

CHAPTER 11: TRANSPORT AND ACCESS

INTRODUCTION

- 11.1 This chapter identifies and assesses the transport and access effects associated with the construction, operation and decommissioning of the proposed Heckington Fen Wind Park. The significance of the potential effect after mitigation is then assessed. The assessment is based upon the number of vehicle movements required for 22 turbines and with maximum dimensions of 45m blade radius as described within **Table 4.2 of Chapter 4: Project Description**.
- 11.2 No specific facilities will be provided for visitors and therefore the effect of visitor traffic has not been examined.
- 11.3 Existing operations on the site are identified and predicted vehicle movements are calculated from guidance produced by turbine manufacturer Vestas, in order to establish how significant the transportation requirements are for the local environment. Consultations have been undertaken, including discussions with Lincolnshire County Council's Highways department and the Highways Agency. This has guided the following assessment.
- 11.4 The assessment considers:
- A review of the methodology and guidance used in the assessment;
 - The selection of suitable routes for construction traffic accessing the site;
 - Baseline conditions and characteristics of the existing local traffic network;
 - The requirements for modifications to the existing public road infrastructure in order to accommodate delivery of turbine components;
 - Prediction of potential effects of the proposed development during construction, operation and decommissioning;
 - Potential conflicts between construction traffic and the interests of other users of the local public road and footpath network; and,
 - Potential mitigation to minimise any impact and a description of any residual significant effects.
- 11.5 The chapter then assesses the significance of the proposed traffic increases in light of recognised thresholds of significance. The transport assessment demonstrates how the proposed development and its associated traffic can be integrated into the highway network.
- 11.6 The findings of the assessment undertaken for this chapter have been summarised and presented by Ecotricity. These findings were issued to the Lincolnshire County Council's Highway Team for their comments.

CONTEXT

Site Context

- 11.7 The application site comprises an area of farmland located on agricultural land adjacent to the A17 trunk road, between the villages of Heckington and Swineshead.

- 11.8 The detailed route proposed for component delivery is discussed in more detail below, but in summary it includes a route from Goole Port, M62, M18, A1(M), A1, A17 and onto the site via a new proposed access point. The location of the new access point can be found in **figure 4.1**. Construction and decommissioning traffic will follow the same route.

Policy Context

National

- 11.9 Advice on transportation impacts relating to the proposed development are detailed in guidance and policies contained within Planning Policy Guidance 13: Transport. PPG13 provides guidance for regional and local planning authorities in the production of their spatial strategies and development plans.

Regional

- 11.10 The transport policies contained within the East Midlands Regional Plan (2009) support and encourage development which would make a positive contribution towards sustainability objectives.
- 11.11 **Policy 53: Regional trunk Road Priorities** and **Policy 54: Regional Major Highway Priorities** both seek to ensure that the highway capacity is managed effectively to reduce congestion and improve safety.
- 11.12 **Policy 55: Implementation of the Regional Freight Strategy** set out key priorities which include reducing the overall impact of freight and expand the usage of inland waterways and coastal navigation.

Local

- 11.13 The North Kesteven Local Plan was Adopted in 2007. Under the provisions of the Planning and Compulsory Purchase Act 2004, the North Kesteven Local Plan expired 21 September 2010. However following North Kesteven District Council's application, the Secretary of State has directed that all policies of the North Kesteven are saved beyond the expiry of the plan. Section 7 of the Local Plan refers to policies on Transport. **Policy T4 – Safety** states that;

Planning permission will be granted for development proposals that will not adversely affect the safety of people using roads, cycleways, footpaths, bridleways or railways”.

- 11.14 Within the core policies section of the local plan **Policy C2: Development in the Countryside** provides criteria for what development would be acceptable. One of the criteria is that development will not attract or generate a large number of journeys, and is located to provide opportunities for access by public transport, walking or cycling.
- 11.15 Within the recreation, sport and tourism section of the local plan **Policy RST2: Protection of Existing Public Rights of Way** is also relevant. The policy advises that planning permission will not be granted for proposals that will adversely affect an existing public right of way.
- 11.16 The guidance contained within the County Council's Highways, 3rd Local Transport Plan 2011/12 to 2012/13 has also been taken into account in understanding the criteria necessary to assess the transport implications of our wind park proposal.
- 11.17 There are no other transport policies which relate specifically to renewable developments.

METHODOLOGY

- 11.18 The general approach to the assessment of effects outlined in **Chapter 2: EIA** and the Environmental Impact Assessment (England) Regulations have been followed, in order to identify environmental effects which are significant in terms of the EIA Regulations. The assessment therefore focuses on:
- potential effects on local roads and the users of those roads; and,
 - potential effects on land uses and environmental resources fronting those roads including the relevant occupiers and users.
- 11.19 The significance of potential effects has been assessed in light of recognised thresholds of significance from the published guidance (as discussed below). In this context there is a need to differentiate between impacts on the operation of the highway network that would fall within the scope of a Traffic Assessment, and environmental impacts that fall within the scope of this statement.
- 11.20 The three phases of the proposed development are construction, operation and decommissioning. All will be assessed individually for their level of significance as this will allow any required mitigation measures to be tailored to the needs of that phase of development.
- 11.21 Given the temporary, short term, nature of the transport/access effects, no criteria have been established for defining the magnitude of change or sensitivity. As mentioned in paragraph 11.31, where predicted traffic flows fall below recommended threshold criteria, effects are deemed as insignificant.
- 11.22 The M62, M18, A1(M), A1 sections of road being considered for the delivery of the turbine components are classed as trunk roads and are the responsibility of the Highways Agency.
- 11.23 The A17 section of road considered for the delivery of the turbine components are class as County Distributor Road and is the responsibility of the Local Highways Authority, Lincolnshire County Council. Historical data has been examined for these roads to determine their current usage and if there is likely to be any adverse traffic impacts.
- 11.24 Due to a lack of available information and the uncertainty around the commencement of the start of the construction process, it has not been possible to assess whether there are any cumulative transportation aspects, which may occur if major infrastructure projects are under construction in the same time frame and are utilising the same road network for deliveries. However, when commencing the construction of the site any such projects would be considered.
- 11.25 Swept path analysis has been completed on any locations on the delivery route identified as “pinch points” as shown in **Figure 11.1**. The swept path assessments provided in **Figures 11.2 to 11.5** have been produced allowing for the maximum turbine blade dimensions of 45m.

Guidance

- 11.26 The assessment of environmental effects has been carried out in accordance with:
- Guidelines for the Environmental Assessment of Road Traffic (1993), Institute of Environmental Assessment;

- Volume 11 of the Design Manual for Roads and Bridges (2009), Highways Agency; and,
- Guidance on Transport Assessments (2007), jointly published by the Department for Communities and Local Government & Department for Transport;
- Circular 2/07: Planning and the Strategic Road Network, Department of Transport; and,
- Planning Policy Guidance 13: Transport.

- 11.27 PPG13 states that it will not always be necessary for development proposals to be accompanied by a full and detailed Transport Assessment (TA) with the thresholds being set out in Appendix B of the Guidance on Transport Assessments. As the volume and type of traffic movement associated with the wind park will not exceed these thresholds it was concluded that a formal Transport Assessment was not required.
- 11.28 However, the information in this chapter will address the transport related environmental impacts at all phases of the development (construction, operation and decommissioning).
- 11.29 In addition, local planning authorities are advised to consult the Highways Agency (HA) over any development which may affect the users of a trunk road even though it may not lead to an increase in traffic.
- 11.30 The Guidelines for the Environmental Assessment of Road Traffic suggests that two broad rules can be used as a screening process to delimit the scale and extent of the assessment. These are:
- Rule 1: Include highway links where traffic flows would increase by more than 30% (or the number of HGV's would increase by more than 30%); and,
 - Rule 2: Include any other especially sensitive areas where traffic flows would increase by 10% or more.
- 11.31 The 30% threshold is based upon research and experience of the environmental effects of traffic, with less than a 30% increase generally resulting in imperceptible changes in the environmental effects of traffic. At a simple level, the Guidance considers that projected changes in traffic flow of less than 10% create no discernible environmental effect. However, the second threshold as set out in Rule 2 ensures that potential impacts on sensitive areas as defined in the IEA Guidelines (1993) are assessed.
- 11.32 Sensitivity of a road can be defined by the user groups such as school children and the elderly. A 'sensitive' area may be adjacent to a school, nursing home, located where residential properties front the road or where pedestrian activity is high. There are no sensitive areas through which the proposed access route would go.

Consultations

- 11.33 During the development of this Environmental Statement and the assessment of the proposal, the Highways Agency and Lincolnshire County Council have been consulted about the proposed delivery routes and their responses can be found in **Appendix 2.1**. The responses have been taken into account within this Chapter and the suitability of the various routes will feed into the final decision over which delivery route is used for the turbines.
- 11.34 Lincolnshire County Council's informal scoping response highlighted specific issues that they expected to be addressed with the EA. These included full details of the HGV's that would be

entering the site during the construction stage and full details of the vehicles and routes used to transport the turbine components. In summary the scoping response indicated that the transport assessment and plans should include;

'plans showing vehicular turning movements to gain access will be required should the scheme proceed in order to ensure this authority that vehicles can move off the A17 with ease and alacrity'

In addition the following items have been assessed within this chapter:

- Abnormal road routes;
- Any enabling works required;
- Traffic generation during construction;
- Swept path analysis where appropriate;
- Impact on the public highway; and,
- Any required mitigation measures.

BASELINE CONDITIONS

Access onto Site

11.35 The complete access route to the proposed site at Heckington is as follows:

- M62 (Via Goole port)
- M18
- A1(M)
- A1
- A17
- Access onto site from a new proposed site access point

11.36 These roads will provide access to the site, for construction traffic, the delivery of the turbine components and for the operational phase. **Figure 11.1** shows the intended route to site along the roads outlined above.

11.37 Data from the DfT¹ shows that the average daily flow of traffic on the A17 north of Sleaford is approximately 20,734 vehicle movements per 24 hour period. Of these movements 2,588(12.4%) are categorised as Heavy Goods Vehicles. The average daily flow of traffic on the A17 at the A52 Junction to the south of the Heckington Fen Wind Park is approximately 9,685 vehicle movements per 24 hour period. Of these movements a average of 1,914 (19.8%) are categorised as Heavy Goods Vehicles.

11.38 Access to the site will be obtained from the A17. As set out within **Appendix 11.1: Road, Crane Pad and Hardstand Specifications for Vestas Turbines** (Maximum specification), the turbine

component vehicles require a turning circle with an inner radius of 45m and a minimum carriageway width of 5m.

11.39 A site survey undertaken by Ecotricity, has confirmed that the proposed route from Goole port onto the M62, M18, A1(M), A1, A17 and then onto site will be viable for the delivery of all the turbine components. These roads have sufficient width and have adequate turning circles at junctions and other cornering areas. **Figure 11.1** shows the intended route and indicates the potential 'pinch points' along the route where a more detailed swept path analysis was carried out to aid the assessment. **Figures 11.2 – 11.5** present the four swept analysis plans produced for these 'pinch points'.

11.40 Access from the A17 into the site is depicted in **Figure 11.5**, which shows the new access point proposed which allows for the turning circle for the turbine components to be delivered.

Rail

11.41 The nearest railway stations within the vicinity of the proposed development site run through Swineshead Bridge and Heckington, approximately 2.2km to the south east and 5.5km to the west respectively. Due to logistics, the removal of the turbine sections at either of these railway stations makes the option not viable.

Sea

11.42 Although access on to the site cannot directly be achieved via water, it is proposed that the turbine components will be brought to the UK via a nearby port. The final decision on which port to use will be determined by the chosen turbine manufacturer, once planning permission has been granted. As part of this assessment it is assumed Goole port is a candidate location given its extensive existing facilities which includes allowing for temporary storage of the turbine components.

Component delivery

11.43 As set out in **Chapter 4: Project Description** of this Environmental Statement, the turbine components and cranes will be delivered to the site via public highways on a route approved through the issue of abnormal loads certificates and will be escorted by the Police. The turbine components will be delivered to the UK from Europe via scheduled transport ships.

11.44 The turbine components are transported to site on different trucks. Each truck will carry a single component (it is possible that two blades will be carried on one vehicle, however a worst case scenario has been presented). These are shown within **Table 11.1**. All the proposed vehicles will require abnormal load clearance to enable delivery to the site. These vehicles are described below.

Table 11.1: Turbine Components

Component	No. Per Turbine	Total No. of components	Transporters (Max. Dimensions)	No. of Trucks
Blades	3	66	Truck (1 blade per truck, weight approx. 35ton)	66
Nacelle and Generator	2	44	Semi – low loader (weight approx. 84ton)	44

¹ Data from Leicestershire County Council AADF count (2008) <http://www.dft.gov.uk/matrix/Map.aspx#>

Steel Tower Sections	3	66	Each tower section on 1 low-loader. (weight approx. 35ton + tower weight)	66
TOTAL		176		176

- 11.45 Each of the abnormal load vehicles will be reduced to standard size for departure. **Figures 11.7 and 11.8** show the dimensions of the largest abnormal loads – the blades and tower section. Please note that the blade delivery lorry is for information only, and shows the largest possible blade length for the proposed turbine. As the 45m blade length is taken from the centre of the nacelle, the actual size of the blade is slightly smaller at 44m. This is indicated on **Figure 11.7**.
- 11.46 Swept path diagrams have been created to illustrate the swept area required for the trailer axles. **Figures 11.2 - 11.5** provide swept path drawings based on all vehicles driving directly in one direction with all steerable trailer equipment operating on 'auto steering'. However, it should be noted that any trailer with 'steerable' axles will also have a 'manual' override system, which allows the trailer to be steered independently and controlled by a trailer steerman. This 'manual' steering system can override the normal direction of the trailer and has the capacity to increase the degree of steering angle, over that normally obtained under the 'auto-steering' operation. These diagrams highlight that the turbine components can be delivered safely to the site.

Cranes and Support Vehicles

- 11.47 The turbines will be assembled using two cranes. The numbers of support vehicles required for each crane are presented in **Table 11.2**.

Table 11.2: Support vehicles for cranes

Crane	Axle Weight	No. Supporting Vehicles
A 500 ton Lieber LTM 1550 telescopic crane	12te max axle load	5 additional vehicles
120 ton mobile crane with 1 hook/winch.	12te max axle load	1 additional transport vehicle required
TOTAL Lorries		6

- 11.48 For the construction of the turbines no other vehicles to arrive at the site will be abnormal loads. This approach has been employed by the applicant for the following similar developments (see **Table 11.3**) in recent years and access to the sites has been achieved successfully and safely with police escorts.

Table 11.3: Similar developments

Site	Development	Comparison	Crane Type
Swaffham (1999)	E-66, 65m tower + viewing platform	Visitor Platform	Demag TC3300
West Somerton (2000)	E-66, 65m tower	Tower section larger	Leibherr LGD1550
Swaffham II (2003)	E-66, 85m tower	Tower section larger	Liebherr LTM11000

Bambers Farm (2002)	E-40, 65m tower	Tower section larger	Leibherr LGD1550
Mablethorpe Wind Park (2004)	E-40, 65m tower	Tower section larger	Leibherr LGD1550
Green Park, Reading (2005)	E-70, 85m tower	Tower section larger	Liebherr LTM11000
Bristol Port, Avonmouth	E-82, 79m tower	Tower section larger	Liebherr LTM11000

Generator

- 11.49 Typically, the generator has been the widest load to deliver to site. The vehicle used for delivery of the generator would normally be a standard width low loader (2.53 metres) with a maximum load width of 4.5 metres (the diameter of the generator).

Public Highway Improvements

As there is no existing access point at the proposed location a new access point will be required from the A17 to the site. The location and design has been included within **Figure 11.10**. The access point design includes for culverting the existing ditch with a 900mm galvanized multiplate pipe and inclusion of a high specification track. The design of the access point was submitted to the Local Highways Authority and Highways Agency for comment. Local Highways responded requesting a minimum angle off the A17 onto site which they indicated could be subject to a planning condition.

Public Footpaths & Bridleways

- 11.50 A single public footpath runs to the north of the site. No crossings of the existing footpath are required and all turbines comply with the safety separation distance from turbine to Public Rights of Way.

Traffic Management

- 11.51 The traffic management procedures which would be required for this proposed development can be broken down into two phases.
- 11.52 **Phase 1:** This will be implemented during the construction phase. All of the large/abnormal load vehicles, which will be carrying the large turbine components and cranes, will require police escort. Form 'BE16' permits will also be required to undertake the movement of the blade components. Once this proposal has obtained planning permission the necessary licenses for these vehicles will be applied for from the Highways Authority. Any disruption to oncoming traffic during passage down these A-roads will be short term as it will only occur during the period of turbine delivery.
- This disruption will be minimised further by delivering the large components outside the peak vehicle use hours of the M62, M18, A1(M), A1 and A17
 - These hours will be defined in more detail when specific discussions take place with the Highways Authority and the Police. However, it is suggested that the transportation will be programmed to avoid rush hour traffic within the area. Adequate warning signs will also be implemented to warn other road users.

11.53 **Phase 2:** This will be implemented once construction is completed. For maintenance purposes on the turbines a small maintenance van will require access to the site every 6 months and potentially for additional visits under unforeseen circumstances. This van will use the new proposed access point off the A17

ASSESSMENT OF EFFECTS

11.54 The general approach to the assessment of effects outlined in **Chapter 2: EIA** and the Environmental Impact Assessment (England) Regulations have been followed, in order to identify environmental effects which are significant in terms of the EIA Regulations. Potential environmental effects will be outlined in the context of the three phases of the development; construction, operational and decommissioning.

Construction

Access on to Site

11.55 The M62, M18, A1(M) and A1 are all UK motorways or trunk roads and are therefore subject to large numbers of traffic vehicle movements per day. The additional traffic associated with the construction of this proposal would not result in 30% increase of HGV vehicles. One swept path analysis has been completed on these roads at the junction between the A1 and the A17 which is shown in **figure 11.2**. This demonstrates that the blade deliveries can be complete without alteration to the existing roundabouts at the A1/A17 junction. Including the management of police escort for abnormal loads the magnitude of impact can be considered as **minor**.

11.56 The A17 is well used serving the nearby population centres and agricultural properties within the local area with traffic recordings taken on the A17 near Sleaford and the A17/A52 junction recording 20,734 and 9,685 vehicles using the road every day with 12.4% and 19.8% being HGVs. As outlined within **Table 11.4** approximately 4,764 HGV, large vehicle or abnormal load movements will occur during the construction process of 52 weeks.

11.57 When these additional vehicle movements are compared against the existing traffic flows along the A17, the additional movements during the construction phase do not exceed a 30% increase in HGV/heavy vehicle flow². Effects during construction are considered to be direct, short-term and temporary. Therefore the magnitude of impact on A17 traffic flows during this stage in the development can be considered as **minor**.

11.58 Swept path analysis was conducted on the A17 route where potential pinch points were identified. Two swept path assessments have been included showing the roundabout on the A17 leading onto Beckingham and Stapleford Lane (**Figures 11.3**) and the A15/A17 roundabout north of Sleaford (**Figure 11.4**). These have shown that both of these roundabouts can be navigated with the largest abnormal load with limited impact to the existing infrastructure. The magnitude of impact can be considered as **minor**.

11.59 The new access point from the A17 to the site has been assessed for abnormal loads in **Figure 11.5**. The access has been designed to ensure that loads and HGV deliveries can obtain access to the site quickly and efficiently with space for a number of HGVs to pass within the access point and nearby passing point described in **Figure 11.6**. The design of the access point is illustrated in

Figure 11.10 and incorporates a gentle slope from the A17 which would satisfy the relevant highway design standards and any conditions imposed by the local highway authority. The construction of the new access point will require an appropriate management plan on the A17 for approximately 2 weeks as described in **Figure 11.9**. Given the short term nature the magnitude of impact is considered **minor**.

Component Delivery

11.60 There will be a number of heavy vehicles required to construct the development (See **Table 11.4**).

Table 11.4: Indicative HGV's/abnormal load vehicle movements during construction phase.

Stage	Week	Activity	No. of Vehicles	Vehicle movements	Size of Vehicles	Timing	Average daily vehicle movements weekdays 08:00–18:00
Set up site and fence off	1	Delivery	1	2	HGV	1 day	2
Hard Standing areas and tracks ³	1 – 23	Delivery and construction	1,190	2,380	HGV (20 tonne trucks)	161 days	14.78
Foundations (excavation)	8 – 40	Excavators	2	4	20t Tracked Machines	2 remain on site	2.0
Foundations (steel)	10 - 15	Delivery	22 (1 per turbine)	44	Articulated Lorry Small crane	35 days	1.26
Foundations (concrete) ⁴	15 - 40	Delivery	968 (44 per turbine)	1,936	8m ³ lorries	175 days	11.06
Break	15 - 44	Minimal activities on site to allow foundations to cure.					
Arrival of Cranes	30	Delivery	10	20	HGV	1 day	10
Turbine delivery	30-50	Delivery	176 (8 per turbine)	352	Various ⁵	140 days	2.51
Departure of Cranes	52	Departure	10	20	HGV	1 day	10

³ Every 1km section of access track requires approximately 60 x 20 tonne trucks delivering a total of 1200 tonnes of crushed aggregate, to provide a stable surface of c.0.3m deep. Every 39m x 22m hard standing area requires 250m³ or 500 tonnes of aggregate, equal to 25 x 20 tonne trucks.

⁴ Concrete will arrive on site as needed – it needs to be used instantly. Each turbine foundation needs to be poured in two stages, with at least 1 day between each stage

⁵ The Vehicles that deliver the turbine will range in size from standard length flat bed lorries, to extendable low-loaders. When departing, the unloaded lorries are contracted to standard length.

² Using the maximum daily vehicle movements of 18.32 as presented in Table 11.4 the maximum daily increase in HGV vehicles will be an estimated 0.7% – 0.95% based upon on the A17 traffic figures provided in paragraph 11.37 and 11.38.

Stage	Week	Activity	No. of Vehicles	Vehicle move-ments	Size of Vehicles	Timing	Average daily vehicle move-ments weekdays 08:00–18:00
Removal of construction area	52	Delivery Vehicles	1	2	HGV	1 day	2
TOTAL	52		2,382	4,764			18.32

- 11.61 The number of vehicles movements on the highway network generated by the development will be spread out over approximately 12 months. **Table 11.4** outlines the anticipated numbers of HGV and abnormal loads that will access the site. The figures are derived from known quantities of materials which will be required during the construction process, although unforeseen local conditions may result in changes to the number of delivery vehicles required for the construction of the access tracks and crane pad areas.
- 11.62 In addition to HGV's, there will be a number of staff accessing the site on a daily basis. These will amount to between 3 and 8 per day during earth works and between 4 and 12 per day during turbine installation. It is likely that private vehicles accessing the site will be arriving from local hotels where the engineering staff will be accommodated during the construction phase.
- 11.63 It can be seen from **Table 11.4** that there will generally be a potential maximum of up to 11.06 heavy vehicle movements per day for the foundation construction process. The vehicles, though supporting a significant weight, are appropriately distributed such that the load requirement on the road is for a 10-12 tonne axle weight.
- 11.64 It will be a requirement due to the size of a number of vehicles, specifically the larger cranes and the low loaders delivering the turbines, that a police escort will be necessary. There will therefore be some disruption to traffic on the A-roads due to the police escorting the abnormal loads.
- 11.65 Overall, construction impacts will be short-term and temporary.
- 11.66 The single footpath within the site boundary is not crossed or in the near vicinity of any construction traffic. The magnitude for impact is **no change**.

Operation

- 11.67 Once the turbines are commissioned there are no further deliveries to the site. There are neither fuels nor wastes to be removed. Additional traffic to the site during the operation will be negligible, comprising of a bi-annual maintenance vehicle and potentially additional visits under unforeseen circumstances. If it becomes necessary to access the site with large vehicles the Highways Authority will be informed and so any traffic management system that is required can be approved prior to works taking place.
- 11.68 These operational traffic levels fall substantially below the 30% increase level and are considered to be **no change**.

Decommissioning

Access from site

- 11.69 It is difficult to predict the transport effects of decommissioning. It is likely that the turbines will be transported from the site in the same form as they arrived. However, prior to decommissioning a further traffic assessment can be undertaken. This would assess the current guidelines for determining significance when calculating increases in traffic flow.
- 11.70 Due to the difficulty in accurately assessing the decommissioning procedure and therefore means of transportation and possible route, at this time, it is hard to accurately determine the significance of this phase of the development. However, it is estimated that traffic flows will not be greater than during the construction phase. Following the reasoning of the Environmental Assessment of Road Traffic Guidelines indicating that a 30% increase is significant; it can be assessed that the effects of traffic impacts on the decommissioning process will be **minor**.
- 11.71 As with the construction phase there will be no impact on the A17 infrastructure during decommissioning and therefore the magnitude of impact is **no change**.

Component Removal

- 11.72 It is predicted that the turbine components will be removed from the site by a number of different recycling and waste contractors, some of whom will remove the steel and copper for recycling. Whilst cranes will be required to take down the turbine components, it is unlikely that the same volume of HGV's will be required to remove ancillary equipment such as access tracks and crane pad areas.
- 11.73 Overall, decommissioning impacts are expected to be short-term and temporary.

Public Footpath

- 11.74 The impact on footpath users is anticipated to be similar to that of the construction phase (**none**).

MITIGATION

- 11.75 During the construction phase when localised disturbance may be at its highest, various mitigation steps will be implemented to reduce any minor environmental impacts.
- Once planning permission has been obtained a definitive route plan for the movement of the turbine sections will be created and submitted for approval to the Police and Highways Authority.
 - Safety of traffic using the A17 will be ensured by providing sufficient visibility to and from turning HGVs entering and leaving the site entrance. This will be achieved through consultation with Lincolnshire County Council and will involve methods such as the installation of traffic management, for example, temporary traffic lights.
 - Measures will also be undertaken to minimise the environmental impacts from building operations and transporting materials. These will include for example:
 - The use of appropriate vehicles e.g. enclosed or sheeted lorries.
 - The use of properly serviced and maintained vehicles.

3. Phasing the works so as to cause minimum disruption to others.

STATEMENT OF RESIDUAL SIGNIFICANCE

- 11.76 All impacts resulting from transport and access aspects of the development, including construction, operation and decommissioning, have been assessed as **insignificant** or **minor** (see **Table 11.5** overleaf for summary details).
- 11.77 There are no significant impacts considered on transport and access within this assessment.

Table 11.5: Summary of Residual Effects

Phase	Receptor	Summary	Sensitivity	Magnitude of Change	Residual Significance
Construction	M62,M18, A1(M) and A1 road users	Trunk roads with high volume of current road users. Abnormal loads using suitable escort and delivered out of peak hours.	Low	Minor	Minor
	A17 road users	High volume of road users with high level of HGV's currently using the road. Some traffic management will be required as part of the new access and ongoing wind park construction.	Medium	Minor	Minor
	A17 infrastructure	A new access track is proposed onto site from the A17. Swept path analysis shows route along A17 requires minimal alteration to the existing road infrastructure.	Medium	Minor	Minor
	Onsite access track users	New proposed access track would not be used by private individuals.	Low	No Change	Insignificant
	Onsite access track infrastructure	Passing points and temporary vehicle	Low	Low	Minor
	Public Rights of Way users	No public footpaths will be altered or impacted as a result of this development.	Medium	No change	Insignificant
Operation	All road users	Minimal traffic associated with the operational phase.	Medium	No change	Insignificant
Decommissioning	A46 road users	Anticipated that a high volume of road users with high level of HGV's will be using the road.	Medium	Minimal	Minor
	A46 infrastructure	Swept path analysis shows no requirements to temporarily alter road infrastructure to facilitate access to site.	High	No change	Insignificant
	Onsite access track users	The track would not be used by any other party.	Low	No change	Insignificant
	Onsite access track infrastructure	Removal of the additional access area created to facilitate turbine component delivery and removal. Area returned to agricultural use.	Low	Low	Minor
	Public Rights of Way users	The footpath will remain unchanged.	Medium	No change	Insignificant