

12 Traffic and Transport

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12 Traffic and Transport

12.1 Executive Summary

12.1.1 The traffic and transport assessment follows the same methodology outlined and undertaken for the Consented Development. The baseline information was updated to account for more recent data collected and the abnormal loads route re-assessed to take account of the increase in maximum blade length between the Consented Development (up to 49 m) and the Revised Development (up to 64 m).

12.1.2 The conclusions of the traffic and transport assessment below are the same for the Revised Development as those reached for the Consented Development. It is anticipated that there will be no significant residual effects on local transport infrastructure as a result of the construction and operation of the Revised Development.

12.2 Introduction

12.2.1 This chapter (which also forms the Transport Assessment for the proposal) assesses the transport impacts that may arise from the Revised Development. It describes the existing traffic conditions and local transport infrastructure and predicts how these may be affected by the Revised Development.

12.2.2 Consideration has been given to the potential site access routes, particularly for access by abnormal loads. The effects generated by traffic during construction, operation and decommissioning of the Revised Development have then been discussed and assessed against recognised guidelines. The effects generated during the operational and decommissioning stages have been assessed as far as practicable at this stage.

12.2.3 Following review of the site area it is proposed that the Revised Development will be accessed from the M74, junction 11 close to grid reference NS845346. North east of (and connected to) the site lies junction 11 of the M74 which permits direct motorway access and access to the wider road network of central and southern Scotland.

12.2.4 The final choice of port for large component delivery will be determined by the appointed contractor, but the principle of using King George V Dock, Glasgow as the nearest suitable port has been established and has been assumed for this assessment.

12.3 Policy and Guidelines

Policy and Guidelines

12.3.1 Relevant policy and guidance documents have been reviewed and taken into account as part of this assessment. Of particular relevance are:

- The Institute of Environmental Assessment 'Guidelines for the Environmental Assessment of Road Traffic' (1993).
- Design Manual for Roads and Bridges (DMRB), Volume 11, Section 2, Part 1, HA201/08 'General principles and guidance of environmental impact assessment'.
- 'Transport Assessment Guidance'; Transport Scotland (2012).

Planning Policy

12.3.2 Chapter 5 sets out the planning policy framework that is relevant to the EIA. The policies set out include those from the adopted South Lanarkshire Local Development Plan 2015.

12.3.3 Policy 19 (Renewable Energy) of the Local Development Plan makes reference to the Development Management criteria laid out in Scottish Planning Policy (SPP) (para 169).

- 12.3.4 Para 169 of SPP cites impacts on road traffic and impacts on adjacent trunk roads as requiring consideration and this chapter considers both.
- 12.3.5 The South Lanarkshire Council (SLC) 'Supplementary Planning Guidance: Renewable Energy (SG)' document of 2015 also discusses transport within the site assessment checklist; Table 7.1.
- 12.3.6 In this chapter (which also forms the Transport Assessment for the Revised Development), the magnitude and consequences of changes in traffic flows on the local and trunk road network have therefore been considered in the context of the construction, operational and decommissioning process of the Revised Development. The consequences of changes in traffic flows have then been considered in terms of their effects on road operation. The consequences of changes in traffic flows in respect of road safety have also been considered, taking account of the recent accident records.

12.4 Consultation

- 12.4.1 As noted in Chapter 4, an initial Scoping exercise was undertaken by previous developers of the project, Community Windpower Ltd, in 2012. In relation to the operation of the trunk road network, Transport Scotland responded to the Scoping Report on 13 April 2012 and stated:

“Overall there will be a minimal increase in traffic on the trunk road during the operation of the facility therefore the proposed development is not likely to have a significant impact on the operation of the trunk road network.”

- 12.4.2 There is therefore no requirement to carry out an assessment of the trunk road.
- 12.4.3 As regards construction, Transport Scotland has acknowledged the presence of abnormal loads and recommended that the trunk road management organisation, BEAR Scotland, be consulted regarding abnormal load transport. No other comment regarding construction traffic impacts is made.
- 12.4.4 In relation to the local road network, South Lanarkshire Council's (SLC) Roads Area Manager for Clydesdale responded to the Scoping Report for a previous, similar development on 30 April 2012, noting the following points:
- confirmed no objection to the Revised Development (as scoped in 2012);
 - high powered vehicle wheel wash should be provided and maintained on site so that all vehicles are cleaned prior to joining the public road;
 - the Applicant shall at all times be responsible for the removal of mud or other materials deposited on the public highway by vehicles entering or leaving the site. Road sweeping by mechanical sweeper should form part of a routine maintenance regime to regularly clear the access route from the build up of debris;
 - all vehicles entering or leaving the site shall use the existing private road to the west of Poniel interchange;
 - the haul route for normal and abnormal loads will require to be agreed with SLC, but the Roads Department would advocate that if possible normal construction traffic should reach the site from the north via the M74 or B7078;
 - the developer must undertake a dilapidation survey along any agreed haul route and will be required to up-grade the haul road infrastructure as deemed necessary by SLC. The developer must enter into a formal Section 96 agreement with SLC for this section of road;
 - the route chosen to deliver abnormal loads to the site must be assessed to ensure that it is capable of accommodating the types of vehicle that propose to use it. It is recommended that trial drive-through of the route is undertaken using appropriate vehicles and this will highlight any pinch points that would require to be upgraded; and

- details must be submitted, to SLC, of any land take or road widening that is required as a result of the above trial drive through.
- 12.4.5 A further response from the SLC Roads Department dated 27 April 2012 raised the following points:-
- survey of existing traffic flows at locations that need to be agreed with the Council. The proposed survey locations can only be agreed with SLC once a delivery/construction route has been agreed in principle with the Roads Area Office.
 - analysis of junctions impacted by the delivery/construction route to take account of existing flows, development flows and committed flows and future years where the proposed development timeline dictates;
 - the requirement and impact of imported materials or removal from site of surplus arisings where applicable; and
 - phasing of works and distribution of traffic flows on a month by month basis.
- 12.4.6 The above points are considered within this chapter and summarised in Table 12.5 below.
- 12.4.7 Following 3R Energy taking on the project in early 2015, a meeting was subsequently held with the SLC Roads Department on 10 March 2015 to ensure that the initial Scoping responses from SLC (as noted above) remained valid. At the meeting it was confirmed that the responses remain valid and the following additional key points to be included in this assessment were raised:-
- swept path required of local / trunk road interface at junction 11 M74;
 - need to cover any construction material import (e.g. for tracks) and preferably identify potential source(s) of material (and hence likely routing);
 - identify principal route(s); and
 - the need to enter into a Section 96 agreement or make a one-off upfront payment in respect of any extraordinary damage to the local road network.
- 12.4.8 Subsequently, the 2015 Application (ref. CL/15/0273) for the Consented Development was submitted and the approved in February 2016. As part of the consideration of the 2015 Application SLC Roads Department and Transport Scotland were consulted. SLC's Roads Department responded to say:
- "no objection subject to conditions. The proposed abnormal delivery route does not involve any Council structures and on the basis the mobile crane is delivered on the same route, the Council's Structures Section has no objection. Traffic and Transportation has no objection to the proposed development subject to conditions relating to Traffic Management Plan, Travel Plan, vehicle parking on site, signage, wheel wash facility, Abnormal Loads Route Assessment and a section 96 legal agreement being entered into."*
- 12.4.9 Transport Scotland responded to say:
- "no objection subject to conditions. The proposed route for any abnormal loads on the trunk road network must be approved by the trunk roads authority prior to the movement of any abnormal load. Any additional signing or temporary traffic control measures deemed necessary due to the size or length of loads being delivered must be undertaken by a recognised Quality Assured traffic management consultant, to be approved by the trunk road authority before delivery commences."*

12.5 Assessment Methodology and Significance Criteria

Assessment Criteria

- 12.5.1 The aim of the assessment as outlined in the IEA Guidelines is to identify, predict and evaluate potential key effects arising from the proposal. Wherever possible, identified effects are quantified. The nature of traffic assessments, however, requires some interpretation by professional judgement.

Assessment of Effect Magnitude

- 12.5.2 The criteria for the determination of effect magnitude as laid out in the IEA Guidelines is related to percentage changes in traffic flows rather than absolute numbers. The broad rule of thumb contained in Para 3.15 of the Guidelines is:

- *Rule 1 - include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%).*

- 12.5.3 In relation to the DMRB, Figure 2.2 of HA201/08 lays out a flow diagram for assessment of environmental effects. Stage 1 covers scoping and, depending on the outcome of that exercise, either “No or negligible change and very insignificant effects”; a “simple assessment” or a “detailed assessment” then follows. In this case, the scoping responses indicate “No or negligible change and very insignificant effects”, therefore, a simple assessment of impacts has been made using project specific data and available information sources.

- 12.5.4 Transport Assessment Guidance deals mainly with peak hour traffic impacts and notes “The significance of a traffic impact depends not only on the percentage increase of traffic but the available capacity. A 10% increase on a lightly trafficked road may not be significant, whereas a 1% increase on a congested motorway will be.”

Assessment of Significance

- 12.5.5 Owing to the low background traffic levels on some surrounding routes (e.g. the B7078), initial considerations indicated it possible that over the course of a day the above (IEA Guidelines) percentage threshold stated in *Para 12.4.2* could be exceeded during the construction phase, should traffic use part of this route to access the site. However, the absolute numbers of vehicles will still be low. Determination of significance is therefore more subjective. Accordingly, background data for this assessment has been obtained not only from permanent counters but also from tube counters / classifiers placed on the B7078.

- 12.5.6 Owing to the rural nature of the site location, the number of receptors that would experience impact arising from traffic impacts is very low.

- 12.5.7 The IEA Guidelines also note various environmental areas where consideration can be given to vehicular impacts and these include:

Severance

- 12.5.8 Para 4.27 of the Guidelines for the Environmental Assessment of Road Traffic states:

“Severance is the perceived division that can occur within a community when it becomes separated by a major traffic artery. The term is used to describe a complex series of factors that separate people from places and other people. Severance can also result from difficulty in crossing a heavily trafficked road.”

- 12.5.9 The proposals do not create severance within this definition as the route to the site is almost entirely comprised of Motorway (M74) or other major scale routes (B7078) which do not pass through communities.

Driver Delay

- 12.5.10 Where roads affected by new development are at or near capacity, the traffic associated with new development can cause or add to vehicle delay. The roads around the site do not have capacity problems and nothing in the proposals is likely to cause any; save for the occasional passage of abnormal loads.

Pedestrian Delay and Amenity

- 12.5.11 Busy roads and changes to the volume or speed of traffic may affect the ability of people to cross roads. In this case, the location of the site and its access routes is such that road crossing for individuals is unlikely to be impeded even with the addition of construction traffic for a temporary period. In relation to amenity, this is also linked with fear and intimidation within the IEA guidelines. There are no common thresholds for estimating levels of fear and intimidation but the effect is considered dependent on the volume of traffic, its HGV component, its proximity to people, or the lack of protection or segregation from traffic influenced by factors such as footway width. Again, the location and access routes illustrate this is unlikely to be of concern in this case.

Accidents and Safety

- 12.5.12 Accident data obtained from Crashmap (www.crashmap.co.uk) is summarised in Table 12.1 below.

Table 12.1 – Accident Summary (2012 to 2016)

Location	Result
M74 J11	1 slight accident in 2012 involving one vehicle
B7078 between J11 and J12	1 slight accident in 2016 involving two vehicles
	1 serious accident in 2014 involving two vehicles

- 12.5.13 It can be seen that recorded accidents are small in number (three over 5 years).

Dust and Dirt

- 12.5.14 Certain types of development can give rise to dust and dirt problems. The effect normally depends to a large extent on the management practices adopted at the site in question, such as vehicle sheeting and wheel washing. It is further noted that in this regard there is a lengthy (some 2.6 km), tarmac surfaced private haul road between the main body of the site and the public road network.

Key Assumptions

- 12.5.15 The following key assumptions have been made in the preparation of this chapter:
- final construction access routes to the site for HGVs (materials) and abnormal loads (turbine components) will be agreed with the appropriate authorities prior to the commencement of operations, and subsequently enforced by the developer, principal contractors and sub-contractors;
 - access routes to the site for construction personnel are, in practice, very difficult to define as it is possible that the workforce will come from all four corners of the compass. However, for the purposes of the assessment it is assumed that construction personnel will use the same access routes as HGVs and abnormal loads;
 - HGV size has been assumed as 20 tonne (net) road stone (aggregate) lorries and 8 m³ (net) concrete carrying vehicles;
 - it is assumed that the pouring of the foundations will take place between weeks 7 - 18;

- HGV construction traffic is most likely to be perceptible during periods of bulk materials transport to supply stone for roads, concrete for turbine foundations etc; and
- the construction programme for the Revised Development has assumed a twelve month overall period including commissioning.

Consultation

- 12.5.16 The consultation summary provided at Section 12.4 has been considered in the preparation of this chapter and the items raised during consultation are summarised in Table 12.5.

Study Area

- 12.5.17 Access to the site from the north can be taken directly from the M74 motorway via junction 11, and access to the site from the south can be taken from junction 12 of the M74 via a short stretch of the B7078 (old A74). It is intended to utilise the M74 to bring the vast majority of construction materials and all abnormal loads to the site for the Revised Development. Therefore, the M74 and B7078 are considered in this chapter.

12.6 Baseline Conditions

History of the Site

- 12.6.1 Much of the site forms part of the former Dalquhandy Opencast Coal Site which operated between circa 1998 and 2004, and was once the largest opencast in Europe. A purpose built, dual-width, tarmac road complete with street lighting was put in place by the opencast operation in the late 1980s to link the site with junction 11 of the M74 motorway and the local road network, principally the B7078 and the A70. This private haul road facilitated the haulage of approximately 16 million tonnes of coal to market, either directly onto the M74 or via the B7078 and A70 to the Ravenstruther Rail Terminal near Lanark. The access road and the serviced hardstanding which housed the former coal processing area at Dalquhandy remain in place today (refer to Figure 3.1). There is therefore excellent infrastructure in place to service the site which was designed to accommodate significant numbers of HGV movements as part of the previous opencast operation.
- 12.6.2 The Revised Development therefore intends to utilise the transport infrastructure that was put in place for the opencast operation to develop 13 wind turbines.
- 12.6.3 In respect of baseline conditions, it is noted that planning permission was granted for the Consented Development on this site in February 2016.
- 12.6.4 It is further noted that in January 2015 the SLC Planning Committee resolved to grant planning permission for:
- a 15 turbine wind farm on the adjoining part of the former Dalquhandy Opencast Coal Site (referred to as the Dalquhandy Wind Farm); and
 - a 3 turbine wind project on the former Poniel Opencast Coal Site (referred to as the Poniel Wind Farm).
- 12.6.5 Both wind Dalquhandy and Poniel Wind Farms would utilise the same access road as the Revised Development.
- 12.6.6 Outline planning permission also exists for a range of commercial and industrial uses on land adjoining the access road to the site (referred to as the Poniel Built Development). Much of the original outline planning permission for the Poniel Built Development has been taken up by a large bonded warehouse development to the south of the access road to the site. Planning consent was also granted in 2017 for the 'M74 Heat and Power Park Mixed Use Scheme', which shares the access road with the Revised Development.

Route Options

- 12.6.7 The preferred route for the delivery of turbine components to the site is set out in Section 12.2 above and shown in Figure 3.8.
- 12.6.8 The route to transport turbines from King George V Dock in Glasgow to junction 11 of the M74, as shown in Figure 3.8, has been used for the transport of turbine components for a number of other projects in the area previously and has proven to be acceptable. This is discussed further in Section 12.8 below.
- 12.6.9 The adequacy of the road network for the transportation of abnormal loads and construction materials to this particular site is acknowledged in the SLC Planning Officer's report dated 17 November 2015 for the Consented Development (ref. CL/15/0273) which utilises the same access from junction 11 of the M74 as the Revised Development. What is said in relation to the transportation of wind turbine components and construction materials is

"Impacts on road traffic and on adjacent trunk roads. The ES at section 12 provides an analysis of the proposed development with respect to the potential impact it may have on the road network. There is no objection on the basis that the proposed abnormal loads route is using the M74 motorway, exiting at junction 11, then exiting the Poniel interchange western roundabout on to the existing Dalquhandy private access road leading to the proposed site; and the construction traffic accesses the site from the north via M74 Junction 11 and from the south Junction 12 of the M74 via a short stretch of the B7078 to Junction 11. Roads and Transportation Services therefore has no objection to the proposed development subject to conditions and a section 96 legal agreement being entered into as noted in paragraph 4.1 and 4.2. On the basis of the above, the proposed development complies with SPP impact on road traffic."

Road Network

- 12.6.10 The Revised Development is located to the southwest of junction 11 of the M74. The M74 connects Glasgow with the English border to the south, and junction 11 is a 'half diamond' junction layout with on and off ramps facing north. South access and egress to the M74 is available at junction 12, approximately 2.2 km to the south.
- 12.6.11 Junctions 11 and 12 are connected by the B7078. Over this section the B7078 is dual carriageway and is part of the old A74 route, in use before the opening of the current motorway.
- 12.6.12 The site is connected to junction 11 by a high quality private road.

Existing Traffic Flows

- 12.6.13 Traffic flow around the site is light (by motorway standards on the M74) and Table 12.2 below summarises available data in the area.

Table 12.2 – Existing Traffic Flows

Location	Annual Average Daily Traffic	%HGV	Notes
M74 north of J11	29,194	19.8%	Counter 80203 from 2016
B7078 north of Happendon services	5,374	7.9%	See below
	Peak Hours	No. HGV	Notes
Junction 11 roundabouts local road approaches	B7078 northbound AM - 292	23	Peak hour counts taken to coincide with peak hours in Poneil Transport Assessment from March 2010
	B7078 southbound AM - 112	8	
	B7078 northbound PM - 260	27	
	B7078 southbound PM - 118	10	
Junction 12 roundabouts local road approaches	B7078 southbound AM - 300	22	
	B7078 southbound PM - 402	44	
	A70 eastbound AM - 362	19	
	A70 westbound AM - 167	27	
	A70 eastbound PM - 242	17	
	A70 westbound PM - 235	27	

12.6.14 Traffic levels on the B7078 were established from a remote counter which was placed on the road at NS848344 for a week commencing 16 March 2015.

Accidents and Safety

12.6.15 Accident data is summarised in Table 12.1 above and illustrates a very low incidence of accidents.

12.7 Assessment of Potential Effects

Vehicle Movements

12.7.1 The assessment outlined below concentrates on road traffic from the construction phase of the Revised Development and also assesses any traffic impacts associated with the operational and decommissioning phases of the project.

Effects during Construction

12.7.2 Table 12.3 provides a summary by construction activity and construction programme of HGV and abnormal load movements required during the construction phase of the Revised Development. A detailed breakdown of estimated traffic movements during the construction phase of the Revised Development is set out in Appendix 12.1.

Table 12.3 – Estimated Vehicle Movements during Construction

Task	Transport Deliveries	Week Number / Vehicle Deliveries (HGV unless otherwise stated)																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Mobilisation	Plant & Eq'ment	24																									
	Supplies/ Offices etc.	20																									
	Stone for Compound	522	522																								
Access & Site tracks	Stone for New Roads		141	141	141	141	141	141	141	141	141	141	141	141	141	141	141										
Foundations	Readymix concrete							136	136	136	136	136	136	136	136	136	136	136	136								
	Foundation Steel / Parts							6	6	6	6	6	6	6	6	6	6	6	6								
On-site cabling	Drums of cable													5	5	5	5										
Crane Pads	Stone for Crane Pads															176	176	176	176	176	176	176	176	176	176		
	Readymix concrete																							68			
Miscellaneous	Fuel/Oil	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	Materials/ Other Items		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	Misc Quarry Materials		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10							
	Removal of plant																										24
TOTAL	HGV DELIVERIES	572	689	167	167	167	167	309	309	309	309	309	309	314	314	490	490	485	344	202	192	192	192	260	192	16	40

Task	Transport Deliveries	Week Number / Vehicle Deliveries (HGV unless otherwise stated)																									
		27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
Substation - Electrical	Misc.																										
Off-site Cabling																											
Turbine Delivery	Turbine parts		424 2	42	42	42	42	42																			
Turbine Erection	Transformer /Switchgear					4	4	4	4	4	4	4	4														
	Handling cranes				70										70												
Commissioning and Testing																											
Site Reinstatement	Removal plant, buildings etc																									10	10
TOTAL	HGV/OST DELIVERIES		42	42	112	46	46	46	4	4	4	4	4	70	0	0	0	0	0	0	0	0	0	0	0	10	10

Note: Numbers refer to total movements (i.e. sum of arrivals and departures)

12.7.3 Table 12.3 summarises the estimated traffic volumes associated with the delivery of the various materials, equipment and supplies that will need to be delivered to the site over the 12 month construction phase. The estimates are explained in full within Appendix 12.1 and are collected together and summarised in Table 12.3 which is intended to indicate maximum traffic volumes generated by the Revised Development in a typical week for each of the construction phases. The table is not to be taken as definitive in terms of traffic movements on any particular day, but is an estimate of the highest level of activity in each construction phase. The permitted hours for deliveries to the site are anticipated to be 7am – 7pm Mondays to Fridays and 7am – 1pm on Saturdays (in line with Condition 21 for the Consented Development).

12.7.4 The main type of material to be imported to the site during the construction phase is stone for access tracks, crane pads and hardstandings. Stone will be required to construct additional site roads to access some of the outlying turbine locations. The finalised layout of the Revised Development, as shown on Figure 3.5, involves the re-use of the existing tarmac surfaced coal haul road that runs from Junction 11 of the M74 motorway through the centre of the site. This asset significantly reduces the amount of new roadway required to construct the wind turbines. Additionally, there are a number of existing farm tracks on the site which can also be upgraded. This results in a net requirement to construct some 4.9 km of new roadway to gain access to the turbine locations (see Table 12.4 below).

Table 12.4 – Internal Access Track Composition

Type	Description	Length (km)	Percentage of Total
Existing Road	The existing tarmac spine road, which serves as the main artery running through the site from the M74 motorway. This requires minimal upgrading or repair.	5.36 (total length to J11)	52%
New Track	New spur roads that will serve either individual turbines or small groups of turbines.	4.9	48 %
Total		10.26	100

12.7.5 It is currently proposed that externally sourced road stone for the site construction works would come from local sources, such as Dunduff Quarry near Kirkmuirhill (13 km to the north) and Duneaton Quarry near Abington (16 km to the south). Use of Dunduff Quarry and/or Duneaton Quarry to source this material would mean that stone could be transported to the site using approved haul routes from the local quarries and the motorway network. Material from the north (Dunduff Quarry) can access the site directly via junction 11 of the M74 and material from the south (Duneaton Quarry) can access the site using the M74 junction 12 and the B7078. Sourcing stone locally not only minimises haul distances but also keeps economic benefits within South Lanarkshire.

12.7.6 Ultimately, the final location for the source of stone will be dependent on commercial considerations at the point of construction, however, a Construction Traffic Management Plan (CTMP) will be prepared for the construction phase of the development to ensure that all vehicles entering or leaving the site use designated routes, and are appropriately organised and supervised. For the purposes of this assessment, it has been assumed that the ‘worst case scenario’ involves stone being transported to the site from the south whereby a short stretch of the B7078 requires to be used from junction 12 of the M74 to the site entrance, noting however that there are no communities along this route.

12.7.7 In respect of light vehicles, it has been assumed that construction personnel and visitors will travel to the site by car or van using a variety of routes but most likely the same route as for construction traffic. Traffic movements associated with site personnel and visitors during the construction phase have been estimated to average some 10 cars/vans per day over the 12 month construction period, peaking at around 45 cars/vans per day during weeks 7 - 18.

12.7.8 Approximately 9 articulated low loader deliveries per turbine would be required to deliver the towers, the nacelles, the hubs and the blades, and a further lorry-load per two turbines would be required to transport the necessary parts / shared equipment to the site.

- 12.7.9 From Table 12.3 it can be seen that the greatest effect on the existing road network is likely to occur during week 2, when 686 weekly HGV movements are anticipated delivering stone for the construction of the compound and the new roads. Typical weekdays in this peak week would therefore see an average of 125 HGV movements, while there would be 62 on the Saturday. There would be 66 hours a week when vehicle movements could occur during the construction of the Revised Development, so this translates to 10.4 HGV movements per hour.
- 12.7.10 However, that is only during the busiest week. Across the entire construction period, the average number of HGV movements per week would be 194 (excluding from the calculation those weeks when no HGV movements are expected). The second busiest week (week 1) would see 572 HGV movements.
- 12.7.11 The background traffic data detailed in Table 12.2 illustrated that the M74 average daily traffic flow was approximately 29,194 vehicles per day, whilst that on the B7078 was 5,374 vehicles per day. The data also showed that around 19.8 % of the M74 24 hour flow was classed as goods vehicles with that on the B7078 being 8 %. That equates to approximately 5,780 HGVs on the M74 and 430 HGVs on the B7078.
- 12.7.12 The ‘worst case’ impact on the B7078 would be if it was assumed that during the busiest week for HGV movements (week 2) all HGVs routed along the B7078 on the journey to and from the Revised Development. That would represent an increase of 2% compared to the baseline traffic flow on the B7078 and 29% when compared to the baseline traffic flow of HGVs only. Neither increase would be enough to warrant further assessment under the thresholds of ‘Rule 1’ above (30%).
- 12.7.13 The ‘worst case’ for impact on the M74 would be if it was assumed that all these vehicles routeing along the M74 on the journey to and from the Revised Development. This would represent an increase of 0.4% against the baseline of all vehicles on the M74 and 2% against the baseline of HGVs only.
- 12.7.14 These percentage impacts on the M74 and the B7078 lie within the thresholds laid out in the IEMA guidance. These impacts are for the peak week of construction and averaged across the entire construction period, the impacts would be even lower. These levels of traffic are therefore deemed to have a **negligible** effect on the operation of the adjacent road network and are **not significant**.
- 12.7.15 In relation to peak hour impacts, the busiest week would see an average of 10.4 HGV movements per hour. The peak hour traffic flows in Table 12.2 show 404 two-way movements on the B7078 in the AM peak hour and 378 in the PM peak hour. Of these movements, 31 are HGVs in the AM peak hour and 37 are HGVs in the PM peak hour. The additional traffic generated during the busiest week of the construction of the Revised Development would see a 2.6% increase in AM peak hour traffic on the B7078 and 34 % increase in HGVs. During the PM peak hour, the busiest week during the construction of the Revised Development would cause increases of 2.7 % (when assessed against a baseline of all traffic) and 28 % when assessed against HGVs only.
- 12.7.16 Although the increase in HGVs during the AM peak would breach the 30 % threshold in ‘Rule 1’ above, that is only for one week out of the 52-week construction period. The second busiest week, week 1, would see an average of 572 weekly HGV movements, which translates to 8.7 HGVs per hour. That would result in an increase in HGVs on the B7078 in the AM peak hour of 28 %.
- 12.7.17 Hence only in one out of the 52 weeks would the increase in HGVs during the AM peak hour on the B7078 breach the 30 % threshold of ‘Rule 1’ above. Furthermore, that assumes that all HGVs route along the B7078 between Junctions 11 and 12. Some may instead route along the M74 to the north of Junction 11, which would reduce the impacts on the B7078.
- 12.7.18 Additionally, the running capacity of a single traffic lane on the B7078 is around 1400 vehicles per hour and the maximum peak hour input has been surveyed at 402 vehicles per hour on a two lane dualled section of the road.
- 12.7.19 The notional capacity of this section is therefore around 2500 vehicles per hour and at 402 vehicles per hour it is therefore running – at peak – at some 16 % of capacity.

12.7.20 The capacity clearly available in the trunk and local network also illustrates that the low numbers of staff travel in private vehicles (as noted in Appendix 12.1) would be unnoticeable to other road users.

12.7.21 The relatively low volume of construction traffic flows and the temporary nature of the Revised Development's construction phase is unlikely to have any discernible environmental effects and, therefore, the overall effect of construction traffic movements is deemed to be **negligible** and **not significant**.

12.7.22 In relation to the other considerations laid out in Section 12.5, the assessment concludes as follows:

Severance

12.7.23 The predicted increases in traffic during the construction phase of the Revised Development are temporary and are not likely to result in any severance effects as set out in Section 12.5. It is therefore concluded that severance effects will be **negligible**.

Driver Delay

12.7.24 It is not considered likely that driver delay will become an issue during the construction of the proposal. Construction traffic movements will be spread across the working day, therefore, it is unlikely that significant driver delay will occur.

12.7.25 For the delivery of abnormal loads, however, which are slower moving vehicles, driver delay is probable so appropriate traffic management arrangements will be put in place in order to limit disruption to the road network. Abnormal loads will also be moved outwith peak hours of normal traffic movements.

12.7.26 Construction staff and deliveries will be provided with adequate parking at the site and the Applicant will instruct all staff and contractors to make use of this.

12.7.27 Staff and contractors, and particularly HGVs, will be instructed not to park on public roads near to the site.

12.7.28 The predicted traffic effects are temporary and it is concluded that delay effects will be **negligible**.

Dust and Dirt

12.7.29 **No significant effects** are predicted as a result of dust and dirt generated by construction traffic. Appropriate sheeting and wheel washing before vehicles leave the site will take place to ensure that dust and dirt are kept to a minimum. It is further noted that there is a lengthy (2.6 km), tarmac surfaced private haul road between the main body of the site and the public road network.

Pedestrian Delay and Amenity

12.7.30 Due to the temporary nature of the construction period, **no long term significant effects** are likely. It is however noted that a Core Path and a number of Aspirational Core Paths and Wider Network Paths cross the site and therefore measures require to be put in place prior to the commencement of any works on site to ensure appropriate crossing points or temporary diversions are put in place at the appropriate times and that these are well advertised locally. This will ensure any temporary disruption to the local path network is minimised and that appropriate mitigation measures are put in place. It is further noted that there will be significant enhancement and promotion of the local path network through the Revised Development for the longer term benefit of the local area. Further detail on the Access Strategy for the Revised Development can be found in Appendix.3.1.

Accidents and Safety

12.7.31 Accident records illustrate a low history of recorded vehicular incidents and the temporary construction phase is not anticipated to alter this. The CTMP will aid the safe operation of the passage of construction vehicles, therefore **no significant effects** are anticipated.

Effects during Operation

- 12.7.32 The Revised Development will support a small number of management and operations staff over its 25 year lifespan. In terms of operational traffic there will also be a requirement to undertake both standard operations and maintenance, periodic servicing and also unscheduled maintenance.
- 12.7.33 The vehicles utilised for these operational activities will largely consist of light goods vehicles, although a crane may be used for periodic blade inspections/maintenance. Occasional unexpected events may require heavier plant or an abnormal load movement to provide a replacement turbine component, however, such events are rare.
- 12.7.34 During the first year of operational life, maintenance activities are likely to be more regular as the operational characteristics of the site are optimised and minor issues are dealt with.
- 12.7.35 It is unlikely, however, that such operational traffic that occurs would be noticeable on the road network. In view of the small number of operational vehicles further consideration of operational traffic is not deemed necessary. **No significant transport effects** from the operational phase of the Revised Development have therefore been identified.

Decommissioning

- 12.7.36 The effects from decommissioning of the Revised Development are likely to be similar to and less than those predicted for construction, as some infrastructure (such as certain access tracks, certain hardstandings, and below ground foundations) will be left in situ. Therefore, the overall effects are anticipated to be lower than that envisaged for the construction phase and there would therefore be **no significant effects** on the road network during decommissioning.

12.8 Abnormal Load Route Assessment

- 12.8.1 As noted earlier in this assessment, King George V Dock in Glasgow is the likely port for turbine component arrival and the route from King George V Dock to junction 11 of the M74, as shown in Figure 3.8, has been used for the transport of wind turbine components for other projects in the area previously and has proven to be acceptable. The route from King George V Dock involves passing through three roundabouts, turning left at a signalised junction then joining the M8 at Junction 26. The route then leaves to M8 to join the M74 and remains on the M74 until Junction 11.
- 12.8.2 A swept path assessment of a vehicle carrying a 64 m long blade and of one carrying a 40 m long and 5 m wide tower section have been carried out for each of the above junctions. These swept path drawings are shown in the drawings in Appendix 12.2, which show that the manoeuvres are feasible though some temporary removal of street furniture would likely be required at a number of locations.
- 12.8.3 It should be noted that the first roundabout encountered in Glasgow can accommodate abnormal loads through overrunning of the central island and abnormal roads leaving the Port by this route commonly make this manoeuvre. Similarly, the swept path drawing illustrating the manoeuvre of the 64m blade load at junction 11 of the M74 shows the vehicle traversing the second roundabout anticlockwise which is to ensure that any oversail entering the private road is on land to the north of the road which is within the Applicant's control. It is not uncommon for large loads to traverse a roundabout in the opposite direction if it makes a manoeuvre easier, provided appropriate traffic management arrangements are agreed with the local authority and Police Scotland in advance.

12.9 Mitigation

Mitigation and Monitoring Measures for Construction Phase

- 12.9.1 Even though the predicted impacts arising from the Revised Development have been assessed as being **negligible**, the following measures have been identified as good practice in terms of construction management in order to help minimise the impacts from the construction phase of the Revised Development:

- preparation and implementation of a Construction Traffic Management Plan;
- use of the agreed access routes to the site will be enforced by the developer, and all principal and sub-contractors;
- at locations where slow moving abnormal load traffic is considered likely to cause a road hazard it is recommended that escorted traffic is complemented by advance publicity and temporary signage where necessary;
- wheel washing is proposed in the vicinity of the site compound to reduce the risk of transferring any mud onto the road and to suppress any dust;
- all site vehicles will be parked off-road and as discretely as possible;
- preparation and implementation of a Public Access Strategy to mitigate any potential conflict between site traffic during construction and the local path network;
- once final loads and transport configurations are known, an updated review of maximum axle loadings on structures along the access routes;
- similarly, an updated review of clear heights;
- confirmation that there are no roadworks or closures that could affect the passage of the loads;
- confirmation that there are no underground services on the access route that would be at risk from any abnormal loads; and
- confirmation that the relevant Police / escort authorities are satisfied with the route being used and that the appropriate roads authorities have been further contacted regarding the proposed loads and route.

12.9.2 It is also recommended that a trial run be undertaken prior to delivery of abnormal loads, using the proposed load trailer and a scaffold to represent the load dimensions to confirm that the loads can be safely accommodated.

Mitigation and Monitoring Measures for Operational and Decommissioning Phases

12.9.3 During the operational phase of the Revised Development only a handful of vehicle movements per month are expected for maintenance and inspection activities. No mitigation or monitoring measures are proposed for this phase of the Revised Development.

12.9.4 The mitigation measures set out for the construction phase will also be implemented, where relevant, during the decommissioning stage of the Revised Development.

12.10 Residual Effects

- 12.10.1 With the above mitigation measures in place, the residual effects of traffic and transport issues associated with the Revised Development will be **negligible** and are considered to be insignificant.
- 12.10.2 It is predicted there will be **no significant effects** on the road network due to traffic arising from the construction phase of the Revised Development.
- 12.10.3 **No significant transport effects** have been identified from the operational or decommissioning phases of the Revised Development.

12.11 Cumulative Assessment

12.11.1 In a transport context, the other neighbouring developments considered relevant to the cumulative assessment are:

- Dalquhandy Wind Farm (CL/12/0042)(15 wind turbines – approved but not yet commenced);
- Poniel Wind Farm (CL/12/0043)(3 wind turbines – approved but not yet commenced);
- Broken Cross Wind Farm (CL/12/0041)(7 wind turbines – approved but not yet commenced); and
- Poniel Built Development (CL/14/0070)(Planning Permission in Principle for a range of uses).
- Existing Poniel development (CL/10/0180) – the Council has granted consent or time extensions on the original planning consent.
 - Poniel Area A (120,770 sqm of Class 6) (CL/10/0180);
 - Poniel Area B (157,700 sqm of Class 6) (CL/10/0180) – s/s by new Dewars application (see below);
 - Poniel Area D (hotel, Class 4 and restaurant/ shops) (CL/10/0180) – s/s by Happendon Wood applications (see below);
- Coalburn – Residential Development for circa 650 homes (CL/13/0334);
- Newmains Home Farm, Douglas – Mixed Use including circa 50 homes (CL/14/0415);
- Broken Cross, Near Poniel – Business/Offices and Light Industrial Park (CL/16/0196);
- Happendon Wood (formerly Poniel Area D) – Class 6 development of circa 17,375 sq m (CL/14/0034 and CL/16/0471); and
- Dewars (formerly Poniel Area B) – additional bonded warehousing (CL/17/0003).
- M74 Heat & Power Park Proposed Mixed Use Scheme (CL/17/0157)

12.11.2 In respect of the consented wind farms at Dalquhandy and Poniel, it is recognised that both developments would utilise the same access road as the Revised Development. However, given the negligible impact of construction traffic associated with all three developments, even if they were to be constructed at the same time it is considered that the cumulative impacts of day-to-day construction traffic would not be significant and the existing access arrangement would be more than capable of coping with those traffic volumes for a short duration. The delivery of abnormal loads would be coordinated between the three projects to minimise any disruption to the wider road network.

12.11.3 The proposed wind farm at Broken Cross is currently part of an active surface coal mine (now under restoration) and traffic associated with the mining operations at this site will be included within the baseline surveys. It is understood that coaling finished at Broken Cross in 2015, therefore, there would be no additional construction traffic on top of the current mining HGV movements to and from that site. Therefore, it is considered that the construction of the Revised Development in

tandem with the other wind farm projects identified would have no significant effect on the operation of junction 11 of the M74 or the local road network.

- 12.11.4 Much of the Poniel Built Development has already been developed (largely as bonded warehousing) and traffic associated with that is included in the baseline surveys. Given the short construction period of the Revised Development and the other nearby wind farm proposals (1 year) it is entirely likely that even if new development commenced at Poniel there would be little overlap in operations. There is therefore unlikely to be crossover between the schemes other than during the operational phase of the Revised Development and other wind farm projects, during which traffic effects have already been demonstrated to be **negligible**.
- 12.11.5 Regarding the other proposed developments, the Transport Assessment for the M74 Heat and Power Park (reference CL/17/0157) contained data on the weekday AM and PM peak hour traffic expected to be generated. The total additional traffic from all of the above proposed developments would be 755 vehicles in the AM peak hour and 692 in the PM peak.
- 12.11.6 The data in Table 12.2 showed that the AADT traffic flow on the B7078 was surveyed as 5,374 vehicles. The AM peak hour flow was 404 vehicles and the PM peak hour flow was 378. Hence the AADT flow is 6.87 times the combined AM and PM peak hour flows. The equivalent AADT figure of the above proposed developments was therefore estimated as 9,940 vehicles. The baseline traffic flow on the B7078 would therefore be 15,314 vehicles to which the peak week of construction at the Revised Development would add a further 125 daily vehicles, making a total of 15,439 vehicles.
- 12.11.7 The additional traffic from these developments and the Revised Development represents an increase of 187% over the existing baseline flow of 5374 vehicles and hence breaches 'Rule 1' above. However, if the traffic from the peak week of construction at the Revised Development (125 vehicles) was assessed against the revised baseline of the above consented proposed developments (15,314 vehicles) then the additional traffic arising from the Revised Development would represent an increase of only 0.8%. That increase would occur only in the peak week for traffic generation during construction of the Revised Development and smaller increases would occur in the remaining weeks.
- 12.11.8 Furthermore, the above developments - and the Consented Development, a previous version of the Revised Development - have been approved by the planning authority who have satisfied themselves that the traffic effects of them are acceptable, both individually and cumulatively. Also, the Revised Development will only generate noticeable levels of traffic during its year-long construction and traffic levels will be negligible when it is operating. Finally, it was noted above that the capacity of the B7078 would be around 2,500 vehicles per hour. The additional daily traffic from all the proposed developments could still be accommodated within the available daily capacity of this section of the B7078.

12.12 Summary

- 12.12.1 Access to the site is to be taken from the existing private road serving the former opencast coal mining site, connecting to the public road network at the western dumbbell roundabout of Junction 11 of the M74.
- 12.12.2 A review of abnormal load routing has been undertaken from the intended Port of Entry at King George V Dock, Glasgow to the site. The route comprises the designated route to exit the Dock to reach the Motorway network within Glasgow (M8) before travelling east to the M74 and south to Junction 11 at Poniel, where the loads would pass underneath the M74. The loads would then take the 2nd exit at the M74 J11 western dumbbell roundabout and continue on the existing private road to the site.
- 12.12.3 The route has been successfully tested previously for other development proposals, but the north (Dock to Motorway) and south (Junction 11) sections have again been confirmed as suitable for the maximum component sizes envisaged at the Revised Development.
- 12.12.4 In relation to delivery of the wind turbine components it should be noted that in the case of extendable abnormal load trailers, these can be shortened prior to their return trip.

- 12.12.5 The access strategy for construction traffic utilises the existing road network to the north and south of the site, via either the M74 and/or the B7078. It has been demonstrated that the impact of construction traffic on background traffic levels is **negligible**.
- 12.12.6 As part of the Revised Development, the principal contractor will prepare a Construction Traffic Management Plan (CTMP), detailing the management processes and proposed measures during the construction phase.
- 12.12.7 During the operational phase, traffic levels are projected to be very low and able to be accommodated on the surrounding network, again resulting in a **negligible** effect.
- 12.12.8 Tables 12.5 and 12.6 below summarise the scoping points laid out in Section 12.3 and the effects considered and reported in this chapter.

Table 12.5 – Summary Table of Scoping Responses

Consultee Scoping Response	Applicant Response
Swept path required of local / trunk road interface at junction 11 M74	This has been carried out and is attached within Appendix 12.2
Need to cover any construction material import (e.g. for tracks) and preferably identify likely source of material (and hence likely routing)	This has been considered and the likely source of material and routing identified
Identify principal route(s)	This has been carried out
Confirm willingness to enter into Section 96 agreement	This is confirmed
Confirmed no objection to the Douglas West Wind Farm (an earlier iteration of the Revised Development)	Noted
High powered vehicle wheel wash should be provided and maintained on site so that all vehicles are cleaned prior to joining the public road	Noted and will be provided
The applicant shall at all times be responsible for the removal of mud or other materials deposited on the public highway by vehicles entering or leaving the site. Road sweeping by mechanical sweeper should form part of a routine maintenance regime to regularly clear the access route from the build up of debris	Noted
All vehicles entering or leaving the site shall use the existing private road to the west of Poniel interchange	Noted – this is proposed
The haul route for normal and abnormal loads will require to be agreed with this Service, but this Service would advocate that if possible normal construction traffic reach the site from the north via the M74 or B7078	The M74 and B7078 are proposed as the construction traffic routes
The developer must undertake a dilapidation survey along any agreed haul route and will be required to up-grade the haul road infra-structure as deemed necessary by this Service. The developer must enter into a formal Section 96 agreement with this Service for this section of road	Noted, a one-off upfront payment was made by the Applicant prior to SLC issuing permission for the Consented Development.

Consultee Scoping Response	Applicant Response
The route chosen to deliver abnormal loads to the site must be assessed to ensure that it is capable of accommodating the types of vehicle that propose to use it. It is recommended that trial drive-through of the route is undertaken using appropriate vehicles and this will highlight any pinch points that would require to be upgraded	The wider route has been established. Trial drive through noted and will be undertaken prior to commencement.
Details must be submitted, to this Service, of any land take or road widening that is required as a result of the above trial drive through	Noted, none anticipated.
Survey of existing traffic flows at locations that need to be agreed with the Council. The proposed survey locations can only be agreed with the Council once a delivery/construction route has been agreed in principle with the Roads Area Office	Data has been obtained for the route identified by the Council (M74 / B7078) from permanent counters (M74) or temporary counters (B7078)
Analysis of junctions impacted by the delivery/construction route to take account of existing flows, development flows and committed flows and future years where the revised development timeline dictates	Percentage impacts illustrate that peak time junction analysis is not required – addition of further commitments will dilute percentage impacts further.
The requirement and impact of imported materials or removal from site of surplus arisings where applicable	This has been accounted for in construction traffic profiles
Phasing of works and distribution of traffic flows on a month by month basis	This is reported on in the body of the text

Table 12.6 – Summary Table - Effects

Description of Effect	Significance of Potential Effect		Mitigation Measure	Significance of Residual Effect		Comparison with the Consented Development
	Significance	Beneficial/ Adverse		Significance	Beneficial/ Adverse	
Traffic impact during construction/ decommissioning and operation	Negligible	Adverse	Construction Traffic Management Plan	Negligible	Adverse	No Change

12.13 References

The Institute of Environmental Assessment (IEMA) (1993). *Guidelines for the Environmental Impact of Road Traffic*.

Design Manual for Roads and Bridges (DMRB), Volume 11, Section 2, Part 1, HA201/08. *General principles and guidance of environmental impact assessment*.

Transport Scotland (2012). *Transport Assessment Guidance*.

Scottish Planning Policy (2014)

South Lanarkshire Local Development Plan (2015)

South Lanarkshire Council (SLC) 'Supplementary Planning Guidance: Renewable Energy (SG)' 2015