



APPENDIX 9-7

**WATER FRAMEWORK
DIRECTIVE ASSESSMENT**

Table of Contents

1.	INTRODUCTION.....	1
1.1	Purpose of Assessment	1
1.2	Statement of Authority	1
1.3	Water Framework Directive.....	2
2.	WATER BODY IDENTIFICATION	1
2.1	Surface Water Bodies.....	1
2.1.1	Surface Water Body Status Classification	4
2.1.2	Surface Water Body Risk Assessment.....	6
2.2	Groundwater Bodies.....	6
2.2.1	Groundwater Body Status Classification	6
2.2.2	Groundwater Body Risk Assessment	6
3.	WFD COMPLIANCE ASSESSMENT	8
3.1	Risk Factors - Surface Water	8
3.2	Risk of Affecting Surface Water Body Status	8
3.3	Risk Factors – Groundwater.....	9
3.4	Risk of Affecting Groundwater Body Status	10
4.	MITIGATION TO PREVENT STATUS DETERIORATION	12
4.1	Construction Phase.....	12
4.2	Operational Phase.....	13
4.3	Decommissioning Phase.....	14
4.4	Monitoring	15
4.5	General Environmental Management Measures.....	15
4.5.1	Accidental Spills and Leaks of Fuel and Chemicals	15
4.5.2	Wastewater Management	16
4.5.3	Cement-Based Products Management	16
4.6	Residual Effects After Implementing Mitigation Measures.....	17
5.	DESIGNATED SITES AND PROTECTED AREAS.....	19
6.	SUMMARY	23
7.	REFERENCES	25

LIST OF TABLES

<i>Table 2-1: WFD River Water Bodies and Subcatchments Linked to the Site.....</i>	<i>1</i>
<i>Table 2-2: WFD River Water Bodies Status Classification (2019-2024) and 3rd Cycle Risk Assessment..</i>	<i>4</i>
<i>Table 4-1: Summary of Proposed Mitigation Measures During Construction Phase.....</i>	<i>13</i>
<i>Table 5-1: Summary of Designated Sites and Potential to be Impacted by the Proposed Project.....</i>	<i>20</i>

LIST OF FIGURES

<i>Figure 2-1: Regional Drainage, Relevant Subcatchments and Water Bodies</i>	<i>3</i>
<i>Figure 2-2: WFD Status Classification of Surface Water Bodies (2019 to 2024).....</i>	<i>5</i>
<i>Figure 2-3: WFD Risk Assessment of Surface Water Bodies (3rd Cycle).....</i>	<i>7</i>

1.

INTRODUCTION

This Water Framework Directive (WFD) Compliance Assessment has been prepared as an appendix to Chapter 9: *'Hydrology and Hydrogeology'* of the Environmental Impact Assessment Report (EIAR) for the proposed Slievegrine Renewable Energy Development, located approximately 5 km southwest of Dungarvan, Co. Waterford

The proposed renewable energy development, referred to herein as the Proposed Project, includes the Proposed Wind Farm and Proposed Grid Connection. A detailed description of the Proposed Project is provided in Chapter 4: *'Description of the Proposed Project'* of this EIAR.

As detailed in Section 1.1.2 in Chapter 1 of the EIAR, for the purposes of this WFD, the following references are used: 'Proposed Project', 'Proposed Wind Farm' 'Proposed Grid Connection', 'Proposed Turbines', 'Proposed 110kV Underground Cabling Route', 'Proposed 110kV Substation', 'Proposed 220kV Loop-in Substation', 'Site', 'Proposed Wind Farm site' and 'Proposed Grid Connection site'.

1.1

Purpose of Assessment

The purpose of the assessment is to determine whether the Proposed Project could compromise the achievement of WFD environmental objectives or cause a deterioration in the status classification assigned by the Environmental Protection Agency (EPA) to any surface water or groundwater body which is hydraulically linked with or affected by the Proposed Project.

1.2

Statement of Authority

This WFD Compliance Assessment was prepared by Monika Kabza and Dr Bebhinn Anders, supported by Anna Bannon, and reviewed by Henning Moe all of MKO.

Monika Kabza is a hydrogeologist with over 16 years of experience in hydrogeology, geology, environmental assessment and water resources management. Monika holds MSc in Groundwater Engineering from the AGH University of Science and Technology Krakow, Poland and is a registered professional geologist (EurGeol, PGeo). She has worked on projects for Uisce Éireann, Geological Survey Ireland, National Federation of Group Water Schemes, Dublin Airport, and private industry. She is experienced with preparing Hydrology and Hydrogeology, and Land, Soils, and Geology chapters for EIARs, including major infrastructure projects, and has conducted WFD Assessments for wind and solar farm developments.

Dr Bébhinn Anders has a BSc in Earth and Ocean Sciences and a PhD from the University of Galway. Bébhinn has 5 years of private industry experience with projects involving environmental monitoring, hydrogeological data analysis, flood risk assessments, and site investigations. She has prepared Land, Soils and Geology and Hydrology and Hydrogeology chapters for EIARs.

Anna Bannon has a BSc in Geology from University College Dublin. Anna joined MKO in September 2025 as a Graduate Geoscientist.

Henning Moe is a registered professional geologist (PGeo, EurGeol) with has more than 30 years of practical experience. He holds a BSc in Geology and a MSc in Hydrogeology from University College London. Of direct relevance to this chapter, Henning led the preparation hydrology and hydrogeology chapters of two recent wind farm EIARs in Co. Mayo, Sheskin South and Glenora, which were approved by ACP in 2024 and 2025, respectively. Over the past several years, he supported the Environmental Protection Agency (EPA) on numerous WFD-related projects and helped prepare technical guidance related to the authorisation of discharges to ground, implementation of source protection measures in context of the drinking water regulations and conducting investigative assessments in rural and urban catchments involving a wide range of environmental pressures and mitigation measures. He has also supported projects with the Geological Survey

Ireland, National Parks and Wildlife Service (NPWS), and the Pesticide Control and Forestry Services of the Department of Agriculture, Food and Marine (DAFM).

1.3

Water Framework Directive

The European Union (EU) Water Framework Directive (2000/60/EC) establishes a comprehensive framework for the protection and management of inland surface waters, transitional waters, coastal waters and groundwater across the EU. The WFD was transposed into Irish law by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003), as amended.

The principal objectives of the WFD are to prevent deterioration in the status of all water bodies and to protect, enhance and restore aquatic ecosystems. For surface water, the aim is to achieve at least Good Ecological Status (or Good Ecological Potential for heavily modified water bodies), and Good Chemical Status, unless High status objectives have been assigned, in which case High status must be achieved. For groundwater, the aim is to achieve Good Quantitative and Chemical Status, unless specific exemptions apply under Article 4 of the Directive.

In Ireland, water body status and environmental objectives are reviewed through successive six-year River Basin Management Plan (RBMP) cycles. Water body status describes the condition achieved during the relevant classification period, while environmental objectives define the status or ecological potential that must be achieved and maintained. The EPA assesses water body status and risk, and the findings inform the preparation and implementation of each RBMP.

Programmes of Measures (PoMs) are implemented to protect water bodies and support the achievement of their environmental objectives. These comprise Basic Measures, which are statutory and enforceable (e.g. the Sustainable Use of Pesticides regulations), and Supplementary Measures, which are generally non-statutory and voluntary (e.g. pilot schemes, awareness campaigns).

As part of the WFD implementation process, the EPA undertakes a risk assessment to identify water bodies that are either 'At Risk' or 'Not At Risk' of failing to achieve their WFD environmental objectives and 'Review', where further monitoring or assessment is required. For water bodies classified as 'At Risk', the EPA identifies the 'significant pressures' responsible for the risk of failing to achieve or maintain the required status. These identified pressures inform the development of targeted Programmes of Measures within the relevant sub-catchment to support the achievement of WFD environmental objectives.

Ireland is currently implementing the third RBMP cycle (2022-2027) through the Water Action Plan 2024. The latest EPA water body classification currently covers the assessment period 2019-2024.

Water body status is formally assessed and reported by the EPA as part of the RBMP cycle. However, the WFD 'no deterioration' principle applies at all times. Accordingly, this assessment considers whether the Proposed Project could result in either temporary or permanent adverse effects that may cause deterioration in the status of any water body or compromise the achievement of its environmental objectives during construction, operation or decommissioning.

The WFD also requires that protected areas associated with the aquatic environment achieve their relevant environmental requirements and conservation objectives. These include:

- Natura 2000 sites comprising Special Areas of Conservation (SACs), and Special Protection Areas (SPAs);
- Drinking water protected areas;
- Bathing waters;
- Shellfish waters;
- Salmonid waters; and
- Nutrient Sensitive Areas.

The environmental requirements for these protected areas are established through relevant legislation and guidance issued by the competent authorities, including the National Parks and Wildlife Service (NPWS) and other statutory bodies.

2. WATER BODY IDENTIFICATION

This section identifies the surface water and groundwater bodies that are linked with and/or may be potentially affected by the Proposed Project. The identification is based on a review of the hydrological and hydrogeological setting of the Site and is further guided by the source-pathway-receptor model of environmental risk assessment.

2.1 Surface Water Bodies

The catchments, subcatchments, and relevant surface water bodies linked to the Proposed Project are listed in **Table 2-1** and shown in **Figure 2-1**.

The Site is predominantly situated within WFD Catchment 18, Blackwater (Munster), with a small portion situated within Catchment 17, Colligan-Mahon.

The principal relevant WFD subcatchment is Goish_SC_010, which incorporates the Licky and Goish Rivers and their tributaries (**Figure 2-1**). A small portion of the Site drains northwards to the Brickey River within the Colligan_SC_010 subcatchment. The named subcatchments thus encompass three principal river systems:

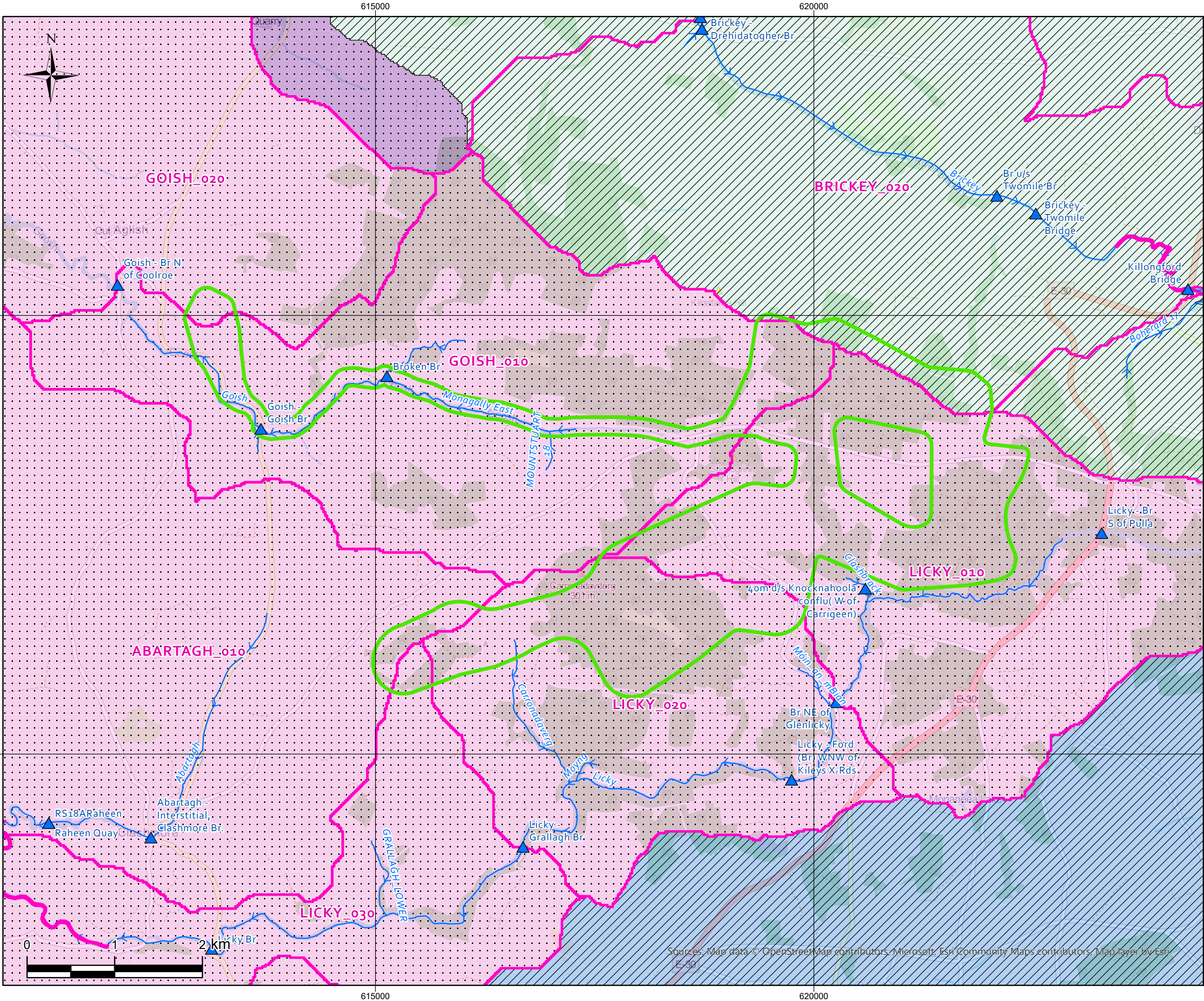
- The Licky River, which receives drainage from the majority of the Site. Existing field drains, forestry drains and tributary streams convey runoff southwards to the Licky River. The river comprises the sequential Licky_010, Licky_020 and Licky_030 river water bodies and flows west-southwest before discharging to the Blackwater River and subsequently to the sea at Youghal.
- The Goish River system, which receives drainage mainly from the Proposed Grid Connection. The relevant river water bodies are Goish_010 and Goish_020. The Goish River drainage system flows westwards before discharging to the Blackwater River.
- A small northern portion of the Site drains to the Brickey River system. The Twomile Bridge, Kilmurray 17 and Coolcormuck streams originate within the Site and flow northwards to the Brickey River. The relevant river water body is Brickey_020, which flows eastwards before entering the sea at Dungarvan.

Table 2-1: WFD River Water Bodies and Subcatchments Linked to the Site

Water Course	WFD River Water Body	WFD Subcatchment	Comment
Proposed Wind Farm			
Licky River	LICKY_010 (IE_SW_18L010100)	Goish_SC_010 (18_27)	Principal receiving watercourse within LICKY_010, receiving flows from An Chúil Rua, Clashbrack and associated headwater tributaries.
An Chúil Rua			Headwater tributary flowing southwards directly to the Licky River
Clashbrack			Headwater tributary flowing southwards to the Licky River
Knocknahoola			Headwater tributary flowing southwards to the Clashbrack stream
Carronahyla			Headwater tributary flowing south to the Clashbrack stream
Drumslig	LICKY_020 (IE_SW_18L010150)		Headwater stream flowing southwards to Móin an mBian

Móin an mBian			Headwater tributary flowing southwards to Licky River
Moyny			Headwater tributary flowing southwards to Licky River
Carronadavderg			Headwater tributary flowing southwards to Licky River
Licky River	LICKY_030 (IE_SW_18L010200)		Downstream section of the Licky River, which subsequently discharges to the Blackwater River before entering the sea at Youghal.
Twomile_Bridge	BRICKEY_020 (IE_SE_17B010090)	Colligan_SC_010 (17_6)	Headwater streams drain the northern part of the Proposed Wind Farm to the Brickey River, which flows eastwards before entering the sea at Dungarvan.
Kilmurray 17			
Coolcormuck			
Proposed Grid Connection			
Monagally East	GOISH_010 (IE_SW_18G120200)	Goish_SC_010 (18_27)	Headwater tributary flowing westwards to Goish River receiving drainage from part of the Proposed Wind Farm and the Proposed Grid Connection.
Goish River			Principal receiving watercourse within GOISH_010, receiving flows from Monagally East
Goish River	GOISH_020 (IE_SW_18G120300)		

Note: EPA river water bodies and their corresponding river sub-basins use the same name and code. To avoid duplication, only the river water body name and code are presented in this table.



Map Legend

- ElIAR Site Boundary
- National Water Monitoring Station (EPA)
- River Network (EPA)
- WFD River Sub Basins
- WFD Catchments
 - Blackwater (Munster)
 - Colligan-Mahon
- WFD SubCatchments
 - Maoil_an_Choirnigh_SC_010
 - Finisk_SC_010
 - Colligan_SC_010
 - Goish_SC_010

Spatial Reference
Name: IREN95 Irish Transverse Mercator
Datum: IREN95
Projection: Transverse Mercator

SITE LOCATION - NOT TO SCALE

Drawing Title Regional Drainage, Relevant Subcatchments and Water Bodies		
Project Title Enerco Slievegrine Wind Farm		
Project No. 240740	Drawing No. 2-1	Scale 1:30,000
Drawn By AMcL	Checked By BA	Date 11/09/2026

Email: info@mkofireland.ie / Website: www.mkofireland.ie

Sources: Map data © OpenStreetMap contributors, Microsoft, Esri Community Maps contributors, Map layer by Esri

The Licky River system ultimately discharges to the Lower Blackwater M Estuary/Youghal Harbour transitional water body (IE_SW_020_0100). The Goish River system discharges to the Upper Blackwater M Estuary transitional water body (IE_SW_020_0500). The Brickey River discharges to the Brickey Estuary transitional water body (IE_SE_140_0200). These transitional water bodies are included in the assessment because indirect downstream hydrological pathways exist between the permanent built infrastructure footprint and the receiving water bodies.

2.1.1 Surface Water Body Status Classification

The latest available WFD ecological status classification for the relevant river water bodies, covering the period 2019-2024, is summarised in **Table 2-2** and shown in **Figure 2-2**. None of the relevant river water bodies have a 'High' status objective; the default WFD status objective is 'Good' ecological status. In summary:

- The LICKY_010, LICKY_020 and LICKY_030 are classified as being at 'Good' ecological status and therefore meet their WFD status objectives.
- The GOISH_010 and GOISH_020 are classified as being at 'Moderate' and 'Poor' ecological status, respectively, and therefore do not meet their WFD status objective.
- The BRICKEY_020 is classified as being at 'Poor' ecological status and therefore does not meet the WFD status objective.

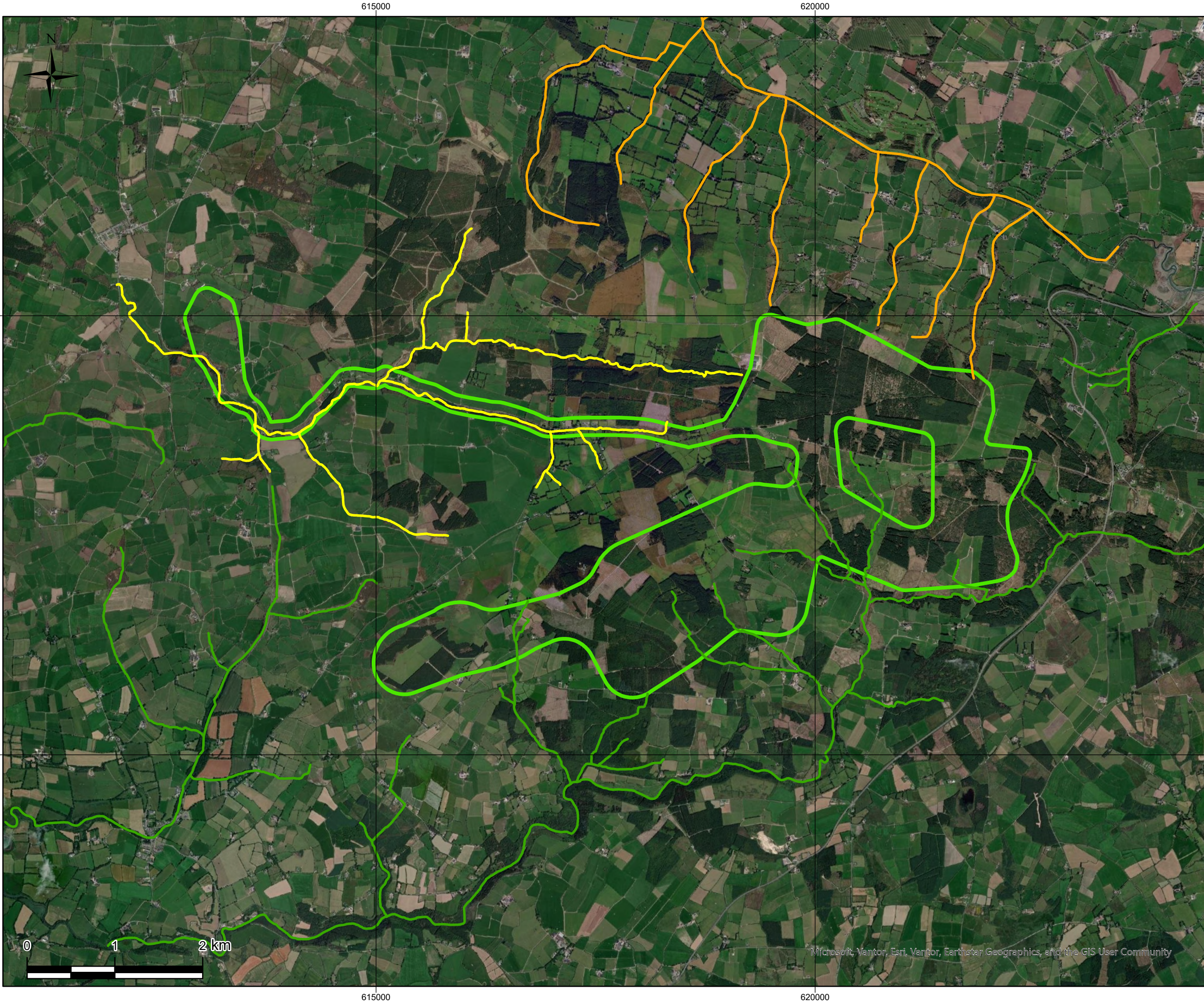
Table 2-2: WFD River Water Bodies Status Classification (2019-2024) and 3rd Cycle Risk Assessment

WFD River Water Body (EPA Code)	WFD Status Objective	WFD Ecological Status (2019-2024)	WFD 3rd Cycle Risk Assessment
LICKY_010 (IE_SW_18L010100)	Good	Good	Not at risk
LICKY_020 (IE_SW_18L010150)	Good	Good	Not at risk
LICKY_030 (IE_SW_18L010200)	Good	Good	Not at risk
BRICKEY_020 (IE_SE_17B010090)	Good	Poor	At risk
GOISH_010 (IE_SW_18G120200)	Good	Moderate	At risk
GOISH_020 (IE_SW_18G120300)	Good	Poor	At risk

Although the Licky River is currently classified as having 'Good' ecological status, it has been identified by the Local Authority Waters Programme (LAWPRO) as Priority Area for Action AFA0963, with a restoration objective under the RBMP 2022–2027. Its selection reflects the presence of a unique freshwater pearl mussel population and evidence of degraded conditions for the species within the river. The EPA also records that the Licky River is not meeting the applicable protected area objectives for freshwater pearl mussel under S.I. No. 296 of 2009. Further investigative assessment by LAWPRO has been assigned. This does not alter the Good ecological status classification of the river water bodies but indicates that the relevant protected area objective is not currently being achieved.

The 'Moderate' and 'Poor' ecological status classification assigned to the GOISH_010, GOISH_020 and BRICKEY_020 river water bodies are summarised below based on publicly available information from EPA (at www.catchments.ie):

- GOISH_010 is classified as being 'Moderate' ecological status, with high confidence, based on 'Moderate' biological status and 'Moderate' invertebrate status. The latest available Q-value was 3-4 in 2024 at the Broken Br invertebrate monitoring station (Code: RS18G120050). A Q3-4 rating indicates Moderate ecological quality, corresponding to slightly polluted and unsatisfactory conditions. The monitoring station is located within the GOISH_010 river water body but outside the section intersected by the Proposed Project. The result is therefore relevant to the EPA classification of the overall water body but does not represent site-specific biological monitoring of the reach.



Map Legend

█ EIAR Site Boundary

River Waterbodies WFD Status 2019-2024

— Good

— Moderate

— Poor

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

SITE LOCATION - NOT TO SCALE

Drawing Title

WFD Status Classification of
Surface Water Bodies
(2019 to 2024)

Project Title

**Enerco Slievegrine
Wind Farm**

Project No.	Drawing No.	Scale
240740	2-2	1:30,000
Drawn By	Checked By	Date
AMcL	BA	28/08/2026

Microsoft, Vantor, Esri, Vantor, Earthstar Geographics, and the GIS User Community

MKO

Email: info@mkofireland.ie / Website: www.mkofireland.ie

- GOISH_020 is classified as being at 'Poor' ecological status, with medium confidence, based on 'Poor' biological status and 'Poor' invertebrate status. The latest available Q-value was 3-4 in 2024 at the Broken Br 2km NW of Aglish invertebrate monitoring station (Code: RS18G120300). This represents 'Poor' ecological quality, corresponding to moderately polluted and unsatisfactory conditions.
- BRICKEY_020 is classified as being at 'Poor' ecological status, with medium confidence, based on 'Poor' biological status and, specifically, 'Poor' invertebrate status. Supporting chemistry conditions received an overall Pass. However, dissolved oxygen (% saturation) failed, and nitrate was classified as 'Moderate', while ammonium and orthophosphate were classified as 'High'. The latest available Q-value at the Br u/s Twomile Br monitoring station (Code: RS17B010090), was Q3 in 2019. A Q3 rating represents 'Poor' ecological quality at the monitoring station, corresponding to moderately polluted and unsatisfactory conditions.

The connected transitional water bodies, Lower Blackwater M Estuary/Youghal Harbour, Upper Blackwater M Estuary and Brickey Estuary, which are located downstream of the river water bodies intersected by or receiving drainage from the Site, are classified as having 'Moderate' ecological status in the period 2019-2024.

2.1.2 Surface Water Body Risk Assessment

Based on the latest available WFD risk assessment for the period 2022–2027, the LICKY_010, LICKY_020 and LICKY_030 river water bodies are classified as being 'Not at risk' of failing to achieve their WFD status objectives. GOISH_010, GOISH_020 and BRICKEY_020 are classified as being 'At risk' of failing to achieve WFD status objectives by 2027, as summarised in **Table 2-2** and shown in **Figure 2-3**.

The significant issues and pressures identified by the EPA for the 'At Risk' river water bodies are as follows:

- GOISH_10 has significant issues relating to morphological condition and an as yet unknown impact type. The named significant pressures are forestry and an unknown pressure;
- GOISH_020 has significant issues relating to sediment and nutrients. Agriculture is identified as the significant pressure.
- BRICKEY_020 has significant issues relating to sediment and nutrients. Agriculture and hydromorphology are identified as the significant pressures.

Of the connected transitional water bodies, the Lower Blackwater M Estuary/Youghal Harbour and Upper Blackwater M Estuary are classified as 'At Risk'. The Brickey Estuary is classified as 'Review'. The significant issues identified for the Lower Blackwater M Estuary/Youghal Harbour are nutrients and organic pollution, with agriculture identified as the significant pressure. The significant issue identified for the Upper Blackwater M Estuary is nutrients, with agriculture identified as the significant pressure. As Brickey Estuary is classified as 'Review', no significant issue or significant pressure has been assigned.

2.2 Groundwater Bodies

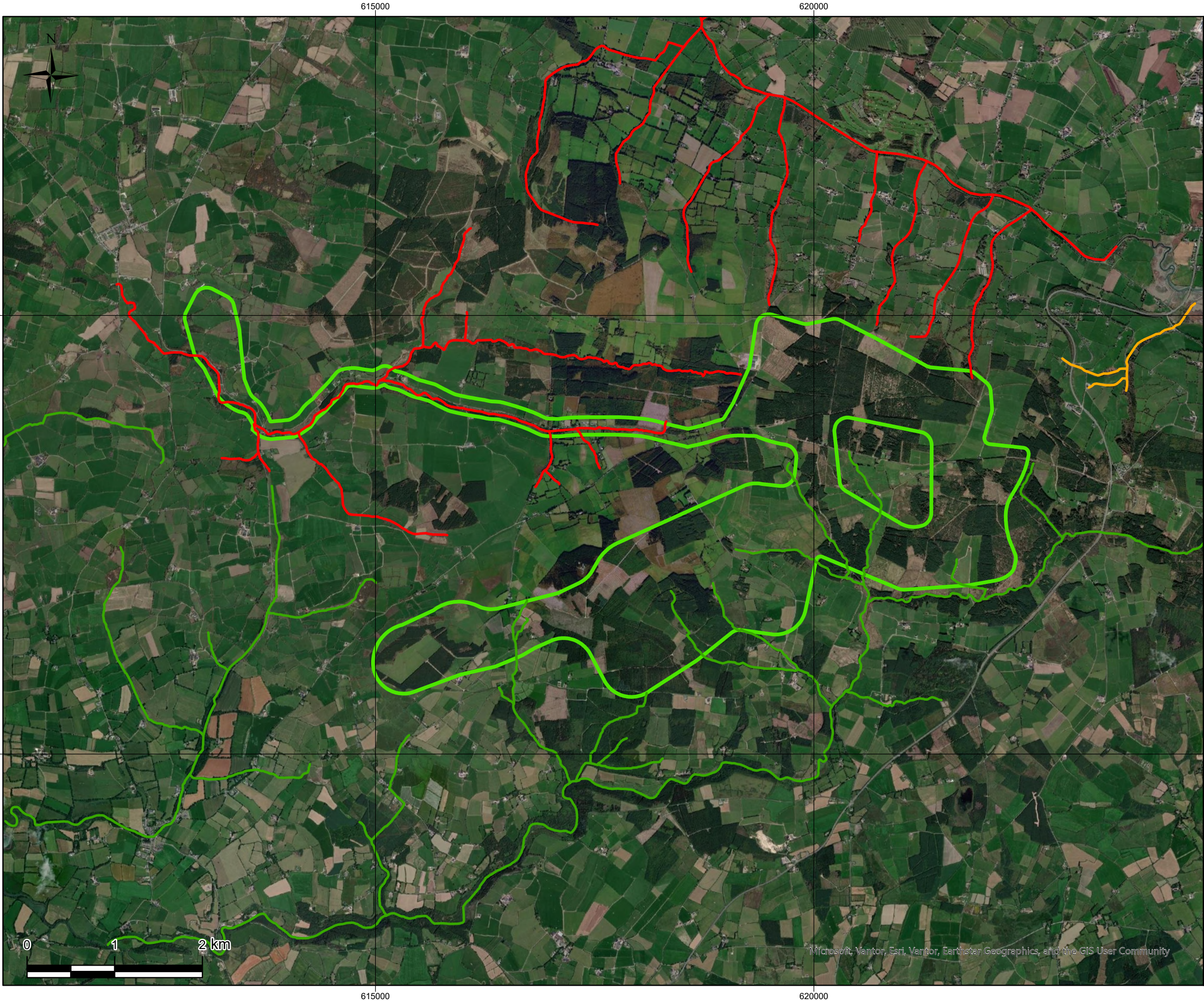
As presented in Chapter 9 of the EIAR, the groundwater bodies that underlie the Site are the Glenville (Code: IE_SW_G_037) and Helvick Head (Code: IE_SE_G_073).

2.2.1 Groundwater Body Status Classification

Based on the latest WFD classification period (2019-2024), the groundwater bodies listed above are classified as having 'Good' status by the EPA, indicating that they meet the WFD environmental objectives for both quantitative and chemical status.

2.2.2 Groundwater Body Risk Assessment

Both groundwater bodies are classified as 'Not At Risk' of failing to achieve the WFD status objectives by 2027.



Map Legend

- EIAR Site Boundary
- River Waterbodies Risk
 - Not At Risk
 - Under Review
 - At Risk

Spatial Reference
Name: IRENET95 Irish Transverse Mercator
Datum: IRENET95
Projection: Transverse Mercator

SITE LOCATION - NOT TO SCALE

Drawing Title

WFD Risk Assessment of Surface Water Bodies (3rd Cycle)

Project Title

Enerco Slievegrine Wind Farm

Project No.	Drawing No.	Scale
240740	2-3	1:30,000
Drawn By	Checked By	Date
AMcL	BA	09/09/2026

Microsoft, Vantor, Esri, Vantor, Earthstar Geographics, and the GIS User Community

MKO

Email: info@mkofireland.ie / Website: www.mkofireland.ie

3. WFD COMPLIANCE ASSESSMENT

This section assesses whether the Proposed Project has the potential to cause deterioration in the status of surface water or groundwater bodies, or to compromise the achievement of WFD objectives for any connected water bodies.

3.1 Risk Factors - Surface Water

Without mitigation, the Proposed Project has the potential to affect the water quality, flow regime and hydromorphological condition of local drains and streams and the downstream Licky, Goish and Brickey river systems.

The principal aspects of the surface water environment that could be affected are:

- Water clarity and quality, through increased sediment and suspended solids loads, turbidity and the subsequent sedimentation of streambeds;
- Water chemistry, through the release of nutrients, dissolved and suspended organic matter, fuels, oils, chemicals, wastewater, concrete or other cementitious materials;
- Aquatic habitats and biological quality elements, as a consequence of increased turbidity, sediment deposition, chemical contamination or changes in water chemistry, including pH;
- Streambeds, streambanks and riparian areas, through physical disturbance during works at or adjacent to watercourses; and
- Surface water flows and drainage patterns, through changes to runoff rates, flow pathways and hydrological connectivity arising from new or modified drainage infrastructure.

The principal activities that may contribute to these effects are:

- During construction:
 - clear-felling and vegetation removal;
 - soil stripping, excavation and other earthworks;
 - construction and upgrading of access roads;
 - construction of turbine foundations, crane hardstands, substations and construction compounds;
 - excavation and operation of borrow pits;
 - installation of underground cabling;
 - construction or upgrading of watercourse crossings and culverts;
 - installation, modification and maintenance of drainage infrastructure;
 - dewatering and pumping from excavations;
 - use, maintenance and refuelling of construction plant;
 - storage and handling of excavated materials, fuels and chemicals;
 - concrete works;
 - management of construction and sanitary wastewater; and
 - construction wastewater management.
- During operation – routine inspection and maintenance of access roads, drainage infrastructure, culverts, settlement ponds, turbines and substations, together with the management and removal of wastewater from the welfare facilities.
- During decommissioning – activities similar to those undertaken during construction, including dismantling, excavation, vehicle movements and reinstatement work, but generally over a smaller area and for a shorter duration.

3.2 Risk of Affecting Surface Water Body Status

Surface water body status is determined from biological quality elements and the physicochemical, chemical and hydromorphological conditions that support them. In the context of the Proposed Project, WFD status could principally be affected by sustained or repeated changes to water quality, hydrology or river morphology, including:

- Increased runoff and changes to existing runoff patterns and flow pathways;
- Increased sediment and suspended solids loading, resulting in elevated turbidity and sediment deposition within downstream watercourses;
- Increased loading of nutrients, dissolved organic matter and fine suspended organic matter, with associated effects on water colour, clarity and oxygen conditions;
- Changes in water chemistry, including pH;
- Physical disturbance of streambeds, streambanks and riparian areas; and
- Releases of fuels, oils, chemicals, concrete or other potentially contaminating substances.

Without mitigation, these pressures could affect the physicochemical and hydromorphological supporting conditions of the receiving water bodies and, consequently, their biological quality elements. Sediment mobilisation, transport and deposition represent the principal concern because sediment may remain within the receiving watercourses after the source activity has ceased and may result in longer-term effects on streambed and aquatic habitats. This is of particular relevance to the Licky River, which supports freshwater pearl mussel habitat and is sensitive to increases in fine sediment, turbidity and organic matter.

The mobilisation of nutrients and organic matter is also relevant. Site baseline monitoring identified generally low nutrient concentrations, although isolated exceedances of the applicable environmental quality standards were recorded for biological oxygen demand, ammoniacal nitrogen, orthophosphate and certain dissolved metals. The exceedances of annual average standards represented individual sample results rather than calculated annual averages.

Individual accidental spills or short duration pollution events would generally be unlikely to affect status at the scale of an entire river water body. However, a serious pollution incident, or repeated releases over an extended period, could affect aquatic biota and the chemical or physicochemical quality elements used in WFD classification.

As described in Section 2.1.1, the LICKY_010, LICKY_020 and LICKY_030 water bodies currently achieve 'Good' ecological status and must therefore be protected from deterioration. GOISH_010, GOISH_020 and BRICKEY_020 are currently below 'Good' ecological status. The Proposed Project must therefore not cause further deterioration in these water bodies or impede the achievement of their applicable WFD environmental objectives.

The mitigation and monitoring measures presented in Section 4 have been developed to interrupt the identified source–pathway–receptor linkages. Subject to the implementation, inspection and maintenance of these measures, the Proposed Project will not cause deterioration in the status of any receiving or downstream surface water body or compromise the achievement of its applicable WFD environmental objectives.

3.3

Risk Factors – Groundwater

Without mitigation, the Proposed Project has the potential to affect groundwater conditions locally, particularly groundwater quality, shallow groundwater levels and groundwater flow pathways. The principal aspects of the groundwater environment that could be affected are:

- Groundwater quality, through the infiltration of fuels, oils, lubricants, chemicals, concrete or cementitious materials, wastewater or other potentially contaminating substances;
- Shallow groundwater levels and flow patterns, through excavation, temporary dewatering and the installation of drainage infrastructure;

- Groundwater recharge and discharge patterns, including local groundwater discharges to springs, seepages and surface watercourses;
- Groundwater contributions to streamflow, where excavation, drainage or dewatering intercepts shallow groundwater that provides baseflow to nearby streams; and
- Private wells and springs, through potential localised changes in groundwater quality, groundwater levels or yield where hydraulic connectivity exists.

The principal activities that may contribute to these effects are:

- During construction
 - excavation and earthworks associated with turbine foundations, crane hardstands, borrow pits, access roads, substations and 1.3m trenches;
 - installation or modification of drainage infrastructure;
 - temporary dewatering and pumping from excavations;
 - use, maintenance and refuelling of construction plant;
 - storage and handling of fuels, oils, chemicals and construction materials;
 - concrete works; and
 - management of construction and sanitary wastewater.
- During operation
 - routine inspection and maintenance of turbines, substations, access roads and drainage infrastructure;
 - management and removal of wastewater from the welfare facilities; and
 - groundwater abstraction from the proposed small volume supply well, should one be installed.
- During decommissioning – activities similar to those undertaken during construction, including excavation, plant movements, drainage management and temporary dewatering, but generally over a smaller area and for a shorter duration.

3.4

Risk of Affecting Groundwater Body Status

As outlined in Section 1.3, groundwater body status is determined by the poorer of its quantitative and chemical status. The Glenville and Helvick Head groundwater bodies underlying the Proposed Project are both classified as having ‘Good’ status and are ‘Not at Risk’ of failing to achieve their WFD environmental objectives.

The potential pathways by which the Proposed Project could affect groundwater are identified in Section 3.3. In terms of quantitative status, the principal considerations are temporary excavation dewatering, interception of shallow groundwater by drainage infrastructure and the proposed small volume groundwater abstraction during operation.

Temporary pumping may be required from turbine foundations, borrow pits, cable trenches and other excavations during construction. Pumping volumes and durations will be limited, and any associated lowering of shallow groundwater levels will be localised and temporary. Permanent drainage infrastructure may also intercept shallow groundwater locally. Chapter 9, Section 9.4.3.5, of the EIAR states that the associated lowering of groundwater levels is expected to extend only a few metres, or possibly tens of metres, from the drains. As the drains will generally be shallow and the anticipated seepage volumes are small, the hydraulic effects are expected to remain localised. These localised effects will not be sufficient to affect the quantitative status of the Glenville or Helvick Head groundwater bodies.

During operation, water for welfare facilities will be supplied principally through rainwater harvesting or, potentially, from a supply well adjacent to the proposed electrical substations. Any groundwater abstraction would be intermittent and less than 2 m³/day. Its hydraulic influence would be localised and will not result in a significant reduction in groundwater levels, available groundwater resources or groundwater baseflow to nearby streams.

Accordingly, the Proposed Project will not affect the quantitative status of the Glenville or Helvick Head groundwater bodies.

The principal potential risk to groundwater chemical status arises from accidental releases of fuels, oils, lubricants, chemicals, concrete or cementitious materials and wastewater during construction, operation or decommissioning. In the absence of controls, such releases could affect groundwater quality locally, particularly where excavations or shallow bedrock provide a pathway to groundwater.

No routine or continuous discharge of pollutants to groundwater is proposed. The pollution prevention, drainage, materials handling, wastewater management and emergency response measures presented in Section 4 will prevent or limit the entry of contaminants to groundwater. Subject to the implementation of these measures, the Proposed Project is not expected to cause sustained or widespread changes in groundwater chemistry, exceedances of relevant groundwater threshold values or significant and sustained upward trends in pollutant concentrations.

Groundwater also contributes locally to springs, seepages and stream flow. The proposed controls will therefore protect both groundwater quality and the associated groundwater contribution to connected surface water receptors. Potential effects on public and private water supplies, are assessed in Chapter 9, Section 9.4.3.12 of the EIAR.

The permanent built infrastructure footprint will occupy only a small proportion of the overall areas of the Glenville and Helvick Head groundwater bodies, and the predicted hydraulic and water quality effects will be localised. Nevertheless, the assessment does not rely on groundwater body scale alone. Mitigation is required to prevent local pollution and protect individual groundwater receptors.

Potential effects during decommissioning will be similar to those arising during construction but will generally be smaller in scale and shorter in duration. The same pollution prevention and drainage controls will be implemented.

For these reasons, the Proposed Project will not cause deterioration in the quantitative or chemical status of the Glenville or Helvick Head groundwater bodies or compromise the achievement or maintenance of their applicable WFD environmental objectives.

4.

MITIGATION TO PREVENT STATUS DETERIORATION

The objective of the proposed mitigation measures is to protect surface water and groundwater quality, maintain existing flow and drainage conditions, and prevent deterioration in the status of the receiving water bodies. The measures are also intended to ensure that the Proposed Project does not compromise the achievement or maintenance of the applicable WFD environmental objectives (WFD 2000/60/EC; DHLGH, 2024).

The mitigation strategy combines embedded design measures with construction, operational and decommissioning controls. It adopts a source-pathway-receptor (SPR) approach by:

- Avoiding or minimising the generation of sediment and contaminants at source;
- Controlling and treating runoff before it leaves the works area;
- Preventing direct discharges to watercourses;
- Maintaining existing surface water and shallow groundwater flow pathways, where practicable; and
- Monitoring the performance of the mitigation measures and the condition of receiving watercourses.

Mitigation measures will be implemented throughout all phases of the Proposed Project. Several components of the proposed drainage system will be installed during construction and retained permanently. This will continue to provide protection during construction, operation and decommissioning. The measures summarised below are derived from Chapter 9 of the EIAR (Sections 9.4.3 and 9.4.4).

4.1

Construction Phase

The construction phase mitigation strategy adopts a multiple-barrier approach to protect the surface water and groundwater. The strategy separates clean runoff, limits erosion and sediment mobilisation, provides settlement and treatment, and controls the final discharge of water from construction areas.

The construction drainage design is based on a multiple-barrier system to protect water quality, in line with the principles set out in Chapter 9 and the Construction Environmental Management Plan (CEMP, Appendix 4-3 of the EIAR). The following pollution control measures will be put in place:

- Sediment and Erosion – Adjacent drainage systems/groundwater will be protected from sedimentation and erosion which can be caused by direct surface water runoff generated onsite during earthworks and forestry felling operations. Surface water discharge from the Site will be managed and controlled for the duration of the construction works until the permanent surface water drainage system of the Site is complete.
- Accidental Spills and Leaks – All oils, fuels, paints and other chemicals will be stored in a secure bunded construction hardstand area. Refuelling and servicing of construction machinery will take place in a designated bunded area which is also remote from any drainage systems. A response procedure will be put in place to deal with any accidental pollution events and spillage kits will be available and construction staff will be familiar with the emergency procedures and use of the equipment.
- Concrete – Concrete batching will take place off site, wash down and wash out of concrete trucks will take place off site and any excess concrete will not be disposed of on site. Pumped concrete will be monitored to ensure there is no accidental discharge. Mixer washings will not be discharged into surface water drains.

- Disposal of Wastewater from Site – Discharge from any vehicle wheel wash areas will be directed to on-site settlement tanks/ponds, debris and sediment captured by vehicle wheel washes are to be disposed off-site at a licensed facility.
- Foul drainage discharge from the construction compound will be transported off site to a licensed facility.

The proposed construction phase mitigation measures are summarised in **Table 4-1**. Several elements of the drainage system will be permanent and will continue to function during the operational and decommissioning phases. Full details of the measures, including their design, location, implementation, and maintenance requirements, are provided in Chapter 9 of the EIAR and the associated SWMP (Appendix 4-4 of the EIAR).

Table 4-1: Summary of Proposed Mitigation Measures During Construction Phase

Mitigation Type	Description	Applicable Works Area
Avoidance Controls	➤ Maintain a 50 m buffer zone from natural watercourses; ➤ Minimise working areas and the duration of exposed ground; ➤ Avoid direct in-stream works and direct discharges to watercourses; and ➤ Schedule and suspend relevant works in response to heavy rainfall.	Construction work areas, particularly earthworks and works near watercourses.
Source Controls	➤ Divert clean runoff around construction areas using interceptor drains; ➤ Cover working areas, staging areas and stockpiles where required; and ➤ Minimise soil disturbance, compaction and rutting.	Construction work areas, access roads, stockpiles, compounds and material storage areas.
In-line Controls	➤ Collect runoff using swales, roadside drains, diversion drains, flumes and culverts; ➤ Reduce erosion and flow velocity using check dams, straw bales, silt fences, sandbags, filter fabrics and similar measures; and ➤ Use sumps, temporary pumping systems and sediment traps where required.	Interceptor, collection and conveyance drainage systems.
Treatment Controls	➤ Treat sediment-laden runoff using settlement ponds, sediment/silt traps and sumps; ➤ Use silt bags, filter fabrics or equivalent filtration measures where required; and ➤	Surface water treatment locations prior to controlled discharge.
Discharge & Receiving Water Controls	➤ Discharge clean water diffusely through level spreaders and treated runoff through buffered outfalls and across vegetation; and ➤ Prevent direct discharge to streams and rivers.	Drainage outfalls, overland discharge locations and receiving watercourses.
Inspection and maintenance	➤ Regular inspection and maintenance of access roads, drains, swales, culverts, check dams, settling basins and drainage outfalls; ➤ Removal of accumulated sediment and vegetation, clearance of blocked outlets and repair of damaged drainage infrastructure;	Drainage outfalls, overland discharge locations and receiving watercourses.

4.2

Operational Phase

During the operational phase, the permanent drainage measures installed during construction will remain in place. Runoff from hardstanding areas will be collected in swales and conveyed to settlement basins or ponds prior to controlled discharge to ground.

The principal operational phase mitigation measures will comprise:

- Regular inspection and maintenance of access roads, drains, swales, culverts, check dams, settling basins and drainage outfalls;
- Removal of accumulated sediment and vegetation, clearance of blocked outlets and repair of damaged drainage infrastructure;
- Use of rainwater harvesting at the substation control buildings, where practicable, to reduce the requirement for groundwater abstraction.
- Riparian buffers will protect watercourses by trapping sediment, filtering nutrients stabilising riverbanks and slowing surface water flow.

Where a groundwater supply well is installed adjacent to an electrical substation, abstraction will be intermittent and less than 2 m³/day. The hydraulic influence of the abstraction will therefore remain localised.

4.3

Decommissioning Phase

Potential effects during decommissioning will be similar to those associated with construction but will be of a reduced magnitude due to the smaller scale and shorter duration of the works.

Turbine bases will be rehabilitated by covering them with local topsoil to encourage revegetation. This will reduce surface runoff, erosion and the mobilisation of sediment. Drains will also be rehabilitated where appropriate, while the operational drainage measures will continue to be maintained during the decommissioning works.

Site access roads will be retained for ongoing forestry and agricultural use. 33kV underground electrical cabling will be removed. However, the associated ducting will remain in situ to avoid unnecessary excavation, soil disturbance and the potential generation of suspended sediment. Turbines will be dismantled and transported offsite along the original delivery route.

The operational drainage measures will continue to be maintained during decommissioning. A Decommissioning Plan (Appendix 4-6 of the EIAR) will be prepared prior to the commencement of the works and will include the drainage, and water protection measures appropriate to the conditions and best practice prevailing at that time.

4.4 Monitoring

Surface water monitoring will be undertaken in accordance with Section 9.4.8 of Chapter 9 and the Water Quality Management Plan contained within the CEMP. The purpose of the programme will be to confirm that the proposed drainage, sediment-control and pollution-prevention measures are operating effectively and to identify any adverse change in receiving-water conditions.

The programme will include:

- Visual inspection of the drainage system and receiving watercourses;
- Field monitoring of key water quality indicators including electrical conductivity (EC), pH, dissolved oxygen (DO) and oxidation reduction potential (ORP); and
- Laboratory analysis of samples collected at established upstream and downstream monitoring locations.

Baseline monitoring will be completed before construction and will continue throughout the construction phase. Monitoring will also be undertaken during decommissioning and continued during the first three years of operation, as described in Chapter 9.

An adaptive monitoring approach will be applied, whereby the monitoring scope and frequency may be amended following review of the results. Where monitoring identifies a visible impact or indicates that the mitigation measures are not operating effectively, the cause will be investigated and corrective measures implemented. Relevant works will be suspended where necessary until the issue has been resolved.

The monitoring programme will therefore provide a means of verifying the continued effectiveness of the proposed mitigation measures and supporting compliance with the WFD no deterioration objective.

4.5 General Environmental Management Measures

In addition to the phase specific mitigation measures described in Section 4.1 to 4.3, general environmental management measures will be implemented to minimise the risk of accidental pollution and protect surface water and groundwater. The measures summarised below are derived from Chapter 9 and will be implemented through the CEMP and, where relevant, the SWMP.

4.5.1 Accidental Spills and Leaks of Fuel and Chemicals

The prevention of, and responses to, accidental spills and leaks of fuel and other chemicals are covered by the CEMP and SWMP. The following mitigation measures will be implemented.

- The highest standards of site management will be maintained, with the utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the Site and surrounding environment during construction;
- An Emergency Response Plan for accidental spillages will be implemented as part of the CEMP. All construction staff will be familiar with the emergency procedures and the use of the relevant equipment;
- The ECoW will oversee the pollution prevention measures agreed for the Site to ensure that they are operating safely and effectively as well as having responsibility for the implementation of Emergency Procedures for spill control measures.
- Where possible, refuelling will occur at an off-site controlled fuelling station.
- On-site refuelling will be undertaken using an offsite fuel truck, with spill kits readily available for accidental leakages or spillages;
- Refuelling will be undertaken by designated, suitably trained personnel only;
- Refuelling of construction machinery will take place using drip trays at all times;

- All plant and machinery will be serviced before being mobilised to site and will be regularly inspected and maintained to minimise the risk of leaks and spillages;
- Maintenance of construction vehicles or plant will, where practicable, be undertaken off site;
- Spill response kits will be available at all active work areas, refuelling locations, concrete works and construction compounds, and personnel will be trained in their use;
- Fuels stored on-site will be minimised. Storage areas, where required, will be bunded appropriately for 110% of the fuel storage volume for the time period of construction and fitted with a storm drainage system and an appropriate oil interceptor;
- All waste tar material arising from the excavation of the 110kV underground cabling trench and resurfacing of roads will be removed off-site and taken to a licenced waste facility;
- An emergency response plan for the construction phase to deal with accidental spillages will be contained within the CEMP.
- Hydrocarbon interceptors will be installed at the substations and construction compounds.

4.5.2 Wastewater Management

Staff welfare facilities will be provided at the construction compounds within the Site. Sealed storage tanks will be used. These will be collected regularly and brought offsite for disposal by authorised means (permitted wastewater collector) to a wastewater treatment plant. It is not proposed to treat wastewater on-site.

- 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 (and along the Proposed Grid Connection as required), 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 to the Site.

During operation, wastewater from the staff welfare facilities within the Proposed 110kV Substation and Proposed 220kV Loop-In Substation will be managed by means of sealed, wastewater holding tanks, which will be emptied regularly, and all wastewater will be transported offsite by a permitted waste collector to a licenced wastewater treatment plant.

The proposed wastewater holding tanks will be fitted with an automated alarm system that will provide sufficient notice that the tank requires emptying. Full details of the proposed tank alarm system will be submitted to the Planning Authority in advance of any works commencing on-site. Only waste collectors holding valid waste collection permits under the Waste Management (Collection Permit) Regulations, 2007 (as amended), will be employed to transport wastewater away from the site.

Equivalent controls will apply during decommissioning where temporary welfare facilities are required. No wastewater will be discharged to surface water, groundwater or the Site drainage system.

4.5.3 Cement-Based Products Management

The prevention of, and responses to, accidental spills and leaks of fuel and other chemicals are covered by the CEMP and SWMP. The following mitigation measures will be implemented.

- No batching of wet-cement 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 culvert and watercourse crossings will be used;
- No washing out of any plant used in concrete transport or concreting operations will be allowed on-site;
- Where concrete is delivered on site, only the chute need be cleaned, using the smallest volume of water possible. No discharge of cement contaminated waters to the construction

phase drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water is to be directed to lined, cement washout ponds before being removed from the Site and discharged at a suitable licensed facility;

- The washout ponds will be covered when not in use to prevent rainwater collecting.
- Weather forecasting will be used to assist in planning large concrete pours, and large pours will be avoided where prolonged periods of heavy rain are forecast.; and,
- Ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event; and
- At proposed turbine foundations, sand blinding, DPM, and lean-mix blinding are used to vertically contain the concrete. While the concrete is contained laterally by temporary/permanent shuttering. The concrete cures within 72hrs.

Risks of pollution will be further reduced as follows:

- Concrete will not be transported around the site in open trailers or dumpers to avoid spillage while in transport.
- Arrangements for concrete deliveries to the site will be discussed with suppliers before work starts, routes will be confirmed, and on-site washouts will be prohibited, and emergency procedures will be discussed.
- Clearly visible signage will be placed in prominent locations close to concrete pour areas specifically stating washout of concrete lorries is not permitted on the site.
- Excavations will be sufficiently dewatered before concreting begins, and dewatering will continue while concrete sets.
- Covers will be used on freshly placed concrete to avoid the surface washing away in heavy rain.
- Any potential, small surplus of concrete will be disposed of after completion of a pour in suitable locations away from any watercourse or sensitive habitats.

4.6

Residual Effects After Implementing Mitigation Measures

Following implementation of the proposed mitigation measures described in Section 4.1 to 4.5, no likely significant residual effects on the surface water or groundwater environment are expected.

During construction, Chapter 9, Section 9.4.3, assesses the residual effects on surface water bodies as direct, negative, slight, short-term and unlikely. Localised effects on groundwater, private well and associated receptors are assessed as imperceptible or not significant and unlikely following mitigation.

During operation, the permanent drainage controls, routine maintenance, pollution-prevention measures and monitoring programme will limit the potential for sustained changes in water quality, flow conditions or hydromorphology. Chapter 9, Section 9.4.4 assesses the residual effects on WFD surface water and groundwater body status as indirect, neutral, imperceptible, long-term and unlikely.

Residual effects during decommissioning will be similar to those associated with construction but will be smaller in magnitude due to the reduced scale of the works and the continued implementation of the applicable mitigation measures.

Accordingly, the Proposed Project will not:

- Cause deterioration in the ecological or chemical status of any connected surface water body;
- Cause deterioration in the quantitative or chemical status of the Glenville or Helvick Head groundwater bodies; or
- Compromise the achievement or maintenance of the applicable WFD environmental objectives.

The current status of water bodies that achieve ‘Good’ status will therefore be protected, while the Proposed Project will not compromise the improvement of water bodies that are currently below ‘Good’ status.

5. DESIGNATED SITES AND PROTECTED AREAS

A review was undertaken of designated sites and protected areas that could be directly or indirectly affected by the Proposed Project. The review was guided by the source-pathway-receptor model and considered whether each site has a water dependent qualifying interest of a designated feature and whether a surface water or groundwater pathway exists. The relevant designated sites and protected areas are summarised in **Table 5-1**.

Table 5-1: Summary of Designated Sites and Potential to be Impacted by the Proposed Project

Designated Site/Protected Area	Nearest Distance from Proposed Project	Assessment of Likely Zone of Influence
Special Areas of Conservation (SAC)		
Blackwater River (Cork / Waterford) SAC [002170]	Within and immediately adjacent to the Proposed Wind Farm (310 m south of the permanent built infrastructure footprint at its closest point) (and 8.5km from the Proposed Grid Connection)	Downstream hydrological and hydrogeological connectivity exists via the Goish River, drains and tributaries of the Licky River and shallow groundwater. In the absence of mitigation, there is potential for deterioration in water quality through sedimentation, nutrient and organic matter loading or accidental pollution, with consequent effects on the water dependent qualifying interests of the SAC. Hence, the SAC was retained for further assessment.
Special Protection Area (SPA)		
Dungarvan Harbour SPA [004032]	2.3km from the Proposed Wind Farm (at its closest point) (4.4km from the Proposed Grid Connection)	The Proposed Project is located entirely outside this SPA. Indirect hydrological connectivity exists via the Brickey River, and Dungarvan Harbour. Potential effects could arise from deterioration in water quality and associated indirect effects on Wetland and Waterbirds [A999] in the absence of mitigation. Hence, the SPA was retained for further assessment.
Blackwater Estuary SPA [004028]	3.6km from the Proposed Wind Farm (at its closest point) and 4.8km from the Proposed Grid Connection (at its closest point)	The Proposed Project is located outside the SPA. Indirect hydrological connectivity exists through the Licky river system. Potential effects could arise through changes in water quality in the absence of mitigation. Hence, the SPA was retained for further assessment.
Proposed National Heritage Area (pNHA)		
Dungarvan Harbour pNHA [000663]	2.3km from the Proposed Wind Farm (at its closest point) (4.4km from the Proposed Grid Connection)	The Proposed Project is located entirely outside this pNHA. Indirect hydrological connectivity exists via the Brickey River. Potential effects on the saltmarsh and sandflat habitats arise from changes in water quality in the absence of mitigation. Hence, the pNHA was retained for further assessment.
Blackwater River And Estuary pNHA [000072]	3.6km from Proposed Wind farm Footprint (at its closest point) and 3.6km from the Proposed Grid Connection (at its closest point)	The Proposed Project is located entirely outside of the pNHA. Indirect hydrological and hydrogeological connectivity exists via the Licky and Goish Rivers. In the absence of mitigation, deterioration in water quality could affect the water-dependent habitats and species supported by the pNHA. Hence, the pNHA was retained for further assessment.
Nutrient Sensitive Area		
Blackwater Estuary Lower (IE_SW_020_0100)	3.6km from Proposed Wind farm Footprint (at its closest point) and 4.8km from the Proposed Grid Connection (at its closest point)	Indirect downstream hydrological connectivity exists via the Licky and Goish river systems. In the absence of mitigation, the mobilisation of nutrients and organic matter could contribute to deterioration in downstream water quality. Hence, further assessment is required.
Shellfish Areas		

Designated Site/Protected Area	Nearest Distance from Proposed Project	Assessment of Likely Zone of Influence
Dungarvan Harbour (IE_SE_140_0000)	5.1 km from the Proposed Wind Farm Footprint. (at its closest point) 7.4 km from the Proposed Grid Connection. (at its closest point)	The Proposed Project is located outside the designated shellfish water. Indirect hydrological connectivity exists from the northern part of the Proposed Wind Farm via Brickey river systems to Dungarvan Harbour. In the absence of mitigation, sediment, nutrients, organic matter or accidental pollution entering the connected drainage network could be transported downstream, resulting in deterioration in water quality and potentially compromising the applicable shellfish-water environmental objectives. Hence, further assessment is required.
Bathing Water Areas		
Clonea Beach (IESEBWC140_0000_0100)	10.0 km from the Proposed Wind Farm Footprint (at its closest point). 11.8 km from the Proposed Grid Connection (at its closest point).	Clonea Beach is an identified bathing water associated with Dungarvan Harbour. A remote indirect pathway exists through the Brickey River and Dungarvan Harbour. No direct effects can occur. However, in the absence of mitigation, pollution entering the connected river system could contribute to deterioration in downstream bathing-water quality. Hence, further assessment is required.
Drinking Water		
Glenville (IE_SW_G_037)	Underlying part of the Proposed Wind Farm and the Proposed Grid Connection	Both groundwater bodies underlying the Proposed Project are identified as drinking water protected areas. Chapter 9 states that there are no public water-supply abstractions within or downgradient of the Proposed Project and that the nearest public supply is outside the hydrologically linked subcatchments. The potential effects on the chemical and quantitative status of these groundwater bodies are assessed in Section 3.4.
Helvick Head (IE_SE_G_073)	Underlying part of the Proposed Wind Farm.	

No river water bodies within the likely Zone of Influence of the Proposed Project are designated salmonid waters.

The designated sites and protected areas retained within the likely Zone of Influence have habitats, species, uses or environmental objectives that are wholly or partly dependent on water quality, water levels or flow conditions.

With the exception of the drinking water protected groundwater bodies that underlie the Proposed Project, the Proposed Project is located outside the boundaries of the identified designated sites and protected areas. Direct effects on these downstream sites will therefore not occur. However, indirect effects could arise through the hydrological and hydrogeological pathways identified in **Table 5-1**.

In the absence of mitigation, the principal potential water-related effects comprise:

- Deterioration in surface water quality through sediment and suspended solids, nutrients, organic matter or accidental releases of fuels, oils, chemicals, cementitious materials or wastewater;
- Deposition of fine sediment within downstream river habitats;
- Localised changes to runoff, drainage patterns and surface water flow pathways; and
- Localised changes to groundwater quality, levels or flow arising from excavation, drainage, temporary dewatering or abstraction.

The principal potential effects would arise during construction, when earthworks, clear-felling, excavation, drainage works and watercourse-crossing works will be undertaken. Operational risks will be more limited and will relate principally to the continued performance and maintenance of the permanent drainage system, accidental releases, wastewater management and any groundwater abstraction. Potential effects during decommissioning will be similar to those arising during construction but will be smaller in scale.

The mitigation and monitoring measures presented in Section 4 (and in Chapter 9 of the EIAR) will interrupt the identified source–pathway–receptor linkages and protect the water quality, hydrological and hydrogeological conditions supporting the designated sites and protected areas. Following implementation of these measures, the Proposed Project will not cause deterioration in the water conditions supporting any connected designated site or protected area or compromise the achievement of its applicable WFD environmental or conservation objectives.

6.

SUMMARY

This Water Framework Directive Compliance Assessment has considered the potential effects of the Proposed Project on surface water bodies, groundwater bodies and water dependent protected areas that are hydrologically or hydrogeologically connected to the Proposed Project.

The Proposed Project is located predominantly within the Blackwater (Munster) Catchment, with a small northern portion located within the Colligan–Mahon Catchment. The principal connected river water bodies are LICKY_010, LICKY_020, LICKY_030, GOISH_010, GOISH_020 and BRICKEY_020. The connected transitional water bodies are Lower Blackwater M Estuary/Youghal Harbour, Upper Blackwater M Estuary and Brickey Estuary. The groundwater bodies underlying the Proposed Project are Glenville and Helvick Head.

For the 2019–2024 classification period, LICKY_010, LICKY_020 and LICKY_030 are classified as having ‘Good’ ecological status. GOISH_010 is classified as having ‘Moderate’ ecological status, while GOISH_020 and BRICKEY_020 are classified as having ‘Poor’ ecological status. The connected transitional water bodies are classified as having ‘Moderate’ ecological status. The Glenville and Helvick Head groundwater bodies are classified as having ‘Good’ status.

In the third-cycle risk assessment, LICKY_010, LICKY_020 and LICKY_030, together with the Glenville and Helvick Head groundwater bodies, are classified as ‘Not At Risk’ of failing to achieve their WFD environmental objectives. GOISH_010, GOISH_020, BRICKEY_020, Lower Blackwater M Estuary/Youghal Harbour and Upper Blackwater M Estuary are classified as ‘At Risk’, while Brickey Estuary is classified as Review.

Without mitigation, the principal potential effects on surface water would arise from sediment mobilisation and deposition, increased turbidity, the release of nutrients and organic matter, accidental pollution, physical disturbance of watercourses and local changes to runoff and drainage pathways. The Licky River and its freshwater pearl mussel interests are particularly sensitive to increases in fine sediment, turbidity and organic matter. Potential groundwater effects would comprise localised changes in groundwater levels and flow arising from excavation, drainage and temporary dewatering, together with potential effects on groundwater quality from accidental releases.

The greatest potential for effects would occur during the construction phase because of clear-felling, earthworks, excavation, drainage works, watercourse crossings, dewatering, concrete works and the handling of fuels, chemicals and excavated materials. Operational risks would be lower and would principally relate to the continued performance and maintenance of the permanent drainage system, accidental releases of oils or chemical during project maintenance, wastewater management and any small volume groundwater abstraction. Potential effects during decommissioning would be similar to those arising during construction but would be smaller in scale and shorter in duration.

The proposed mitigation strategy incorporates avoidance measures, source controls, drainage and conveyance controls, settlement and treatment measures, diffuse discharge arrangements and pollution prevention procedures. These measures will be supported by wastewater management and cement management controls, an Emergency Response Plan and a programme of surface water monitoring. Permanent drainage controls will be inspected and maintained throughout operation and decommissioning, and corrective action will be implemented where monitoring indicates that the measures are not operating effectively.

Following implementation of the proposed mitigation and monitoring measures, no likely significant residual effects on surface water or groundwater are expected. The Proposed Project will not cause deterioration in the ecological or chemical status of any connected surface water body, will not cause deterioration in the quantitative or chemical status of the Glenville or Helvick Head groundwater bodies, and will not compromise the achievement or maintenance of the applicable WFD environmental objectives or the water-dependent objectives of connected protected areas.



The Proposed Project is therefore considered compliant with the environmental objectives of the Water Framework Directive.

7.

REFERENCES

Department of Housing, Local Government and Heritage (2024). Water Action Plan 2024: River Basin Management Plan 2022 – 2027. Accessible from: <https://www.gov.ie/en/department-of-housing-local-government-and-heritage/policy-information/river-basin-management-plan-2022-2027/>

EPA, GSI, NPWS, online databases were reviewed to assess catchment status, surface and groundwater classification chemistry data, and designated sites.

Environmental Protection Agency (2024). Cycle 3. HA 17 Colligan-Mahon Catchment Report.

Environmental Protection Agency (2024). Cycle 3. HA 18 Blackwater (Munster) Catchment Report.

European Parliament and Council, 2000. Directive 2000/60/EC Establishing a Framework for Community Action in the Field of Water Policy (Water Framework Directive). Official Journal of the European Communities, L327/1.

European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003), as amended.

