

9. TRAFFIC AND TRANSPORT

9.1 Introduction

This Chapter provides an appraisal of the potential effects of vehicle movements associated with the construction and operational phases of the Project on traffic and transport receptors. Vehicle movements to and from the Site will consist of Heavy Goods Vehicles (HGV), Light Goods Vehicles (LGV) and cars. For the delivery of some equipment components, Abnormal Load Vehicles will be required.

9.2 Study Area

The Study Area has been defined by the public road network in proximity to the Site, potential delivery corridors to be used during construction and operational access routes.

9.3 Appraisal Methodology

The specific methodology for the assessment of transport and traffic is based upon the likely impacts of the Project evaluated in accordance with the Institute of Environmental Assessment (now Institute of Environmental Management and Assessment, IEMA) Guidelines¹.

The objective of the assessment is to identify impacts on traffic and transport receptors resulting from the construction and operation of the Project. The traffic impacts of the project have been appraised regarding existing road users, pedestrians, cyclists and other sensitive receptors. The following types of impacts have been assessed:

- Changes in traffic conditions and the potential for delays and congestion;
- Changes to conditions for pedestrians and cyclists;
- Severance, fear and intimidation; and
- Accidents and safety.

IEMA Guidance provides information on how the magnitude of changes in traffic flow should be determined, as shown in **Table 9.1**. This is used to assess the impacts, particularly of construction traffic, on the local highway network.

Table 9.1 Magnitude of Change

Magnitude	Change In Total Traffic	Description
Negligible	<30%	No discernible change in conditions
Minor/low	30 – 60%	Perceptible change in condition
Moderate/medium	60 – 90%	Apparent and noticeable changes to the local conditions
Major/high	>90%	Considerable change in conditions

The IEMA Guidelines also advise on receptor sensitivity criteria which can be used to assess the sensitivity of roads within the vicinity of the Site, as shown in **Table 9.2** below.

Table 9.2 Receptor Sensitivity

Sensitivity	Description
High	Receptors of greatest sensitivity to changes in traffic flow, would include: People whose livelihood depends upon unrestricted movement within their environment including commercial drivers and companies who employ them,

¹ Institute of Environmental Assessment, Guidelines for the environmental assessment of Road Traffic (Guidance Note 1), 1993.

Sensitivity	Description
	local residents, schools and colleges. Accident hotspots would also be considered.
Medium	Traffic flow sensitive receptors, would include: People who pass through the area habitually, but whose livelihood is not wholly dependent on free access. Would also typically include: congested junctions, community services, parks, businesses with roadside frontage, and recreation facilities.
Low	Receptors with some sensitivity to changes in traffic flow: People who occasionally use the road network. Would also typically include: public open spaces, nature conservation areas, listed buildings, tourist attractions, residential roads with adequate footway provision and places of worship.
Negligible	Receptors with very low sensitivity to traffic flows: People not sensitive to transport effects. Would also refer to receptors that are sufficiently distant from the affected roads and junctions.

The IEMA Guidelines advise that detailed assessment should be undertaken on:

- Highway links where traffic flows will increase by more than 30% (or the number of HGVs will increase by more than 30%); and
- Any specifically sensitive areas where the traffic flows have increased by 10% or more.

Where the predicted increase in traffic flows is lower than the thresholds, the IEMA guidelines suggest significance of effects can be stated to be low or not significant and further detailed assessments are not warranted. Peak traffic flows will be identified to assess a worst-case scenario.

9.4 Consultation

A Screening Opinion request was submitted to the Energy Consents Unit of the Scottish Government in August 2021, with additional information submitted on request in February 2022. A response relating to the Associated Development was received in May 2022 which included comments on Traffic and Transport, as detailed below:

“Given the short duration of peak construction traffic flow and the likely level of traffic required no significant effects on local road users are likely. Due to the nature of the project, operational traffic will be infrequent as access will most likely be required for inspection and maintenance. Thus, operational traffic related noise is not likely to be significant. There may be a significant cumulative increase in HGV numbers from other developments for a short duration of 1 to 3 months. Operational and cumulative traffic and transport impacts will be managed through a construction traffic management plan to be agreed with Argyll and Bute Council. Significant cumulative impacts on total traffic flow and numbers of light goods/cars are not likely” (Energy Consents Unit, May 2022).

The consultation response above has been considered as part of the assessment for the Traffic and Transport chapter.

A Screening Opinion request was submitted to Argyll and Bute Council in August 2021. A response relating to the Proposed Development was received in February 2022 which included comments on Traffic and Transport, as detailed below:

“Traffic and Transport; (A Transportation Plan will be required for routing of traffic associated with transporting any large plant and construction materials)”

A routing assessment is provided in **Annex Q**.

9.5 Access

During the construction phase, there will be a requirement for access to, and egress from the Project by heavy goods vehicles (HGVs) and light traffic.

Transportation of the transformer will be from Campbeltown Harbour where it will have arrived by sea. It will then follow the A83 before taking the Cross Kintyre Haul Road (CKHR) to the project Site. Maintenance work will be required to facilitate use of the haul road and this will be confirmed once a Contractor is selected. Any widening or upgrades will be subject of a separate planning application.

An initial routeing report has been commissioned by SSEN Transmission, available in **Annex Q**. Further information on routeing will be considered once the transformer supplier and haulier are selected by SSEN Transmission.

Cars and LGVs will follow the A83 and then turn east onto the B8001 then the B842. Access for all other construction vehicles for the works will be via the 23.5 km long Cross Kintyre Haul Road (CKHR) which starts at the hamlet of Killean on the A83. Vehicles will remain on the CKHR until they reach the Cour Estate access track, which was built for the existing Crossaig substation.

New access tracks are required for the Proposed Development which will measure approximately 660 m in length (see **Figure 1.1**).

A Construction Traffic Management Plan (CTMP) will be submitted post application as part of the discharge of planning conditions.

For the Associated Development, a temporary access track 134 m long will connect the existing private forestry tracks to the northern most temporary tower and a temporary access track 22.7 m long will be installed to connect existing private forestry tracks to the third most southerly proposed temporary tower. A new section of permanent access track approximately 225 m long connecting the Crossaig North substation to the southern most proposed permanent (terminal) tower and a 25 m long track connecting the northern most proposed permanent (angle) tower to the existing track are also required.

9.6 Baseline

Baseline traffic flow conditions on the construction traffic route were established using publicly available information published by the Department for Transport (DfT). The baseline traffic flows have informed the analysis to determine the impact of the Project on the road network.

The principal measurement considered in this study is the Average Annual Daily Flow (AADF)². Traffic count data is available along the Project construction route, the nearest being on the A83 just before the turning for the B8001 (site ref. 77107). The AADF of vehicles³ at these points is shown in **Table 9.3** below.

Table 9.3 Average Annual Daily Flow

Site	Year	Count Method	Pedal Cycles	Two wheeled motor vehicles	Cars and Taxis	Buses and Coaches	Light Goods Vehicles	Heavy Good Vehicles	All motor vehicles
A83 (north of junction with B8001) Site ref. 77107	2021	Dependent on a neighbouring counted link	0	0	1311	34	647	249	2241

² An AADF is the average over a full year of the number of vehicles passing a point in the road network each day.

³ Department for Transport – Manual Count Points Data [online] Available from: <http://roadtraffic.dft.org.uk> Accessed on 13/12/2022

For the purpose of the assessment, impacts are presented for HGVs and LGVs. **Table 9.3** presents two-way movements in both directions. The following number of two-way return traffic movements are assumed i.e., half the number of two-way movements in both directions:

- HGVs: 125⁴ two-way return movements, comprising of HGV movements only; and
- LGVs: 1,992 two-way return movements, comprising of two wheeled motor vehicles, cars and taxis, buses and coaches and light goods vehicles.

9.7 Road Traffic Collision Assessment

The CrashMap website, which provides publicly available data from Police reports via the Department for Transport, was reviewed to determine whether there have been any 'serious', 'fatal' or 'slight' road traffic collisions (RTCs) in the last five years for roads in proximity to the Site. 'Serious' RTCs are those in which result in hospitalisation of one or more of the parties involved. 'Fatal' RTCs are those which one or more parties' dies within 30 days as a result of injuries sustained. 'Slight' RTCs are those which are reported, but do not require hospitalisation.

From Campbeltown leading to the junction at Killean there are six 'serious', six 'slight' and one 'fatal' records. The fatal record appears to have occurred at a junction.

From the A83 to the north near the B8001 junction, there is one 'serious' and four 'slight' records.

9.8 Construction Traffic

9.8.1 The Project

The Project will be constructed over a 30-month period. Forestry felling works will be required prior to the start of works to provide suitable working areas for construction. This work is likely to commence several months in advance of substation earthworks / construction and has therefore been included within this assessment. No traffic movements on public roads are anticipated with regards to peat excavation on the project.

The estimated number of vehicle movements during construction, including both light and heavy vehicles, is summarised in **Table 9.4**. **Table 9.5** provides an estimate of vehicle movements per month for the Project.

Table 9.4 Projected HGV Trip Generation During Construction Phase

Construction Task	Vehicle Type	Approximate No. of Loads
HGV		
Forestry Removal	Timber lorry, low loader, fuel lorry	94
Earthworks Substation Platform	20T Tipper lorry	2547
Substation Access Tracks	20T Tipper lorry	125
Earthworks Site Compound	20T Tipper lorry	569
Concrete for all work	Concrete wagon (6m ³ carry capacity)	463
Building & External civils deliveries (steelwork, cladding, drainage, fencing etc)	HGV Trailer	114
Electrical equipment deliveries	HGV Trailer	238

⁴ Rounded to the nearest whole number

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Construction Task	Vehicle Type	Approximate No. of Loads
Transformer delivery	Abnormal indivisible load	2
Car/ Light Goods Vehicle (LGV)		
Personnel to and from site	Car/ Light Goods Vehicle	26,400
Total No. of HGVs and LGVs (Two-way return movements)		30,431

Table 9.5 Monthly Estimate of Construction Vehicle Numbers for the Project

Task	Month																								Total		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Months 25 to 30	
Forestry Operations	24	24	23	23																						94	
Earthworks Platform							425	425	425	424	424	424														2,547	
Earthworks Site Compound			285	284																						569	
Access Tracks					63	62																				125	
Concrete													100	100	93	85	85									463	
Building/ Civils work														20	20	20	18	18	18							114	
Electrical Equipment																		25	25	25	25	25	24	22	67 total	238	
Transformer																						2			2		
Total HGVs (Two-way return movements)	24	24	308	307	63	62	425	425	425	424	424	424	100	120	113	105	103	43	43	25	25	27	24	22	67 total	4,152	
Car/ Light Goods Vehicle	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880	880 per month	26,400
Total Vehicles (Two-way return movements)	904	904	1188	1187	943	942	1305	1305	1305	1304	1304	1304	980	1000	993	985	983	923	923	905	905	907	904	902	904	30,552	

The Project considers both the Proposed Development and Associated Development. The monthly maximum two-way return HGV movements during construction is 425 for a period of six months during earthworks. This equates to approximately 19 HGV return movements per day (based on 22 working days per month). This represents a 15 % increase in the average number of HGVs on the A83 per day for the six months during earthworks. For the two months during earthworks for the site compound, the increase in HGV movements will be 11% and for the remaining months of construction the increase will be < 4%.

In terms of car and LGV movements construction will result in approximately 880 movements each month, assuming an even distribution across the construction period. This would result in approximately 34 two-way return movements per day (assuming 26 working days per month), resulting in a 1.7% increase in the number of cars/LGVs on the A83. This is assumed for the A83 to the north of the junction with the B8001 (Redhouse Junction). After this point cars and LGVs will turn east onto the B8001 then the B842.

Considering HGV and cars/LGVs combined the maximum number of monthly two-way movements is approximately 1,305 during months 7 to 12 which equates to 59 two-way return movements per day (assumes 22 working days per month). This represents a 2.8 % daily increase in total vehicle movements on the A83 during months 7 to 12 of construction. This is assumed for the A83 to the north of the junction with the B8001 (Redhouse Junction). After this point cars and LGVs are likely to turn east on the B8001 then the B842.

9.8.2 Cumulative Assessment

Other Projects that may be constructed in parallel with the substation include Earraghail, Eascairt, Sheirdrim, Alrigh, High Constellation and Tangy IV wind farms. The Environmental Statement for Tangy IV indicates that most construction traffic will be experienced in the south of the Mull of Kintyre ⁵ and cumulative effects are therefore scoped out.

Table 9.6 shows the worst case cumulative impact of an increase in HGVs against baseline HGVs. In the unlikely scenario that this maximum was to coincide with peak HGV movements for the Crossaig North substation there would be an additional 256 HGV return movements (512 two way movements) on the A83 representing a worst case increase of 205%. This would result in a high magnitude cumulative impact on these medium sensitivity receptors resulting in a major impact, which may be reduced to minor with the proposed mitigation in section 9.9.

Table 9.6 Maximum Cumulative Impact Assessment (2 way return movements)

Location	High Constellation	Earraghail	Alrigh	Eascairt	Sheirdrim	Crossaig North	Total Cumulative	Baseline	% Increase in HGV traffic
A83 (north of junction with B8001)	37	47	37	31	85	19	256	125	205
Site ref. 77107									

⁵ <https://www.energyconsents.scot/ApplicationDetails.aspx?cr=ECU00000673&T=5> Accessed July 2022

9.9 Mitigation

The Contractor will share a CTMP with Argyll and Bute Council (ABC) and Transport Scotland (where appropriate) identifying appropriate and safe routes for construction traffic which will include the following mitigation measures:

- The Contractor will liaise with ABC to determine appropriate traffic management arrangements for construction vehicle movements;
- The Contractor will agree appropriate and safe routes to and from the Project with ABC. All construction vehicles will be required to use approved access routes;
- Movement of abnormal loads will be restricted to take place outside peak flow hours to minimise disruption to general traffic flows;
- Measures will be implemented to minimise dust and dirt being deposited on the carriageway due to construction operations;
- Appropriate signage warning other motorists and pedestrians of the presence of construction vehicles will be implemented;
- Appropriate signage restricting vehicle speeds will be considered in discussion with ABC;
- Police escort or other escort approved by Police Scotland will accompany abnormal load vehicle movements for the delivery of transformer components or any other loads deemed necessary by the road's authorities; and
- Use of the Construction Environmental Management Plan (CEMP) to monitor and ensure that agreed mitigation measures are being implemented.

It is anticipated that Abnormal Indivisible Load (AIL) deliveries to the Project will be required for the delivery of the transformers. Further consultation and notification will be undertaken with relevant local authorities including ABC and Police Scotland once details have been finalised to make sure that traffic impacts on the road network are minimised and emergency access is provided at all times.

Details will include the selection of delivery times which would avoid peak times and use of police escort vehicles when required to manage the deliveries and facilitate safe interaction with other road users. Road signage will be implemented to provide advanced warning of abnormal load movements. An SSEN Transmission Community Liaison Manager will be appointed to the Project to ensure that the local community and the general public have enough information to plan their journey and avoid use of the road network during abnormal load movements if desired.

9.10 Operational Traffic

The Project will be unmanned with regular site inspections undertaken and visits required for switchgear operation. A LGV is expected to visit the Proposed Development once per week during normal operation. In addition, it is likely that maintenance would be completed for approximately one week each year. During a maintenance period four or five vehicles per day would attend the Proposed Development. Additional visits to the substation would be required in the event of faults. Traffic to the associated development will be infrequent and are considered negligible.

A summary of the appraisal of traffic, after mitigation is implemented, is provided in **Table 9.7**.

Table 9.7 Appraisal of Traffic

Environmental Feature	Development Interaction	Receptor Sensitivity	Magnitude of Change	Mitigation Measures	Significance of Effect
A83, B8001 and B842. Other road users: delays,	Construction traffic, temporary	Medium	Negligible	CTMP to be provided to	Negligible

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Environmental Feature	Development Interaction	Receptor Sensitivity	Magnitude of Change	Mitigation Measures	Significance of Effect
severance, limited short-term impacts, increased risk of accidents				ABC pre-construction	
Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Operational traffic	Medium	Negligible	N/A	Negligible
The Associated Development					
A83, B8001 and B842. Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Construction traffic, temporary	Medium	Negligible	CTMP to be provided to ABC pre-construction	Negligible
Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Operational traffic	Medium	Negligible	N/A	Negligible
The Proposed Development and Associated Development					
A83, B8001 and B842. Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Construction traffic, temporary	Medium	Negligible	CTMP to be provided to ABC pre-construction	Negligible
Other road users: delays, severance, limited short-term impacts, increased risk of accidents	Operational traffic	Medium	Negligible	N/A	Negligible
Other Cumulative Developments					
A83 and . Other road users; delays, severance, limited short-term impacts, increased risk of accidents	Construction traffic, temporary	Medium	High	CTMP to be provided to ABC pre-construction	Minor
Other road users; delays, severance, limited short-term impacts, increased risk of accidents	Operational traffic	Medium	Negligible	N/A	Negligible

9.11 Summary of Effects

This Chapter has assessed the likely effects of the Project on traffic and transport receptors.

The conclusion is that with the implementation of the proposed mitigation the traffic and transport effects arising from the construction and operational phases of the Project will be minor or less including potential cumulative effects.