Kintradwell Wind Farm

Outline Construction Environmental Management Plan (CEMP)

Revision History

Issue	Date	Author	Nature and Location of Change
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1.0 INTRODUCTION

This outline Construction Environmental Management Plan (CEMP) is submitted by RES. The principal objective of this document is to provide information on the methodologies to construct and decommission Kintradwell Wind Farm.

The contractor(s) appointed to construct the project will prepare detailed method statements to construct the works which will incorporate the details outlined in this CEMP.

This CEMP sets out the overarching construction management philosophy for the site and provides further details on specific activities that will be undertaken on the site.

1.1 Project Description.

The proposed Kintradwell Wind Farm includes the installation of 15 wind turbines with a maximum height to blade tip of 149.9m and associated infrastructure including; a temporary construction compound, crane pads, temporary laydown areas adjacent to the turbines, access tracks, watercourse crossings, underground cables between turbines, an electric switching station, an on-site substation and control building, battery storage infrastructure, a gatehouse compound, a telecoms mast, concrete batching plant and potential excavations/borrow workings.

Relevant drawings of the site infrastructure are listed as ***Annex 1***.

Table 1.1: Outline Project Programme

TASK	CONSTRUCTION MONTH														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Site Set-Up															
Site tracks & hard standings															
Substation and control building															
Foundation construction															
Cable installation															
Turbine erection, commissioning & testing															
Reinstatement															
Site demobilisation															
Misc															

1.2 Community Liaison

Throughout the construction period of the project, RES will maintain an open dialogue with local residents and all other interested parties. RES will ensure the local community is provided with regular updates on the progress of construction and upcoming activities through appropriate channels.

RES has appointed a community liaison for key contact between RES and the community. This person will be the nominated point of contact for local residents in connection with any issues that may be raised during construction, operation and decommissioning of the wind farm.

This person is:

Callum Whiteford
RES Ltd
e: callum.whiteford@res-group.com

t: 0141 404 5560

Any change to the appointed person shall be communicated to the planning authority and the local community representatives as required.

2.0 GENERAL CONSTRUCTION MANAGEMENT PRINCIPLES

Kintradwell Wind Farm will be constructed in accordance with the Environmental Impact Assessment Report prepared during the development stage of the project.

Throughout the development of the project, the aim has been to ensure the design:

- Minimises the extent of infrastructure;
- Avoid sensitive habitats;
- Minimises environmental impacts; and
- Maximises health and safety.

Where appropriate and practicable, local plant and materials will be used in order to maximise the benefit of the wind farm project to the local economy.

2.1 Environmental Management and Pollution Prevention

Specific procedures to ensure that the local environment is protected during construction works are managed through our Environmental Management System Procedures and Policies which is certified to ISO 14001.

2.1.1 Contractors Requirements

Details of the environmental management and emergency procedures to be adopted by Contractors during the construction phase are contained within the RES management system procedure *Safety and Environmental Requirements of Contractors* found in ***Annex 2***.

2.1.2 Surface and Ground Water Management

A sustainable drainage system (SuDS) will be implemented to provide a series of surface water management techniques to mitigate any adverse impact on the hydrology of the site.

The *SuDS Design Statement* details the design criteria and philosophy for the SuDS system. This document is included as ***Annex 3***.

2.1.3 Water Quality Monitoring

Any potential pollution incident on site that may impact water quality will be dealt with in accordance with the RES management system, *Procedure in the Event of a Contaminant Spill*, included as ***Annex 4***.

Water quality monitoring will be undertaken on discharge waters during the construction phase and immediately post construction to ensure that the Proposed Development does not impact on local watercourses and rivers.

A bespoke water monitoring strategy will be prepared and implemented by a specialist consultant, detailing monitoring locations, sampling frequency and the methodology for chemical and biological analyses. Site sensitivity will be taken into account when deciding on the level and periodicity of sampling and the proposed monitoring plan discussed and agreed with SEPA prior to implementation.

The exact location of each sampling point will be determined during a walkover survey, and will reflect the point on all relevant controlled waters closest to the proposed active construction areas. Sampling points up-stream and down-stream of the construction activity will be selected to provide a full profile of the controlled waters.

A baseline report will be prepared following initial pre-construction water quality monitoring. This report will provide details of any contamination concentrations recorded and will be used to depict “uncontaminated background pollution levels” for the site.

In the event of a potential pollution incident, all relevant monitoring points would be visited and re-sampled to determine any changes relative to the baseline data. A report detailing the findings would be prepared for each incident and recommendations provided for further monitoring and / or requisite mitigation measures.

Following completion of the construction of the wind farm, all sample points will be revisited, re-sampled and analysed for a full suite of analytical parameters and a further report prepared discussing any impacts upon water quality arising from the construction process.

2.1.4 Flood Risk Assessment

A full flood risk assessment was not considered to be required for the Site. The 1:200-year flood envelope of the SEPA Interactive Flood Map does not highlight any areas within the Site at risk of flooding from the surface water features draining the Site. Although SEPA has modelled a few localised surface water flood extents within the site these are minor and localised, never forming large linked areas or flow paths.

2.1.5 Site Waste Management

A *Site Waste Management Plan* is provided in ***Annex 5***. A site-specific site waste management plan will be prepared by the Principal Contractor prior to commencement on site in accordance with RES management system procedure *Safety and Environmental Requirements of Contractors*, included in ***Annex 2***.

2.1.6 Foul Water Management

Foul drainage will be provided in agreement with the relevant authorities and most likely involve the installation of a septic tank and soakaway.

2.1.7 Noise Management

The sources of construction noise are temporary and vary in location, duration and level as the different elements of the wind farm are constructed. Construction noise arises primarily through the operation of large items of plant and equipment such as bulldozers, diesel generators, vibration plates, concrete mixer trucks, rollers etc. Noise also arises due to the temporary increase in construction traffic near the site.

BS 5228-1:2009 'Noise control on construction and open sites; Part 1 – Noise' is identified as being suitable for the purpose of giving guidance on appropriate methods for minimising noise from construction activities.

For all activities, measures shall be taken to reduce noise levels with due regard to practicality and cost as per the concept of 'best practicable means' as defined in Section 72 of the Control of Pollution Act 1974.

The following noise mitigation measures will be implemented where appropriate and in line with further guidance from BS 5228-1;

- Consideration will be given to noise emissions when selecting plant and equipment to be used on site. Where appropriate, quieter items of plant and equipment will be given preference.
- All equipment should be maintained in good working order and fitted with the appropriate silencers, mufflers or acoustic covers where applicable;
- Stationary noise sources shall be sited as far as reasonably possible from residential properties and, where necessary and appropriate, acoustic barriers installed to further reduce the impact;
- The movement of vehicles to and from site will be controlled; and

- Employees will be instructed to ensure compliance with the noise control measures adopted.

Should it be considered necessary to further reduce noise levels, mitigation measures would be considered and appropriate measures will be undertaken.

There are many strategies that could be employed to reduce construction noise levels; BS 5228-1 also states that the 'attitude to the contractor' is important in minimising the likelihood of complaints and therefore consultation with the local community should occur. Non-acoustic factors such as mud on roads and dust generation, which can also influence the overall level of complaints, will also be controlled as detailed elsewhere in the CEMP.

In the event that noise complaints are received, the senior RES onsite staff member will contact the complainant and if required, visit the property to discuss the complaint and subjectively assess the noise levels. If the noise complaint is found to be merited, additional mitigation measures will be put in place.

In the event a resolution cannot be reached between RES and the complainant, the planning authority will be informed in order that they can carry out their own subjective assessment and if required agree any additional mitigation.

All noise complaints will be recorded along with actions taken to resolve the issue. These records will be available to the Council on request.

2.1.8 Dust Management

The potential issue of dust creation during the works will be weather and season dependant, therefore detailed dust management methods will be subject to the works programme and contractor working methods.

Dust management will be carried out at all times in accordance with industry best practice to ensure that any local sensitive receptors are not affected by nuisance levels of dust from the works.

The following methods of dust suppression will be implemented during the construction phase of the wind farm as required:

- Site tracks to be damped down using bowser or other suitable system;
- Road sweeper to be used to remove loose material from adjacent public roads during construction;
- Cleaning of vehicles, including provision of waterless wheel washing facilities, prior to exiting site onto the public road;
- Soil erosion control measures;
- Speed limits to be put in place to ensure low vehicle speeds;
- Vehicle loads to be covered;
- Damping of dry excavations and cutting activities which generate dust; and
- Sequencing of works to minimise the time that soils are exposed.

2.1.9 Spoil Management

Excavated peat, topsoil and subsoil will be reused within the works either as part of backfilling or reinstatement operations or used to form landscaping verge. Materials will generally be

stockpiled close to the location of reuse to limit vehicle movements on site. Further details of how spoil and peat shall be managed on the site are set out within the *Outline Peat Management Plan* found in Appendix 10.2 of the EIA Report (Volume 6).

2.1.10 On-Site Fuel and Chemical Storage

All fuel and chemicals will be stored within appropriately specified containers and within specifically designed stores / storage areas and shall include appropriate measures to avoid spillages in line with the relevant legislation. Further information on fuel and chemical storage will be provided within the Construction Phase Plan prior to the construction phase of the project.

2.2 Temporary Lighting

Temporary lighting will be required at the construction compound for security purposes and to ensure that a safe working environment is provided to construction staff. In addition, temporary lighting may be required to ensure safe working conditions at tracks, control building and turbine locations during construction.

All temporary lighting installations will be downward facing and all lights will be switched off during daylight hours.

2.3 Peat Slide Risk and Slope Stability

A Peat Landslide Hazard Risk Assessment has been undertaken as part of the Environmental Impact Assessment Report, included as Appendix 10.1 of the EIA-R, and the design of infrastructure has taken into account the findings of the assessment. The mitigations measures outlined will also be closely adhered to during the construction phase. In order to minimise the risk of potentially inducing peat landslides during construction at the site the following mitigation measures have been provided:

- Raise Health and Safety awareness of the peat environment at the Proposed Development for construction staff by incorporating the issue into the Site induction. Include peat slide risk assessment information (e.g. peat instability indicators, best practice and emergency procedures) in toolbox talks with relevant operatives e.g. plant drivers;
- Introduce a 'Peat Hazard Emergency Plan' to provide instructions for Site staff in the event of a peat slide or discovery of peat instability indicators;
- For sections of track that require track side cuttings into peat, suitable support measures would need to be designed to maintain the stability of the adjacent peat terrain;
- Refine/optimise the design through the pre-construction phase following completion of a detailed ground investigation; and
- Develop methodologies to ensure that accelerated degradation and erosion of exposed peat deposits does not occur as the break-up of the peat top mat has significant implications for the morphology, and thus hydrology, of the peat (e.g. minimise off-track plant movements within areas of peat).

2.4 Utilities

Existing utilities and services are located along the abnormal access route, and just off the A9 which runs parallel with the southern edge of the site boundary. Between the proposed site entrance, located off the A9, and the tie in point with the existing track where it is expected there will be upgrade works there are various utilities present, including SSE assets overhead and underground, BT Openreach infrastructure and a Scottish Water pipeline.

An overview of the existing utilities is shown on Figure 2.5 Sheet 2 (Volume 2) of the EIA report.

2.5 Post Construction Restoration and Reinstatement

During construction of the infrastructure elements (detailed in Section 3), the vegetated layer will be stripped from the area of the excavation and stored locally with the growing side up.

The remaining organic topsoil and subsoils will be excavated down to formation level, or a suitable stratum, and again will be stored local to the point of excavation, but shall remain segregated to avoid mixing of materials.

Temporary storage areas shall take cognisance of all identified buffer areas and be stripped of vegetation prior to stockpiling in line with best working practices. As construction is progressed the effectiveness of the buffer zones will be reviewed and if necessary adjusted. Alternatively, the construction procedure may be reviewed and altered, or additional control measures put in place.

Post-construction reinstatement will be undertaken as work progresses to minimise the period of time any organic material is stockpiled. Subsoils shall be used in landscaping and backfilling around structures while the vegetated layer and/or topsoil will be used to reinstate storage and working areas, road verges, drainage swales and embankments. In addition, following the completion of the works, a final inspection of the wind farm site will be undertaken and in circumstances where reinstatement using vegetation and/or topsoil is unsuccessful alternative methods will be considered.

Upon completion of all construction works, the temporary construction compound will be reinstated to their approximate pre-wind farm condition. All temporary structures and construction equipment will be removed and the granular material that forms the hardstandings will be moved to areas agreed with the landowner or removed from site. Following this, the areas will be backfilled with material stripped and stored during the construction of the wind farm and reseeded as required.

In line with construction best practice and to suit the ground conditions anticipated on site, the track and hardstanding design has endeavoured to minimise spoil generated during construction.

2.6 Traffic Management

Sections 8, 9 and 10 of the Transport Assessment, which is included as EIA Report Appendix 11.1 (Volume 6), sets out a framework for a TMP for both general construction traffic, and Abnormal Indivisible Loads (AILs) including contingency and incident planning.

2.7 Health and Safety Management

The Principal Contractor will be responsible for ensuring that a construction phase health and safety plan is prepared and implemented on site. All work will be carried out in accordance with:

- The Health and Safety at Work etc. Act 1974;
- The Construction (Design and Management) Regulations 2015; and
- All applicable third-party safety guidelines.

2.8 Environmental

Once appointed, the Ecological Clerk of Works (ECoW) will be fully engaged in all preparatory works and their terms of appointment extended throughout the construction period into the operational period.

Once appointed, a Written Scheme of Investigation (WSI) will be prepared by the project Archaeologist.

3.0 DESIGN PHILOSOPHY AND CONSTRUCTION METHODS

3.1 Micro-siting of infrastructure

During the detailed design phase, the location of wind farm infrastructure may need to be micro-sited though at this point in the wind farm design process there is no planned micro-siting of infrastructure.

3.2 Site Entrance

All traffic associated with construction of the wind farm will access the site from the A9 using the newly constructed site entrance in accordance with the TMP. Wheel cleaning facilities will be set up at the main entrance to remove mud from the wheels of vehicles leaving the site. Public roads will be inspected daily and a road sweeper will be employed to remove any mud or debris transferred onto the roads from site activities.

3.2.1 General Construction Method

The site entrance will be constructed in accordance with the design drawings as follows:

- Traffic management to be installed;
- Utilities located and any necessary mitigation identified;
- Topsoil shall be removed and carefully stockpiled;
- New road drainage shall be installed taking care to ensure that existing drainage will not be compromised;
- Edge restraints where required in the design will be installed;
- Road pavement works to be completed to the design requirements; and
- Line marking, signage, fencing and vehicle restraint systems required as part of the design will be installed.

3.3 Temporary Construction Compound, Site Tracks and Crane Hardstandings

3.3.1 Temporary Construction Compound

Temporary construction compounds are required for the provision of site offices, welfare facilities and storage arrangements for materials, plant and equipment. There are 3 temporary construction compounds required for different areas and stages of the project.

The temporary gatehouse compound will be built for use during construction of the access tracks to the temporary construction compound. The compound will subsequently be used as the site gatehouse entrance on the wind farm.

The construction compound will be constructed at the location indicated on *Figure 1.2* of the EIA Report (Volume 2)and will be the main compound for the site with welfare facilities at this location. A 40m x 50m area will be retained after construction of the wind farm to house the battery storage infrastructure indicated on Figure 2.12 (sheets 1 to 3) of the EIA Report (Volume 2) The remaining 40 x 50m area is temporary and will be removed and reinstated after completion of construction.

An area will be assigned for the storage of fuels and chemicals, ensuring any spillage is captured and appropriately dealt with. Refuelling will be undertaken in line with the requirements as outlined in the *Safety and Environmental Requirements of Contractors*, located in ***Annex 2***.

3.3.2 Site Tracks

The running width of the tracks will be typically 4m on straight sections with 0.25m (0.5m for floating roads) shoulders on each side resulting in 4.5m track width in total (5m for floating roads). Shoulders are likely to increase at corners and passing places to accommodate the swept path of turbine delivery vehicles. The track working area will be kept to the minimum required allowing for working area, safe access, drainage and electrical works.

Site tracks will consist of a compacted stone structure. Where tracks cross over services such as electricity cables, they will be designed after consultation with the relevant authority and in accordance with their specific requirements.

A number of track designs may be utilised on site which will be determined during detailed design, dependent on the ground conditions encountered on site and include:

- Excavated Track, and;
- Floating Track;

Track drainage will be incorporated within the design in accordance with sustainable drainage design principles. Where the road alignment crosses existing drainage channels, crossings appropriate to the location will be designed in accordance with the relevant guidelines.

A buffer zone in accordance with the relevant guidance from SEPA will be maintained around watercourses shown on Figure 3.1 of the EIA Report (Volume 2) The exceptions to these buffers will be where the existing tracks are located within the buffer zone and where there are watercourse crossings. Site personnel will be made aware of the buffer zones through the site induction and specific toolbox talks.

<u>Excavated Track</u>

Typical track construction may be used in areas identified where the thickness of soft soils is low, and the underlying layer has adequate load bearing properties. This track system will likely consist of a suitable capping layer and then a suitable running layer.

<u>Floating Track</u>

Floating track construction may be adopted where the ground conditions require. This system involves installing geo-grid directly onto the organic or exposed soil layer and placing layers of suitable stone and additional geo-grid (as required) above until the track design level is achieved.

3.3.3 Crane Hardstandings

The main crane hardstanding area is anticipated to be 40m x 35m. There may be additional temporary hardstanding areas required for the erection of the main crane, lay down of materials and turbine components.

The main crane hardstanding area will be left uncovered for the operational lifetime of the wind farm in line with good practice outlined in the Scottish National Heritage guidance *Good Practice During Windfarm Construction*. Temporary crane hardstanding elements will be reinstated post construction.

All crane hardstandings will consist of one or a combination of the following:

- A compacted stone structure bearing directly on a suitable formation strata;
- A compacted stone structure bearing on a formation strata strengthened through ground improvement techniques; or

- A compacted stone structure bearing on a strengthened soil mass created by the installation of multiple stone or concrete columns.

3.3.4 General Construction Method

Where competent soils exist close to the existing ground surface the following construction method will typically be followed:

- Track alignments will be established from the construction drawings and marked out with ranging rods, timber posts or steel pins.
- Track corridors shall be pegged out 500 - 1000m in advance of operations.
- Where possible, upgraded access tracks will re-use the structure of the existing track to reduce construction requirements.
- Material will be excavated and stored.
- Cut track construction will be used where soils are identified as being shallow. This cut track system will likely consist of a suitable layer of crushed aggregate, either spread by a dozer or placed by hydraulic excavator, prior to being compacted in layers by vibratory rollers. If ground conditions dictate a geotextile membrane will be applied.
- Floating track construction may be adopted where the ground conditions dictate. This system involves installing a geogrid membrane directly onto the organic vegetated layer and placing layers of suitable stone and additional geogrid layers (if required by the design) above. If ground conditions require a geotextile membrane may be applied also.
- Drainage swales will be excavated adjacent to the tracks where required. Surface water runoff will not be allowed to discharge directly into existing watercourses but will be routed through a SuDS.
- A surface water cut off ditch may be installed on the slope above the earthworks footprint where achievable given the topography.
- Where the road alignment crosses existing drainage channels, crossings appropriate to the location will be designed in accordance with the relevant guidelines.
- Depending on depth and type of material, cut slopes are anticipated to be between 1:1 to 1:3.
- Post-construction reinstatement shall be in line with the details of Section 2.5.

Where the load bearing properties of the underlying soils are determined to be insufficient, ground stabilisation may be carried out to provide adequate bearing capacity of the formation level. Due to the variable nature of the ground at the site, specific construction methods shall be selected at detailed design stage in consultation with specialist contractors. Such methods may consist of:

- Compaction of the existing in situ soils;
- Lime/cement stabilisation of the existing in situ soils; or
- Installation of stone or concrete columns to provide adequate support.

3.3.5 Battery Storage Compound

To match on-site energy generation to energy demand, as well as facilitate options such as a reduction in any possible grid constraint requirements, the Proposed Development also provides for the provision of an energy storage device. The proposed design is a compact and low-key containerised scheme within the construction compound, part of which will be repurposed as a battery storage compound.

3.4 Turbine Foundations

Turbine foundations will be designed in accordance with the relevant design standards. Due account will be taken of guidance provided in appropriate codes and standards such as Eurocodes, British Standards and other specialist design documents.

Due to the anticipated load bearing capacity of the near surface soils, gravity base turbine foundations are expected to be used to support the wind turbine.

The foundations are expected to be designed as a reinforced concrete slab. The foundation geotechnical design will be based on the information contained in the site investigation, which will be carried out post consent.

3.4.1 General Gravity Base Construction Method

The gravity base foundation general construction method would generally be as follows:

- The topsoil will be excavated and stored to one side for reuse during the landscaping round the finished turbine;
- Excavation will be undertaken to competent material. Excavated subsoil material may be stockpiled temporarily adjacent to the excavation for later use as backfill or stored elsewhere on site. Temporary & permanent drainage shall be installed at the same time as the excavation works;
- In the case where competent material is lower than the required formation level the foundation will likely be over-excavated to competent material and compacted engineering fill placed to the required level;
- Where excavation is required to extend below the water table or in material which does not drain freely, appropriate pumping will be employed to keep the excavation dry. Water pumped from an excavation shall not be discharged directly to any watercourse;
- A layer of concrete blinding will be laid directly on top of the newly exposed formation, finished to ensure a flat and level working surface;
- Steel reinforcement, the turbine anchorage system and cable ducts will be fixed in place and formwork erected around the steel cage;
- Concrete will be placed using a crane, pump or other suitable lifting device and compacted using vibrating pokers;
- The foundation will be backfilled with suitable material, and landscaped using the vegetated soil layer set aside during the initial excavation; and
- A gravel path will be built leading from the access track or crane hardstanding to the turbine door or access steps and around the turbine for maintenance.

3.5 Turbines and Turbine Transformers

3.5.1 Turbines

The turbines will be supplied with a light grey semi-matt finish (RAL colour 7035), or a suitable alternative, and installed with a height not exceeding 149.9m measured from ground level to the blade tip in the vertical position.

The turbines shall not carry any symbols, logos or other lettering except where required under other legislation. However, RES propose to add turbine numbers to the base of each tower to aid service engineers during the operational phase of the wind farm.

In line with Health and Safety best practice, turbine manufacturers have indicated a preference to locate a passive infra-red (PIR) detector and light above each turbine door. It should be noted that this lamp will not be permanently lit and would only be switched on by the PIR when personnel approach a particular turbine.

Specific locations for the turbines are shown on Figure 1.2 of the EIA Report (Volume 2).

3.5.2 Turbine Transformers

Turbine transformers will be placed internally within the turbine tower.

Oil cooled transformers will be supplied full of oil and will not require topping up on site. The transformers will be sealed and will be inspected for any damage prior to offloading. Air cooled or cast resin transformers do not require cooling oil.

The transformers will be located within enclosures which shall be locked, accessible by trained and authorised personnel only, and displaying appropriate warning signs.

3.5.3 General Turbine Erection Method

The following general steps will be undertaken in order to erect the turbines on site:

- Some turbine components will be pre-delivered in sections to the site and offloaded at the crane hardstandings;
- The remaining turbine components will be delivered on a just-in-time basis and be lifted directly from vehicle trailers;
- Turbine components will be lifted by adequately sized cranes (one main crane and one smaller tail crane) and positioned on the foundations / other turbine sections until the entire turbine is erected;
- Upon completion of the erection all fasteners will be tightened and the internal fit out of the turbine undertaken;
- The turbines will then be connected to the wind farm substation; and
- Turbine testing and commissioning will be undertaken before the turbines will be handed over as complete.

3.6 Control Building and Substation Compound

Cables will export power from the wind turbines to the substation compound and control building before being transferred to the local Scottish Hydro Electric Transmission (SHE-T) owned network. The location of the control building and substation compound is shown on Figure 1.2 of the EIA Report (Volume 2).

The electrical switching station / control building have been designed, sized and positioned to be sympathetic with the surroundings. The control building contains the following rooms; control room, switch room, SCADA room, and equipment store and welfare facilities.

The detailed design of the foundations for the buildings will be based on the Site Investigation reports and building requirements, and will ensure loads associated with the buildings are transferred to the appropriate bearing layer in the sub-surface.

The building design, including external appearance, dimensions, surface materials of the substation, etc. will be agreed with the Planning Authority prior to development.

Foul drainage will be provided in accordance with Building Control requirements and in agreement with SEPA.

3.6.1 General Construction Method

The switching station / control building and substation compound will generally be constructed in accordance with the following:

- The plan area of the switching station /substation control building and compound will be set out and the topsoil stripped and removed to a temporary stockpile;
- The building foundations will be excavated and concrete poured;
- The building structure will be constructed from the foundations, in accordance with current practice and specific design; and
- The internal fit out of the building including installation of services will be completed.

3.7 Cabling Works

All electricity and other service cables between the turbines and the switching station will be placed underground.

The detailed construction and trenching specifications will depend on the ground conditions encountered but typically cables will be directly buried inside a trench, except at road crossings when cables will be ducted.

3.7.1 General Construction Method

The following construction method will typically be used:

- Trenches will be excavated and a suitable bedding material placed for which to lay the cables upon. The ground is trenched typically using a mechanical digging machine;
- The cables shall be laid directly onto the bedding material;
- The trench will then be backfilled and compacted with suitable material up to the required level and finished with a layer of topsoil to aid in the trench reinstatement;
- A suitable marking tape is installed between the cables and the surface; and
- The cables are terminated on the switchgear at each turbine and at the switching station.

3.8 Concrete Batching Plant

An temporary onsite concrete batching plant will be constructed at the location shown on Figure 1.2 of the EIA Report (Volume 2). The footprint of the batching plant will to be capable of withstanding the bearing pressures required for the plant to be installed there. All plant components will be self-contained with track running gear and can be moved as conventional trailers. Following completion of construction, the batching plant will be removed and reinstated.

3.8.1 Cement Handling

- Cement will conform to design specification and will be from one source;
- Cement will be delivered to project site in bulk tankers;
- Cement will be pumped into silos by pneumatic blower to an induction pipe mounted on the side of silos;
- Dust filters will be installed on all silos to ensure minimal dust emission to atmosphere during silo filling;
- All silos will be fitted with high low Indicators; in addition, the high-level indicator will shut valve on induction pipe when silo full ensuring no overfilling and pressurising of the silo.

3.8.2 Aggregate Handling

- Coarse aggregate and fine aggregate will conform to the design specification;
- Delivered aggregates will be stored on ground bins which will have sub-base bases with suitable fall to prevent ground contamination and allow run off of ground water;
- Aggregates will be fed into covered bins in the batching plant using a front-end loader.

3.8.3 Water Handling

- Water will be potable water stored in several large tanks;

3.8.4 Concrete

- The concrete batching will take place within a sealed unit to control emissions of dust, noise and to provide quality control of the final product;
- Concrete lorries will be washed out in dedicated wash out areas on site which comprise of lined containers with sufficient capacity to take the wash out material from the lorry;
- This water will be disposed of to a licensed waste facility.

3.9 Borrow Pit

It is planned to have a borrow pit search area as shown on Figure 1.2 of the EIA Report (Volume 2). It is anticipated that the borrow pit(s) can provide approximately 55,6000 m^3 of aggregate.

Key activities at the borrow pit(s) include extraction, crushing, screening, stock piling and haulage of the material to areas on site.

3.10 Communications masts

The location of the communications is identified on Figure 1.2 of the EIA Report (Volume 2)

The mast will require its own reinforced concrete foundation and crane pad to enable erection, plus associated electrical and communication plant that service the mast. The foundation construction and mast erection will follow a similar approach to that of the turbines.

4.0 OUTLINE DECOMISSIONING PLAN

RES is seeking in-perpetuity consent for the Proposed Development. In the event of decommissioning, at the end of the operational life of the wind farm a decision would be made as to whether to refurbish, remove, or replace the turbines. If refurbishment or replacement were to be chosen, relevant planning applications would be made. If decommissioning, it would be undertaken in line with best practice processes and methods at that time and will be managed through an agreed Decommissioning Environmental Management Plan.

5.0 RECORDS

Records, as-built drawings, specifications, operational maintenance manuals and residual risks will be collated and filed in the project Health & Safety file based upon the requirements of the Construction (Design and Management) Regulations 2015 (or any subsequent amendments).

ANNEX 1: DRAWINGS

EIA-R Reference	Drawing Name	Drawing Number
Figure 1.1	Site Location	03501-RES-LAY-DR-PT-001
Figure 1.2	Infrastructure Layout	03501-RES-LAY-DR-CE-001
Figure 2.1	Wind Turbine Elevation	03501-RES-WTG-DR-PT-001
Figure 2.2	Wind Turbine Foundation (Gravity Foundation)	03501-RES-FOU-DR-PT-001
Figure 2.3	Wind Turbine Piled Foundation	03501-RES-FOU-DR-PT-002
Figure 2.4	Crane Hardstand General Arrangement	03501-RES-ACC-DR-PT-002
Figure 2.5	Site Entrance (2 Sheets)	03501-RES-ACC-DR-PT-001
Figure 2.6	Access Track Typical Details	03501-RES-ACC-DR-LO-003
Figure 2.7	Cable Trench Typical Details	03501-RES-CBL-DR-EE-001
Figure 2.8	Typical Switching Station Plan	03501-RES-SUB-DR-EE-004
Figure 2.9	Switching Station & Elevations	03501-RES-SUB-DR-EE-005
Figure 2.10	Substation & Control Room Compound Plan	03501-RES-SUB-DR-EE-001
Figure 2.11	Substation & Control Room Elevations	03501-RES-SUB-DR-EE-002
Figure 2.12	Battery Storage Compound	03501-RES-BLD-DR-PT-001
Figure 2.13	PCS & Transformer General Arrangement	03501-RES-BLD-DR-PT-002
Figure 2.14	Battery Container Elevation with HVAC	03501-RES-BLD-DR-PT-003
Figure 2.15	Typical Temporary Construction Compound Layout	03501-RES-CTN-DR-CO-001
Figure 2.16	Gatehouse Compound	03501-RES-CTN-DR-CO-002
Figure 2.17	Borrow Pit General Arrangement	03501-RES-ERW-DR-CO-003
Figure 2.18	Proposed Batching Plant Layout	03501-RES-ERW-DR-CO-001

Safety & Environmental Requirements for Contractors on all activities (RSWP 005)

Document Nº: ***01059R0003***

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1 PURPOSE

The purpose of this document is to promote; Health, Safety, Environment, Safety Leadership and Sustainability of our Contractors, Consultants, RES employees and the general public by setting out the minimum expectations when working on RES managed contracts.

This document shall be supplied to all Contractors and Consultants tendering for any contracts relating to works or services on any RES site or office, it shall be read carefully and its receipt acknowledged in writing in connection with a specific Contract. No variation shall be permitted without the express permission of the appropriate RES Manager responsible for the works / services; eg. Project Manager, Construction Site Manager, Asset / Site Manager or Office / Facilities Manager, etc.

This document shall be read in conjunction with the relevant Health and Safety (& Environmental – where applicable) Plan for the location of the works.

2 SCOPE

It should be noted that this document and the References quoted below do not cover all possible site activities and it therefore remains the Contractor's / Consultant's responsibility to ensure that their works are carried out in a safe and environmentally responsible manner which complies with ALL relevant legislation current at that time. All work activities with significant risks are to be covered by an appropriate written risk assessment and work instruction / method statement that has been reviewed by the appropriate RES Manager prior to works commencing.

3 RESPONSIBILITIES & REQUIREMENTS

Contractors & Consultants shall comply with all relevant requirements appertaining to their contracted works. Throughout this document any references to Contractor(s) shall also apply equally to Consultant(s) and whilst RES are not typically identified, this does not absolve RES employees from following the same site rules and requirements as our Contractors or Consultants. Where specific training requirements or qualifications are required, Contractors may provide evidence of alternative training subject to it being equivalent to / better than, the RES defined minimum requirements.

4 RES Responsibilities

4.1 Controlling Documentation

RES shall provide the Health, Safety & Environmental Plan (Pre-tender and construction phase), Project Quality Plan and Site Waste Management Plan. RES shall review all Safe Systems of Work for all significant risk activities; including Risk Assessments, Method Statements and Permits to Work - work will not be permitted without these being in place. HV Electrical cable and system isolations and documentation shall be controlled through RES Senior Authorised Person (SAP) or RES nominated SAP.

RES shall audit all aspects of the management of health, safety, quality and environment on site and may carry out appropriate surveys, inspections, tours and sampling at any time. RES may carry out their own accident investigation if deemed necessary to ensure that correct preventative measures are put in place.

4.2 On Site Responsibilities

Safety requirements & rules shall be displayed on site and readily available for all employees to see. RES shall provide the RES site induction or RES on-line induction (to be advised by RES) prior to visiting, starting works & at refresher intervals and provide support to those who have difficulty with the English language to ensure that all site attendees can demonstrate that they understand the site rules & instructions.

RES shall provide prompt information that could affect health & safety of workers, and/or other 3rd parties, members of the public, ensuring adequate steps to prevent harm to livestock on site, maintenance of site fencing, boundaries & keeping gates closed.

RES shall facilitate agreements on interface responsibilities between other parties – within procedures and appropriate documentation controls, including regular meetings / liaison with RES staff, employees and other contractors to identify and discuss hazards with work activities and how they could affect others.

Unaccompanied site visits will be at the discretion of the RES Site Manager. First Aid facilities and provision of first aid is the responsibility of the contractor unless agreed otherwise, RES facilities will be available for use in case of emergency.

4.3 Wildlife

RES Site Manager shall inform Contractors of any constraints or work time restrictions due to the protection of wild life, i.e. nesting sites, habitat issues. If unexpected wildlife is encountered during work activities, i.e. bird nest / badger sett etc, work is to be temporarily suspended and the Site Manager informed. No work shall take place until clearance has been given by RES to resume.

5 Contractor / Consultant Responsibilities & Requirements

5.1 Controlling Documentation

Contractors shall provide the Health & Safety management & site controls applicable to employees, visitors, third parties, Quality management & associated documentation for services, equipment, materials, products, Environmental management & associated documentation for services, equipment, materials, products. Contractors shall conform to the Project; Health, Safety (& Environmental) Plan, Quality Plan and Site Waste Management Plan. Contractors shall provide the Inspection & Test Plan appropriate for their works and any associated documentation required to support conformance to contract specification.

Safe Systems of Work for all significant risk activities shall be provided, including; Risk Assessments, Method Statements and Permits to Work - work will not be permitted without these being in place.

5.2 On Site Responsibilities

Safety requirements & rules shall be displayed on site and be readily available for all employees to see, with delivery of toolbox talk records provided to RES. Contractors shall ensure that all site attendees complete a RES site induction or have undertaken a RES on-line induction (to be advised by RES) prior to visiting, starting works & at refresher intervals – including provision of support to those who have difficulty with the English language; everyone attending site must demonstrate that they understand the site rules & instructions. Contractors shall provide safety training & skills competency records (nationally recognised training bodies) – including matrix of training requirements and supporting certificates, CITB cards etc for all employees.

Contractors shall provide communication devices for contact and emergencies; to suit site requirements (mobile phone signals may not work), provision of prompt information that could affect health & safety of workers, and/or other 3rd parties, members of the public.
Implementing adequate steps to prevent harm to livestock on site, maintenance of site fencing, boundaries & keeping gates closed. A fencing & gates / gated scheme shall be developed and agreed with the landowner, including location, temporary or permanent. Agreeing interface responsibilities between other parties, defining within procedures and appropriate documentation controls.

Undertake regular meetings / liaison with RES staff, employees and other contractors to identify and discuss hazards with work activities and how they could affect others. Agreement to start works on site is through the consent of the RES Site Manager. When required, work instructions and risk assessments are to be provided to all employees undertaking the work who fully understand and agree with the requirements. Keep adequate records for site works including nature of work, duration, etc and making available to RES as required.

Visitors to be accompanied on site at all times by a fully inducted employee, (visitors shall receive a full induction if visiting site more than once and unaccompanied site visits shall be at the discretion of the Site Manager).

Contractors shall appoint a Competent Safety Representative (responsible for all safety issues for their company inc. electrical safety rules if applicable) and Site Supervisor(s) normally (black coloured hard hat required on construction sites) trained to nationally recognised standards, E.g. SSSTS, IOSH Managing Safely, Black / Gold CITB Card.

5.3 Site Accommodation

Temporary electrical systems are to be designed, inspected & tested by the Contractor, who shall provide the forms of Completion, Inspection & Testing required by the Wiring Regulations BS7671. Housekeeping relating to accommodation, storage and vehicles is to be of a high standard including regular cleaning. Areas for storage of plant, equipment, materials along with rules for use and access are to be in agreement with / designated on site by the RES Site Manager – Contractor shall provide all details of site requirements and what is being used on site (including any reinstatement of area after use).

All access tracks and entry routes are to be kept free of obstacles and well maintained – this

includes controlling dust. Petrol or diesel engine plant is not to be used within buildings unless exhaust gases are piped to open air or an alternative approved. LPG is only to be used in accordance with legislation.

5.4 Site Security

Contractors shall use designated means of access and egress on the site, daily site records of employees shall be collected to aid security in the event of a fire or other emergency. Where security is used on site it shall be the duty of the gate / guard person to ensure vehicles and people are logged and have undergone induction.

5.5 Safety Audit(s)

Contractors shall make available all information and records as required by an auditor in the undertaking of their activities. The Contractor shall co-operate at all times in the undertaking of such health, safety, quality or environmental related audits and follow up actions. The Contractor shall undertake their own audits and inspections as agreed by both parties. Any actions identified from the audits shall be planned, communicated and agreed to rectify the issue(s).

5.6 Alcohol, Drugs & Smoking

The supply and consumption of alcohol & drugs is prohibited on site. Any misbehaviour at work such as; being under the influence of alcohol or drugs, shall be classed as gross industrial misconduct. Accident investigation on site may require the need for alcohol or drug tests to be undertaken by the employer.

Any person prescribed medication by their GP must be fit for work. The Site Manager needs to be informed of such instances and arrangements made for storage of their medication on site. A record of their capability for work may also be required.

5.7 First Aid

First aid facilities and provision of first aid is the responsibility of the contractor unless agreed otherwise. All First Aid treatments must be reported and logged, no matter how small. Notification of first aid arrangements shall be displayed and employees and other 3rd parties shall be informed of the arrangements.

5.8 Accident Reporting & Investigation

All accidents shall be reported and recorded in their company and the RES site accident book / recording system. The RES Site Manager shall be informed of all accidents, incident and near misses. The RES accident procedure shall be followed. Any notifiable accidents, specified injuries or conditions, or dangerous occurrences which are reported by the contractor under RIDDOR regulations, shall be reported without delay to the RES Site Manager.

The Contractor must encourage near miss incident and hazard reporting, active recognition and reporting is a key function in Safety Leadership and a mandatory responsibility of everyone on site. The Contractor's Health and Safety Advisor is to carry out a full investigation of all accidents and issue a report to RES.

5.9 Lone Working

A risk assessment shall be produced to determine the risks of lone working and to mitigate any risks – lone working should be avoided where possible. Where persons are required to work alone, i.e. surveys, a lone working procedure shall be in place and communicated to all parties. The procedure shall be agreed with the Site / Project Manager.

5.10 Excavations, Barriers & Existing Underground Services

No mechanical excavation work shall take place within one metre of live High Voltage Cables, nor within 500mm of any known live utility services. Contractors shall provide early notice of their intended work near live services, confirming location of underground services and preparing safety document controls, barriers around all opening, trenches, excavations to prevent access into the areas.

Permission to remove / open mesh, coverings, gratings shall be obtained and removed items are to be replaced as soon as possible. Report any broken or damaged gratings etc and put in place controls to prevent any risk of injury etc. Provide all shoring and support to excavations to prevent collapse as per HSG 150.

Excavated materials not suitable for backfill are to be disposed of in accordance with the Site Spoil Management Plan. Drilling, spikes or posts are to not to be driven into the ground without a permit to break ground as issued by the Site Manager.

There must be no alterations to any RES supplied barriers, screens or notices. Warning lights and reflective surfaces shall be placed on barriers around excavation works. Inspection

reports are to be undertaken prior to entry of excavations, upon completion of shuttering and after additional works, alterations or dismantling as per HSE CIS 47. Weekly inspections are required and evidence submitted to RES. Excavation tags to be positioned at all access/egress points to all excavations and be updated at each inspection.

Segregation of plant and pedestrians shall be maintained; barriers are to be installed at access points and within excavation, along with appropriate signage. Stop blocks to be used with reversing of vehicles up to an excavation.

Pumps to be used to remove water from excavations shall be regularly inspected for stability; pumped water, whether ground or rain is not to be pumped into a watercourse or drain, water is to be managed in accordance with the site drainage plan (typically settlement lagoons).

5.11 Lifting Operations – Mobile cranes or similar type of equipment & lifting accessories

All lifting operations shall be managed in accordance with BS 7121; which shall include preparation of: risk assessment, method statement and lifting plan; and shall be agreed by all parties prior to works taking place. The lifting plan shall cover crane mobilisation, assembly and travel on site as well as any unloading and lifting activities. All crane movements on site are subject to 'Permit for Movement of Heavy Plant'.

All lifting equipment shall be fully certified and in date; copies of all certification and inspection reports shall be provided to RES prior to the works taking place. Safe Working Load (SWL) shall be clearly marked on all lifting equipment and ancillaries, along with test date. Structural steelwork shall not be used for lifting point or anchorage without agreement of RES (only permitted in exceptional circumstance and has been subject to structural review – Structural Engineer report required).

All temporary points for attachment to be load tested prior to use and record of test provided to RES, method of testing to be agreed. All testing shall be undertaken by an approved Test Engineer to British standards; approved on Lifting Equipment Engineers Association (LEEA) or similar organisation. Persons are not allowed to ride on a hoist unless it has been designed to carry passengers and fitted with interlock gates / safety devices. All persons operating hoists are to be fully trained and have recorded evidence of training to a national recognised standard.

RES lifting operations checklist shall be used unless contractor has their own approved requirements. All crane lifts shall be planned by a competent Appointed Person (AP), an approved Crane Supervisor MUST be on site if the AP is not able to monitor the lifting. Lifting plans including method statement / risk assessment shall be reviewed by RES.

5.12 Scaffolding / Ladders

Only competent and fully trained persons shall be used to erect, dismantle and modify/alter and inspect scaffolding (CISRS – tube & clip, PASMA – system). All scaffolding must display an in date SCAFFTAG or similar signage tag at point of access detailing scaffold status. All scaffolding shall be designed, erected, maintained, examined and recorded for the type of scaffold used – where necessary scaffold should be earthed.

All trained scaffold erectors shall wear securely attached safety harnesses connected to suitably tested fixed points as appropriate to risk assessment requirements. Scaffold boards shall be clamped into place wherever possible; any gaps in scaffold boards shall be covered with an appropriate secured material strong enough for the application and activity. Scaffolding shall be redesigned for all work activities, adjusted and inspected prior to use for each phase of work, scaffolding is not to be used until it has been cleared for the work activity.

Permission to use a scaffold erected by others must be obtained from the Site Manager and only after an inspection has been carried out. Incomplete and unsafe scaffolding must not be used and appropriate measures shall be put in place to prevent usage and when site is unattended access routes to scaffold to be removed to stop persons climbing scaffold.

All ladders used on site shall be in good condition and have a system of regular inspection; register to be kept on site. Metal ladders shall not be used in the vicinity of electrical equipment or scaffold.

Scaffold inspections shall be carried out by a competent person before use and then weekly (7 Days). Inspections will also need to be carried out following any modification or

alteration to scaffolding; reports to be provided to RES weekly.

5.13 Work at Height

Any work at height or below ground level activity, shall require a method statement & risk assessment and be reviewed by RES prior to starting the work. A safe access & safe work place shall be provided via use of crawling boards, ladders, barriers, handrails, toe boards, edge protection as applicable. All materials shall be prevented from falling. Warning notices shall be displayed, along with exclusion zones at all levels, access routes etc.

The Work at Height hierarchy; Avoid, Prevent, Minimise should be implemented; 'collective' protection methods shall take priority to individual personal protection, with fall arrest equipment only being used if all other forms of protection cannot be achieved.

If Fall Arrest is to be used, persons must be fully trained in its use; it shall be inspected before / during use and have appropriate tested attachments; relevant records of equipment tests / dates to be provided. 100% attachment of the equipment is required during working at height, including double lanyards or other fall arrest equipment if collective measures are not implemented, method statement shall include Emergency Plans to rescue a suspended casualty. The Contractor shall inspect all equipment to ensure compatibility between each item being used.

MEWPS, mobile scaffold, podium steps shall be used where possible, ladders shall only be used for short duration low risk work, for no more than 30 minutes and only where stability can be achieved.

5.14 Risk & Environmental Controls

Contractors shall identify all potential environmental risks and report to the Site Manager, inform all employees of the site environmental rules and inform RES of environmental incident or potential incident as soon as practicable. Provision of information to RES for carbon counting / sustainability targets and records, typically: vehicles on site, mileage covered, fuel used (site equipment), materials used, visitors and travel details, etc.

5.15 Environmental Plan

Contractors will be required to provide relevant documentation for inclusion into the RES Environmental Plan when applicable, all contractors are to comply with the RES Environmental Plan at all times.

5.16 Existing Features (Sites)

Any disturbance, remediation or disposal of contaminated land shall only be carried out under the direction of RES and in accordance with the Health, Safety (and Environmental) Plan, areas of contaminated land shall be fenced off and all persons made aware of its location and hazardous nature. Where any unexpected or potential hazardous obstacles are encountered, work shall cease until specialist advice has been obtained.

Underground services shall be identified in the site Health, Safety (and Environmental) Plan and controls put in place for the works to be undertaken, i.e. permit to work, risk assessment, etc. If poor conditions of underground services are found after exposure, this is to be reported to RES and the relevant authority.

Any old containers found on site should be checked and emptied by a licensed waste carrier before removal. Pollution is often caused through vandalism, theft or fly tipping – the site or working area shall be protected by fencing and locked access to discourage unauthorised access. Any instances of tipping on site shall be reported to the Site Manager.

5.17 Discharges to Water

All employees shall be made aware of the following:

- Rules about discharges to drains from spillage
- Refuelling / storage controls to be in place & location to be away from surface drains (minimum 10m distance)
- Use of bunded areas / bunds, double skinned bowsers for storing of fuels, liquids etc – to be checked weekly
- Management of any / all spills, spill kits, informing Site Manager etc (included in risk assessment)
- Discharge of any fuel, chemicals, silt, etc to a drain or water course is forbidden. Ensure that a suitable method for containing any surface water is provided when working near to a watercourse
- Surface water drains should only carry uncontaminated rain water and shall be protected from any other contaminants

Methods for prevention of pollution to water courses shall be regularly checked and

maintained – failing of systems should be reported immediately to RES.

5.18 Hazardous Substances (COSHH)
Contractor shall provide a list of substances, liquids, gases, etc to be used on site or with their work activities, along with quantities to be stored in secure storage containers, clearly labelled with legible warning signs and content details. MSDS & COSHH Risk Assessment & register and controls in place, including emergency plans.

As defined by COSHH Risk Assessment, spill kits are to be located near any hazardous liquids or substances either at point of use or storage area. Emergency procedures and associated equipment shall be provided – 'Kelp' bio-remediation solution shall be provided for early treatment of any spills after initial clean up.

Generators shall be provided with an internal bund and external fuel tank with fuel cut off float switch, the refuelling area shall be kept empty of water (covered area or inceptor/full retention separator).

Bowsers are to be stored to minimise risk of collision, run-away and vandalism, with a flexible pipe, tap or valve provided with an appropriate lock for security when not in use. Flexibly delivery pipes for use with refuelling must be fitted with manually operated pumps or a valve that closes automatically when not in use (delivery end).

Fuel type and capacity shall be displayed, along with no smoking signs and close valve when not in use signs, etc. A responsible person shall supervise deliveries, check tank quantities and emptying of tank and residues for safe disposal elsewhere.

Switch gear containing SF6 (Sulphur Hexafloride) shall be labelled on the equipment and substation door, along with contractor details and any leak shall be reported to the Site Manager and acted upon following the emergency contamination spill procedure.

5.19 Waste Management
Waste management shall follow the waste hierarchy of: Prevent, Reduce, Re-use, Re-cycle, Other recovery before disposal, all wastes shall be stored and segregated at designated disposal points away from watercourses and potential risk areas (cleared from work area as it is accumulated).

All personnel are to prevent litter from being blown around the site by disposing of rubbish responsibly. Skips must be covered to prevent refuse blowing away and rainwater accumulation. Skips to be replaced when full and disposal shall be in accordance with statutory requirements and RES Site Waste Management Plan, Contractors shall provide appropriate waste documentation.

5.20 Earthworks
Contractors shall work to the site drainage / SuDS design statement for the site. Appropriate drainage / SuDS management methods shall be agreed with the Site Manager where no Construction Method Statement is present.

Contractors shall make best endeavours to prevent water becoming contaminated at the place of work, activity area and to prevent build up of silt; shall use methods of work that eliminate or reduce workings in channels and do not contaminate surface water. Water containing silt shall not be discharged directly into rivers, streams or surface water drains. If silty water does occur and present a hazard, suitable treatment will be required – details of controls to be presented to the Site Manager.

Contractor shall prevent water from entering excavations, any cut-off ditches, well point de-watering or pumping shall be in accordance with the site drainage plan. Disturbance to flora and fauna whilst carrying out works shall be kept to the minimum and agreed with the Site Manager.

Topsoil and vegetation (not part of subsoil) shall be retained and stored in accordance with the Site Spoil Management Plan and reinstated on all areas of stripped ground as soon as possible to prevent erosion and leaching.

Where wet and marshy ground occurs, excavated materials may need to be stored on a geotextile. Turf shall be reinstated wherever possible to maintain the original species mix. Exposed ground and stockpiles / storage shall be kept to the minimum to prevent silt and dust build up, whilst long term storage shall be controlled and stockpiles seeded with recovered seed, covered and silt fences constructed from geotextile where required. In dry weather dust suppression controls will be required to eliminate at source, e.g. watering.

Environmental Agency guidance shall be used as guidance in control measure for works and maintenance in or near water.

5.21 Road Cleanliness
Site roads to be brushed or scraped as required to minimise mud and dust deposits, especially at site entrances and watercourse crossings; mechanical suction brush may be necessary. Wheel wash stations may be required to mitigate debris going onto public highways, private roads or accesses. Used water shall be collected and passed through a silt trap before disposal.

5.22 Drip Trays
Where practicable, drip trays shall be used to contain absorbent granules, sheets or fibres and disposed of to site rules. Once used, drip trays shall be cleaned using appropriate materials and disposed of in accordance with COSHH regulations. Regular checks and cleaning of drip trays to be carried out.

5.23 Concrete
All concrete disposal shall be as set out in the Site Waste Management Plan (SWMP) when in place or responsibly and in accordance with legislation when no SWMP in place. Cement and wash out water is not to enter any watercourse or aquifer; wash out of cement vehicles shall only be permitted in a designated and suitable prepared wash out area(s), clearly signed and to the satisfaction of the RES Site Manager.

Tools, equipment or materials shall not be washed in watercourses, mortar mixing and storage shall be clear of any watercourses. Any concrete works near to a watercourse shall be approved by the appropriate agency and the RES Site Manager.

5.24 Wildlife
Wildlife shall be protected from entering and becoming trapped in any part of the works on site. For excavations this may mean provision of fences, crossing or escape routes. Due consideration shall be given to hazards presented to personnel from wildlife; adders, wild boar, buzzards, wasps etc.

5.25 Emergencies
Environmental emergencies such as spills shall be dealt with in accordance with the Environmental Emergency Response Plan – familiarisation with this plan is required before commencement of any works. Any spill kit provided shall be made accessible at all times to all site staff.

5.26 Environmental Assessment
Contractor shall provide an assessment of the likely environmental impacts of their activities (if applicable), along with controls to minimise impact and any corrective measures and actions.

6 APPENDICES
Appendix 1 – References
Appendix 2 – Issue / Receipt for Safety and Environmental Requirements for Contractors on all activities.

5.1.1 Appendix 1 – RES References
The following documents may contain useful references.

6 App 1.1 RES Documents
i) RES Health, Safety, Quality & Environmental Management Systems, and associated documentation including all IMS, Safety Procedures, RAWP and documents and templates.

7 App 1.2 Project Specific Documents
i) The Health, Safety & Environment Plan (Pre-tender and construction phase)
ii) Health & Safety Plan
iii) Quality Plan
iv) Environmental Plan
v) Inspection and Test Plan
vi) Site Waste Management Plan

7.1.1 Appendix 2 – Issue / Receipt for Issue / Receipt for Safety and Environmental Requirements for Contractors on all activities
SAFETY & ENVIRONMENTAL REQUIREMENTS FOR ALL CONTRACTORS

ISSUE DOCUMENT

Issued to .....
.....

Contract Number and Description .....
.....

.....
.....

.....
.....

Location
.....
.....

The person named below is the Company Project Manager responsible for overall management of the contract.

Project Manager
.....
Telephone .....

The person named below is the Company Site / Facilities Manager responsible for local management of the contract, who shall be permanently on Location.

Site Manager
.....
Mobile .....

Other Site Telephones
.....
.....

The Site Manager shall always be the first point of contact, if for any reason, he is not available you shall contact the Company Project Manager.

The Company Integrated Management System and Site Rules are available / displayed at:

.....
.....

SAFETY & ENVIRONMENTAL REQUIREMENTS FOR ALL CONTRACTORS

RECEIPT DOCUMENT

RENEWABLE ENERGY SYSTEMS COPY

(To be detached and retained by the Site Manager when this document is issued to a Contractor on site)

I acknowledge receipt of the safe works procedure - Safety & Environmental Requirements for All Contractors.

Contract Number and Description
.....
.....

.....
.....

.....
.....

Location
.....
.....

Signed .....

Contracting Company
.....
.....

Date .....

Contracting Company Head Office Telephone
.....

Local/site Telephone Number
.....

ANNEX 3: SUSTAINABLE URBAN DRAINAGE SYSTEM DESIGN STATEMENT

NOTES

1. SURFACE WATER CATCHMENTS PROVIDED BY SEPA

LEGEND

- SITE BOUNDARY
- PROPOSED TURBINE LAYOUT
- SITE ENTRANCE
- WATERCOURSE CROSSING
- GATEHOUSE COMPOUND
- BATCHING PLANT
- TELECOMS MAST
- BORROW PIT
- BORROW PIT TEMPORARY TRACK
- TEMPORARY CONSTRUCTION COMPOUND
- TEMPORARY HARDSTANDING
- PERMANENT HARDSTANDING
- SUBSTATION
- UPGRADED TRACK
- NEW TRACK

SURFACE WATER CATCHMENT AREAS

- RIVER BRORA (OVERALL)
- LOTH BURN
- KINTRADWELL BURN

SLR

4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH

T: +44 (0)131 335 6830
www.slrconsulting.com

KINTRADWELL WIND FARM

SUDS REPORT

CATCHMENT AREAS

1

Scale	Date
1:30,000 @ A3	NOVEMBER 2020

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NOTES

1. SURFACE WATER CATCHMENTS PROVIDED BY SEPA

LEGEND

- SITE BOUNDARY
- PROPOSED TURBINE LAYOUT
- WATERCOURSE CROSSING
- BATCHING PLANT
- BORROW PIT
- BORROW PIT TEMPORARY TRACK
- TEMPORARY CONSTRUCTION COMPOUND
- TEMPORARY HARDSTANDING
- PERMANENT HARDSTANDING
- NEW TRACK

SURFACE WATER CATCHMENT AREAS

- RIVER BRORA (OVERALL)
- LOTH BURN
- KINTRADWELL BURN
- SUB-CATCHMENT BOUNDARY
- CLEAN WATER CUT-OFF DRAIN
- SLOPE DIRECTION
- SURFACE WATER DISCHARGE DIRECTION

SLR

4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH

T: +44 (0)131 335 6830
www.slrconsulting.com

KINTRADWELL WIND FARM

SUDS REPORT

INDICATIVE DRAINAGE PLAN
MAIN SITE

2

Scale	Date
1:12,500 @ A3	NOVEMBER 2020

428.02606.00049.10.02.0 Indicative Drainage Plan

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NOTES

1. SURFACE WATER CATCHMENTS PROVIDED BY SEPA

LEGEND

- SITE BOUNDARY
- SITE ENTRANCE
- WATERCOURSE CROSSING
- GATEHOUSE COMPOUND
- TELECOMS MAST
- SUBSTATION
- UPGRADED TRACK
- NEW TRACK
- KINTRADWELL BURN
- SUB-CATCHMENT BOUNDARY
- CLEAN WATER CUT-OFF DRAIN
- SLOPE DIRECTION
- SURFACE WATER DISCHARGE DIRECTION

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4/5 LOCHSIDE VIEW
EDINBURGH PARK
EDINBURGH
EH12 9DH

T: +44 (0)131 335 6830
www.slrconsulting.com

KINTRADWELL WIND FARM

SUDS REPORT

INDICATIVE DRAINAGE PLAN ACCESS

3

Scale	Date
1:12,500 @ A3	NOVEMBER 2020

428.02606.00049.10.02.0 Indicative Drainage Plan

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LEGEND

- SILTY WATER
- CLEAN WATER
- SILT TRAP WITH AGGREGATE OR SAND BAG SURROUND (OR SIMILAR)
- SECONDARY SILT TRAP WITH SILT FENCE AND STRAW BALES (AS REQUIRED)

50 STIRLING BUSINESS CENTRE
WELLGREEN
STIRLING
FK8 2DZ

T: +44 (0)1786 239900
www.slrconsulting.com

KINTRADWELL WIND FARM

SUDS

TRACK DRAINAGE TECHNIQUES

FIGURE 10.4.7

Scale	Date
N.T.S. @ A3	OCTOBER 2020

428.02606.00049.10.4.7 Track Drainage Techniques.dwg

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EXAMPLE OF INSTALLED SILT FENCING

TYPICAL SILT FENCE DETAIL

IN CHANNEL ROCK CHECK DAM ELEVATION

IN CHANNEL ROCK CHECK DAM SECTION

IN CHANNEL SAND BAG CHECK DAM SECTION

STRAW BALE TEMPORARY SILT TRAP

(FROM WIND FARM CONSTRUCTION GOOD PRACTICE GUIDE)

EXAMPLE OF CONSTRUCTED IN-LINE SILT TRAPS

(FROM WIND FARM CONSTRUCTION GOOD PRACTICE GUIDE)

SCHEMATIC SECTION: IN-LINE SILT TRAPS

50 STIRLING BUSINESS CENTRE
WELLGREEN
STIRLING
FK8 2DZ

T: +44 (0)1786 239900
www.slrconsulting.com

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SILT MANAGEMENT TECHNIQUES

FIGURE 10.4.8

Scale	Date
N.T.S. @ A3	OCTOBER 2020

428.02606.00049.10.4.8 Silt Management Techniques.dwg

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LEGEND

- POTENTIAL SILTY RUN-OFF/DRAINAGE
- CHECK DAMS
- CLEAN WATER RUN-OFF/DRAINAGE
- SILT FENCE AND/OR STRAW BALES TO AID DISPERSION (AND TREAT STOCKPILE RUNOFF)

50 STIRLING BUSINESS CENTRE
WELLGREEN
STIRLING
FK8 2DZ

T: +44 (0)1786 239900
www.slrconsulting.com

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SUDS

BORROW PIT WATER MANAGEMENT

FIGURE 10.4.9

Scale	Date
N.T.S. @ A3	OCTOBER 2020

428.02606.00049.10.4.9 Borrow Pit Water Management.dwg

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CLOSED CULVERT

CLOSED CULVERT

TYPICAL BRIDGE

ARCH CULVERT

NOTES

1. INDICATIVE SECTIONS FOR IDENTIFIED CROSSING POINTS PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY AND SUBJECT TO DETAILED DESIGN

2. ALL CROSSING TO BE SUBJECT TO HYDRAULIC AND GEOTECHNICAL ASSESSMENT PRIOR TO CONSTRUCTION

3.CIRCULAR CULVERTS WITH APPROPRIATE HYDRAULIC CAPACITY MAY BE USED FOR ADDITIONAL WATER CROSSINGS (SMALL OR TEMPORARY IN NATURE) IDENTIFIED DURING DETAILED SITE DESIGN

50 STIRLING BUSINESS CENTRE
WELLGREEN
STIRLING
FK8 2DZ

T: +44 (0)1786 239900
www.slrconsulting.com

KINTRADWELL WIND FARM

SUDS

WATERCOURSE CROSSING TECHNIQUES

FIGURE 10.4.10

Scale	Date
N.T.S. @ A3	OCTOBER 2020

428.02606.00049.10.4.10 Watercourse Crossing Techniques.dwg

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Emergency Procedure in the Event of a Contaminant Spillage

Report No: 01276R00001

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1.0 OBJECTIVES

This procedure details the emergency procedure to be followed and actions to be taken in the event of a hazardous waste spillage such as oil, fuel and chemicals, occurring on a RES managed premises or site / project in order that the environmental impacts that may be associated with a hazardous waste spillage may be mitigated.

2.0 SCOPE

This procedure covers all UK geographic locations; sites, project or offices for which RES are responsible for or manage.

3.0 PROCEDURE

3.1 Project, Site or Office Locations

		Responsibility
i)	The Contractor shall provide MSDS and COSHH assessments for all substances controlled under COSHH that are to be used or stored on the site. Records of the supplied MSDS & CoSHH Assessments shall be maintained. Note: Substances with hazardous properties such as cement, concrete and curing agents are all controlled by the COSHH.	**C**
ii)	Appropriately sized spill kits shall be provided for the controlled substances that will be used or stored on the site; the contractor shall train personnel in the use of these spill kits and maintain training records.	**C** **RRM**
iii)	The Contractor shall provide oil spill training and awareness to their staff RES have subscribed to an emergency environmental call-off support service from Veolia to be used the event of a major spill, details included in Project Directory or can be provided by the HSQEM.	**C,** **HSQEM**
iv)	In the event of a liquid spill occurring the Contractor shall cease work in the vicinity immediately. If spillage is flammable, extinguish all ignition sources. Identify source of pollution and rectify the problem. The Contractor's trained personnel shall immediately deploy the spill kit in accordance with the manufacturer's instructions. Contractor's personnel shall don appropriate PPE and clean up the spill. All used spill kit materials should be disposed of in the proper manner.	**C**

v)	In the event of a concrete spillage into water channel or surface water, as the waste is highly alkaline it is regarded as Hazardous Waste. Every effort should be made to contain the movement of the liquid cement in the watercourse or drainage channel. Similarly in the event of a Peat / Spoil Movement / Slip into a water course; remove any peat or clay material which has entered the watercourse and transport to a location where it will no longer be a source of pollution. Notify the following agencies; Environmental Agency (region specific; EA, SEPA or NIEA etc), local Fisheries.	**RRM, C**
vi)	Place geotextile silt fences/stone barrages at downstream points in the river as required. Constant monitoring should be maintained not only of the water quality (clarity) downstream of the check dams, but also of the excavated peat or clay material. Consideration should also be given to the subsequent movement of the spoil / peat and any preventative / containment measures required.	**RRM**
vii)	The Contractor shall inform the RRM of the incident as soon as possible and certainly no more than 1 hour after the spill.	**C**
viii)	The Contractor is responsible for replacing the used spill kits as soon as possible and no later than 24 hours after use.	**C**
ix)	The Contractor is responsible for ensuring that used spill kits and any other oil / fuel soaked / contaminated material e.g. rags, used during the incident are disposed of in accordance with the Environmental Waste Management Regulations in operation. These materials shall be bagged up and disposed of at a licensed hazardous waste disposal site e.g. taken away by a licensed oil / fuel disposal / broker company.	**C**
x)	The Contractor shall submit copies of the receipt or waste oil certificate to the RRM within 48 hours.	**C**

4.0 REFERENCE DOCUMENTS

i) IMS 20 – Emergency Incident Preparedness and Response HSQE00-001043

5.0 DEFINITIONS

	Abbreviation or term	**Explanation of abbreviation or term**
i)	C	Contractor: Any company or person employed by RES to carry out any work on a site / project or office location
ii)	COSHH	Control of Substance Hazardous to Health Regulations 2011
iii)	H&S Plan	Health and Safety File maintained by the Site Manager
iv)	HSQE	Health, Safety, Quality & Environment
v)	HSQEM	HSQE Manager (Head of HSQE)
vi)	MSDS	Material Safety Data Sheet supplied by manufacturer
viii)	RRM	Responsible RES Manager (Construction Site – Construction Site Manager, Generation Site – Site / Asset Manager, Office Locations – Office Manager)

Kintradwell Wind Farm
Draft Site Waste Management Plan

REVISION HISTORY

Issue	Date	Author	Nature And Location Of Change
01	16th Sept 19	Calum Campbell	First Issue

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1 CONSTRUCTION SITE WASTE MANAGEMENT PLAN

1.1 Introduction – What is a Site Waste Management Plan

RES has a waste management policy that requires all activities undertaken by the company and their contractors to follow best practise guidelines and to minimise effects on the environment. As the management of waste is crucial in achieving this aim, SWMPs are applicable to all sites in UK & Ireland, in accordance with this policy and the ISO14001 standard for minimising effects on the environment.

A SWMP provides guidance on waste management and disposal throughout the construction period, it identifies the following:

- Who is responsible for the SWMP;
- What types of waste will be generated;
- How the waste will be managed – reduced, reused or recycled;
- Which waste contractors will be used; and
- How the quantity of waste generated from the project will be measured. here

1.2 Why do RES have a Site Waste Management Plan?

Everyone on site is responsible for the waste that is generated, be it wooden pallets to drink bottles and paper. Whether you are a site worker, engineer, project manager or site manager, you must think hard about the role you can play in reducing, reusing and recycling wastes on site.

1.2.1 Waste Management Priorities:

- Minimise raw materials used;
- Reduce wastes;
- Reuse materials;
- Recycle wastes – 30% of all steel now produced in the UK is recycled waste steel;
- Recover energy from wastes;
- Send minimum amount of waste to landfill.

The SWMP ensures overall responsibility is assigned and individuals know their roles and the requirements with regard to waste management and legislation.

1.3 Legislation

Make sure you know the rules and follow them. It is important to know that the Environmental Protection Act (1990) and Duty of Care state that wastes must be transported by a registered carrier and disposed of, or deposited at a licensed facility.

1.3.1 Rules of Waste Management

1. You must be able to describe what wastes you are holding and transporting on a Waste Transfer Note. See below for required content.

2. Waste should be correctly handled and stored, segregated where necessary, with the container clearly labelled.

3. Waste should only be transferred by / to a registered carrier. Any carrier of waste must be registered with the relevant environment agency. The only exception to this is for charities and voluntary organisations.

1.3.2 Duty of Care – Code of Practise

Four basic principles:

- Identify and describe the controlled waste accurately by using the European Waste Codes and complete the documentation.
- Keep the waste safely, do not allow it to escape.
- Transfer to authorised carrier, check the original license and check with the relevant authority that they are still licensed.
- Checking-up responsibility on destination of waste.

1.3.3 Your Responsibilities

All those who produce or handle wastes from demolition, earthworks and construction activities have legal responsibilities called a 'Duty of Care' to ensure it's; safe keeping, transport and subsequent recovery or disposal. Failure to comply can result in an unlimited fine.

Duty of Care requires you to take care of your waste while it's in your control, check that the person to whom you give your waste is authorised to receive it, make out a waste transfer note when the waste is handed over and to take all reasonable steps to prevent unauthorised handling or disposal by others.

1.3.4 Definition of Responsibilities

Producer

Producer means anyone whose activities produce waste. They are responsible for ensuring the description of the waste is accurate and contains all the information necessary for safe handling, disposal and treatment. The Producers bear the main responsibility for packing waste for transit.

The Producer's responsibility does not stop at the gate as the skip leaves, follow-up is required, chasing for weighbridge receipts, auditing carriers, keep records of this.

Carrier

Is anyone who carries a controlled waste; they must be licensed, it is an offence to carry controlled waste without registration.

Broker

Any organisation or individual who arranges the disposal or recovery of waste for another person is likely to be a Broker and must register with the relevant environmental agency, unless they have an exemption. Often, Brokers will not physically possess the waste they are dealing with.

Waste Disposers/Licensed Site

Should be a licensed site, documentation should be seen by the Carrier and the Producer, copies kept.

1.3.5 Waste Transfer Notes

A Waste Transfer Note (WTN) is a document which must accompany any transfer of waste between different holders. The purpose of a WTN is to allow other people who handle your waste to know what they are dealing with, so that they can manage it safely and properly.

The sub-contractor must create a WTN for each and every load of waste that leaves a wind farm site.

The WTN must include:

- What the waste is, how much there is and its 6-digit European Waste Code – it is the responsibility of the producer to identify the waste;
- What sort of containers it is in;
- The time, date and place the waste was transferred;
- The names and addresses of both persons involved in the transfer, the WTN must be signed by both before it leaves the site;
- Details of which category of authorised person each one is e.g. producer;
- Registered waste carrier, waste licence holder;
- If either of the persons is a registered waste carrier, the certificate number of the registration;
- If either of the persons has a waste management licence, the licence number of the facility;
- Where appropriate, the name and address of any broker involved in the transfer of waste; and
- Signatures of both parties, and transfer notes kept for two years.

When the waste is collected, the transfer carrier and the waste producer will sign the WTN and you will be given a copy. The carrier will keep a copy and when transport of the waste is completed, they will fill in details of the landfill site. At this point, a copy is also given to the landfill site

Note: Wastes from construction, demolition and excavation operations is a 'controlled waste' and hence subject to waste-related legislation.

1.3.6 Hazardous Waste

The transfer documentation for hazardous/special waste (In Scotland) is called a 'consignment note'. If your waste has hazardous properties, you will need to treat it as hazardous/special waste. In this case, a consignment note should be completed to comply with your duty of care. The consignment note must contain similar information to a WTN. A separate WTN is not required.

Waste that is defined by the European Waste Catalogue (EWC) as hazardous can only go to a waste treatment facility that is licensed to receive hazardous waste, this should be identified during the SWMP set up described in Section 1.4.

1.3.7 Hazardous Waste Site Registration

For sites in Scotland, 'Pre-notification' of the first movement of waste must be provided to the regulator at least 3 working days before the 'expected removal date' the sub-contractor (Producer) should contact the carrier for them to arrange this.

The waste must be moved within one month of the given expected removal date.

1.3.8 Who's Who in Waste Transfer?

You must check that anyone that you pass your waste onto is authorised to take it. If you don't check that they are authorised to take your waste and it is illegally disposed of, you could be held responsible.

What you must check is that anyone removing waste from site is either:

- Exempt from registration as a carrier of controlled waste, or
- Is from a waste disposal authority in Scotland.

Additionally, the site receiving the waste has a waste management licence, applicable to the waste management site and the carrier is registered as a carrier of controlled waste.

You should ask for proof that an individual or business is authorised to handle or transport your waste.

The sub-contractor's responsibility for the waste does not end when the waste carrier removes it from the wind farm site. The responsibility extends until the waste has either been finally and properly disposed of or fully recovered.