Technical Appendix 6: Outline Construction Environmental Management Plan

Coolshamrock 110kV Substation SID

22/09/2023

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INTRODUCTION

Background

6.1 Neo Environmental Ltd has been appointed by Renewable Energy Systems (RES) Ltd (the "Applicant") to undertake an Outline Construction Environmental Management Plan (OCEMP) for a Strategic Infrastructure Development ("SID") Application for a new 110kV Substation ("the Proposed Development") to feed into the existing Drumline-Ennis 110kV overhead line (OHL) circuit. The Substation and 110kV loop in infrastructure is situated within the townland of Coolshamroge, Ennis, Co. Clare ("the Application Site"). The Substation is to facilitate the Manusmore Solar Farm (**PA Ref: 20562**, the Manusmore Solar Farm Extension (**PA Ref: 21915**) and the Coolshamrock Solar Farm (**PA Ref: 22586**).

6.2 Please see **Figure 3, Volume 2** for the layout of the Proposed Development.

Development Description

6.3 Coolshamrock and Manusmore Solar Farms will feed into a new 110kV substation. The method of connection to the national grid for the new substation will be a looped connection into the existing Drumline – Ennis 110kV Circuit. 2 No. new OHL end towers will be constructed to facilitate connection to the existing OHL (see **Figure 3 and 11, Volume 2).** The application site will comprise of a 110/33kV substation which consists of 2 No. control buildings, a transformer compound, a high voltage (HV) switchgear compound, a customer MV compound and associated cabling. There is also 2. No underground 110kV cables, a cable access track and 2 No. overhead line towers.

6.4 The control buildings will consist of foundation works, block work, roofing, low voltage electrical fit out, medium voltage switchgear, cladding and building finishing works.

6.5 A power transformer, HV electrical equipment (4bays), lightning protection masts, communication mast, structural steel works, circuit breakers, current transformers, voltage transformers, busbars, surge arresters, cable sealing ends, disconnectors/earth switches, surge arrestors and post insulators will be installed in the Eirgrid HV Substation Compound.

6.6 The Customer MV Compound will consist of 2 No. capacitor banks, 1 No. reactor banks and associated circuit breakers (capacitor and reactor), 1 no. harmonic filter, resistor, pre-insertion resistor and 1 No. auxiliary transformer.

6.7 Palisade and concrete post and rail fencing will be erected around the compound for security/protection.

6.8 The 110kV loop in connection will connect the Drumline-Ennis 110kV overhead line (OHL) circuit to 2. Overhead line towers and 2. No associated 110kV underground cables and into the HV compound infrastructure. There is a cable access which branches from the consent solar tracks (P22568) to provide access to the cables and towers.

Site Description

6.9 The proposed Substation and 110kV loop in infrastructure is located within the townland of Coolshamroge, Ennis, Co. Clare. The proposed site is approximately 7km southeast of Ennis, 4.2km east of Clarecastle and 1.5km west of the smaller settlement Quin.

6.10 The Application Site in which the substation is proposed to be located comprises of 3 fields of relatively flat agricultural land. The Application site lies at an elevation of c. 26-31m AOD and covers a total area of c. 3.78 acres. The approximate Irish Grid Reference points (ITM) of the proposed substation are X 539777 and Y 674345. The proposed substation will be enclosed by palisade fencing. Access to the proposed substation will be from a private lane off an unnamed local road to the south which is the same entrance point as for the Coolshamrock Solar Farm (PA Ref:22586).

Scope of Report

6.11 This OCEMP has been produced in support of the planning application to the County Council and includes:

- Construction method statement which identifies works likely to impact upon water quality;
- Pollution prevention and mitigation measures;
- Drainage management plan; and
- Waste management.

6.12 The OCEMP has been prepared with reference to the environmental assessments which have been undertaken in support of the planning application, these include: Flood Risk and Drainage Impact Assessment (Technical Appendix 4) and the Ecological Impact Assessment (Technical Appendix 2). Following the approval of planning consent, this OCEMP will be revised by the contractor and amended where necessary.

6.13 The Applicant will appoint a main contractor who will be responsible for the construction of the Proposed Development. The contractor will ensure that all measures and mitigation identified within this OCEMP are taken into account and implemented during the construction. In addition, the OCEMP will be monitored regularly throughout the duration of the construction phase to ensure best practice is implemented.

6.14 A Site Manager will be appointed and will be in charge of activities on site, including personnel. They will ensure that all personnel on site follow and adhere to the procedures outlined within the OCEMP.

Statement of Authority

6.15 This OCEMP has been produced by Neo Environmental, with input from Dara Dunlop BSc (Hons) and Michael McGhee BSc TechIOA. Neo Environmental have produced detailed OCEMPs for a range of development types, including for over 1GW of solar farm developments across the UK and Ireland.

LEGISLATION

6.16 Current legislation has been taken into consideration during the production of this OCEMP. The legislation covers all relevant areas including; water pollution, wildlife species protection, waste and noise. In the case of the Proposed Development, the following legislation has been considered:

- The Local Government (Water Pollution) Act 1977[1]
- The Local Government (Water Pollution) (Amendment) Act 1990[2]
- EC (Water Policy) (Amendment) Regulations, 2003[3]
- The Wildlife Act 1976 (amended 2000)[4]
- EC (Birds and Natural Habitats) Regulations 2011 (amended 2015)[5]
- Protection of the Environment (POE) Act 2003[6]
- Environmental Noise Regulations 2006[7]
- Environmental Protection Agency Act 1992[8]
- Waste Management Acts (WMA) 1996 to 2005[9]
- Waste Management (Hazardous Waste) Regulations 1998[10]

[1] Office of the Attorney General (1977). Local Government (Water Pollution) Act 1977. Available at www.irishstatutebook.ie

[2] Office of the Attorney General (1990). Local Government (Water Pollution) (Amendment) Act 1990. Available at www.irishstatutebook.ie

[3] Office of the Attorney General (2003) S.I. No. 722/2003 – European Communities (Water Policy) Regulations 2003, as amended 2014. Available at www.irishstatutebook.ie

[4] Office of the Attorney General (1976) Wildlife Act 1976 (amended 2000), available at www.irishstatutebook.ie

[5] Office of the Attorney General (2011) European Communities (Birds and Natural Habitats Regulations 2011 (amended 2015), available at www.irishstatutebook.ie

[6] Office of the Attorney General (2003) Protection of the Environment Act 2003. Available at www.irishstatutebook.ie

[7] Office of the Attorney General (2006) Environmental Noise Regulations 2003. Available at www.irishstatutebook.ie

[8] Office of the Attorney General (1992) Environmental Protection Agency Act 1992. Available at www.irishstatutebook.ie

[9] Office of the Attorney General (1996) Waste Management Act 1996, as amended. Available at www.irishstatutebook.ie

[10] Office of the Attorney General (1998) S.I. No. 163/1998- Waste Management (Hazardous Waste) Regulations 1998. Available at www.irishstatutebook.ie

- Carriage of Dangerous Good by Road Act 1998[11]
- EC Environmental Objectives (Surface Waters) Regulations 2009[12]
- EC Environmental Objectives (Groundwater) Regulations 2010[13]
- Article 4 of Waste Framework Directive (Directive 2008/98/EC)[14]
- Water Framework Directive (2000/60/EC)[15]

Guidance

6.17 The Environmental Protection Agency (EPA) has produced Pollution Prevention Guidelines (PPGs). The most relevant guidelines to the Proposed Development include:

- IPC Guidance Note – Guidance Note on Storage and Transfer of Materials for Scheduled Activities (EPA 2004) (amended 2012, 2013)[16]. This guidance note covers tanks, bunds and pipelines which store or transmit potentially polluting substances.
- National Hazardous and Waste Management Plan 2014-2020 (EPA 2014)[17]. The plan details guidance on how to prevent, reduce and collect hazardous waste.

6.18 Key guidance from other bodies that are relevant to the Proposed Development construction phase include:

- Best Practice Guide BPGCS005 – Oil Storage Guidelines[18].

[11] Office of the Attorney General (1998) Carriage of Dangerous Goods by Road Act 1998. Available at www.irishstatutebook.ie

[12] Office of the Attorney General (2009) European Communities Environmental Objectives (Surface Waters) Regulations 2009. Available at www.irishstatutebook.ie

[13] Office of the Attorney General (2010) European Communities Environmental Objectives (Groundwater) Regulations 2010. Available at www.irishstatutebook.ie

[14] European Parliament and the Council (2008) Directive 2008/98/EC on waste and repealing certain directives. Available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32008L0098

[15] European Parliament and the Council (2000) Directive 2000/60/EC, establishing a framework for community action in the field of water policy. Available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060

[16] Environmental Protection Agency, Ireland (EPA) (2004) IPC Guidance Note – Guidance Note on Storage and Transfer of Materials for Scheduled Activities. Available at www.epa.ie

[17] Environmental Protection Agency, Ireland (EPA) (2014) National Hazardous Waste Management Plan 2014-2020. Available at www.epa.ie

[18] Best Practice Guide BPGCS005 – Oil Storage Guidelines. Available at www.envirocentre.ie

- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects[19].
- Construction and Demolition Waste Management – a handbook for Contractors and Site Managers[20].
- IEMA Environmental Impact Assessment Guide to: Delivering Quality Development[21].

6.19 UK Pollution Prevention Guidelines have also been considered in the production of this plan. The suite of Pollution Prevention Guidelines published by the Scottish Environmental Protection Agency (SEPA), the Environment Agency and the Northern Ireland Environment Agency (NIEA), are considered as a source of information on good practice only. Currently, a review for the PPGs is underway, and will result in a replacement guidance series. However, only some have been completed and therefore a mixture of guidelines and guidance documents are available. These documents provide a sound basis for any OCEMP and can be accessed online.[22] The PPGs/GGPs most relevant to the Proposed Development construction phase include:

- PPG1 'General Guide to the Prevention of Pollution'
- GPP2 'Above Ground Oil Storage'
- GGP5 'Works and Maintenance in or Near Water'
- PPG6 'Working at Construction and Demolition sites'
- PPG7 'Safe Storage – The Safe Operation of Refuelling Facilities'

6.20 These PPGs/GGPs provide guidance as to the various environmental considerations and potential mitigation and prevention measures.

Health and Safety Management

6.21 A site specific Safety and Health plan should be implemented and followed during construction of the Proposed Development. All work should be carried out in accordance with the following health and safety regulations:

[19] Department of the Environment, Heritage and Local Government (2006) Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects. Available at www.envirocentre.ie

[20] FÁS and Construction Industry Federation (2002) Construction and Demolition Waste Management – A handbook for Contractors and Site Managers. Available at www.ncdwc.ie

[21] IEMA (2016) EIA Guide to: Delivering Quality Development. Available at: http://www.iema.net/assets/newbuild/documents/Delivering%20Quality%20Development.pdf

[22] Environmental Guidance (Wales, Scotland, and NI). Available online: http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/

- Safety, Health and Welfare at Work Act 2005[23]
- Safety, Health and Welfare at Work (Construction) Regulations 2013[24]
- Safety, Health and Welfare at Work (General Application) Regulations 2007[25]

[23] Office of the Attorney General, 2005. Safety, Health and Welfare Act 2005. Available at www.hsa.ie

[24] Office of the Attorney General, 2013. Safety, Health and Welfare at Work (Construction) Regulations 2013. Available at www.hsa.ie

[25]https://www.hsa.ie/eng/Legislation/Regulations_and_Orders/General_Application_Regulations_2007/General_Application_Regulations_2007_S_I_2007_.pdf

RESPONSIBILITIES

Key Contacts & Roles

6.22 The detailed CEMP will need to confirm the details outlined in **Table 6-1** below.

Table 6 - 1: Indicative Key Contacts & Responsibilities (governance subject to change)

	Name	Role	Address	Name & Contact Details
Developer	RES Ltd	To ensure all planning condition requirements are implemented	Beaufort Court, Egg Farm Ln, Kings Langley WD4 8LR	TBC
Main Contractor	TBC	Responsible for the development of the CEMP in line with planning condition requirements	TBC	TBC
Site Manager	TBC	Responsible for the implementation of the CEMP with all site personnel	TBC	TBC
Environmental Compliance Officer	TBC	Responsible for the coordination and development	TBC	TBC
Consulting Engineers	TBC	Responsible for the development of method statements and design	TBC	TBC

ENVIRONMENTAL SENSITIVITIES

6.23 The environmental assessments which were undertaken in support of the planning application identified some sensitivities onsite.

6.24 The key potential environmental impacts associated with the site preparation and construction works are set out in Table 6-2. Relevant potential sensitive receptors to the works are identified. These potential sensitive receptors, the environmental considerations and potential impacts are to be considered as the basis for a future detailed CEMP.

Table 6 - 2: Environmental Considerations and Impacts

Environmental Issue	Potential Receptor	Potential Impacts
Protected Species	Badger	Disturbance, destruction of sett, accidental trapping, and the restriction of movement through the site (foraging habitat)
Protected Species	Otter	Disturbance, contamination of aquatic environment, accidental trapping, and the restriction of movement through the site
Protected Species	Bats	Disturbance / damage to roosts.
Protected Species	Breeding birds	Disturbance / damage to nests.
Water	Waterways adjacent to the Development	Contamination of aquatic environment
Water	Groundwater	Contamination of groundwater by additional pathways caused by piling Risk to aquifer recharge Risk to existing groundwater flow route
Soil	Soil on site	Contamination, compaction & soil degradation Reduced filtration

Ecology

Habitats

6.25 A Fossitt habitat survey was undertaken in August 2021 and March 2022 by Louis Maloney BSc (Hons) MSc and Dylan Donoghue BSc (Hons). The Extended Survey Area (ESA) covered all land within the Application Site and a 50m buffer around the entire site.

6.26 A total of six habitat types were noted within the ESA, comprising of;

- Hedgerows (WL1)
- Treelines (WL2)
- Improved Agricultural Grassland (GA1)
- Oak-Ash-Hazel Woodland (WN2)
- Spoil and Bare Ground (ED2)
- Active Quarries and Mines (ED4)

6.27 Survey work was carried out in accordance with the Fossitt Guide to Habitats in Ireland (2000) in order to produce a habitat map.

6.28 The main impacts during the construction phase include the direct loss of habitat under the Proposed Development footprint and indirect loss of habitat due to disturbance and pollution. The loss of improved agricultural grassland is considered to be negligible to nature conservation within the local area.

6.29 Please refer to the supporting **Technical Appendix 2: Ecological Impact Assessment** for full details on the habitats present within the Application Site.

Protected Species

6.30 As part of the Ecological Impact Assessment a desk-based data search was conducted through the National Biodiversity Data Centre (NBDC) to obtain information regarding protected/notable species within 2km of the Application Site boundary. In addition, the habitat survey included a species scoping survey to identify the potential of the Application Site to support protected and notable species. Please see the Ecological Impact Assessment (**Technical Appendix 2; Volume 3**) for details on the selection of study zones and ecology methodology.

6.31 Data records for five species of bats were recorded in the desk study. Features such as woodland, treelines, and hedgerows were found within the ESA and could provide suitable foraging and commuting habitat for bats.

6.32 Data records of badger were identified in the desk study. Suitable habitats were observed for badgers such as woodland for foraging and/or commuting. However, no sightings or field signs of badger were observed within the ESA during the Fossitt habitat survey.

6.33 Data records of otter were identified in the desk study. No sightings or field signs of otter were observed within the survey area. Habitats within the Application Site are only suitable for commuting otter.

6.34 Given the close proximity of the Application Site to the River Shannon & River Fergus Estuaries Special Protection Areas (SPA), wintering bird surveys were undertaken to provide a current baseline for bird activity of the qualifying species associated with the SPA. The Line Transect surveys identified common passerine and corvid species utilising the improved grassland, treeline, and woodland habitats associated with the study area. The full results of the Wintering Bird Survey are outlined within **Appendix B of Volume 1: Natura Impact Statement**.

6.35 Records of hedgehog were recorded in the desk study. Suitable habitats of treelines, hedgerows and woodland were recorded within the ESA.

6.36 Records of red squirrel were recorded In the desk study.

6.37 No sightings or signs of any other notable or protected species were observed within the ESA.

Environmental Designations

6.38 The desk-based assessment identified eighteen Special Areas of Conservation (SACs), three SPAs and one Ramsar Site within 15km of the Application Site boundary.

6.39 It has been concluded that hydrological and ornithological connectivity exists between the Application Site and the River Shannon and River Fergus Estuaries SPA and hydrological and ecological connectivity exists between the Application Site and the Lower River Shannon SAC, providing a pathway for potential impacts. It has also been concluded that Ecological connectivity exists between Old Domestic Building (Keevagh) SAC and Poulnagordon Cave (Quin) for lesser horseshoe bats. All designated sites with a connection to the Application Site have been outlined and fully assessed within the supporting Natura Impact Assessment (NIS) (see **Volume 1**). The findings of the NIS conclude that the Proposed Development **will not lead to any significant adverse effects** upon any of the Natura 2000 sites within the study area.

Design and Best Practice Measures

6.40 Measures recommended within **Technical Appendix 2: Ecological Impact Assessment** include:

6.41 Given the low levels of excavation and concrete required, the nature of the development and the dilution factor, it has been concluded that the Proposed Development would not have any significant direct or indirect impact on the conservation objectives of the Natura 2000 sites within 15km or greater. The findings of the NIS (see **Volume 1**) concluded that, with the implementation of the appropriate measures and mitigation, along with ongoing monitoring

to ensure compliance, it is considered that the Proposed Development **will not have a significant effect upon any qualifying features, and therefore the integrity, of the Natura 2000 sites** connected with the Application Site.

- Best practice pollution prevention measures implemented prior to and throughout the construction phase to prevent contaminants entering the aquatic environment;
- Pre-commencement otter survey;
- Pre-construction breeding bird survey on any trees or hedgerow to be removed (if works are to commence between March and August inclusive);
- Pre-commencement potential roost inspection surveys on any trees to be removed
- All excavations to be securely covered, or a suitable means of escape provided (ramp at 45^0) at the end of each working day to prevent accidental trapping of otter and badger;
- Fencing around the solar site to include mammal gates or a 10cm gap at base to allow free movement of mammals through the site.

Hydrology

6.42 According to the Environmental Protection Agency (EPA) Map[26] the proposed Application Site and the surrounding area lies within Hydrometric Area No. 27, Shannon Estuary North (Water Framework Directive) Catchment Area and within the Rine sub catchment 'SC_010'.

6.43 The Application Site is wholly contained within the Manusmore_010 river sub basin.

Local River Network

6.44 The Carrowmeer Watercourse is located approximately 0.5km northwest of the Application Site and flows west before converging with the Manusmore Stream approximately 0.7km west of the Application Site. The Manusmore Stream flows south and joins the Rine River approximately 2.5km southwest of the Application Site. The whole of the Application Site is within the catchment of the Rine River.

Internal Watercourses

6.45 There are no field drains within the Application Site, the gradients will convey the surface water to the Manusmore Stream via the local network of field drains and drainage networks outside the Application Site.

26Environmental Protection Agency. EPA Map Viewer. Available at: http://gis.epa.ie/Envision

Groundwater Vulnerability

6.46 Groundwater Vulnerability refers to the intrinsic geological and hydrogeological characteristics that determine the ease at which groundwater may be contaminated by human activities. The more vulnerable the groundwater is, the more easily it can be contaminated by surface water. The GSI Groundwater Vulnerability maps are based upon the type and thickness of subsoils, and the presence of karst features.

6.47 According to the GSI map, the groundwater vulnerability across the Application Site is considered to be a mixture of 'Extreme', and 'Karst'. There are also no Karst data records held in the GSI Spatial Resources online geological mapping.

6.48 The subsoil permeability is classed as 'Not Mapped'. Therefore, the vulnerability rating has been used to determine the thickness of up to 3m.

CONSTRUCTION METHOD STATEMENT

Introduction

6.49 This Construction Method Statement (CMS) outlines the management plan for the construction and decommissioning phases of the Proposed Development. Employed contractors will be instructed on compliance with the contents of this document prior to accessing the site for construction.

Construction Operations

6.50 The Proposed Development will be constructed in accordance with the drawings submitted in support of the planning application.

Construction Activities

6.51 The following activities will be undertaken during the construction phase:

- Erecting construction traffic signage;
- Creation of internal site tracks;
- Erecting security fence;
- Site preparation, including mowing and marking out if required;
- Constructing the permeable pad for the grid compound;
- Sustainable Drainage Systems (SuDS) installation;
- Cable route trenching and cable laying;
- Concrete base formation for the buildings and associated above ground infrastructure;
- Building of above ground infrastructure; and
- Installation of ecological and landscape measures as outlined within the supporting Ecology and Landscape and Ecology Management Plan (LEMP), please see **Figure 1.10, Appendix 1A of Technical Appendix 1: Landscape and Visual Assessment.**

Schedule & Hours of Operation

6.52 The construction phase of the Proposed Development is anticipated to cover a period of up to six months. During this period, there will be a combination of HGVs for the component deliveries and cars/vans for construction staff. HGV movements are expected to be most

intense throughout the early stages of construction, tailing off towards the final weeks. Car/van movements are expected to be constant throughout.

6.53 All traffic movements will be carried out between the hours of 08.00 to 19.00 on Monday to Friday and 08.00 to 16.00 on Saturdays. Outside of these times works are limited to:

- works which do not require significant noise eg, distribution of materials, , commissioning and testing and
- Works required in an emergency where there is the potential of harm or damage to personnel, plant, equipment, or the environment, provided the developer retrospectively notifies the County Council of such works within 24 hours of their occurrence.

Staff

6.54 It is forecast that there will be a maximum of 20 staff on site at any one time during the construction periods, although this will vary subject to the overall programme of works.

Equipment

6.55 As outlined in **Table 6-3 below**, plant equipment required for the construction phase may include but not be limited to the following:

Table 6 - 3: Plant Equipment

Equipment	Function
JCB Diggers / cable trenching machines	Trenching for cables
Dump trucks	Earth distribution as required
Vibrating roller	Compacting access tracks and pads
Telehandler(s)	Distributing materials
Crane	Capable of lifting transformer and other infrastructure into place
Fuel bowser	Refuel plant as required
Concrete mixer	Foundations
HGV	Delivery of materials

WASTE MANAGEMENT

Introduction

6.56 Surplus or waste materials may arise from materials imported to the site, or those generated on site during the construction and decommissioning phases.

6.57 The Waste Management Plan follows the waste hierarchy, as outlined within Article 4 of the Waste Framework Directive 2008/98/EC. The waste hierarchy, as defined within the legislation, is detailed below:

- Prevention;
- Re-use;
- Recycling;
- Other recovery; and
- Disposal.

Identification of Waste

6.58 There will be limited waste generated during the construction phase of the Proposed Development.

6.59 The contractor on site during each phase will ensure that all waste will be disposed of responsibly from the site. Potential waste generated during the construction phase is likely to include:

- Wooden crates or cardboard boxes in which the materials will be packaged. These will be removed from the site and recycled appropriately at regular intervals.
- Packaging materials from various components including cabling, etc. These will also be removed regularly and recycled.
- Aggregate and substrate from groundworks – soil will be excavated for the construction of the access tracks, construction slabs, etc. All of which is expected to be reused on site or within the adjacent solar farm.
- Site office waste will be collected separately in order to maximise the potential for recycling.
- Any kitchen waste will be taken off site in refuse containers and disposed of off-site.

- Oils/fuels, paints, solvents or other chemicals will be stored at the temporary site compound and disposed of appropriately.

Burning of waste on site will be prohibited.

Waste Segregation and Storage

6.60 A specific segregation area within the temporary site construction compound, within the consented adjacent solar farm, will be identified where the separation of materials will take place during the construction phase. This area will allow for the separation of materials into those which can be reused, recycled or disposed.

6.61 All waste containers should be appropriate to the nature of the substances stored and should be secure to ensure no waste can escape. In addition, all waste containers should be appropriately labelled to ensure that it is clear to all construction staff what types of waste can be stored in each container. These containers should be located appropriately to reduce any potential hazards and to ensure no waste is released into the external environment.

6.62 Relevant waste and resource management procedures will be communicated to all construction operatives during the initial site induction, which is mandatory for all staff working on site. This will include instruction on the segregation, handling, re-use and return methods to be used by all parties at all appropriate stages of development. Where possible, waste will be eliminated, re-used or recycled as per the requirements of the waste hierarchy.

Storage of Fuels and Chemicals

6.63 As per Best Practice Guidance (BPGCS005),[27] all fuels, oils and chemicals on site will have a secondary containment system of 110% capacity and be located more than 20m from any watercourse (i.e. outside of the water course buffer).

6.64 A bunded diesel bowser will be located inside a fenced off area within the temporary construction compound, within the consented adjacent solar farm. Any other chemicals will be stored within a storage container with an accompanying Control of Substances Hazardous to Health ("COSHH") Datasheet in accordance with health and safety regulations. If generators are used on site, these shall be bunded (the bund shall be capable of containing 110% of the fuel tank's capacity). The bund shall be kept empty of water.

6.65 Where chemicals are required on site, they must be placed in an appropriate bund to prevent ground contamination. All chemicals must be stored in a correctly marked container clearly identifying the contents. Where labels are worn off, they must have a new label placed on them or the contents transferred to a correctly marked container. All safety data sheets for all chemicals should be filed on site as part of the CEMP.

[27] Best Practice Guide BPGCS005 - Oil Storage Guidelines. Available at:

http://www.envirocentre.ie/includes/documents/OilStorageBPG.pdf;

6.66 Spill kits will be on site and, for ease of access, located in the site office. Contingency plans will be in place for dealing with a spillage should a spillage occur.

Refuelling

6.67 During construction, fuel and oil deliveries shall take place within the designated refuelling area within the temporary construction compound located within the consented adjacent solar farm, the location of this area falls outside the watercourse buffers (discussed subsequently). The Contractor shall supervise site deliveries to ensure that the correct amount of material is delivered to the correct tank and the level is checked prior to refilling to avoid spillage.

6.68 Where refuelling of vehicles on site is necessary, the following guidelines will be strictly adhered to:

- Mobile plant will be filled in a designated area, on an impermeable surface well away from any drains or watercourses;
- A spill kit will be stored (and clearly marked) near refuelling areas;
- A bunded tank / bowser will be used with capacity of the bund to be 110% of the fuel storage capacity;
- Vehicles will never be left unattended during refuelling and drip trays should be located under all static plant vehicles;
- Hoses and valves will be checked regularly for signs of wear, and will be turned off and securely locked when not in use;
- Vehicles will not be left running unnecessarily and low emission fuels will be used where possible; and
- Diesel pumps and similar equipment will be checked regularly and any accumulated oil removed for appropriate disposal.

Excavation and Earthworks

6.69 All excavation and earthworks will be carried out in accordance with BS6031:2009 Code of Practice for Earthworks.[28] Soil handling, extraction and management will be undertaken with

[28] British Standards Institute (BSI), 2009. BS 6031:2009 Code of Practice for Earthworks

regard to best practice guidelines such as Guidance on the Waste Management (Management of Waste from the Extractive Industries) Regulations 2012.[29]

6.70 The following practices will be followed in relation to the excavation of cable trenches, topsoil stripping and any other earthworks:

- Any excavated material will be stored and re-used to infill excavations, except for the excavation of large areas such as the compounds which will be stockpiled. Where the soil is to be re-used, this will be side casted. All side casted soil to be kept a minimum of 20m from any watercourse.
- Although unlikely, if any contaminated earth is uncovered, this will be stored separately and disposed of accordingly once the contaminant has been identified.
- Efforts will be made to ensure that water does not accumulate in excavated areas.
- All topsoil and subsoil will be stored separately, and care will be given to ensure the structure and quality of the soil is not damaged.
- Earthworks shall not occur during unsuitable weather conditions, including when soils are waterlogged or very dry.
- The Proposed Development does not propose to change ground levels and only small sections of land are to be regraded around the buildings and possibly at the access track edges; however, this will only be over a few metres.
- Any excavated soil which is not re-used or dispersed across the site and shall be stored on the impermeable surface at the construction compound and covered to prevent silt runoff and dust creation.

Concrete

6.71 Concrete will not be allowed to enter watercourses under any circumstances, and drainage from excavations in which concrete is being poured will not be discharged directly into existing watercourses without appropriate treatment and consent from the relevant authority. Delivery trucks, tools and equipment will be cleaned at the wheel wash facility located at the temporary site compound.

[29] Environmental Protection Agency (EPA) 2012. Guidance on the Waste Management (Management of Waste from the Extractive Industries) Regulations 2012. Available at www.epa.ie

6.72 Buffers from the site drainage ditches of 2m have been incorporated into the design of the Proposed Development and therefore there will be no concrete being used within the immediate vicinity of a watercourse.

Monitoring

6.73 Operations and activities that have the potential to impact on the water environment will be regularly monitored throughout the construction of the Development. This is to ensure compliance with planning conditions and environmental regulations.

6.74 The Site Manager is responsible for ensuring that all monitoring is carried out according to the Environmental Monitoring Programme, summarised in Table 6-4 below.

Table 6 - 4: Environmental Monitoring

Environmental Aspect	Monitoring Location	Monitoring Frequency	Monitoring Arrangements
Site housekeeping	Entire site	Daily	Visual inspection
Surface watercourses	All watercourses	After periods of rain Weekly, if no rain	Visual inspection
Fuels and chemicals – appropriate storage	Entire site	Daily	Visual inspection

6.75 These records and results will be maintained by the Site Manager and will be stored on site during the construction phase.

Site Office Waste

6.76 The proposed site layout includes for a temporary construction compound located within the consented adjacent solar farm, and all site waste will be stored in this area.

- A Project Supervisor will be employed to ensure that welfare facilities in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013, Statutory Instrument No. 291 are located at the proposed site for the duration of the construction. Welfare facilities will be provided within the construction compound to cater for the required staff members at any one time. The welfare facilities will include:
  - The provision of toilet, washing and changing facilities;
  - Clothing Storage;
  - Facilities for eating;

  - Rest room; and
  - Car Parking.

- Water will be held within a holding tank within the temporary welfare facility. There will also be a separate tank for waste. The Project Supervisor will be responsible for organising the tanks to be emptied/filled by an approved local contractor as and when required.

POLLUTION PREVENTION

Introduction

6.77 Given the low levels of excavation and concrete required, the nature of the development and the dilution factor, it can be concluded that the Proposed Development would not have any significant direct or indirect impact on watercourses. As outlined in the Natura Impact Statement (NIS) (see **Volume 1**), no significant effects will occur for the qualifying habitats and species of the Natura 2000 sites hydrologically connected to the Application Site. No reliance is placed on 'mitigation measures' intended to avoid or reduce the likelihood of significant effects on any European site. General pollution prevention measures are not considered to be mitigation.

6.78 Notwithstanding this, this OCEMP sets out general pollution prevention measures.

Best Practice Measures

6.79 Suitable protection for watercourses potentially affected by the works will be installed prior to relevant works proceeding. These measures will be in-line with Environmental Protection Agency (EPA) Pollution Prevention Guidelines. Protection measures will include:

- Plant and equipment will be stored on dedicated hardstandings within the construction compound located within the consented adjacent solar farm. This will minimise the risk of pollution caused by leakages occurring out of hours. Drip trays will be used where appropriate.
- Plant and equipment will be regularly checked to ensure their correct operation and verify no leakages.
- All plant and equipment will utilise biodegradable hydraulic oil.
- Spill kits will be readily available to all personnel. The spill kits will be of an appropriate size and type for the materials held on site.
- Diesel fuel will be stored in a bunded diesel bowser which will be located within a fenced off area in the construction compound, located within the consented adjacent solar farm.
- Refuelling and maintenance of vehicles and plant will take place in designated areas of hardstanding.

- All other chemicals will be stored in a secure area with an accompanying COSHH Datasheet.
- Wastewater from the temporary staff toilets and washing facilities will be discharged to sealed containment systems and disposed via licensed contractors.

6.80 All staff on site will be made aware of the pollution prevention measures being implemented throughout the construction and decommissioning phases using appropriate toolbox talks and the site induction.

Noise and Vibration

6.81 Operating plant noise will be kept within the standards and time periods dictated for the site. Any noncomplying plant will be stopped and stood down until it can be rectified or removed from the site.

6.82 The British Standard which gives guidance on noise from construction and mineral working sites is BS 5228. This document does not specify absolute noise limits relating to construction activities; however, it does provide detailed guidance on the steps that can be taken to minimise potential noise & vibration effects. Reasonable mitigating measures are as follows:

- Vehicles and machinery will be switched off when not in use.
- Operation of plant, including fitting and proper maintenance of silencers and/or enclosures, avoiding excessive and unnecessary revving of engines and parking of equipment in locations which avoid possible effects on residential properties.
- Deliveries limited to:
  - 08.00 to 19.00 Monday to Friday.
  - 08.00 to 16.00 Saturdays.
  - Public holidays will be observed unless otherwise agreed with the local planning authority.
  - When loading and unloading material, attempts shall be made not to drop material from a height.

6.83 Any noise complaints shall immediately be directed to the site manager. Depending on the nature of the complaint remedial action may need to be undertaken.

Dust

6.84 In order to control, prevent and minimise dirt on the access route and emissions of dust and other airborne contaminants during the construction works, the following measures will be implemented:

- Wheel washing equipment will be available and used on-site, as required to prevent the transfer of dirt and stones onto the public highway. All drivers will be required to check that their vehicle is free of dirt, stones and dust prior to departing from the site. Wheel washing will likely be a water bowser and power spray. It will not have any cleaning additives and will drain into the temporary drainage feature at the site compound located within the consented adjacent solar farm.
- During windy conditions, any dust generating activities will be avoided or minimised, where practical.
- Any soil stockpiles will be covered when left for extended periods of time.
- Driving practices which minimise dust generation will be adopted.
- Loads into and out of the site will be covered where required.

DRAINAGE MANAGEMENT PLAN

Introduction

6.85 The measures described in this section will be adopted during the construction phase in order to manage on-site drainage in accordance with current best practice and legislation.

Monitoring Records and Emergency Spill Response

Monitoring

6.86 To ensure compliance with the detailed Drainage Management Plan ("DMP"), drainage management works will be supervised by the site engineer.

Emergency Spill or Pollution Response

6.87 In the event of a liquid spill occurring on a construction site, the Contractor shall cease work immediately in the vicinity. Contractor's trained personnel shall have appropriate PPE and do as follows:

- Locate the source of the pollution and stop/contain any further flow if possible;
- If spillage is flammable, extinguish all ignition sources;
- Immediately deploy the spill kit in accordance with the manufacturer's instructions;
- Clean up the spill; and
- All used spill kit materials should be disposed of in the proper manner as outlined in spill summary procedures.

6.88 The Site Manager shall contact:

- The Client;
- Environmental Protection Agency ("EPA") 24-hour emergency incident line 1890 33 55 99; and
- Inland Fisheries 24-hour pollution line 1890 34 74 24. The pollution hotline number shall be referenced in the construction site rules and displayed in the Site Office and in the Emergency preparedness & response plan.

6.89 Each Contractor working with controlled substances shall supply appropriate spill kits which shall be kept on site. The spill kits shall be made accessible at all times to all site personnel.

6.90 In the event of a fire, all personnel must evacuate the site and assemble at the site entrance. The Site Manager is responsible for calling the Fire Service, who will handle the emergency.

Proposed Drainage Arrangements

6.91 As outlined within the supporting **Technical Appendix 4: Flood Risk & Drainage Impact Assessment**, SuDS will be installed as part of the site preliminary works prior to the main equipment deliveries. The layout of the drainage design is indicated within **Figure 4.4**, **Appendix 4A** of **Technical Appendix 4**.[30]

Construction Phase

6.92 The construction phase will utilise the construction compound on the adjacent solar farm development.

Operational Phase

6.93 It is proposed to construct a network of rainwater harvesting tanks and a soakaway pit within the Application Site. The idea is to capture any overland flow in the SuDS device before infiltrating into the surrounding soils.

6.94 The underground piped system connects the Eirgrid building and IPP switchroom to rainwater harvesting tanks, which overflow into a soakaway pit. As the transformer will hold a volume of oil, the system will include a class 1 full retention separator. The soakaway pit and rainwater harvesting tanks will be designed to hold a total volume of 21m^3 with the detailed design of the structure being submitted to the council for review prior to the construction period.

6.95 A permanent toilet is proposed within the Eirgrid building and IPP switchroom and will be utilised by maintenance staff of substation. Each toilet will be off grid toilet with a foul holding tank which will be emptied when required by an approved contractor.

Drainage Mitigation

Clean Water Diversion

6.96 Where feasible, clean water (e.g. water that has yet to come into contact with any disturbed construction or working areas), will be kept separate from the watershed or intercepted by the solar farm construction drainage.

6.97 Clean runoff that has been diverted around an area of working should be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques.

[30] McGhee, M (2020) Technical Appendix 4 - Flood Risk Assessment – Fieldstown Solar Farm

6.98 Sediment control measures, such as silt traps, gravel, sand bags, anchored straw bales or silt fencing might be required at the discharge point to prevent erosion at the outlet and aid dispersion of the diverted water.

Silt Control

6.99 Silt-laden runoff should be expected from any areas of recently exposed soil or rock. There is also potential for pollution to occur from machinery used in the construction of the Proposed Development.

6.100 Any introduced or artificial materials required (e.g. silt fencing, straw bales, sand bags etc.) that might need to be deployed onsite, will be removed on completion of the works.

6.101 Discharge from the silt control measures will be discharged into an area of vegetation for dispersion or infiltration, in accordance with SuDS techniques or discharged into the existing drainage network within the Application Site.

DECOMMISSIONING – LAND RESTORATION

6.102 Upon the end of the operational phase of the Proposed Development, the subject land shall be reinstated to its former agricultural use within a year of the last export.

6.103 It is considered that the potential impacts during the decommissioning phase will be similar to those identified for the construction phase of the Proposed Development. Therefore, it is recommended that the pre-construction measures should also be applied at this stage of the development.

6.104 Most of the infrastructure will be removed from site and recycled. Due to the long-life span of the project, no details of this can be provided at present. However, it is recommended that a pre-commencement condition outlining the requirement for a Decommissioning Method Statement is attached to any planning decision by ABP.

SUMMARY & CONCLUSIONS

6.105 The best practice and design measures identified throughout this OCEMP have been summarised in **Table 6-5** below.

Table 6 - 5: OCEMP Best Practice and Design Measures

Potential Receptor	Potential Impact	Recommended Measures
Ecology		
Badger	Disturbance, destruction of sett, accidental trapping, and the restriction of movement through the site (foraging habitat)	All excavations should be securely covered, or a suitable means of escape provided at the end of each working day Implementation of mammal gates in fencing to allow the free movement of badgers through the site.
Otter	Disturbance and the restriction of movement through the site	All excavations should be securely covered, or a suitable means of escape provided at the end of each working day Implementation of mammal gates in fencing to allow the free movement of otter through the site.
Water		
Streams and Rivers outside the Application Site boundary where surface water runoff will be discharged to on exit from the site via field drains.	Pollution	Implementation of pollution prevention measures detailed within this OCEMP. 2m field drain buffer zone.
	Increased surface water runoff	Implementation of Drainage Management Plan outlined within this OCEMP

Groundwater contamination	Pollution	Implementation of pollution prevention measures detailed within this OCEMP
Soil		
Soil	Pollution	Implementation of pollution prevention measures detailed within this OCEMP

Table 8-6: Recommended Mitigation Measures

Potential Receptor	Potential Impact	Recommended Mitigation
Ecology		
Badger	Disturbance, destruction of sett, accidental trapping, and the restriction of movement through the site (foraging habitat)	Pre-construction badger survey (Measures dependant on survey findings).
Otter	Disturbance and the restriction of movement through the site	Pre-commencement survey (Measures dependant on survey findings).
Breeding birds	Disturbance / damage to nest	Pre-construction breeding bird survey (if works are to commence between March and August inclusive)
Bats	Disturbance, destruction of roosts	Pre-commencement survey (Only where works directly affecting trees are required)

6.106 The overall objective of this OCEMP is to reduce the potential impact on the environment during the construction and decommissioning phases of the Proposed Development. As outlined previously, the appointed contractor will need to follow the measures identified within this document.

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