15. TRAFFIC AND TRANSPORT

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15. Traffic and Transport

15.1. Introduction

15.1.1. This Chapter does not repeat the information set out in *Chapter 15: Traffic and Transport* of the Shepherds' Rig EIA Report (November 2018) where that information remains valid in the context of the reduced number of turbines now proposed as the Revised Development (AEI Figure 4.1). As such, the Additional Environmental Information (AEI) supplements Chapter 15 of the EIA Report (November 2018) and should be read in conjunction with it.

15.1.2. In response to the EIA Report (November 2018), several post-submission consultation responses were received as detailed in AEI AEI Table 15.1.

AEI Table 15.1: Post-Submission Consultation Responses

Organisation	Consultee Comments	Response
Transport Scotland 12/02/19	Transport Scotland is in agreement with this conclusion and is satisfied that the potential environmental impact of the construction related traffic on the trunk road receptors has been adequately addressed.	Noted, no further action taken.
Carsphairn Community Council 25/03/19	The traffic and transport associated with all stages of the proposed Shepherds Rig will come through the village of Carsphairn where residences line either side of the A713. The B729 over which this traffic will come to access the site from the A713 and along which further residences are sited is narrow and full of bends. The route therefore is totally unsuited to large/oversized trucks and the proposed additional wind farm traffic will cause damage to the road surface which was not constructed with wind farm traffic in mind. Villagers and those living along the B729 would have to tolerate large volumes of wind farm traffic passing their doorstep.	The A713 is a major road with a high existing HGV traffic level of 414 HGVs per day. The overall traffic level is anticipated to increase by only 4.3% in Carsphairn during the peak month which is negligible and likely to be within existing daily traffic variation. The effect felt by villagers in Carsphairn is therefore anticipated to be negligible. This effect remains the same for the Revised Development, as assessed in Section 15.4. The B729 is an existing timber haulage route and is therefore considered suitable for HGV vehicles both in terms of geometry and structural makeup. The increase in traffic flow levels on this route was assessed as negligible in terms of the existing baseline traffic flow levels. This effect remains the same for the Revised Development, as assessed in Section 15.4.

Organisation	Consultee Comments	Response
Carsphairn Community Woodland Trust 17/03/19	B729 is a strategic timber route which causes issues for residents regarding traffic volume and insufficient passing places. Wind farm traffic would exacerbate this and compromise safety to the wood/outdoor education centre and is unacceptable.	The predicted increase in traffic flow on the B729 is anticipated to be within the capacity of the route. This effect remains the same for the Revised Development, as assessed in Section 15.4.

15.2. Methodology

15.2.1. There have been no relevant changes to the traffic and transport legislation, policy and guidance referred to in the EIA Report (November 2018). The baseline information relied upon in order to make an assessment of the effects of the Proposed Development has not changed and remains that which has been provided in the EIA Report (November 2018). To ensure consistency of approach, the same significance criteria and assessment methodology as referred to in the EIA Report (November 2018) has been followed. Taking into account the relevant policy and guidance, baseline information, and assessment criteria, an assessment is presented below which details the changes in any significant effects as a result of the revised layout.

15.3. Baseline Conditions

15.3.1. There are no changes to baseline traffic conditions from the EIA Report (November 2018) so that Section 5.5 of the EIA Report remains valid.

15.4. Change in Effects

15.4.1. The following aspects of the revised layout (**AEI Figure 4.1**) are of relevance to Traffic and Transportation:

- Removal of two turbines - T7 and T11 of the original layout; and
- A corresponding reduction in access track length, quantity of electrical cabling and hardstanding areas.

15.4.2. The effect of each of these changes is a reduction in the quantity of materials required to be imported to the site during construction of the Revised Development; therefore, the number of vehicle movements anticipated during construction will be reduced from those identified in the EIA Report (November 2018).

15.4.3. AEI Table 15.2 provides a summary of all deliveries expected throughout duration of construction.

AEI Table 15.2: Anticipated Vehicle Movements - Summary

Operation	Vehicle Type	Operational Months	Total	Max Monthly
Forestry				
Plant Delivery/Removal	HGV Low Loader	1, 6	28*	14*
Timber Extraction	HGV	1-6	1600	267
Fuel Delivery	Fuel Tanker HGV	1-6	96	16
Subtotal			**1724**	**297**
Site Mobilisation/Demobilisation				
On-site vehicles	Car/LGV**	3, 17	30	15
Construction Compound	HGV Low Loader	3, 17	120*	60*
Borrow Pit Equipment	HGV Low Loader	3, 17	168*	84*
Subtotal			**318**	**159**
Access Track and Hardstanding Construction				
Plant Delivery	HGV Dump Truck	5-11	16	8
	HGV Low Loaders (Excavators/Rollers)	5-11	8*	4*
Material Deliveries	HGV	5-11	24	5
Subtotal			**48**	**12**
Turbine Foundation Construction				
Concrete Delivery	Ready-Mix HGV	8-13	1904	112 (daily)
Rebar Delivery	HGV	8-13	96	16 (monthly)
Subtotal			**2000**	
Control Building and Substation Construction				
Electrical Components and Switchgear Delivery	HGV	4-11	40	5
Transformer Delivery	ALV	4-11	4	2
	Escort Car/Van	4-11	8	4
Subtotal			**52**	**11**
Electrical Cabling Delivery				
Electrical Cabling Delivery	HGV	12-14	50	17
Crane Delivery				
Crawler Crane	HGV	12, 16	52	26

Operation	Vehicle Type	Operational Months	Total	Max Monthly
	Abnormal Load Vehicle**	12, 16	2	1
Subtotal			**54**	**27**
Turbine Delivery				
Turbine Components	ALV	12-16	272	55
	Escort Car or Van	12-16	544	110
Ancillary Equipment	HGV	12-16	34	7
Subtotal			**850**	**172**
Fuel Delivery				
Fuel Delivery	HGV Fuel Tanker	3-17	30	2
Staff				
Staff	Car or Minibus	3-21	25,156	1324
Totals				
Total HGV and Abnormal Load Movements (excluding concrete deliveries)			2640	429
Total HGV Movements for Concrete Delivery (19 non-consecutive days)			1904	318
Total Car and Van Movements			25,738	1434
Overall Total			**30,282**	**1,875****

*Includes transporter vehicle leaving and then returning to site during demobilisation
**Total flow in peak month

15.4.4. The EIA Report (November 2018) concluded that there would be 30,628 overall total vehicle movements, with 1,932 movements in the peak month. It can therefore be seen that the Revised Development would result in a lower overall and peak monthly traffic level.

15.4.5. A detailed breakdown of the distribution of vehicle movements in each month, and for each element of work, throughout the construction phase of the Revised Development is included in **AEI Figure 15.1**. The peak month of construction, from a traffic perspective, was identified and used to predict the traffic increase on routes within the study area. A worst case scenario in which all predicted traffic passes each location within the study area was assumed.

15.4.6. From inspection of the predicted traffic movements, the peak month for vehicle flow is expected to be month 12 where a total of 1,875 vehicle movements are predicted. Concrete deliveries are expected to occur during this month on non-

consecutive days. On days where concrete delivery occurs, a maximum of 172 vehicle movements are expected. This represents a reduction from the EIA report where 1,932 overall vehicle movements with a daily maximum of 173 movements were predicted.

15.4.7. During month 12 on days with no concrete delivery a maximum of 60 vehicle movements are expected. This represents a reduction from the EIA Report where 61 movements were predicted on these days.

15.4.8. Outside of the foundation pouring phase, the peak month of construction from a transport perspective is expected to be month three, relating to forestry and mobilisation. During this month a total of 1,768 vehicle movements are expected resulting in an average of 68 vehicle movements per day. These figures are the same as predicted in the EIA Report.

15.4.9. AEI Table 15.3 details the anticipated vehicle flow in the month 3 where there is no concrete delivery. The percentage increase above the predicted baseline at each point within the study area is indicated. This has not changed from the EIA Report.

AEI Table 15.3: Predicted Peak Month Average Daily Traffic - No Concrete Delivery

Location	Total Vehicles			HGV Only*		
	2021 Baseline	Peak Month	% Increase	2021 Baseline	Peak Month	% Increase
1	156	224	43.7	57	73	29.1
2	148	216	45.8	44	61	37.2
3	1564	1632	4.3	414	431	4.0
4	23844	23912	0.3	1276	1292	1.3

*For the purposes of this estimation abnormal load vehicles are included in HGV

15.4.10. AEI Table 15.4 details the anticipated vehicle flow in the peak month on days where concrete deliveries will take place; this will occur on a maximum of 17 non-consecutive days.

AEI Table 15.4: Predicted Peak Month Average Daily Traffic - During Concrete Delivery

Location	Total Vehicles			HGV Only*		
	2021 Baseline	Peak Month	% Increase	2021 Baseline	Peak Month	% Increase
1	156	328	110.4	57	173	205.9
2	148	320	115.8	44	161	263.4
3	1564	1736	11.0	414	531	28.2
4	23844	24016	0.7	1276	1393	9.2

15.4.11. The percentage increases presented in Table 15.4 generally show a minor reduction from those identified in the EIA Report. In some cases, the peak

month flow is identical to that identified in the EIA Report once rounded to the nearest whole number.

15.4.12. As demonstrated by the above figures the traffic volume anticipated during construction of the Revised Development in comparison to that identified in the EIA Report (November 2018) is slightly reduced or the same as that previously assessed.

15.4.13. The EIA Report, Section 15.8 (November 2018) identified one significant Traffic and Transport effect in relation to Pedestrian Amenity at four schools: Carsphairn Primary School, Doon Academy, Dalmellington Primary School and St Xavier's Primary School. The proposed route to site passes near to these schools.

15.4.14. Mitigation measures in relation to the identified significant effects were proposed and are detailed in Section 15.10 of the EIA Report (November 2018). The residual effects following implementation of the proposed mitigation measures were identified as low and not significant. All other effects were low or negligible and not significant.

15.4.15. The proposed mitigation measures for the Revised Development are the same as identified in the EIA Report (November 2018). As the anticipated level of traffic will be reduced or at worst identical, all effects would be less than previously assessed and remain not significant in all cases.

15.5. Cumulative Effects

15.5.1. The EIA Report, Section 15.9 (November 2018) identified a number of nearby developments which have the potential to result in cumulative effects. Chapter 2 of this AEI identifies the changes to the cumulative scenario within 10 km of the site. From a review of this information, the number of cumulative wind developments has been reduced, and it has been concluded that cumulative effects on traffic and transport have been reduced since the EIA Report.

15.6. Summary

15.6.1. The Revised Development was considered using the same assessment methodology as the EIA Report 2018. The Revised Development is predicted to result in a lower overall number of traffic movements, as a result of the reduced volume of construction materials required to be delivered during construction. Therefore, all effects in relation to Traffic and Transport of the Revised Development remain not significant.

15.6.2. A net reduction in traffic as a result of cumulative effects from other nearby wind farm developments from the EIA Report (2018) is predicted. Therefore, all cumulative effects remain not significant.

15.7. Statement of Significance

15.7.1. Effects on Traffic and Transport associated with the Revised Development are not significant. This represents no change to the conclusions outlined in the EIA Report (November 2018).