

moray offshore renewables ltd

Developing Wind Energy In The Outer Moray Firth

Environmental Statement

Modified Transmission Infrastructure for
Telford, Stevenson and MacColl Wind Farms

Technical Appendix 5.6 C

Construction Traffic Management Plan



This document was produced by [WYG] on behalf of Moray Offshore Renewables Ltd



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1 Introduction

1.1 Background

WYG has been commissioned by Moray Offshore Renewables Ltd (MORL) to produce a Construction Traffic Management Plan (CTMP) relating to the planning in principle application for the installation of the modified transmission infrastructure (TI). This study will focus on the onshore transmission infrastructure (OnTI) which includes the onshore aspects of the export cable and two substations to the south west of New Deer.

This report has been prepared in accordance with instructions from MORL on the above project details. No liability is accepted for the use of all or part of this report by third parties. This report is © Copyright of WYG and MORL. No section of this report may be reproduced without prior written approval.

It is the responsibility of the substation component supplier (depending upon contract) through CDM regulations to ensure that the finalised access route from the Port of Entry (POE) to the site is fit for purpose and that appropriate consideration for all road users has been made in accordance with the relevant health and safety legislation and ruling transport requirements.

Where references are made to work by third parties, WYG does not accept any liabilities for these items or issues based upon them.

1.2 Report Structure

Following this introductory chapter the report is structured as follows:

- **Chapter Two** describes the proposed development and delivery route;
- **Chapter Three** outlines the legislative background and details the construction vehicles and associated traffic flows;
- **Chapter Four** reviews the physical and operational access constraints;
- **Chapter Five** describes the physical and operational measures;
- **Chapter Six** describes the on-site traffic management measures;
- **Chapter Seven** outlines the management measure for the abnormal load delivery convoys; and
- **Chapter Eight** summarises this report.

2 Proposed Development

2.1 Site Details

The TI will consist of both offshore and onshore infrastructure. This will consist of a maximum of two OSPs, offshore and onshore export cable and two onshore substations. The offshore export cable from the three consented wind farms will come onshore at Inverboyndie. The onshore cabling will then run underground south-east to connect with two substations, which are to be provided to connect the cabling to the National Electricity Transmission System (NETS). The substation site is located approximately 5.5 km south-west of New Deer, which in turn lies 28 km west of Peterhead in Aberdeenshire.

2.2 Modified Onshore Export Cable

The modified onshore export cable spans a distance of approximately 33 km from the landfall to the proposed substations. A series of access junctions are proposed at 2 km intervals along the length of the modified export cable route, and will be located on A, B, C and unclassified roads. These access junctions would be based on one of a series of standard layouts produced in line with Aberdeenshire Council standards for various road types.

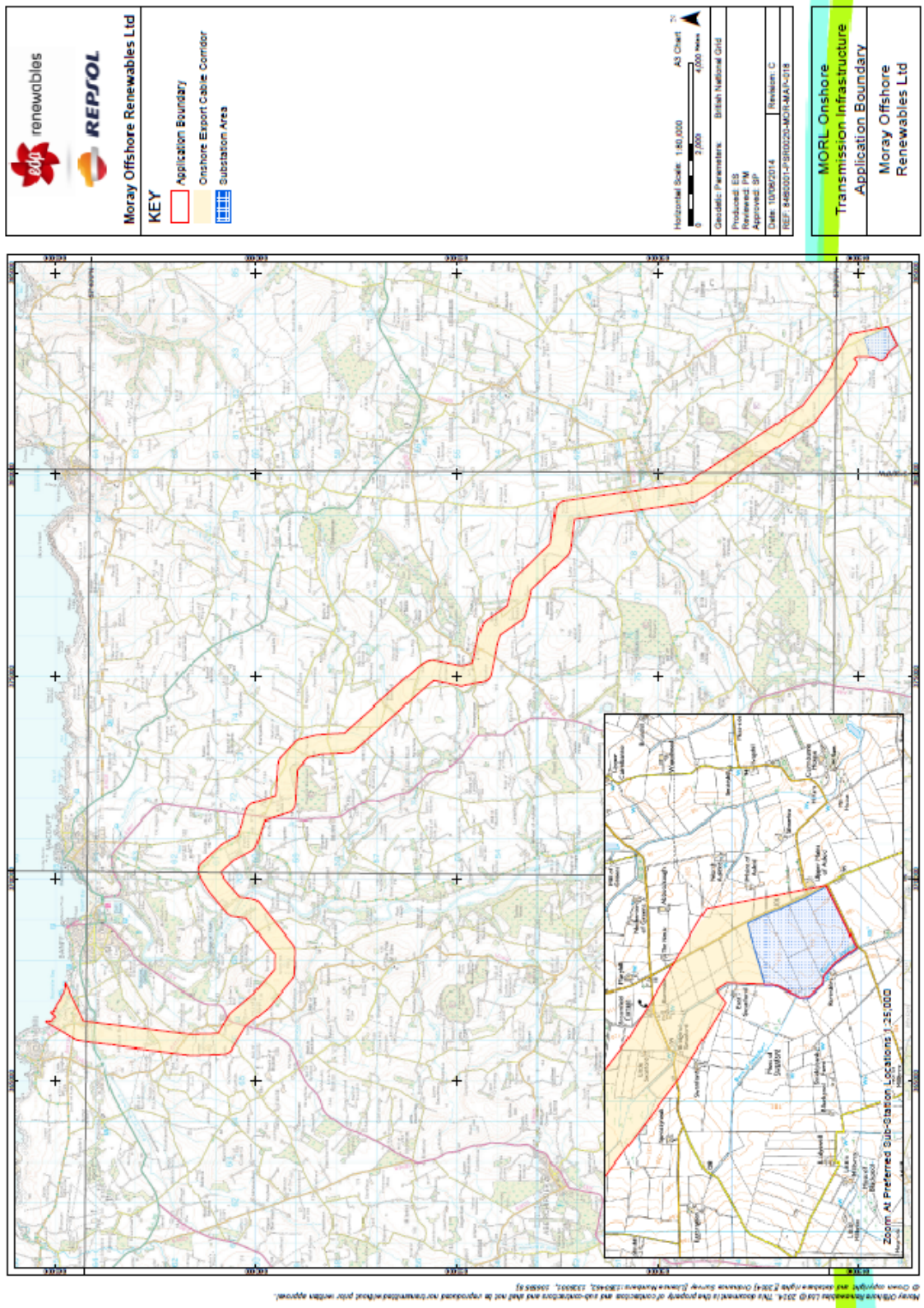
An overview of the modified export cable route along with the location of the proposed access junctions is provided in Plate 2.1.

For ease of reference, the route has been split into three sections, namely:

- Section 1: Substation to Fintry;
- Section 2: Fintry to the East Bank of the River Deveron; and
- Section 3: West Bank of the River Deveron to the Landfall Point.

Subdivision of the route is only a reference guide for the planning documents. The cable run will be one continuous line when constructed.

Plate 2-1: Modified Onshore Export Cable Route



2.3 Onshore Substations

The location of the onshore substations is to be accessed via a new junction on the west side of the unclassified road that runs north to south through Maryhill. The junction is to be located approximately 300 m south of Maryhill Farm.

A route feasibility study from the nearest suitable Port of Entry (Peterhead) to the site was undertaken by WYG as part of the application for planning permission in principle to determine its feasibility for the movement of Abnormal Indivisible Loads (AIL). The report, contained in Technical Appendix 5.6C, concluded that this route is considered feasible.

The delivery route from the port at Peterhead is as follows:

- Depart the port onto Bath Street;
- Turn left (west) at the junction with Kirk Street;
- Turn left (south) at the Kirk Street / South Road Roundabout and continue south on South Road;
- Turn right (west) at the A90 / A982 roundabout and continue west on the A90;
- Turn left (west) at the A90 / A950 roundabout and continue west on the A950;
- Turn left (southwest) at the A950 / A981 Lake House junction and continue southwest on the A981;
- Continue south on the B9028 from the A981 / B9029 / B9028 junction;
- Turn right (northwest) onto the A948, then continue west onto the B9170 from the A948 / A981 / B9170 junction;
- Turn left (southwest) onto the unclassified road at the junction with the B9170 at Hillhead Auchreddie; and
- Turn left (south) onto the unclassified road that lies south of Maryhill Farm and continue to the site access.

The access route is illustrated in Plate 2.3 overleaf.

Plate 2-2: Proposed AIL Route



Works to construct the OnTI will include the creation of a landing point, site access junctions, improvements to existing access tracks, the creation of new access tracks, casting foundations, creating electrical connection trenches, erecting a control building, two substations and 33 km of transmission line.

2.4 Intended Delivery Routes

2.4.1 Landfall Point

It is likely that quarry sourced construction materials will approach by way of the B9139 or the A98 through Banff. Exported fill material will leave the site in the opposite direction.

The remaining construction traffic will approach by way of the A96 split evenly between the A98 and the A947. Construction staff will approach by way of the A98 from the east.

All construction traffic will access the landing area by way of an access junction on the B9038 north of Inverboyndie.

2.4.2 Modified Onshore Export Cable Route

In order to distribute traffic associated with the 33 km long cable route the route has been split into three distinct sections as follows:

- Section 1: Substation to Fintry;
- Section 2: Fintry to the East Bank of the River Deveron; and
- Section 3: West Bank of the River Deveron to the Landing Point.

2.4.2.1 Cable Section 1

It is likely that quarry sourced materials will approach by way of the A98/B9027/B9170 or A947/B9170 depending upon the distances to from the entry point to the nearest quarry location. Exported fill material will leave the site in the opposite direction.

The remaining construction traffic will approach by way of the A96/A947/B9170/B9105 or the A90/A948/B9170, depending upon the access junction to the cable that is being used. Construction staff will approach by way of the A947/B9170/B9105 or the A948/B9170.

Cable section 1 is likely to have four main access points along this section of the route as follows:

- C121B west of the C295;
- C29S south of Cuminestown;
- B9170 west of Cuminestown; and
- B9105 south of Fintry.

The access points are illustrated in the accompanying Construction Traffic Method Statement, contained in Technical Appendix 5.6D.

2.4.2.2 Cable Section 2

It is likely that quarry sourced materials will approach by way of the A947 or A98/B9105, depending upon the location of the quarry to the site access points. Exported fill material will leave the site in the opposite direction.

The remaining construction traffic will approach by way of the A96/A98/A947 or A947. Construction staff will approach by way of the A947.

Cable section 2 is likely to have three main access points along this section of the route as follows:

- B9105 south of Fintry.
- C7S west of Gorrachie; and
- A947 north of Keilhill.

The access points are illustrated in the accompanying Construction Traffic Method Statement, contained in Technical Appendix 5.6D.

2.4.2.3 Cable Section 3

It is assumed that quarry sourced materials will approach from the north by way of the B9139/B9121 or the A98 through Banff. Exported fill material will leave the site in the opposite direction.

The remaining construction traffic will approach by way of the A96. Construction staff will approach by way of the A98 from the east.

Cable section 3 is likely to have three main access points along this section of the route as follows:

- A97 south of Tippetty;
- B9121 north of Tippetty ; and
- A98 west of Inverboyndie.

The access points are illustrated in the accompanying Construction Traffic Method Statement, contained in Technical Appendix 5.6D.

2.4.3 Onshore substations

It is likely that quarry sourced materials will approach by way of the A98/B9027/B9170/C295. Exported fill material will leave the site in the opposite direction.

The remaining construction traffic will approach by way of the A90 split evenly between the A981 and A948 and then following the B9170/C121B/C295 to site. Construction staff will approach by way of the A948/B9170/ C121B/C295.

3 Construction Traffic

3.1 Traffic Categories

Traffic to the site during construction will fall into two categories, namely:

- General construction traffic; and
- AIL traffic – vehicles for the transport of the transformers and reactors along with the required crane and associated support vehicle movements.

The components are classified as AIL due to their weight, length, width and/or height when loaded

3.2 Legislative Background

General construction traffic is covered by the Construction and Use Regulations, while AIL traffic is covered under the Road Vehicles (Authorisation of Special Types)(General) Order 2003 which defines an Abnormal Indivisible Load as;

“...a load that cannot, without undue expense or risk of damage, be divided into two or more loads for the purpose of being carried on a road and that:

- On account of its length or width, cannot be carried on a motor vehicle of category N3 or a trailer of category O4 (or by a combination of such vehicles) that complies in all respects with Part 2 of The Construction and Use Regulations; or
- On account of its weight, cannot be carried on a motor vehicle of category N3 or a trailer of category O4 (or by a combination of such vehicles) that complies in all respects with–
- Authorised Weight Regulations (or, if those Regulations do not apply, the equivalent provisions in Part 4 of the Construction and Use Regulations); and
- Part 2 of the Construction and Use Regulations.”

There are four main pieces of legislation that cover AIL movements:

- The Road Vehicles (Construction & Use) Regulation 1986: This covers all aspects of the vehicles setup from the weights and dimensions through to the braking system and environmental standards.
- The Road Vehicles (Authorised Weight) Regulations 1998: This regulation sets the limited maximum weight of the vehicle and axle loading of different vehicle categories.
- The Road Vehicles (Authorisation of Special Types)(General) Order 2003: The STGO is for vehicles not covered by either of the above Regulations and covers component delivery vehicles which are categorised as N3 for the tractor units and O4 for the specifically designed trailers. It states that the Police, the relevant road and bridge authorities or the Secretary of State may need to be notified of vehicle movement, dependent on the size of the load. Notifications can be made online or in paper form using the BE16 form for Special Orders.
- The Road Vehicles Lighting Regulation 1989 (Authorisation of Special Types)(General) Order 2003: This regulation defines whether front, side and rear lamps and reflectors are mandatory and which ones are permitted and which are not permitted.

Applications for a ‘Vehicle Special Order’ (VSO) will be made to the Vehicle Certification Agency (VCA) by the haulier at least ten weeks prior to planned vehicle movements.

3.3 General Construction Traffic

With the exception of the transformers, reactors and crane elements, the vast majority of traffic is normal construction plant, rather than AIL, and will include grading tractors, excavators, HIAB cranes, forklifts and dumper trucks. Most earthmoving plant will arrive on site on low loader transporters.

Traffic generation has been estimated using information from manufacturers and contractors with experience of substation construction as well as from MORL. Trips within the application site are not included as they do not pose a direct effect on the public highway network.

Construction personnel will generally travel to site in private vehicles and minibuses and these will be parked locally within the site or at a specific designated construction compound. The indicative construction programme is estimated to be a minimum of thirty seven months long and the anticipated normal hours of construction activity will generally be between 07:00-19:00 on Monday to Friday and 07:00-12:00 Saturday inclusive.

A typical trip generation has been developed by WYG on behalf of MORL and includes for each element an activity in terms of personnel and material deliveries. The predicted construction programme and associated activity traffic generation is included in Appendix A of this report.

The highest flow of traffic will occur in month 22 and will correspond with the excavation of cable trenches, delivery of cabling sand, import of rock and the delivery of the cables. This equates to approximately 8,547 movements (i.e. 4,274 inbound and 4,274 outbound trips) during the month, giving an average of 356 movements per day across the entire 33 km long study area, distributed to ten principal access points.

As described in ES Chapter 5.6 (Traffic and Transport) (Technical Appendix 5.6A) the maximum level of traffic at any one access point at the peak of construction would be 93 vehicle movements (46 inbound and 45 outbound).

The potential effect of this low level of construction traffic on the network is not considered significant when considering the link capacities of the surrounding road network and as such no link or junction capacity assessments are considered necessary.

3.4 AIL Traffic

The main elements of the predicted loads of this project are summarised in Table 3-1.

Table 3-1: Abnormal Indivisible Loads

Component	Number of Components
Transformers	4
Reactors	2
Crane and Associated Support Vehicles	12

The cable drums required for the project can be delivered using standard low loader Heavy Goods Vehicles (HGV) and these loads are not considered abnormal.

The AIL components can be delivered on a variety of specialist transport platforms. It is proposed that all components will be delivered under full police and civilian escort. With the convoy escorts included, it is estimated that there will be 132 movements (66 inbound and 66 outbound) in total associated with the delivery of AIL loads.

All the trailers used in the transport process are specifically designed for the transport of the associated components or feature custom modifications to suit loads. All feature rear wheel steering. When not transporting components, the trailers are shortened so that they do not exceed normal HGV dimensions.

The trailers are built to a high standard and the tractor units are designed for heavy haulage. Regular checks are undertaken on the vehicles on a daily basis. As such, the mechanical state of vehicles is kept at a very high level and breakdowns or malfunctions are very rare.

Delivery of transformer and reactor components is the responsibility of the manufacturer under the sales contracts. The manufacturer selects specialised hauliers for the transport of these loads and all drivers are reviewed and carry full AIL licences. The component manufacturer will appoint specialist hauliers for this element of the project.

Given that loads could be transported in convoys of up to three components, it is possible that up to six individual convoys would be present on the network at any one time. This however would be at the discretion of the police and as such it is safer to assume that the substation components would be delivered individually, resulting in a total of up to six days where AIL deliveries would be operating on the road network.

In addition to the transformer and reactor deliveries, a large erection crane will be needed to offload a number of components. The crane will be a high capacity mobile crane that is delivered in sections to keep the weights to a minimum on the public highway. The crane segments will consist of separate loads including the self propelled chassis, boom carrier and ballast trucks. A smaller erector crane will also be present to allow the assembly of the main crane and to ease overall load movements.

4 Route Traffic Management Considerations

4.1 AIL Route Conflict Areas

Potential conflicts between construction traffic and other road users can occur with AIL traffic due to the width of loads or the need to hold traffic back from constrained areas. General construction traffic does not have the same level of conflict with other road users as the vehicles are smaller and road users are generally more used to them.

Potential conflicts between AILs and other road users can occur at a variety of locations and circumstances. The main potential conflicts are likely to occur:

- In rural areas where the loads may straddle the centre line, where fast moving oncoming traffic may be encountered, etc.;
- Where traffic turns at a road junction, requiring other traffic to be restrained on other approach arms; and
- In locations where high speeds of general traffic are predicted.

Urban areas along a route pose different challenges for the abnormal loads. Whilst vehicle speeds would be less than those in the rural or motorway sections of a route, there are more potential conflicts with other road users to be aware of. These include:

- Pedestrians and cyclists;
- Local vehicular traffic;
- Parked vehicles;
- Side junctions; and
- Street furniture.

In this instance, straddling will be required along sections of the rural route and loads will be required to negotiate road junctions and general traffic travelling at high speed.

4.2 General Traffic Management Controls

The project will adopt a 'Considerate Contractor' approach to the development of the site.

The following measures will be implemented to aid site operation and maintenance during the construction phase;

- All materials delivery lorries loaded with dry and dusty materials will be sheeted to reduce dust and stop spillage on public roads;
- Main bulk delivery access points will be tarred to adoptable standards for a distance of 15 m from the Give Way line and all on site tracks will be of stone construction to reduce debris from being brought onto the carriageway;
- A road sweeper will be available to the site to deal with the unlikely instance of debris being placed on the public highway;
- All vehicles will be liveried or have identifying marks to enable recognition by the general public in case of issues;
- All construction traffic will be routed on agreed construction traffic routes to reduce the impact of traffic on sensitive areas such as villages, schools, shopping areas, etc;
- Construction traffic routes will be sign posted and warning signs will be placed in the vicinity of site access junctions to provide advance warning to other road users;
- A public awareness campaign of construction routes and likely movements will be published by the developer and distributed to local residents and to the local media; and
- Specific training and disciplinary measures should be established to ensure the highest standards are maintained to prevent construction vehicles from carrying mud and debris onto the carriageway.

A Construction Phase Environmental Management Plan (CEMP) will set out measures to be put in place to reduce the impact of noise, dust and excessive speed. The CEMP will also include a requirement to maintain access to existing paths within or affected by the development or to make alternative provision to avoid severance.

Vehicles will be fitted with identification numbers to allow the public to identify any vehicles that may be speeding or causing specific issues and drivers will be required to pass through sensitive areas at low speed.

The site induction process will also enforce the need to take care along the route and to reduce speeds in sensitive areas. The site induction process is a legal requirement under the Construction Design and Management CDM Regulations 2007 and will be mandatory for all persons working on the development.

Advanced warning signs are recommended to be installed on the approaches to the affected road network. Temporary signage advising drivers that AILs will be operating is recommended along the route.

Signage such as this would help improve driver information and alert drivers of oncoming traffic, thereby allowing them to consider whether proceeding to the nearest convenient passing bay, or breaking their journey until the convoy has moved on, would be appropriate.

4.3 General Abnormal Load Convoy Composition

A police escort will be required to facilitate the delivery of the predicted loads. The police escort will be further supplemented by a civilian pilot car to assist with the escort duty. It is proposed that an advanced escort would warn oncoming vehicles ahead of the convoy, with one escort staying with the convoy at all times. The escorts and convoy would remain in radio contact at all times where possible. An example of escorts protecting a convoy is provided in Plate 4.1 from a recent wind farm delivery.

The AIL convoys should be no longer than three HGVs long, to permit safe transit along the delivery route and to allow limited overtaking opportunities for following traffic where it is safe to do so. It is likely that the police will only allow one substation component to be transported at any one time however this will be confirmed with the police at the detailed AIL licensing stage, post consent.

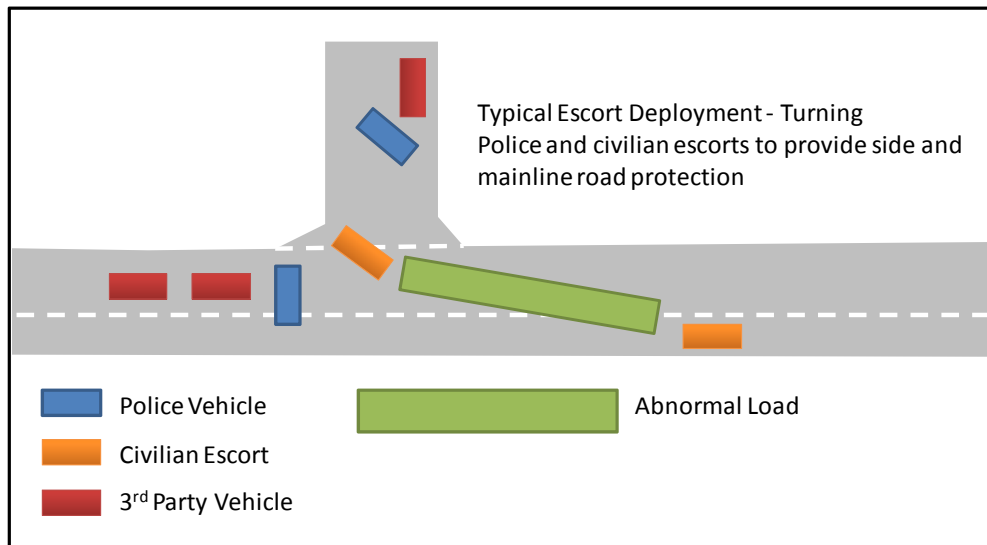
The times at which the convoys would travel will be agreed with Police Scotland. Typical delivery times for similar projects has seen the very early morning periods used in constrained sections, as traffic levels are generally lighter than those found in the afternoon and disruption is minimised.

A full convoy operation plan will be developed in consultation with Aberdeenshire Council, Transport Scotland and Police Scotland representatives along the route and agreed before deliveries commence to the site.

Plate 4.1: Escort Example



Within the route there are locations where general traffic flows will need to be stopped, such as junctions and crossings to allow safe manoeuvre of the loads. In these circumstances the advance police escorts will ensure that the traffic is stopped before the convoys enter the affected section. The advance police escorts will confirm through radio contact that the area is clear and safe for transit. Should general traffic fail to observe the request to stop, the advance police escort will advise the convoy to immediately halt, and then proceed to remove the rogue traffic. The convoy must not start without approval from the advance police escort. Plate 4.2 illustrates an indicative layout of the convoy and escorts for information.

Plate 4.2: Convoy Layout for Turning Traffic

Similar deployment will be undertaken at roundabouts, where the police escorts will hold back traffic on the entry arms and circulating carriageway.

In areas where the load is likely to, or is close to, straddling the centre line or road lanes the advance escort should be positioned to give advance warning and protection to the convoy such that any necessary evasive action can be taken. This is most prevalent at the final section of the route to the west of New Deer, when loads will depart from the B9170.

On the final access section, it is suggested that the advance police escorts hold traffic at either side road junctions or at new lay-by locations on the unclassified road.

5 Mitigation Measures

5.1 Physical AIL Mitigation Measures

A review of the AIL access route has been undertaken, focussing on the principle junctions along the access route. Where constraints have been identified, these have been reviewed through swept path assessments for the transformer as the worst case loads.

Swept path drawings are provided within the Route Survey Report (Technical Appendix 5.6C). The swept path assessments identified the following constraints:

- Peterhead Port Exit: the AIL convoy will be required to oversail the inside footway on exit from the port but no physical works will be required;
- A950 / A981 Junction: the AIL convoy will be required to overrun the offside verge on the A981 where a load bearing surface should be laid and one road sign should be relocated. An area of oversail will be required in the verge on the south side of the junction bellmouth but no physical works will be required;
- A981 / B9029 Junction: the AIL convoy will be required to undertake a contra flow manoeuvre of the splitter island on the northern approach of the A981 to avoid the requirement to remove street furniture from the island;
- B9170 / C121B Junction: the AIL convoy will be required to straddle the centre line of the road from this point to the C121b / C29S junction. Escorts should hold all traffic beyond these points to allow loads to utilise the entire carriageway width;
- C121B Right Bend at Mill of Greens: the AIL convoy will be required to overrun the verge to the north of the road where a load bearing surface should be laid. One road sign should be relocated;
- C121B / C29S Junction: the AIL convoy will be required to overrun the north eastern verge and south eastern verge crossroads junction as well as the field beyond the south eastern verge. A load bearing surface should be laid in these areas. The wood and wire fence that bounds the field to the south east should be set back outwith the over-run and over-sail areas, which will require third party land. In addition, vegetation should be cleared from this area; and
- Site Access Junction: the AIL convoy will be required to overrun the northern edge of the junction bellmouth where a load bearing surface should be laid.

The only major element of new construction associated with the above constraints is the site access junction which is designed to accommodate the proposed loads. This junction will be subject to a Road Opening Permit application following detailed design with Aberdeenshire Council and generally conforms to their access standards.

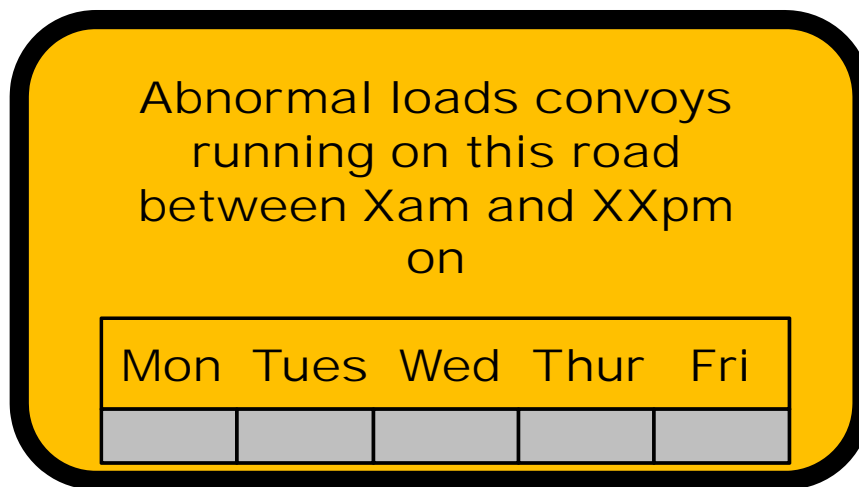
The access road leading into the site will feature an Industrial Access Road type pavement for 20 m back from the highway kerb line and an access gate will be set back 20 m during the construction phase. This could be moved to a 12.5 m set back during the operational phase of the junction if required by the Council.

A full services review will be undertaken at the detailed design stage and minor vegetation trimming is proposed to achieve the visibility splay requirements.

5.2 AIL Advance Warning Signage

Advance warning signs would be installed along the access route for AIL traffic from the A90 at Peterhead through to the site access junction. Temporary signage advising drivers that abnormal loads will be operating such as the example shown in Plate 5.1 could be installed to help assist drivers. Flip up panels (shown in grey) can be used to mask over days where convoys would not be operating

Plate 5.1: Indicative Information Sign



To further improve driver information, it is suggested that any Variable Message Signs (VMS), operated by Transport Scotland on the Trunk Road network, are used to warn drivers of abnormal loads operating on the trunk road sections of the route. This would display information warning of possible delays and would allow drivers to consider alternative routes if possible.

5.3 Construction Traffic Mitigation and Signage

New access junctions to enable access for material and construction plant deliveries will be required along the cable route and at the landing point and substation location. Where possible, existing field access points will be used.

At principal access junctions, the junctions will be formalised, featuring a metalled surface to reduce the movement of debris and mud onto the public road. Full details of the proposed junction forms are provided in the accompanying Construction Traffic Method Statement (Technical Appendix 5.6D). With the exception of the substation access junction, all other construction access junctions will be temporary in nature and will be removed following completion of the full cable installation.

Where access routes are located on roads of less than 5.5 m in width, passing places will be provided within the adopted boundary to ease access for all road users. The location and frequency of these passing places will be detailed at the detailed planning application stage.

Advance warning signs will be provided in advance of all construction access points. Where crossroads crossings are proposed, “Heavy Plant Crossing” signs would be provided on the public road arms. All access junctions would feature “Caution Site Entrance” signs as illustrated below in Plate 5.2.

Plate 5.2: Indicative Warning Signs



All traffic management measures associated with the new junctions will be designed to Chapter 8 of the Traffic Signs Manual and will be installed and maintained by a specialised Traffic Management Contractor who would be required to review the signs on a regular basis.

To improve sign visibility, it is proposed that all signs be made out of 3M Diamond Grade (or similar) retro-reflective signage material which provides excellent visibility in all lighting conditions.

5.4 Public Information

Information on the movement of abnormal load convoys and general construction traffic activity will be provided to local media outlets to help assist the public. Information could be provided to local newspapers and radio stations that relate to the expected vehicle movements along the proposed route. It is intended that this level of information will make residents aware of convoy movements and help reduce any potential conflicts.

6 Site Traffic Management

6.1 Internal Roads Management

All construction vehicles operating on the site must be fitted with a CB radio and all operatives inducted at the site compounds before being allowed to work on site.

The maximum speed limit for all traffic in on-site roads will be 10 mph and advance warning signs will be installed on all construction tracks leading up to junctions with the public road network.

Passing places will be provided on the internal tracks for ease of access. Site rules will be established to ensure that no vehicles reverse out of the site on the public road network.

All vehicles operating on the site must have headlights and warning lights operating at all times when under way.

During AIL deliveries at the substations, on-site traffic will be advised to clear the track by radio when an abnormal load is approaching. The site manager must ensure that the access track is clear for use and all remedial works are in place and that in steep sections, the track has been swept. Once the abnormal load is at its designated destination, other traffic may resume.

Once the abnormal load has been offloaded, the HGV will advise the site manager that the vehicle is ready to depart. All other traffic is to be removed from the track, to allow the HGV to depart the site. Empty HGVs will depart the site and regroup if necessary at the haulier identified lay-over areas. Where loads pass under energised electricity services on site, warning gates will be provided

7 General Abnormal Load Convoy Management

7.1 Journey Timings

The timing of deliveries is a key consideration and greatly influences the potential effects of the convoys on the road network.

The police have ultimate authority and control of convoy movement timings. From previous experience of similar movements throughout the UK, it is usually preferable to undertake convoy movements outwith peak traffic flows to limit the effect that they have on network traffic

7.2 Initial Checks

Before the convoys depart the POE, the lead convoy driver will check weather and traffic conditions, and advise colleagues through a "Tool Box Talk". The following websites provide relevant weather and traffic updates:

Traffic updates	Weather conditions
www.theaa.com/traffic-news/index	www.metoffice.gov.uk
www.bbc.co.uk/travelnews	www.bbc.co.uk/weather
ww.transportdirect.com	www.uk.weather.com
www.rac.co.uk	www.weatheronline.co.uk

7.3 Daily Management Updates

Daily updates to the general convoy management will be provided at the daily Tool Box Talks, where drivers and escorts will be fully briefed on the specific requirements of the convoys on that day. During these sessions, the following checks will be made by abnormal load staff:

- That staff are aware of the CTMP and have a copy of the latest version of the Driver Information Pack (a condensed version of the CTMP) in the cab;
- That all staff have the appropriate licences, safety equipment and clothing;
- That all radios and mobile telephones are provided, charged and that the correct channels are known;
- That the convoy is aware of its legal responsibilities for the country of operation;
- That drivers are briefed on welfare issues, including provisions for sleep and/or rest during the day if applicable;
- That the convoy is aware of client, haulier and component supplier health and safety requirements and method statements; and
- That all persons are inducted on site rules, the induction is undertaken immediately upon arrival and prior to persons undertaking any site works. Details of the induction process are to be provided by the relevant Principal Contractor.

7.4 Communications Strategy

In order to ensure effective communications during transit, all vehicles within the convoy will be fitted with Citizens Band (CB) radio equipment. The CB units on the transporters will be hard-wired to reduce the risk of power failure during transit. All escort vehicles will be fitted with hand held battery powered CB radio sets. Spare sets should only be carried to allow communications with the police during transit, if the police request it. In addition to the CB sets, all vehicles will be fitted with hands free mobile phones, to allow contact with third parties without CB devices and that would also act as an alternative form of communication in an emergency. Mobile phones could only be used when stationary.

A communication protocol would also be established with the emergency services so that, in the case of a blue light emergency, the convoys would be diverted to the nearest lay-by / hold point area. In the case of emergency vehicles that need to pass the convoy en-route to a third party emergency, the escorting police will be informed by radio of the incident and the requirement for vehicles to pass unhindered. At that time, a police escort vehicle, which is likely to comprise a motorbike, will travel ahead of the convoy to the next convenient holding point(s) at which the convoy could be manoeuvred such that clear passage can be afforded to the emergency vehicle. In the unlikely event that such an area is a considerable distance away, the emergency services will be informed of this and a decision taken concerning the necessity to reroute the emergency vehicle(s). Alternatively, once the wide area has been reached, the police escort will marshal the AIL convoy such that safe and speedy passage is afforded to the emergency vehicle.

This entire process will be controlled by the escorting police officers, in contact with the emergency services control centre

7.5 Contingency and Incident Plans

Contingency details for incidents such as tyre punctures, breakdowns and accidents are described below and should be observed. In all situations the safety of personnel and the public is paramount and reasonable steps to ensure safety at a site will be undertaken. In the event of an incident, it will be reported to the appropriate person immediately.

In the event of vehicle breakdown or incident the following details from The Highway Code must be observed:

- Try to remove the vehicles off the road if possible;
- If available, try to stop near to an emergency telephone;
- When stopped, close the convoy up to reduce the length where possible;
- Warn other traffic by using hazard warning lights if the vehicles are causing an obstruction;
- Drivers should depart using the left hand side door. Unless staff are threatened by their situation, all staff should depart the vehicles;
- Use PPE at all times when outside the vehicle;
- Place a warning triangle on the road at least 100 metres behind the last convoy vehicle on the same side of the road. Use the warning cones and flares carried in the escorts to protect the end of the convoy by creating a diagonal around the back of the last vehicle. Always take great care when placing or retrieving them. The Highway Code indicates that warning triangle should not be used on motorways;
- Consult with the Police escorts to identify what additional warning devices should be deployed;
- Keep sidelights and beacons on;

- No staff should stand between the convoy vehicles and oncoming traffic. Staff should not stand between vehicles in the convoy. Staff should be located at locations where all road users can see them;
- Staff should wait on the verge and where barriers are provided, stay behind them;
- In the event of injuries, do not move injured people unless they are in immediate danger from fire or explosion. Staff must not remove a motorcyclist's helmet unless it is essential to do so and should be prepared to give first aid if appropriately trained;
- In the case of injuries, all staff must stay at the scene until the emergency services arrive;
- In the event if a collision which causes damage or injury to any other person, vehicle, animal or property, the convoy must stop, provide contact details and addresses, provide vehicle registration details to third parties. The police escort should be informed and the incident reported within 24 hours to the local police station;
- In the event of a collision, all staff should obey directions from the escort Police Officers or attending officers;
- In the event of a breakdown, the nature of the breakdown should be reported to the indicated assistance provider. Obtain advice from the haulier Project Manager; and
- In the event of a burst tyre the appropriate repair provider should be contacted to come and replace the damaged item. Staff should not attempt to replace any HGV tyres themselves.

Should the convoy be able to restart following an incident, it should only enter when a safe gap in the traffic occurs.

To ensure the minimum delay and inconvenience, the haulier will have recovery agreements set up with suitable contractors along the route

7.6 Equipment Requirements

Each of the convoy vehicles must be suitably equipped with hazard warning devices to warn all other road users. All the tractor, trailer and escort vehicles operating on the project must have the following:

- Tractor units to have beacon bars on the roof and 3M reflective markings on both sides;
- Trailer units to have amber beacons on the rear with 3M reflective markings on both sides;
- All escort vehicles will have beacon bars on the roof, with 360 degree motion for all round visibility, and 3M reflective markings;
- Certified cargo lashing straps are to be used at all times. Certification must be carried and made available for inspection, kept within the cab.

All of the hazard warning equipment must be checked and cleaned at the start of each day. Additional cleaning of the warning equipment may be required throughout the day and must be undertaken when required.

All escort vehicles will carry the following equipment:

- 8x Reflective Road Cones;
- 8x Flare Alert Beacons;
- 2 x Warning Triangles;
- 1 x Spill Kit;
- 1 x Emergency Hammer;
- 1 x Flash Light;
- 1 x Auxiliary Rechargeable CB Radio;
- 1 x Fire Extinguisher (dry powder);
- 1 x Van/Truck First Aid Kit;
- 1 x Roll of Barrier Tape;
- 1 x Spare High-Vis Waistcoat;
- 1 x Spare Hard Hat;
- 1 x pack of disposable dust masks; and
- 1 x safety spectacles.

All relevant personnel must have the appropriate Personal Protective Equipment (PPE). All PPE clothing must be 'CE' marked to show it meets the European standards and should be appropriate for use in Motorway situations (i.e. must be full coats with reflective bands on the arms). Drivers must be issued with:

- Hard hat (within certification date);
- High-Vis (jacket / coat);
- Lace up steel toe capped safety boots; and
- Gloves

7.7 Third Party Accident / Breakdown on Route

In the event of a third party accident or breakdown on the delivery route, ahead of the AIL convoy, it may be necessary for the convoy to be slowed or temporarily halted until safe passage can be assured. The police escort would take control of the convoy and monitor manoeuvring of the convoy into a safe location, which would generally be a suitable holding point identified nearby. The convoy would be held at this location until the highway ahead is judged by the police to be sufficiently clear to enable safe passage of the convoy.

Should it be required for the loads to be temporarily halted, traffic in the vicinity of the convoy would be marshalled by a combination of the police and civilian escorts.

It is assumed for the purpose of this CTMP that any road closure is likely to be only temporary. However, in the case of a catastrophic failure of the road, for example a collapsed culvert, which would lead to longer term closures, alternative nearby routes would be identified as emergency diversions. These would be agreed with appropriate highway authority officers and marshalled by the attending police escort. It is not possible to plan in advance for the implications of such catastrophic failures.

8 Summary

WYG has been commissioned by Moray Offshore Renewables Ltd (MORL) to produce a Construction Traffic Management Plan (CTMP) relating to the planning in principle application for the installation of the modified transmission infrastructure (TI). This study will focus on the onshore transmission infrastructure (OnTI) which includes the onshore aspects of the export cable and two substations to the south west of New Deer.

A route access review has been undertaken from the Port of Entry at Peterhead through to the site access junction. The route is suitable for the movement of the anticipated loads subject to implementation of the required mitigation measures, although careful manoeuvring will be required into the site access.

A series of operational measures have also been detailed to further aid the delivery of equipment and to minimise the impact of convoys on the network. These include the provision of warning signs and incident contingency plans.

Appendix A – Construction Traffic Generation

Transport Indicative Construction Programme																												Vehicle Classes																				
	2016					2017					2018					May	2019					2020					Total	Cars & Lights	HGV																			
	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July		August	September	October	November	December	January	February	March	April	May				June	July	August	September	October	November	December	January											
Landing Point																																																
Set Up																																		116	116													
Excavation																																		34	68	68												
Piling																																		34	34	34												
Construction Works																																		16	31	31												
Cable Instalation																																		16	32	32												
Remediation																																		58	58	58												
General Supplies																																		16	48	48												
Staff																																		240	720	720												
Cable Run																																																
Set Up																																			160	320	320											
Excavation																																			6074	32093	32093											
Laying																																			631	5051	5051											
Jointing																																			76	456	456											
Backfil																																			17	104	104											
Remediation																																			87	6501	6501											
General Supplies																																			44	572	572											
Staff																																			864	11232	11232											
Substation																																																
Set Up																																				204	204	204										
Site Preparation																																				43	128	128										
Foundations																																				251	1256	1256										
Buildings																																				60	300	300										
AIL deliveries																																				44	132	96	36									
Installations																																				150	600	600										
Commissioning																																				64	128	128										
Remediation																																				43	128	128										
General Supplies																																				40	960	960										
Staff																																				396	9504	9504										
Total Per Month	0	0	0	640	479	479	730	687	687	687	747	496	496	496	496	480	480	480	586	586	586	1654	7888	8453	8547	8186	2198	995	0	0	0	0	0	160	2857	3488	3582	3582	4796	4071	0	0	0	0	0	70776	23132	47644
Assumed Working Days	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Total Per Day	0	0	0	27	20	20	30	29	29	29	31	21	21	21	21	20	20	20	24	24	24	69	329	352	356	341	92	41	0	0	0	0	0	7	119	145	149	149	200	170	0	0	0	0	0	33%	67%	