Vattenfall Wind Power Ltd

Thanet Extension Offshore Wind Farm

Annex 8-1: Abnormal Indivisible Load Access Study

June, 2018, Revision A

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June, 2018

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Vattenfall Wind Power Ltd

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Abnormal Indivisible Load Access Study

May 2018

Amec Foster Wheeler Environment
& Infrastructure UK Limited

Report for

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Document revisions

No.	Details	Date
1	AIL Draft v1	March 2018
2	AIL Final	May 2018

Contents

1. Introduction

Amec Foster Wheeler UK Ltd (Amec Foster Wheeler) have been commissioned by Vattenfall to undertake an Abnormal Indivisible Load (AIL) access study for the delivery of AILs associated with Thanet Extension Offshore Wind Farm (Thanet Extension), also referred to as 'the proposed development'.

The project comprises of proposed wind turbines and all infrastructure required to transmit the power generated by the turbines to the national grid network at the grid connection location at Richborough Energy Park. It also comprises onshore and offshore infrastructure required to operate and maintain the wind farm and associated infrastructure.

1.1 Purpose of Report

The purpose of this AIL study is to provide Vattenfall with as much information as possible concerning the practicalities of delivering AILs between the preferred port(s) of entry/Strategic Road Network (SRN) to the proposed development site's ingress and egress.

The transfer vehicle considered for delivery of AILs is a 20-axle Girder Frame Trailer (GFT). The transfer vehicle has been selected to present a robust worst-case scenario during the early stages of the project development and may be subject to change as the project develops. Given a worst-case scenario vehicle configuration, it is considered that the findings of this report will continue to remain valid.

Information regarding Swept Path Analysis (SPA) and traffic management measures have not been included within this report and will be covered separately as part of post consent documentation and a Construction Traffic Management Plan (CTMP), respectively.

In summary this report provides information on the following items:

- Transfer vehicle and AIL specifications;
- Transfer routes considered within this assessment; and
- Next steps.

This is a dynamic document and will continue to be updated as the project develops.

1.2 Study Approach

A desktop review, supported by site audit (27-28 March 2017) has been undertaken to identify and audit potential haulage routes.

Only two abnormal loads are expected to be delivered to the proposed development site, in the form of the transformers. For cable deliveries, it is expected that the contractor will seek to use normal loads based on cable drum dimensions. However, it may be that a smaller number of large deliveries is preferable to a larger number of small deliveries, and therefore could potentially result in additional AIL movements. For this assessment, only the transformer has been considered as an AIL.

Preferred routes between potential receiver ports and the SRN have been identified and audited for suitability to accommodate AILs. It is a possibility that the transformer may be constructed and route from within the United Kingdom. Should this be the case, the AIL will route along the SRN towards the proposed development, from which point an assessment of impacts has been undertaken within this report. Therefore, the routes assessed are considered to be representative despite the origin of the transformer components.

1.3 Report Structure

The scope of this study is structured as follows:

- **Chapter 2 Site Context and Proposed Development**: provides the site location, an overview of the proposed development, and the location of site access points;
- **Chapter 3 AIL Transfer Vehicles Specifications**: identifies the proposed transport vehicle for the substation equipment, along with details on axle spacing/loading;
- **Chapter 4 Legislative and Procedural Guidelines**: provides an overview of the relevant guidance and procedural documentation used to determine the category of AIL vehicle and respective requirements concerning notification procedures, speed limits and escorts;
- **Chapter 5 Route Options**: provides an outline of the proposed ports of entry and identified routes along the strategic, regional, and local road network to the proposed development;
- **Chapter 6 Route Options Appraisal**: provides an assessment of the route options, identifying pinch points, constraints, and potential mitigation requirements;
- **Chapter 7 Consultation**: provides a summary of responses from Highways England and Kent County Council regarding the chosen routes from port of entry to the site;
- **Chapter 8 Management Strategy**: details the general management measures that will be adhered to during the transfer of AILs; and
- **Chapter 9 Summary:** provides a summary of the route options identified.

All information presented within this assessment, including the type of AIL and vehicle specifications, is based on the best available information at this time and may be subject to change following the appointment of a haulage contractor. This assessment does however represent a 'worst case' scenario, meaning any change to the AIL/vehicle specification should not cause any issues at a later stage.

Any intended changes will be forwarded to the relevant highway authorities for consideration.

2. Site Context and Proposed Development

2.1 Site Location

The proposed development is situated approximately 4km south-west of Ramsgate, in Kent.

The proposed development is bound to the east by Pegwell Bay, to the north by Sandwich Road, to the south by the River Stour, and to the west by the A256 (Ramsgate Road)/Richborough Energy Park.

2.2 Development Description

Thanet Extension will comprise of wind turbines (with a maximum generating capacity of up to 340 MW) and all infrastructure required to transmit the power generated by the turbines to the National Grid network at the grid connection location at Richborough Energy Park (REP). It will also comprise any onshore and offshore infrastructure required to operate and maintain the wind farm and associated infrastructure, up to the cable interface point at the National Grid network; no works are proposed on National Grid infrastructure as part of this application.

There are two possible export cable system configurations from the offshore site to the onshore substation:

- 4 cables connected from the Wind Turbine Generators (WTG)s directly to the onshore substation from the offshore site all the way to landfall and then to the onshore substation at Richborough Port where it will be transformed to 400 kV before being fed into the National Grid system at REP; or
- An Offshore Substation (OSS) collecting the power from array cables and transforming the power to 132kV and feeding the power back to the onshore substation via two export cables where the power will be transformed up to 400 kV before being fed into the National Grid system at REP.

The transmission voltage will be either 66 kV or 132 kV, with a maximum of four export cables.

The offshore export cables will be buried for the majority of the export cable route from the WTG's to the landfall site in Pegwell Bay.

2.3 Site Access

Five access points are proposed along Sandwich Road (only Access five is being considered for AIL access) as identified in **Figure 1**:

- Access One (Grid reference: TR 34076 63319) is located further south, approximately 221 m, and provides access to a construction and laydown area and likely to be used by HGVs.
- Access Two (Grid reference: TR 33954 63102) is located further south, approximately 467 m, and provides access to a construction and laydown area and likely to be used by HGVs.
- Access Three (Grid reference: TR 33689 62412) is situated in vicinity of the Ebbsfleet Lane signal junction. This is a new access and will provide egress/ingress to the cable trench. This will also provide access to a further construction and laydown area for HGVs.
- Access Four (Grid reference: TR 33642 62327) is situated in vicinity of the Ebbsfleet Lane signal junction. This is an existing access which provides egress/ingress to the Baypoint Club. This will also provide access to a further construction and laydown area for HGVs.
- Access Five (Grid reference: TR 33541 61908) will be achieved via the existing A256/Richborough Energy Park roundabout. This will be utilised for all substation equipment, including delivery of the Super Grid Transformer (SGT), and is likely to act as the only AIL

access point, unless cable drums are determined as AILs and, as a result, would need to be delivered to one of the Sandwich Road access points.

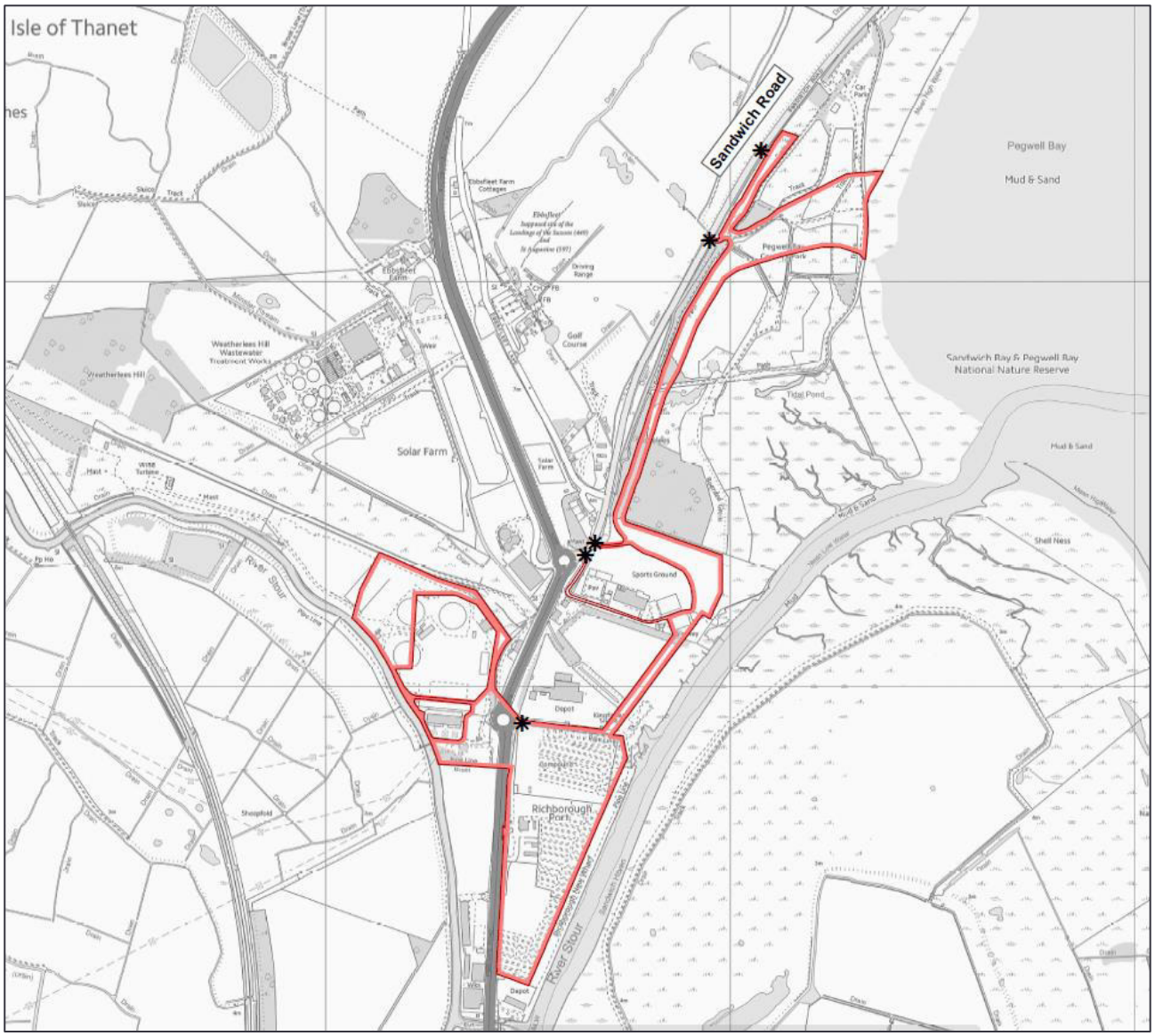


Figure 1: Site Access Locations

2.4 AIL Transfer Vehicle Specifications

The type of transfer vehicle being considered in this assessment is a 20-axle Girder Frame Trailer (GFT). The vehicle configuration used to transfer the abnormal loads will ultimately be decided by the appointed haulier, however, the configurations selected are considered to be a robust representation for the purposes of this assessment.

It is anticipated that the 20-axle GFT will be the principal means by which the transformer components will be transferred. As identified in Section 1.2, the largest component to be transported will be the 400kV transformer tank body. The transformer tank body is not expected to exceed 360 tonnes and has an approximate envelope dimension of 11.0 m x 4.5 m x 4.9 m.

It is assumed that all vehicle configurations will use a ballast tractor/s to move the AIL components (model to be confirmed by appointed haulier). The GFT considered for this assessment, will be powered by two tractor

units, one at the front and one at the rear of the GFT as illustrated below in **Figure 2** with specifications presented in **Table 2.1**.

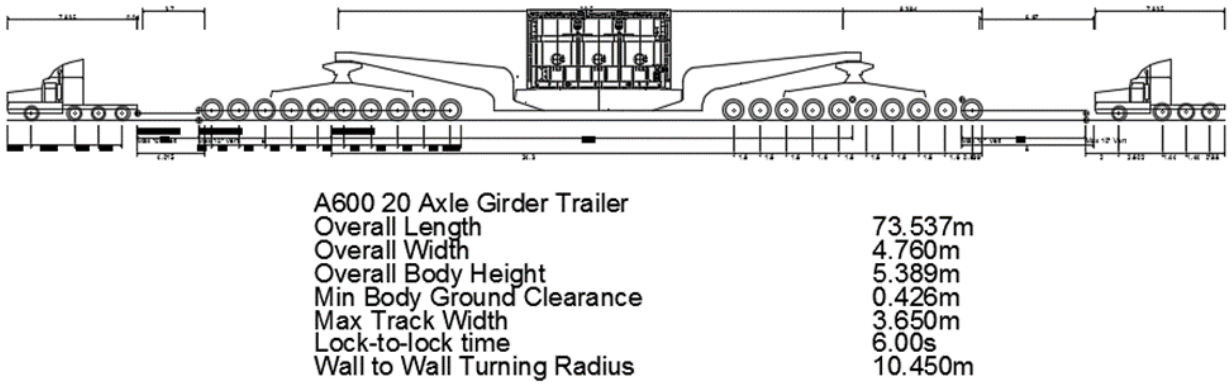


Figure 2: 20-axle girder frame trailer powered by two tractor units.

Table 2.1 Specification of 20-Axle GFT with load

Aspect	Value
Weight	342,200 kg*
No. of Axles	20
Axle Weight	17,110 kg x 20
Wheels per Axle (Wheels x No. of Axles)	8 x 20
Axle Spacing	(9 x 1600) x 2
Tyre Size	215/75 R17.5 x 20
Length	48.1m
Total Configuration Length	73.7m
Width	4.8m
Typical Running Height	4.7m
Wheelbase	16.1m
Rear Overhang	0.0m
Ground Clearance	0.3m
Outside Track	3.7m

*Includes the weight of AIL, trailer weighs 132,200 kg (including auxiliary steel weight of 5,200 kg)

3. Legislative and Procedural Guidelines

3.1 Introduction

The Secretary of State (SOS) (1986) describes the different types and classification of permitted vehicles for use on the road, for example motor cars, motorbikes, buses, lorries, mobile cranes, and tracked vehicles. It also states the maximum dimensions for each type of vehicle, its gross weight, number of axles, braking system, type of tyres, maximum speed, exhaust system and mirrors.

SOS (1998) details the imposed maximum weight (gross and per axle) of different types of vehicles relating to the number of axles within each category of vehicle.

Vehicles not conforming to the Regulations specified above are subject to those outlined within SOS (2003). It specifies when the Police, Roads Authority or Secretary of State is to be notified of an intended vehicle movement, and the number of days' notice required before the movement takes place.

3.2 Special Types General Order (STGO) – Abnormal Indivisible Load Regulations

AIL transport vehicles are broadly defined by the Department for Transport (DfT) as vehicles that have any of the following:

- A weight of more than 44,000 kg;
- An axle load of more than 10,000 kg for a single non-driving axle and 11,500 kg for a single driving axle;
- A width of more than 2.9 m; and
- A rigid length of more than 18.65 m.

In addition to the above, hauliers are generally advised to inform statutory authorities if total vehicle heights are likely to exceed 5.0 m (although it should be noted that there is no legal height restriction).

STGO vehicles are further categorised into three weight categories, as follows:

- Category 1 - Maximum Gross Weight: 50,000 kg, C&U Regulation axle limit (46,000 kg if the combination has less than 6 axles and does not comply in all other respects with the Authorised Weight Regulations);
- Category 2 - Maximum Gross Weight: 80,000 kg, 12,500 kg axle limit; and
- Category 3 - Maximum Gross Weight: 150,000 kg, 16,000 kg axle limit.

For all categories, the following advice is provided with regards to width:

- A vehicle, locomotive or trailer may be up to 3.0 m wide and, subject to certain qualifications, this limit may be exceeded if it is necessary for the safe carriage of the load;
- Loads wider than 5 m can only be conveyed if authorised by special order (the VR1 procedure – under SOS (2003) Regulations). The VR1 must be carried on the vehicle and at least 10 days notification is required prior to the movement date; and
- The load cannot exceed 6.1 m width under STGO Regulations.

For all categories, the following advice is provided with regards to length:

- The overall length of the vehicle(s) and load may be up to 30 m, or greater if authorised by special order from the SOS (see Section 3.3). In any combination of vehicles on which a load

rests, including any articulated vehicle, the 30 m does not include the length of the drawing vehicle; and

- An articulated vehicle or trailer, which is abnormal only in respect of length for carrying indivisible loads of exceptional length, can operate under normal C&U Regulations.

With regards to speeds, those that apply to each of the weight categories are set out in **Table 3.1**.

Table 3.1 Speed Restrictions

	Motorways	Dual Carriageways	Other
Category 1	Normal	Normal	Normal
Category 2	40mph	35mph	30mph
Category 3	30mph	25mph	20mph
Article 20 (over 4.3m wide)	30mph	25mph	20mph

Source: https://www.gov.uk/government/publications/special-types-enforcement-guide/special-types-enforcement-guide

It should be noted that although the speeds referenced above are the legal limits, the actual achievable speed of the vehicle configuration may be substantially lower.

3.3 Special Orders

Vehicles that exceed one of the following, and thus are not covered by the STGO Regulations, necessitates an application for a Vehicle Special Order (VSO):

- Width of 6.1 m;
- Length of 30 m; and
- Gross weight of 150,000 kg.

To apply a VSO, the following information will need to be supplied to the DfT.

- Name and address of person/organisation making the application;
- Details of persons/organisations who will be using the vehicles, if different from the previous;
- The number of vehicles involved;
- Type of vehicles involved, their make, model, registration, and/or chassis (serial) numbers of motor vehicles or trailers. These will be listed on any order issued;
- Details of the vehicles e.g. number of axles, individual axle weights, and gross vehicle weights (both in kg), plus dimensions (in m);
- In the case of vehicle combinations, overall weights (in kg) and dimensions (in m); and
- Details of the C&U Regulations with which the vehicles do not comply and the reasons why they cannot comply: The Regulations are specified on the VSO, and it should be made clear that failure to comply with non-specified Regulations, or supplying incorrect data would invalidate the VSO.

On receipt of the application, the Vehicle Certification Agency (VCA) will evaluate the application and contact the applicant should further information be required. Various organisations including the Police, Local Authorities and other interested parties, both within and outside of the DfT may be consulted; especially in respect of the conditions to be imposed. Following receipt of all information, and assuming that there are no technical reasons or objections from any of the parties consulted, the VSO will be prepared and dispatched by email within 10 working days.

VSO's are issued for varying periods of time at the discretion of the DfT. Typically, they are issued for a period of up to five years.

The following sets out the speed limits of VSO loads:

- Articulated vehicles weighing between 150 and 250 tonnes: 25 mph;
- Draw-bar Trailer vehicles weighing between 150 and 250 tonnes: 20 mph; and
- Girder frame trailers: 12 mph.

3.4 Notification Requirements

Table 3.2 provides a summary of the actions required dependent upon a vehicles specific width, length, weight and load projection.

Table 3.2 Levels of Notification for AIL movements

	Width of Vehicle Load	Police Notification	Special Notice to Road and Bridge Authorities	Secretary of State "VR1" Authorisation	Special Order
Width of Vehicle Load	Exceeding 2.9m up to 4.3m (C&U)	✓			
	Exceeding 3.0m up to 5.0m (STGO)	✓		✓	
	Between 5.0m and 6.1m	✓	✓		✓
Overall Length	Exceeding 6.1m	✓			
	Exceeding 18.65m up to 27.4m (C&U)	✓			
	Exceeding 18.75m (STGO)	✓	✓		✓
Gross Weight of Vehicle and Load	Overall length of a part 2 vehicle combination exceeding 25.9m	✓	✓		
	Maximum length exceeding 30.0m	✓	✓		
	C&U limits up to 80,000 kg	✓	✓		✓

Source: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/503103/Aide_Memoire_updated_Sep_2015.pdf

3.5 Guidance on the movement of Abnormal Indivisible Loads (ACPO 2010)

Guidance on the movement of Abnormal Indivisible Loads (ACPO 2010) has been issued by the Association of Chief Police Officer (ACPO) of England, Wales & Northern Ireland and sets the general rules for escorting abnormal loads on roads in England, Wales and Northern Ireland.

The purpose of this document is to assist individual Constabularies concerning the movement of abnormal loads.

Section 2.14 of the ACPO (2010) states that:

"An escort or escort vehicle is not defined in legislation and there is no legal requirement for any abnormal loads to be escorted. There is however a requirement for loads of certain dimensions to have an attendant. SOS (2003) permits the attendant to be in an accompanying vehicle, which may for practical purposes be considered an 'Escort Vehicle'*".*

Section 2.16 of the ACPO (2010) lists the dimensions of vehicles that are currently self or privately escorted as follows:

Motorways:

- Width over 4.6 m wide;
- Weight over 130 tonnes; and
- Length no overall policy (load, route and dimensions considered).

All other roads:

- Width over 4.1 m wide;
- Weight over 100 tonnes; and
- Length over 27.4 rigid length.

These dimensions are a general guide and police officers retain the right to vary them as considered necessary.

Where there is a requirement to stop or control traffic for the purposes of undertaking a specific manoeuvre, Sections 2.21 and 2.22 of the ACPO (2010) state:

"An escort driver or any other person or attendant to the abnormal load does not have any legislative powers to stop and control other road users. A Police authority will not accredit an escort driver or any other person with powers to stop and control traffic to facilitate the movement of an abnormal load.

The appointed haulier will therefore, confirm the above with all relevant Police Constabularies prior to transfer."

In accordance with the above, where the stopping of traffic or other road is required, a Police escort will be utilised. In all other instances, self/private escort will be utilised.

4. Route Options

4.1 Introduction

The following section identifies the opportunities for transportation of the 400kV transformer components from potential ports of entry to the proposed development. Routes have been assessed with respect to road type, horizontal alignment, settlement patterns and available height and weight restrictions in order to identify specific 'pinch points'.

A 'pinch point' is defined as a location where constraints relating to each of the design characteristics referenced below are likely to prevent or significantly impede abnormal load access.

- Horizontal road alignment;
- Vertical road alignment; and
- Weight/height restrictions.

4.2 Assessment Approach

Potential routes to the proposed development were identified through consultation with Vattenfall and desktop analysis of the highway network between the potential ports of entry and the proposed development.

A desktop assessment has been undertaken using Ordnance Survey (OS) maps, Google Earth Pro, Google Street View and Google Maps and has considered road type, horizontal and vertical alignment, settlement patterns and available height and weight restrictions.

A site audit was undertaken as part of the Environmental Impact Assessment (EIA) on 27 - 28 March 2017. A visual inspection has been undertaken of routes between the M2 and the Port of Ramsgate to the proposed development. No visual inspection has been undertaken from the Port of Dover due to the fact that this AIL study had not been commissioned at the time of the site inspection.

Preferred routes have been selected based on the consideration of the above, in addition to the likelihood of upgrade works and third-party land being required.

4.3 Ports of Entry

Three potential ports of entry have been considered for the delivery of transformer components. These are detailed as follows and illustrated in **Figure 3**:

- Port of Tilbury – The Port of Tilbury is London's major port located with excellent access to the SRN (M25). The port experiences a large number of daily HGV movements and has capacity to receive AILs.
- Port of Dover – The Port of Dover is the UK's busiest passenger port and the busiest roll-on-roll-off ferry port in Europe. The port provides ease of access to the A2 with connection northbound via the A256 to the proposed development. Due to the number of HGV movements experienced through the port daily, it is assumed that this will accommodate the access of the AIL for transportation of transformer components.
- Port of Ramsgate – The Port of Ramsgate is well connected to the SRN, with the A299 and A256 acting as the main westbound and southbound connections, respectively. The port received AILs as part of the NEMO project and is deemed suitable for the delivery of transformer components. The Port is the closest to the proposed development and would therefore be the most cost effective.

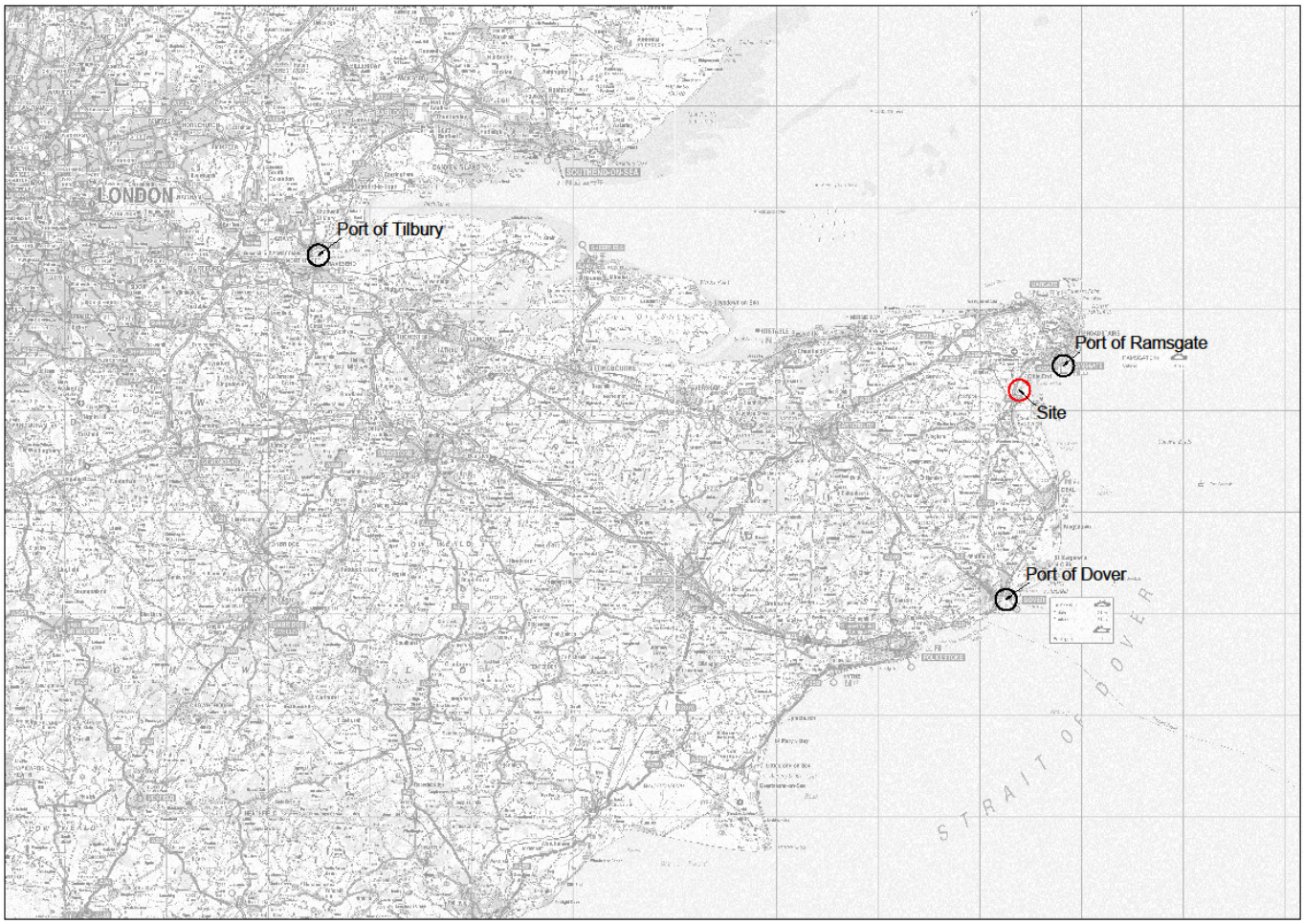


Figure 3: Port locations.

Best practice guidelines set by Highways England (HE) state that, where possible, the nearest port to the proposed development should be used when investigating the transportation of AILs.

4.4 Swept Path Analysis

Due to the uncertainty of transformer loads and vehicle specification at this stage of the development planning process, no SPA has been undertaken as part of this AIL study. However, AILs have been successfully delivered to Richborough Energy Park which suggests that suitable routes exist.

4.5 Route Identification

Potential routes from the potential ports of entry and SRN have been identified using Ordnance Survey (OS) maps, Google Earth Pro, Google Street View and Google Maps and on-site observations.

4.6 Route Options

Figure 4 illustrates the route options to the proposed development that have been considered as part of this assessment. Three options have been identified for the transportation of the 400kV transformer components. These are as follows:

- Route Option 1 – Routing from the Port of Tilbury, accessing the proposed development from the north;
- Route Option 2 – Routing from the Port of Dover, accessing the proposed development from the south;

- Route Option 3 – Routing from the Port of Ramsgate, accessing the proposed development from the north; and
- Route Option 3a – Routing from the Port of Ramsgate, accessing the proposed development from the north.

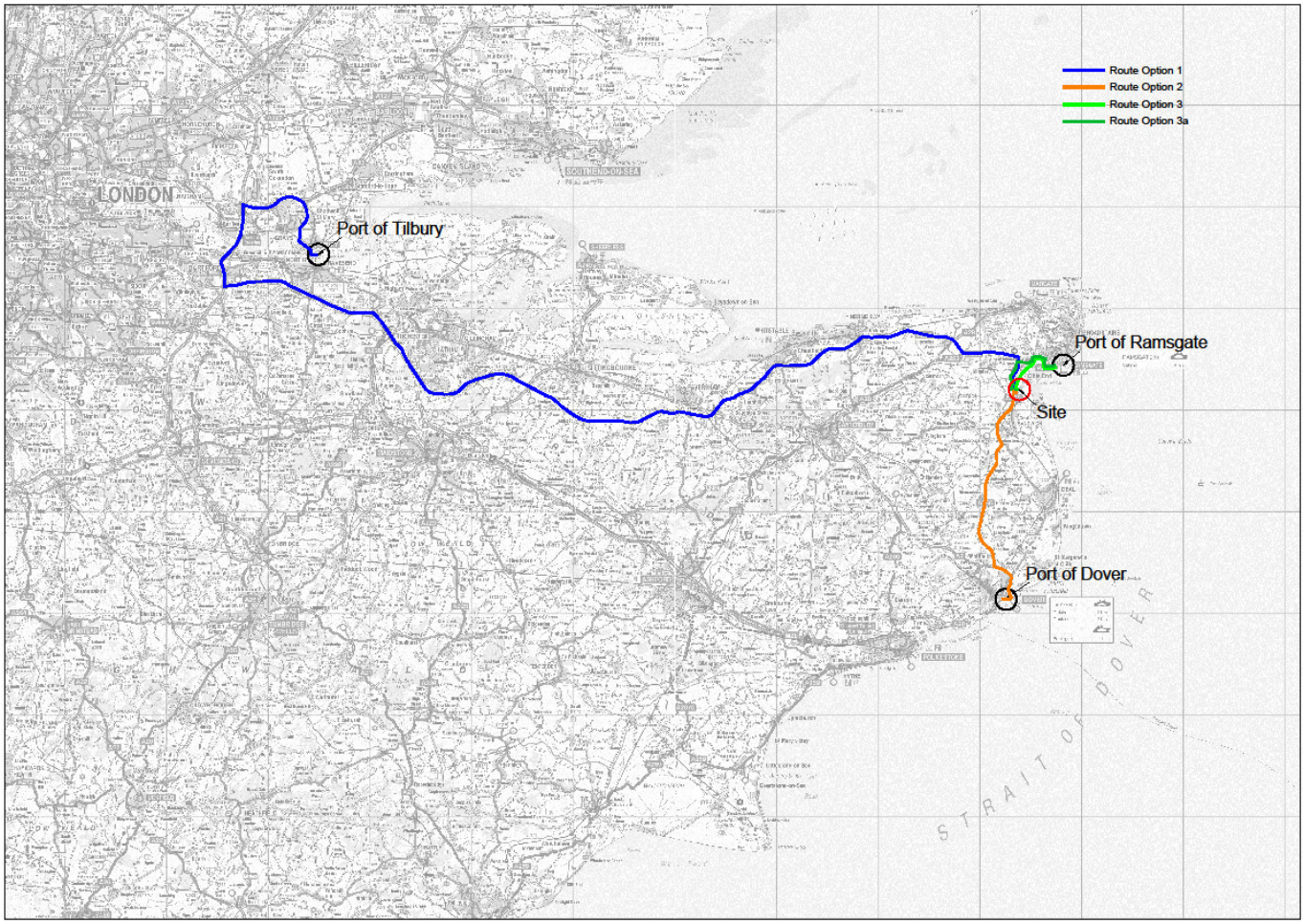


Figure 4: AIL routes.

4.7 Local Road Network (LRN)

The following provides a description of the local roads in the vicinity of the proposed development which provide a link from the SRN. Refer to **Figure 5** for an overview.

Sandwich Road

Sandwich Road can be split into three sections for descriptive purposes:

- Section 1 (between the roundabout with the A299/ A256 and the mini roundabout with Cliffs End Road). This section is a single carriageway road (approximately 7.5 m wide) subject to a 40 miles per hour (mph) speed limit. Heading north to south there are initial traffic calming measures in place, with dragons teeth warning drivers upon approaching the 30 mph speed limit zone, as well as central traffic island build outs acting as lane narrowing features.
- Section 2 (between the mini roundabout with Cliffs End Road and the junction with Foads Lane). This section is a single carriageway road (approximately 6 m wide) subject to a 30 mph speed limit. There are pedestrian footways present along its entirety, with street lighting provided at regular intervals. The carriageway is fronted by residential properties on the west (set back and separated by grass verging/ walls/ fencing) and Pegwell Nature Reserve to the east. Traffic calming features are present along this stretch of carriageway in the form of

pedestrian ghost islands, raised pedestrian crossing tables, and central road hatching narrowing available lane width.

- Section 3 (between the junction with Foads Lane and the roundabout with the A256). Between Foads Lane and Pegwell Bay Country Park, there is a signalised traffic calming arrangement which permits single file traffic only. This is in the form of a 3 m wide carriageway with kerbside build outs restricting vehicle speed and fencing erected to restrict forward visibility. The speed limit increases to 40 mph shortly after this arrangement to the entrance to Pegwell Bay Country Park, after which it increases to the national speed limit (60 mph). The carriageway is fronted by St Augustine's Golf Club to the north-west and Pegwell Bay Country Park to the south-east. There are no pedestrian footways present along this section of Sandwich Road. Within the southern section, upon approach to the roundabout with the A256, there is a three-arm signalised T-junction with Ebbsfleet Lane (the access road for Stonelees Golf Centre).

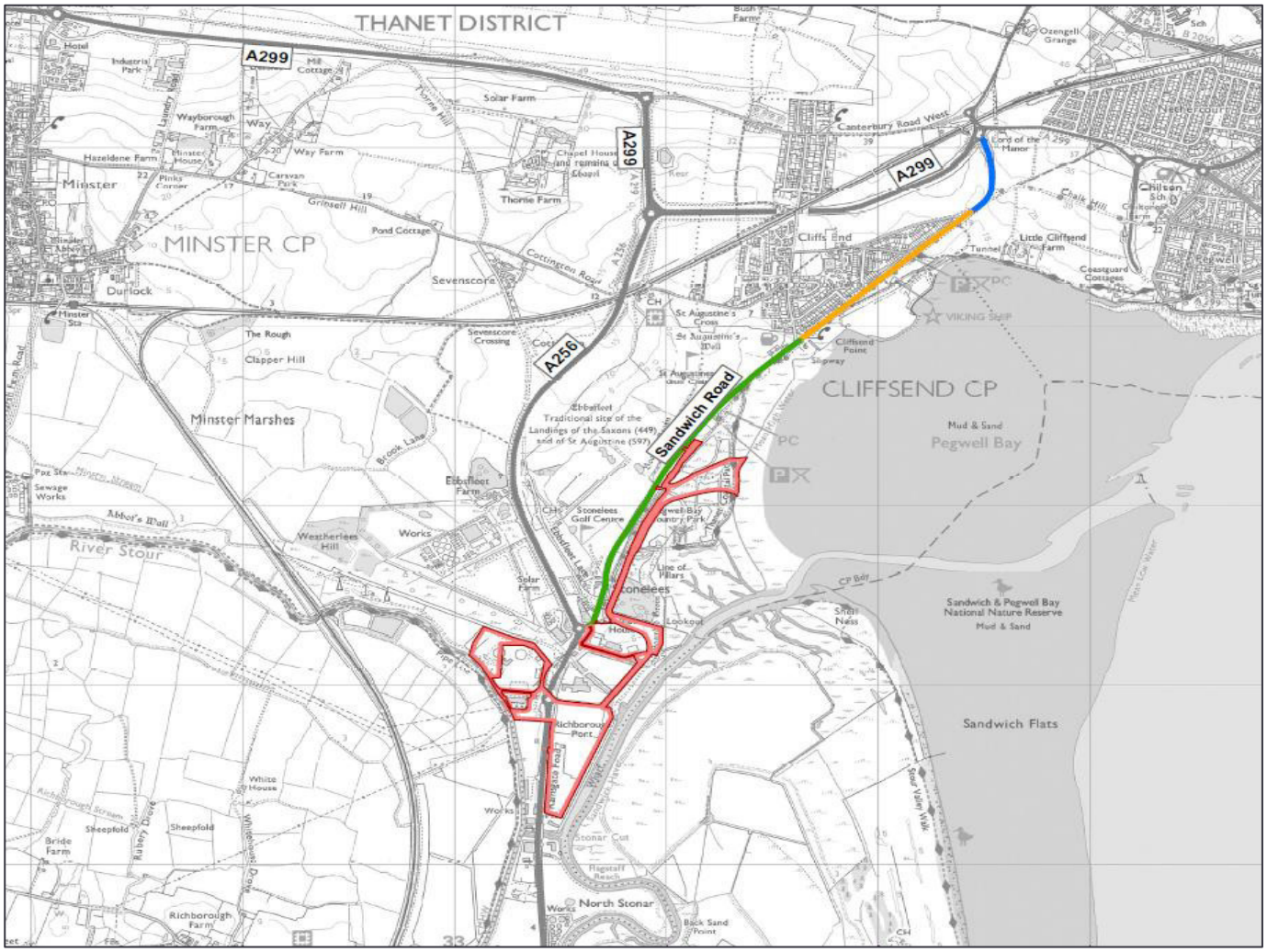


Figure 5: Road Network

4.8 Regional Road Network (RRN)

A256

The A256 is a dual carriageway road (approximately 8 m wide) subject to the national speed limit (70 mph), which acts as the main north-south connection between Cliffsend and Dover. The A256 carries a significant amount of traffic on a daily basis, with peak hour flows exceeding 3,000 vehicles (both southbound and northbound), as well as a large proportion of HGVs. The road acts as a bypass for Cliffsend and is anticipated to form the primary route from the wider regional/strategic road network to the Site.

A299

The A299 is a dual carriageway road (approximately 7.5 m wide) subject to the national speed limit (70 mph), which provides the main east-west connection between Ramsgate and the M2. The A299 turns to single carriageway upon entering Ramsgate, from the roundabout with the A256/Sandwich Road to the roundabout with Military Road (speed limits vary from 50 - 30 mph).

4.9 Strategic Road Network

Routing options to the proposed development have included consideration of the SRN as follows:

A2/M2

Managed by HE, the A2/M2 provides the west-east connection from the Port of Tilbury/M25 to the regional road network (A299). This is a two-four lane carriageway subject to the national speed limit (70 mph) and is capable of accommodating proposed AIL deliveries.

5. Route Options Appraisal

The following section provides further detail on the aforementioned route options. This includes identification of the location, obstacle and potential mitigation measures required for the AIL transfer vehicle to safely manoeuvre between the port of origin to the primary access to the proposed development for AILs (A256/Richborough Energy Park roundabout). Supporting photographic evidence, where available, is included within **Appendix A**.

For the purpose of this assessment, it has been assumed that the AIL will straddle both running lanes on dual carriageway sections. All assumptions and conclusions have been based on the site audit and a desktop assessment. It is recommended that SPA be undertaken at all key junctions/pinch points identified below.

Route Option 1

Route: Port of Tilbury – A1089 Dock Approach Road – A13 – A282 Queen Elizabeth Bridge – A2 – M2 – A299 Thanet Way – A299 – A299 Hengist Way – A256 Richborough Way – Site

AILs will depart the port via the A1089 toward the A13 to the north via a slip road. The route joins the M25 at its junction with the A282 via a four-arm roundabout, heading southbound over Queen Elizabeth Bridge. At the junction with the A282/M25/A2, AILs would take the slip road eastbound onto the A2. The route continues east, becoming the M2, until reaching Junction 7 (route illustrated in **Figure 6** below).

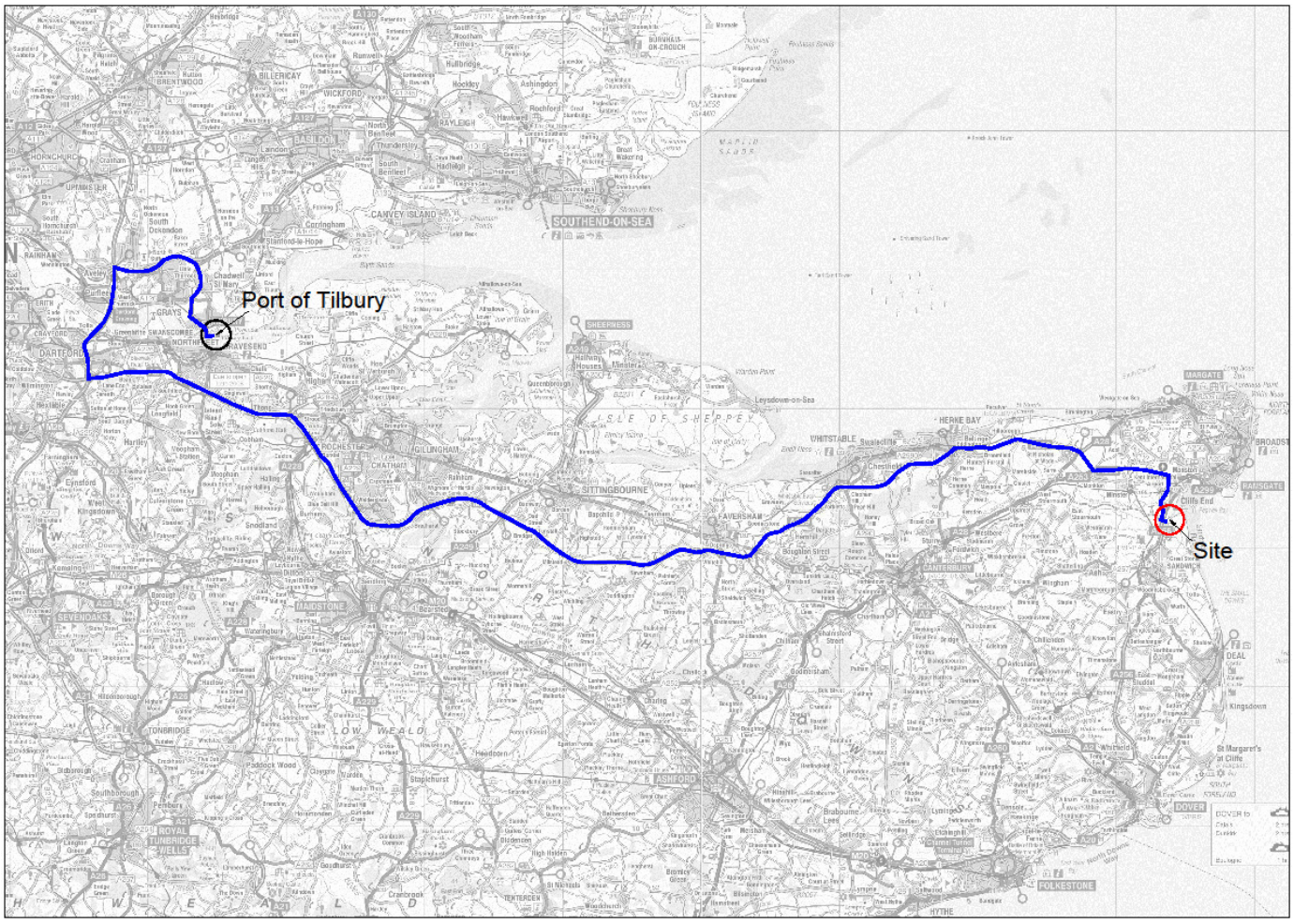


Figure 6: Port option 1.

Due to the size and nature of the SRN, it is assumed that there are no constraints to impede AILs on this section of the haulage route. Therefore, the route assessment commences from M2 Junction 7/A299.

AILs will route along the A299 Thanet Way. This is a dual carriageway road subject to the national speed limit. No weight or height restrictions have been identified along this section of the SRN. Along the A299 there are a number of pinch points the AIL will negotiate on route to the proposed development. These have been assessed in **Table 5.1** below.

Supporting photographic evidence, where available, is included within **Appendix A**.

Table 5.1 Route Option 1 Appraisal

Pinch Point No.	Direction of Travel	Location	Photo Set (Ref No)	Responsible Authority	Issue	Solution/Comment
1	Straight ahead	St. Nicholas Roundabout	1	Kent County Council	N/A	Negotiable
2	Straight ahead	Monkton Roundabout	2	Kent County Council	N/A	Negotiable
3	Straight ahead	Minster Roundabout	3	Kent County Council	N/A	Negotiable
4	Right turn	Cliffsend Roundabout	4	Kent County Council	Raised central island, tight arrangement of street furniture.	Recommended that SPA be undertaken.
5	Straight ahead	Sevenscore Roundabout	5	Kent County Council	Junction entry width and alignment, tight arrangement of street furniture.	Recommended that SPA be undertaken.
6	Straight ahead	Ebbsfleet Roundabout	6	Kent County Council	Raised central island, tight arrangement of street furniture, tight turn.	Recommended that SPA be undertaken.
7	Left turn	A256/Site Access	7	Kent County Council	N/A	Negotiable

Route Option 2

Route: Port of Dover – A2 Jubilee Way – A256 – Site

From the Port of Dover, AILs will exit via Back Road Way onto the A2 Jubilee Way. AILs will be required to negotiate the Duke of York's roundabout, continuing straight ahead along the A2, before leaving via the slip road at Whitfield Interchange. From this location, AILs will travel north on the A256 Whitfield Bypass, from which point an assessment of pinch point locations and feasibility of the route has been undertaken (route illustrated in **Figure 7** below).

Figure 7: Route option 2.

AILs will route on the A256 to the proposed development, along a dual carriageway road subject to the national speed limit. There are no weight or height restrictions identified along this section of road. There are a number of pinch points the AIL will be required to negotiate on route. These have been assessed in **Table 5.2** below.

Supporting photographic evidence, where available, is included within **Appendix A**.

Table 5.2 Route Option 2 Appraisal

Pinch Point No.	Direction of Travel	Location	Photo Set (Ref No)	Responsible Authority	Issue	Solution/Comment
1	Right Turn	Whitfield Interchange S	1	Kent County Council	Raised central island, tight turning manoeuvre required, location of street furniture.	Recommended that SPA be undertaken.
2	Straight ahead	Whitfield Interchange N	2	Kent County Council	N/A	Negotiable.
3	Straight ahead	A256 Whitfield Bypass/Barn Owl Way	3	Kent County Council	N/A	Negotiable.
4	Straight ahead	A256 Tilmanstone	4	Kent County Council	N/A	Negotiable.

		Bypass/Barville Road				
5	Straight ahead	A256 Tilmanstone Bypass/Cater Road	5	Kent County Council	N/A	Negotiable.
6	Left turn	A256 Sandwich Bypass/Deal Road	6	Kent County Council	Narrow approach/exit width, tight turning manoeuvre, location of street furniture.	Recommended that SPA be undertaken.
7	Straight ahead	A256 Sanwich Bypass/A257 Each End/Ash Road	7	Kent County Council	Narrow approach/exit width, tight turning manoeuvre, location of street furniture.	Recommended that SPA be undertaken.
8	Straight ahead	A256 Sandwich Bypass/Monk's Way	8	Kent County Council	N/A	Negotiable.
9	Straight ahead	A256 Sandwich Bypass/A256 Ramsgate Road	9	Kent County Council	N/A	Negotiable.
10	Right turn	A256/Site access	10	Kent County Council	Raised central island, tight turning manoeuvre required, location of street furniture.	Recommended that SPA be undertaken.

Route Option 3

Route: Port of Ramsgate – Royal Harbour Approach – A299 Canterbury Road East – Sandwich Road – A256 – Site

From the Port of Ramsgate, AILs will exit via Royal Harbour Approach westbound. It is assumed that, due to this being a main exit from the port, this route is suitable for abnormal vehicles. There are no identified height/weight restrictions, despite the underpass. The AIL will then route via the A299 Canterbury Road East, taking the first exit at the roundabout with the A299/Sandwich Road to route southbound along Sandwich Road. The AIL will negotiate a number of pinch points before continuing straight ahead at the roundabout with Sandwich Road/A256, continuing southbound before entering the proposed development at the A256/site access roundabout (route illustrated in **Figure 8** below).

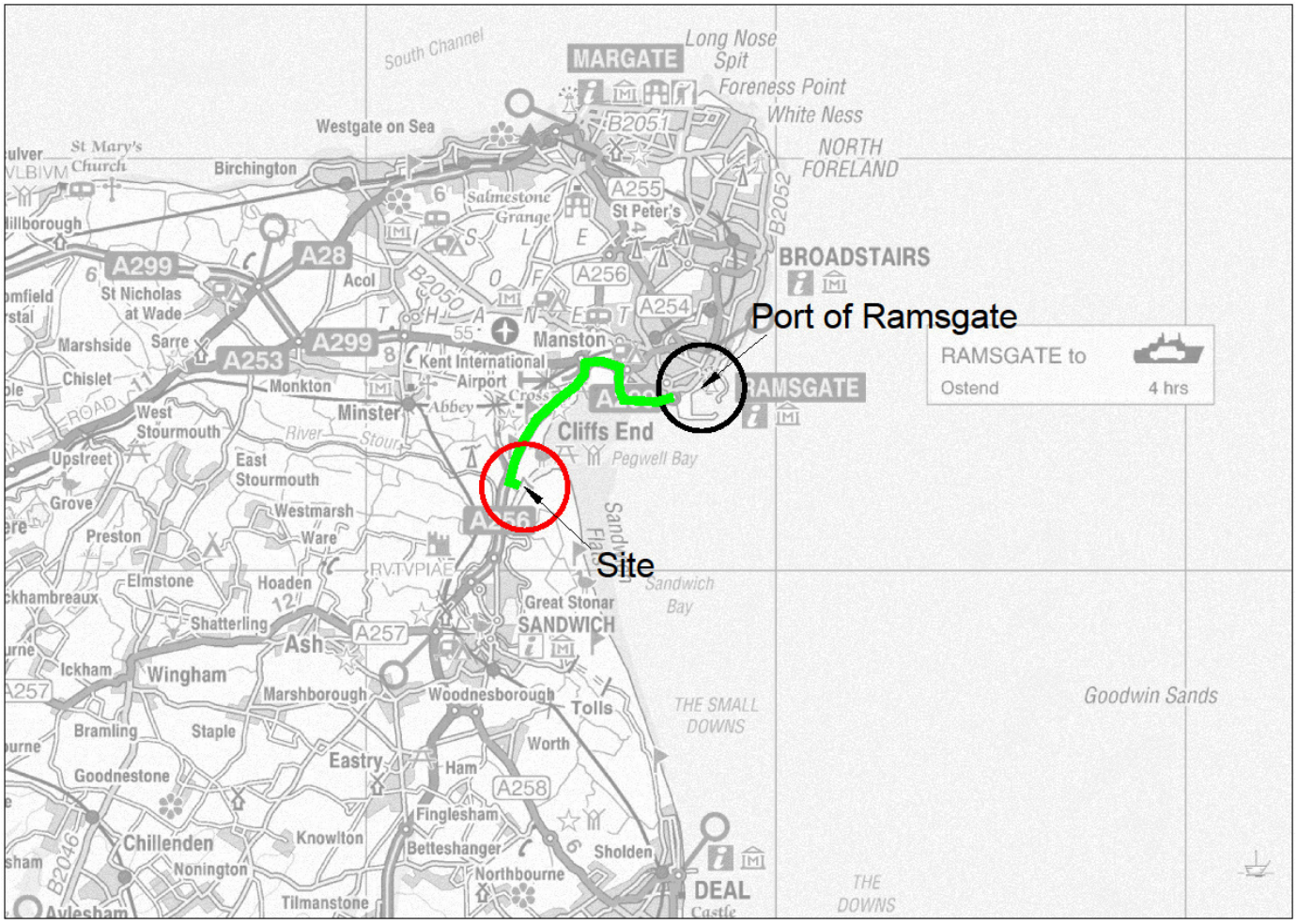


Figure 8: Route option 3.

Pinch points along the route have been assessed in **Table 5.3** below. Supporting photographic evidence, where available, is included within **Appendix A**.

Table 5.3 Route Option 3 Appraisal

Pinch Point No.	Direction of Travel	Location	Photo Set (Ref No)	Responsible Authority	Issue	Solution/Comment
1	Left turn	A299 Royal Harbour Approach/A299 Canterbury Road/A255	1	Kent County Council	N/A	Negotiable.
2	Left turn	Lord of the Manor Roundabout	2	Kent County Council	N/A	Negotiable
3	Straight ahead	Cliffs End Road/Sandwich Road Mini Roundabout	3	Kent County Council	Narrow junction entry, speed calming build out with central island, location of street furniture on central island.	Recommended that the AIL undertake a contraflow movement to navigate the junction. Possible removal of street furniture on central island.
4	Straight Ahead	Meverall Avenue/Sandwich Road Roundabout	4	Kent County Council	Narrow junction entry, speed calming build out with central island, location of street furniture on central island.	Possible removal of street furniture on central island and build out.

5	Straight ahead	Sandwich Road/Jet Petrol Station Traffic Calming	5 & 6	Kent County Council	Narrow, snaking traffic calming feature, close proximity of associated street furniture.	Recommended that SPA be undertaken at this location.
6	Straight ahead	Sandwich Road/Ebbsfleet Lane	7	Kent County Council	Narrow junction entry due to location of street furniture/central island.	Recommended the AIL undertake a contraflow movement to navigate the junction.
7	Left turn	Ebbsfleet Roundabout	8	Kent County Council	N/A	Negotiable.
8	Left turn	A256/Site Access	9	Kent County Council	N/A	Negotiable

Route Option 3a

Route: Port of Ramsgate – Royal Harbour Approach – A299 Canterbury Road East – A299 Hengist Way – A256 Richborough Way – Site

From the Port of Ramsgate, AILs will exit via Royal Harbour Approach westbound. It is assumed that, due to this being a main exit from the port, this route is suitable for abnormal vehicles. There are no identified height/weight restrictions, despite the underpass. The AIL will then route via the A299 Canterbury Road East, taking the second exit at the roundabout with the A299/Sandwich Road to route westbound along the A299 Hengist Way. The AIL will then make a left turn at the roundabout with the A299 Hengist Way/A256 Richborough Way heading southbound. The AIL will continue straight ahead at the roundabout with the A256/Sandwich Road, before entering the site at the A256/site access roundabout (route illustrated in **Figure 9** below).

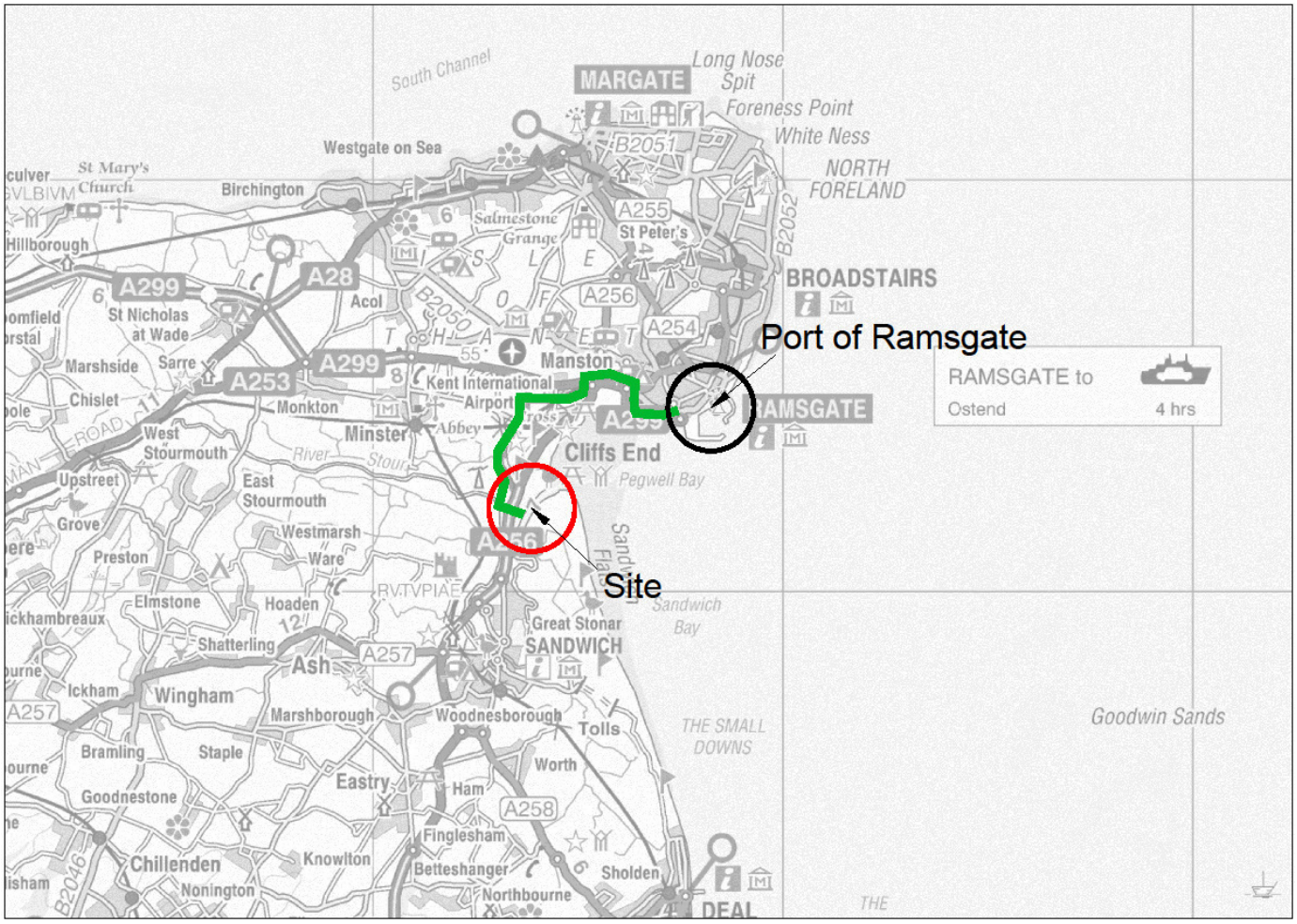


Figure 9: Route option 3a.

Pinch points along the route have been assessed in **Table 5.4** below. Supporting photographic evidence, where available, is included within **Appendix A**.

Table 5.4 Route Option 3a Appraisal

Pinch Point No.	Direction of Travel	Location	Photo Set (Ref No)	Responsible Authority	Issue	Solution/Comment
1	Left turn	A299 Royal Harbour Approach/A299 Canterbury Road/A255	1	Kent County Council	N/A	Negotiable.
2	Straight Ahead	Lord of the Manor Roundabout	2	Kent County Council	Location of street furniture, tight turning movement required.	Recommended that SPA be undertaken, possible removal of street furniture.
3	Left Turn	Sevenscore Roundabout	3	Kent County Council	N/A	Negotiable.
4	Straight Ahead	Ebbsfleet Rounadbout	4	Kent County Council	Tight turning manoeuvre required, location of street furniture.	Recommended that SPA be undertaken.
5	Left turn	A256/Site Access	5	Kent County Council	N/A	Negotiable.

5.1 Structures/Vertical Assessment

Throughout the route appraisal, Amec Foster Wheeler have not identified any weight, height or width restrictions within the SRN, RRN or LRN on route to the proposed development.

5.2 Route Assessment Summary

Table 5.5 provides a summary of the route assessment. All horizontal/vertical alignment pinch points have been identified through a site audit and desktop based assessments, no swept paths have been undertaken.

Table 5.5 Route Assessment Summary

Route Option	Horizontal Assessment	Structures/Vertical Assessment	Route Summary	Risk Level
1	A number of pinch points have been identified along the route. These are as follows: - Cliffsend Roundabout; - Sevenscore Roundabout; and - Ebbsfleet Roundabout.	No posted restrictions observed. To be confirmed by the Highways Authority.	Route is feasible subject to horizontal assessment, SPA of all identified pinch points, possible availability of third party land, and the outcome of discussions with the Highways Authority regarding affected structures.	Low
2	A number of pinch points have been identified along the route. These are as follows: - Whitfield Interchange South Roundabout; - A256 Sandwich Bypass/ Deal Road Roundabout; - A256 Sandwich Bypass/ A257 Each End/Ash Road Roundabout; and - A256/Site Access Roundabout.	No posted restrictions observed. To be confirmed by the Highways Authority.	Route is feasible subject to horizontal assessment, SPA of all identified pinch points, possible availability of third party land, and the outcome of discussions with the Highways Authority regarding affected structures.	Low
3	A number of pinch points have been identified along the route. These are as follows: - Cliffs End Road/ Sandwich Road mini-roundabout; - Meverall Avenue/ Sandwich Road Roundabout; - Sandwich Road/ Jet Petrol Station Traffic Calming; and - Sandwich Road/ Ebbsfleet Lane Junction.	No posted restrictions observed. To be confirmed by the Highways Authority.	Route is feasible subject to horizontal assessment, SPA of all identified pinch points, possible availability of third party land, and the outcome of discussions with the Highways Authority regarding affected structures.	Low
3a	A number of pinch points have been identified along the route. These are as follows: - Lord of the Manor Roundabout; and - Ebbsfleet Roundabout.	A potential pinch point has been identified along the A299 Hengist Way. The tunnel under Foads Lane / rail line may present a potential height restriction for the SGT.	Route is feasible subject to horizontal assessment, SPA of all identified pinch points, possible availability of third party land, and the outcome of discussions with the Highways Authority regarding affected structures.	Low

6. Consultation

Kent County Council (KCC) and (HE) have been consulted regarding advice on the transfer routes from the ports of entry to the proposed development in order to seek Approval in Principal (AiP). A summary of consultee responses has been recorded in **Table 6.1** below. Copies of the consultation emails have been provided in **Appendix B**.

Table 6.1 Consultee Responses

Consultee	Date Contacted	Summary of Response	Action being taken
Kent County Council	23/02/2018	Awaiting response on routing options. There is a formal process for notifying abnormal load movements. Web link provided. Streetworks Team notified so they can make any comments on your proposals	Requested AiP
Highways England	23/02/2018	Approval in Principal (AIP) received for transportation of the SGT from the Port of Ramsgate to the proposed development. HE unable to provide an AIP for alternative ports of entry at this time.	No action required at this time. Once formal details on the load specification and haulier are finalised, HE will be consulted again to seek an AIP for Route Options 1 and 2.

7. Management Strategy

7.1 General Traffic Management Measures

The following sets out the general traffic management strategy that would be employed by the contractor. It is expected that a full Construction Traffic Management Plan (CTMP) will be drafted and agreed with KCC and HE prior to the transfer taking place.

Route Enforcement

The routes identified in this document will be strictly enforced unless further notification is given. All main and sub-contracting companies involved in the project will be monitored to ensure they follow the correct routes and do not use other 'shortcuts'. The routes will be clearly defined in all sub contracts and clearly signposted for all drivers to see. Any contractor not adhering to the relevant route guidance will be disciplined. Onsite monitoring and spot checks will assist in this.

Timing of Movements

Deliveries shall only take place during the hours agreed with the Police and the relevant Highways Authority.

Deliveries would be timed to avoid the morning or afternoon school run periods or other predictable peak traffic periods.

Deliveries are expected to take place during weekdays, however, if deliveries are required at weekends approval in principle should be sought from the relevant Roads Authority and the Police.

Escorts

Where applicable, abnormal loads shall all be escorted in accordance with HE (2007). The escorting will be undertaken by the haulage contractor. Where it has been identified that traffic will need to be temporarily stopped, then a Police escort will be required.

Convoys would typically comprise no more than two abnormal vehicles and shall be escorted by Police and/or haulier escort vehicles, as appropriate.

Temporary Closures

At the discretion of the haulage contractor, temporary road closures may be required in order to deliver some of the larger abnormal loads. The haulage contractor will liaise with the local community, businesses and key services to ensure they are fully informed in advance should a road closure scheme be required.

Public Communications Strategy

The delivery of abnormal loads is likely to cause some delay to local road users and, in some cases, restrict access along certain routes. To ensure residents, local business and key services are made aware of such restrictions, the principal contractor will implement a comprehensive communications strategy, which could include, but is not limited to; letter drops, radio spots, notices within local papers, temporary road signage, website updates on a project website and other social media outlets.

Notification

All key stakeholders, which include the Local and Strategic Highways Authorities, would be notified prior to the movement of any abnormal loads. The appointed haulage contractor will be responsible for notifying the relevant stakeholders and will do so in one of the following ways:

- Highways England's Electronic Service Delivery for Abnormal Loads (ESDAL) system; and
- Abnormal Loads Movement Application Form.

If the latter method of notification is chosen, then notification periods referenced within SOS (1986) will apply.

8. Summary

Amec Foster Wheeler have been commissioned by Vattenfall to undertake a review of the most suitable routes for the delivery of AIL's between the three potential ports of entry; Tilbury, Ramsgate and Dover.

The site is located close to the regional and strategic road network, providing ease of access for the delivery of the SGT.

All routes are considered to be low risk. This will however require confirmation through SPA and discussions with Local Highways Authorities and HE.

9. References

Association of Chief Police Officer of England, Wales & Northern Ireland (ACPO) (2010), *'Guidance/Practice on the Movement of Abnormal Indivisible Loads'.*

Highways England (HE) (2007), *'Code of Practice: Self-escorting of Abnormal Loads and Abnormal Vehicles'.*

The Secretary of State (SOS) (1986), '*The Road Vehicles (Construction and Use) Regulations 1986*'.

The Secretary of State (SOS) (1998), *'The Road Vehicles (Authorised Weight) Regulations 1998'.*

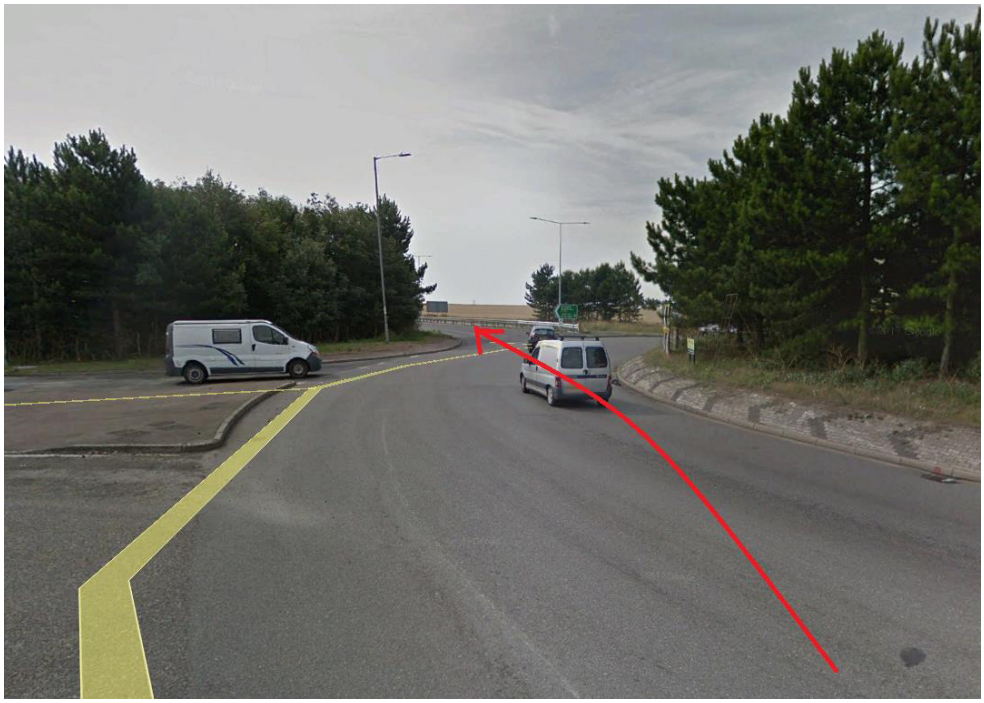
The Secretary of State (SOS) (2003), *'The Road Vehicles (Authorisation of Special Types) (General) Order 2003'.*

Appendix A
Route Options Photographs

Appendix A
Photographs

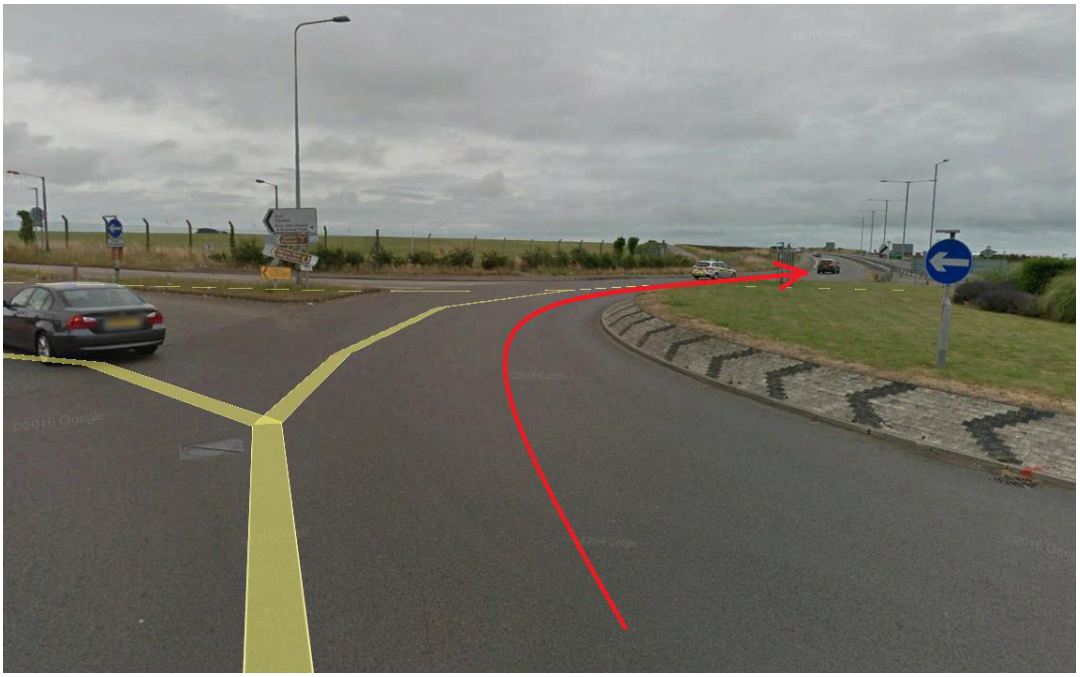
Photographs to accompany Table 5.1: Route Option 1 Appraisal

Photograph 1



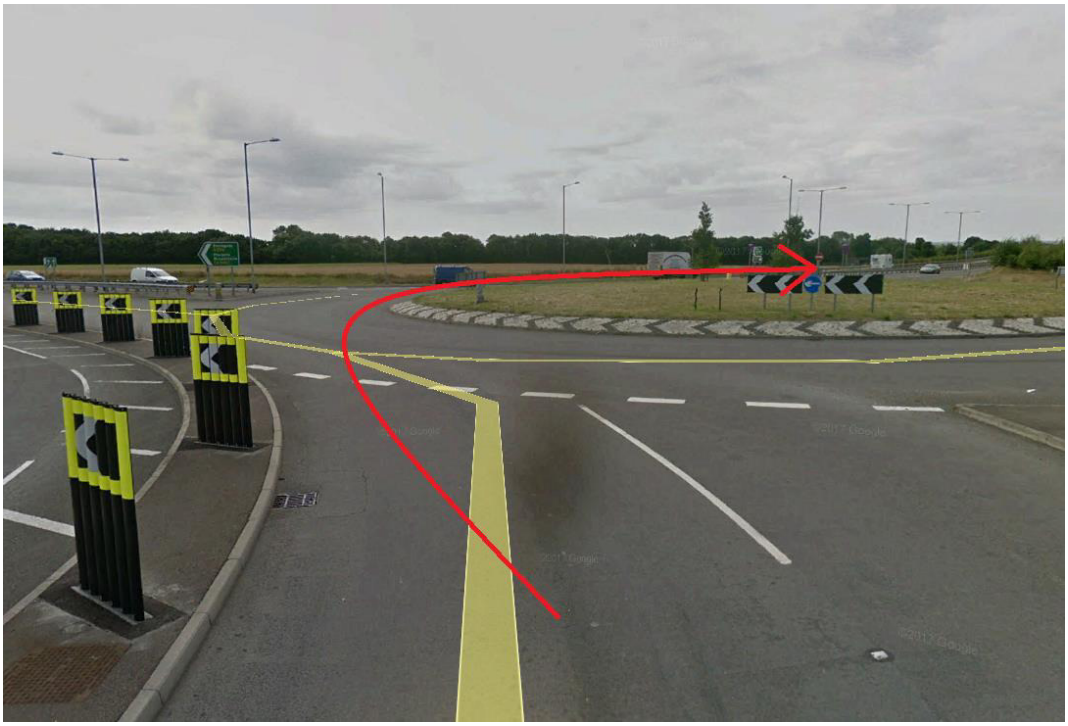
Photograph 2

Photograph 3



Photograph 4

Photograph 5

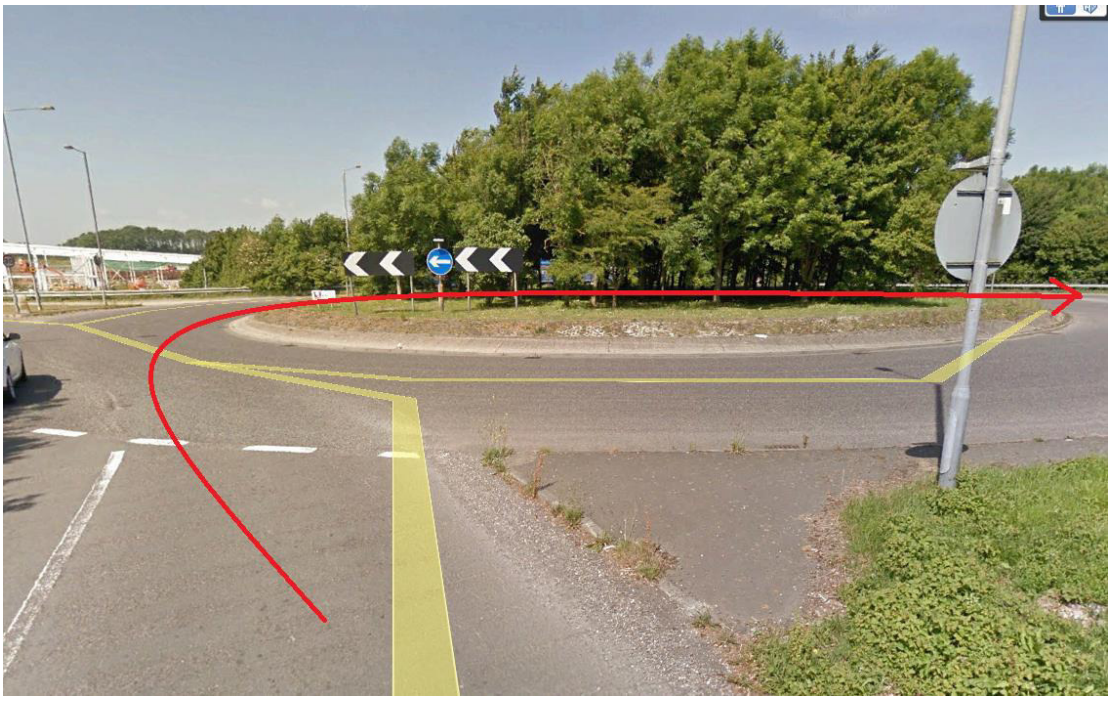


Photograph 6

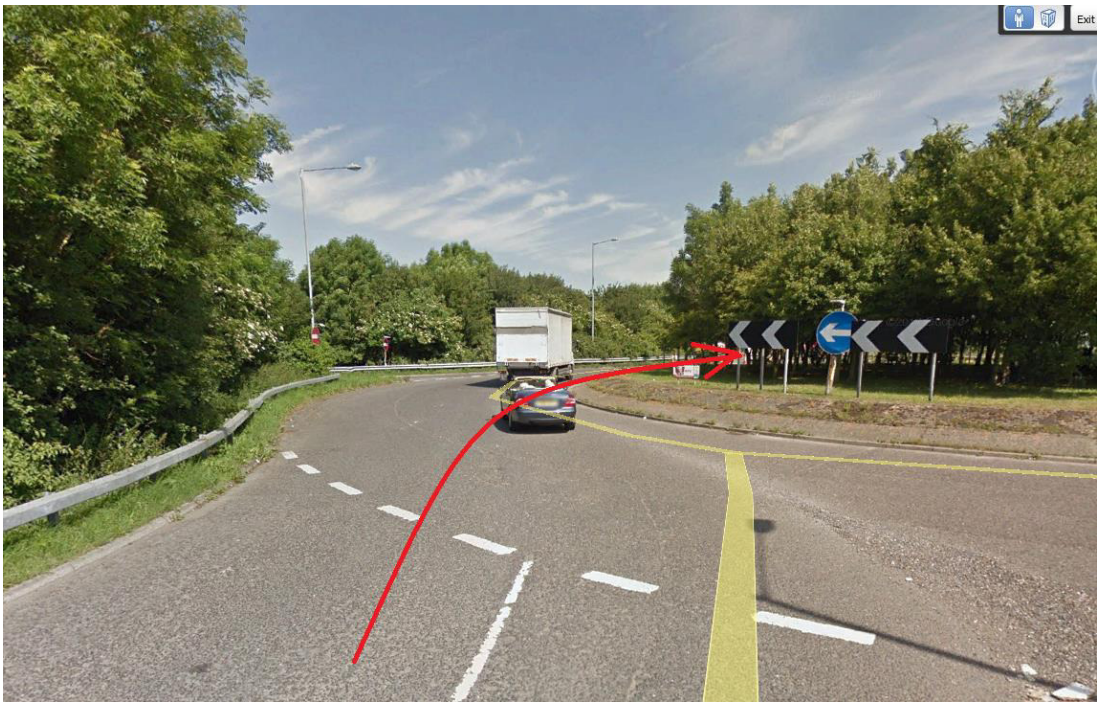
Photograph 7

Photographs to accompany Table 5.2: Route Option 2 Appraisal

Photograph 1



Photograph 2



Photograph 3

Photograph 4

Photograph 5

Photograph 6

Photograph 7

Photograph 8

Photograph 9

Photograph 10

Photographs to accompany Table 5.3: Route Option 3 Appraisal

Photograph 1

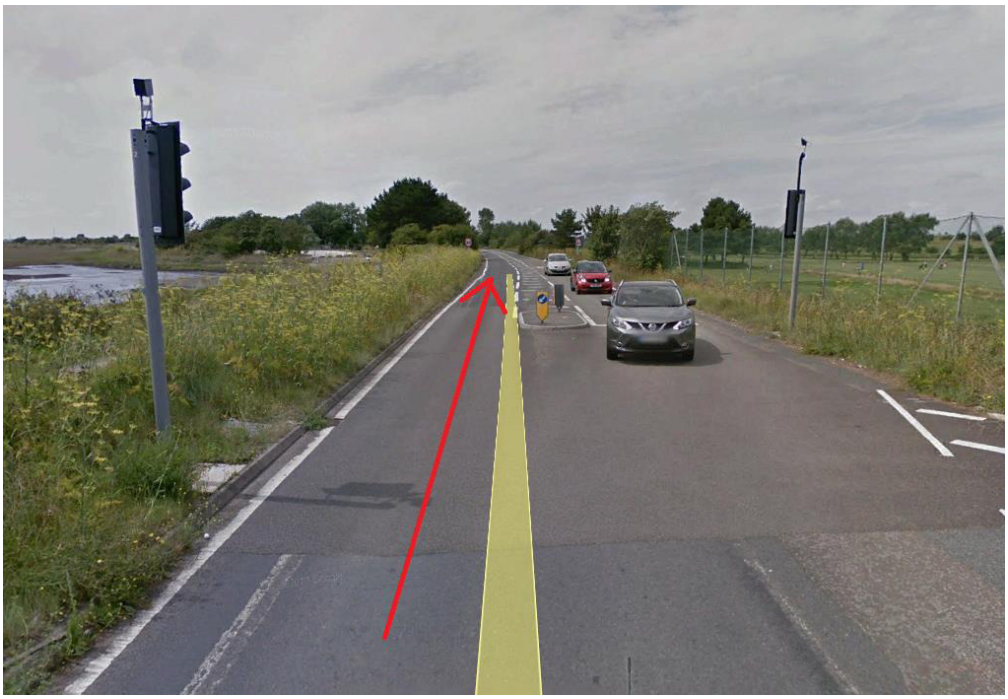
Photograph 2

Photograph 3

Photograph 4

Photograph 5

Photograph 6



Photograph 7

Photograph 8

Photograph 9

Photographs to accompany Table 5.3: Route Option 3 Appraisal

Photograph 1

Photograph 2

Photograph 3

Photograph 4

Photograph 5

Appendix B
Consultation Responses

[redacted]

From: [redacted]
Sent:
To: [redacted]
Cc: [redacted]
Subject:
Attachments: AIP 485 THANET EXT OFFSHORE WIND FARM.pdf

Hi [redacted]

Please find attached AIP for the future movement of 1 Super Grid Transformer (SGT)/ Transformer Tank from the port of Ramsgate to Thanet Extension Offshore Wind Farm.

Full movement and component details to be confirmed by yourselves nearer the planned movement time schedule.

With regards to any associated constraints on the route or structures, this will be assessed when we send out the movement route for consultation with all affected route parties. It would be pointless at this present time as things can change over time regarding the clearance of specific routes.

Hope this helps.

Please feel free to contact me if you require any further information.

Regards

[redacted]

[redacted]
Highways England | The Cube | 199 Wharfside Street | Birmingham | B1 1RN
Tel: [redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]

From: [redacted]
Sent:
To: [redacted]; Abnormal Loads
Cc: [redacted]
Subject: RE: Thanet Extension Offshore Wind Farm AIL Study

Hi [redacted],

Many thanks for your email.

As construction is not proposed to commence until December 2020 (at the earliest) the client is unable to provide further information on the specific details of the transformer, haulier to undertake the transportation, or the location of origin. Therefore we have to assume, at this stage, that either Port option could be utilised.

In response to your questions, I can confirm that a waterway option has not been explored. I can feed this back to the client.
Due to the fact that no haulier has been appointed, no costs for transporting components have been identified. It's a valid question and one I can pass on.

At this stage, I cannot confirm if the components require SGTO.

Ideally at this stage we seek your feedback and approval in principal on the potential proposed routes from Port to site. Are there any vertical, horizontal constraints we need to be aware of on the relevant routes?

If you have any other questions, please do not hesitate to get in touch.

Kind regards,
[redacted]

[redacted]
www.woodplc.com

wood.

From: [redacted]
Sent: 22 February 2018 09:15
To: [redacted]
Cc: [redacted]
Subject: RE: Thanet Extension Offshore Wind Farm AIL Study

Good Morning [redacted]

Many thanks for your enquiry.

Highways England will always prefer any abnormal load to be delivered to the nearest landing point to its destination. We evaluate each application individually based on the criteria provided to make best use of the SRN wherever possible, thereby avoiding congestion to other road users.

We presume in this instance the Transformer is being imported from abroad. Based on the information you have provided Highways England preferred port of delivery would be Ramsgate. Dover and Tilbury would not be considered at this point. We have previously cleared routes for Transformers to Richborough Energy Park via Ramsgate.

We appreciate this is an access study at this point but if you could provide the following information this will help us assess any future applications in greater detail.

- Has an inland waterway option been explored using the River Stour direct to site
- What are the costs of the components being transported
- Is there a planned schedule of delivery of components relating to Special Order category

Once an application is received and processed we distribute to all affected authorities on the designated route. Once we have received all acceptable confirmations that there are no restrictions to the route, the authorised Special Order for movement will be issued.

Highways England use the ESDAL system for VR1 and Special Order applications and any enquiries would preferably be applied for using this method.

I trust this will go some way to helping with your assessment, but please feel free to contact me should you require any further information.

Regards,

[redacted]

[redacted]
Highways England | The Cube | 199 Wharfside Street | Birmingham | B1 1RN
Tel: [redacted]
Web: http://www.highways.gov.uk
GTN: [redacted]

From: [redacted]
Sent: 21 February 2018 18:21
To: Abnormal Loads
Cc: [redacted]
Subject: Thanet Extension Offshore Wind Farm AIL Study

Dear Sir/Madam,

Further to my correspondence with [redacted] (30/10/17) regarding the proposed DCO application for the Thanet Extension Offshore Wind Farm project, we have been commissioned by Vattenfall to undertake an Abnormal Indivisible Load (AIL) access study for the delivery of AILs associated with the proposed Thanet Extension Offshore Wind Farm (Thanet Extension).

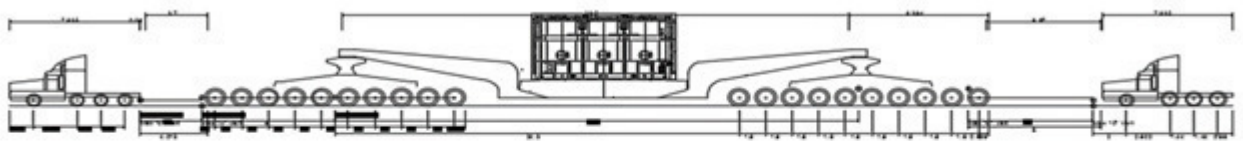
The project comprises of proposed wind turbines and all infrastructure required to transmit the power generated by the turbines to the national grid network at the grid connection located at Richborough Energy Park. It also comprises onshore and offshore infrastructure required to operate and maintain the wind farm and associated infrastructure.

Following previous discussions concerning general HGV construction traffic and potential impact to the SRN, we wish to consult Highways England on the delivery of substation transformer equipment (Super Grid Transformer (SGT)/ Transformer Tank) between three potential ports of entry and the development Site.

Access for all substation AILs will be facilitated via the existing A256 (Ramsgate Road)/Richborough Energy Park roundabout [currently provides access to the BCA Fleet Solutions unit]. https://goo.gl/maps/1bEe1NjRsVy

Abnormal Load Requirements / dimensions

The type of transfer vehicle being considered in this assessment is a 20-axle Girder Frame Trailer (GFT). The vehicle configuration used to transfer the abnormal loads will ultimately be decided by the appointed haulier, however, the configurations selected are considered to be a robust representation. Vehicle specifications are as follows.



A600 20 Axle Girder Trailer	
Overall Length	73.537m
Overall Width	4.760m
Overall Body Height	5.389m
Min Body Ground Clearance	0.426m
Max Track Width	3.650m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	10.450m

Specification of 20-Axle GFT with load

Aspect	Value
Weight	342,200 kg*
No. of Axles	20
Axle Weight	17,110 kg x 20
Wheels per Axle (Wheels x No. of Axles)	8 x 20
Axle Spacing	(9 x 1600) x 2
Tyre Size	215/75 R17.5 x 20
Length	48.1m
Total Configuration Length	73.7m
Width	4.8m
Typical Running Height	4.7m
Wheelbase	16.1m
Rear Overhang	0.0m
Ground Clearance	0.3m
Outside Track	3.7m

The largest component to be transported will be the 400kV transformer tank body. The transformer tank body is not expected to exceed 360 tonnes and has an approximate envelope dimension of 11.0m x 4.5m x 4.9m.

Ports of Entry

Three potential ports of entry have been considered for the delivery of transformer components. These are detailed as follows:

- Port of Tilbury – The Port of Tilbury is London's major port located with excellent access to the SRN (M25). The port experiences a large number of daily HGV movements and has capacity to receive AILs.
- Port of Dover – The Port of Dover is the UK's busiest passenger port and the busiest roll-on-roll-off ferry port in Europe. The port provides ease of access to the A2 with connection northbound via the A256 to the Site. Due to the number of HGV movements experienced through the port daily, it is assumed that this will accommodate the access of the AIL for transportation of transformer components.
- Port of Ramsgate – The Port of Ramsgate is well connected to the strategic road network, with the A299 and A256 acting as the main westbound and southbound connections respectively. The port received AILs as part of the NEMO project and is deemed suitable for the delivery of transformer components. The Port is the closest to the proposed development site and would therefore the most cost effective.

Access Routes

Four potential route options are currently being considered for transportation of the SGT. These are as follows:

- Route Option 1 – Routing from the Port of Tilbury, along the SRN, accessing the Site from the north;
  - **Route:** Port of Tilbury – A1089 Dock Approach Road – A13 – A282 Queen Elizabeth Bridge – A2 – M2 – A299 Thanet Way – A299 – A299 Hengist Way – A256 Richborough Way – Site
- Route Option 2 – Routing from the Port of Dover, along the SRN, accessing the Site from the south;
  - **Route:** Port of Dover – A2 Jubilee Way – A256 – Site
- Route Option 3 – Routing from the Port of Ramsgate, along the LRN and SRN, accessing the Site from the north.
  - **Route**: Port of Ramsgate – Royal Harbour Approach – A299 Canterbury Road East – Sandwich Road – A256 – Site

- Route Option 3a – Routing from the Port of Ramsgate, along the LRN and SRN, accessing the Site from the north.
    - **Route**: Port of Ramsgate – Royal Harbour Approach – A299 Canterbury Road East – A299 Hengist Way – A256 Richborough Way – Site

For the purpose of this assessment, it has been assumed that the AIL will straddle both running lanes on dual carriageway sections. No weight or height restrictions have been identified along the sections of the strategic road network.

If you could provide any feedback on the information outlined above that would be very much appreciated.

In the meantime, should you require any further information, please feel free to contact myself on the details below, or my colleague [redacted] (cc'd in to this email).

Kind regards
[redacted]

[redacted]
[redacted]t
[redacted]
www.woodplc.com

Highways England Company Limited | General enquiries: [redacted] ***|National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF |***
https://www.gov.uk/government/organisations/highways-england | *info@highwaysengland.co.uk*

Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

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Highways England Company Limited | General enquiries: [redacted] ***|National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF |***
https://www.gov.uk/government/organisations/highways-england | *info@highwaysengland.co.uk*

Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

Consider the environment. Please don't print this e-mail unless you really need to.

highways england

Our ref: HE Ref AIP485
Your ref:
Thanet Extension Offshore Wind Farm AIL Study

[redacted]
The Cube
199 Wharfside Street
Birmingham B1 1RN

[redacted]
Leamington Spa,
[redacted]
Warwickshire

Direct Line: [redacted]
27 February 2018

Dear [redacted]

AGREEMENT IN PRINCIPLE: - AIP 485
THANET EXTENSION OFFSHORE WIND FARM AIL STUDY

Further to your initial email dated 21 February 2018, requesting provision of an AIP for future abnormal load moves into Thanet Extension Offshore Wind Farm.

I can confirm that an AIP can be provided at this point specifically for a Wind Farm Super Grid Transformer Tank move from Ramsgate Port to Thanet Extension Offshore Wind Farm, the dimensions, weight and number of pieces as provisionally detailed below.

1nr. Super Grid Transformer Tank with an approximate gross weight of 360,000kg on a 20-Axle GFT.

Additional Wind farm components will be assessed individually upon movement application.

Delivery is expected to be around 2020.

This will of course be subject to formal application nearer the time at which Highways England will consult with all relevant parties and take into consideration their views and requirements. Consequently, any Special Order issued is likely to include specific requirements relating to the day(s) on which movements will be authorised. The Special Order may also prescribe specific times during the day or night when movement will be permitted (which may take into account seasonal variations in traffic) in order to minimise traffic congestion, and disruption to other road users.

highways england

The AIP is valid for a period of at least seven years but with the proviso that should a nearer, suitable access point such as the River Stour become apparent, or feasible in that time, Wood Plc. or its associated representatives would undertake to investigate and assess its potential for future use, with a view to that new facility becoming the agreed access.

It would be helpful if you could ask the designated haulier to quote the above AIP reference when applying for the Special Order permit.

I trust this information is sufficient for your purposes, but please do not hesitate to get in touch if you require anything further.

Yours sincerely

[redacted]

Abnormal Loads
Email: [redacted]

[redacted]

From: [redacted]
Sent: 06 March 2018 13:40
To: [redacted]
Cc: [redacted]

Subject: RE: Thanet Extension Offshore Wind Farm AIL Study

Hi [redacted],

The potential routes are really the only ones available. Please note that you will also need to discuss with Highways England for any parts of the eventual route which form part of the strategic road network. Once the route is decided you will also need to track the vehicle through any potential problem locations to determine if any temporary works/removal of street furniture is required. I would also advise that you discuss the eventual route with our Structures Management Team to ensure the load weight is suitably distributed through a sufficient number of axles to allow passage over any highway structures.

Regards,

[redacted]

[redacted]
Kent County Council
Highways and Transportation
Ashford Highway Depot
4 Javelin Way
Ashford TN24 8AD
Tel: [redacted]

From: [redacted]
Sent: 26 February 2018 17:30
To: [redacted]
Cc: [redacted]; [redacted]
Subject: RE: Thanet Extension Offshore Wind Farm AIL Study

Hi [redacted]

Many thanks for your email.

As construction is not proposed to commence until December 2020 (at the earliest) the client is unable to provide further information on the specific details of the transformer, haulier to undertake the transportation or location of origin. We are therefore not in a position to notify the HE or book road space.

At this stage, we seek your feedback and approval in principal on the potential proposed routes from Ports to site.

If you have any other questions, please do not hesitate to get in touch.

Kind regards,
[redacted]

[redacted]
Transport Planning Consultant
Direct: [redacted]
www.woodplc.com

From: [redacted]
Sent: 23 February 2018 09:01
To: [redacted]
Cc: [redacted]
Subject: RE: Thanet Extension Offshore Wind Farm AIL Study

Hi [redacted],

There is a formal process for notifying abnormal load movements and the web link is attached. I have also copied in our Streetworks Team so they can make any comments on your proposals.

Transporting abnormal loads: Notifying the authorities - GOV.UK

Regards,

[redacted]

[redacted]
Kent County Council
Highways and Transportation
Ashford Highway Depot
4 Javelin Way
Ashford TN24 8AD
Tel: [redacted]

From: [redacted]]
Sent: 21 February 2018 18:38
To: [redacted]
Cc: [redacted]
Subject: Thanet Extension Offshore Wind Farm AIL Study

Dear [redacted],

We have been commissioned by Vattenfall to undertake an Abnormal Indivisible Load (AIL) access study for the delivery of AILs associated with the proposed Thanet Extension Offshore Wind Farm (Thanet Extension).

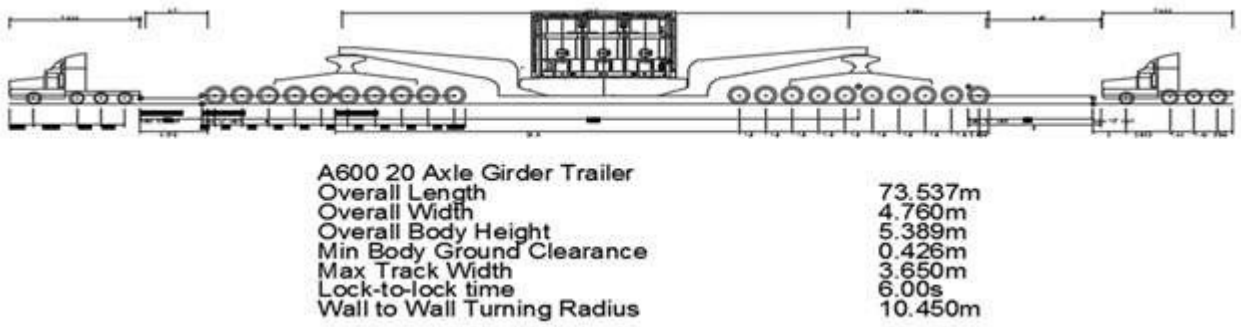
The project comprises of proposed wind turbines and all infrastructure required to transmit the power generated by the turbines to the national grid network at the grid connection located at Richborough Energy Park. It also comprises onshore and offshore infrastructure required to operate and maintain the wind farm and associated infrastructure.

Following previous discussions concerning general HGV construction traffic and potential impact to the SRN, we wish to consult Kent County Council on the delivery of substation transformer equipment (Super Grid Transformer (SGT)/ Transformer Tank) between three potential ports of entry and the development Site.

Access for all substation AILs will be facilitated via the existing A256 (Ramsgate Road)/Richborough Energy Park roundabout [currently provides access to the BCA Fleet Solutions unit]. https://goo.gl/maps/1bEe1NjRsVy

Abnormal Load Requirements / dimensions

The type of transfer vehicle being considered in this assessment is a 20-axle Girder Frame Trailer (GFT). The vehicle configuration used to transfer the abnormal loads will ultimately be decided by the appointed haulier, however, the configurations selected are considered to be a robust representation. Vehicle specifications are as follows.



Specification of 20-Axle GFT with load

Aspect	Value
Weight	342,200 kg*
No. of Axles	20
Axle Weight	17,110 kg x 20
Wheels per Axle (Wheels x No. of Axles)	8 x 20
Axle Spacing	(9 x 1600) x 2
Tyre Size	215/75 R17.5 x 20
Length	48.1m
Total Configuration Length	73.7m
Width	4.8m
Typical Running Height	4.7m
Wheelbase	16.1m
Rear Overhang	0.0m
Ground Clearance	0.3m
Outside Track	3.7m

The largest component to be transported will be the 400kV transformer tank body. The transformer tank body is not expected to exceed 360 tonnes and has an approximate envelope dimension of 11.0m x 4.5m x 4.9m.

Ports of Entry

Three potential ports of entry have been considered for the delivery of transformer components. These are detailed as follows:

- Port of Tilbury – The Port of Tilbury is London's major port located with excellent access to the SRN (M25). The port experiences a large number of daily HGV movements and has capacity to receive AILs.

- Port of Dover – The Port of Dover is the UK's busiest passenger port and the busiest roll-on-roll-off ferry port in Europe. The port provides ease of access to the A2 with connection northbound via the A256 to the Site. Due to the number of HGV movements experienced through the port daily, it is assumed that this will accommodate the access of the AIL for transportation of transformer components.
- Port of Ramsgate – The Port of Ramsgate is well connected to the strategic road network, with the A299 and A256 acting as the main westbound and southbound connections respectively. The port received AILs as part of the NEMO project and is deemed suitable for the delivery of transformer components. The Port is the closest to the proposed development site and would therefore the most cost effective.

Access Routes

Four potential route options are currently being considered for transportation of the SGT. These are as follows:

- Route Option 1 – Routing from the Port of Tilbury, along the SRN, accessing the Site from the north;
  - **Route:** Port of Tilbury – A1089 Dock Approach Road – A13 – A282 Queen Elizabeth Bridge – A2 – M2 – A299 Thanet Way – A299 – A299 Hengist Way – A256 Richborough Way – Site
- Route Option 2 – Routing from the Port of Dover, along the SRN, accessing the Site from the south;
  - **Route:** Port of Dover – A2 Jubilee Way – A256 – Site
- Route Option 3 – Routing from the Port of Ramsgate, along the LRN and SRN, accessing the Site from the north.
  - **Route**: Port of Ramsgate – Royal Harbour Approach – A299 Canterbury Road East – Sandwich Road – A256 – Site
- Route Option 3a – Routing from the Port of Ramsgate, along the LRN and SRN, accessing the Site from the north.
  - **Route**: Port of Ramsgate – Royal Harbour Approach – A299 Canterbury Road East – A299 Hengist Way – A256 Richborough Way – Site

For the purpose of this assessment, it has been assumed that the AIL will straddle both running lanes on dual carriageway sections. No weight or height restrictions have been identified along the sections of the strategic road network.

If you could provide any feedback on the information outlined above that would be very much appreciated.

In the meantime, should you require any further information, please feel free to contact myself on the details below, or my colleague Adrian Simms (cc'd in to this email).

Kind regards

[redacted]

[redacted]
Transport Planning Consultant
Direct: [redacted]
www.

wood.

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May 2018
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