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WATER FRAMEWORK DIRECTIVE ASSESSMENT
TIRAWLEY WIND FARM DEVELOPMENT, CO. MAYO

FINAL REPORT

Prepared for:

CONSTANT ENERGY LTD

Prepared by:

HYDRO-ENVIRONMENTAL SERVICES

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1. INTRODUCTION

1.1 BACKGROUND

Hydro-Environmental Services (HES) were requested by Jennings O'Donovan and Partners Limited, on behalf of Constant Energy Ltd, to complete a Water Framework Directive (WFD) Compliance Assessment for a planning application for the proposed Tirawley Farm Development (i.e. the 'Proposed Development'), Co. Mayo.

A full description of the Proposed Development is provided in **Chapter 2: Development Description** of this EIAR.

Note that the improvements and temporary accommodation requirement along the TDR have been screened out of the WFD Compliance Assessment due to the very minor and short-duration of any works.

The purpose of this WFD Compliance Assessment is to determine if any specific components or activities associated with the Proposed Development will compromise WFD objectives or cause a deterioration in the status of any surface water or groundwater body and/or jeopardise the attainment of good surface water or groundwater status. This assessment will determine the water bodies with the potential to be impacted, describe the proposed mitigation measures and determine if the Proposed Development is in compliance with the objectives of the WFD.

This WFD Assessment is intended to supplement the EIAR submitted as part of the wind farm planning application.

This report has been compiled using the following data sources:

- Environmental Protection Agency database (www.epa.ie);
- Observations and drainage mapping recorded during various site visits as described in Section 9.2.5 of the EIAR; and,
- Surface Water Quality sampling as described in Section 9.3.7 of the EIAR.

1.2 STATEMENT OF AUTHORITY

Hydro-Environmental Services (HES) are a specialist geological, hydrological, hydrogeological and environmental practice that delivers a range of water and environmental management consultancy services to the private and public sectors across Ireland and Northern Ireland. HES was established in 2005, and our office is located in Dungarvan, County Waterford. We routinely complete impact assessments for hydrology and hydrogeology for a large variety of project types including wind farms.

This WFD assessment was prepared by Michael Gill, Conor McGettigan and Jenny Law.

Michael Gill (BA, BAI, Dip Geol., MSc, MIEI) is an Environmental Engineer and Hydrogeologist with over 22 years' environmental consultancy experience in Ireland. Michael has completed numerous hydrological and hydrogeological impact assessments of wind farms and renewable projects in Ireland, as well as accompanying Flood Risk Assessments. He has substantial experience in surface water drainage design and SUDs design and surface water/groundwater interactions. For example, Michael has worked on the EIS for Oweninny WF, Cloncreen WF, and Yellow River WF, and over 100 other wind farm-related projects.

Conor McGettigan (BSc, MSc) is an Environmental Scientist with over 5 years' experience in the environmental sector in Ireland. Conor holds an M.Sc. in Applied Environmental Science and a B.Sc. in Geology from UCD. Conor has prepared the Hydrology and Hydrogeology chapter of the Environmental Impact Assessment Reports (EIARs) for numerous wind farm

developments, grid connections and quarries. Conor has worked on several wind farm EIAR projects and associated Flood Risk Assessments and Water Framework Directive Assessment reports.

Jenny Law (BSc, MSc) is an environmental geoscientist holding a first honour's degree in applied environmental geosciences from the UCC (2022). Jenny has assisted in the preparation of the land, soils and geology and hydrology chapters for various environmental impact assessment reports, hydrological impact assessments, Water Framework Directive Assessment reports and Flood Risk Assessment reports for a variety of projects including wind farm developments and strategic housing developments.

1.3 WATER FRAMEWORK DIRECTIVE

The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU ("**WFD**"), was established to ensure the protection of the water environment. The Directive was transposed in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003).

The WFD requires that all member states protect and improve water quality in all waters, with the aim of achieving good status by 2027 at the latest. Any new development must ensure that this fundamental requirement of the WFD is not compromised.

The WFD is implemented through the River Basin Management Plans (RBMP) which comprises a six-yearly cycle of planning, action and review. RBMPs include identifying river basin districts, water bodies, protected areas and any pressures or risks, monitoring and setting environmental objectives. In Ireland the first RBMP covered the period from 2010 to 2015 with the second cycle plan covering the period from 2018 to 2021.

The Water Action Plan 2024: a River Basin Management Plan for Ireland outlines the new approach that Ireland will take as it works to protect and restore its rivers, lakes, estuaries and coastal waters over the 3rd cycle of the EU Water Framework Directive (WFD). The Water Action plan was published in September 2024 and builds on the lessons learned from the previous river basin management plans.

The following evidence-based priorities have been adopted for the 3rd river basin planning cycle:

- Ensure full compliance with relevant EU legislation.
- Prevent deterioration.
- Meet the water standards and objectives for designated protected areas.
- Protect high-status waters.
- Implement targeted actions and pilot schemes in focus sub-catchments aimed at (i) targeting water bodies close to meeting their objective and (ii) addressing more complex issues that will build knowledge for future cycles.

Our understanding of these objectives is that water bodies, regardless of whether they have 'Poor' or 'High' status, should be treated the same in terms of the level of protection and mitigation measures employed.

2. WATERBODY IDENTIFICATION AND CLASSIFICATION

2.1 INTRODUCTION

This section identifies those Surface Waterbodies (SWBs), Groundwater Bodies (GWBs) and protected areas with potential to be affected by the Proposed Development and reviews all available WFD information.

2.2 SURFACE WATERBODY IDENTIFICATION

On a regional scale, the Wind Farm Site is located in the Blacksod-Broadhaven Bay surface water catchment within Hydrometric Area 33 of the Western River Basin District and the Glencullin [North Mayo]_SC_010 river sub-catchment.

More locally the Wind Farm Site is mapped in 2 no. WFD river sub-basins:

- The majority of the Wind Farm Site is located in the Cloonalaghan_010 WFD river sub-basin. This area is drained by the Cloonalaghan River and its tributaries. The Cloonalaghan River flows to the northeast ~130m east of wind turbine AT01 before discharging into Lackan Bay. All watercourses within this area of the Wind Farm Site form part of the Cloonalghan_010 SWB.
- The northeast of the Wind Farm Site is located in the Knockboha_010 WFD river sub-basin. This area is drained by several 1st and 2nd order streams which flow downslope (i.e. to the north and east) before discharging into the Atlantic Ocean. The primary mapped watercourse in this sub-basin is the Knockboha Stream. The watercourses in the vicinity of the Wind Farm Site are locally unnamed and are referred to by the EPA as the Castletown Stream. This watercourse is mapped to originate ~250m northeast of wind turbine AT15. All watercourses within this area of the Wind Farm Site form part of the Knockboha_010 SWB.

In terms of the Grid Connection, in the vicinity of the Wind Farm Site the route is located in the Blacksod-Broadhaven surface water catchment and is drained by the Cloonalaghan_010 SWB.

Further to the south the Grid Connection is located in the Moy and Killala Bay surface water catchment within Hydrometric Area 34. The northern part is located in the Cloonaghmore_SC_010 sub-catchment and passes through the Cloonaghmore_050 and Cloonaghmore_060 WFD river sub-basins. Downstream the Cloonaghmore_060 SWB discharges into the Cloonaghmore Estuary transitional waterbody at Palmerstown Bridge. This transitional waterbody in turn discharges into the Killala Bay coastal waterbody. Further to the southeast, in the vicinity of Tawnaghmore substation, the Grid Connection is located in the Abbeytown_SC_010 sub-catchment and the Moyne_010 river sub-basin. Here the Moyne_010 SWB discharges into the Killala Bay coastal waterbody.

Figure A below presents is a local hydrology map.

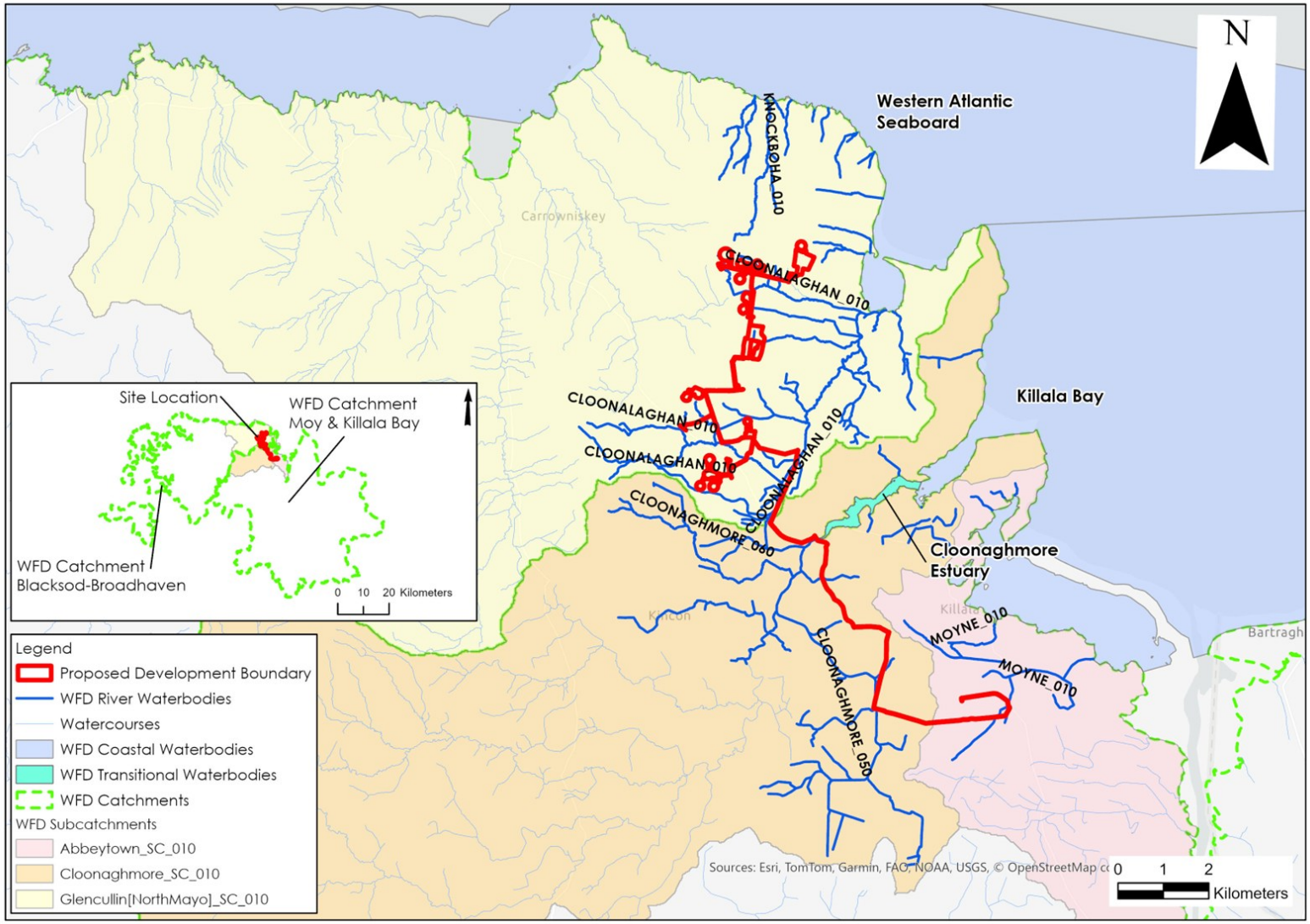

Figure A: Local Hydrology Map

2.3 SURFACE WATER BODY CLASSIFICATION

A summary of the WFD status and risk result for Surface Water Bodies (SWBs) downstream of the Proposed Development are shown in **Table A**. The overall status of SWBs is based on the ecological, chemical and quantitative status of each SWB.

Local Groundwater Body (GWB) and Surface water Body (SWB) status information is available from (www.catchments.ie).

The Cloonalaghan_010 SWB which drains the majority of the Wind Farm Site achieved 'Good' status in the 3 no. recent WFD cycles. The Knockboha_010 SWB achieved 'Moderate' status in the latest WFD cycle (2019-2024). This represented a deterioration from the 'Good' status which this SWB had previously achieved. Further downstream the Western Atlantic Seaboard coastal waterbody achieved 'High' status.

In terms of risk status, the Cloonalaghan_010 and Western Atlantic Seaboard SWBs have been deemed to be 'not at risk' of failing to meet their respective WFD objectives. Meanwhile, the risk status for the Knockboha_010 SWB is currently under review.

The 3rd Cycle Blacksod-Broadhaven Catchment Report (EPA, 2024) states that excess nutrients and sediment impacts are the most prevalent issues in the Blacksod-Broadhaven Catchment. However, the catchment report does not identify any significant pressures on any SWBs downstream of the Wind Farm Site / Grid Connection.

Within the Moy and Killala Bay catchment, all sections of the Cloonaghmore River (Cloonaghmore_050 and _060 SWBs) downstream of the Grid Connection achieved 'Good' status in the 3 no. recent WFD cycles. The Cloonaghmore Estuary achieved 'Moderate' status in the latest WFD cycle having been 'unassigned' in the previous WFD cycle (2016-2021), we note that this SWB achieved 'High' status in the 2013-2018 WFD cycle (this was assigned by grouping). In the vicinity of Tawnaghmore substation, the Moyne_010 SWB achieved 'Moderate' status in the 2 no. most recent WFD cycles. The Killala Bay coastal waterbody achieved 'Good' status in all 3 no. WFD cycles.

In terms of risk status, all SWBs, with the exception of the Moyne_010 SWB, have been deemed to be 'not at risk' of failing to meet their WFD objectives. The risk status of the Moyne_010 SWB is currently under review.

The 3rd cycle Moy and Killala Bay Catchment Report (EPA, 2024) states that the excess nutrients and morphological impacts are the most prevalent issues in this catchment. However, the catchment report does not identify any significant pressures on any SWB downstream of the Grid Connection.

The SWB status for the 2019-2024 WFD cycle are shown on **Figure B.**

Table A: Summary WFD Information for Surface Water Bodies

SWB	Overall Status (2013-2018)	Overall Status (2016-2021)	Overall Status (2019-2024)	Risk Status (3rd cycle)	Pressures
River Waterbodies					
Glencullin [North Mayo]_SC_010 sub-catchment					
Knockboha_010	Good	Good	Moderate	Under review	None
Cloonalaghan_010	Good	Good	Good	Not at risk	None
Cloonaghmore_SC_010 sub-catchment					
Cloonaghmore_050	Good	Good	Good	Not at risk	None
Cloonaghmore_060	Good	Good	Good	Not at risk	None
Abbeytown_SC_010 sub-catchment					
Moyne_010	Good	Moderate	Moderate	Under review	None
Transitional Waterbodies					
Cloonaghmore Estuary	High	Unassigned	Moderate	Not at risk	None
Coastal Waterbodies					
Western Atlantic Seaboard	High	High	High	Not at risk	None
Killala Bay	Good	Good	Good	Not at risk	None

2.4 GROUNDWATER BODY IDENTIFICATION

The bedrock geology underlying the Wind Farm Site is mapped predominantly as Dinantian Sandstones, Shales and Limestones of the Downpatrick Formation which is classified by the GSI as being a Poor Aquifer – Bedrock which is Generally Unproductive except for Local Zones (Pl). In addition, some areas in the northeast and south of the Wind Farm Site are underlain by the Dinantian Sandstones of the Mullaghmore Sandstone Formation. This bedrock formation is classified as a Locally Important Aquifer – Bedrock which is Generally Moderately Productive (Lm).

In terms of GWBs, the majority of the Wind Farm Site is underlain by the Belmullet GWB (IE_WE_G_0057) which is characterised by poorly productive bedrock. Meanwhile, the northeast and south of the Wind Farm Site is underlain by the Killala North GWB (IE_WE_G_0046) which is characterised by productive fissured bedrock.

The north of the Grid Connection is underlain by Dinantian Sandstones of the Mullaghmore Sandstone Formation. These rocks are classified by the GSI as a Locally Important Aquifer – Bedrock which is Generally Moderately Productive (Lm). A small area of the Grid Connection in the townland of Castlereagh is underlain by Dinantian Pure Bedded Limestones of the Killala Oolite Member. This is also classified as a Locally Important Aquifer – Bedrock which is Generally Moderately Productive (Lm). The south of the Grid Connection is underlain by the Dinantian Upper Impure Limestones of the Ballina Limestone Formation. These rocks are classified as being a Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones (Ll).

With respect to GWBs, the north of the Grid Connection is underlain by the Killala North GWB. Further south, the Grid Connection is underlain by the Killala South GWB (IE_WE_G_0047) and the Bellacorick-Killala GWB (IE_WE_G_0041).

2.5 GROUNDWATER BODY CLASSIFICATION

The Belmullet and the Killala North GWBs that underly the Wind Farm Site achieved 'Good' status in all 3 no. WFD cycles (2013-2018, 2016-2021 and 2019-2024) which is defined based on the quantitative status and chemical status of the GWB. Furthermore, all GWBs underling the Grid Connection (Killala North GWB, Killala South GWB and Bellacorick-Killala GWB) also achieved 'Good' status.

All GWBs underlying the Proposed Development have been deemed to be 'not at risk' of failing to meet their respective WFD objectives. No significant pressures have been identified on these GWBs. The GWB status for the 2019-2024 WFD cycle are shown on **Figure B** and in **Table B.**

Table B: Summary WFD Information for Groundwater Bodies

GWB	Overall Status (2013-2018)	Overall Status (2016-2021)	Overall Status (2019-2024)	Risk Status (3rd Cycle)	Pressures
Belmullet	Good	Good	Good	Not at risk	None
Killala North	Good	Good	Good	Not at risk	None
Killala South	Good	Good	Good	Not at risk	None
Bellacorick-Killala	Good	Good	Good	Not at risk	None

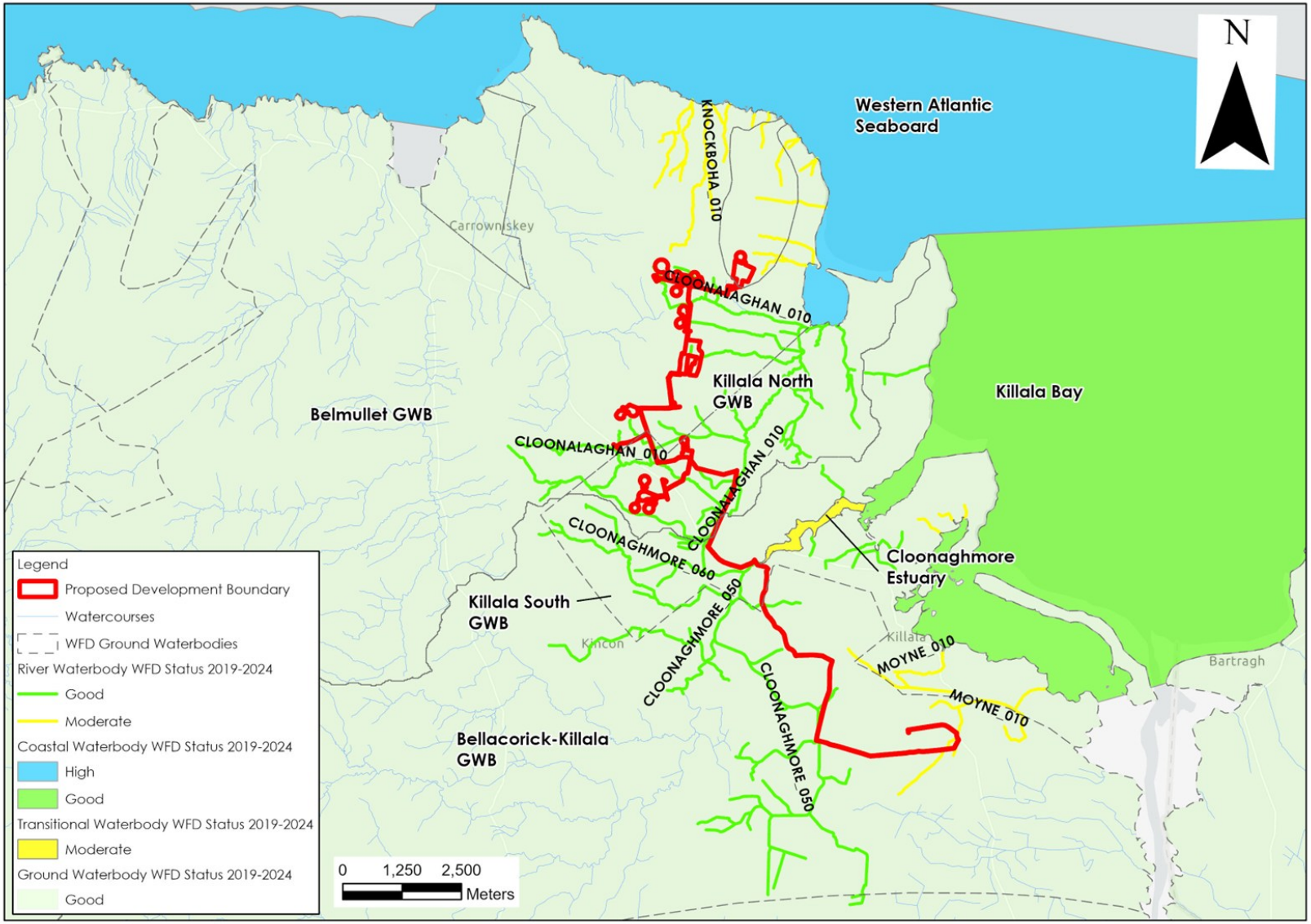

Figure B: WFD Groundwater and Surface Waterbody Status (2016-2024)

2.6 ZONE OF INFLUENCE

The Zone of Influence (ZoI) of the Proposed Development extends to the following SWBs and GWBS:

- River SWBs –Knockboha_010, Cloonalaghan_010, Cloonaghmore_050 and _060 and Moyne_010 SWBs;
- Transitional SWBs - Cloonaghmore Estuary;
- Coastal SWBs - Western Atlantic Seaboard and Killala Bay; and,
- GWBs – Belmullet, Killala North, Killala South GWB and Bellacorick-Killala GWBs.

2.7 PROTECTED AREA IDENTIFICATION

The WFD requires that activities are also in compliance with other relevant legislation, as considered below. Nature conservation designations, bathing waters, nutrient Sensitive areas (NSA), shellfish areas and drinking water protected area's (DWPA) are looked at as part of the assessment.

2.7.1 Nature Conservation Designations

Within the Republic of Ireland designated sites include Natural Heritage Areas (NHAs), Proposed Natural Heritage Areas (pNHAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC) and Special Protection Areas (SPAs).

Ramsar sites are wetlands of international importance designated under the Ramsar Convention (adopted in 1971 and came into force in 1975), providing a framework for the conservation and wise use of wetlands and their resources.

The Wind Farm Site / Grid Connection are not located within any designated conservation site, however there are designated sites in close proximity to the Proposed Development. The Proposed Development has downstream hydrological connections with several Natura 2000 sites as described below:

- The Wind Farm Site and north of the Grid Connection are hydrologically linked to the Lackan Saltmarsh and Kilcummin head SAC and pNHA (Site Code: 000516), and the Killala Bay/ Moy Estuary SPA/Ramsar site (Site Code: 004036) via the Cloonalaghan_010 SWB. At its closest point the Lackan Saltmarsh and Kilcummin head SAC and pNHA and the Killala Bay/ Moy Estuary SPA are situated approximately 1km east of the Wind Farm Site.
- The Killala Bay/ Moy Estuary SAC/pNHA (Site Code: 00458), SPA (Site Code: 004036) and Ramsar Site are located downstream Grid Connection via the Cloonaghmore and Cloonalaghan rivers. However, the Wind Farm Site is not hydrologically connected to the SAC/pNHA as the Cloonalaghan River acts as a hydrological barrier. Meanwhile, the SPA includes Lackan Bay, downstream of the Cloonalaghan River, and therefore this designated site is hydrologically connected to the Wind Farm Site.

Several designated sites are located in the local area but no significant hydrological connections exist between the sites and the Proposed Development:

- The Creevagh head pNHA (Site Code: 000482) is situated approximately 3km north of the Wind Farm Site. No hydrological connections exist between this Wind Farm Site or Grid Connection and this pNHA other than via the Atlantic Ocean.
- The Downpatrick Head pNHA (Site Code: 000494) is located approximately 5km north/northwest of Wind Farm Site. No hydrological connections exist between this Wind Farm Site or Grid Connection and this pNHA other than via the Atlantic Ocean.

- The Glenamoy Bog Complex SAC (Site Code: 000500) is located roughly 3.8km west of Wind Farm Site. The Ballinglen River provides a hydrological barrier between the Wind Farm Site and this SAC. No hydrological or hydrogeological linkages exist.
- The Killala Esker pNHA is located ~1km north of Tawnaghmore substation. However, no hydrological linkage exists between this designated site and the Grid Connection. However, this pNHA is recognised for geological reasons and has no water dependent qualifying interests. Therefore, even in an unmitigated scenario the Proposed Development would not have the potential to affect this pNHA.

2.7.2 Bathing Waters

Bathing waters are those designated under the Bathing Water Directive (76/160/EEC) or the later revised Bathing Water Directive (2006/7/EC).

The closest designated bathing waters are located at Ross beach in Killala and at Enniscrone Beach in Co. Sligo. These bathing waters are situated within the Killala Bay coastal waterbody.

2.7.3 Nutrient Sensitive Areas

Nutrient Sensitive Areas (NSA) comprise Nitrate Vulnerable Zones and polluted waters designated under the Nitrates Directive (91/676/EEC) and areas designated as sensitive areas under the Urban Wastewater Treatment Directive (UWWTD)(91/271/EEC). Sensitive areas under the UWWTD are water bodies affected by eutrophication associated with elevated nitrate concentrations and act as an indication that action is required to prevent further pollution caused by nutrients.

According to the 3rd Cycle Blacksod-Broadhaven Catchment Report (EPA 2024), there are no NSAs in the catchment.

According to the 3rd Cycle Moy and Killala Bay Catchment Report (EPA, 2024) there are only 2 no. NSAs located in this catchment. These waterbodies are not located downstream of the Proposed Development. The NSAs are situated downstream of the Castlebar urban wastewater treatment agglomerations. There is no hydrological connection between the Proposed Development and these NSAs.

2.7.4 Shellfish Areas

The Shellfish Waters Directive (2006/113/EC) aims to protect or improve shellfish waters in order to support shellfish life and growth.

Killala Bay (IE_WE_420_0000) is the nearest designated shellfish area to the Proposed Development.

2.7.5 Drinking Water

There are no DWPA's located in the vicinity or downstream of the Wind Farm Site / Grid Connection.

The Wind Farm Site is ~14.2km north of Lough Conn DWPA (IEPA1_WE_34_406b) which is the nearest DWPA. There is no hydrological linkage between this DWPA and the Wind Farm Site.

Meanwhile, all GWBs are listed as DWPAs.

3. WFD SCREENING

3.1 SURFACE WATER BODIES

With consideration for the construction, operational and decommissioning phases of the Proposed Development, it is considered that all river waterbodies draining the Wind Farm Site and the Grid Connection (*i.e.* the Knockboha_010, Cloonalaghan_010, Cloonaghmore_050, Cloonaghmore_060 and Moyne_010 SWBs) are carried through into the WFD Compliance Assessment. These SWBs have been screened in due to their close proximity to the Proposed Development and the occurrence of proposed infrastructure and works within their respective catchments. Many of these SWBs have relatively small catchment areas, making them susceptible to potential water quality impacts associated with the Proposed Development. The proposed works must not in any way result in a deterioration in the status of these SWBS and/or prevent them from meeting the biological and chemical characteristics for good status in the future.

Meanwhile, the Cloonaghmore Estuary transitional SWB is screened in due to its location directly downstream of the Cloonaghmore_060 SWB. However, the susceptibility of this SWB to potential effects will be considerably reduced in comparison to the river waterbodies due to the increased volumes of water in this transitional waterbody. The proposed works must not in any way result in a deterioration in the status of this SWB and/or prevent it from meeting the biological and chemical characteristics for good status in the future.

Further downstream, the Killala Bay and Western Atlantic Seaboard coastal SWBs have been screened out due to the large volumes of water within these SWBs and the saline nature of these waters. The Proposed Development has no potential to cause a deterioration in status of these SWBs and/or jeopardise the attainment of good surface water status in the future. Note that the Proposed Development does not in any way rely upon the dilution or assimilative capacity of any downstream waterbody. The mitigation measures prescribed in Section 9.5 of the EIAR and Section 4.3 of this report, ensure the protection of all watercourses in the vicinity of the site. By protecting local watercourses, all downstream watercourses are also protected from potential negative effects including the vulnerable coastal landscapes and associated waterbodies.

3.2 GROUNDWATER BODIES

With respect to groundwater bodies, all GWBs underlying the Wind Farm Site and Grid Connection (*i.e* the Belmullet GWB, Killala North GWB, Killala South GWB and Bellacorick-Killala GWB) have been screened in due to their location directly underlying the Proposed Development. The proposed works must not in any way result in a deterioration in the status of this GWB and/or prevent it from meeting the biological and chemical characteristics for good status in the future.

3.3 PROTECTED AREAS

Lackan Saltmarsh and Kilcummin head SAC (Site Code: 000516) is located ~1.2km east of the Wind Farm Site. The Wind Farm Site is hydrologically connected with this designated site via the Cloonalaghan River and several other smaller watercourses which drain the east of the Wind Farm Site. With consideration for the construction, operational and decommissioning phases of the Proposed Development, it is considered that the Lackan Saltmarsh and Kilcummin head SAC and pNHA is carried through into the WFD Compliance Assessment due to its proximal location downstream of the Wind Farm Site.

The area around Lackan Bay and the lower reaches of the Cloonalaghan River also form part of the Killala Bay / Moy Estuary SPA (Site Code: 004036). The Wind Farm Site is hydrologically

connected with this designated site via the Cloonalaghan River. Further south the Grid Connection is also hydrologically connected with this SPA via the Cloonaghmore River. With consideration for the construction, operational and decommissioning phases of the Proposed Development, it is considered that the Killala Bay/ Moy Estuary SPA/Ramsar site is carried through into the WFD Compliance Assessment due to its proximal location downstream of the Wind Farm Site.

Killala Bay and the Moy Estuary are also designated as an SAC (Site Code: 000458) which contains many water-dependent protected habitats and species. The Grid Connection is hydrologically linked with this SAC via the Cloonaghmore River. With consideration for the construction, operational and decommissioning phases of the Proposed Development, it is considered that the Killala Bay/ Moy Estuary SAC is carried through into the WFD Compliance Assessment due to its proximal location downstream of the Grid Connection.

The Creevagh Head pNHA and the Downpatrick Head pNHA are mapped within the Western Atlantic Seaboard coastal waterbody and in close proximity to the Wind Farm Site. However, these designated sites have been screened out due to the large volumes of water within the coastal waterbody and the saline nature of these waters. The Proposed Development has no potential to cause a deterioration in status of the Creevagh Head pNHA or the Downpatrick Head pNHA.

There are no rivers or streams connecting the Glenamoy Bog Complex SAC to the Proposed Development. In addition, the Ballinglen Rivers act as hydrological barrier between the Wind Farm Site and this SAC. Therefore, the Glenamoy Bog Complex SAC has been screened out as the Proposed Development has no potential to impact this designated site.

The Killala Esker pNHA has been screened out due to the lack of hydrological connections between the Grid Connection and this pNHA.

The Lough Conn DWPA has been screened out due to its distant location (~14.2km) from the Wind Farm Site. The Proposed Development has no hydrological linkage to this DWPA and no potential to impact this DWPA.

The bathing waters at Enniscrone Beach and Ross beach, and the designated shellfish area in Killala Bay, have been screened out due the large volumes of water within the coastal waterbodies and the saline nature of these waters. The Proposed Development has no potential to impact these designated bathing waters or shellfish areas.

3.4 WFD SCREENING SUMMARY

A summary of WFD Screening discussed above is shown in **Table C**.

Table C: Screening of WFD water bodies located within the Study Area

Type	WFD Classification	Waterbody Name/ID	Inclusion in Assessment	Justification
SWB	River	Knockboha_010	**Yes**	The northeast of the Wind Farm Site, including 2 no. turbines (AT15 and AT16) is located in the Knockboha_010 WFD river sub-basin. An assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	River	Cloonalaghan_010	**Yes**	The majority of the Wind farm Site, including 14 no. turbines, the substation, the met mast, 2 no. temporary construction compounds, operations building, is located in the Cloonalaghan_010 WFD river sub-basin. In addition, the north of the Grid Connection, including 2 no. watercourse crossings, is located in this WFD river sub-basin. An assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	River	Cloonaghmore_050	**Yes**	A section of the Grid Connection, including 3 no. watercourse crossings, is mapped in the Cloonaghmore_050 WFD river sub-basin. An assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	River	Cloonaghmore_060	**Yes**	A section of the Grid Connection, including 2 no. watercourse crossings, is mapped in the Cloonaghmore_060 WFD river sub-basin. An assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	River	Moyne_010	**Yes**	The east of the Grid Connection, including 3 no. watercourse crossings, is mapped in the Moyne_010 WFD river sub-basin. An assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	Transitional	Cloonaghmore Estuary	**Yes**	The Cloonaghmore Estuary SWB is located directly downstream of the Cloonaghmore_060 SWB. Therefore, an assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	Coastal	Western Atlantic Seaboard	No	The Western Atlantic Seaboard SWB has been screened out due to the saline nature of its waters and the large volumes of water within the coastal waterbody. The Proposed Development has no potential to impact the status of this SWB.
	Coastal	Killala Bay	No	The Killala Bay SWB has been screened out due to the saline nature of its waters and the large volumes of water within this coastal waterbody. The Proposed Development has no potential to impact the status of this SWB.
GWB	Groundwater	Belmullet GWB	**Yes**	Much of the Wind Farm Site overlies the Belmullet GWB. An assessment is required to consider potential impacts of the Proposed Development on this GWB.
	Groundwater	Killala North	**Yes**	The northeast and south of the Wind Farm Site and the north of the Grid Connection are underlain by the Killala North GWB. An assessment is required to consider potential impacts of the Proposed Development on this GWB.

	Groundwater	Killala South	**Yes**	A section of the Grid Connection is underlain by the Killala South GWB. An assessment is required to consider potential impacts of the Proposed Development on this GWB.
	Groundwater	Bellacorick-Killala	**Yes**	A section of the Grid Connection is underlain by the Bellacorick-Killala GWB. An assessment is required to consider potential impacts of the Proposed Development on this GWB.
Protected areas	Nature Conservation Designations	The Lackan Saltmarsh and Kilcummin head SAC & pNHA	**Yes**	The Lackan Saltmarsh and Kilcummin head SAC and pNHA are located downstream of the Wind Farm Site. An assessment is required to consider potential impacts of the Proposed Development on this site.
		Killala Bay / Moy Estuary SPA/ Ramsar site	**Yes**	The Killala Bay/ Moy Estuary SPA is located downstream of the Wind Farm Site and the Grid Connection at Lackan Bay and the lower reaches of the Cloonalaghan estuary. Further south, this designated site is also hydrologically connected to the Grid Connection via the Cloonaghmore River. An assessment is required to consider potential impacts of the Proposed Development on this site.
		Killala Bay/ Moy Estuary pNHA, SAC & Ramsar site	**Yes**	The Grid Connection is hydrologically connected to this SAC via the Cloonaghmore River. An assessment is required to consider potential impacts of the Proposed Development on this site.
		Creevagh head pNHA	No	Creevagh Head pNHA has been screened out due to its location within the Western Atlantic Seaboard coastal waterbody, the large volumes of water within this SWB and the saline nature of the waters. The Proposed Development has no potential to impact the status of the designated site.
		Downpatrick Head pNHA	No	Downpatrick Head pNHA has been screened out due to its location within the Western Atlantic Seaboard coastal waterbody, the large volumes of water within this SWB and the saline nature of the waters. The Proposed Development has no potential to impact the status of the designated site.
		Glenamoy Bog Complex SAC	No	There are no hydrological linkages between the Wind Farm Site and the Glenamoy Bog Complex SAC. Therefore, no hydrological or hydrogeological impacts will occur on this designated site.
		Killala Esker pNHA	No	There are no hydrological linkages between the Grid Connection and the Killala Esker pNHA. Therefore, no hydrological or hydrogeological impacts will occur on this designated site.
	Bathing Waters	Enniscrone Beach	No	The Enniscrone Beach bathing waters have been screened out due to its distant location from the Wind Farm Site (~12.5km). The Proposed Development has no potential to impact these Bathing Waters.

	Bathing Waters	Ross Beach	No	The bathing waters at Ross Beach have been screened out as the only hydrological linkage between the Wind Farm Site / Grid Connection is via the Cloonaghmore River, the Cloonaghmore Estuary and the Killala Bay coastal SWB. The bathing waters have been screened out due to the large volumes of water within the coastal SWB and the saline nature of these waters. The Proposed Development has no potential to impact these Bathing Waters.
	Shellfish Waters	Killala Bay	No	The shellfish waters in Killala Bay have been screened out as the only hydrological linkage between the Wind Farm Site / Grid Connection is via the Cloonaghmore River, the Cloonaghmore Estuary and the Killala Bay coastal SWB. The designated shellfish waters have been screened out due to the large volumes of water within the coastal SWB and the saline nature of these waters. The Proposed Development has no potential to impact this Shellfish Area.
	Drinking Water	Lough Conn	No	The Lough Conn DWPA has been screened out due to its distant location (~14.2km) from the Wind Farm Site and the lack of any hydrological connectivity. The Proposed Development has no potential to cause a deterioration in the status of this DWPA.

4. WFD COMPLIANCE ASSESSMENT

4.1 DEVELOPMENT PROPOSAL

The Proposed Development comprises the erection of 16 no. wind turbines and associated Turbine Hardstands and Turbine Foundations. 16 no. Vestas V117 turbines are proposed and will have a blade tip height of 135 m.

The Proposed Development also includes a meteorological mast, a 110 kV onsite electrical substation and 2 no. control buildings, the installed of battery arrays adjacent to the Onsite Substation (20 no. container units), 2 no. Temporary Construction Compounds, Battery Energy Storage System (BESS), a Permanent Operations Compound, 17 no. permanent onsite spoil deposition areas and the construction of new internal Site Access Tracks (9.64 km) and the upgrade of existing Site Access Tracks and public roads (2.28 km of private Access Tracks and 1.58 km of public roads).The Proposed Development includes 5 no. new site entrances and the upgrade of 9 no. existing site entrances. Approximately 31.86 ha of coniferous forestry will be felled to facilitate the Proposed Development. The Proposed Development also includes Biodiversity Enhancement Measures. The Proposed Development also includes an underground grid connection route from the Wind Farm Site to the existing Tawnaghmore 110kV substation in the townland of Tawnaghmore Upper and improvements and temporary accommodation requirements along the Turbine Delivery Route (TDR).

Due to the nature of wind farm developments, being near surface construction activities, impacts on groundwater are generally negligible and surface water is generally the main sensitive receptor assessed during impact assessments. The primary risks to groundwater at the will be the chemical pollution of groundwater from cementitious materials, hydrocarbon spillage and leakages. Potential piling works also have the potential to impact groundwater levels.

The primary risk to surface waters will be entrained suspended sediments (peat and soil particles) in site runoff during earthworks and tree felling along with release cement-based compounds and/or hydrocarbons. The Proposed Development may also result in changes to surface water runoff volumes and flow patterns. The Proposed Development includes works over and in close proximity to waterbodies.

4.2 POTENTIAL EFFECTS

4.2.1 Construction Phase (Unmitigated)

4.2.1.1 Potential Surface Water Quality Effects from Works within the Wind Farm Site

Construction phase activities including tree felling, site levelling/construction and building turbine foundation excavation and the spoil deposition areas will require earthworks resulting in removal of vegetation cover and excavation of peat, soil and subsoils. The main risk will be from surface water runoff from bare soil/peat, spoil storage areas and spoil deposition areas drainage during construction works.

Hydrocarbons and cement-based compounds will be used during the construction phase. Accidental spillage during refuelling of construction plant with petroleum hydrocarbons is a significant pollution risk to surface waters at all construction sites. The accumulation of small spills of fuels and lubricants during routine plant use can also be a pollution risk. Hydrocarbon has a high toxicity to humans, and all flora and fauna, including fish, and is persistent in the environment. It is also a nutrient supply for adapted micro-organisms, which can rapidly deplete dissolved oxygen in waters, resulting in the death of aquatic organisms.

Release of effluent from wastewater treatment systems also has the potential to impact on surface waters if site conditions are not suitable for an on-site percolation unit.

Within the Wind Farm Site, there are a total of 12 no. watercourse crossings. 7 no. crossings are located along existing public and private roads and there will be no requirement for the construction or upgrade of these crossings. Works will be required at a total of 5 no. crossing locations.

The upgrade of existing crossings and the construction of new watercourse crossings (Site Access Tracks and cable connection crossings) has the potential to significantly interfere with water quality and flows during the construction phase. Directional drilling will be used at 1 no. crossing location within the Wind Farm Site.

Clear felling of coniferous forestry plantations is also proposed over 31.8ha. Potential surface water quality effects from felling include the release of elevated concentrations of suspended solids and nutrient release which has the potential to effect downstream surface water quality.

Construction phase activities can result in the release of suspended solids and pollutants in runoff water and could result in an increase in the suspended sediment load, resulting in increased turbidity, increased pH and contamination which in turn could affect the water quality and fish stocks in the downstream SWBs.

The SWBs likely to be impacted by these activities include Knockboha_010 and Cloonaghlan_010 river waterbodies. The potential for water quality effects will decrease once the waters become saline (i.e. transitional waterbody) due to the large volumes of water within this SWB and the saline nature of these waters.

A summary of potential status change to SWBs arising from surface water quality impacts from earthworks during the construction phase of the Proposed Development in the unmitigated scenario are outlined in **Table D**.

Table D: Surface Water Quality Effects during Construction Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Knockboha_010	IE_WE_33K030830	Moderate	Poor
Cloonalaghan_010	IE_WE_33C010700	Good	Moderate

4.2.1.2 Potential Surface Water Quality Effects Along the Grid Connection

There will be a requirement for 10 no. watercourse crossings along the Grid Connection. These are located over existing bridges and culverts along the local road network.

Due to the close proximity of local waterbodies to the construction work at the crossing locations, there is a potential for surface water quality impacts during trench excavation work due to runoff from the road surface. This runoff may contain elevated concentrations of suspended sediment, cementitious runoff and/or hydrocarbons.

Some minor groundwater/surface water seepages will likely occur in trench excavations and substation foundation excavations, and this will create additional volumes of water to be treated by the runoff management system. Inflows will likely require management and treatment to reduce suspended sediments.

Directional drilling will be used at 3 no. crossings along the Grid Connection. These activities have the potential to impact local surface water quality.

Construction activities along the Grid Connection have the potential to adversely impact local surface water quality. However, due to the minor and transient nature of the works along the Grid Connection there would be very limited potential to change the overall status of the local SWBs.

A summary of potential status change to SWBs arising from works along the Grid Connection during the unmitigated construction phase are outlined in **Table E**.

Table E: Potential Surface Water Quality Effects along Grid Connection during Construction Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Cloonalaghan_010	IE_WE_33C010700	Good	Good
Cloonaghmore_050	IE_WE_34C030270	Good	Good
Cloonaghmore_060	IE_WE_34C030300	Good	Good
Moyne_010	IE_WE_34M190890	Moderate	Moderate
Cloonaghmore Estuary	IE_WE_420_0100	Moderate	Moderate

4.2.1.3 Potential Groundwater Quality/Quantity Effects at Wind Farm Site

The accidental spillage of hydrocarbons, the release of effluent from wastewater treatment systems and the release of cement-based products have the potential to negatively impact on groundwater water quality at the Wind Farm Site.

In addition, groundwater seepages may occur in turbine base excavations, particularly those on lower elevations and this will create additional volumes of water to be treated by the drainage management system.

Furthermore, temporary dewatering of excavations (turbine base etc) may drawdown the local groundwater table. However, given the scale of the Proposed Development in comparison to the size of the underlying GWBs (Belumullet GWB – 1,204km^2 and Killala North 20km^2), there is limited potential for the Proposed Development to change the overall status of these GWBs.

A summary of potential status change to GWBs arising from works at the Wind Farm Site during the unmitigated construction phase are outlined in **Table F**.

Table F: Potential Groundwater Quantity/Quality Effects at Wind Farm Site during Construction Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Potential Status Change
Belmullet GWB	IE_WE_G_0057	Good	Good
Killala North	IE_WE_G_0046	Good	Good

4.2.1.4 Potential Effects on Groundwater Quality/Quantity along the Grid Connection

The accidental spillage of hydrocarbons, the release of effluent from wastewater treatment systems and the release of cement-based products have the potential to negatively impact on groundwater water quality along the Grid Route.

Some minor groundwater/surface water seepages will likely occur in trench excavations which will impact local groundwater quantity. However, given the minor and transient nature of the proposed works in comparison to the scale of the GWBs, there is no potential for effects on the WFD status of the local GWBs.

A summary of potential status change to GWBs arising from works along the Grid Connection during the unmitigated construction phase are outlined in **Table G**.

Table G: Potential Effects on Groundwater Quantity/Quality along Grid Connection during Construction Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Potential Status Change
Killala North	IE_WE_G_0046	Good	Good
Killala South	IE_WE_G_0047	Good	Good
Bellacorick-Killala	IE_WE_G_0041	Good	Good

4.2.1.5 Potential Effects on Protected Areas

Lackan Saltmarsh and Kilcummin Head pNHA and SAC

The Lackan Saltmarsh and Kilcummin head SAC/pNHA is located ~1.2km to the east and downstream of the Wind Farm Site. Within this designated site, there is an excellent diversity of coastal habitats including mature dunes, saltmarsh, rocky sea cliffs, dune grassland and estuarine sandflats.

The site is a Special Area of Conservation (SAC) selected for the following habitats and/or species listed on Annex I / II of the E.U. Habitats Directive (*numbers in brackets are Natura 2000 codes):

- [1310] Salicornia Mud
- [1330] Atlantic Salt Meadows
- [1410] Mediterranean Salt Meadows
- [2120] Marram Dunes (White Dunes)
- [2130] Fixed Dunes (Grey Dunes)

A hydrological linkage exists between the Proposed Development and the Cloonalaghan River, which is forms part of the Lackan Saltmarsh and Kilcummin head SAC and pNHA. With the requirement for earthworks during the construction phase there is potential for contaminants, mainly suspended solids, to enter the Cloonalaghan River and the Lackan Saltmarsh and Kilcummin head SAC and pNHA. Such contaminants could affect aquatic life.

Therefore, it can be concluded that the Proposed Development may have the potential to affect this SAC/pNHA in an unmitigated scenario throughout the construction phase.

Killala Bay/ Moy Estuary SPA

The very northern part of the Killala Bay/ Moy Estuary SPA and Ramsar site is located ~1.2km to the east and downstream of the Wind Farm Site within Lackan Bay.

Killala Bay/Moy Estuary SPA is of high ornithological importance as it supports eight species that have populations of national importance, including a very substantial population of Grey Plover (3.4% of the all-Ireland total). The presence of Red throated Diver, Golden Plover and Bar-tailed Godwit is of particular note as these species are listed on Annex I of the E.U. Birds Directive.

The actual conservation interests of the SPA are listed below:

- A137 Ringed Plover (*Charadrius hiaticula*)
- A140 Golden Plover (*Pluvialis apricaria*)
- A141 Grey Plover (*Pluvialis squatarola*)
- A144 Sanderling (*Calidris alba*)
- A149 Dunlin (*Calidris alpina alpina*)
- A157 Bar-tailed Godwit (*Limosa lapponica*)
- A160 Curlew (*Numenius arquata*)
- A162 Redshank (*Tringa tetanus*)
- A999 Wetlands

A hydrological linkage exists between the Proposed Development and the Cloonalaghan River, mapped within the Killala Bay/Moy Estuary SPA. With the requirement for earthworks during the construction phase there is potential for contaminants, mainly suspended solids, to enter the Cloonalaghan River and ultimately the Killala Bay/Moy Estuary SPA.

Therefore, it can be concluded that the Proposed Development may have the potential to affect this SPA in an unmitigated scenario throughout the construction phase.

Killala Bay / Moy Estuary SAC

Killala Bay and the Moy Estuary are also designated as an SAC (Site Code: 000458) which contains many water-dependent protected habitats and species. The site is a Special Area of Conservation for the following habitats and species listed on Annex I/II of the E.U. Habitats Directive:

- [1130] Estuaries
- [1140] Tidal Mudflats and Sandflats
- [1210] Annual Vegetation of Drift Lines
- [1230] Vegetated Sea Cliffs
- [1310] Salicornia Mud
- [1330] Atlantic Sea Meadows
- [2110] Embryonic Shifting Dunes
- [2120] Marram Dunes
- [2130] Fixed Dunes
- [2190] Humid Dune Slacks
- [1014] Narrow-mouthed Whorl Snail (Vertigo angustior)
- [1095] Sea Lamprey (Petromyzon marinus)
- [1365] Common (Harbour) Seal (Phoca vitulina)

The Grid Connection is hydrologically linked with this SAC via the Cloonaghmore River. With the requirement for earthworks during the construction phase there is potential for contaminants, mainly suspended solids, to enter the Cloonaghmore River and ultimately the Killala Bay/Moy Estuary SAC.

Therefore, it can be concluded that the Proposed Development may have the potential to affect this SAC in an unmitigated scenario throughout the construction phase.

4.2.2 Operational Phase (Unmitigated)

4.2.2.1 Surface Water Quantity Effects Downstream of Wind Farm Site

The replacement of soil or vegetated surfaces with impermeable surfaces could potentially result in an increase in the proportion of surface water runoff reaching the surface water drainage network. This could potentially increase runoff from the Wind Farm Site and increase flood risk downstream of the Proposed Development.

During storm rainfall events, additional runoff coupled with increased velocity of flow could increase hydraulic loading, resulting in erosion of watercourses and causing hydromorphological effects. However as detailed in Chapter 9 of the EIAR, the total permanent footprint of the development represents just 8.5% of the site area and would, in a worst case scenario, result in a 1.5% increase in the average daily/monthly runoff volume from the Site. This would have no potential to affect the WFD status of the local SWBs.

A summary of potential status change to SWBs arising from increased runoff during the operation phase of the Proposed Development in the unmitigated scenario are outlined in **Table H**.

Table H: Potential Effect on Surface Water Quantity During Operational Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Knockboha_010	IE_WE_33K030830	Moderate	Moderate
Cloonalaghan_010	IE_WE_33C010700	Good	Good

4.2.2.2 Surface Water Quality Effects Downstream of Wind Farm Site

During the operational phase, the potential for silt-laden runoff is much reduced compared to the construction phase. In addition, all permanent drainage controls will be in place, and the disturbance of ground and excavation works will be complete. Some minor maintenance works may be completed, such as maintenance of site entrances, internal roads and hardstand areas. These works would be of a very minor scale and would be very infrequent. Potential sources of sediment laden water would only arise from surface water runoff from small areas where new material is added during maintenance works.

Furthermore, during the operational phase, a permanent operations building will be in operation in the Cloonalaghan_010 river sub-basin. Any release of untreated wastewater from the onsite welfare facilities would have the potential to impact nearby surface watercourses.

Given the nature of the works completed during the operational phase, there is limited potential for the Proposed Development to result in a change in the qualitative status of the receiving waterbodies.

A summary of potential status change to SWBs arising from surface water quality impacts during the operation phase of the Proposed Development in the unmitigated scenario are outlined in **Table I**.

Table I: Surface Water Quality Effects during Operational Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Knockboha_010	IE_WE_33K030830	Moderate	Moderate
Cloonalaghan_010	IE_WE_33C010700	Good	Good

4.2.2.3 Potential Groundwater Quality Effects

During the operational phase any untreated discharge of wastewater at the proposed operations building would have the potential to impact local groundwater quality.

The proposed operations building overlies the Belmullet GWB. This is a large GWB which covers an area of 1,204km^2. Therefore, even in an unmitigated scenario there is no potential for the Proposed Development to impact the WFD status of the GWBs.

A summary of potential status change to SWBs arising from surface water quality impacts during the operation phase of the Proposed Development in the unmitigated scenario are outlined in **Table J**.

Table J: Potential Groundwater Quantity/Quality Effects at Wind Farm Site during Construction Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Potential Status Change
Belmullet GWB	IE_WE_G_0057	Good	Good
Killala North	IE_WE_G_0046	Good	Good

4.2.2.4 Potential Effects on Protected Areas

During the operational phase, the potential for silt-laden runoff is much reduced compared to the construction phase. In addition, all permanent drainage controls will be in place and the disturbance of ground and excavation works will be complete.

Therefore, the risk of any operational phase activities that may affect the conservation objectives of the designated sites is greatly reduced.

4.3 MITIGATION MEASURES

In order to mitigate against the potential negative effects on surface and groundwater quality, quantity and flow patterns, mitigation measures will be implemented during the construction and operational phases of the Proposed Development. These are outlined below.

4.3.1 Construction Phase

4.3.1.1 Mitigation Measures to Protect Surface Water Quality

A suite of general SuDs drainage controls available for surface water management are summarised (along with their application) in **Table K** below. These include avoidance controls, source controls, in-line controls, water treatment controls, and outfall controls.

During the construction phase of the Proposed Development, excavations will be limited to minimise the generation of spoil. Sediment will be generated where excavations are required (turbine foundations) and dirty water from these work areas will be routed via drains to

settlement ponds for treatment and removal of suspended solids prior to release into the existing drainage network. There will be no direct or untreated discharge from construction work areas into the existing drainage network.

Finally, regular inspection and maintenance for the on-site drainage system will be completed regularly during the construction phase. This will be a particular importance following periods of heavy rainfall to check for blockages in any drains and any excess build-up of silt within settlement ponds which will decrease the effectiveness of the drainage system unless removed.

Table K: Summary of Drainage Mitigation & their Application

Management Type	Description of SuDs drainage control method	Applicable Works Area
Avoidance Controls:	• Application of 50m buffer zones to natural watercourses where possible; • Using small working areas; • Working in appropriate weather and suspending certain work activities in advance of forecasted wet weather.	Construction work areas where sediment is being generated.
Source Controls:	• Use of upstream interceptor drains and downstream collector drains, vee-drains, diversion drains, flumes and culvert pipes.	Construction work areas where sediment is being generated.
	• Using small working areas; • Covering stockpiles; • Weathering off / sealing stockpiles and promoting vegetation growth.	Stockpiles areas
In-Line Controls:	• Interceptor drains, vee-drains, oversized swales/collector drains; • Erosion and velocity control measures such as: o sand bags; o oyster bags filled with gravel; o filter fabrics; o straw bales; o flow limiters; o weirs or baffles; o and/or other similar/equivalent or appropriate systems. • Silt fences, filter fabrics; • Collection sumps, temporary sumps, pumping systems; • Attenuation lagoons; • Sediment traps, stilling / settlement ponds.	Interceptor and collection drainage systems
Water Treatment Controls:	• Temporary sumps; • Attenuation ponds; • Temporary storage lagoons; • Sediment traps, Stilling / Settlement ponds, silt bags; • Proprietary settlement systems such as Siltbuster, and/or other similar/equivalent or appropriate systems.	Surface water treatment locations
Outfall Controls:	• Level spreaders; • Buffered outfalls; • Vegetation filters; • Silt bags; • Flow limiters and weirs.	Drainage run outfalls and overland discharge points

Each element of the Proposed Development (*i.e.,* access roads, turbines, and spoil repository) will have an array of drainage control measures to ensure protection of downstream watercourses. Each drainage control element is not stand alone but occurs as part of a treatment train of control systems (i.e., check dams, silt traps, settlement ponds etc).

Monitoring will be completed during the construction phase to ensure that there are no water quality issues. A Surface Water Management Plan is attached to the CEMP (Management Plan 3 of the CEMP (Appendix 2.1).

4.3.1.2 Mitigation Measures to Protect Against Release of Hydrocarbons

The potential pollution of groundwater during the construction phase will be mitigated by the provision of appropriate controls and working methods. These include best practice methods for storage and handling of fuels and chemicals and include:

- On site re-fuelling of machinery will be carried out using a mobile double skinned fuel bowser.
- The fuel bowser, a double axel custom-built refuelling trailer will be re-filled off site, and will be towed around the site by a 4x4 jeep to where machinery is located.
- The 4x4 jeep will also carry fuel absorbent material and pads in the event of any accidental spillages.
- The fuel bowser will be parked on a level area in the construction compound when not in use and only designated trained and competent operatives will be authorised to refuel plant on site.
- Mobile measures such as drip trays and fuel absorbent mats will be used during all refuelling operations;
- Onsite refuelling will be carried out by trained personnel only;
- A permit to fuel system will be put in place;
- Taps, nozzles or valves associated with refuelling equipment will be fitted with a lock system;
- All fuel storage areas will be bunded appropriately for the duration of the construction phase. All bunded areas will be fitted with a storm drainage system and an appropriate oil interceptor. Ancillary equipment such as hoses, pipes will be contained within the bunded area;
- Fuel and oil stores including tanks and drums will be regularly inspected for leaks and signs of damage;
- The electrical control building (at the substation) will be bunded appropriately to the volume of oils likely to be stored and to prevent leakage of any associated chemicals to groundwater or surface water. The bunded area will be fitted with a storm drainage system and an appropriate oil interceptor;
- The plant used during construction will be regularly inspected for leaks and fitness for purpose;
- An emergency plan for the construction phase to deal with accidental spillages is included within the Construction and Environmental Management Plan; and,
- Spill kits will be available to deal with any accidental spillage in and outside the re-fuelling area.

4.3.1.3 Mitigation Measures to Prevent Release of Wastewater

The best practice methods for wastewater management at the proposed on-site construction compound during the construction phase include:

- During the construction phase, a self-contained port-a-loo with an integrated waste holding tank will be used at each of the site construction compounds, maintained by the providing contractor, and removed from site on completion of the construction works;
- Water supply for the site office and other sanitation will be brought to site and removed after use from the site to be discharged at a suitable off-site treatment location; and,
- No water or wastewater will be sourced on the site, nor discharged at the Wind Farm Site.

4.3.1.4 Mitigation Measures to Prevent Release of Cement-Based Products

Best practice methods for cement-based compounds includes:

- No batching of wet-concrete products will occur on site. Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place;
- Where possible pre-cast elements for culverts and concrete works will be used;
- Where concrete is delivered on site, only the chute will be cleaned, using the smallest volume of water practicable. No discharge of concrete contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water will be undertaken at lined concrete washout ponds;
- Weather forecasting will be used to plan dry days for pouring concrete; and,
- The pour site will be kept free of standing water and plastic covers will be ready in case of sudden rainfall event.

4.3.1.5 Mitigation Measures for Clear-Felling

All felling operations will conform to current best practice Forest Service regulations, policies and strategic guidance documents as well as Coillte and DAFM guidance documents, to ensure that felling, planting and other forestry operations result in minimal potential negative effects to the receiving environment.

There is a requirement in the Forest Service Code of Practice and in the FSC Certification Standard for the installation of buffer zones adjacent to aquatic zones at planting stage. Minimum buffer zone widths recommended in the Forest Service (2000) guidance document "Forestry and Water Quality Guidelines" will be adhered to during felling operations. The setback distance from sensitive hydrological features means that adequate room is maintained for the proposed mitigation measures (discussed below) to be properly installed and operate effectively.

Mitigation measures which will reduce the risk of entrainment of suspended solids and nutrient release in surface watercourses comprise best practice methods which are set out as follows:

- Machine combinations will be chosen which are most suitable for ground conditions at the time of felling, and which will minimise soils disturbance. The harvester and the forwarder are designed specifically for the forest environment and are low ground pressure machines;
- All machinery will be operated by suitably qualified personnel;
- Checking and maintenance of roads and culverts will be on-going through any felling operations. No tracking of vehicle through watercourses will occur, as vehicles will use road infrastructure and existing watercourse crossing points. Where possible, existing drains will not be disturbed during felling works;
- These machines will traverse the site along specified off-road routes (referred to as racks);
- The location of racks will be chosen to avoid wet and potentially sensitive areas;
- Brash mats will be placed on the racks to support the vehicles on soft ground, reducing peat and mineral soil disturbance and erosion and avoiding the formation of rutted areas, in which surface water ponding can occur. Brash mat renewal should take place when they become heavily used and worn. Provision should be made for brash mats along all off-road routes, to protect the soil from compaction and rutting. Where there is risk of severe erosion occurring, extraction will be suspended during periods of high rainfall;
- Silt fences will be installed at the outfalls of existing drains downstream of felling areas. No direct discharge of such drains to watercourses will occur. Sediment traps and silt fences will be installed in advance of any felling works and will provide surface water

settlement for runoff from work areas and will prevent sediment from entering downstream watercourses. Accumulated sediment will be carefully disposed of at pre-selected peat disposal areas. Where possible, all new silt traps will be constructed on even ground and not on sloping ground;
- In areas particularly sensitive to erosion it will be necessary to install double or triple sediment traps and increase buffer zone width. These measures will be reviewed on site during construction;
- Double silt fencing will also be put down slope of felling areas which are located in close proximity to streams and/or relevant watercourses;
- Drains and silt traps will be maintained throughout all felling works, ensuring that they are clear of sediment build-up and are not severely eroded;
- Timber will be stacked in dry areas, and outside watercourse buffer zones. Straw bales and check dams to be emplaced on the down gradient side of timber storage/processing sites;
- Works will be carried out during periods of no, or low rainfall, in order to minimise entrainment of exposed sediment in surface water runoff;
- Refuelling or maintenance of machinery will not occur within 50m of an aquatic zone or within 20m of any other hydrological feature. Mobile bowser, drip kits, qualified personnel will be used where refuelling is required; and,
- Branches, logs or debris will not be allowed to build up in aquatic zones. All such material will be removed when harvesting operations have been completed, but care will be taken to avoid removing natural debris deflectors.

In addition felling works will only be completed during periods of low rainfall and all drains will be inspected and maintained before, during and after the proposed felling works.

4.3.1.6 Mitigation Measures to Prevent Morphological Changes to Surface Watercourses

The Proposed Development design has been optimised to utilise the existing infrastructure (roads and hardstands) where practicable. This design prevents the unnecessary disturbance of the existing site drainage network prevents the requirement for widespread instream works.

Mitigation for windfarm culvert upgrades:
- The proposed new natural stream crossing will be a bottomless culvert and the existing banks will remain undisturbed as much as possible;
- Any guidance / mitigation measures proposed by the OPW or the Inland Fisheries Ireland will be incorporated into the design of the proposed crossings;
- As a further precaution near stream construction work will only be carried out during the period permitted by Inland Fisheries Ireland for in-stream works according to the Eastern Regional Fisheries Board (2004) guidance document "Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites", that is, May to September inclusive. This time period coincides with the period of lowest expected rainfall, and therefore minimum runoff rates. This will minimise the risk of entrainment of suspended sediment in surface water runoff, and transport via this pathway to surface watercourses;
- During the near stream construction work double row silt fences will be emplaced immediately down-gradient of the construction area for the duration of the construction phase. There will be no batching or storage of cement allowed on-site; and,
- All access road river/stream crossings will require a Section 50 application (Arterial Drainage Act, 1945). The river/stream crossings will be designed in accordance with OPW guidelines/requirements on applying for a Section 50 consent.

If instream works are required in minor watercourses, the following mitigation will be employed:

- In-stream works at natural watercourses will only be done over a dry period during the months of July, August and September (as required by IFI for in-stream works) to avoid the salmon spawning season;
- Firstly, the crossing works area will be clearly marked out with fencing or flagging tape to avoid unnecessary disturbance of vegetation;
- A minimum 10 metre vegetative buffer zone will be maintained (if present) between disturbed areas and the watercourse bank. There will be no storage of material / equipment, excavated material (see below) or overnight parking of machinery inside the 10m buffer zone;
- Double silt fencing will be placed upslope of the buffer zone on each side of the watercourse. The silt fencing will have removable "gates" as required to allow access of excavator while maintaining ease of replacement for overnight or during periods of heavy rainfall. The silt fencing will be extended at least 10m upstream and downstream of the crossing location works;
- Bog mats will be used underneath the excavator, inside the 10 metre vegetative buffer zone, to prevent soil erosion/rutting and potential surface water quality impacts from localised surface water runoff;
- A temporary sump will be constructed in the watercourse bed upstream of the proposed dam location if a natural pool does not already exist. The sump will be lined with clean rockfill to prevent scouring and erosion during pumping at the intake;
- An energy dissipater (such as clean rock fill or splash plates) will be placed on the watercourse bed downstream of the dam at the pump outfall. This will prevent scouring and erosion of the watercourse bed at the outfall during pumping;
- Dams are to be made of sand (clean) bags, cobbles or clean well-graded coarse gravel fill. Poorly sorted material will not be used as it would be a potential source of fine sediment;
- Watercourse bed excavation works will only commence once the stream flow is isolated from the proposed trench excavation area;
- Temporary storage of excavated material will be undertaken outside of the 10m buffer on flat ground or within a local hollow area. A containment berm will be placed downslope of the excavated material which in turn will be surrounded by secondary silt fence protection to prevent saturated soil from flowing back into the watercourse;
- Any pumped water from trench dewatering will be discharged onto a well vegetated, flat, dry area at least 50m from a watercourse via a straw bale dewatering structure or geotextile filter bag (i.e. silt bag). Silt fencing will also be placed downslope of the outfall;
- If there is no suitable area for discharge onto ground, temporary settlement ponds will be used where necessary and will be put in place prior to commencement of preparation works;
- Sediment laden water from trench dewatering will not be discharged directly to a watercourse;
- Clay bunds will be placed within the trench backfill on either side of the watercourse to prevent the trench acting as a drain towards the watercourse, thus preventing potential water quality impacts;
- Once the lean mix concrete is in place in the trench, a layer of fine sand (5 – 10cm) will be over the cement prior to backfilling. This will prevent release of cement into the watercourse when flow is restored;
- Upon completion of the in-stream work, the watercourse crossing will be restored to its original configuration and stabilised to prevent bank erosion by means of timber stakes, timber planks and geotextiles as required;
- Operation of machinery and use of equipment within the 10m buffer will be kept to a minimum to avoid any unnecessary disturbance;
- Disturbance of bankside soils and watercourse sediments will be kept to the minimum required for the cable laying process to avoid any unnecessary impact on the watercourse morphology;
- There will be no batching or storage of cement allowed at the watercourse crossing;
- There will be no refuelling allowed within 100m of the watercourse crossing;

- All plant will be checked for purpose of use prior to mobilisation at the watercourse crossing; and,
- Works will not take place during periods of heavy rainfall and will be scaled back or suspended if heavy rain is forecasted.

4.3.1.7 Mitigation Measures to Protect Water Quality During Excavation Dewatering

Management of groundwater seepages and subsequent treatment prior to discharge into the drainage network will be undertaken as follows:

- Appropriate interceptor drainage, to prevent upslope surface runoff from entering excavations will be put in place;
- If required, pumping of excavation inflows will prevent build-up of water in the excavation;
- The interceptor drainage will be discharged to the site constructed drainage system or onto natural vegetated surfaces and not directly to surface waters;
- The pumped water volumes will be discharged via volume and sediment attenuation ponds adjacent to excavation areas, or via specialist treatment systems such as a Siltbuster unit;
- There will be no direct discharge to surface watercourses, and therefore no risk of hydraulic loading or contamination will occur;
- Daily monitoring of excavations by a suitably qualified person will occur during the construction phase. If high levels of seepage inflow occur, excavation work should immediately be stopped and a geotechnical assessment undertaken; and,
- A mobile 'Siltbuster' or similar equivalent specialist treatment system will be available on-site for emergencies in order to treat sediment polluted waters from settlement ponds or excavations should they occur. Siltbusters are mobile silt traps that can remove fine particles from water using proven technology and hydraulic design in a rugged unit. The mobile units are specifically designed for use on construction sites. They will be used as a final line of defence if needed.

4.3.1.8 Mitigation Measures to Protect surface Water Quality along Grid Connection

Silt Fences/Roadside Drain Blocking:

Silt fences will be placed down-gradient of the proposed cable route during construction work. Silt fences are effective at removing larger particle sized solids. This will act to prevent entry to water courses of sand and gravel sized sediment released from excavation of mineral sub-soils of glacial and glacio-fluvial origin and entrained in surface water runoff. Inspection and maintenance of these structures during the construction phase is critical to their functioning to stated purpose. They will remain in place throughout the entire construction phase.

Double silt fences will be placed down-gradient of all construction areas inside the hydrological buffer zones.

Any roadside drains will be temporarily blocked using sand bags in the area where trenching works is taking place.

Surplus Excavated Spoil:

Excavated spoil emanating from the trenches, where appropriate (i.e. when trenching within private tracks or the public road verge) will be used to backfill the trenches. Any excess will be disposed of at an appropriate licenced facility. All excavated material emanating from trenches within the public road will be disposed of at an appropriate licenced facility.

Timing of Site Construction Works:

Excavation of cable trench will not be undertaken during periods of high rainfall. This will minimise the risk of entrainment of suspended sediment in surface water runoff and transport via this pathway to surface watercourses.

4.3.1.9 Mitigation Measures During Direction Drilling

- Although no in-stream works are proposed, the drilling works will only be done over a dry period between July and September (as required by IFI for in-stream works) to avoid the salmon spawning season and to have more favourable (dryer) ground conditions.
- The crossing works area will be clearly marked out with fencing or flagging tape to avoid unnecessary disturbance.
- There will be no storage of material / equipment or overnight parking of machinery inside the 15m buffer zone.
- Before any ground works are undertaken, double silt fencing will be placed upslope of the watercourse channel along the 15m buffer zone boundary.
- Additional silt fencing or straw bales (pinned down firmly with stakes) will be placed across any natural surface depressions / channels that slope towards the watercourse.
- Silt fencing will be embedded into the local soils to ensure all site water is captured and filtered.
- The area around the bentonite batching, pumping and recycling plant will be bunded using terram (as it will clog) and sandbags in order to contain any spillages.
- Drilling fluid returns will be contained within a sealed tank / sump to prevent migration from the works area.
- Spills of drilling fluid will be clean up immediately and stored in an adequately sized skip before been taken off-site.
- If rainfall events occur during the works, there will be a requirement to collect and treat small volumes of surface water from areas of disturbed ground (i.e. soil and subsoil exposures created during site preparation works).
- This will be completed using a shallow swale and sump down slope of the disturbed ground; and water will be pumped to a proposed percolation area at least 50m from the watercourse.
- The discharge of water onto vegetated ground at the percolation area will be via a silt bag which will filter any remaining sediment from the pumped water. The entire percolation area will be enclosed by a perimeter of double silt fencing.
- Any sediment laden water from the works area will not be discharged directly to a watercourse or drain.
- Works will not take place during periods of heavy rainfall and will be scaled back or suspended if heavy rain is forecasted.
- Daily monitoring of the compound works area, the water treatment and pumping system and the percolation area will be completed by a suitably qualified person during the construction phase. All necessary preventative measures will be implemented to ensure no entrained sediment, or deleterious matter is discharged to the watercourse.
- If high levels of silt or other contamination is noted in the pumped water or the treatment systems, all construction works will be stopped. No works will recommence until the issue is resolved and the cause of the elevated source is remedied.
- On completion of the works, the ground surface disturbed during the site preparation works and at the entry and exit pits will be carefully reinstated and re-seeded at the soonest opportunity to prevent soil erosion.
- The silt fencing upslope of the river will be left in place and maintained until the disturbed ground has re-vegetated.
- There will be no batching or storage of cement allowed at the watercourse crossing.
- There will be no refuelling allowed within 100m of the watercourse crossing.
- All plant will be checked for purpose of use prior to mobilisation at the watercourse crossing.

Fracture Blow-out (Frac-out) Prevention and Contingency Plan:

- The drilling fluid/bentonite will be non-toxic and naturally biodegradable (i.e., Clear Bore Drilling Fluid or similar will be used).
- The area around the drilling fluid batching, pumping and recycling plants will be bunded using terram and/or sandbags to contain any potential spillage.
- One or more lines of silt fencing will be placed between the works area and the adjacent river.
- Spills of drilling fluid will be cleaned up immediately and transported off-site for disposal at a licensed facility.
- Adequately sized skips will be used where temporary storage of arisings are required.
- The drilling process / pressure will be constantly monitored to detect any possible leaks or breakouts into the surrounding geology or local watercourse.
- This will be gauged by observation and by monitoring the pumping rates and pressures. If any signs of breakout occur then drilling will be immediately stopped.
- Any frac-out material will be contained and removed off-site.
- The drilling location will be reviewed, before re-commencing with a higher viscosity drilling fluid mix.
- If the risk of further frac-out is high, a new drilling alignment will be sought at the crossing location.

4.3.1.10 Mitigation Measures for Protected Areas

The potential for material to enter the downstream protected areas is negligible as mitigation controls as described above will be implemented. These measures include the use of silt fences, silt traps and check dams. Emphasis will also be placed on prevention of hydrocarbon releases to local watercourses.

It can be concluded that with best practice methods adhered to during the construction of the Proposed Development, the potential for the project to impact upon the qualifying interests of designated sites is not significant.

4.3.2 Operational Phase

4.3.2.1 Increased Site Runoff and Hydromorphology Effects

The operational phase drainage system of the Proposed Development will be installed and constructed in conjunction with the road and hardstanding construction work as described below:

- Interceptor drains will be installed up-gradient of all proposed infrastructure to collect clean surface runoff, in order to minimise the amount of runoff reaching areas where suspended sediment could become entrained. It will then be directed to areas where it can be re-distributed over the ground by means of a level spreader;
- Swales/road-side drains will be used to collect runoff from access roads and turbine hardstanding areas of the site, likely to have entrained suspended sediment, and channel it to settlement ponds for sediment settling;
- On steep sections of access road transverse drains ('grips') will be constructed in the surface layer of the road to divert any runoff off the road into swales/road side drains;
- Check dams will be used along sections of access road drains to intercept silts at source. Check dams will be constructed from a 4/40mm non-friable crushed rock;
- Settlement ponds, emplaced downstream of road swale sections and at turbine locations, will buffer volumes of runoff discharging from the drainage system during periods of high rainfall, by retaining water until the storm hydrograph has receded, thus reducing the hydraulic loading to watercourses; and,
- Settlement ponds have been designed in consideration of the greenfield runoff rate.

4.3.2.2 Mitigation Measures to Protect Surface Water Quality

The mitigation measures to protect against poor quality runoff during the operational phase of the are the same as those outlined in **Section 4.3.1** above.

Mitigation measures for oils and fuels during the operational phase of the Proposed Development are the same as those outlines in **Section 4.3.1.2** above.

The existing welfare facilities (septic tank) at the existing dwelling which will undergo a change of use to a permanent operations building will be upgraded to meet the needs of the Proposed Development. These upgrades will include an appropriately sized effluent treatment system and percolation area all of which will be constructed and maintained in accordance with the relevant guidelines. There will be no discharge of untreated wastewater during the operational phase.

4.3.2.3 Mitigation Measures to Protect Groundwater Quality

It is proposed to manage wastewater from the staff welfare facilities in the control buildings by means of an appropriately sized effluent treatment system and percolation area all of which will be constructed and maintained in accordance with the relevant guidelines. There will be no discharge of untreated wastewater during the operational phase.

4.3.2.4 Mitigation Measures for Protected Areas

The mitigation measures to protect against poor quality runoff during the operational phase of the Proposed Development are the same as those outlined above.

Mitigation measures for oils and fuels during the operational phase of the Proposed Development are the same as those outlines in **Section 4.3.1.2** above.

It can be concluded that with best practice methods adhered to during the operation phase of the Proposed Development, the potential for the project to impact upon the qualifying interests of the local designated sites is not significant.

4.3.1 Decommissioning Phase

The potential effects associated with decommissioning of the Proposed Development will be similar to those associated with the construction phase but of a reduced magnitude, due to the reduced scale of the proposed decommissioning works in comparison to construction phase works.

During decommissioning, it will be possible to reverse or at least reduce some of the potential effects caused during construction, and to a lesser extent operation, by rehabilitating constructed areas such as turbine bases and hard standing areas. This will be done by covering with vegetation to encourage vegetation growth and reduce run-off and sedimentation.

The Site Access Tracks will be kept and maintained following decommissioning of the wind farm infrastructure, as these will be utilised by ongoing forestry works and by other participating landowners.

The electrical cabling connecting the site infrastructure to the on-site substation will be removed, while the ducting itself will remain in-situ rather than excavating and removing it, as this is considered to have less of a potential environmental impact, in terms of soil exposure, and thus on the possibility of the generation of suspended sediment which could enter nearby watercourses.

The turbines will be removed by disassembling them in a reverse order to their erection. This will be completed using the same model cranes as used in their construction. They will then be transported off-site along their original delivery route. The disassembly and removal of the turbines will not have an impact on the hydrological/hydrogeological environment at the Wind Farm Site.

Other impacts such as possible soil contamination by fuel leaks will remain but will be of reduced magnitude than the construction phase because of the smaller scale of the works and reduced volumes on-site. Similar mitigation implemented during the construction phase will be utilised during the decommissioning phase to ensure no impacts of receiving waters.

Some of the potential effects water bodies will be avoided by leaving elements of the Proposed Development in place where appropriate. The substation will be retained by EirGrid as a permanent part of the national grid. The turbine bases will be rehabilitated by covering with local topsoil in order to regenerate vegetation which will reduce runoff and sedimentation effects. Mitigation measures to avoid contamination by accidental fuel leakage and compaction of soil by on-site plant will be implemented as per the construction phase mitigation measures.

With the implementation of the mitigation measures outlined above no significant effects on the hydrological and hydrogeological environment will occur during the decommissioning phase of the Proposed Development.

4.3.2 Potential Effects with the Implementation of Mitigation

In all instances, the mitigation measures described in **Section 4.3** are sufficient to meet the WFD Objectives. The assessment of WFD elements for the WFD waterbodies is summarised in **Table L** below.

Similarly with the implementation the mitigation measures there will be no effect on the status of downstream protected areas.

Table L: Summary of WFD Status for Unmitigated and Mitigated Scenarios

SWB	WFD Code	Current Status	Assessed Potential Status Change- Unmitigated	Assessed Status with Mitigation Measures
Knockboha_010	IE_WE_33K030830	Moderate	Poor	Moderate
Cloonalaghan_010	IE_WE_33C010700	Good	Moderate	Good
Cloonaghmore_050	IE_WE_34C030270	Good	Good	Good
Cloonaghmore_060	IE_WE_34C030300	Good	Good	Good
Moyne_010	IE_WE_34M190890	Moderate	Moderate	Moderate
Cloonaghmore Estuary	IE_WE_420_0100	Moderate	Moderate	Moderate
Belmullet GWB	IE_WE_G_0057	Good	Good	Good
Killala North GWB	IE_WE_G_0046	Good	Good	Good
Killala South	IE_WE_G_0047	Good	Good	Good
Bellacorick-Killala	IE_WE_G_0041	Good	Good	Good

5. WFD AASSESSMENT CONCLUSION

WFD status for SWBs (Surface Water Bodies) and GWBs (Groundwater Bodies) hydraulically linked to the Proposed Development are defined in **Section 2** above.

The Proposed Development does not involve any abstraction of groundwater or significant alteration of drainage patterns. Therefore, the quantitative status (i.e., the available quantity (volume) of groundwater and surface water locally) to the receiving waters will remain unaltered during the construction and operational phases of the Proposed Development.

There is no direct discharge from the Proposed Development to downstream receiving waters. Mitigation for the protection of surface water during the construction, operation and decommissioning phases of the Proposed Development will ensure the qualitative status of the receiving waters will not be altered by the Proposed Development.

There is also mitigation proposed to protect groundwater quality within the Wind Farm Site and along the Grid Connection during the construction, operational and decommissioning phases of the Proposed Development. These mitigation measures will ensure the qualitative status of the underlying GWBs will not be altered by the Proposed Development.

Furthermore, mitigation measures during the construction, operation and decommissioning phases of the Proposed Development will ensure that there will be no significant effects on any of the protected areas in the vicinity of the Proposed Development including the Lackan Saltmarsh and Kilcummin Head SAC and pNHA and the Killala Bay / Moy Estuary SPA, SAC and pNHA.

As such, the Proposed Development:

- will not cause a deterioration in the status of all surface and groundwater bodies assessed;
- will not jeopardise the objectives to achieve 'Good' surface water/groundwater status;
- does not jeopardise the attainment of 'Good' surface water/groundwater chemical status;
- does not jeopardise the attainment of 'Good' surface water/groundwater quantity status;
- does not permanently exclude or compromise the achievement of the objectives of the WFD in other waterbodies within the same river basin district;
- is compliant with the requirements of the Water Framework Directive (2000/60/EC); and,
- is consistent with other Community Environmental Legislation including the EIA Directive (2014/52/EU), the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC) (Note that a full list of legislation complied with in relation to hydrology and hydrogeology is included in Section 9.2.2 of EIAR Chapter 9).

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6. REFERENCES

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Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds.

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