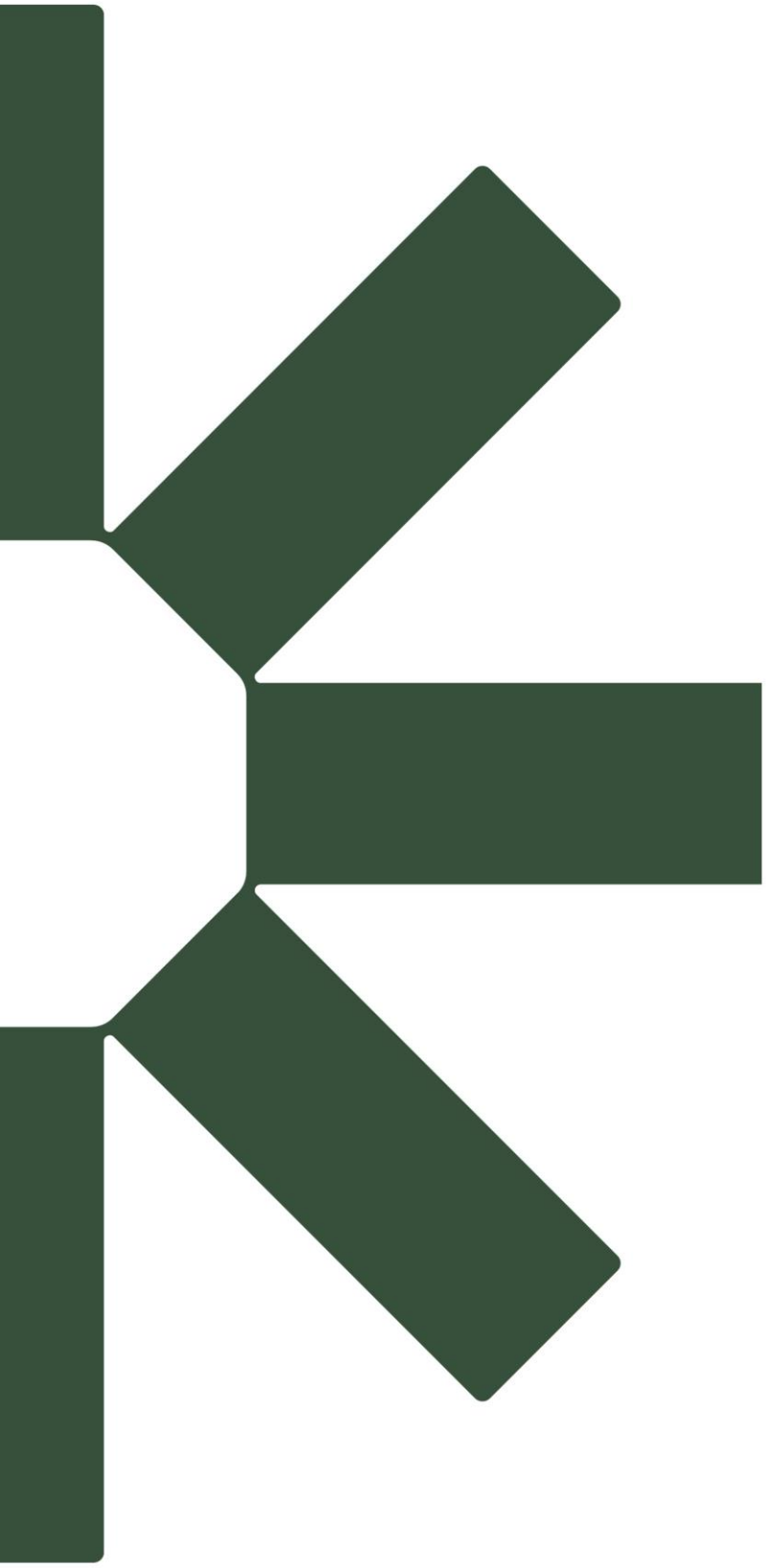
TA9.1: Transport Statement

Ben Sca Redesign Wind Farm

Ben Sca Wind Farm Limited

SLR Project No.: 405.064982.00001

26 March 2024



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