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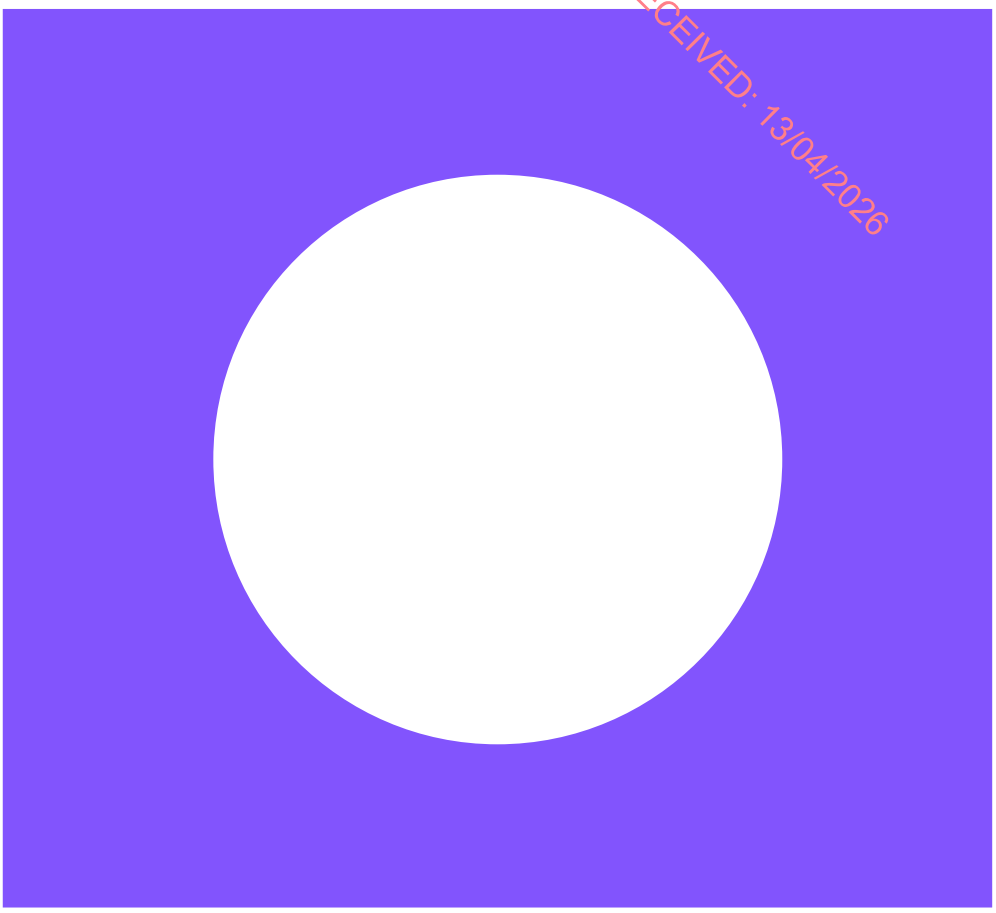

Shelburne Energy Farm Environmental Impact Assessment Report

Chapter 9 Surface Water Resources and Flooding

April 2026

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Shelburne Energy Farm Environmental Impact Assessment Report

Chapter 9 Surface Water Resources and Flooding

April 2026

Issue and Revision Record

Document reference: 229101268 | PL2

Contents

Tables

Figures

Click or tap here to enter text.

9 Surface Water Resources and Flooding

9.1 Introduction

This chapter considers the potential impacts during construction, operation (including maintenance) and decommissioning associated with:

- Surface waterbodies;
- Water supply and wastewater discharge (including drinking water supply network, foul water and the drainage network);
- Water Framework Directive (WFD) surface water objectives; and
- Flood risk.

This assessment focuses on impacts associated with the construction of the Proposed Project proposed as detailed on Chapter 5 - *Description of Development.*

Proposed mitigation measures to prevent, reduce and/or offset the anticipated potential impacts are presented as appropriate.

The assessment of the likely significant effects arising from the Proposed Project on groundwater is presented in Chapter 8 Land, Soils and Hydrogeology. The assessment of impacts on biodiversity is discussed in Chapter 7 Biodiversity.

9.2 Guidance

This assessment follows guidelines established by Transport Infrastructure Ireland (TII) / National Roads Authority (NRA) in its *Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes* (NRA, 2009), hereafter referred to as the NRA Guidelines. Regard has also been had to:

- Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters (Inland Fisheries Ireland, 2016);
- Planning for Watercourses in the Urban Environment: A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate / Flood Risk and Recreational Planning (Inland Fisheries Ireland, 2020);
- Control of Water Pollution from Construction Sites - Guide to Good Practice (C532) (CIRIA, 2001); and
- The Planning System and Flood Risk Management, Guidelines for Planning Authorities (hereafter referred to as the Flood Risk Guidelines) (The Department of the Environment, Heritage and Local Government (DEHLG) and the Office of Public Works (OPW) 2009)

9.3 Methodology

9.3.1 Approach to Data Collection

Identification of surface water features / waterbodies, such as rivers and lakes, has been based on site walkovers, desktop data such as those detailed on Environmental Protection Agency (EPA) datasets and mapping.

The following data sources were used in the compiling of this chapter;

- Water quality data for Ireland - Catchments.ie – (DHLGH, EPA and Local Authority Waters Programme 2024) accessed in August 2025.
- Water Quality in 2023 - An Indicators Report (EPA, 2024)
- Environmental Protection Agency Water map - online map viewer (EPA 2025) accessed in August 2025.
- GeoHive (Ireland) – National Geospatial Data Hub (Government of Ireland and Tailte Éireann 2025)
- Flood Mapping available on floodinfo.ie (Office of Public Works, 2025), accessed in August 2025.
- National Parks and Wildlife Service (NPWS) - Designated Sites (NPWS 2025)
- Tailte Éireann Drainage ditch layer from Prime 2 data (Tailte Éireann 2025)

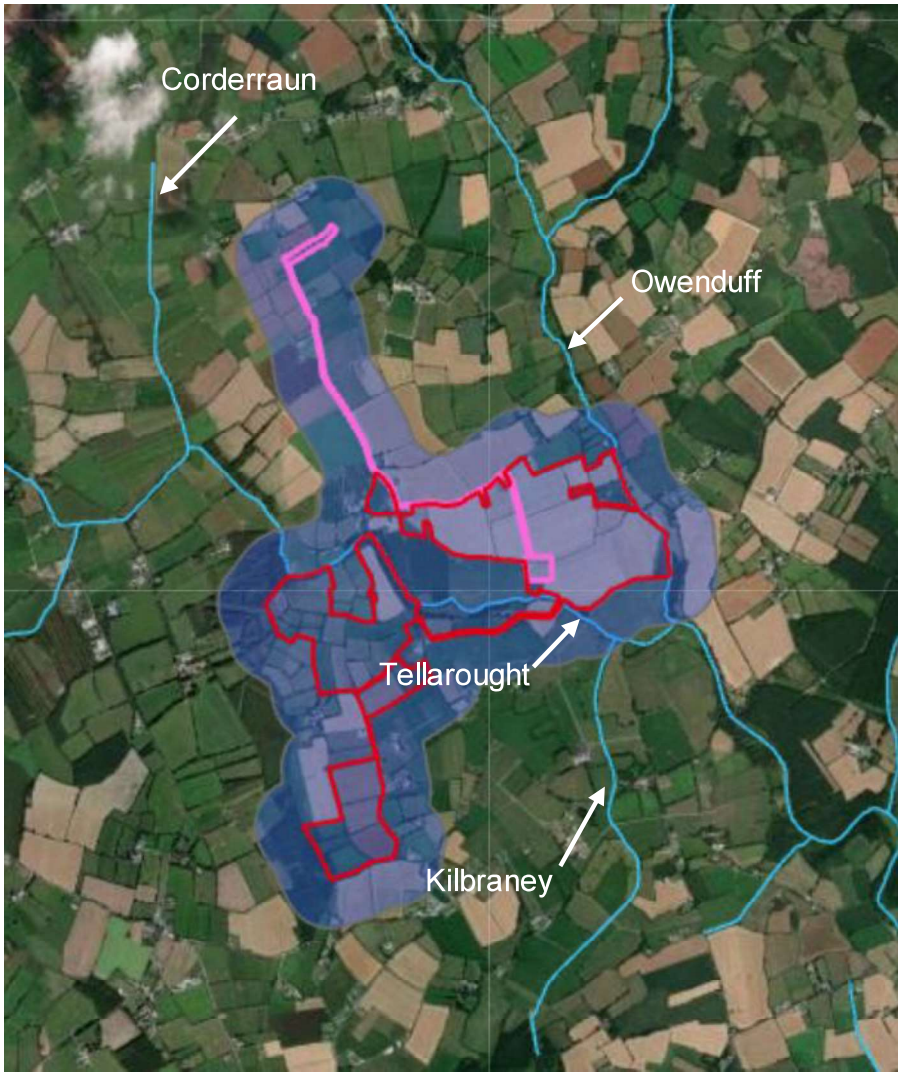
9.3.2 Study Area

The study area includes surface waterbodies adjacent to the Proposed Project. It is noted that there are no direct works within any identified surface water body as part of the Proposed Project.

The zone of influence for surface waters extends downstream from works areas in terms of potential effects on surface water quality. The zone of influence will differ depending on the potential pollutants. A 250m study area (250m radius from the Proposed Project boundary) has been applied and is considered appropriate to encompass all water bodies that may be susceptible to significant impacts.

Figure 9.1 illustrates the surface waters which are the basis for assessment, and the 250m study area.

Figure 9.1: Study Area and surface waterbodies within 250m radius



Source: Mott MacDonald Ireland Limited

9.3.3 Approach to Impact Assessment

The surface water environment is intrinsically linked to flood risk, ecological receptors and groundwater, which are respectively considered in the Flood Risk Assessment Report (Appendix 9.1, Volume 3 of this EIAR), and Chapter 7 (Biodiversity) and Chapter 8 (Soils, Geology and Hydrogeology) in Volume 2 of this EIAR.

Commercial and recreational uses of the water environment are not included in the scope of this Chapter, as commercial and recreational interests are considered and assessed in Chapter 6 (Population and Human Health) and Chapter 17 (Material Assets) in Volume 2 of this EIAR.

The following tables outline the criteria for rating site attributes, the reference values for biological water quality and WFD status, the criteria for rating flood risk receptors, the criteria for rating impact magnitude and the rating of significant environmental effects.

Table 9.1: Criteria for Rating Site Attributes – Estimation of Importance of Hydrology Attributes (NRA, 2009)

Importance	Criteria	Typical Examples
Extremely High	Attribute has a high quality or value on an international scale	River, wetland or surface water body ecosystem protected by EU legislation
Very High	Attribute has a high quality or value on a regional or national scale	River, wetland or surface water body ecosystem protected by national legislation Regionally important potable water source supplying >2500 homes Quality Class A (Biotic Index Q4, Q5) Flood plain protecting more than 50 residential or commercial properties from flooding Nationally important amenity site for wide range of leisure activities
High	Attribute has a high quality or value on a local scale	Salmon fishery Locally important potable water source supplying >1000 homes Quality Class B (Biotic Index Q3-4) Flood plain protecting between 5 and 50 residential or commercial properties from flooding Locally important amenity site for wide range of leisure activities
Medium	Attribute has a medium quality or value on a local scale	Coarse fishery Local potable water source supplying >50 homes Quality Class C (Biotic Index Q3, Q2-3) Flood plain protecting between 1 and 5 residential or commercial properties from flooding
Low	Attribute has a low quality or value on a local scale	Locally important amenity site for small range of leisure activities Local potable water source supplying <50 homes Quality Class D (Biotic Index Q2, Q1) Flood plain protecting 1 residential or commercial property from flooding Amenity site used by small numbers of local people

Source: Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009)

Table 9.2: Reference Values for Q Value / WFD Status (Riverine only)

Q Value*	WFD Status	Pollution Status	Condition**
Q5, Q4-5	High	Unpolluted	Satisfactory
Q4	Good	Unpolluted	Satisfactory
Q3-4	Moderate	Slightly polluted	Unsatisfactory
Q3, Q2-3	Poor	Moderately polluted	Unsatisfactory
Q2, Q1-2, Q1	Bad	Seriously polluted	Unsatisfactory

Source: Environmental Protection Agency Ireland (epa.ie)

Notes:

* These Values are based primarily on the relative proportions of pollution sensitive to tolerant macroinvertebrates (the young stages of insects primarily but also snails, worms, shrimps etc.) resident at a river site.

** "Condition" refers to the likelihood of interference with beneficial or potential beneficial uses.

Table 9.3: Criteria for Rating Flood Risk Receptors

Vulnerability class	Land uses and types of development which include*
Highly vulnerable development (including essential infrastructure)	Garda, ambulance and fire stations and command centres required to be operational during flooding; Hospitals; Emergency access and egress points; Schools; Dwelling houses, student halls of residence and hostels; Residential institutions such as residential care homes, children's homes and social services homes; Caravans and mobile home parks; Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less vulnerable development	Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions; Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans; Land and buildings used for agriculture and forestry; Waste treatment (except landfill and hazardous waste); Mineral working and processing; and Local transport infrastructure
Water compatible development	Flood control infrastructure; Docks, marinas and wharves; Navigation facilities; Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; Water-based recreation and tourism (excluding sleeping accommodation); Lifeguard and coastguard stations; Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan).
*Uses not listed here should be considered on their own merits	

Source: Table 3.1 Classification of vulnerability of different types of development, The Planning System and Flood Risk Management (2009)

Table 9.4: Criteria for Rating Impact Magnitude

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute and /or quality and integrity of attribute	Loss or extensive change to a waterbody or water dependent habitat Increase in predicted peak flood level >100mm Extensive loss of fishery Calculated risk of serious pollution incident >2% annually[1]

[1] Refer to Annex 1 of HA216/06 Highways Agency (2006) Road Drainage and the Water Environment (HA216/06), Design Manual for Roads and Bridges (DMRB). The UK DMRB suggests that where the probability of a serious pollution incident is greater than1%/year, spill-containment measures should be considered. It also suggests that, in particularly sensitive waters, areas at lower risk of serious pollution may also warrant special measures. The formula is however tailored for road developments where increasing traffic densities and higher proportions of heavy goods vehicles (HGVs) are likely to lead to an increased risk

Magnitude of Impact	Criteria	Typical Examples
		Extensive reduction in amenity value
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Increase in predicted peak flood level >50mm Partial loss of fishery Calculated risk of serious pollution incident >1% annually Partial reduction in amenity value
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Increase in predicted peak flood level >10mm Minor loss of fishery Calculated risk of serious pollution incident >0.5% annually Slight reduction in amenity value
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	Negligible change in predicted peak flood level Calculated risk of serious pollution incident <0.5% annually
Minor Beneficial	Results in minor improvement of attribute quality	Reduction in predicted peak flood level >10mm Calculated reduction in pollution risk of 50% or more where existing risk is <1% annually
Moderate Beneficial	Results in moderate improvement of attribute quality	Reduction in predicted peak flood level >50mm Calculated reduction in pollution risk of 50% or more where existing risk is >1% annually
Major Beneficial	Results in major improvement of attribute quality	Reduction in predicted peak flood level >100mm

Source: Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009)

Table 9.5: Rating of Significant Environmental Effects

Importance of Attribute	Magnitude of Impact			
	Negligible	Small	Moderate	Large
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant / Moderate	Profound / Significant	Profound
High	Imperceptible	Moderate / Slight	Significant / Moderate	Severe / Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Slight / Moderate

Source: Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes (NRA, 2009)

9.3.4 Limitations of this EIAR

Identification of surface water features / waterbodies, such as rivers and lakes, has been based on site walkovers, desktop data such as those detailed on Environmental Protection Agency (EPA) datasets and mapping.

of accidents that could give rise to hazardous spills. While the calculation is not appropriate for use on this project, having regard to the characteristics of the proposals as detailed in Section 11.3, regard has been had to the proposed mitigation as appropriate.

9.4 Receiving Environment

A desktop qualitative appraisal was undertaken to identify the baseline characteristics relating to the hydrology of surface waterbodies proximal to the Proposed Project.

9.4.1 Catchment Overview

The Proposed Project is located in the Ballyteigue-Bannow Hydrometric Area (Catchment ID 13). This catchment measures and area of 654km^2 within County Wexford. The third Cycle Catchment Report (EPA, May 2024) described the catchment as the area drained by all streams entering tidal water between Greenore Point and Railway Bridge, Great Island, Co. Wexford

The Ballyteigue-Bannow Catchment is divided into five sub catchments with 115 river waterbodies, 19 lakes, two transitional waterbodies, four coastal waterbodies and 37 groundwater bodies.

There are no large urban centres in the catchment. The only urban centres in this catchment are Lady's Island, Kilmore Quay, Bridgetown, Wellingtonbridge, Duncannon, and Campile.

9.4.2 Surface Water Features

There are three surface waterbodies within the study area, these are;

- Owenduff river (EPA Code: 13O01, segment code: 13_645)
- Tellarought river (EPA Code: 13T14, segment code: 13_232)
- Kilbraney river (EPA code: 13K04, segment code: 13_561)

Under the Water Framework Directive monitoring programme, all three watercourses are collectively named the Owenduff (Wexford)_010 (European code: IE_SE_13O010100) and assigned a Moderate status for the monitoring period 2016-2021[2]. The Risk status is categorised 'At Risk', with the significant pressure identified as agriculture, which are described as "Impacts from agriculture include nutrient and organic pollution. A significant agricultural pressure can be diffuse and/or point source of pollution."

The Owenduff (Wexford)_010 is attributed an importance rating of High in accordance with the NRA's Estimation of Importance of Hydrology Attributes presented in Table 9.1 above. The NRA categories rivers with Q Values of 3-4 (Class B) as High importance.

There are no lakes within the study area.

9.4.3 Protected Areas

A review was conducted to determine those European sites which are within the study area and / or hydrologically connected to the study area. There are no designated bathing waters or shellfish protection areas within 5km of, or in direct hydrological connection to the Proposed Project.

There are hydrological links to the following designated sites;

Special Protection Areas (SPA)

A hydrological link has been identified with the Bannow Bay SPA via the Owenduff River. The hydrological river distance between the SPA and the Project site is 8.4km.

[2] https://www.catchments.ie/data/#/waterbody/IE_SE_13O010100?_k=7n12td

The Proposed Project is located a significant distance from the Seas off Wexford SPA. A weak hydrological link has been identified to the SPA via the Owenduff River. The closest separation distance between the SPA and the Project site is 12.1km.

Special Areas of Conservation (SAC)

The Proposed Project is located approximately 5.6 km from the River Barrow and River Nore SAC with no downstream hydrological connectivity although it is within the same catchment area

The Proposed Project is has hydrologically connectivity via the Tellarought and Owenduff rivers to the Bannow Bay SAC (this this SAC also shares a boundary with Bannow Bay proposed Natural Heritage Area) The hydrological river distance between the SAC and the Project site is 8.1km.

The Proposed Project is located a significant distance from the Hook Head SAC, with hydrologically connectivity via the Tellarought and Owenduff rivers. The hydrological river distance between the SAC and the Project site is 18km.

9.4.4 Non-designated watercourses

It is proposed that surface water drainage from Array Area A will discharge to an existing ditch via a headwall discharge outfall, this ditch is hydrologically connected to the Owneduff River (EPA Code: 13O01, segment code: 13_645) to the east.

There are number of ditches within the study area, which will not be crossed by any element of the Proposed Project.

9.4.5 Drinking Water Supply

There are no surface water Geological Survey Ireland (GSI) Public Supply Source Protection Areas or National Federation of Group Water Schemes (NFGWS) Source Protection Areas located within the study area. There are no known surface water abstractions within the study area. None of the river segments within the study area are designated Drinking Water Rivers.

9.4.6 Drainage, Water Supply and Wastewater Infrastructure

The Project site comprises agricultural pasture, anecdotally it is known that localised field drainage is present in agricultural fields used for hay production, however details of the types of subterranean drainage is not known. The proposed MV cabling between the solar array areas and the 220kV grid connection will be located within the local tertiary road network in which potable water pipes are present. There is no agglomeration for any urban wastewater treatment plant present within the study area due its rural setting, and therefore wastewater sewers are not anticipated to be in present in the local road network.

9.4.7 Flood Risk

A Stage 1 Flood Risk Assessment (FRA) was prepared to accompany this EIAR and is contained in Appendix 9.1 (Volume 3 of this EIAR). The FRA has been prepared in accordance with the Flood Risk Guidelines (DEHLG and OPW, 2009).

The FRM Guidelines define three Flood Zones:

- **Flood Zone A** where the probability of flooding from rivers and the sea is highest (greater than 1% Annual Exceedance Probability (AEP) or 1 in 100 year for river flooding or 0.5% AEP or 1 in 200 for coastal flooding);

- **Flood Zone B** where the probability of flooding from rivers and the sea is moderate (between 0.1% AEP or 1 in 1,000 year and 1% AEP or 1 in 100 year for river flooding and between 0.1% AEP or 1 in 1,000 year and 0.5% AEP or 1 in 200 year for coastal flooding); and
- **Flood Zone C** where the probability of flooding from rivers and the sea is low (less than 0.1% AEP or 1 in 1,000 for both river and coastal flooding). Flood Zone C covers all areas which are not in Flood Zone A and Zone B.

There are no vulnerable or highly vulnerable development types (i.e. 220 kV substation compound) located in Flood Zone A or B. The majority of the Proposed Project is located in Flood Zone C, with the exception of perimeter fencing for Shelburne Energy Farm which occurs in close proximity to the Owenduff River. A detailed baseline assessment of flood risk, including flood zone mapping, is provided in Appendix 9.1 in Volume 3 of this EIAR.

9.5 Likely Significant Impacts

This section presents the potential impacts that may occur due to the Proposed Project on the identified and in-scope receptors. All potential impacts are identified in the absence of control measures or mitigation.

The assessment informs the need for mitigation and / or monitoring measures, which are presented in Section 9.7, while Section 9.8 presents the predicted residual impacts, following the implementation of the prescribed mitigation and / or monitoring measures.

9.5.1 'Do Nothing' Scenario

Under a 'Do Nothing' scenario it is expected that the site will continue to be utilised for agricultural purposes. As is, the site potentially represents a source of contamination to the water environment, as diffuse agricultural sources continue to be a main threat to the quality of water in Ireland.

9.5.2 Construction Phase

Given the nature of the Proposed Project, the potential for impacts on the water environment are for the most part associated with the construction phase of the Proposed Project and are similar to any civil engineering project. These include:

- Impacts to surface water quality from sediment runoff, spillages and discharges;
- Impacts on drainage patterns from working in or near watercourses;
- Impacts from new water supply and wastewater infrastructure; and
- Impacts on flood risk.

9.5.2.1 Surface Water Quality

Vegetation clearance and excavations can pose a risk to surface water quality through surface water run-off and the release of sediment to watercourses. Ground damage from construction vehicles and machinery can also cause rutting and increased erosion of soils. Access tracks used during construction may affect surface run-off patterns, creating alternative flow paths, promoting erosion and localised flooding.

The construction of the BESS compound, substation compound and the construction compound will require earthwork activities to create a level platform, over a total area of 6.92 hectares. This has potential to result in elevated dust levels and sediment run-off which may impact surface water bodies in the absence of mitigation.

Elevated levels of sediment could impact on spawning fish, through issues including the sedimentation of spawning gravels, clogging of fish gills and reduction in dissolved oxygen.

Accidental release of potentially polluting substances such as oils (hydrocarbons) can result in significant impacts on the aquatic environment. The release of hydrocarbons can impact water dependent species resulting in disruption to neurosensors, abnormal behaviour and development issues as well as direct impacts on fertility. Oil spills can reduce the capacity of a waterbody to exchange oxygen as well as result in oil coating the gills of aquatic species causing lesions on respiratory surfaces. This can result in significant respiratory difficulties for aquatic organisms. Benthic invertebrates can be adversely affected if fractions of hydrocarbons settle and accumulate in sediments. This can result in the mortality of populations and prevent future colonisation.

Concrete and cement are highly alkali and fresh concrete has corrosive properties. Concrete wash water is a particularly severe pollutant, as it typically has a high pH (11-12) coupled with extremely high suspended sediment content. In the freshwater environment, pH levels which are elevated beyond natural conditions can have significant impacts upon water bodies.

Schedule 5 of SI 272 of 2009 (European Communities Environmental Objectives (Surface Waters) Regulations 2009) includes the following (WFD) pH limits for rivers and lakes:

- Soft water 4.5< pH < 9.0, where soft water is ≤100 mg/1 $CaCO_3$; and
- Hard water 6.0< pH < 9.0, where hard water is >100mg/l $CaCO_3$.

There are no in-stream works of any designated watercourse. The closest separation distance to the Owenduff River during the construction phase is ca. 15m, which relates to the installation of the 38kV polesets to carry the MV cabling across the Tellarought River.

The proposed MV cabling from Array Area B and C will be required to cross the Tellalought River to reach the AIS substation compound. This river crossing will be facilitated via the provision of a section of overhead line, with the cabling strung between two 38kV wooden polesets (setback distance from the top of the river bank is ca. 15m) to avoid in-stream works and impacts to the riparian zone. There is no requirement for concrete in the installation of the wooden 38kV poles as these will be driven into the ground to an appropriate depth below ground level (subject to site specific ground conditions).

The proposed earthworks associated with the substation compound and BESS compound may result in localised changes to surface water drainage patterns and restrictions to infiltration of rainfall in soils. The proposed access tracks may affect surface runoff patterns, creating alternative flow paths and may promote erosion of previously unaffected areas.

Given the rural setting of the Proposed Project existing drainage networks are available, and any disturbance will be localised and temporary in duration. Surface water contributions will remain unchanged and will likely discharge to the same catchment.

The use of construction vehicles and machinery can cause increased erosion of exposed surfaces, which once exposed to rainfall, can result in excessive volumes of eroded material entering surface water features.

There is a chance that construction traffic could accidentally release fuel/oil which could cause a pollution incident if it reaches a watercourse. There are several bridges crossing watercourses which construction traffic will encounter on haulage routes to the Project site; however, there is no potential for likely significant effects from such a pollution event cause by construction traffic.

The magnitude of adverse surface water quality impacts in the absence of additional mitigation is expected to be localised in scale but large and adverse, relative to Table 9.4, resulting in

severe / significant effects of temporary duration prior to the implementation of additional mitigation measures.

9.5.2.2 Surface water drainage, water and wastewater infrastructure

During construction, welfare facilities will be provided at each of the temporary construction compounds, and any discharges will be connected to a sealed holding tank to be emptied and disposed of off-site by a licenced contractor to an approved licenced facility. Water will be tankered onto site as required.

The MV cabling for the solar farm will utilise public roads to reach the proposed AIS substation compound, however, utility services records will be consulted by the appointed Contractor to ensure that the micro-siting of the cabling will avoid other in-road utilities. Consequently, significant adverse impacts on water or wastewater utility infrastructure during the construction phase are not likely and the effect will be short-term and imperceptible.

9.5.2.3 Flood Risk

The proposed inter-array (MV) cabling and the 220kV grid connection is mostly buried underground and is designed to continue to be operation under flood conditions. The BESS compound and substation compound are located in Flood Zone C. The only element of construction works occurring within Flood Zone A or B is the erection of the perimeter fencing. It is proposed that wire mesh deer stock fencing is provided, which does not require foundations instead each wooden pole will be installed to a minimum depth of 900mm, with excavated material being reused and compacted at the base of each wooden pole. Consequently, significant adverse impacts on flood risk during the construction phase are not likely and the effect will be temporary and imperceptible.

9.5.3 Operation and Maintenance Phase

9.5.3.1 Surface Water Quality

The drainage design has been developed in accordance with Sustainable Drainage Systems (SuDS) principle, consequently the solar farm will continue to drainage to the existing greenfield run-off rates. In order to reduce sediment erosion and flow velocity gravel-filled filter drains are proposed along the proposed access tracks. All new cable infrastructure will be located below-ground and will not interface with surface water receptors. The land will continue to drain as per the existing arrangements along the proposed MV and 220kV cable routes.

Within the surface water drainage system for the BESS and substation compound it is proposed to locate a silt trap chamber and oil/fuel interceptor located upstream of the dry detention basin to help remove pollutants which may have become entrained in runoff from any hardstanding areas that may be at risk of contamination from oil or fuel spills associated with vehicles.

The surface water runoff generated by the BESS facility will be collected via a gravity drainage system and managed using a dry detention basin. The proposed future substation will also be connected to main gravity drainage system serving the BESS compound. The basin will be unlined allowing for infiltration and it will be sized to ensure no flooding of the proposed site occurs for the critical storm with a 1 in 100-year return period, including a 30% allowance for climate change. The operational efficiency of infiltration systems is dependent on the geotechnical properties of underlying soil at the proposed location and should be confirmed through ground investigation. The dry detention basin will include a sediment forebay at the inlet of the basin that will provide sediment treatment by allowing particulates to settle out and preventing their resuspension within the main detention area. Furthermore, a permanently wet volume will be provided to enhance the treatment of surface water runoff by encouraging the adhesion of entrained contaminants to vegetation planted within the pond. The outfall from the

basin will be discharged via a headwall into the existing drainage ditch located to the southeast. The discharge to a watercourse is to be restricted in accordance with sustainable drainage principles and limited to the greenfield runoff rate.

An emergency shut-off valve chambers located upstream of the dry detention basin to prevent discharge from the drainage network in an emergency event and during periodic maintenance. In case of a fire event, surface water from the hardstanding areas within the BESS compound will be automatically redirected to an underground firewater storage tank via an automated penstock. The fire water will be tested to determine the appropriate disposal method. For example, if it is not contaminated, it can likely be discharged through the attenuation pond. Otherwise, fire water will be collected by a licenced waste contractor and tankered off-site for disposal at a licenced wastewater treatment facility.

With regard to the transformer centres within the solar farm, these units will be bunded and fitted with an in-bund interceptor to prevent any oil spillage to ground. Similarly, the transformer within the AIS compound will be an oil filled transformer. This transformer will be bunded and will have the capacity to hold 110% of the volume of oil.

Given the nature of the surface water design which has embedded mitigation it is expected that there are no adverse or significant impacts on surface water quality during operation and maintenance phase, impacts are likely to be long-term but imperceptible.

9.5.3.2 Surface water drainage, water and wastewater infrastructure

An on-site water supply will be provided for fire fighting purposes in relation to the BESS compound. This proposed on-site borehole will fill each of the two tanks, which have a combined capacity of 248m3. It is proposed that both tanks would be filled at the commencement of the operational and maintenance phase to ensure that fire water is present and will only be refilled when emptied as a result of fire fighting measures. In addition, this borehole will provide the potable water supply for the GIS building. Due to the limited requirements for water during the operational phase, which under a normal operating scenario is limited to use during monthly site visits to the GIS building it is estimated that the weekly average consumption is ≤50litres.

Once the GIS building is operational, domestic type wastewater will be produced by the onsite welfare facilities (toilet, wash hand basin and mess room sink). It is proposed that wastewater will be discharged by gravity sewer to a sealed foul wastewater holding tank. The holding tank is sized according to the anticipated staff numbers, which is predicted to be four people visiting once per month, thus emptying frequency will occur once every 12 months. The holding tank will be monitored by a high-level alarm which will alert the site operators when the tank capacity is approaching full.

The water abstraction volumes from groundwater for potable water and firefighting purposes are limited, and sized appropriate based on predicted operational staff and size of the BESS installation in accordance with National Fire Chiefs Council publication 'Grid Scale Battery Energy Storage System Planning – Guidance for FRS. Consequently, this groundwater abstraction will not result in any likely adverse impacts on surface water quality of flow levels during the operation and maintenance phase, impacts will be imperceptible.

As there will be no discharge of wastewater (importance low and magnitude negligible), effects will be imperceptible.

9.5.3.3 Flood Risk

A desk-based assessment of the Proposed Project was undertaken (contained within Appendix 9.1, Volume 3 of this EIAR), which concludes that the impact on flood risk is negligible at

operation stage as all elements are located within Flood Zone C (with the exception of perimeter fencing occurs in Flood A or B and one 38kV poleset).

9.5.4 Decommissioning Phase

Subject to the granting of statutory approval, the Shelburne Energy Farm and grid connections will form part of the national electrical grid infrastructure. The design life of the PV Solar Farm and BESS is 30 years and 20 years respectively, where the planning permission for the operational life span of the Proposed Project overall is 40 years. The Shelburne Energy Farm is to be decommissioned in line with the Decommissioning and Land Restoration Plan, contained in Appendix 3.1, Volume 3 of this EIAR.

It is expected that the 220kV Grid Connection will remain a permanent part of the national electricity transmission network and will be refurbished and / or redeveloped as required rather than be decommissioned.

The activities associated with the decommissioning phase for the Solar Plant and BESS will be similar to those associated with the construction phase.

Therefore, the impacts of the decommissioning phase should be, as a worst-case scenario, similar to those at construction phase.

9.6 Cumulative Effects

9.6.1 Other Developments

A review of the projects detailed in Table 3.2 of Chapter 3 *EIA Methodology* was undertaken to determine if there are any other projects which could act in combination with the Proposed Project such that cumulative effects would be likely on surface water receptors or flood risk.

The potential for any future extension of the solar farm into undeveloped lands immediately north of the proposed BESS compound, any construction phase would not overlap with that of the Proposed Project. There would be no requirement for re-contouring or development of access tracks (or associated drainage) within these lands which may be developed, and therefore sediment or concrete pouring construction activities would be limited (based on the assumption that no more than one new transformer centre [which will be bunded] would be required for the extension).

Construction phase activities would likely be negative, short term and imperceptible.

The proposed solar farm extension would not impact flood risk as these lands are located in Flood Zone C, and there is very limited change to surface water run-off patterns in addition to what is proposed by the subject Proposed Project.

There are no likely significant cumulative operational and maintenance phase impacts predicted as there will be limited changes to surface water run-off patterns.

The potential future expansion of the BESS compound into undeveloped lands abutting the proposed BESS compound will result in the requirement for earthworks to create a level platform is likely to have a negative, short-term but not significant effect impact on surface waterbodies due to potential for an increase in sediment laden runoff. The same mitigation measures listed in section 9.7.1 would be utilised to mitigate any potential impacts to surface water quality.

During the operational and maintenance phase the extended surface water drainage will tie into the subject proposed BESS compound drainage detailed in this EIAR, and there is no requirement to provide additional supply for the fire water tanks. There are no likely significant cumulative impacts predicted.

There are no other proposed projects within the vicinity of the Owenduff River that could act cumulatively with the Proposed Project.

9.7 Mitigation and Monitoring Measures

9.7.1 Construction Phase

The following mitigation measures will be implemented prior to commencement and throughout the duration of the proposed works. These measures will also be incorporated into the Construction and Environmental Management Plan (CEMP), which the Contractor will develop based on the CEMP which accompanies this application.

- A full-time on-site Environmental Clerk of Works (EnCoW) will be appointed by the Contractor prior to commencement of works.
- Confirmatory pre-construction surveys will be carried out and seasonal constraints will be confirmed in agreement with IFI and National Parks and Wildlife Service (NPWS) and Wexford County Council, as appropriate.
- Works will be carried out in accordance with the guidelines set out by IFI in *'Guidelines on Protecting Fisheries During Construction Works in and Adjacent to Waters'* (IFI, 2016) including the programming of instream works within the period July to September.
- The IFI Biosecurity Protocol for Field Survey Works[3] will be complied with.
- In the case of a warning of a flood event, plant and materials vulnerable to flooding in 'at risk' construction compounds will be relocated to parts of the compound that are considered to be not at risk of flooding.

The following mitigation measures will be implemented prior to commencement and throughout the duration of the works:

- Activities will be planned in advance and machinery will be managed to ensure that the number of trips is limited to the minimum required at each location i.e. the more times a piece of ground is tracked, the more likely it is that vegetative cover will be removed, and ruts will be created that will act as miniature rivers where dirty water will flow.
- Tracking beside streams will be avoided to avoid damage to the bankside.
- Geotextile or timber matting will be used on soft ground, and in all protected areas
- A buffer zone of 15m will be maintained between storage and working areas and watercourses, taking account of the minimum working area required to facilitate the works.
- The time period over which areas of clearance are left open will be reduced insofar as is reasonably practicable.
- Re-instatement method statements will be subject to approval by the EnCoW.
- Concrete will be brought to site by covered truck. Wet concrete operations adjacent to watercourses will be avoided.
- The Contractor will ensure that all concrete truck wash watering / cleaning is undertaken offsite where possible and remote from watercourses.
- In order to reduce the risk of contamination arising as a result of spills or leakages, measures including, but not limited to, the following will be employed.

[3] file.html (fisheriesireland.ie)

  - All collected waste will be managed in accordance with the Waste Management Act 1996, and associated Regulations:
  - Fuels, chemicals, liquid and solid waste will be stored on impermeable surfaces;
  - Refuelling of plant, equipment and vehicles will be carried out on impermeable surfaces;
  - All tanks and drums will be bunded in accordance with established best practice guidelines; and
  - Spill kits will be provided at all compound locations and carried by all crews during underground cable installation works.
- Works will not be carried out during extreme rainfall or high flow events as determined by the EnCoW. An early flood warning system will be set up by the appointed Contractor to allow the removal of plant and material from construction areas located in Flood Zones A and B in the event of a flood warning. The duration of works within Flood Zone A and B will be minimised to reduce the potential of impact.
- Temporary works will be designed so as not to increase flood risk elsewhere from overland flow, by limiting excavated lengths and providing suitable drainage provision.
- Silt fences (to Hy-Tex Premium specification or similar) and silt traps will be installed prior to commencement of works and will be inspected daily to inform adaptive management as required. The locations of same will be determined by the EnCoW.
- Any instream works will be conducted during the period July – September to avoid effects on fisheries or otherwise agreed with IFI.

Silt Control Measures

- Silt control measures will be used to control silt generated from activities on site and prevent it gaining access to surface drainage which could convey silt to larger streams and watercourses.
- Silt control measures include silt traps which can be located in small drains where flow is small and silt fences where runoff from large areas needs to be controlled.
- Silt fences will be installed in the working areas and not at the watercourse.
- Access routes will be delineated such that an appropriate set back distance of 30m from watercourses is maintained except where existing access . Where works are to be undertaken adjacent to watercourses the setback distance will be delineated by the EnCoW on site.
- Where distances between the works and watercourse allow, a minimum setback distance of 30m from the watercourse will be maintained.
- Where the site is constrained, the best available set back distance will be employed taking account of the minimum working area required to facilitate the works.

Silt Fences

- Silt fences will be installed downslope of the area where silt is being generated on disturbed ground.
- To be effective the silt curtain will contain the area where silt is generated and will terminate on high ground (i.e. an elevated area not in the watercourse).
- Silt fences will be constructed using a permeable filter fabric (e.g. Hy Tex Terrastop Premium silt fence or similar) and not a mesh.
- The base of the silt fence will be bedded at least 15-30 cm into the ground at 2 metre intervals.
- Once installed the silt fence will be inspected by the Environmental Clerk of Works regularly, daily during the proposed works, weekly on completion of the works for at least one month, but particularly after heavy rains.

- The integrity of the silt fencing will be checked daily by the EnCoW and after poor weather conditions (rain or wind) and any failures rectified immediately.
- Two lines of silt curtain / fence will be installed, where considered necessary by the EnCoW.
- Any build-up of sediment along the fence boundary will be removed daily.
- Silt fences will be maintained until vegetation on the disturbed ground has re-established. Re-instatement method statements will be subject to approval by the EnCoW.
- The silt fencing will be left in place until the works are completed (which includes removal of any temporary ground treatment).
- Silt fences will not be removed during heavy rainfall.
- The silt fence will not be pulled from the ground but cutaway at ground level and posts removed.
- A record of when silt fences were installed, inspected and removed will be maintained by the EnCoW.

Silt Traps

The purpose of the trap is to reduce the level of solids in the slowly flowing water. The silt trap works by allowing a build-up of water behind it slowing flow and allowing solids to settle out. The following requirements will apply:

- Silt traps will only be placed in drains downstream of working areas where the volume of water flow is expected to be low.
- Silt traps will be made of terram or similar material, not mesh.
- The trap will be staked into the banks of the drain / watercourse such that no water can flow around the sides.
- The material will be bedded into the drain bed/watercourse to prevent water flowing beneath it.
- The height of the trap will be lower than the bank heights. The upper edge will be fixed to a timber cross piece. This will allow water to overtop the silt trap and not burst through or around it.
- Inspections will be carried out daily; during the proposed works, weekly on completion of the works for at least one month, and after heavy rains, and monthly thereafter until bare areas have developed new growth.
- Any build-up of solids will be carefully removed without removing any vegetation growing on the bottom.
- In sensitive areas a series of silt traps will be placed in the drain.
- The silt trap will not be pulled from the ground but cutaway at ground level and posts removed.
- A record of when it was installed, inspected and removed will be maintained by the EnCoW.

Temporary surface water management arrangements

Temporary surface water management arrangements are required during the works. The following measures will be put in place to mitigate the impact:

- Construction phase site drainage is designed to convey and attenuate pluvial surface waters through implementation of appropriately sized drainage systems including ditches, swales and settlement ponds.
- All site access tracks will be maintained to prevent the pooling of water and have an adequate camber to allow drainage of surface waters to drainage ditches for conveyance.

- Areas of exposed soils will be maintained to prevent the pooling of water and allow for a drainage system to allow pluvial surface water to drain to a swale or settlement pond.
- The EnCoW will monitor the effectiveness of drainage system and advise contractors on improvements, additions and maintenance.

Dewatering

Dewatering may be required for some excavation works. The following measures will be put in place to mitigate the impact:

- Any water ingress associated with excavation works will be removed to facilitate suitable working conditions.
- The water will be over pumped and treated via a filter bag before being discharged within a vegetated area located north of the construction compound.
- Silt fences will be installed around the vegetated area to ensure there is no runoff of sediment laden surface water.
- Any contaminated water unsuitable to be discharged to ground will be removed and disposed of offsite.

Stockpiling materials

The stockpiling of materials will be required for some aspects of the works. The following measures will be put in place to mitigate the impact:

- All excavated material will be stored a minimum of 50m from rivers and any drainage ditches hydrologically connected to the watercourse.
- Silt fences or gravel drains will be positioned around the stockpiles to prevent surface water run-off. The silt fences and gravel drains will be regularly inspected and maintained.
- Stockpiled material, comprising soil, earth, stone etc. will be covered in order to prevent surface water run-off.

Prevention of leaks and spills

In order to reduce the risk of contamination or pollution arising because of spills or leakages, measures including, but not limited to, the following will be employed.

- Fuels, chemicals, liquid and solid waste will be stored on impermeable surfaces
- Chemical storage – all potentially polluting chemicals will be stored in secure weatherproof enclosures with spill kits
- Storage of fuel and refuelling will be undertaken within bunded hardstanding areas
- Refuelling of plant, equipment and vehicles will be carried out on impermeable surfaces
- All tanks and drums will be bunded in accordance with established best practice guidelines.
- Spill kits will be provided at all compound locations and carried by all crews during underground cable installation works.
- The site will be kept secure to prevent vandalism which can lead to pollution from stored liquids escaping and entering drains
- Bentonite Breakout procedure will be developed.
- Where mobile equipment is required, e.g. generators, these will be housed in a suitably sized bund/plant nappy such that any leaks/spills are intercepted. All mobile equipment used at the proposed discharge outfall will be stored within a plant nappy.
- All chemicals and hydrocarbons (oils, fuels and lubricants etc) should be stored in containers of up to 110% capacity to ensure there is a reduced risk of overflow spill and should be stored an absolute minimum of 10m from any watercourses and/or drains. If

more than 200 litres of any oil type are to be stored on site, this must be stored in oil storage containers including drums and intermediate bulk containers (IBCs). All chemicals and hydrocarbons are to be stored within a bunded area, within the construction compound. All hand-held equipment and generators will be stored on site in appropriately sized bunds when not in use.

- Fuelling and lubrication of plant and equipment will be restricted to the construction compound site only. No refuelling will be permitted to occur within 10m of watercourses, waterbodies or drainage ditches.
- Spill-kits and hydrocarbon absorbent packs will be stored in the cabin of each vehicle and operators will be fully trained in the use of this equipment.
- Welfare/hygiene facilities will be located within temporary construction compounds a minimum of 50m from any watercourse/drainage ditch.

Management of leaks and spills

In the event of leaks or spills occurring, in order to manage and reduce contamination risk, measures including, but not limited to, the following will be employed.

- All construction staff will be properly trained to respond to accidental discharge or leaks and appropriate spill management kits will be in place to allow rapid response on site.
- An Incident Response Plan will be in place detailing the procedures to be undertaken in the event of spillage of chemical, fuel or other hazardous substances or wastes, logging of non-compliance incidents and any such risks that could lead to a pollution incident at any point over the proposed working areas.

9.7.2 Operation and Maintenance Phase

Mitigation for stormwater is embedded in the design, described in section 9.5.3.1, and includes that surface water runoff will flow through a silt trap chamber and oil/fuel interceptor and conveyed to the underground fire water retention tank before discharging to the existing drainage.

Wastewater from the GIS building foul holding tank will be tankered and removed off site, no mitigation is required.

9.8 Residual Impacts

Following the implementation of mitigation measures during construction and the embedded mitigation built into the design for the operational phase, residual effects in terms of water quality will be imperceptible Owenduff Wexford_010. The residual effect on water supply, wastewater and drainage will be imperceptible.

Table 9.6: Residual Effects

Receiving Environment	Construction Effect	Operational Effect	Residual Effect
Surface water quality	Moderate - Significant	Imperceptible	Imperceptible
Water supply, wastewater, drainage	Imperceptible	Imperceptible	Imperceptible
Flood Risk	Moderate	Imperceptible	Imperceptible

9.9 Water Framework Directive Assessment

9.9.1 Introduction

The EU Water Framework Directive (Directive 2000/60/EC)[4] (referred hereafter as the WFD) establishes a framework for the protection of inland surface waters, transitional waters, coastal waters, and groundwater. It aims to prevent and reduce pollution, promote sustainable water use, protect and improve the aquatic environment and mitigate the effects of floods and droughts.

In Ireland, the WFD is transposed by the following national regulations:

- European Communities (Water Policy) Regulations (2003 and 2014) and;
- European Union Environmental Objectives (Surface Waters) Regulations (2009, 2012, 2015 and 2019)

Under the WFD, a water body is the basic management unit used to assess if the environmental objectives for that water body have been met.

River water bodies are defined as all or part of a river system within operational sub catchments which are located in larger catchments within river basin districts. Relevant examples for this study would include:

- Water body: Owenduff River water body;
- Sub catchment: Owenduff [Wexford]_SC_010
- Catchment: Ballyteigue-Bannow
- River Basin Districts (RBD): Ireland's national River Basin District.

The Irish River Basin District (RBD) covers an area of 70,273km2, with 46 catchment management units, consisting of 583 sub-catchments, with 4,829 water bodies (DHLGH, 2018).

The key environmental objectives of the WFD are set out in Article 4 of the Directive. It requires member states to use their River Basin Management Plans (RBMPs) and Programmes of Measures (PoMs) to protect and, where necessary, restore water bodies in order to reach good status, and to prevent deterioration. Good status means both good chemical and good ecological status. RBMPs are key tools for implementing the WFD and are drawn up every six-years following extensive public consultation.

In Ireland, the Department of Housing, Local Government and Heritage leads the development and implementation of Ireland's river basin management plans. To date, there have been two cycles of river basin management planning in Ireland: the first cycle covered the period 2010-2015 and the second cycle the period 2018-2021. Ireland's third cycle RBMP for the period 2022-2027 was published in September 2024 and titled The Water Action Plan 2024 – A River Basin Management Plan for Ireland[5].

Under the requirements of the WFD member states must ensure that the requirements of Article 4 are met. Specifically, the relevant competent authorities of a member state must consider whether proposals for new schemes/development have the potential to:

[4] Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (accessed on 29 August 2025 via https://eur-lex.europa.eu/eli/dir/2000/60/oj)

[5] The Water Action Plan 2024 – A River Basin Management Plan for Ireland (accessed 08 September 2025 via https://www.gov.ie/en/department-of-housing-local-government-and-heritage/policy-information/river-basin-management-plan-2022-2027/)

1. Cause a deterioration of a water body from its current status or potential, and or,
2. Jeopardise attainment of good status or potential where not already achieved.

As a result, new schemes/developments that have the potential to impact on current or predicted WFD status are required to assess their compliance against the WFD objectives of the potentially affected water bodies.

If the tests above cannot be satisfied, Article 4.7 of the Directive sets out conditions and specific situations that permit derogations.

There are three stages in a WFD assessment:

- A screening assessment which can either screen in or screen out an activity based on the available evidence;
- A no deterioration assessment which considers if the activity will result in a deterioration in the current status of a water body;
- Achievement of good status assessment which considers if the activity will jeopardise the water body from achieving good status in the future.

9.9.2 Outline of the Proposed Project

The Proposed Project comprises a solar photovoltaic farm with an accompanying and co-located battery energy storage system, collectively referred to as Shelburne Energy Farm, which is proposed within a circa 121.5 hectare site in the townlands of Nash, Ballygarvan and Cloonagh, Gusserane, County Wexford. A connection to the national electricity grid for Shelburne Energy Farm is also proposed and will comprise a 220kV substation and an associated 220kV 2.9km cable connection to an existing transmission overhead line (Great Island - Lodgewood 220kV circuit) in the vicinity north of Shelburne Energy Farm.

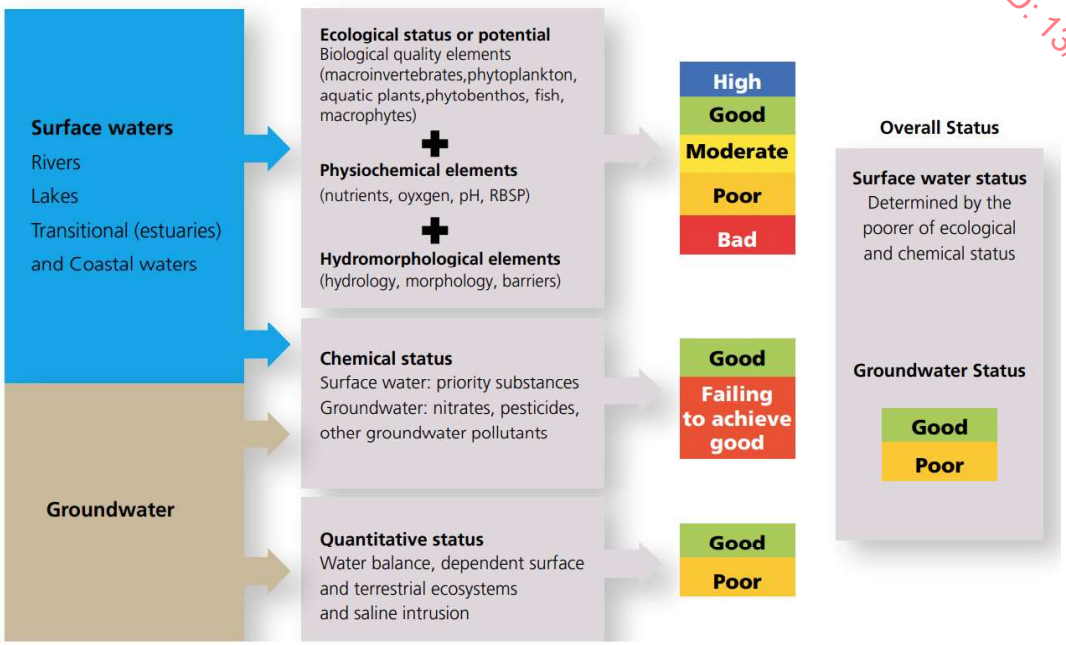
There are no-instream works proposed to any designated waterbody, the proposed drainage system for the BESS and substation will include a discharge outfall being installed within an existing drainage ditch.

9.9.3 Waterbody Status

Surface waters are classified by their ecological status (biology, water quality and hydromorphology combined) and chemical status (level of harmful chemicals in the water). Groundwaters are classified according to their chemical status and quantitative status (the amount of water present). The way this information is combined to provide an overall status of surface waters and groundwaters is illustrated in Figure 8.2. The element with the lowest status in each step of the process determines the overall classification. This is called the ‘one out, all out’ principle.

The quality elements used to determine water status are detailed in Annex V of the Directive.

Figure 9.2: Process on Assigning water body status



Source: Water Quality iNIreland 2016-2021 (EPA,2022) https://www.epa.ie/publications/monitoring--assessment/freshwater--marine/EPA_WaterQualityReport2016_2021.pdf

The Owenduff river waterbody (Owenduff (Wexford_010) has been assigned a Moderate ecological status by the Environmental Protection Agency (EPA), the competent authority responsible for assigning water status in Ireland. The assessment technique to assign this status was based on monitoring as stated on EPA catchments website (catchments.ie[6]) and status confidence is listed as medium confidence. The biological Q rating system applied under the Water Framework Directive monitoring programme assigned a Q value of 3-4 (moderate), taken up-stream of the Proposed Project at Rathnageeragh Bridge (Station code: RS13O010060). The data as listed by the EPA on the www.catchments.ie is reproduced in Table 9.7.

Table 9.7: Owenduff (Wexford)_010 Water Quality data

Attribute	Value
Name	Owenduff (Wexford)_010
Code	IE_SE_13O010100
Subcatchment	Owenduff [Wexford]_SC_010
Catchment	13 Ballyteigue-Bannow
Latitude	52.3347146
Longitude	-6.8809047
Local Authority	Wexford County Council
Waterbody Category	River
Ecological Status	Moderate
WFD Risk	At Risk

[6] https://www.catchments.ie/data/#/waterbody/IE_SE_13O010100?_k=9pic7z (accessed 04 September 2025)

Attribute	Value
Protected Area	No
High Status Objective	No
Heavily Modified	Unknown
Artificial	Unknown
Length (Km)	22.86

Source: https://www.catchments.ie/data/#/waterbody/IE_SE_13O010100?_k=9pic7z

9.9.4 Assessment

Table 9.8 below assesses the potential of effects on the Owenduff (Wexford)_010 and the potential for effects on the hydromorphological status, physicochemical status and biological status of the stream during the construction and operational phases of the Proposed Project.

Table 9.8: WFD Assessment

Element	Assessment	Control Measures
Biological Assessment		
Benthic invertebrates	During construction there is the potential for increased sedimentation.	Silt mitigation – see section 9.7.1 - Silt Control Measures
Phytobenthos	During construction and operation there is the potential for increased sedimentation and runoff of pollutants.	Silt trap chamber and oil/fuel interceptor – see section 9.7.2
Fish	During construction and operation there is the potential for increased sedimentation and runoff of pollutants.	
Macrophytes	During construction and operation there is the potential for increased sedimentation and runoff of pollutants.	
Hydromorphological Assessment		
Quantity and Dynamics of water flow	During the construction phase there is limited requirement for any over-pumping, and therefore a negligible volume would reach any watercourse adjacent the Proposed Project	Not applicable.
Connection to groundwater bodies	During excavations, there is potential for groundwater to be encountered and dewatering required, however, this would be localised and minor in scale.	Should dewatering be required any discharges will be treated to remove contaminants and silt and disposed of in accordance with waste management legislation and EPA guidance.
River Continuity	There are no proposed instream structures which could act as a barrier to river continuity.	Not applicable.
River depth and width variation	There will no change to river depth or width as a result of the Proposed Project.	Not applicable.
Structure and substrate of the river bed	Increased sedimentation could affect river bed substrate over time. There are no structures proposed within the river.	Silt measures – see section 8.7
Structure of the riparian zone	There are no structures within the riparian zone of the Owenduff (Wexofrd)_010, the closest structure is a proposed electricity poleset in proximity to the banks of the Tallarought river. A separation distance of 15m from the top of the bank has been provided.	Minimise effects on the riparian zone and consult with IFI with regards to method statements for the works.
Physico-chemical Assessment		
Thermal conditions (temperature)	There is no potential for effects on the thermal condition of the stream.	N/A

Element	Assessment	Control Measures
Nutrient conditions	During construction and operation there is the potential for increased sedimentation and associated phosphate and ammonia.	Silt mitigation – see section 9.7.1 - Silt Control Measures
Oxygenation conditions	Potential for some localised reduction in oxygenation conditions during the construction phase associated with fine sediment mobilisation (assuming it has an associated oxygen demand). During operations, wastewater will be tankered off site (and disposed of an urban wastewater treatment plant) and therefore no discharge of wastewater will occur to the Owenduff (Wexford)_010.	Silt mitigation – see section 9.7.1 - Silt Control Measures; and, embedded mitigation – see section 9.7.2.
Acidification (pH)	There is potential for run-off from concrete construction activities.	The headwall for the discharge outfall pipe will be constructed with pre-fabricated cast concrete, thereby reducing the volume of concrete required on site. Concrete will be brought to site by covered truck. Wet concrete operations adjacent to watercourses will be avoided. The Contractor will ensure that all concrete truck wash watering / cleaning is undertaken offsite where possible and remote from watercourses.

9.9.5 Conclusion

With the implementation of the proposed mitigation measures proposed, the Proposed Project will not result in a change in status of any WFD quality elements or prevent any connected waterbodies from reaching good status in the future.

The assessment has shown that the Proposed Project upon completion will have no permanent impact on the hydromorphological (i.e. flow, continuity, morphology) and physicochemical (i.e. thermal, nutrient, oxygenation, acidification) elements of the Owenduff (Wexford)_010 and the ability of these elements to provide a supporting environment for the river's ecology. As such the assessment has demonstrated that the potential impacts associated with the proposed development are unlikely to cause a deterioration at the water body scale.

The mitigation measures included in this assessment will be incorporated into the accompanying CEMP. The CEMP will be further developed by the appointed Contractor and will incorporate any statutory requirements that may arise during the consenting process. The CEMP will be agreed with relevant planning authority (Wexford County Council and / or An Coimisiún Pleanála) prior to the commencement of construction works.

In summary the Proposed Project would not result in status deterioration of the Owenduff (Wexford)_010 waterbody or directly prevent the future attainment of good water status or indirectly impact measures that may be put in place by the relevant competent authorities to achieve the environmental objectives of the WFD.

It can therefore be concluded that the Proposed Project is fully complaint with WFD and therefore does not require assessment under Article 4.7 of the WFD.

9.10 References

CIRIA 2001. Control of Water Pollution from Construction Sites - Guide to Good Practice (C532)

https://gis.epa.ie/EPAMaps/ (accessed 29 August 2025)

Inland Fisheries Ireland, 2016. Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters

Inland Fisheries Ireland, 2020. Planning for Watercourses in the Urban Environment: A Guide to the Protection of Watercourses through the use of Buffer Zones, Sustainable Drainage Systems, Instream Rehabilitation, Climate / Flood Risk and Recreational Planning