

EARBA STORAGE

A GILKES ENERGY COMPANY

Earba Pumped Storage Hydro Scheme EIA Report

Chapter 17: Transport and Access

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Contents

17. Transport & Access	1
17.1 Executive Summary	1
17.2 Introduction	2
17.3 Scope of Assessment	2
17.4 Legislation, Policy and Guidance	7
17.5 Methodology	8
17.6 Baseline Conditions	11
17.7 Mitigation by Design	16
17.8 Potential Significant Effects	16
17.9 Mitigation	20
17.10 Residual Effects	23
17.11 Conclusion	26

List of Appendices

- Appendix 17.1 – Transport Assessment
- Appendix 17.2 – Abnormal Indivisible Load Route Survey

17. Transport & Access

17.1 Executive Summary

The Proposed Development is located to the south of the A86 Loach Earba and is to be accessed directly from the A86 trunk road via a new priority access junction. The new junction is located to the east of the existing crossing over the River Spean.

The construction period will involve different tasks being undertaken at the Site. These activities will involve different levels of activities, materials and staff and as such, there will be fluctuations in traffic travelling to and from the Site.

During construction, a peak of construction traffic movement occurs and this assessment reviews the effects that this peak month of activity will have on roads located within the study area.

During the construction period, the following traffic will require access to the Proposed Development:

- Staff transport, in either cars or staff minibuses to a residential camp to be founded within the Proposed Development area;
- Light Goods Vehicles (LGV) providing supplies, provisions and deliveries to the construction offices and residential camp;
- Construction consumables such as fuel and oil deliveries made in Heavy Goods Vehicles (HGV);
- Construction equipment, plant and machinery by HGV low loader (or similar);
- Bulk materials such as cement and aggregate (the majority of aggregates will be won from the Site); and
- Abnormal Indivisible Loads (AIL) associated with the High Voltage (HV) transformer and electrical / mechanical equipment and tunnel linings.

The peak of construction activity is expected to occur in Month 39, when there will be 46 two-way HGV movements and 342 cars / LGV movements.

The proposed development would lead to a temporary increase in traffic volumes on the study area during the construction phase. Traffic volumes would fall considerably outside the peak period of construction.

The greatest potential impact would occur along the A86 and A889.

With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of traffic and transport issues. The residual effects are all assessed to be slight or insignificant but as they will occur during the construction phase only, they are temporary and reversible.

17.2 Introduction

- 17.2.1 This Chapter considers the potential effects, including cumulative effects, of the Proposed Development on transport and access during construction and operation. As detailed in Chapter 3: Description of Development, with proper maintenance the Proposed Development should remain functional indefinitely. If the project were to be decommissioned, it is anticipated that the potential effects on transport and access would be equal to or lesser than the construction impacts. As such, a separate assessment of potential decommissioning effects on transport and access is not included in this Chapter. Where likely significant effects are predicted during construction and operation, appropriate mitigation measures are proposed, and the significance predicted residual effects are assessed.
- 17.2.2 This assessment has been carried out by Pell Frischmann. A table presenting relevant qualifications and experience of key staff involved in the preparation of this Chapter is included in **Appendix 1.1 – EIA Specialist Team** of this EIA Report.

17.3 Scope of Assessment

Study Area

- 17.3.1 The study area centred around data collection count sites, likely points of origin for materials to assist in developing a suitable study area.
- 17.3.2 The study area for this assessment is therefore as follows:
- The A82 between Fort William and Fort Augustus;
 - The A86 between Spean Bridge and Kingussie;
 - The A9 between Aviemore and Dalnaspidal; and
 - The A889 between Laggan and Dalwhinnie.
- 17.3.3 The following effects were identified at the scoping stage for consideration in this assessment:
- Direct effects during construction on traffic and transport;
 - Traffic flows in the surrounding area;
 - Local road users; and
 - Local residents.
 - Cumulative effects during construction on traffic and transport.
- 17.3.4 The assessment scenarios used for this topic will be:
- Future Baseline Flows (2029) – which are estimated by applying National Road Traffic Forecast (NRTF) low growth factors to traffic flow information obtained from the Department for Transport (DfT) and Transport Scotland (TS) databases; and

- Future Baseline + Development Flows (2029) – which are estimated by applying the distributed development trips to the future baseline traffic flow information.

Consultation Responses

- 17.3.5 To inform the scope of the assessment for the Proposed Development, consultation was undertaken with statutory and non-statutory bodies. **Table 17.1** summarises the scoping and consultation responses relevant to the Landscape and Visual Assessment and provides information on where and/or how points raised have been addressed in this assessment.
- 17.3.6 Full details on the consultation responses and scoping opinion can be reviewed in Chapter 5: Scoping and Consultation, and associated appendices.

Table 17.1 Consultation Responses

Consultee	Issue Raised	Response/Action Taken
The Highland Council Pre App Response 8 March 2023	Transport Scotland will require to be satisfied that the existing junction and access road layout have the capacity to accommodate HGVs passing each other without blocking back to the trunk road. A CTMP and details of access improvements will also be required. In addition, an Outdoor Access Management Plan and a mitigation strategy is required.	Transport Scotland has been consulted with on the access design and are content with the indicative design. CTMP details are contained in Appendix 17.1: Transport Assessment . An Outdoor Access Management Plan (OAMP) would be delivered by planning condition, noting that no Core Paths are affected by the proposed Development.
The Highland Council Pre App Response 8 March 2023	These proposals do not appear to impact on adoptable local public roads, with access suggested off the A86 Trunk Road directly onto private estate tracks. If that is the case, then feedback should be sought from Transport Scotland on their requirements for considering the implications to their Trunk Road network. If local public roads will be impacted by the proposed works, then the scope of any required Transport Assessment / Transport Statement should be agreed with Highland Council as the Local Roads Authority covering the area before work on that supporting documentation commences.	The scope of the assessment is illustrated in Appendix 17.1: Transport Assessment .
Transport Scotland Pre App Response	The proposed development comprises the development of a Pumped storage hydroelectric scheme on a site approximately 4.2km southeast of Moy Lodge in Tulloch, Roy Bridge. The nearest	Transport Scotland has been consulted with on the access design and are content with the indicative design.

Consultee	Issue Raised	Response/Action Taken
	trunk road to the site is the A86(T), located at the northwest boundary of the site, where it is proposed that site access will be taken from. Information supporting the pre-app states that the forthcoming application will be supported by a Transport Assessment report, Abnormal Load Route Survey and technical figures. Transport Scotland considers this appropriate and will be pleased to comment on the Scoping for these assessments. We note that site access is proposed from an existing junction with the A86(T), currently a single-track road leading to a narrow bridge over the River Spean. It should be noted that, while the access road is a local road, Transport Scotland will require to be satisfied that the existing junction and access road layout have the capacity to accommodate HGVs passing each other without blocking back to the trunk road. We would also state that any improvements to the junction will require to be designed in accordance with CD123 and discussed and agreed with the Area Manager for the A86(T) - Marco Bardelli. Transport Scotland would also request that a Construction Traffic Management Plan be submitted. This should include the likely routing to and from the site and details of any large or abnormal loads. Forecast HGV movements using the trunk road junctions should be explicitly identified.	Forecast traffic movements are provided in Appendix 17.1: Transport Assessment . CTMP details are contained in Appendix 17.1: Transport Assessment .
The Highland Council Scoping Response 27 April 2023	The following paragraphs highlight some principal considerations. There are a number of other large scale developments in the area and you are encouraged to use your understanding of these in assessing your development and the potential for cumulative effects to arise. The EIAR should fully utilise this understanding to ensure that information provided is relevant and robustly grounded.	As detailed in the scoping opinion, cumulative development where planning permission has been granted are included in the assessment.
The Highland Council Scoping Response 27 April 2023	THC Transport Planning will require any application for planning permission associated with this proposal to submit a Construction Traffic Management Plan (CTMP) for the approval of the Planning Authority. A CTMP will normally detail the following issues, however this is not an exhaustive list and the CTMP should be tailored to reflect the issues pertinent to this development: Identification of all	CTMP measures are provided, however no THC roads are affected.

Consultee	Issue Raised	Response/Action Taken
	Council maintained roads likely to be affected by the various stages of the development; Predicted volume, type and duration of construction traffic; Location of site compound, staff parking and visitor parking; Proposed measures to mitigate the impact of general construction traffic and abnormal loads on the local road network following detailed assessment of relevant roads; Details of any traffic management signage required for the duration of the construction period; Measures to ensure that all affected public roads are kept free of mud and debris arising from the development; The developer may also be requested to enter into a Section 96 agreement with the Highland Council to cover any abnormal wear and tear to the Council roads. This will include a requirement for pre and post construction surveys to be undertaken and agreed with the Council and for the provision of a suitable bond; If the development involves any abnormal loads a detailed protocol, route and delivery programme will be required and agreed with any interested parties such as Highland Council, the Police, Transport Scotland and community representatives. The protocol shall identify any requirement for convoy working and/or escorting of vehicles and include arrangements to provide advance notice of abnormal load movements in the local media.	
The Highland Council Scoping Response 27 April 2023	THC Transport Planning would generally expect a Transport Assessment to be submitted with any future planning application and a High National Traffic Forecast be applied. The information below is not exhaustive and should be used as a guide to submitting all relevant information in relation to roads, traffic and transportation matters arising from the development proposals, which should be in the form of a Transport Assessment forming part of the EIAR	Please note Appendix 17.1: Transport Assessment. The study area however is exclusively made of trunk roads and no impact on THC roads is reported.
The Highland Council Scoping Response 27 April 2023	Any requirement for abnormal loads must be identified in the TA (including cranes and construction plan such as wide low loaders, crushing plant etc.) and the types of vehicles/loading and the routes established. A review of the preferred route, to include swept path assessment and inspection and/or assessment of any	A detailed Route Survey has been undertaken and this is presented in Technical Appendix 17.1: Transport Assessment. The study area however is exclusively made of trunk

Consultee	Issue Raised	Response/Action Taken
	structures along the route, shall be undertaken. A trial run to demonstrate the suitability of the abnormal load route may be required (this will likely be conditioned by the consent if it is necessary). If abnormal loads are required, then early direct consultation with the Councils structures section and the Abnormal Load Team is advised.	roads and no impact on THC roads is reported.
Transport Scotland Scoping Response	The thresholds as indicated within the Institute of Environmental Management and Assessment (IEMA) Guidelines for the Environmental Assessment of Road Traffic are to be used as a screening process for the assessment. These specify that road links should be taken forward for assessment if: Traffic flows will increase by more than 30%; or The number of HGVs will increase by more than 30%; or Traffic flows will increase by 10% or more in sensitive areas. between Spean Bridge and Kingussie; and A82(T) between Fort William and Invergarry.	Noted.
Transport Scotland Scoping Response	We also note that base traffic flows will be factored to the peak construction design year using National Road Traffic Forecasts (NRTF) "Low" growth. Transport Scotland considers the above approach to be satisfactory.	Noted
Transport Scotland Scoping Response	It is noted that any impacts associated with the operational phase of the development are to be scoped out of the EIA. We would consider this to be acceptable in this instance.	Noted
Transport Scotland Scoping Response	The SR states that a Construction Traffic Management Plan (CTMP) will be developed as part of the proposed development. This is welcomed and we would ask that a copy of this be forwarded to the Area Manager when it becomes available.	Noted. The CTMP measures are detailed in Appendix 17.1: Transport Assessment.
Transport Scotland Scoping Response	Chapter 14 states that a detailed Route Survey Report (RSR) will accompany the planning application and will set out the mitigation measures required on the route for abnormal load access and the proposed access junction arrangement. Abnormal Loads will access the site from the Port of Inverness via the A9(T), A889(T) and A86(T).	Noted. The Route Survey Report is appended to Appendix 17.1: Transport Assessment.

Consultee	Issue Raised	Response/Action Taken
Transport Scotland Scoping Response	We would add that Transport Scotland will require to be satisfied that the size of loads proposed can negotiate the selected route and that their transportation will not have any detrimental effect on structures within the trunk road route path.	Noted. A weight consultation has been undertaken with Transport Scotland and is appended to Appendix 17.1: Transport Assessment .

Issues Scoped out of Assessment

- 17.3.7 The traffic effects during the operational phase of the proposed development are likely to be insignificant as expected traffic flows will be less than fifteen vehicle movements per day, far below the recognised thresholds for triggering a formal transport assessment. As such, the effects during the operation phase are scoped out of the assessment.

17.4 Legislation, Policy and Guidance

Legislative Context

- 17.4.1 There is no legislation, which is specific to transport assessments, that is required to be considered as part of this assessment.

Policy Context

- 17.4.2 This assessment has been undertaken in accordance with policies outlined in the following plan:
- National Planning Framework 4 (NPF4) (2023).

Technical Guidance

- 17.4.3 This assessment has been carried out in accordance with the principles outlined in the following documents:
- Institute of Environmental Assessment, Guidelines for the Environmental Assessment of Road Traffic (1993);
 - Institute of Environmental Assessment, Environmental Assessment of Traffic and Movement (2023);
 - Institution of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005);
 - Manual for Roads and Bridges (DMRB), LA 104 Environmental Assessment and Monitoring (Revision 1) (2020);
 - Planning Advice Note (PAN) 75 (1995); and
 - Transport Assessment Guidance, (2012).

17.5 Methodology

Desk Study

17.5.1 The desk study included reviews and identification of the following:

- Relevant transport planning policy;
- Accident data;
- Sensitive locations;
- Any other traffic sensitive receptors in the area (core paths, routes, communities, etc.);
- Ordnance Survey (OS) plans;
- Potential origin locations of construction staff and supply locations for construction materials to inform extent of local area roads network to be included in the assessment; and
- Constraints to the movement of AIL through a route survey including swept path assessments.

Field Study

17.5.2 Field surveys were also undertaken and comprised of a Site visit to review the access routes and local road network.

Assessment Methodology

Sensitivity Criteria

- 17.5.3 The Institute of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Impact Assessment' (2005) notes that the separate IEMA Guidelines should be used for characterising the environmental traffic and transport effects (off-site effects) and the assessment of significance of major new developments. Recent guidance published by the IEMA, namely 'Environmental Assessment of Traffic and Movement' (2023) provides an update to the previously used guidance, 'Guidelines for the Environmental Assessment of Road Traffic' (1993) document, that should be used to characterise the environmental traffic and transport effects (off-site effects) and the assessment of significance of major new developments. The guidelines intend to complement professional judgement and the experience of trained assessors.
- 17.5.4 In terms of traffic and transport impacts, the receptors are the users of the roads within the study area and the locations through which those roads pass.
- 17.5.5 The IEMA Guidelines includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement was used to develop a classification of sensitivity for users based on the characteristics of roads and locations. This is summarised in **Table 17.2**.

Table 17.2: Classification of Receptor Sensitivity

Receptor	Sensitivity			
	High	Medium	Low	Negligible
Users of Roads	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures.	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures.	Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads (AIL) and new strategic trunk road junctions capable of accommodating AIL.
Users/ Residents of Locations	Where a location is a large rural settlement containing a high number of community and public services and facilities.	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.	Where a location is a small rural settlement, few community or public facilities or services.	Where a location includes individual dwellings or scattered settlements with no facilities.

17.5.6 Where a road passes through a location, users are considered subject to the highest level of sensitivity defined by either the road or location characteristics.

Magnitude of Effect

17.5.7 The following rules, also taken from the 1993 and 2023 IEMA Guidelines, were used to determine which links within the study area should be considered for detailed assessment:

- Rule 1 – Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles (HGV) will increase by more than 30%); and
- Rule 2 – Include highway links of high sensitivity where traffic flows have increased by 10% or more.

17.5.8 The IEMA Guidelines identify the key impacts that are most important when assessing the magnitude of traffic impacts from an individual development: the impacts and levels of magnitude are discussed below:

- Severance – the IEMA Guidance advises that, “The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.” (Para 3.16). The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that “the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.” (Para 3.17).
- Driver delay – the IEMA Guidelines note that these delays are only likely to be “significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system” (Para 3.20).
- Pedestrian delay (incorporating delay to all non-motorised users) – the IEMA Guidance advises that “pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site.” (Para 3.24). Furthermore, the guidance advises that “...it is not considered wise to set down definitive thresholds. Instead it is recommended that the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect.” (Para 3.26).
- Non-motorised user amenity - the IEMA Guidance advises that, “The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law.” (Para 3.30).
- Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the guidelines. (Para 2.19). As such, this has been used to assess the potential impacts associated with construction activities around fear and intimidation on people in close proximity to the proposed development.
- Road safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidance, those areas of collision clusters would be subject to detailed review.
- Road safety audits – It would be proposed to undertake any necessary Road Safety Audits (RSA) post consent and it is considered that this can be secured via a planning condition.

- Large loads – The movement of the AILs associated with the construction of the proposed development have been considered in full, within a separate route survey assessment, which identifies physical mitigation measures required to accommodate the predicted loads. Additional mitigation in terms of addressing potential impacts on sensitive receptors are included in Technical Appendix 13.1: Transport Assessment.

17.5.9 While not specifically identified as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

Significance Criteria

17.5.10 To determine the overall significance of effects, the results from the receptor sensitivity and magnitude of change assessments are correlated and classified using a scale set out in DMRB LA 104 Environmental Assessment and Monitoring (Revision 1) and summarised in **Table 17.3**.

Table 17.3: Significance of Effects

		Magnitude of Change			
		High	Medium	Low	Negligible
Sensitivity	High	Major	Major/Moderate	Moderate	Moderate/Minor
	Medium	Major/Moderate	Moderate	Moderate/Minor	Minor
	Low	Moderate	Moderate/Minor	Minor	Minor/Negligible
	Negligible	Moderate/Minor	Moderate/Minor	Minor/Negligible	Negligible

17.5.11 In terms of the EIA Regulations, effects would be considered of significance where they are assessed to be Major or Major/Moderate. Where an effect could be one of Major/Moderate or Moderate/Minor, professional judgement would be used to determine which option should be applicable.

Assumptions and Limitations

17.5.12 The assessment is based upon average traffic flows in one-month periods. During the month, activities at the Proposed Development may fluctuate between one day and another and it is not possible to fully develop a day-by-day traffic flow estimate as no contractor has been appointed and external factors can impact upon activities on a day by day basis (weather conditions, availability of materials, time of year, etc).

17.6 Baseline Conditions

Existing Baseline

Pedestrian and Cyclist Networks

17.6.1 A review of Core Paths directly affected by the Proposed Development works has been undertaken. There are no Core Paths located within the development Site or in close proximity to it. The nearest Core Paths are located approximately 6 kilometres (km) to the west.

- 17.6.2 A review of Sustrans' National Cycle Route (NCR) map indicates that NCR 7 Sunderland – Inverness uses part of the A889 between its junction with the A9 and General Wade's Road to the northeast of Dalwhinnie. No other NCR are located on roads forming part of the study area.

Study Area Road Network

A82 (T)

- 17.6.3 The A82 (T) is a two-way single carriageway which forms part of the trunk road network and provides a connection between Glasgow and Inverness, via Fort William. The A82 (T) is maintained by BEAR Scotland and is generally subject to the national speed limit, which reduces when travelling through towns and villages. An advisory speed limit of 40 miles per hour (mph) is recommended along this route for vehicles which are 7.5 T and over.

A9

- 17.6.4 The A9 forms the principal north – south link between Stirling and Inverness. The road is a mix of sections of single carriageway and dual carriageway and is operated by BEAR Scotland on behalf of Scottish Ministers. The road is subject to average speed camera on single carriageway sections, with HGV traffic restricted to a limit of 50mph.

A889

- 17.6.5 The A889 a two-way single carriageway which forms part of the trunk road network and provides a connection between the A9 at Dalwhinnie and the junction with the A86 near Laggan. The A889 is maintained by BEAR Scotland and is generally subject to the national speed limit, which reduces when travelling through Dalwhinnie.

A86

- 17.6.6 The A86 a two-way single carriageway which forms part of the trunk road network and provides a connection between the A9 at Kingussie and the A82 at Spean Bridge. The A86 is maintained by BEAR Scotland and is generally subject to the national speed limit, which reduces when travelling through towns and villages on the route.

Accident Review

- 17.6.7 Road traffic accident data for the five-year period commencing 01 January 2017 through to the 31 December 2021 was obtained from the online resource Crashmap which uses data collected by the police about road traffic crashes occurring on British roads.
- 17.6.8 The statistics are categorised into three categories, namely "slight" for damage only incidents, "serious" for injury accidents and "fatal" for accidents that result in a death. 15 "Slight" and 14 "Serious" accidents occurred on the A86 and A889, these being the two links with closest proximity to the Proposed Development.
- 17.6.9 The majority of accidents on the A86 occurred to the at the sinuous section near Strathmashie or to the west of Murlaggan. Of the recorded accidents, seven serious incidents involved motorcycles or young drivers.

- 17.6.10 HGV traffic was involved in six accidents, four “Slight” and two “Serious”.
- 17.6.11 In general, there are no significant clusters of accidents at any location or high numbers of accidents involving HGVs for example. It is however acknowledged that there has been a reasonably high number of accidents involving motorcycles, which could be attributed to the fact the local road network is used by a high number of tourists, including those undertaking motorcycle touring holidays.
- 17.6.12 Based on the information available, it has been established that there are no specific road safety issues within the immediate vicinity of the Proposed Development that currently require to be addressed or would be exacerbated by the construction of the Proposed Development.

Existing Traffic Conditions

- 17.6.13 Traffic data used in the assessment has been sourced from the following sources:
- A86 West of the Site Access - Department for Transport Count Site (Ref 40848);
 - A86 Spean Bridge - Transport Scotland Database Count Site (Ref 0000ATC01049);
 - A889 North of Dalwhinnie - Transport Scotland Database Count Site (Ref 000000001167);
 - A86 West of Newtonmore - Transport Scotland Count Site (Ref 0000ATC01051);
 - A9 North of Kingussie - Transport Scotland Count Site (Ref 0000ATC00150);
 - A9 South of Dalwhinnie - Transport Scotland Count Site (Ref 000000000148);
 - A82 North of Spean Bridge - Transport Scotland Count Site (Ref 0000ATC01036); and
 - A82 North of Corpach - Transport Scotland Count Site (Ref 000000001035).
- 17.6.14 The locations of the count points are illustrated in Figure 4 of **Appendix 17.1: Transport Assessment**. The traffic data was factored using NRTF low growth factors to create the 2023 traffic flows.
- 17.6.15 The traffic count data allowed the traffic flows to be split into vehicle classes and the data has been summarised into cars / LGV and HGVs (i.e. all goods vehicles >3.5 tonnes gross maximum weight). **Table 17.4** illustrates the 2023 traffic flows.

Table 17.4: 24 Hour Average Daily Traffic Data (2023)

Site Ref	Survey Location	Cars & LGV	HGV	Total
1	A86 Site Access	888	71	960
2	A86 Spean Bridge	2,149	244	2,393
3	A889 North of Dalwhinnie	927	87	1,014
4	A86 West of Newtonmore	758	184	942

Site Ref	Survey Location	Cars & LGV	HGV	Total
5	A9 North of Kingussie	8,126	2,265	10,392
6	A9 South of Dalwhinnie	8,112	2,066	10,178
7	A82 North of Spean Bridge	3,165	772	3,937
8	A82 North of Corpach	4,690	353	5,043

Please note minor variances due to rounding may occur.

Future Baseline

- 17.6.16 Construction of the project is expected to commence in 2026, if consent is granted, and is anticipated to take 64 months, depending on weather conditions and ecological considerations.
- 17.6.17 A review of the construction programme suggests that the peak of construction activities will occur in 2029.
- 17.6.18 To assess the likely effects during the construction and typical operational phase, base year flows were forecast by applying a NRTF low growth factor to the 2023 flows in **Table 17.5**. The NRTF low growth factor for 2023 to 2029 is 1.036.

Table 17.5: 24 Hour Average Daily Traffic Data (2029)

Site Ref	Survey Location	Cars & LGV	HGV	Total
1	A86 Site Access	920	74	995
2	A86 Spean Bridge	2,226	253	2,479
3	A889 North of Dalwhinnie	960	90	1,051
4	A86 West of Newtonmore	785	190	976
5	A9 North of Kingussie	8,419	2,347	10,766
6	A9 South of Dalwhinnie	8,404	2,140	10,544
7	A82 North of Spean Bridge	3,279	799	4,078
8	A82 North of Corpach	4,859	366	5,224

Please note minor variances due to rounding may occur.

- 17.6.19 In the scenario that the proposed development did not proceed, traffic growth will still occur and the links within the study area will experience increased traffic flows resulting from other development pressures, tourism traffic and population flows.
- 17.6.20 A review of sensitive receptors has been undertaken within the study area. **Table 17.6** details the receptors and their sensitivities for use within the following

assessment. A justification for the sensitivity has been provided, based upon the details contained in **Table 17.2**.

Table 17.6: Receptor Sensitivity Summary

Receptor	Sensitivity	Justification
A86 Users	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
A889 Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
A82 Users	Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic.
A9 Users	Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition.
A86 Residents	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
A889 Residents	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
A82 Residents	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
A9 Residents	Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.
Dalwhinnie Residents	Low	Where a location is a small rural settlement, few community or public facilities or services.
Newtonmore & Kingussie Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Spean Bridge Residents	Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.

- 17.6.21 Based on the indicators set out within the IEMA Guidelines, the users of the A86 and A889 and the residents of Newtonmore, Kingussie and Spean Bridge are identified as sensitive receptors in this assessment. These locations will therefore be subject to 'Rule 2' of the IEMA Guidelines which requires a full assessment of effects if the locations are subject to an increase in 10 % of traffic.
- 17.6.22 All other locations within the study area are subject to 'Rule 1' and are assessed if traffic flows (or HGV flows) on road links increase by more than 30%.

17.7 Mitigation by Design

- 17.7.1 The Site access junction has been designed to the appropriate standards to operate in a safe and efficient manner throughout the design life of the project. It will be maintained to ensure that road safety at this location is ensured.
- 17.7.2 To reduce traffic volumes during the construction phase, a residential camp will be established on the Site to accommodate staff engaged in construction activities at the Site. Having staff based at the Site will help reduce the number of trips on the road network.

17.8 Potential Significant Effects

- 17.8.1 This section considers the potential impacts and associated effect significance of the construction, and operation of the Proposed Development based on the typical activities described in **Chapter 2: The Proposed Development**.

Construction Effects

- 17.8.2 The construction period will involve different tasks being undertaken at the Site. These activities will involve different levels of activities, materials and staff and as such, there will be fluctuations in traffic travelling to and from the Site.
- 17.8.3 During construction, a peak of construction traffic movement occurs and this assessment reviews the effects that this peak month of activity will have on roads located within the study area.
- 17.8.4 During the construction period, the following traffic will require access to the Proposed Development:
- Staff transport, in either cars or staff minibuses to a residential camp to be founded within the Proposed Development area;
 - LGVs providing supplies, provisions and deliveries to the construction offices and residential camp;
 - Construction consumables such as fuel and oil deliveries made in HGVs;
 - Construction equipment, plant and machinery by HGV low loader (or similar);
 - Bulk materials such as cement and aggregate (the majority of aggregates will be won from the Site); and
 - Abnormal Indivisible Loads (AIL) associated with the High Voltage (HV) transformer equipment and tunnel linings. Further details of the AIL access

are provided in the Route Survey Report appended to **Appendix 17.1: Transport Assessment**.

17.8.5 The traffic generated during this peak period has been distributed to the study area network as detailed in **Appendix 17.1: Transport Assessment**. The resulting peak traffic has been added to the future year baseline traffic flows (2029) in order to consider the percentage impact that these flows will have.

17.8.6 The resulting traffic impact is summarised in **Table 17.6**.

Table 17.7: 2029 Future Baseline + Construction Peak Traffic Summary

Site Ref	Survey Location	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	A86 Site Access	1262	120	1383	37.2%	62.5%	39.0%
2	A86 Spean Bridge	2303	257	2561	3.5%	1.8%	3.3%
3	A889 North of Dalwhinnie	1041	118	1158	8.4%	30.6%	10.3%
4	A86 West of Newtonmore	970	204	1174	23.5%	7.3%	20.3%
5	A9 North of Kingussie	8573	2361	10934	1.8%	0.6%	1.6%
6	A9 South of Dalwhinnie	8484	2168	10652	1.0%	1.3%	1.0%
7	A82 North of Spean Bridge	3310	799	4109	0.9%	0.0%	0.8%
8	A82 North of Corpach	4905	370	5275	1.0%	1.3%	1.0%

Please note minor variances due to rounding may occur.

17.8.7 The highest level of impact occurs at the Site entrance with an increase of 39%. Traffic impacts at the sensitive traffic receptors of Spean Bridge, Dalwhinnie and Newtonmore / Kingussie are 3.1%, 10.3% and 20.3% respectively. This indicates that further assessment is required on the A86 and A889 as well as at Dalwhinnie and Newtonmore / Kingussie.

17.8.8 A review of the existing road capacity has been undertaken and is summarised in **Appendix 17.1: Transport Assessment**. The results indicate there are no road capacity issues with the combined development and ample spare capacity exists within the trunk and local road network to accommodate construction phase traffic.

- 17.8.9 The results indicate there are no road capacity issues with the addition of the construction traffic associated with the construction of the proposed development and that ample spare capacity exists within the local road network to accommodate construction phase traffic.
- 17.8.10 In accordance with the IEMA Guidelines Rules 1 and 2, detailed assessments have been undertaken on the following receptors:
- Users of the A86;
 - Users of the A889;
 - Residents of Dalwhinnie; and
 - Residents of Newtonmore & Kingussie.
- 17.8.11 The significance of the potential effects has been determined using the rules and thresholds discussed previously. **Table 17.8** summarises the significance on the receptors for the construction phase.

Table 17.8: Overall Construction Phase Effects

Receptor	Severance	Driver Delay	Pedestrian Delay	Non-Motorised Amenity	Fear & Intimidation	Road Safety	Large Loads
A86 Users (Medium Sensitivity)	Minor	Minor	Minor	Minor	Minor	Mode rate	Mode rate
A889 Users (Medium Sensitivity)	Minor	Minor	Minor	Minor	Minor	Minor	Mode rate
Dalwhinnie Residents (Low Sensitivity)	Minor	Minor	Minor	Minor	Minor	Minor	Minor
Newtonmore / Kingussie Residents (Medium Sensitivity)	Minor	Minor	Minor	Mode rate	Minor	Minor	Minor

- 17.8.12 The assessment of significance suggests that the following receptors would experience significant effects, prior to the application of mitigation measures:
- Users of the A86;
 - Users of the A889; and
 - Residents of Newtonmore / Kingussie.

- 17.8.13 It should be noted that the impacts relate solely to the peak of construction activities and that the construction period is short lived and the effects are transitory in nature.

Operational Effects

- 17.8.14 The operational effects associated with the Proposed Development has been scoped out of the assessment as the level of traffic generation is minimal.

Cumulative Effects

- 17.8.15 A review of consented developments in the study area has been undertaken. The consented developments of relevance are Coire Glas Pumped Storage Scheme, Cloich and Dell Wind Farms.
- 17.8.16 The construction of these projects may coincide with the construction activities associated with the Proposed Development and as such, the construction peak traffic flows have been obtained from the respective planning application documents for each application.
- 17.8.17 The cumulative traffic flows have been added to the future baseline traffic and the results are summarised in **Table 17.9**.

Table 17.9: 2029 Future Baseline + Construction + Cumulative Traffic Summary

Site Ref	Survey Location	Cars & LGV	HGV	Total Traffic	Cars & LGV % Increase	HGV % Increase	Total Traffic % Increase
1	A86 Site Access	1262	147	1410	37.2%	45.7%	38.0%
2	A86 Spean Bridge	2303	257	2561	3.5%	1.8%	3.3%
3	A889 North of Dalwhinnie	1041	145	1185	8.4%	23.6%	10.0%
4	A86 West of Newtonmore	970	231	1201	23.5%	6.4%	19.8%
5	A9 North of Kingussie	8573	2361	10934	1.8%	0.6%	1.6%
6	A9 South of Dalwhinnie	8484	2168	10652	1.0%	1.3%	1.0%
7	A82 North of Spean Bridge	3358	926	4284	0.9%	0.0%	0.7%
8	A82 North of Corpach	4953	470	5423	0.9%	1.0%	0.9%

Table 17.9 - please note minor variances due to rounding may occur.

17.8.18 The overall effects will be similar to that reported in **Table 17.6**, with significant effects existing prior to mitigation at the following:

- Users of the A86;
- Users of the A889; and
- Residents of Newtonmore / Kingussie.

17.9 Mitigation

Mitigation During Construction

Construction Traffic Management Plan

17.9.1 The following measures would be implemented through a Construction Traffic Management Plan (CTMP) during the construction phase. The CTMP would be agreed with THC prior to construction works commencing:

- Where possible the detailed design process would minimise the volume of material to be imported to Site to help reduce HGV numbers;
- A Site worker transport and travel arrangement plan, including transport modes to and from the work Site (including pick up and drop off times);
- All materials delivery lorries (dry materials) should be sheeted to reduce dust and stop spillage on public roads;
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway;
- Wheel cleaning facilities may be established at the Site entrance, depending on the views of Transport Scotland;
- Appropriate traffic management measures would be put in place on the A86 to avoid conflict with general traffic, subject to the agreement of the Transport Scotland. Typical measures would include HGV turning and crossing signs and / or banksmen at the Site access and warning signs;
- Provide construction updates on the project website and or a newsletter to be distributed to residents within an agreed distance of the Site;
- Adoption of a voluntary speed limit of 15 mph for all construction vehicles travelling through local villages and towns;
- All drivers would be required to attend an induction to include:
 - A tool box talk safety briefing;
 - The need for appropriate care and speed control;
 - A briefing on driver speed reduction agreements (to slow Site traffic at sensitive locations such as Kingussie, Newtonmore and Dalwhinnie); and
- Identification of the required access routes and the controls to ensure no departure from these routes.

- 17.9.2 Transport Scotland may require an agreement to cover the cost of abnormal wear and tear on the A86 in close proximity to the access junction. Video footage of the pre-construction phase condition of the construction vehicles route would be recorded to provide a baseline of the state of the road prior to any construction work commencing. This baseline would inform any change in the road condition during the construction stage of the Proposed Development. Any necessary repairs would be coordinated with the Roads Authority. Any damage caused by traffic associated with the Proposed Development, during the construction period that would be hazardous to public traffic, would be repaired immediately.
- 17.9.3 Any damage to road infrastructure caused directly by construction traffic would be made good, and street furniture that is removed on a temporary basis would be fully reinstated.
- 17.9.4 There would be a regular road edge review and any debris and mud would be removed from the public carriageway to keep the road clean and safe during the initial months of construction activity, until the construction junction and immediate access track works are complete.

A86 Improvement Works

- 17.9.5 The proposed development will increase traffic flows on the A86, which is narrow in sections over the construction period.
- 17.9.6 To assist with traffic management, it is proposed to offer Transport Scotland financial support to introduce improved measures on the route. These can take the form of enhanced signage, clearance of vegetation / slopes to improve forward visibility and enhanced laybys / passing areas to ease access.
- 17.9.7 It is proposed to offer a financial contribution to a fixed amount to Transport Scotland. This would allow the authority to undertake any planned works early. This goodwill gesture will assist in improving the road network for the benefit of all road users prior to works commencing on Site and will allow Transport Scotland to bring forward its own considered works.

Abnormal Load Mitigation Works

- 17.9.8 An abnormal load Route Survey Report (RSR) highlights a number of constraint points which have been assessed within the report using swept path assessment software. The locations of the constraint points and the swept path drawings are included in **Appendix 17.1: Transport Assessment**.
- 17.9.9 The RSR identifies key points and issues associated with the route that require mitigation works. These works are to be agreed with Transport Scotland and other relevant stakeholders.
- 17.9.10 The abnormal loads mitigation works can be designed to be temporary in nature to enable the restoration to their original condition, if required by Transport Scotland.

Abnormal Load Management Plan

- 17.9.11 Before the abnormal loads traverse the route, the following tasks would be undertaken to ensure load and road user safety:
- Ensure any vegetation which may foul the loads is trimmed back to allow passage;

- Confirm there are no roadworks or closures that could affect the passage of the loads;
 - Check no new or diverted underground services on the proposed route are at risk from the abnormal loads; and
 - Confirm the police are satisfied with the proposed movement strategy.
- 17.9.12 There are a number of traffic management measures that could help reduce the effect of abnormal load convoys.
- 17.9.13 All abnormal load deliveries would be undertaken at appropriate times (to be discussed and agreed with the relevant roads authorities and police) with the aim to minimise the effect on the local road network. It is likely that the abnormal load convoys would travel in the early morning periods, before peak times while general construction traffic would generally avoid the morning and evening peak periods.
- 17.9.14 The majority of potential conflicts between construction traffic and other road users will occur with abnormal load traffic. General construction traffic is not likely to come into conflict with other road users as the vehicles are smaller and road users are generally more accustomed to them.
- 17.9.15 Potential conflicts between the abnormal loads and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:
- On the A86 and A82 where the loads may straddle the centre line, where fast moving oncoming traffic may be encountered, etc.;
 - Where loads turn from the A82 onto the A86;
 - Where traffic turns at a road junction, requiring other traffic to be restrained on other approach arms; and
 - In locations where high speeds of general traffic are predicted.
- 17.9.16 Advance warning signs would be installed on the approaches to the affected road network. Information signage could be installed to help advise drivers of dates and times of movements.
- 17.9.17 The location and numbers of signs would be agreed post consent and would form part of the wider Traffic Management Proposal for the project.
- 17.9.18 The Abnormal Load Transport Management Plan would also include:
- Procedures for liaising with the emergency services to ensure that police, fire and ambulance vehicles are not impeded by the loads. This is normally undertaken by informing the emergency services of delivery times and dates and agreeing communication protocols and lay over areas to allow overtaking;
 - A diary of proposed delivery movements to liaise with the communities to avoid key dates such as local events;
 - A protocol for working with local businesses to ensure the construction traffic does not interfere with deliveries or normal business traffic; and
 - Proposals to establish a construction liaison committee to ensure the smooth management of the project / public interface with the applicant, the construction contractors, the local community, and if appropriate, the police

forming the committee. This committee would form a means of communicating and updating on forthcoming activities and dealing with any potential issues arising.

Construction Staff Travel Plan

- 17.9.19 A Travel Plan for construction staff will be developed to reduce dependency on single occupancy car trips. The Travel Plan will be a contractual requirement for contractors working on the Site and would include the following elements:
- The provision of staff minibus / coach links from railway stations at Roy Bridge, Dalwhinnie and Newtonmore. Links would also extend to Aviemore and Spean Bridge town centres;
 - The use of limited parking spaces at the residential camp. The level of parking will be agreed with Transport Scotland, prior to works commencing;
 - The encouragement for car sharing amongst staff and visitors;
 - The provision of an online shopping / Amazon delivery locker in Aviemore and provision of a dedicated postal link from this to the residential camp to reduce single delivery vehicle trips;
 - Provision of emergency taxi links from the Site to Aviemore and Inverness in the event of family emergency requirements;
 - Subsidised rail tickets for use to get from Inverness / Lochaber and the Central Belt to the minibus pick up areas;
 - Reviewing shift changes to ensure that large numbers of staff movements occur outside peak network times to reduce the impact on school trips etc; and
 - The provision of a staff travel co-ordinator to assist in organising the travel links, reviewing their operation and monitoring compliance with the contractual requirements.

Public Information

- 17.9.20 The Applicant would also ensure information was distributed through its communication team via the project website, local newsletters and social media.

Cumulative Measures

- 17.9.21 Shift changes and abnormal load deliveries could be co-ordinated with other large construction schemes with significant traffic generation in the study area, if required

Mitigation During Operation

- 17.9.22 No additional measures are required during the operational phase.

17.10 Residual Effects

Construction Residual Effects

- 17.10.1 An evaluation of the potential effects of the increase in traffic on the roads, within the study area, used for construction traffic was undertaken. The summary of this assessment is provided in **Table 17.10**.

Table 17.10: Summary of Residual Effects – Construction Phase

Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Severance	CTMP, AIL Transport Management Plan, Signage Strategy, Construction Staff Travel Plan	Via a suitably worded planning condition. The CTMP, AIL TMP and Construction Staff TP will be agreed with Transport Scotland prior to works commencing.	Not significant
Driver delay	CTMP, AIL Transport Management Plan, Contribution to A86 physical works, Signage Strategy and Construction Staff Travel Plan	Via a suitably worded planning condition. The CTMP, AIL TMP and Construction Staff TP will be agreed with Transport Scotland prior to works commencing. The financial contribution for A86 works would be provided to TS, following agreement of a suitable legal agreement.	Not significant
Pedestrian delay	CTMP	Via a suitably worded planning condition. The CTMP will be agreed with Transport Scotland prior to works commencing.	Not significant
Non-motorised user amenity	CTMP	Via a suitably worded planning condition. The CTMP will be agreed with Transport Scotland prior to works commencing.	Not significant

Likely Significant Effect	Mitigation	Means of Implementation	Residual Effect
Fear and intimidation	CTMP and AIL Transport Management Plan,	Via a suitably worded planning condition. The CTMP, AIL and TMP will be agreed with Transport Scotland prior to works commencing.	Not significant
Road Safety	CTMP, AIL Transport Management Plan, Contribution to A86 physical works, Signage Strategy and a Road Safety Audit of the proposed access junction (Stage 1 / 2 RSA)	Via a suitably worded planning condition. The CTMP, AIL TMP and Stage 1 / 2 RSA will be agreed with Transport Scotland prior to works commencing. The financial contribution for A86 works would be provided to TS, following agreement of a suitable legal agreement.	Not significant
Large Loads	AIL Transport Management Plan	Via a suitably worded planning condition. The AIL will be agreed with Transport Scotland prior to works commencing.	Not significant

17.10.2 The assessment confirms the effects would be minor in nature and they would be not significant. The traffic effects are transitory in nature. No long-lasting detrimental transport or access issues are associated with the construction phase of the proposed development.

Operational Residual Effects

17.10.3 There are no operational residual effects associated with the Proposed Development.

Cumulative Residual Effects

17.10.4 The cumulative residual effects are the same as these reported in **Table 17.10**. All residual effects are considered minor and reversible.

17.11 Conclusion

- 17.11.1 The Proposed Development would lead to a temporary increase in traffic volumes on the study area during the construction phase. Traffic volumes would fall considerably outside the peak period of construction.
- 17.11.2 The peak of construction activity is expected to occur in Month 39, when there will be 46 two-way HGV movements and 342 cars / LGV movements.
- 17.11.3 The greatest potential impact would occur along the A86 and A889.
- 17.11.4 With the implementation of appropriate mitigation, no significant residual effects are anticipated in respect of traffic and transport issues. The residual effects are all assessed to be slight or insignificant but as they will occur during the construction phase only, they are temporary and reversible.