Derrygrogan Little Solar Farm

Report to Inform Screening for Appropriate Assessment
and
Natura Impact Statement

794-NI-P&E-02898
F01
December 25

rpsgroup.com

Document status					
Version	**Purpose of document**	**Authored by**	**Reviewed by**	**Approved by**	**Review date**
A01	Client review	EA	RW	JMC	28.10.2025
A02	Client review	EA	RW	JMC	28.11.2025
F01	Final for planning	EA	RW	JMC	04.12.2025

Approval for issue	
JMC	04.12.2025

Prepared by:

Tetra Tech RPS

Prepared for:

Ballyteige Solar Limited

CONTENTS

Figures

Tables

1. INTRODUCTION

This report has been prepared by Tetra Tech RPS (TT RPS) on behalf of RES for Ballyteige Solar Limited (the Applicant) and examines whether or not the proposed installation and operation of a solar farm (hereafter 'the Proposed Development') on lands at Derrygrogan Little and Derrygrogan Big, County Offaly, Ireland (hereafter 'the Application Site') is likely to give rise to a significant effect on any European site, and in doing so inform screening for Appropriate Assessment (AA).

This Report to Inform Screening for Appropriate Assessment (RISAA) has been prepared to accompany an application for development consent to Offaly County Council (as the Competent Authority), and is an examination of whether, in view of best scientific knowledge and applying the precautionary principle, the Proposed Development, either individually or in combination with other plans or projects, is likely to have a significant effect on any European site(s). The assessment will be carried out in accordance with the provisions of Part XAB of the Planning and Development Act 2000, as amended (**"the 2000 Act"**) and in accordance with the requirements of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (as amended) (**"the Habitats Directive"**).

With the introduction of the Habitats Directive (Council Directive 92/43/EEC on the Conservation of natural habitat and of wild fauna and flora) came the obligation to establish the Natura 2000 network of Sites of Community Interest (SCIs), comprising a network of areas of highest biodiversity importance for rare and threatened habitats and species across the European Union (EU).

In Ireland, the Natura 2000 network of sites comprises Special Areas of Conservation (SACs, including candidate SACs) designated under domestic legislation transposing Directive 92/43/EEC, and Special Protection Areas (SPAs, including proposed SPAs) classified under the Birds Directive (Council Directive 2009/147/EC on the conservation of wild birds) and designated under the same domestic legislation.

SACs are designated for the conservation of Annex I habitats (including priority types which are in danger of disappearance) and Annex II species (other than birds). SPAs are designated for the conservation of Annex I birds and other regularly occurring migratory birds and their habitats. The annexed habitats and species for which each site is designated correspond to the qualifying interests of the sites; from these the conservation objectives of the site are derived.

SACs and SPAs make up the pan-European network of Natura 2000 sites. It should be noted that 'European sites' are defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended ('the 2011 Regulations'), Section 177R of the Planning and Development Act 2000, as amended ('the 2000 Act'), and Section 2 of the Planning and Development Act 2024 ('the 2024 Act').

Following screening, if it cannot be excluded on the basis of objective scientific information and in the absence of mitigation measures that the proposed development may result in a significant effect on any European site then a Natura Impact Statement (NIS) shall be prepared.

1.1 Appropriate Assessment

1.1.1 The Habitats Directive

A key protection mechanism in the Habitats Directive is the requirement to subject plans and projects to Appropriate Assessment (AA) in line with the requirements of Article 6(3) of the Habitats Directive, which requires that–

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation

objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and if appropriate, after having obtained the opinion of the general public.

Thus, Article 6(3) defines a step-wise procedure for considering plans and projects:

The first part of this procedure consists of a preliminary 'screening' stage to determine whether, firstly, the plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site; it is governed by the first sentence of Article 6(3).

The second part of the procedure, governed by the second sentence of Article 6(3), relates to the appropriate assessment and the decision of the competent national authorities.

1.1.2 Irish Legislation

For the purposes of applications for planning permission, under Section 34 of the Planning and Development Act 2000 (as amended) ("the PDA"), and applications for approval under Section 182A of the PDA, the obligations under Article 6(3) of the Habitats Directive have been transposed into Irish law by part XAB of the PDA. In relation to other consent regimes, the provisions of the European Communities (Birds and Natural Habitats) Regulations 2011, as amended ("the 2011 Regulations"), transpose those obligations.

This report has been prepared to assist the Competent Authority in carrying out Screening for Appropriate Assessment in respect of the Proposed Development, which is the subject of (i) an application for planning permission under section 34 of the PDA and (ii) an application for approval under section 182A of the PDA, and as such the provisions of the PDA apply.

1.1.3 Screening

Regulation 42 of the 2011 Regulations requires *inter alia* that screening for appropriate assessment of a project for which an application for consent is received, and which is not directly connected with or necessary to the management of the site as a European Site, shall be carried out by the public authority to assess, in view of best scientific knowledge and in view of the conservation objectives of the site, if that project, individually or in combination with other plans or projects is likely to have a significant effect on the European site.

Section 177U of the 2000 Act requires *inter alia* that a screening for appropriate assessment of an application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on a European site.

Section 212 of Chapter 3 of Part 6 of the 2024 Act requires *inter alia* that a screening for appropriate assessment of a relevant development is carried out by the competent authority (a) for which an application for permission for relevant development is made, and (b) that is not directly connected with, or necessary for, the management of a European site, for the purpose of determining whether or not the proposed development (either individually or in combination with any plan or other project) has had, is having or is likely to have a significant effect on a European site having regard to the conservation objectives of that European site..

1.1.4 Appropriate Assessment (AA)

Regulation 42 of the 2011 Regulations requires *inter alia* that a public authority shall determine that an appropriate assessment of a project is required where the project is not directly connected with or necessary to the management of the site as a European Site and if it cannot be excluded, on the basis

of objective scientific information following screening that the project, individually or in combination with other plans or projects, will have a significant effect on a European site.

Section 177V of the 2000 Act requires *inter alia* that an appropriate assessment carried out by the competent authority shall include a determination under Article 6(3) of the Habitats Directive as to whether or not a proposed development would adversely affect the integrity of a European site and an appropriate assessment shall be carried out by the competent authority where it has made a determination under section 177U(4) that an appropriate assessment is required, before consent is given for the proposed development.

Section 217 of Chapter 3 of Part 6 of the 2024 Act requires *inter alia* that an appropriate assessment of a relevant development is carried out by the competent authority to determine as to whether or not any reasonable scientific doubt exists as to the absence of adverse effects on the integrity of any European site following the submission of a Natura Impact Statement prepared by an applicant for permission in accordance with Section 215 of Chapter 3 of Part 6 of the 2024 Act..

1.1.5 The Appropriate Assessment Procedure

According to European Commission guidance documents 'Assessment of plans and projects significantly affecting Natura 2000 sites' (EC, 2001) and the 'Managing Natura 2000 sites: The Provisions of Article 6 of the 'Habitats' Directive 92/43/EEC' (EC, 2019), the obligations arising under Article 6 establish a step-wise procedure for Habitats Directive Assessment as follows, and as illustrated in **Figure 1.1: Step-wise procedure of Article 6 of the Habitats Directive (from EC, 2021)[1].**

The first part of this procedure consists of a pre-assessment stage ('screening') to determine whether, firstly, a plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site either alone or in combination with other plans or projects; it is governed by the first sentence of Article 6(3).

The second part of the procedure, governed by the second sentence of Article 6(3), relates to the appropriate assessment and the decision of the competent national authorities.

A third part of the procedure (governed by Article 6(4)) comes into play if, despite a negative assessment, it is proposed not to reject a plan or project but to give it further consideration. In this case Article 6(4) allows for derogations from Article 6(3) under certain conditions.

The extent to which the sequential steps of Article 6(3) apply to a given plan or project depends on several factors, and in the sequence of steps, each step is influenced by the previous step. The order in which the steps are followed is therefore essential for the correct application of Article 6(3). Each step determines whether a further step in the process is required. If, for example, the conclusion at the end of a Habitats Directive stage one screening appraisal is that significant effects on European sites can be excluded in the absence of any best practice or targeted measures intended to avoid or reduce the harmful effects of a proposed development on European sites, there is no requirement to proceed to the next step.

[1] The flowchart illustrated in **Error! Reference source not found.** is Figure 1 of EC (2021). It is noted that while this flowchart states in the 'Appropriate Assessment' stage (the dark blue step) "*Is it ascertained that [having applied the necessary mitigation measures and consulted the public] the plan or project will not have* ***significant effect*** *[with other plans or projects] on the integrity of the Natura 2000 site in view of its conservation objectives?*" (emphasis added), the applicable test at the Appropriate Assessment stage, in accordance with Article 6(3) of the Habitats Directive and the Planning and Development Act 2000, is whether or not the plan or project will have an **adverse effect** the integrity of any European site (as referred to in section 1.1.4 above).

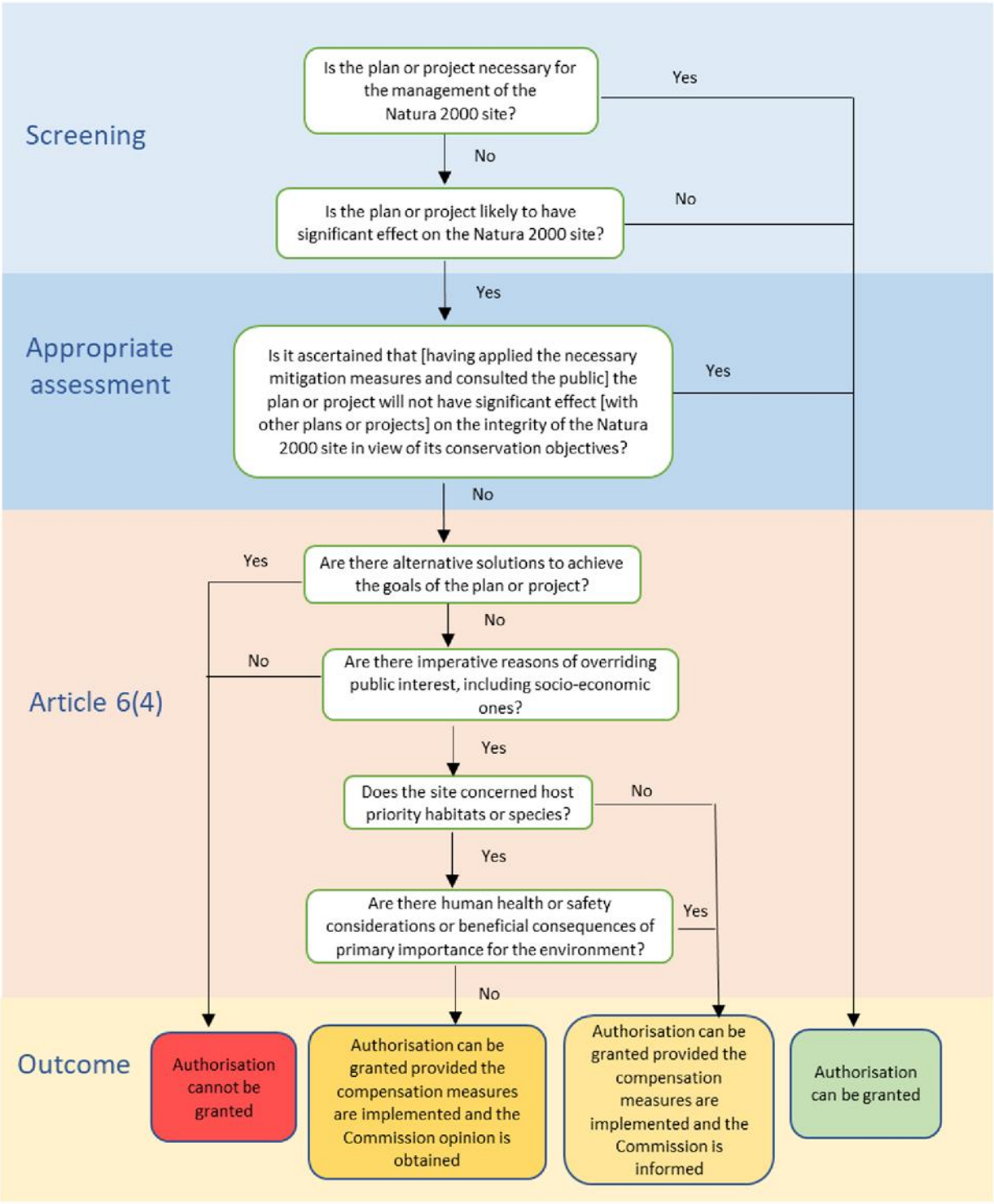


Figure 1.1: Step-wise procedure of Article 6 of the Habitats Directive (from EC, 2021)

Error! Reference source not found.[2].

[2] The flowchart illustrated in **Error! Reference source not found.** is Figure 1 of EC (2021). It is noted that while this flowchart states in the 'Appropriate Assessment' stage (the dark blue step) "*Is it ascertained that [having applied the necessary mitigation measures and consulted the public] the plan or project will not have* ***significant effect*** *[with other plans or projects] on the integrity of the Natura 2000 site in view of its conservation objectives?*" (emphasis added), the applicable test at the

1.2 Document Structure

1.2.1 Objective of the RISAA

The purpose of this RISAA is to provide the competent authority with information to assist them in carrying out an assessment of the implications of the Proposed Development on European sites in view of their conservation objectives.

This exercise has been conducted on behalf of the Applicant in support of an application to the local planning authority for development consent.

1.2.2 Methodology and Guidance

Section 2 of the RISAA sets out the methodology followed, and guidance documents used in conducting a screening appraisal for appropriate assessment and subsequent appraisal for appropriate assessment of the implications of the Proposed Development on European sites.

1.2.3 Proposed Development

Section 3 of the RISAA describes the Proposed Development, the general methodology sequence and activities to be undertaken.

1.2.4 Information for Stage 1 Screening Appraisal

Section 4 of the RISAA contains a preliminary examination and analysis to understand whether or not the Proposed Development is likely to have a significant effect on any European site. This is the Stage 1 screening appraisal. It has been undertaken in view of best scientific knowledge, in light of the Conservation Objectives of the sites concerned and considers the Proposed Development individually and in combination with other plans and projects. Measures intended to avoid or reduce the harmful effects of the proposed works on European sites (i.e. “mitigation measures”) or best practice measures have not been taken into account in the screening stage appraisal and should not be taken into account by the competent authority in conducting its screening exercise.

Appropriate Assessment stage, in accordance with Article 6(3) of the Habitats Directive and the Planning and Development Act 2000, is whether or not the plan or project will have an **adverse effect** the integrity of any European site (as referred to in section 1.1.4 above).

2. METHODOLOGY

2.1 Published guidance on Appropriate Assessment

Appropriate Assessment Guidelines for Planning Authorities have been published by the Department of the Environment Heritage and Local Government (DEHLG, 2010) and more recently by the Office of the Planning Regulator Practice Note (PN01) (OPR, 2021). In addition to the advice available from the Department, the European Commission has published a number of documents which provide a significant body of guidance on the requirements of Appropriate Assessment, most notably including Notice C(2021) 6913 '*Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC*', which sets out the principles of how to approach decision making during the process. These principal national and European guidelines have been followed in the preparation this RISAA. The following list identifies these and other pertinent guidance documents:

- DEHLG (2010). *Appropriate Assessment of Plans and Projects in Ireland Guidance for Planning Authorities Acknowledgements*. Available at: https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2009_AA_Guidance.pdf.
- Communication from the Commission on the Precautionary Principle., Office for Official Publications of the European Communities, Luxembourg (EC, 2000);
- Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC. Office for Official Publications of the European Communities, Luxembourg (EC, 2001);
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: Alternative Solutions, Imperative Reasons of Overriding Public Interest, Compensatory Measures, Overall Coherence, Opinion of the Commission. Office for Official Publications of the European Communities, Luxembourg (EC, 2007);
- Estuaries and Coastal Zones within the Context of the Birds and Habitats Directives - Technical Supporting Document on their Dual Roles as Natura 2000 Sites and as Waterways and Locations for Ports. Office for Official Publications of the European Communities, Luxembourg (EC, 2009);
- Appropriate Assessment of Plans and Projects in Ireland. Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, Dublin (DEHLG, 2010a);
- Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities, Dublin (DEHLG, 2010b);
- European Commission Note on Setting Conservation Objectives for Natura 2000 Sites, Office for Official Publications of the European Communities, Luxembourg (EC, 2012);
- Interpretation Manual of European Union Habitats. Version EUR 28. Office for Official Publications of the European Communities, Luxembourg (EC, 2013a);
- Guidelines on Climate Change and Natura 2000. Office for Official Publications of the European Communities, Luxembourg (EC, 2013b);
- European Commission Notice C (2018) 7621 'Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC', Office for Official Publications of the European Communities, Luxembourg (EC, 2019);
- Institute of Air Quality Management 'A guide to the assessment of air quality impacts on designated nature conservation sites (Version 1.1)', London (IAQM, 2020);
- Office of the Planning Regulator Practice Note (PN01) 'Appropriate Assessment Screening for Development Management', Dublin (OPR, 2021);
- European Commission Notice C(2021) 6913 'Assessment of plans and projects in relation to Natura 2000 sites - Methodological guidance on Article 6(3) and (4) of the Habitats Directive 92/43/EEC', Office for Official Publications of the European Communities, Luxembourg (EC, 2021); and

- European Commission Guidance document on Assessment of plans and projects in relation to Natura 2000 sites - A summary, Office for Official Publications of the European Communities, Luxembourg (EC, 2022).

2.2 Likely Significant Effect

The Commission's 2019 Notice (EC, 2019) advises that the appropriate assessment procedure under Article 6(3) is triggered not by the certainty but by the likelihood of significant effects, arising from plans or projects regardless of their location inside or outside a protected site. Such likelihood exists if significant effects on the site cannot be excluded. The significance of effects should be determined in relation to the specific features and environmental conditions of the site concerned by the plan or project, taking account of the site's conservation objectives and ecological characteristics.

The threshold for a Likely Significant Effect ("LSE") is treated in the screening exercise as being above a *de minimis* level. A *de minimis* effect is a level of risk that is too small to be concerned with when considering ecological requirements of an Annex I habitat or a population of Annex II species present on a European site necessary to ensure their favourable conservation condition. If low level effects on habitats or individuals of species are assessed to be in this order of magnitude and that this assessment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be LSEs.

The requirement that the effect in question be 'significant' exists in order to lay down a *de minimis* threshold – thus, plans or projects that have no appreciable effect on the site are thereby excluded. A likely significant effect is triggered when:

- there is a probability or a risk of a plan or project having a significant effect on a European site;
- the plan is likely to undermine the site's conservation objectives; and
- a significant effect cannot be excluded on the basis of objective information.

The analysis involved in a Stage 1 screening appraisal for Appropriate Assessment is described in EC (2021) as comprising four steps:

- ascertaining whether the plan or project is directly connected with or necessary to the management of a Natura 2000 site;
- identifying the relevant elements of the plan or project and their likely impacts;
- identifying which (if any) Natura 2000 sites may be affected, considering the potential effects of the plan or project alone or in combination with other plans or projects;
- assessing whether likely significant effects on the Natura 2000 site can be ruled out, in view of the site's conservation objectives.

EC (2021) defines a LSE as being "any effect that may reasonably be predicted as a consequence of a plan or project that would negatively and significantly affect the conservation objectives established for the habitats and species significantly present on the Natura 2000 site. This can result from either on-site or off-site activities, or through combinations with other plans or projects".

The requirement that the effect in question be 'significant' exists in order to lay down a *de minimis* or negligible threshold – thus, plans or projects that have no appreciable or imperceptible effects on the site are thereby excluded.

2.3 Mitigation Measures

In determining whether likely significant effects will occur or can be excluded in the Stage 1 appraisal, measures intended to avoid or reduce the harmful effects of the proposed development on European sites, (i.e. "mitigation measures") or best practice measures have not been taken into account in this

screening stage appraisal. This approach is consistent with up-to-date EU guidance (EU,2019; EC,2021; EC, 2022) and the case law of the Court of Justice of the European Union (CJEU).

In April 2018, the Court of Justice (CJEU) of the European Union issued a ruling in case C-323/17 People Over Wind & Peter Sweetman v Coillte Teoranta ("People Over Wind") that Article 6(3) of Directive 92/43/EEC must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site. The CJEU found that taking account of mitigation measures at the screening stage could compromise the practical effect of the Habitats Directive in general, and the assessment stage in particular (since the assessment stage would be deprived of its purpose and there would be a risk of circumvention of that stage). In its judgment in Eco-Advocacy, the CJEU recently found that this does not preclude standard features, which are inherent to a project, and are incorporated into a project's design, not with the aim of reducing its negative effects.

The judgment in People Over Wind is further emphasised in EC (2019) which refers to CJEU Case C-323/17, and also EC (2021) states specifically in Table 1 on p12 thereof that that mitigation measures cannot be considered at the screening stage of appropriate assessment, citing CJEU case C-323/17.

More recently, in June 2023, the CJEU issued a ruling in case C-721/21 Eco Advocacy CLG vs. An Coimisiun Pleanála that Article 6(3) of Directive 92/43/EEC must be interpreted as meaning that, in order to determine whether it is necessary to carry out an appropriate assessment of the implications of a plan or project for a site, account may be taken of the features of that plan or project which involve the removal of contaminants and which therefore may have the effect of reducing the harmful effects of the plan or project on that site, where those features have been incorporated into that plan or project as standard features, inherent in such a plan or project, irrespective of any effect on the site.

This appraisal does not attempt to formulate any measures which involve the removal of contaminants in light of the emerging case law from the CJEU by now describing them as features that have been incorporated into the Proposed Project as 'standard features'.

2.4 Consideration of *ex-situ* effects

EC (2019) advises that Member States, both in their legislation and in their practice, allow for the Article 6(3) safeguards to be applied to any development pressures, including those which are external to European sites, but which are likely to have significant effects on any of them.

The CJEU developed this point when it issued a ruling in case C-461/17 ("Brian Holohan and Others v An Coimisiun Pleanála") that determined inter alia that Article 6(3) of Directive 92/43/EEC must be interpreted as meaning that an appropriate assessment must on the one hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site.

In that regard, consideration has been given in this Habitats Directive appraisal to implications for habitats and species located both inside and outside of the European sites considered in the screening appraisal with reference to those sites' Conservation Objectives where effects upon those habitats and/or species are liable to affect the conservation objectives of the sites concerned.

2.5 Conservation Objectives

The conservation objectives for each European site are to maintain or restore the favourable conservation condition of the Annex I habitat(s) and/or the Annex II species for which the site has been selected. The favourable conservation status of a habitat is achieved when:

- its natural range, and area it covers within that range, are stable or increasing;
- the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and
- the conservation status of its typical species is favourable.

The favourable conservation status (or condition, at a site level) of a species is achieved when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

EC (2022) advises that an assessment should be done for all of the designating features (species, habitat types) that are significantly present on the site (habitats and species with A, B or C, but not D, site assessment in the Standard Data Form for the site) in view of their conservation objectives. EC (2022) additionally notes that "*the lack of site-specific conservation objectives or the establishment of conservation objectives, which are not in line with the required standard, as specified in the Commission note on "Setting conservation objectives of Natura 2000 sites" (EC, 2012), jeopardises compliance with the requirements of Article 6(3)*".

2.5.1 Site-Specific Conservation Objectives

NPWS began preparing detailed Site-Specific Conservation Objectives (SSCOs) for European sites in 2011. The European sites along the coast of Ireland in closest proximity to the proposed development which are considered in some detail in this RISAA have all had SSCOs set.

The published SSCO documents note that an appropriate assessment based on the most up to date conservation objectives will remain valid even if the targets are subsequently updated, providing they were the most recent objectives available when the assessment was carried out. It is essential that the date and version are included when objectives are cited.

The most up-to-date Conservation Objectives for the European sites being considered, and details in relation to the Qualifying Interests and Special Conservation Interests of these European sites is based on publicly available data on these European Sites, sourced from the NPWS website in March 2025.

2.6 In-combination effects

Article 6(3) of the Habitats Directive requires that in-combination effects with other plans or projects are also considered. As set out in EC (2019), significance will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned.

EC (2020) notes that cumulative environmental effects can be defined as effects on the environment caused by the combined action of past, current and future activities. Although the effects of one development may not be significant, the combined effects of several developments together can be significant.

EC (2020) also notes that the 'in combination' provision applies to plans or projects that are completed, approved but uncompleted, or proposed. In addition to the effects of the plans or projects that are the main subject of the assessment, it may be appropriate to consider the effects of already completed plans and projects. Although already completed plans and projects are themselves excluded from the assessment requirements of Article 6(3), it is still important to take them into consideration when assessing the effects of the current plan or project in order to determine whether there are any potential cumulative effects arising from the current project in combination with other completed plans and

projects. The effect of completed plans and projects would typically form part of the site's baseline conditions at this stage. Plans and projects that have been approved in the past but have not yet been implemented or completed should be included in the in-combination provision. As regards other proposed plans or projects, on grounds of legal certainty it would seem appropriate to restrict the 'in combination' provision to plans that have been proposed, i.e. for which an application for approval or consent has been submitted.

This mirrors the advice contained in EC (2019) which advises that other plans or projects which are completed, approved but uncompleted, or proposed have been considered. EC (2019) specifically advises that "as regards other proposed plans or projects (i.e. other projects not proposed by the Applicant), on grounds of legal certainty it would seem appropriate to restrict the in-combination provision to those which have been actually proposed, i.e. for which an application for approval or consent has been introduced".

EC (2021) additionally advises that:

- All types of plans or projects that could, in combination with the plan or project under consideration, have a significant effect, should be taken into account during the assessment
- An in-combination assessment is often less detailed at the screening stage than in the appropriate assessment.
- There is still a need to identify all other plans or projects that could give rise to cumulative impacts with the plan or project in question and
- If this analysis cannot reach definitive conclusions, it should at least identify any other relevant plans and projects that should be scrutinised in more detail during the appropriate assessment.

3. THE PROPOSED WORKS

3.1 Site Location

The Application Site is located in a generally rural agricultural setting, approximately 7.2km northeast of Tullamore and c. 23 km to the south of Mullingar Derrygrogan Little and Derrygrogan Big, County Offaly and comprises an area of 28.1 hectares.

The location of the site and red line boundary are illustrated in **Figure 3.1 Site Location**

3.2 The Existing Site

The Application Site currently comprises of arable crops, improved agricultural grassland, scrub, drainage ditches (dry), tall ruderal vegetation and hedgerows/treelines.

3.3 Summary of the Proposal

The Proposed Development will consist of the construction of photovoltaic (PV) panels mounted on metal frames, inverter strings, transformer stations, electrical cabling and ducting, internal access tracks and hardstanding areas, perimeter fencing and access gate, CCTV, a temporary construction compound and other ancillary infrastructure

The Proposed Development will occupy 10 fields across the Application Site. The Proposed Development will connect into the consented Derrygrogan Big solar development (planning reference 22/378) via Derrygrogan Little Road.

It is important to note the national grid connection does not form part of this planning application. The Proposed Development plans can be summarised as follows:

- Solar arrays and metal support structures or on concrete foundations if archaeological mitigation measures are required;
- 7 no. Low Voltage/Medium Voltage (LV/MV) Transformer Stations with associated hardstanding areas;
- Internal access track with two perimeter gates;
- 47 no. CCTV camera units;
- Site access via Derrygrogan Little Road with associated visibility splay;
- Security fencing incorporating timber posts and deer fencing;
- Cable trenching and backfilling;
- Temporary construction compound; and
- Structural landscape planting and ecological enhancement measures.

The Application Site will be accessed from a new access point off Derrygrogan Little Road to the south of the Application Site.

The Proposed Development is temporary and fully reversible; the land can be restored to its present state at the end of the facilities planned life.

4. STAGE 1 SCREENING APPRAISAL FOR APPROPRIATE ASSESSMENT

4.1 Directly Connected with or Necessary to the Management of the Site

The Proposed Development involves the construction of a solar PV farm on rural lands approximately 7.4km northeast of the town of Tullamore, County Offaly.

On this basis, the Proposed Development is not directly connected with or necessary to the management of any site as a European Site. A screening exercise must be undertaken by the competent authority to determine whether, firstly, the plan or project is directly connected with or necessary to the management of the site, and secondly, whether it is likely to have a significant effect on the site; it is governed by the first sentence of Article 6(3).

In addition, the provisions of the 2000 Act and 2024 Act make clear that screening for appropriate assessment of an application for consent for proposed development shall be carried out by the competent authority to assess, in view of best scientific knowledge, if that proposed development, individually or in combination with another plan or project is likely to have a significant effect on the European site.

4.2 European Sites

This Stage 1 Appropriate Assessment Screening (Stage 1 Screening) considers European sites designated under European Council Directives 92/43/EEC and 2009/147/EC. The Proposed Development will be screened against those European sites in order to appraise whether it is likely to have a significant effect on the site.

In addition, the provisions of national legislation make clear that a Stage 1 screening for appropriate assessment shall be carried out to assess, in view of best scientific knowledge, if the proposed works, individually or in combination with other plans or projects are likely to have a significant effect on a European site.

The Zone of Influence (ZoI) for a project is the area over which ecological features may be affected by biophysical changes as a result of a proposed project and its associated activities. These include European sites located within the boundary of the project; European sites in immediate proximity to the boundary of the project; and European sites outside the boundary of the project that may be connected to the project through an identifiable impact pathway.

The Application Site is not located within the boundary of any European sites however, the presence of the Kilmurry Drain located immediately outside the eastern boundary of the site, and the unnamed drainage ditch running from the central to eastern boundary, creates hydrological linkage to a tributary of the Silver River, which flows west into the Clodiagh (Tullamore) River, Brosna River and eventually into several European sites downstream. These downstream European sites, as well as those in close proximity of the Proposed Development, have been selected for the screening process to ensure that features of European sites that can potentially be affected are scoped in. The sites screened in within this ZoI have been chosen for their potential hydrological or ecological connectivity with the Proposed Development using the source-pathway-receptor model.

In total, three SACs and two SPAs were considered within this appraisal, as these sites lie within the potential ZoI and/or are hydrologically linked to the site. Details in relation to the Qualifying Interests of these European sites are provided in **Table 4.1** and the European sites are illustrated in **Figure 4.1**.

The information contained in these tables is based on publicly available data on these European Sites, sourced from NPWS in November 2025.

Table 4.1: European Sites in the anticipated Zone of Influence of the Proposed Development

Site Code	Site Name	Distance from Site	Qualifying Interest Features
000582	Raheenmore Bog SAC	2.7km NE straight-line distance	• Active raised bogs [7110] • Degraded raised bogs still capable of regeneration [7120] • Depressions on peat substrates of the *Rhynchosporion* [7150]
000216	River Shannon Callows SAC	38.5km SW straight-line distance 47.1km via hydrological connection (downstream)	• Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) [6410] • Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*) [6510] • Alkaline fens [7230] • Limestone pavements [8240] • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* [91E0] • Otter *(Lutra lutra)* [1355]
004096	Middle Shannon Callows SPA	38.5km SW straight-line distance 47.1km via hydrological connection (downstream)	• Whooper Swan (*Cygnus cygnus*) [A038] • Corncrake (*Crex crex*) [A122] • Golden Plover (*Pluvialis apricaria*) [A140] • Lapwing (*Vanellus vanellus*) [A142] • Black-tailed Godwit (*Limosa limosa*) [A156] • Black-headed Gull (*Chroicocephalus ridibundus*) [A179] • Wigeon (*Mareca penelope*) [A855] • Wetland and Waterbirds [A999]
002241	Lough Derg, North-East Shore SAC	57.2km SW straight-line distance 73.9km via hydrological connection (downstream)	• *Juniperus communis* formations on heaths or calcareous grasslands [5130] • Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210]

			• Alkaline fens [7230] • Limestone pavements [8240] • Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* [91E0] • *Taxus baccata* woods of the British Isles [91J0]
004058	Lough Derg (Shannon) SPA	57.2km SW straight-line distance 73.9km via hydrological connection (downstream)	• Cormorant (*Phalacrocorax carbo*) [A017] • Tufted Duck (*Aythya fuligula*) [A061] • Goldeneye (*Bucephala clangula*) [A067] • Common Tern (*Sterna hirundo*) [A193] • Wetland and Waterbirds [A999]

4.3 Establishing an Impact Pathway

The possibility of significant effects is considered in this RISAA using the source-pathway-receptor model. 'Source' is defined as the individual elements of the proposed works that have the potential to affect the identified ecological feature (or receptor). 'Pathway' is defined as the means or route by which a source can affect the ecological receptor, in this case the Kilmurry drain Silver River and its tributaries, Clodiagh (Tullamore) River, Brosna River and Shannon River. 'Ecological receptor' is defined as the Qualifying Interests of River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA for which conservation objectives have been set for the European sites under consideration (refer to Table 4.1). Each element can exist independently however an effect is created when there is a linkage between the source, pathway and receptor. Possible effects are discussed under four themes:

Possible direct and indirect effects arising because of activities undertaken as part of the project are as follows:

- Direct Effects:
  - Habitat loss;
  - Aerial noise and/or visual disturbance or displacement of Annex II qualifying species or Special Conservation Interest (SCI) bird species; and
  - Air Quality Reduction
  - Suspended Sediments and Pollution
- Indirect Effects
  - Reduction in water quality and habitat deterioration of Annex I habitats in SACs, wetland habitats in SPAs and non-annex habitats resulting in impacts to Annex II species, as result of suspended sediments or pollution incidents.

4.4 Potential Effects

4.4.1 Habitat Loss

The area of the Proposed Development is located outside of any European Site (see Figure 4.1). There will be no direct habitat loss from any European site as a result of any aspect of the Proposed Development.

Therefore, it can be excluded, on the basis of objective information, that the Proposed Development will have a significant effect on any European Site as a result of habitat loss. That is the case in the absence of any mitigation measures being applied as part of the Proposed Development.

4.4.2 Suspended Sediments and Pollution

The principal identified pathway of effect upon European sites arising as a result of aspects of the Proposed Development is deterioration of water quality in the freshwater environment or of other habitats via hydrological connections to downstream sites.

Environmental Protection Agency (EPA) mapping confirms that the Lackan Ditch, which is connected to Ratheenmore Bog SAC, flows downstream into where the Kilmurry Ditch and Silver River tributary meet. Therefore, as this watercourse flows out of Ratheenmore Bog SAC, there is no hydrological pathway for any potential pollution from the proposed development entering the Killmurry Ditch to subsequently reach Ratheenmore Bog SAC.

The Kilmurry ditch is located along the eastern site boundary and due to this close proximity, any construction related pollutants or sediments have potential to enter this watercourse. This risk is heightened by the presence of the unnamed drainage ditch which runs from the central to eastern site

boundary, therefore providing an additional route for construction related runoff into the Kilmurry ditch. However, at the time of surveying all drainage ditches on site were vegetated and dry, therefore these act as unlikely pathways for pollutants or sediments into the Kilmurry ditch. The Kilmurry ditch creates hydrological linkage to a tributary of the Silver River (Puttaghan ditch), which flows west into the Clodiagh (Tullamore) River, Brosna River and eventually into the River Shannon which provides inflow to Lough Derg. This hydrological pathway therefore creates linkage between the Proposed Development and the River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA. These designated sites are located approximately 47.10 km, 73.94 km and 73.94 km downstream of the Proposed Development, respectively.

In the event that the construction phase of the Proposed Development was to result in the inadvertent or accidental release of sediments or pollutants into the Kilmurry ditch, it is considered unlikely that the quantities of sediments accidentally released or magnitude of sediment loading would give rise to any measurable increase in the background levels of such materials within the waters of the European sites of the downstream River Shannon and Lough Derg as sediments cannot remain in concentrated 'packets' of suspended solids over a 40+ km journey downstream. The ability of sediments suspended in water to remain in a high concentration is significantly diminished over time and distance, and the sediment particles are constantly subject to natural forces of dilution and mixing throughout their journey downstream. With each downstream kilometre travelled, the sediment is diluted within water flowing from an ever-increasing catchment size as every new ditch, stream and tributary adds to the downward flowing hydraulic gradient. The sediments would be diluted to *de minimis* levels by the time they reach the habitats or species of any European Site that requires water quality to be maintained to prevent any diminution of ecological structure and functioning.

Operation of the Proposed Development does require deionised water for mechanical cleaning of solar panels, but this activity does not introduce any potentially polluting substances and as such has no potential to introduce pollutants or sediments into nearby watercourses.

A reasonable pathway for likely significant effects is not supported between the Proposed Development and these distant European Sites. The potential for likely significant effects on River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA as a result of diminution of water quality can be excluded at this screening stage of the appraisal, in the absence of further assessment or the application of mitigation measures.

No likely significant effects via suspended sediments and pollution will occur during construction or operational phases of the proposed development alone, even in the absence of mitigation.

4.4.3 Aerial Noise and Visual Disturbance

For Raheenmore Bog SAC, there are no qualifying species that could be impacted by noise and visual disturbance as a result of the proposed development. The possibility of likely significant noise and disturbance effects can be excluded at the screening stage, even in the absence of mitigation.

Lough Derg, North-East Shore SAC is designated on account of its supported areas of Annex I habitat which are not sensitive to the effects of aerial noise and visual disturbance. As such, the possibility of likely significant noise and disturbance effects can be excluded at the screening stage, even in the absence of mitigation.

River Shannon Callows SAC, Middle Shannon Callows SPA and Lough Derg (Shannon) SPA are designated for several bird and mammal species which may be sensitive to the effects of aerial noise and visual disturbance.

Species can be vulnerable to aerial noise and visual triggers of disturbance. The sounds that birds hear can be divided into threatening and non-threatening sounds. Examples of non-threatening sounds are wave noise on a beach or constant traffic noise from a road. Threatening sounds include impulsive

sounds such as gunfire, explosion or barking of a dog. The sound of construction is not impulsive (sudden, loud or shocking) but tends to be continuous and low frequency noise such as that made by machinery and vehicular traffic. Disturbance often implies a short-term or temporary effect that is unlikely to impact upon the individuals or populations of waterbirds concerned. However, it is a term that covers a wide range of responses in waterbirds. The resulting effects of disturbance stimuli on waterbirds are variable. Disturbance can lead to a reduction in feeding time, and birds can expend greater levels of energy walking or flying away in response to disturbance. It is important to note that not all observed effects (e.g. walking or flying away) equate to negative impacts (e.g. reduced foraging success, decrease in survival, reduced fitness of the population). The term habituation is used to describe birds that have become accustomed to particular sources of disturbance. Cutts et al. (2009) considered impacts to birds utilising the Humber Estuary and summarised the general thresholds due to the potential effects of construction disturbance on birds. Noise up to 50dB(A) is found to have no effect whereas noise between 50dB(A) and 85dB(A) causes head turning, scanning behaviour, reduced feeding and movement to nearby areas. Above 85dB(A), response includes preparing to fly away, flying away and possibly leaving the area.

The proposed works will involve activities emitting aerial noise associated with the movement of machinery and staff. The proposed works would take place a substantial distance of at least 38.5km from any European Site with qualifying bird or mammal species sensitive to aerial noise or visual disturbance.

Even taking account of the requirement to consider *ex situ* effects (as explained in section 2.4 above) on implications for habitat types and species to be found outside the boundaries of European sites, where those implications are liable to affect the conservation objectives of the site, at distances exceeding 35 km and over 45 km downstream along hydrological pathways, there is sufficient separation between the Proposed Development and these European sites to conclude that visual movement and aerial noise arising from the proposed project will not trigger any behavioural change in any SPA or SAC featured species and will not give rise to disturbance events. The potential for likely significant noise and disturbance effects on River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA can be excluded at the screening stage of this appraisal, in the absence of further assessment or the application of mitigation measures.

No likely significant effects from aerial noise and visual disturbance will occur during construction phases or operation of the proposed development, even in the absence of mitigation.

4.4.4 Air Quality

The Proposed Development may give rise to dust and traffic movements temporarily during construction phase. Emissions from traffic generated by the construction of the Proposed Development are not anticipated to be sufficient to give rise to any significant increases to the deposition of Ammonia NH3, Nitrogen Oxides NO_x, Sulphur Dioxide SO_2 or nutrient nitrogen, within any of the assessed European Sites.

No operational phase impacts associated with air quality and associated nutrient deposition are predicted because of the Proposed Development.

No likely significant effects from air quality impacts are expected; therefore, they have been screened out for all relevant European sites, in the absence of mitigation measures.

4.5 In-Combination Effects

Article 6(3) of the Habitats Directive requires that in-combination effects with other plans or projects are also considered. As set out in the Commission's 2018 Notice (EC, 2019), significance of effect will vary depending on factors such as magnitude of impact, type, extent, duration, intensity, timing, probability, cumulative effects and the vulnerability of the habitats and species concerned. The significance of any

identified combined effects of the Proposed Development alongside other past, present or reasonably foreseeable future plans or projects must be evaluated.

In that context, plans or projects which are completed, approved but uncompleted, or proposed have been considered. EC (2019) specifically advises that "*as regards other proposed plans or projects, on grounds of legal certainty it would seem appropriate to restrict the in-combination provision to those which have been actually proposed, i.e. for which an application for approval or consent has been introduced".*

4.5.1 Planning Applications

The Offaly County Council ePlan Planning Search website was used to identify projects of scale in the immediate area of the Proposed Development. Developments related to energy, large-scale residential developments (greater than 10 dwellings) and large-scale industrial, road, infrastructure or utility developments. A website search was undertaken in October, November and December 2025. Other projects were considered if they were located within a 2 km radius around the application site.

The developments described in **Table 4.2** have been screened in for in-combination assessment.

Table 4.2: Nearby Developments Assessed In-Combination

Planning Reg Ref No.	Application Description	Distance and direction of Project site from the Proposed Works
22378	**Derrygrogan Big Solar PV Farm** • Construction of a 73.9 hectare solar PV energy development over a period of ten years, to be operational for 35 years. • Plans comprise a control building, inverter substations, modules, solar PV ground mounted on support structures, temporary construction compounds, internal access tracks, security fencing, electrical cabling and ducting, cctv and other ancillary infrastructure, drainage, additional landscaping and habitat enhancement and associated works relating to site access. • A Natura Impact Assessment has been submitted with this application.	0.05 km SW
218	**Derries and Lackan Solar PV Farm, Battery Energy Storage System and associated grid connection** Page 18 • Construction, 40 year operation and subsequent decommissioning of a 52.75 hectare solar farm, battery energy storage system and underground electricity grid connection. • Total combined development area of 53.7 hectares. • The proposed underground electricity grid route passes underneath the Wood of O bridge, a protected structure, on the Grand Canal. • The proposed solar farm is located in the townlands of Derries and Lackan, County Offaly. • The proposed underground electricity grid connection is to be installed entirely under public roads from the proposed solar farm. • A Natura Impact Assessment will be submitted to the planning authority with this application.	0.35 km N
2198	**Ballyteige Solar PV Farm** • Five-year construction of a 60.53 hectare solar PV energy development. • To include a single storey electrical substation building, inverter substations, modules, solar pv ground mounted on support structures, a temporary construction compound, internal access tracks, security fencing, electrical cabling and ducting, cctv and	1.5 km SW

Planning Reg Ref No.	Application Description	Distance and direction of Project site from the Proposed Works
	other ancillary infrastructure, drainage, additional landscaping and habitat enhancement and associated works relating to site access. • The solar farm will be operational for 35-years.	
n/a	**Amendments to Ballyteige Solar PV Farm** • Application for amendments to the previously consented Ballyteige Solar PV Farm development (planning reference: 2198). The proposed amendment seeks minor modifications to the Consented Development including the following: ○ Removal of the 38kV substation and infrastructure within the most northern field (Field 1) ○ Internal access track reduced from c.3.4km to c. 3.2km ○ Relocated and tweaked to include turning areas ○ String inverters are used instead of combined central inverters and MV transformers. The central MV transformers remain, and increase from 11No. to 12 No., however there will be a reduction in their associated hardstanding areas, ○ The number of string inverters is 128, ○ Table layout updated (reduced) ○ PV angle tilt reduced from 10º and 30º to 10º and 20º ○ Separation area between infrastructure and OHL towers increased ○ An additional badger sett buffer added (due to new sett found during updated Fossitt Habitat Survey), ○ Temporary Construction Compound has been relocated from Field 1 to Field 4 ○ Alter Condition No. 10 to increase the boundary fencing from 1.8m-2m high to 2.4m high and reduce in the perimeter fence length ○ CCTV number increase from 81 to 118 and their locations have been amended ○ Adjustment of the development period from 5 years to 10 years, and ○ Alter Condition No. 11 to change the operational lifetime from 35 years to 40 years.	1.5 km SW
n/a	**Colehill 110Kv Substation and Grid Route** • Strategic Infrastructure Development (“SID”) Application for a new 110kV Substation (“Colehill 110kV Substation”) and grid connection from the proposed Ballyteige Solar PV Farm (see above) to the existing Thornsberry 110kV substation. Development comprises: ○ 1No. substation compound comprising of No.3 work areas with CCTV and associated drainage which will be enclosed by 2.6m high palisade fencing and gates: ○ Property boundary fencing; ○ Access tracks (upgraded existing and new); ○ Temporary construction compound and temporary access track, ○ Temporary and permanent road re-alignment of a section of O of Wood local road; ○ c.7.5km of underground 110kV cabling with joint bays, over and under watercourse crossing and a potential horizontal directional drill on access track and local roads; ○ c.610m of medium voltage underground interconnection cable with associated horizontal directional drill.	1.5 km SW

The projects listed in **Table 4.2** were investigated on the Offaly County Council ePlan site. Ecology reports were reviewed where available, and the consultation response of relevant agencies and

departments, the professional planning report and the decision notice and attached conditions of the planning authority were inspected.

A NIS was prepared for a proposed solar farm at Derrygrogan Big (**22378**) as a result of the possibility of likely significant effects in downstream European sites of the River Shannon system not being excluded at the screening stage. The possibility of diminution of water quality and potentially adverse effects on aquatic habitats or species that required the maintenance of water quality levels was to be mitigated by a range of pollution prevention measures to be applied at construction stage.

The findings of the NIS concluded that the proposed development would not lead to any adverse effects on the integrity of the sites concerned with the application of mitigation measures. Permission has been granted for this solar PV farm development.

An NIS was prepared for a proposed solar farm, BESS and grid connection development (**218**), which is situated on land at Derries and Lackan. The NIS reports that the proposed development failed AA screening as a result of the possibility of likely significant effects in downstream European sites of the River Shannon system not being excluded at the screening stage. The possibility of diminution of water quality and potentially adverse effects on aquatic habitats or species that required the maintenance of water quality levels was to be mitigated by a range of pollution prevention measures to be applied at construction stage.

The findings of the NIS concluded that the proposed development would not lead to any adverse effects on the integrity of the sites concerned with the application of mitigation measures. Permission has been granted for this development.

An AA screening report was completed for the Ballyteige Solar Farm development **(2198**). This report found that hydrological connectivity exists between the proposed development and Charleville Wood SAC and that *ex situ* effects were possible on otters in River Barrow and River Nore SAC foraging and commuting outside of the SAC.

The findings of the AA screening concluded that the proposed development would not lead to any likely significant effects on the sites concerned with the application of best practice measures but not project specific mitigation measures. Permission has been granted for this development.

A NIS was prepared for an application seeking modification to the above referenced Ballyteige Solar Farm development. This report found that hydrological connectivity exists between the proposed development and Charleville Wood SAC and that *ex situ* effects were possible on otters in River Barrow and River Nore SAC foraging and commuting outside of the SAC.

The findings of the NIS concluded that the proposed development would not lead to any adverse effects on the integrity of the sites concerned with the application of mitigation measures including a pre-construction otter survey, a drainage strategy, a waste management strategy and a range of pollution prevention measures being applied.

A NIS was prepared for the SID application for the proposed Colehill 110kV Substation and HV transmission line. This report found that hydrological connectivity exists between the proposed development and Charleville Wood SAC and that *ex situ* effects were possible on otters in River Barrow and River Nore SAC foraging and commuting outside of the SAC.

The findings of the NIS concluded that the proposed development would not lead to any adverse effects on the integrity of the sites concerned with the application of mitigation measures including a pre-construction otter survey, a drainage strategy, a waste management strategy and a range of pollution prevention measures being applied.

All other applications in the surrounding area were either historic record (10 years or older), minor additions to existing properties of much smaller scale than the proposed development (e.g individual dwelling construction or barn construction). None of these nearby projects had an Appropriate

Assessment Screening report submitted with their applications and are therefore indicated to have no pathways for any likely significant effects on designated sites.

There is a distinct possibility that one or more of the following energy projects could be under construction at the same time.

- The proposed development (Derrygrogan Little Solar PV Farm)
- Derries and Lackan Solar PV Farm, Battery Energy Storage System and associated grid connection
- Derrygrogan Big Solar PV Farm
- Ballyteige Solar PV Farm or Amendments to Ballyteige Solar PV Farm *(but not both)*
- Colehill 110Kv Substation and Grid Route serving Ballyteige Solar PV Farm

If this were the case and if the pollution prevention measures proposed for each of these projects at construction phase were to fail due to an accidental pollution event occurring on more than one construction project at the same time, then in line with the precautionary principle (EC, 2000a), reasonable scientific doubt remains as to the absence of likely significant effects without the application of mitigation measures.

4.5.2 Offaly County Development Plan

As part of our assessment of potential impacts on nearby designated sites, the County Offaly Development Plan was reviewed to determined if this would have in-combination effects with the Proposed Developments approval.

The Offaly County Development Plan 2021 – 2027 was adopted on 10.09.2021, it sets out a strategic policy framework with objectives and strategic policies to be delivered through to 2027. Key features include a focus on sustainable development, community engagement and the implementation of strategies.

Key focuses for the conservation, protection and enhancement of natural heritage include:

- Designated Site for Nature Conservation (24 Natura 2000 sites, 51 potential Natural Heritage Areas (pNHA), 7 Natural Heritage Areas (NHA, 4 Statutory Nature Reserves and 4 Ramsar sites)
- Sites designated for the protection of plants, species and habitats
- Occurrences of protected species under the Flora Protection Order (1999)

- Geology, Eskers and Quarries
- Peatlands
- Lakes, Waterways and Wetland Landscapes
- Trees, Forestry and Hedgerows
- Green Infrastructure (i.e. parks, gardens, green roofs, green walls, rivers, lakes, canals, peatland, wetland landscapes, uplands, greenways, blueways, woodlands and farmlands)
- All Ireland Pollinator Plan 2015 – 2020
- Invasive Species (primarily Japanese Knotweed and Himalayan Balsam)
- Areas of High Amenity
- Landscape (i.e. protection of key scenic views, prospects and key amenity routes)

Key planning policies for the conservation, protection and enhancement of natural heritage are detailed further under BLP-01 – BLP-45 within the County Offaly Development Plan.

As European Sites are a key focus for conservation, protection and enhancement as part of this development plan, we expect that there will be no significant alone or in-combination effects with the Proposed Development. Any works occurring as part of the Offaly County Development Plan 2021-2027 are expected to be sufficiently mitigated to have a negligible impact.

4.5.3 Conclusion of In-Combination Assessment

Likely significant water quality and wetland habitat deterioration effects cannot be excluded at the screening stage, for construction phase of the Proposed Development in combination with simultaneous construction of one or more of the other projects listed in **Table 4.2**. Pollution prevention measures must be applied at the next stage of appropriate assessment to prevent adverse effects on the integrity of River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC or Lough Derg (Shannon) SPA.

4.6 Conclusions of the Stage 1 Screening Appraisal

This Stage 1 screening appraisal was completed in accordance with Section 2 of this RISAA. The Proposed Development has been considered in the context of the European Sites identified within the project's zone of influence, their Qualifying Interests and Special Conservation Interests and any Conservation Objectives which have been set.

From the finding of the screening stage appraisal, it is concluded that

- The Proposed Development is not directly connected with or necessary to the management of any European site.
- The possibility of likely significant Water Quality and Habitat Deterioration effects can be excluded for the project alone on Raheenmore Bog SAC, River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA without further evaluation and analysis, or the application of measures intended to avoid or reduce harmful effects of the potential project on European Sites.
- The possibility of likely significant Aerial Noise and Visual Disturbance effects can be excluded for Raheenmore Bog SAC, River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA without further evaluation and analysis, or the application of measures intended to avoid or reduce harmful effects of the potential project on European Sites.
- The possibility of likely significant Air Quality effects due to the proposed developments construction can be excluded for Raheenmore Bog SAC, River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA without further evaluation and analysis, or the application of measures intended to avoid or reduce harmful effects of the Proposed Development on European sites.
- The Proposed Development was assessed against other plans and projects and the possibility of likely significant Water Quality and Habitat Deterioration effects cannot be excluded at the screening stage for the Proposed Development in combination with other projects listed in **Table 4.2** for River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA, in the absence of the application of measures intended to avoid or reduce harmful effects of the potential project on European Sites

Having regard to the methodology employed and the findings of the screening stage appraisal, it has been concluded that a Stage 2 appraisal of the implications of the Proposed Development on European sites is required.

5. NATURA IMPACT STATEMENT

Section 4 of this report concluded that likely significant water quality and wetland habitat deterioration effects cannot be excluded at the screening stage, for construction phase of the Proposed Development in combination with simultaneous construction of one or more of the other projects listed in **Table 4.2**. Pollution prevention measures must be applied at the next stage of appropriate assessment to prevent adverse effects on the integrity of River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC or Lough Derg (Shannon) SPA.

5.1 Adverse Effects on the Integrity of European sites

The European Commission's 2019 Notice (EC, 2019) states that the purpose of the appropriate assessment is to assess the implications of the plan or project in respect of the site's Conservation Objectives ("COs"), either individually or in combination with other plans or projects. The conclusions should enable the competent authorities to ascertain whether the plan or project will adversely affect the integrity of the site concerned. The focus of the appropriate assessment is therefore specifically on the species and/or the habitats for which the European site is designated.

The 2021 Commission Notice notes the difference between the tests for screening (stage 1) and appropriate assessment (stage 2), summarised in **Table 5.1** below.

Table 5.1: Differences between Screening and Appropriate Assessment

Screening	Appropriate Assessment
Ascertains whether significant negative effects on a European site are likely as a result of implementing the plan or project in view of the site's conservation objectives.	Assesses the likely effects on the Natura 2000 site in view of its conservation objectives and assesses whether adverse effects on the integrity of the site will or might occur.
If the occurrence of significant effects cannot be excluded with certainty, the plan or project has to undergo an appropriate assessment.	The plan or project can be authorised only if adverse effects on the integrity of the Natura 2000 site can be excluded.
Typically based on existing data, available knowledge and experience, and expert opinion.	Requires a detailed examination, often field surveys, expert advice, and an expert assessment of the specific case.
Mitigation measures cannot be considered.	Assesses mitigation measures to eliminate or reduce adverse effects.

The Commission's 2019 Notice also emphasises the importance of using the best scientific knowledge when carrying out the appropriate assessment to enable the competent authorities to conclude with certainty that there will be no adverse effects on the integrity of the site. This guidance notes that it is at the time of adoption of the decision authorising implementation of the project that there must be no reasonable scientific doubt remaining as to the absence of adverse effects on the integrity of the site in question.

The 2018 Notice notes that if the competent authority considers the mitigation measures are sufficient to avoid the adverse effects on site integrity identified in the appropriate assessment, they will become an integral part of the specification of the final plan or project or may be listed as a condition for project approval.

The 2021 Notice advises that it is for the competent authorities, in the light of the conclusions made in the appropriate assessment on the implications of a plan or project for the European site concerned, to

approve the plan or project. This decision can only be taken after they have made certain that the plan or project will not adversely affect the integrity of the site. That is the case where no reasonable scientific doubt remains as to the absence of such effects.

The 2021 Notice also reaffirms that the authorisation criterion laid down in the second sentence of Article 6(3) of the Habitats Directive integrates the precautionary principle and makes it possible effectively to prevent the protected sites from suffering adverse effects on their integrity as the result of the plans or projects. A less stringent authorisation criterion could not as effectively ensure the fulfilment of the objective of site protection intended under that provision. The onus is therefore on demonstrating the absence of adverse effects rather than their presence, reflecting the precautionary principle. It follows that the appropriate assessment must be sufficiently detailed and reasoned to demonstrate the absence of adverse effects, in light of the best scientific knowledge in the field.

The **'integrity of the site'** can be usefully defined as the coherent sum of the site's ecological structure, function and ecological processes, across its whole area, which enables it to sustain the habitats, complex of habitats and/or populations of species for which the site is designated (EC, 2019).

As noted above, the screening stage appraisal concluded that likely significant water quality and wetland habitat deterioration effects cannot be excluded at the screening stage, for construction phase of the Proposed Development in combination with simultaneous construction of one or more of the other projects listed in **Table 4.2**. Pollution prevention measures must be applied at the next stage of appropriate assessment to prevent adverse effects on the integrity of River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC or Lough Derg (Shannon) SPA.

5.2 European sites concerned

5.2.1 River Shannon Callows SAC

The River Shannon Callows SAC is located 47.1 km downstream of the site of proposed development. It is designated for the following four qualifying interest feature habitats and one qualifying feature species:

- Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) [6410]
- Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) [6510]
- Alkaline fens [7230]
- Limestone pavements [8240]
- Alluvial forests with Alnus glutinosa and Fraxinus excelsior [91E0]
- Otter (Lutra lutra) [1355]

The conservation objectives published for this European site (NPWS, 2022[3]) describe the conservation targets for each qualifying interest as defined by various attributes and targets. The tables below set out each of the component objective attributes, measures and targets, and determines whether or not a

[3] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000216.pdf

pollution event upstream of this feature would be liable to affect the achievement of the component objective.

NPWS (2022) advises that for Molinia meadows, the overall objective is to **restore** the favourable conservation condition of Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) in River Shannon Callows SAC, which is defined by the attributes and targets listed in Table 5.2.

None of the component objectives are liable to be affected by a pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.2: Conservation Objectives for Habitat [6410] in River Shannon Callows SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline, subject to natural processes	No
Vegetation composition: positive indicator species	Number at a representative number of 2m x 2m monitoring stops; within 20m surrounding area of monitoring stops	At least 7 positive indicator species present in monitoring stop or, if 5–6 present in stop, additional species within 20m of stop; this includes at least one 'high quality' positive indicator species present in the stop or within 20m of stop	No
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%	No
Vegetation composition: non-native species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of non-native species not more than 1%	No
Vegetation composition: moss species	Percentage cover at a representative number of 2m x 2m monitoring stops	Hair mosses (Polytrichum spp.) not more than 25% cover	No
Vegetation composition: woody species and bracken	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of woody species and bracken (Pteridium aquilinum) not more than 5% cover	No
Vegetation structure: broadleaf herb:grass ratio	Percentage at a representative number of 2m x 2m monitoring stops	Broadleaf herb component of vegetation between 40% and 90%	No
Vegetation structure: sward height	Percentage at a representative number of 2m x 2m monitoring stops	At least 30% of sward between 10cm and 80cm tall	No
Vegetation structure: litter	Percentage cover at a representative number of 2m x 2m monitoring stops	Litter cover not more than 25%	No
Physical structure: bare ground	Percentage cover at a representative number of 2m x 2m monitoring stops	Not more than 10% bare ground	No
Physical structure: grazing or disturbance	Area in local vicinity of a representative number of monitoring stops	Area of the habitat showing signs of serious grazing or disturbance less than 20m²	No

NPWS (2022) advises that for Lowland hay meadows, the overall objective is to **restore** the favourable conservation condition of Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis) in River Shannon Callows SAC, which is defined by the attributes and targets listed in Table 5.3.

None of the component objectives are liable to be affected by a significant in-combination pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.3: Conservation Objectives for Habitat [6510] in River Shannon Callows SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline, subject to natural processes	No
Vegetation composition: positive indicator species	Number at a representative number of 2m x 2m monitoring stops; within 20m surrounding area of monitoring stops	At least 7 positive indicator species present in monitoring stop or, if 5–6 present in stop, additional species within 20m of stop; this includes at least one 'high quality' positive indicator species present in the stop or within 20m of stop	No
Vegetation composition: negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Negative indicator species collectively not more than 20% cover, with cover by an individual species not more than 10%	No
Vegetation composition: non-native species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of non-native species not more than 1%	No
Vegetation composition: woody species and bracken	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of woody species and bracken (Pteridium aquilinum) not more than 5% cover	No
Vegetation structure: broadleaf herb:grass ratio	Percentage at a representative number of 2m x 2m monitoring stops	Broadleaf herb component of vegetation between 40% and 90%	No
Vegetation structure: sward height	Percentage at a representative number of 2m x 2m monitoring stops	At least 50% of sward between 10cm and 50cm tall	No
Vegetation structure: litter	Percentage cover at a representative number of 2m x 2m monitoring stops	Litter cover not more than 25%	No
Physical structure: bare ground	Percentage cover at a representative number of 2m x 2m monitoring stops	Not more than 5% bare ground	No
Physical structure: disturbance	Area in local vicinity of a representative number of monitoring stops	Area of the habitat showing signs of serious grazing or disturbance less than 20m²	No

NPWS (2022) advises that for Alkaline fens, the overall objective is to **maintain** the favourable conservation condition of Alkaline fens in River Shannon Callows SAC, which is defined by the attributes and targets listed in Table 5.4.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.4: Conservation Objectives for Habitat [7230] in River Shannon Callows SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline, subject to natural processes	No
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil pH and nutrient status within natural ranges	No
Ecosystem function: peat formation	Percentage cover of peat-forming vegetation and water table levels	Maintain active peat formation, where appropriate	No
Ecosystem function: hydrology - groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients; water supply	Maintain, or restore where necessary, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	No
Ecosystem function: hydrology - surface water flow	Drain density and form	Maintain, or restore where necessary, as close as possible to natural or semi-natural drainage conditions	No
Ecosystem function: water quality	Various	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and	Yes
Vegetation composition: community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	No
Vegetation composition: typical brown mosses	Percentage cover at a representative number of monitoring stops	Maintain adequate cover of typical brown moss species	No
Vegetation composition: typical vascular plants	Percentage cover at a representative number of monitoring stops	Maintain adequate cover of typical vascular plant species	No
Vegetation composition: native negative indicator species	Percentage cover at a representative number of monitoring stops	Cover of native negative indicator species at insignificant levels	No
Vegetation composition: non-native species	Percentage cover at a representative number of monitoring stops	Cover of non-native species less than 1%	No
Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 10%	No
Vegetation composition: algal cover	Percentage cover at, and in local vicinity of, a representative number of monitoring stops	Cover of algae less than 2%	No
Vegetation structure: vegetation height	Percentage cover at a representative number of monitoring stops	At least 50% of the live leaves/flowering shoots are more than either 5cm or 15cm	No

Attribute	Measure	Target	Liable to be affected by pollution
		above ground surface depending on community type	
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number of monitoring stops	Cover of disturbed bare ground not more than 10%	No
Physical structure: tufa formations	Percentage cover in local vicinity of a representative number of monitoring stops	Disturbed proportion of vegetation cover where tufa is present is less than 1%	No
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	No
Transitional areas between fen and adjacent habitats	Hectares; distribution	Maintain adequate transitional areas to support/protect the alkaline fen habitat and the services it provides	No

NPWS (2022) advises that for Limestone pavements, the overall objective is to **maintain** the favourable conservation condition of Limestone pavements[4] in River Shannon Callows SAC, which is defined by the attributes and targets listed in Table 5.5.

None of the component objectives are liable to be affected by a significant in-combination pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.5: Conservation Objectives for Habitat [8240] in River Shannon Callows SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline	No
Vegetation composition: positive indicator species	Number at a representative number of monitoring stops	At least seven positive indicator species present	No
Vegetation composition: bryophyte layer	Percentage at a representative number of monitoring stops	Bryophyte cover at least 50% on wooded pavement	No
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Collective cover of negative indicator species on exposed pavement not more than 1%	No
Vegetation composition: non-native species	Percentage at a representative number of monitoring stops	Cover of non-native species not more than 1% on exposed pavement; on wooded pavement not more than 10% with no regeneration	No

[4] Limestone pavements are a Priority Annex I habitat in this SAC

Attribute	Measure	Target	Liable to be affected by pollution
Vegetation composition: scrub	Percentage at a representative number of monitoring stops	Scrub cover no more than 25% of exposed pavement	No
Vegetation composition: bracken cover	Percentage at a representative number of monitoring stops	Bracken (Pteridium aquilinum) cover no more than 10% on exposed pavement	No
Vegetation structure: woodland canopy	Percentage at a representative number of monitoring stops	Canopy cover on wooded pavement at least 30%	No
Vegetation structure: dead wood	Occurrence in a representative number of monitoring stops	Sufficient quantity of dead wood on wooded pavement to provide habitat for saproxylic organisms	No
Physical structure: disturbance	Occurrence in a representative number of monitoring stops	No evidence of grazing pressure on wooded pavement	No
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	No

NPWS (2022) advises that for Alluvial forests, the overall objective is to **maintain** the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) in River Shannon Callows SAC, which is defined by the attributes and targets listed in Table 5.6.

None of the component objectives are liable to be affected by a significant in-combination pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.6: Conservation Objectives for Habitat [91E0] in River Shannon Callows SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline, subject to natural processes	No
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	No
Woodland structure: cover and height	Percentage; metres; centimetres	Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20cm; bryophyte cover at least 4%	No

Attribute	Measure	Target	Liable to be affected by pollution
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	No
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes of target species for 91E0* woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy	No
Hydrological regime: flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	No
Woodland structure: dead wood	Number per hectare	At least 19 stems/ha of dead wood at least 20cm diameter	No
Woodland structure: veteran trees	Number per hectare	No decline	No
Woodland structure: indicators of local distinctiveness	Occurrence; population size	No decline in distribution and, in the case of red listed and other rare or localised species, population size	No
Woodland structure: indicators of overgrazing	Occurrence	All five indicators of overgrazing absent	No
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover at least 90% of canopy; target species cover at least 50% of canopy	No
Vegetation composition: typical species	Occurrence	At least 1 target species for 91E0* woodlands present; at least 6 positive indicator species for 91E0* woodlands present	No
Vegetation composition: negative indicator species	Occurrence	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent	No
Vegetation composition: problematic native species	Percentage	Cover of common nettle (Urtica dioica) less than 75%	No

NPWS (2022) advises that for otter, the overall objective is to **maintain** the favourable conservation condition of Otter (Lutra lutra) in River Shannon Callows SAC, which is defined by the attributes and targets listed in Table 5.7.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.7: Conservation Objectives for Species [1355] in River Shannon Callows SAC

Attribute	Measure	Target	Liable to be affected by pollution
Distribution	Percentage positive survey sites	No significant decline	No

Attribute	Measure	Target	Liable to be affected by pollution
Extent of terrestrial habitat	Hectares	No significant decline. Area mapped and calculated as 282.1ha	No
Extent of freshwater (river) habitat	Kilometres	No significant decline.	No
Couching sites and holts	Number	No significant decline	No
Fish biomass available	Kilograms	No significant decline	Yes
Barriers to connectivity	Number	No significant increase	No

5.2.2 Middle Shannon Callows SPA

Middle Shannon Callows SPA is located 47.1 km downstream of the site of Proposed Development. It is designated for the following seven special conservation interest features:

- Whooper Swan (*Cygnus cygnus*) [A038]
- Corncrake (*Crex crex*) [A122]
- Golden Plover (*Pluvialis apricaria*) [A140]
- Lapwing (*Vanellus vanellus*) [A142]
- Black-tailed Godwit (*Limosa limosa*) [A156]
- Black-headed Gull (*Chroicocephalus ridibundus*) [A179]
- Wigeon (*Mareca penelope*) [A855]
- Wetland and Waterbirds [A999]

The conservation objectives published for this European site (NPWS, 2022[5]) describe the conservation targets for each special conservation interest as defined by various attributes and targets. The tables below set out each of the component objective attributes, measures and targets, and determines whether or not a pollution event upstream of this feature would be liable to affect the achievement of the component objective.

NPWS (2022) advises that for Whooper swan, the overall objective is to **maintain** the favourable conservation condition of Whooper swan in Middle Shannon Callows SPA, which is defined by the attributes and targets listed in Table 5.8.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.8: Conservation Objectives for Waterbird [A038] in Middle Shannon Callows SPA

Attribute	Measure	Target	Liable to be affected by pollution
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	No
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity	No

[5] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004096.pdf

Attribute	Measure	Target	Liable to be affected by pollution
		of use) of suitable habitat to support the population target	
Disturbance at wintering site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	No
Barriers to connectivity and site use	Number, location, shape and hectares	The number, location, shape and area of barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	No
Forage spatial distribution, extent and abundance	Location and area, and available forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	No
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	No
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Yes

NPWS (2022) advises that for Corncrake, the status of this species as a Species of Conservation Interest for the Middle Shannon Callows SPA is currently under review. The outcome of this review will determine whether a site-specific conservation objective is set for this species.

As such it cannot be determined at this time, by reference to site specific conservation objectives published for the Middle Shannon Callows SPA whether or not a significant in-combination pollution event might be liable to affect the species in tis European site. In those circumstances and in applying the precautionary principle, mitigation is required to prevent accidental pollution resulting in adverse effects on the integrity of the site.

NPWS (2022) advises that for Wigeon, the overall objective is to **restore** the favourable conservation condition of Wigeon in Middle Shannon Callows SPA, which is defined by the attributes and targets listed in Table 5.9.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.9: Conservation Objectives for Waterbird [A050] in Middle Shannon Callows SPA

Attribute	Measure	Target	Liable to be affected by pollution
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	No
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	No
Disturbance at wintering site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the	No

Attribute	Measure	Target	Liable to be affected by pollution
		achievement of targets for population trend and spatial distribution	
Barriers to connectivity and site use	Number, location, shape and hectares	The number, location, shape and area of barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	No
Forage spatial distribution, extent and abundance	Location and area, and available forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	No
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	No
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Yes

NPWS (2022) advises that for Golden plover, the overall objective is to **maintain** the favourable conservation condition of Golden plover in Middle Shannon Callows SPA, which is defined by the attributes and targets listed in Table 5.10.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.10: Conservation Objectives for Waterbird [A140] in Middle Shannon Callows SPA

Attribute	Measure	Target	Liable to be affected by pollution
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	No
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	No
Disturbance at wintering site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	No
Barriers to connectivity and site use	Number, location, shape and hectares	The number, location, shape and area of barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	No
Forage spatial distribution, extent and abundance	Location and area, and available forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	No
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	No
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Yes

NPWS (2022) advises that for Lapwing, the overall objective is to **restore** the favourable conservation condition of Lapwing in Middle Shannon Callows SPA, which is defined by the attributes and targets listed in Table 5.11.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.11: Conservation Objectives for Waterbird [A142] in Middle Shannon Callows SPA

Attribute	Measure	Target	Liable to be affected by pollution
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	No
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	No
Disturbance at wintering site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	No
Barriers to connectivity and site use	Number, location, shape and hectares	The number, location, shape and area of barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	No
Forage spatial distribution, extent and abundance	Location and area, and available forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	No
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	No
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Yes

NPWS (2022) advises that for Black-tailed godwit, the overall objective is to **restore** the favourable conservation condition of Black-tailed godwit in Middle Shannon Callows SPA, which is defined by the attributes and targets listed in Table 5.12.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.12: Conservation Objectives for Waterbird [A156] in Middle Shannon Callows SPA

Attribute	Measure	Target	Liable to be affected by pollution
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	No
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	No
Disturbance at wintering site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels	No

Attribute	Measure	Target	Liable to be affected by pollution
		that do not significantly impact the achievement of targets for population trend and spatial distribution	
Barriers to connectivity and site use	Number, location, shape and hectares	The number, location, shape and area of barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	No
Forage spatial distribution, extent and abundance	Location and area, and available forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	No
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	No
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Yes

NPWS (2022) advises that for Black-headed gull, the overall objective is to **restore** the favourable conservation condition of Black-headed gull in Middle Shannon Callows SPA, which is defined by the attributes and targets listed in Table 5.13.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.13: Conservation Objectives for Waterbird [A179] in Middle Shannon Callows SPA

Attribute	Measure	Target	Liable to be affected by pollution
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	No
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	No
Disturbance at wintering site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	No
Barriers to connectivity and site use	Number, location, shape and hectares	The number, location, shape and area of barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	No
Forage spatial distribution, extent and abundance	Location and area, and available forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	No
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	No

Attribute	Measure	Target	Liable to be affected by pollution
Supporting habitat: area and quality	Hectares and quality	Sufficient area of utilisable habitat available in ecologically important sites outside the SPA	Yes

NPWS (2022) advises that for Wetlands and Waterbirds, the overall objective is to **maintain** the favourable conservation condition of wetlands in Middle Shannon Callows SPA, which is defined by the attributes and targets listed in Table 5.14.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.14: Conservation Objectives for Wetlands [A999] in Middle Shannon Callows SPA

Attribute	Measure	Target	Liable to be affected by pollution
Wetland habitat area	Hectares	No significant loss to wetland habitat within the SPA, other than that occurring from natural patterns of variation	No
Wetland habitat quality and functioning	Quality and function of the wetland habitat	No significant impact on the quality or functioning of the wetland habitat within the SPA, other than that occurring from natural patterns of variation	Yes

5.2.3 Lough Derg, North-East Shore SAC

Lough Derg, North-East Shore SAC is located 73.9 km downstream of the site of proposed development. It is designated for the following six qualifying interest feature habitats:

- *Juniperus communis* formations on heaths or calcareous grasslands [5130]
- Calcareous fens with *Cladium mariscus* and species of the *Caricion davallianae* [7210]
- Alkaline fens [7230]
- Limestone pavements [8240]
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* [91E0]
- *Taxus baccata* woods of the British Isles [91J0]

The conservation objectives published for this European site (NPWS, 2019[6]) describe the conservation targets for each qualifying interest as defined by various attributes and targets. The tables below set out each of the component objective attributes, measures and targets, and determines whether or not a pollution event upstream of this feature would be liable to affect the achievement of the component objective.

NPWS (2019) advises that for *Juniperus communis* formations, the overall objective is to **restore** the favourable conservation condition of Juniperus communis formations on heaths or calcareous grasslands in Lough Derg, North-East Shore SAC, which is defined by the attributes and targets listed in Table 5.15.

[6] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002241.pdf

None of the component objectives are liable to be affected by a pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.15: Conservation Objectives for Habitat [5130] in Lough Derg, North-East Shore SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline, subject to natural processes	No
Juniper formation size	Number and proximity of juniper plants	At least 50 juniper plants present with each plant separated by no more than 20 m	No
Vegetation structure: female fruiting plants	Percentage in a representative number of 5m x 5m monitoring stops or in an ad hoc count of 50 plants	Fruiting females comprise at least 10% of juniper plants rooted in plot in at least 50% of stops or in an ad hoc count of 50 plants	No
Vegetation structure: seedling recruitment	Presence in a representative number of 5m x 5m monitoring stop	At least one seedling recorded in at least one monitoring stop	No
Vegetation structure: live juniper	Percentage in a representative number of 5m x 5m monitoring stops or across the site as a whole	At least 90% of juniper plants rooted in plot alive in at least 75% of stops or across the site as a whole	No
Vegetation compostion: negative indicator species	Percentage in a representative number of 5m x 5m monitoring stops	Total cover of negative indicator species to be less than 10% in at least 50% of stops	No
Physical structure: germination niches	Percentage in a representative number of 5m x 5m monitoring stops	At least 5% bare soil and/or at least 5% bare rock in at least 50% of stops	No
Formation structure: browning/die-back of plants	Percentage of juniper cover in a representative number of 5m x 5m monitoring stops	Browning or dead juniper branches (excluding fully dead plants) comprise no more than 20% of total juniper cover in plot in at least 75% of stops	No
Formation structure: evidence of browsing and bark stripping	Occurrence across a representative number of 5m x 5m monitoring stops	Recent browsing of juniper plants and bark stripping and trampling due to browsers evident in no more than 50% of stops	No
Indicators of local distinctiveness	Occurance and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat	No

NPWS (2019) advises that for Calcareous fens, the overall objective is to **maintain** the favourable conservation condition of Calcareous fens[7] with Cladium mariscus and species of the Caricion davallianae in Lough Derg, North-East Shore SAC, which is defined by the attributes and targets listed in Table 5.16.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.16: Conservation Objectives for Habitat [7210] in Lough Derg, North-East Shore SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline, subject to natural processes	No
Ecosystem function: hydrology – groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients	Maintain, or where necessary restore, as close as possible to natural or semi-natural, drainage conditions	No
Ecosystem function: water quality	Water chemistry measures	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and functioning of the habitat	Yes
Vegetation composition: typical species	Percentage cover at a representative number of 2m x 2m monitoring stops	Maintain adequate cover of typical species, including brown mosses and vascular plants	No
Vegetation compostion: native negative indicator species	Percentage cover at a representative number of 2m x 2m monitoring stops	Cover of native negative indicator species at insignificant levels	No
Vegetation compostion: non-native species	Percentage cover at, and in local vicinity of, representative number of 2m x 2m monitoring stops	Cover of non-native species less that 1%	No
Vegetation compostion: trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Cover of scattered native trees and shrubs less than 10%	No
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of, a representative number 2m x 2m monitoring stops	Cover of disturbed bare ground not more than 10%. Where tufa is present, disturbed bare ground not more than 1%	No
Indicators of local distinctiveness	Occurance and population size	No decline in distribution or population sizes of rare, threatned or scarce species assocaited with the habitat; maintain features of local	

[7] Calcareous fens are a Priority Annex I habitat in this SAC

Attribute	Measure	Target	Liable to be affected by pollution
		distinctiveness, subject to natural processes	

NPWS (2019) advises that for Alkaline fens, the overall objective is to **maintain** the favourable conservation condition of Alkaline fens in Lough Derg, North-East Shore SAC, which is defined by the attributes and targets listed in Table 5.17.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.17: Conservation Objectives for Habitat [7230] in Lough Derg, North-East Shore SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline, subject to natural processes	No
Ecosystem function: soil nutrients	Soil pH and appropriate nutrient levels at a representative number of monitoring stops	Maintain soil pH and nutrient status within natural ranges	No
Ecosystem function: peat formation	Percentage cover of peat-forming vegetation and water table levels	Maintain active peat formation, where appropriate	No
Ecosystem function: hydrology - groundwater levels	Water levels (centimetres); duration of levels; hydraulic gradients; water supply	Maintain, or restore where necessary, appropriate natural hydrological regimes necessary to support the natural structure and functioning of the habitat	No
Ecosystem function: hydrology - surface water flow	Drain density and form	Maintain, or restore where necessary, as close as possible to natural or semi-natural drainage conditions	No
Ecosystem function: water quality	Water chemistry measures	Maintain appropriate water quality, particularly pH and nutrient levels, to support the natural structure and	Yes
Community diversity	Abundance of variety of vegetation communities	Maintain variety of vegetation communities, subject to natural processes	
Vegetation composition: brown mosses	Percentage cover at a representative number 2m x 2m monitoring stops	Maintain adequate cover of typical brown mosses	
Vegetation composition: typical vascular plants	Percentage cover at a representative number 2m x 2m monitoring stops	Maintain adequate cover of typical vascular plant species	
Vegetation composition: native negative indicator species	Percentage cover at a representative number 2m x 2m monitoring stops	Cover of native negative indicator species at insignificant levels	

Attribute	Measure	Target	Liable to be affected by pollution
Vegetation composition: non-native species	Percentage cover at a representative number 2m x 2m monitoring stops	Cover of non-native species less than 1%	
Vegetation composition: native trees and shrubs	Percentage cover in local vicinity of a representative number of monitoring stops	Attribute and target based on Perrin et al (2014). Scrub and trees will tend to invade if fen conditions become drier	No
Vegetation composition: soft rush and common reed cover	Percentage cover in local vicinity of a representative number of monitoring stops	Total cover of soft rush (Juncus effusus) and common reed (Phragmites australis) less than 10%	No
Vegetation structure: litter	Percentage cover in local vicinity of a representative number of monitoring stops	Total cover of litter not more than 25%	No
Physical structure: disturbed bare ground	Percentage cover at, and in local vicinity of a representative number 2m x 2m monitoring stops	Cover of disturbed bare ground not more than 10%	No
Physical structure: tufa formations	Percentage cover in local vicinity of a representative number of monitoring stops	Disturbed proportion of vegetation cover where tufa is present is less than 1%	No
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	No

NPWS (2019) advises that for Limestone pavements, the overall objective is to **maintain** the favourable conservation condition of Limestone pavements[8] in Lough Derg, North-East Shore SAC, which is defined by the attributes and targets listed in Table 5.18.

None of the component objectives are liable to be affected by a significant in-combination pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.18: Conservation Objectives for Habitat [8240] in Lough Derg, North-East Shore SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline	No
Vegetation composition: positive indicator species	Number at a representative number of monitoring stops	At least seven positive indicator species present	No
Vegetation composition: bryophyte layer	Percentage at a representative number of monitoring stops	Bryophyte cover at least 50% on wooded pavement	No

[8] Limestone pavements are a Priority Annex I habitat in this SAC

Attribute	Measure	Target	Liable to be affected by pollution
Vegetation composition: negative indicator species	Percentage at a representative number of monitoring stops	Collective cover of negative indicator species on exposed pavement not more than 1%	No
Vegetation composition: non-native species	Percentage at a representative number of monitoring stops	Cover of non-native species not more than 1% on exposed pavement; on wooded pavement not more than 10% with no regeneration	No
Vegetation composition: scrub	Percentage at a representative number of monitoring stops	Scrub cover no more than 25% of exposed pavement	No
Vegetation composition: bracken cover	Percentage at a representative number of monitoring stops	Bracken (Pteridium aquilinum) cover no more than 10% on exposed pavement	No
Vegetation structure: woodland canopy	Percentage at a representative number of monitoring stops	Canopy cover on wooded pavement at least 30%	No
Vegetation structure: dead wood	Occurrence in a representative number of monitoring stops	Sufficient quantity of dead wood on wooded pavement to provide habitat for saproxylic organisms	No
Physical structure: disturbance	Occurrence in a representative number of monitoring stops	No evidence of grazing pressure on wooded pavement	No
Indicators of local distinctiveness	Occurrence and population size	No decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat; maintain features of local distinctiveness, subject to natural processes	No

NPWS (2019) advises that for Alluvial forests, the overall objective is to **maintain** the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)[9] in Lough Derg, North-East Shore SAC, which is defined by the attributes and targets listed in Table 5.19.

Page 41

None of the component objectives are liable to be affected by a significant in-combination pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.19: Conservation Objectives for Habitat [91E0] in Lough Derg, North-East Shore SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline, subject to natural processes	No
Woodland size	Hectares	Area stable or increasing. Where topographically possible,	No

[9] Alluvial forests are a Priority Annex I habitat in this SAC

Attribute	Measure	Target	Liable to be affected by pollution
		"large" woods at least 25ha in size and "small" woods at least 3ha in size	
Woodland structure: cover and height	Percentage; metres; centimetres	Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20cm; bryophyte cover at least 4%	No
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community types	No
Woodland structure: natural regeneration	Seedling: sapling: pole ratio	Seedlings, saplings and pole age-classes of target species for 91E0* woodlands and other native tree species occur in adequate proportions to ensure survival of woodland canopy	No
Hydrological regime: flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	No
Woodland structure: dead wood	Number per hectare	At least 19 stems/ha of dead wood at least 20cm diameter	No
Woodland structure: veteran trees	Number per hectare	No decline	No
Woodland structure: indicators of local distinctiveness	Occurrence; population size	No decline in distribution and, in the case of red listed and other rare or localised species, population size	No
Woodland structure: indicators of overgrazing	Occurrence	All five indicators of overgrazing absent	No
Vegetation composition: native tree cover	Percentage	No decline. Native tree cover at least 90% of canopy; target species cover at least 50% of canopy	No
Vegetation composition: typical species	Occurrence	At least 1 target species for 91E0* woodlands present; at least 6 positive indicator species for 91E0* woodlands present	No
Vegetation composition: negative indicator species	Occurrence	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent	No
Vegetation composition: problematic native species	Percentage	Cover of common nettle (Urtica dioica) less than 75%	No

NPWS (2019) advises that for Yew forests, the overall objective is to **maintain** the favourable conservation condition of Taxus baccata woods of the British Isles[10] in Lough Derg, North-East Shore SAC, which is defined by the attributes and targets listed in Table 5.20.

None of the component objectives are liable to be affected by a significant in-combination pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.20: Conservation Objectives for Habitat [91J0] in Lough Derg, North-East Shore SAC

Attribute	Measure	Target	Liable to be affected by pollution
Habitat area	Hectares	Area stable or increasing, subject to natural processes	No
Habitat distribution	Occurrence	No decline. The surveyed yew woodland at Cornalack.	No
Woodland size	Hectares	Area stable or increasing. Where topographically possible, "large" woods at least 25ha in size and "small" woods at least 3ha in size	No
Woodland structure: cover and height	Percentage; metres; centimetres	Total canopy cover at least 30%; median canopy height at least 7m; native shrub layer cover 10-75%; native herb/dwarf shrub layer cover at least 20% and height at least 20cm; bryophyte cover at least 4%	No
Woodland structure: community diversity and extent	Hectares	Maintain diversity and extent of community tyes	No
Woodland structure: natural regeneration	Seedling:sapling:pole ratio	Seedlings, saplings and pole age-classes of yew (Taxus baccata) and other native tree species occur in adequate proportions to ensure survival of woodland canopy	No
Hydrological regime: flooding depth/height of water table	Metres	Appropriate hydrological regime necessary for maintenance of alluvial vegetation	No
Woodland structure: dead wood	Number per hectare	At least 19 stems/ha of dead wood at least 20cm diameter	No
Woodland structure: veteran trees	Number per hectare	No decline	No
Woodland structure: indicators of local distinctiveness	Occurrence	No decline	No
Woodland structure: indicators of overgrazing	Occurrence	All four indicators of overgrazing absent	No
Vegetation composition: native tree cover	Percentage	o decline. Native tree cover at least 90% of canopy; yew (Taxus baccata) cover at least 50% of canopy	No

[10] Taxus bacatta woods are a Priority Annex I habitat in this SAC

Attribute	Measure	Target	Liable to be affected by pollution
Vegetation composition: typical species	Occurrence	Yew (Taxus baccata) present; at least 6 positive indicator species for 91J0* woodlands present	No
Vegetation composition: negative indicator species	Occurrence	Negative indicator species cover not greater than 10%; regeneration of negative indicator species absent	No

5.2.4 Lough Derg (Shannon) SPA

Lough Derg (Shannon) SPA is located 73.9 km downstream of the site of Proposed Development. It is designated for the following five special conservation interest features:

- Cormorant (*Phalacrocorax carbo*) [A017]
- Tufted Duck (*Aythya fuligula*) [A061]
- Goldeneye (*Bucephala clangula*) [A067]
- Common Tern (*Sterna hirundo*) [A193]
- Wetland and Waterbirds [A999]

The conservation objectives published for this European site (NPWS, 2024[11]) describe the conservation targets for each special conservation interest as defined by various attributes and targets. The tables below set out each of the component objective attributes, measures and targets, and determines whether or not a pollution event upstream of this feature would be liable to affect the achievement of the component objective.

NPWS (2024) advises that for Cormorant, the overall objective is to **restore** the favourable conservation condition of Cormorant in Lough Derg (Shannon) SPA, which is defined by the attributes and targets listed in Table 5.21.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.21: Conservation Objectives for Waterbird [A017] in Lough Derg (Shannon) SPA

Attribute	Measure	Target	Liable to be affected by pollution
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	No
Productivity rate	Number of fledged young per AON	Sufficient to maintain a stable or increasing population	No
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	No
Forage spatial distribution, extent, abundance and availability	Location and hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Yes

[11] https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004058.pdf

Attribute	Measure	Target	Liable to be affected by pollution
Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	No
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	No
Barriers to connectivity	Number, location, shape and area (hectares)	No significant rise	No

NPWS (2022) advises that for Tufted duck, the overall objective is to **maintain** the favourable conservation condition of Tufted duck in Lough Derg (Shannon) SPA, which is defined by the attributes and targets listed in None of the component objectives are liable to be affected by a pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.22.

None of the component objectives are liable to be affected by a pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.22: Conservation Objectives for Waterbird [A061] in Lough Derg (Shannon) SPA

Attribute	Measure	Target	Liable to be affected by pollution
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	No
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	No
Disturbance at wintering site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	No
Barriers to connectivity and site use	Number, location, shape and hectares	Barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	No
Forage spatial distribution, extent and abundance	Location and area, and available forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	No
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	No

NPWS (2022) advises that for Goldeneye, the overall objective is to **maintain** the favourable conservation condition of Goldeneye in Lough Derg (Shannon) SPA, which is defined by the attributes and targets listed in None of the component objectives are liable to be affected by a pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.23.

None of the component objectives are liable to be affected by a pollution event, and so no mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.23: Conservation Objectives for Waterbird [A067] in Lough Derg (Shannon) SPA

Attribute	Measure	Target	Liable to be affected by pollution
Winter population trend	Percentage change in number of individuals	Long term winter population trend is stable or increasing	No
Winter spatial distribution	Hectares, time and intensity of use	Sufficient number of locations, area, and availability (in terms of timing and intensity of use) of suitable habitat to support the population target	No
Disturbance at wintering site	Intensity, frequency, timing and duration	The intensity, frequency, timing and duration of disturbance occurs at levels that do not significantly impact the achievement of targets for population trend and spatial distribution	No
Barriers to connectivity and site use	Number, location, shape and hectares	The number, location, shape and area of barriers do not significantly impact the wintering population's access to the SPA or other ecologically important sites outside the SPA	No
Forage spatial distribution, extent and abundance	Location and area, and available forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	No
Roost spatial distribution and extent	Location and hectares of roosting habitat	Sufficient number of locations, area and availability of suitable roosting habitat to support the population target	No

NPWS (2022) advises that for Common tern, the overall objective is to **restore** the favourable conservation condition of Common tern in Lough Derg (Shannon) SPA, which is defined by the attributes and targets listed in Table 5.24.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.24: Conservation Objectives for Waterbird [A193] in Lough Derg (Shannon) SPA

Attribute	Measure	Target	Liable to be affected by pollution
Breeding population size	Number of Apparently Occupied Nests (AON)	Long term SPA population trend is stable or increasing	No
Productivity rate	Number of fledged young per AON	Sufficient to maintain a stable or increasing population	No
Distribution: extent of available nesting options within the SPA	Numbers and spatial distribution	Sufficient availability of suitable nesting sites throughout the SPA to maintain a stable or increasing population	No
Forage spatial distribution, extent, abundance and availability	Location and hectares, and forage biomass	Sufficient number of locations, area of suitable habitat and available forage biomass to support the population target	Yes
Disturbance at the breeding site	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on birds at the breeding site	No

Attribute	Measure	Target	Liable to be affected by pollution
Disturbance at areas ecologically connected to the colony	Intensity, frequency, timing and duration	Disturbance occurs at levels that do not significantly impact on breeding population	No
Barriers to connectivity	Number, location, shape and area (hectares)	No significant increase	Yes

NPWS (2022) advises that for Wetlands and Waterbirds, the overall objective is to **maintain** the favourable conservation condition of wetlands in Lough Derg (Shannon) SPA, which is defined by the attributes and targets listed in Table 5.25.

One of the component objectives is liable to be affected by a significant in-combination pollution event, and so mitigation is required to prevent adverse effects on the integrity of the site.

Table 5.25: Conservation Objectives for Wetlands [A999] in Lough Derg (Shannon) SPA

Attribute	Measure	Target	Liable to be affected by pollution
Wetland habitat area	Hectares	No significant loss to wetland habitat within the SPA, other than that occurring from natural patterns of variation	No
Wetland habitat quality and functioning	Quality and function of the wetland habitat	No significant impact on the quality or functioning of the wetland habitat within the SPA, other than that occurring from natural patterns of variation	Yes

5.3 Mitigation Measures

The following mitigation measures will avoid any potential accidental pollution pathways that could cause adverse effects on the integrity of the European sites concerned by way of component objectives liable to be affected as outlined (and shaded grey) in Tables 5.2 – 5.25 above.

A Construction stage Environmental Management Plan (CEMP) containing methods to manage and minimise the potential for accidental pollution at construction phase of the proposed development shall be implemented.

An outline CEMP has been prepared and is submitted with the planning application. A finalised CEMP shall be submitted to and agreed with the planning authority in advance of the commencement of construction.

The finalised CEMP shall contain *inter alia* the measures outlined below to manage and minimise the potential for accidental pollution at construction phase.

5.3.1 Pollution Control and Contingency Plan

Legislation

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

- The Local Government (Water Pollution) Act 1977;
- The Local Government (Water Pollution) (Amendment) Act 1990;
- EC (Water Policy) Regulations 2003, as amended (including S.I. No. 52/2025 – EU (Water Policy) (Amendment) Regulations 2025);
- The Wildlife Act 1976 (as amended;
- EC (Birds and Natural Habitats) Regulations 2011 (as amended);
- Protection of the Environment (POE) Act 2003;
- Environmental Noise Regulations 2006;
- Environmental Protection Agency Act 1992; and
- Waste Management Acts (WMA) 1996 to 2005.

Guidance

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

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

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

- Best Practice Guide BPGCS005 – Oil Storage Guidelines;
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects;
- Construction and Demolition Waste Management – a handbook for Contractors and Site Managers; and
- IEMA Environmental Impact Assessment Guide to: Delivering Quality Development.

UK Pollution Prevention Guidelines have also been considered in the production of this plan. The Pollution Prevention Guidelines (PPGs) and their successor documents, the Guidance for Pollution Prevention (GPPs), published by the Scottish Environment Protection Agency (SEPA), the Northern Ireland Environment Agency (NIEA), and formerly the Environment Agency (EA) in England, are considered guidance documents that reflect current good practice and are not applicable to the Republic of Ireland but are a good source of information and guidance.

Page 48

GPPS are downloadable in full from this link: http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/

GPP01 Understanding your Environmental Responsibilities – Good Environmental Practices

The basis of any good environmental performance is compliance with environmental regulations. You must be aware of your environmental responsibilities and make sure that you operate in a completely legal way.

The site and activities will only cause a risk to the environment or people if it has all three parts of the pollutant linkage present i.e. a source, a pathway and a receptor. Measures should be put in place to prevent or minimise or mitigate the effects of any risks and thereby break the pollutant linkages between these three.

It offers advice on drainage from site. Drains are common pathways for dirty water to enter the environment and cause pollution so it should be known where drains are situated and where they lead to reduce the risk of pollution. All premises should have a drainage plan to guide any activities. This guidance covers on-site water treatment facilities such as septic tanks, package treatment plants or oil separators. It also mentions Sustainable Drainage Systems (SuDS) which can be used to treat lightly contaminated water.

Safe storage of fuels, oils, chemicals and other materials can be achieved by planning storage areas, using suitable containers, containing leaks and spills and overseeing deliveries. GPP 01 also contains information on waste handling, storage and minimisation as poorly managed wastes, including both direct and indirect waste, can pollute the environment. In this context everyone has a duty of care to ensure waste is produced, stored, transported and disposed of without harming the environment. Hazardous or special waste must be dealt with differently to non-hazardous waste. It also covers how to correctly dispose of your waste and measures that must be taken.

Dealing with pollution incidents starts with preparation, planning and training which is discussed in this guidance. It recommends the implementation of plans, analysing risks such as flood and fire risks and having spill kits and pollution control equipment at the ready to ensure that everybody knows what to do in the case of an emergency. Following the guidance in this GPP can help reduce or eliminate the negative impacts that may arise.

Spill kit must be kept on site with sand, earth or commercial products for the containment of fuel and other material spillages. All staff will receive appropriate training in the use of these kits and are to be made aware of where the kit is stored. In the event of a spillage of oils or chemicals resulting in contamination of water courses or damage to habitats, the following procedure will be adopted:

- The appropriate spill kit is to be deployed immediately, and the site manager is to be informed.
- The incident is to be recorded within the site logbook.
- In the event of contaminants being discharged directly to water courses, or in the event of significant spillage (in excess of 10 litres), the EPA is to be contacted on **1890 33 55 99.**

A way of ensuring awareness of impacts is to develop a suitable Environmental Management System (EMS). An environmental management system (EMS) is similar to other management systems, such as those that manage quality or safety. It assesses business' strengths and weaknesses and helps identify and manage environmental risks/opportunities. This guidance covers the different types of EMS.

GPP02 Guidance for Pollution Prevention Above Ground Oil Storage Tanks

This Guidance for Pollution Prevention is written for anyone who:

- Intends to install or replace above ground oil storage tanks
- Has existing oil storage tanks on their site to help look after their oil safely.

Following this guidance will help look after above ground oil storage tanks safely and minimise the risk of causing pollution.

Oil is one of the most common pollutants and therefore it is important to have adequate insurance cover which should include:

- environmental clean-up for accidental oil loss, or deliberate oil loss through vandalism
- a high enough liability limit to cover you if neighbouring land, premises and/or boreholes are affected
- the costs of cleaning up oil on your own property

Insurers may not settle a claim if the oil tank and associated pipework which leaked did not comply with the applicable oil storage regulations.

Oil tanks connected to fixed combustion appliances, like central heating boilers and cookers, need to comply with the building regulations that apply in the UK. When deciding where to put the tank, environmental high-risk locations should be avoided and areas at risk from flooding. It is important to check which type of oil storage is best suited, recommendations for which are included within the guidance.

There are manufacturing and quality standards for different types of tanks and your tank manufacturer, supplier or installer should advise you on the minimum design and manufacturing standards under the appropriate accredited quality assurance scheme. It should comply with BS EN ISO 9001. These include single skinned tanks, double skinned tanks and integrally bunded tanks.

It may be a legal requirement to have secondary containment or bunds, which must hold at least 110% of the volume of oil the tank is designed to contain. Tanks should be installed by a competent person who is registered with a professional scheme for the type of tank you're having installed.

Valves, filters, sight gauges, vent pipes, or other tank ancillary equipment, not including the fill pipe, draw-of pipe or pumps for oil with a flashpoint less than 32°C, must be within the secondary containment system, so any discharges of oil are retained. In terms of pipework, it is suggested that underground pipework is avoided where possible. All above ground pipework must be protected against corrosion, positioned or protected to minimise the chances of damage by impact or collision and supported so it is secure and can't come loose.

It is essential to ensure safe deliveries to the tank. Tanks should be labelled with the capacity and type of oil they contain. The area around your tank where deliveries are made and, if applicable, oil is dispensed should have an impermeable surface and be isolated from surface water drainage systems.

It is important to monitor the legal compliance of existing tanks with Building regulations or OSR.

As well as tanks mobile bowsers can be used to store oil. Mobile bowsers are oil storage containers that can dispense oil and are designed to be moved, either being towed or lifted onto another vehicle, but which can't move under their own power. Requirements for these are available within this guidance.

Oil storage areas should be secured to prevent theft and vandalism. Permanent taps or valves through which oil can be discharged to open areas should be locked when not in use. Display a notice telling users to keep valves, nozzles and trigger guns locked when they're not in use. Pumps should also be protected from unauthorised use. If the Oil Storage Regulations apply, you must ensure you protect the containers and the secondary containment system.

In the event of an oil spill, take immediate action to stop the oil getting into any drains or watercourses or soaking into the ground. Keep a spill kit with commercial sorbent products, sand or earth close to oil storage areas to deal with spills. Make sure all personnel know how to use it safely. If oil soaks into the ground, a professional company should remove the soil soaked in oil, so it doesn't cause long term pollution.

GPP 03 Guidance for Pollution Prevention Use and Design of Oil Separators in Surface Water Drainage Systems

Oil separators (also known as oil interceptors) are fitted to surface water drainage systems to prevent pollution from oils and to prevent disruption to sewage treatment works. They are designed to separate the oil from the water, and to collect the oil for removal. They can be installed at the point where potentially contaminated water leaves a site, and protect water courses, groundwater, land, Sustainable Drainage Systems (SuDS) or the sewer system. They are often used to contain leaks from vehicles and plant, and where oils are handled and accidental spills are possible.

They are used anywhere there is a risk of oil entering surface waters or sewers from rainfall runoff, petrol station forecourts or vehicle refuelling sites, or any other site where there is a risk of oil contamination.

SuDS can be used to manage runoff from site and can reduce the overall impact on the environment. On High-risk sites they can provide further treatment below an oil separator. SuDS should be considered on all sites. The guidance covers other techniques for low risk and high risk sites as well as what to do in terms of discharges from sites.

In many cases sites change ownership and there is often little information available on the size, type, condition or even existence of separators. New owners or tenants of a site, should establish Baseline Asset information to confirm that any separator/s present on site are fit for purpose and adequately sized and type for the current activities.

Existing sites may move site boundaries, change or move processes on site. Sites should be re-assessed for separator requirement when any significant changes are undertaken to ensure adequate protection is provided.

This GPP advises that SuDS should be incorporated into the surface water drainage whenever possible, and in Scotland and Wales this is a legal requirement for new developments. This may remove the requirement for an oil separator, if the surface water leaving site is only very lightly contaminated.

The UK has adopted a two-part European Standard (BS EN 858-1:2002 and BS EN 858- 2:2003) for the design, use, selection, installation, operation and maintenance of prefabricated oil separators. It must be ensured that these standards are adhered to with when fitting an oil separator. There are Class 1 and Class 2 separators. If too much oil is allowed to accumulate inside a separator it will not work effectively, and oil will escape. To avoid this, full retention separators must be provided with an automatic closure device.

Separators must have automatic warning devices or alarm systems to provide visual and audible warning (if necessary to a remotely located supervisory point) when the level of oil reaches 90 per cent of the oil storage volume under static liquid level conditions. This automatic warning device tells the operator that the separator is in need of immediate emptying for it to continue to work effectively.

All separators that comply with the European Standard will have been given a nominal size (NS) based on a standard test procedure. The formulae to calculate the nominal size of both a bypass separator and a full retention separator can be found within this guidance as well as the formulae to calculate both the oil storage capacity and silt storage capacity. The minimum working capacity (which excludes any provision for silt deposition) of a separator should be 1,000 litres; though for forecourts, it is likely that risk assessment will indicate the need for a larger separator. For bypass separators, the minimum capacity is defined as the working capacity of the oil separating chamber only.

To prevent pollution and minimise your costs, you need to manage your separator effectively. Every six months, or in accordance with manufacturer's instructions, experienced personnel should:

Page 51

- Physically inspect the integrity of the separator and all mechanical parts
- Assess the depth of accumulated oil and silt
- Service all electrical equipment such as alarms and separator management systems
- Check the condition of any coalescing device and replace it if necessary
- Clean the sampling shaft if required.

It covers waste management with reference to the Duty or Care for waste legislation. This section reinstates points from GPP 01 such as dealing with hazardous waste.

GPP05 Guidance for Pollution Prevention Works and Maintenance in or Near Water

This guidance is for anyone carrying out works or activities in or near the water environment. Such activities have the potential to cause pollution, transfer non-native species and can impact on the bed and banks of a watercourse.

Potential environmental risks when working in or near water include:

- Silt
- Cement and concrete
- Chemicals and solvents
- Bridge cleaning debris
- Herbicides
- Invasive Non-Native Species (INNS)
- Waste materials (including hazardous waste or special waste in Scotland)

Even if the works that are carrying out are required because of an emergency, this Guidance for Pollution Prevention should be followed as closely as possible.

Good soil use and management is crucial to preventing silt pollution which is a major cause of environmental incidents. It can harm water quality, damage and kill aquatic life by smothering and suffocation and can cause flooding by blocking culverts and channels.

Activities that cause silt pollution include:

- Run-off from exposed ground/stockpiles
- Plant washing, roads and river crossings
- Dredging
- De-watering/ pumping excavations

Where run off water is contaminated with silt or other pollutants such as oil this water must not be pumped or allowed to flow (directly or indirectly) into the water environment without treatment. Discharges to the water environment may require formal approval from the environmental regulator. The choice of method for the treatment and disposal of contaminated water will depend on:

- the volume of water
- the area of land available for storage, treatment or discharge
- the amount and type of silt
- the presence of other substances in the water
- the conditions of any consent or authorisation.

Contaminated water treatment and disposal options include:

- Sustainable Drainage Systems
- The most effective SuDS use a series of drainage components to imitate natural drainage rather than traditional end-of-pipe drainage solutions.
- Settlement lagoons/tanks

- To be effective a settlement lagoon or tank should retain contaminated water long enough for silt to settle out. The length of time will depend on the type of silt
- Filtration
- If you do not have the space for lagoons and the water is contaminated with coarse silt only (not fine clay silts), you may be able to use tanks filled with filter material.
- Pump to grassland
- This method of disposal is only suitable for water contaminated with silt only and you must have permission from your environmental regulator and landowner.
- Discharge to sewer
- Discharges to foul sewer will require the permission of the local water and sewerage provider.
- Tanker off site

If no other disposal routes are available, then contaminated water can be collected by tanker for authorised disposal off-site.

Concrete, cement and grouts are very alkaline and corrosive and can cause serious pollution to water. Concrete, cement and grout mixing and washing areas must therefore meet certain requirements which can be found in this guideline. Wash waters from concrete and cement works should never be discharged into the water environment as this could have serious impact on the water quality and ecology.

Guidance on bridge maintenance and structures over water discusses pollutant containment during maintenance and advised methods of paint removal, surface cleaning and painting.

Information on **pesticides** including the required equipment and methods of spraying is found in section 6. If it is decided to use a pesticide in or near water, approval is needed from an environmental regulator before use, however it should always be considered alternative ways of controlling pests and weeds in or near water.

This guidance covers INNS and how to eliminate the risk of transferring water and soil potentially containing plant or animal diseases, or invasive non-native species, to or from the development site.

Legal waste storage and disposal are essential for effective pollution prevention. This reinstates what is outlined in other GPPs concerning Duty of Care and storage and disposal of hazardous waste.

GPP06 Guidance for Pollution Prevention Working at Construction and Demolition Sites

This guidance is for anyone carrying out works or activities on construction or demolition sites. Any building or development works are considered to be construction sites. Such activities have the potential to cause pollution and harm to the environment.

On construction and demolition sites there are forms of pollution that are classed as a statutory nuisance, noise being the largest cause of complaint. Activities that can cause nuisance should be regularly monitored and it should be checked that measures put in place to reduce or eliminate nuisance are working. This guidance covers how to minimise nuisance in terms of operating vehicles and machinery and the importance of informing neighbours.

Section 2 managing water on construction sites discusses ways in which to minimise 'dirty' water such as: reducing the area of stripped soil, stop water entering working areas, keep nearby roads clean, and protecting watercourses. Water can be treated through on site treatment methods or alternative treatment methods such as Sustainable Drainage Systems, settlement lagoons or tanks, filtration and the use of oil separators. Water can also be recycled through various methods including rainwater harvesting, wheel washing systems and recycling concrete wash down water.

Where run off water is contaminated with silt or other pollutants, such as oil, this water must not be pumped or allowed to flow (directly or indirectly) into the water environment without treatment. There it must be established what the most appropriate method of water disposal is from site. The various methods discussed are as follows:

- pumping to grassland,
- discharging to sewers and
- collection by a tanker for disposal off-site.

Protecting soils is essential for many environmental, social and economic functions. This guidance offers information on how to protect soils and prepare a soil resource plan. Before starting work on a contract, a soil survey should be carried out. It outlines how the criteria to create good stockpiles and how to deal with contaminated land. If unexpected contamination is discovered on site, stop works and seek advice from an environmental regulator or the local district council. At times it may be necessary to import or export soil from sites, under these circumstances refer to this guidance for the measures that should be

followed including information on surplus soil for use off-site, topsoil from outside the site and using soils from brownfield or industrial sites.

Other areas such as archaeology, unexplored ordnance, invasive non-native species and pesticides must be considered when working on construction and demolition sites. In terms of the environmental and fire protection, this GPP discusses safe delivery access, maintenance, and security requirements before deciding where to put any permanent or temporary oil storage facilities. Fuel stores should be in dedicated areas specifically designed and constructed to be safe and secure. When using and handling oil and fuel on site, dispensing and refuelling must be taken into account alongside the regular inspection and maintenance of all storage facilities. On construction and demolition sites it is important to be aware of asbestos in terms of waste management, to prevent any adverse health effects.

Cement, concrete, and grouts are highly alkaline and corrosive and can cause serious pollution to the ground and watercourses therefore advise on working with these materials on site and near water courses is provided. All chemicals and hazardous substances should be stored away from watercourses, drains and areas where there is risk of damage from impact or collision.

Pollution incident response plans should be produced to identify the possible pollution incidents and outline the actions necessary to minimise pollution any caused. This is a site-specific document. All environmental incidents should be immediately reported to the relevant environmental regulator.

GPP08 Guidance for Pollution Prevention Safe Storage and Disposal of Used Oils

This guidance is for anyone who stores and disposes of used oils. The guidance applies to activities ranging from a single engine oil change to those of large industrial users.

Disposing of domestic used oil from households refers to engine oil and used cooking oils and fats. Used oils such as engine or gearbox oil from vehicles of machine maintenance should be taken to specific oil banks to be recycling. Used cooking oils and fats should be allowed to cool before separating them for collection and should not be poured down the sink. They can be recovered in local authority food waste collections or disposed of in the general household waste through being soaked into normal household rubbish or putting them into rigid plastic containers.

Used mineral oil from commercial and industrial sources will be classified as hazardous/special waste. It must be managed in accordance with the relevant regulations which impose legal requirements for its movement, recovery and disposal. Used oil is a useful substance that can be recycled and reused or recovered and used as a fuel to save resources; it should be treated as such. Cooking oils from commercial users can be collected by specialist contractors and recovered by manufacturers of biofuels.

Sites such as garages can generate large quantities of used oil. This oil must be collected by a registered waste carrier. Electrical transformers may use specialist oil. When spent, used transformer oil is always a hazardous/special waste.

In terms of storing waste oil and associated pipework in all cases care must be taken to avoid spillage when transferring waste oil to storage facilities. Any spills should be dealt with using absorbent materials. The environmental regulators recommend that waste oil tanks should be installed and pipework above ground whenever possible. This enables regular maintenance checks to be carried out more easily, allowing leaks to be identified earlier. This document offers guidance on above ground storage, on site storage of waste oils, underground tanks and pipes and the disposal of waste from bunded areas.

Regardless of whether they are covered by specific on-site waste oil storage legislation, all oil storage facilities must be sited on an impervious base within an oil-tight secondary containment system such as a bund. Where oil is stored within a bunded area, rainwater and oil residues can build up. This build-up reduces the storage capacity of the bund and you should remove it regularly by bailing from the sump or using a manually operated pump. This residue is likely to be contaminated with oil and, as such, may be hazardous/special waste.

The storage of used oils below ground poses a potential threat to groundwater. All new tanks must be double skinned with a suitable leak detection device. If you do not have a continuous leak detection system you must test:

- Pipework before use
- Pipework with mechanical joints every 5 years
- All other pipe work at least every ten years.

GPP20 Guidance for Pollution Prevention Dewatering Underground Ducts and Chambers

This guidance is for utilities and contractors who often need to remove a build-up of water from underground ducts and chambers. The volume of water is usually below 5m^3, but can be contaminated with:

- Silt
- Oil
- Various chemicals

If the water is not dealt with correctly there is a risk of pollution to surface waters and groundwater. Discharge should directly to a watercourse unless this has been agreed with your environmental regulator. If the water or silt is contaminated it could be classed as hazardous/special waste. WM3 can be used to help classify the resulting waste and to determine whether it is hazardous/special waste. Advice from an environmental regulator should be attained if in doubt about the classification of the materials.

There are alternative options that don't involve a discharge to ground or water including design through pumping to a foul sewer or by removal to a waste or treatment facility. If possible, design and construct ducts and chambers that prevent the ingress of water. If water is likely to enter the structure sloped can be used on the base of the chamber and include a sump where water can collect.

Alternatively, any accumulated water should be pumped to a foul sewer if possible. This will ensure that any contamination is treated before it is discharged. If there is no access to a foul sewer, and a sample of the water has either:

- Silt in suspension;
- An unusual colour; and
- An unusual odour.

Water should be removed by pumping to suitable containers or to a tanker. This must then be taken to a licensed waste disposal site and transported by a suitably licenced waste carrier.

If contamination is suspected where there is no odour or colour present, for example from metals or organics, samples should be analysed by a lab.

You must comply with the requirements of the Duty of Care Regulations. There is a legal responsibility to produce, store, transport and dispose of controlled waste without harming the environment.

If no foul sewer is available it can be discharged to land or water. Before discharging water from a duct or chamber it is your responsibility to make a thorough check of the quality of the water. If the water is clean accumulated water without silt and if it is possible to remove light contamination, then pumps can go directly to surface waters or to a surface water drain. If possible, water should be pumped across a grassy strip to remove any silt.

GPP21 Guidance for Pollution Prevention Pollution Incident Response Planning

These guidelines set out best practice for producing an incident response plan to deal with an environmental incident on your site. Following such a plan will help you to prevent or reduce environmental damage if such an incident occurs. The guidelines set out:

- why you need a plan
- what information you should include
- who should be involved in its production
- what the plan should look like by providing a template.

It is important to minimise the risk of pollution to protect the environment and human health. If pollution is caused, one can be liable to enforcement action by the local Environmental Regulator.

This guidance is for:

- site operators of industrial and commercial premises to help them produce an incident response plan.
- other organisations, authorities and individuals whose site or operations pose a potential risk to the environment and who should have an incident response plan.
- the Fire and Rescue Service and others who may be involved in the production of, and/or have an interest in such plans, for example the Health and Safety Executive, Maritime and Coastguard Agency, Government Decontamination Service, public health officials and insurers/underwriters.

The guidelines are aimed at sites which are not already required, as a condition of a permit, to prepare pollution incident response plans. If you operate a site that is required to have a pollution incident response plan, then one should speak to their environmental regulator about the specific requirements for site. Contact details are listed at the end of these guidelines.

The Pollution Incident Response Plan could be designed to deal with environmental incidents on site, or it could be part of a more comprehensive incident response plan for the site, for example Control of Major Accident Hazards (COMAH) on-site and off-site plans.

The planning cycle consists of 5 stages:

- Assess the risks on site
- Identify all potential risks to the environment from the materials, processes and activities on your site. Refer to GPP1, GPP18 and GPP28.
- Gather information and prepare your plan Page 56
- This includes a cover page, external and internal contacts list, site chemical products and waste inventory, pollution prevention equipment inventory, site plan and drainage plan.
- Activate your plan and seek responses
- Once plans have been developed, develop supporting emergency procedures to check the plan works if there's an incident. Make sure all relevant staff and contractors are aware of these procedures and the plan.
- Test plans and train your staff
- Once the plan has been completed test it regularly by carrying out exercises. At some sites, for example COMAH sites, it is a legal requirement.
- Review plans and update it

The plan must remain effective and up to date, so record any lessons learnt from exercises or actual incidents. Use these recommendations, or comments from staff and contractors, to improve any developed plans.

Once any relevant comments have been considered, distribute copies of the completed plan to the relevant organisations.

5.3.2 Emergency Procedures

A Site Environmental Emergency Plan will be prepared prior to construction and communicated to all members of the project team including sub-contractors and emergency services. A Pollution Incident Emergency Response Plan would be developed in accordance with the guidance set out by the Environmental Protection Agency (EPA). **Appendix G** of the OCEMP contains an example Emergency Response & Environmental Plan. The Environmental Emergency Plan would set out the procedures to be followed and measures to be implemented in the event of a pollution incident. These incidents may be the result of:

- delivery and use of materials;
- spillages of oils or chemicals;
- discharge of silty water or other pollutants to watercourses;
- flooding event; and,
- fire (emissions to air).

Emergency procedures are developed to support the response plan. The procedures define the circumstances when the plan should be activated and include:

- the names and contact details of staff trained in incident response,
- clearly defined roles and responsibilities,
- the types and location of emergency response equipment available,
- the location of the emergency assembly point, and,
- Procedures for recovering spilled product.

Responsible staff will be trained in emergency procedures to form an Emergency Team, so that these procedures can be implemented swiftly and effectively. Periodic testing of emergency procedures will be undertaken by the Site Manager.

The Environmental Manager will observe the test and to report on results. Any corrective actions are taken forward for review and approval.

Should an emergency incident occur, the Environmental Manager will be notified immediately. The emergency response will be co-ordinated by the Site Manager.

Protective measures, mitigation, clean up and remediation actions will be identified from the evaluation and shall be put into place, having regard for the sensitivities of the environment.

A record of the emergency incident will be kept to show the nature of the corrective action undertaken. (See **Appendix C** of the OCEMP for an example template).

Appendix G of the OCEMP contains an example Emergency Response & Environmental Plan. All relevant staff would be trained in how and when to contact the emergency services, EPA and other organisations identified in the Environmental Emergency Plan.

5.3.3 Oil Storage and Refuelling

Oil storage and refuelling areas will not be located close to any local watercourses or any drainage ditch which feeds into a watercourse. The following measures must be implemented.

- Dedicate specific areas for oil storage and refueling, bunds sized to contain 110% of fuel storage capacity.
- The contractor will use fill point drip trays, bunded pallets and secondary containment units.

- The site will be enclosed and secured, and fuel storage areas will be secondarily secured.
- All fuel; oil and chemical deliveries will be supervised by a responsible person who will be trained to deal with any spillage to prevent a pollution problem occurring.
- Storage of COSHH items is not permitted and only brought to site as required, where small portable machines are to be fueled up a drip tray is used.

5.3.4 Concrete Pouring

Concrete, cement and grouts are very alkaline and corrosive and can cause serious pollution to water. The following measures shall be followed on-site during construction and pouring of concrete:

- Ensure that concrete pours are contained within the working area and do not enter any watercourses or surface water drains.
- When mixing grout on site, construct a suitable barrier around mixing areas, supply lines and around working areas to prevent its escape.
- Trucks, hoppers, mixers and concrete pumps that have contained concrete must be washed out in a contained area, see 'management of concrete wash out areas' below.
- All concrete pours will be carried out under supervision.
- Pours will be properly prepared to avoid run off (shuttering, mud matts, membranes used) and waste.
- **Pouring of concrete should not take place when heavy rain is imminent.**

Wash down water arising from the washing of equipment that has come into contact with concrete will be collected in an impervious container.

5.3.5 Stockpiles

Management of stockpiles in accordance with best practice should include where possible 10 metre buffer zone between the stockpile and any watercourse. If required additional mitigation such as silt fencing at the toe or geotextile wrapping of the stockpiles should be considered to manage contaminated run off. The following measures are proposed in relation to stockpiling of materials:

- Locate stockpiles out of the wind or provide wind breaks to minimise dust generation
- Keep stockpiles to minimum practicable height and use gentle slopes
- Minimise the storage time of materials on site
- Store materials away from the site boundary
- Minimise the height of fall of all materials Page 58
- Avoid spillage, and clean any spill up as soon as possible
- Good soil handling and storage methods including protection of stockpiles with geotextiles.

Stockpiled material is located more than 10m away from the exclusion zone around the water body.

5.3.6 Silt Management

Good soil use and management is crucial to preventing silt pollution which is a major cause of environmental incidents. It can harm water quality, damage and kill aquatic life by smothering and suffocation and can cause flooding by blocking culverts and channels. The following will be implemented on-site:

- Do not allow water containing silt or mud to discharge directly to any waterway.
- Minimising the amount of time stripped ground and soil stockpiles are exposed.
- Only removing vegetation from the area that needs to be exposed in the near future.

- Using geotextile silt fencing at the toe of the slope, to reduce the movement of silt; this should be installed before soil stripping has begun and vehicles start tracking over the site.
- Plant washing is carried out in a designated area of hard standing at least 10 metres from any watercourse or surface water drain.
- Where run off water is contaminated with silt or other pollutants such as oil this water must not be pumped or allowed to flow (directly or indirectly) into the water environment without treatment.
- Silt controls in place to prevent silt entering watercourses or drains.
- Silt treatment options can be complex or relatively simple depending on the volume of water, the amount and type of silt and the type and size of site. Whichever method is used, an area where water can be undisturbed for a period of time. These facilities must be correctly installed, routinely maintained and inspected to ensure they're working efficiently.

6. CONCLUSION

This Report to Inform Screening for Appropriate Assessment and Natura impact Statement has been prepared by Tetra Tech RPS (TT RPS) on behalf of Ballyteige Solar Limited for the proposed installation and operation of a solar farm on lands at Derrygrogan Little and Derrygrogan Big, County Offaly, it examines whether or not the Proposed Development is likely to give rise to a significant effect on any European site, and in doing so informs screening for Appropriate Assessment (AA).

Having regard to the relevant legislative requirements and methodology outlined above, a Stage One Screening appraisal was completed to identify the likely significant effects of the proposed solar farm development on Raheenmore Bog SAC, River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA.

Stage One Screening concluded that the Proposed Development is not directly connected with or necessary to the management of any European Site; will not give rise to likely significant effects on Raheenmore Bog SAC, River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA alone, even in absence of mitigation measures.

The Proposed Development was assessed against other plans and projects and the possibility of likely significant Water Quality and Habitat Deterioration effects could not be excluded at the screening stage for the Proposed Development in combination with other projects listed in Table 4.2 for River Shannon Callows SAC, Middle Shannon Callows SPA, Lough Derg, North-East Shore SAC and Lough Derg (Shannon) SPA, in the absence of the application of measures intended to avoid or reduce harmful effects of the potential project on European Sites.

In accordance with the methodology set out in section 2 above, a Natura Impact Statement (NIS) was prepared containing a Stage 2 Appropriate Assessment appraisal of the implications of the Proposed Development on European sites in view of their conservation objectives, so as to enable the competent authorities to determine if the Proposed Development would adversely affect the integrity of any European site.

The site-specific conservation objectives were assessed in section 5.2 of the NIS and it was determined that measures intended to avoid or reduce harmful effects of the potential project on European Sites needed to be applied to prevent adverse effects on the integrity of the sites by way of affecting the following component conservation objectives:

River Shannon Callows SAC

- Ecosystem function: water quality for QI [7230] Alkaline fens
- Fish biomass available for QI [1355] Otter

Lough Derg, North-East Shore SAC

- Ecosystem function: water quality for QI [7210] Calcareous fens
- Ecosystem function: water quality for QI [7230] Alkaline fens

Middle Shannon Callows SPA

- Supporting habitat: area and quality for SCI [A038] Whooper swan
- Supporting habitat: area and quality for SCI [A050] Wigeon
- Supporting habitat: area and quality for SCI [A140] Golden plover
- Supporting habitat: area and quality for SCI [A142] Lapwing
- Supporting habitat: area and quality for SCI [A156] Black-tailed godwit
- Supporting habitat: area and quality for SCI [A179] Black-headed gull
- Wetland habitat quality and functioning for SCI [A999] Wetlands

Lough Derg (Shannon) SPA

- Forage spatial distribution, extent, abundance and availability for SCI [A017] Cormorant
- Forage spatial distribution, extent, abundance and availability for SCI [A193] Common tern
- Wetland habitat quality and functioning for SCI [A999] Wetlands

Mitigation measures were applied in section 5.3 of the report.

Having considered the further investigation and analysis, which is set out in the NIS, the conclusion of the Stage 2 Appropriate Assessment appraisal is that the competent authorities can conclude, based on best scientific knowledge, that there will be no adverse effects upon the integrity of any European site consequent upon the implementation mitigation measures prescribed in this NIS. Accordingly, the competent authorities can conclude, beyond reasonable scientific doubt, that the Proposed Development, whether considered alone or in combination with other plans and projects, will not adversely affect the integrity of any European site.

REFERENCES

CIEEM (2025) *Code of Professional Conduct*, Chartered Institute of Ecology and Environmental Management, Hampshire

CIRIA (2001). Control of water pollution from construction sites. Guidance for consultants and contractors.

Council Directive 79/409 EEC on the Conservation of Wild Birds

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

Cutts, N., A. Phelps, and D. Burdon. 2009. "Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance, Report to Humber INCA." ZBB710-F-2009. Institute of Estuarine and Coastal Studies University of Hull.

Department of the Environment, Heritage and Local Government (2010a). Appropriate Assessment of Plans and Projects in Ireland, Guide for Planning Authorities, Dublin.

D. Lyons, M. and L. Kelly, D. (2016). *Monitoring Guidelines for the Assessment of Petrifying Springs in Ireland Irish Wildlife Manuals No. 94*. [online] Available at: https://www.npws.ie/sites/default/files/publications/pdf/IWM94.pdf [Accessed 8 May 2025].

Offaly County Council. (2021). *Offaly County Development Plan 2021-2027*. [online]. Available at: https://www.offaly.ie/c/county-development-plan/

Department of the Environment, Heritage and Local Government (2010b) Circular NPW 1/10 and PSSP 2/10 on Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities.

Delaney, A., Devaney, F.M, Martin, J.M. and Barron, S.J. (2013). Monitoring survey of Annex I sands dune habitats in Ireland. Irish Wildlife Manuals, No. 75. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht, Dublin, Ireland. Available at: https://www.npws.ie/sites/default/files/publications/pdf/IWM75.pdf

European Commission (2000a) *Communication from the Commission on the Precautionary Principle*. Office for Official Publications of the European Communities, Luxembourg

European Commission (2000b) *Managing Natura 2000 Sites: the provisions of Article 6 of the 'Habitats' Directive 92/43/EEC*, Office for Official Publications of the European Communities, Luxembourg

European Commission (2001) *Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological guidance on the provisions of Articles 6(3) and (4) of the Habitats Directive 92/43/EEC*. Office for Official Publications of the European Communities, Brussels

European Commission (2007) *Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission,* Office for Official Publications of the European Communities, Luxembourg.

European Commission (2013) *Interpretation Manual of European Union Habitats*. Version EUR 28. Office for Official Publications of the European Communities, Brussels

McCorry, M. and Ryle, T. (2007). *Saltmarsh Monitoring Project*. [online] Available at: https://www.npws.ie/sites/default/files/publications/pdf/McCorry_%26_Ryle_2009_Saltmarsh_survey_V1.pdf.

Netregs (2018). Guidance for Pollution Prevention. Works and maintenance in or near water: GPP 5. Version 1.2 February 2018.

NPWS (2009). *Threat response plan: otter (2009 - 2011).* National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

NPWS (2010) Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service, Dublin.

NPWS (2011a). *Ratheenmore Bog SAC | National Parks & Wildlife Service*. [online] www.npws.ie. Available at: https://www.npws.ie/protected-sites/sac/000582.

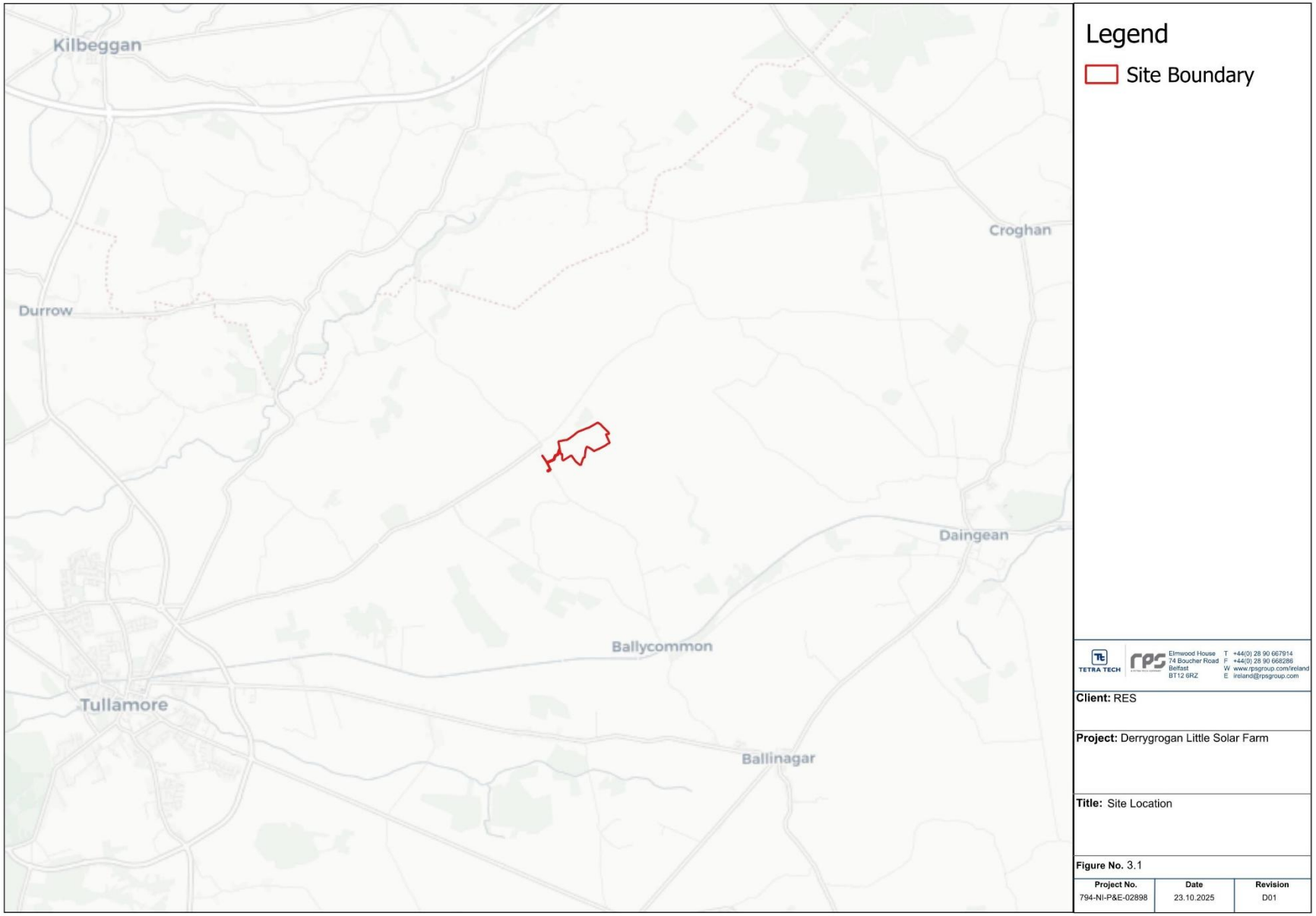
NPWS (2011b). *River Shannon Callows SAC | National Parks & Wildlife Service*. [online] www.npws.ie. Available at: https://www.npws.ie/protected-sites/sac/000216.

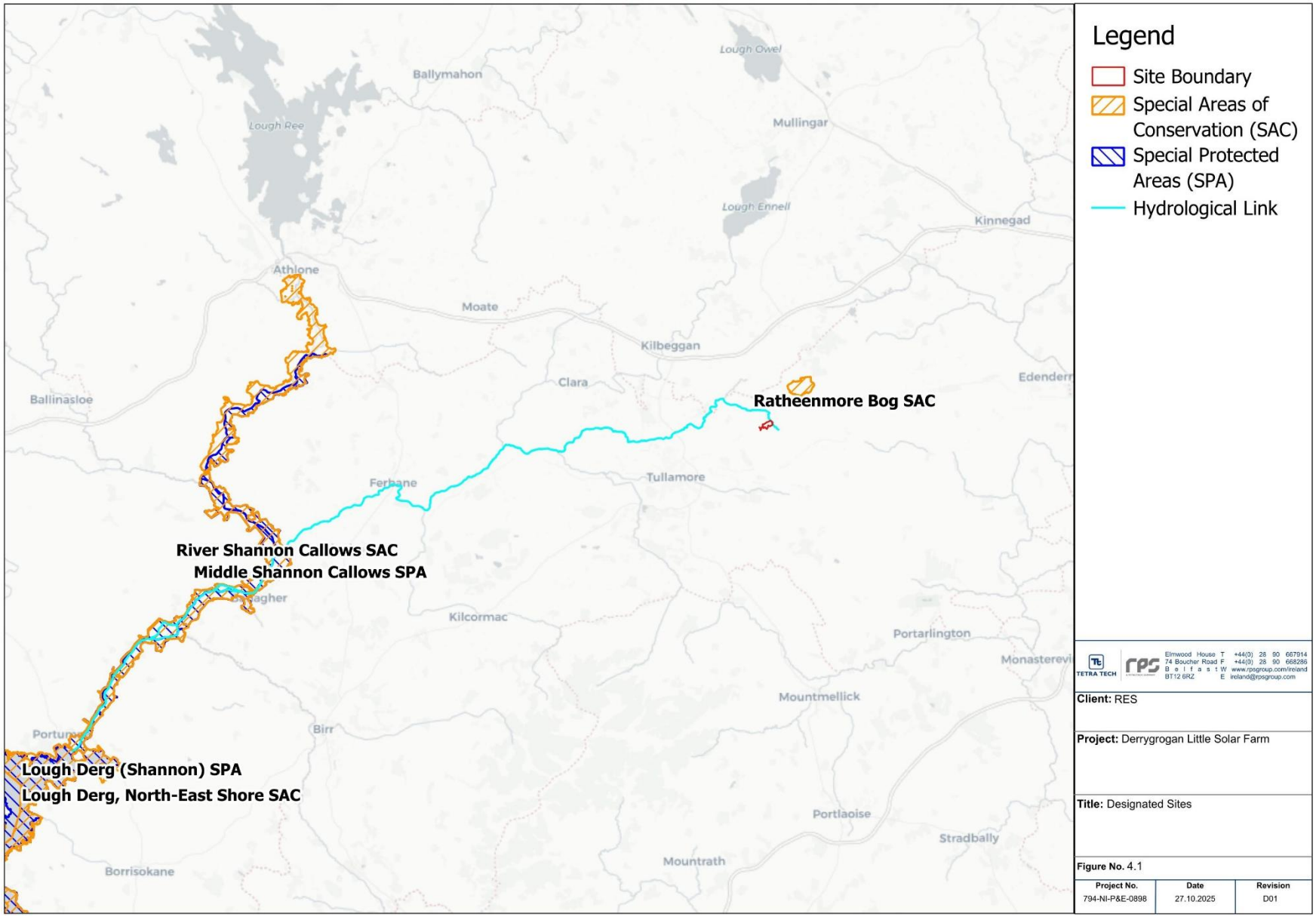
NPWS (2011c). *Middle Shannon Callows SPA | National Parks & Wildlife Service*. [online] www.npws.ie. Available at: https://www.npws.ie/protected-sites/spa/004096.

NPWS (2011d). *Lough Derg, North-East Shore SAC | National Parks & Wildlife Service*. [online] www.npws.ie. Available at: https://www.npws.ie/protected-sites/sac/002241.

NPWS (2011e). *Lough Derg (Shannon) SPA | National Parks & Wildlife Service*. [online] www.npws.ie. Available at: https://www.npws.ie/protected-sites/spa/004058.

LIST OF FIGURES


Kilbeggan
Croghan
Durrow
Daingean
Ballycommon
Tullamore
Ballinagar
Legend
Site Boundary
TETRA TECH
Elmwood House
74 Boucher Road
Belfast
BT12 6RZ
T +44(0) 28 90 667914
F +44(0) 28 90 668286
W www.rpsgroup.com/ireland
E ireland@rpsgroup.com
Client: RES
Project: Derrygrogan Little Solar Farm
Title: Site Location
Figure No. 3.1
Project No.
794-NI-P&E-02898
Date
23.10.2025
Revision
D01


Lough Owel
Ballymahon
Lough Ree
Mullingar
Lough Ennell
Kinnegad
Athlone
Moate
Kilbeggan
Clara
Ballinasloe
Ratheenmore Bog SAC
Ferbane
Tullamore
River Shannon Callows SAC
Middle Shannon Callows SPA
Kilcormac
Portarlington
Mountmellick
Birr
Lough Derg (Shannon) SPA
Lough Derg, North-East Shore SAC
Portlaoise
Stradbally
Mountrath
Borrisokane
Legend
Site Boundary
Special Areas of Conservation (SAC)
Special Protected Areas (SPA)
Hydrological Link
TETRA TECH
Elmwood House
74 Boucher Road
Belfast
BT12 6RZ
T +44(0) 28 90 667914
F +44(0) 28 90 668286
W www.rpsgroup.com/ireland
E ireland@rpsgroup.com
Client: RES
Project: Derrygrogan Little Solar Farm
Title: Designated Sites
Figure No. 4.1
Project No. 794-NI-P&E-0898
Date 27.10.2025
Revision D01