

SHADOW HABITATS REGULATIONS ASSESSMENT

Magheralin Solar Farm

NI2702 Magheralin Solar
Farm
sHRA
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REPORT

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1 INTRODUCTION

RPS was commissioned by Renewable Energy Systems Ltd (RES) (the Applicant) to complete a shadow Habitats Regulations Assessment (sHRA) for their proposed solar farm located at lands south of Magheralin and southeast of Dollingstown. This sHRA forms part of the planning application pack submitted for consideration to Armagh City, Banbridge & Craigavon Borough Council (the Council) on behalf of the Applicant.

The sHRA examines firstly, whether or not the proposed project is likely to have a significant effect on any European site (a Stage 1 screening appraisal); and subsequently, an assessment of implications of the proposed project on European sites where likely significant effects could not be excluded (a stage 2 appraisal for appropriate assessment).

The relevant consenting authority shall be provided with this shadow Habitats Regulations Assessment (“sHRA”) report to assist them in their role as a Competent Authority fulfilling its duties in accordance with The Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended), otherwise known as the “Habitats Regulations”.

Regulation 43 of the Habitats Regulations states:

“(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which—

(a) is likely to have a significant effect on a European site in Northern Ireland (either alone or in combination with other plans or projects), and

(b) is not directly connected with or necessary to the management of the site, shall make an appropriate assessment of the implications for the site in view of that site’s conservation objectives.

(2) A person applying for any such consent, permission or other authorisation shall provide such information as the competent authority may reasonably require for the purposes of the assessment.

(3) The competent authority shall for the purposes of the assessment consult the Department and have regard to any representations made by it within such reasonable time as the authority may specify.

(4) The competent authority shall, if it considers it appropriate, take such steps as it considers necessary to obtain the opinion of the general public.

(5) In the light of the conclusions of the assessment, and subject to regulation 44, the authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site.

(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority shall have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposed that the consent, permission or other authorisation should be given.”

These regulations transpose *inter alia* Articles 6(3) and 6(4) of Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora and remain relevant following the UK’s departure from the EU. This approach is in line with the Habitats Regulations as amended, taking into account the effect of the Conservation (Natural Habitats, etc.) Regulations (Amendment) (Northern Ireland) (EU Exit) Regulations 2019. Terminology used in this report is in line with guidance published by DAERA in light of changes to the status of European sites following the UK’s departure from the EU (DAERA 2020).

In simple terms, a project must be screened for appropriate assessment to ascertain whether or not likely significant effects on the UK European i.e., Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites; will occur. The sHRA firstly considers the proposed project by itself and secondly in combination with other relevant plans or projects and has been undertaken in view of best available scientific knowledge and in view of the conservation objectives set for the sites concerned and published by the Department of Agriculture, Environment and Rural Affairs (“DAERA”) in Northern Ireland.

2 METHODOLOGY

2.1 Guidance on Appropriate Assessment

The Environment and Heritage Service of the then Department of the Environment for Northern Ireland published '*Habitats Regulations guidance notes for competent authorities*' (EHS, 2002). The purpose of the guidance was to help competent authorities and others with an interest in such sites interpret and implement the Habitats Regulations and were intended to provide a framework for making judgements under the Regulations in order to promote consistency amongst decision-makers.

In addition to the guidelines published by the former 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, '*Assessment of Plans and Projects in relation to Natura 2000 sites – Methodological Guidance on the Provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*' (EC, 2021), which sets out the principles of how to approach decision making during the process.

These guidelines have been followed in the preparation of this report. The following list identifies these and other pertinent guidance documents:

- Communication from the Commission on the Precautionary Principle., Office for Official Publications of the European Communities, Luxembourg ([EC, 2000](#));
- 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, 2000b](#));
- 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 ([EC, 2001](#));
- Habitats Regulations Guidance Notes for Competent Authorities. Environment and Heritage Service. Belfast (EHS, 2002) [*not available online*];
- 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. Publications Office of the European Union, Luxembourg ([EC, 2007](#));
- The Appropriate Assessment of Plans in Northern Ireland. RSPB, Belfast ([RSPB, 2008](#));
- 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. Publications Office of the European Union, Luxembourg ([EC, 2009](#));
- Interpretation Manual of European Union Habitats. Version EUR 28. Publications Office of the European Union, Luxembourg ([EC, 2013](#));
- 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](#)); and
- Institute of Air Quality Management 'A guide to the assessment of air quality impacts on designated nature conservation sites (Version 1.1)' ([IAQM, 2020](#)).

- Institute of Air Quality Management 'A guide to the assessment of air quality impacts on designated nature conservation sites (Version 1.1)' ([IAQM, 2020](#));
- 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](#)).

EC (2000) notes that the implementation of an approach based on the precautionary principle should start with a scientific evaluation, as complete as possible, and where possible, identifying at each stage the degree of scientific uncertainty, and also that decisions taken based on the precautionary principle should be maintained so long as scientific information is incomplete or inconclusive. EC (2001) notes also that predicting the response of a receptor to a disturbance effect can be difficult and, in the absence of firm scientific information, requires a precautionary approach.

2.2 Approach

2.2.1 Stages of the Habitats Regulation Assessment Process

HRA is a three-stage process:

- The first stage involves a screening for appropriate assessment (test of likely significance);
- The second stage arises where, having screened the proposed development, the competent authority determines that an appropriate assessment is required, in which case it must then carry out that appropriate assessment (test of adverse effect); and
- The third stage is a derogation procedure where adverse effects upon the integrity of a site remain, but the project must nonetheless proceed for imperative reasons of overriding public interest.

According to European Commission guidance documents 'Assessment of plans and projects significantly affecting Natura 2000 sites' (EC, 2021) 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 stepwise procedure for Habitats Regulations Appraisal as follows, and as illustrated in Figure 2.1.

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; 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 Stage 1 screening appraisal is that significant effects on European sites can be excluded, there is no requirement to proceed to the next step.

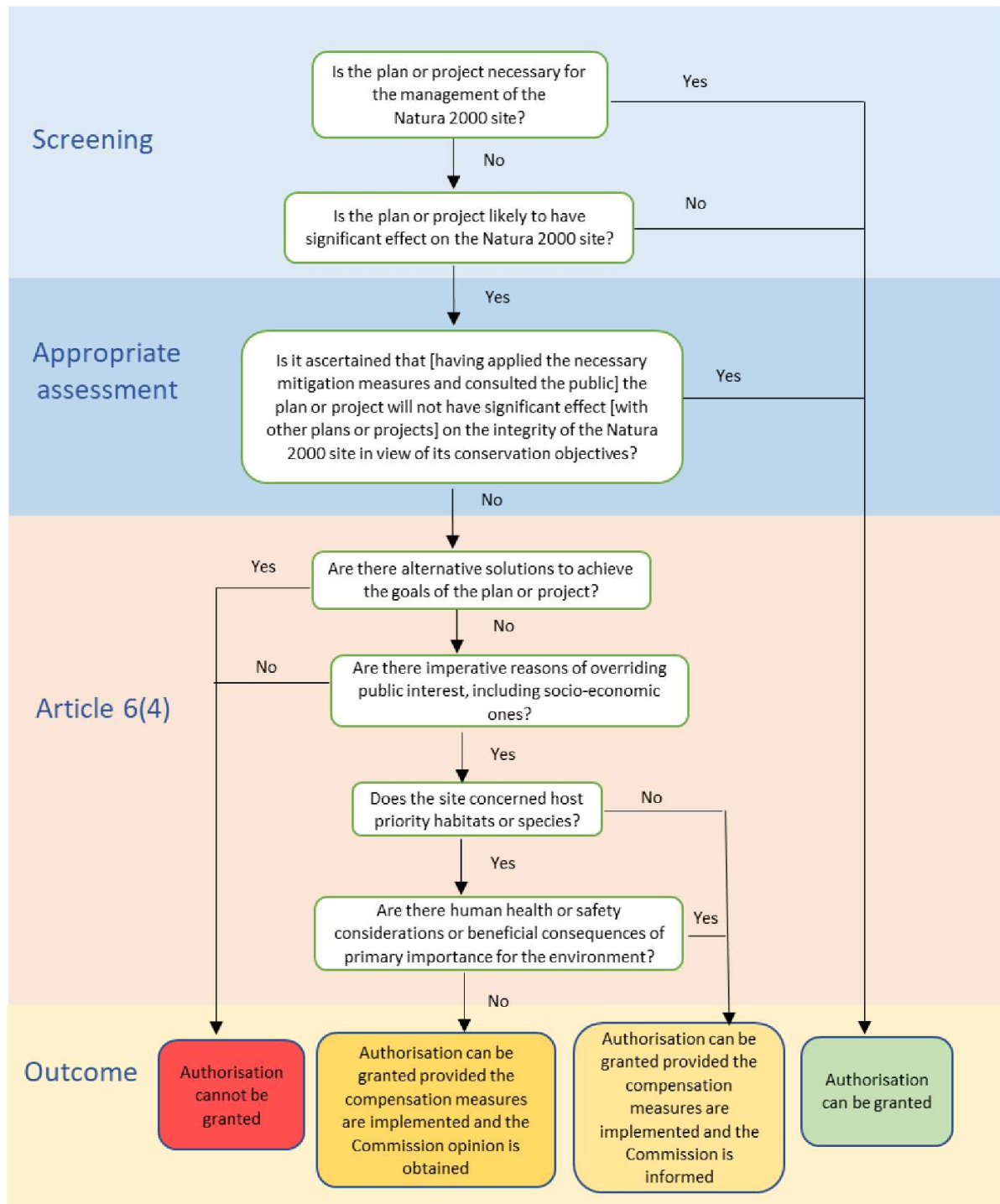


Figure 2.1: Stepwise procedure of Article 6 of the Habitats Directive (from EC, 2021)

2.2.2 Likely Significant Effect

The Commission's 2018 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 particular account of the site's conservation objectives and ecological characteristics.

The threshold for a Likely Significant Effect (LSE) is treated 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 judged to be in this order of magnitude and that judgment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be likely significant effects.

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.

Case law of the court of Justice of the European Union (CJEU) has confirmed that a 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.

EC (2021) defines an 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* threshold – thus, plans or projects that have no appreciable effect on the site are thereby excluded.

2.2.3 Mitigation Measures

In determining whether or not 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 (EC,2019; EC,2021) and the case law of the Court of Justice of the European Union (CJEU):

EC (2001) states that *“project and plan proponents are often encouraged to design mitigation measures into their proposals at the outset. However, it is important to recognise that the screening assessment should be carried out in the absence of any consideration of mitigation measures that form part of a project or plan and are designed to avoid or reduce the impact of a project or plan on a Natura 2000 site”*. This direction in the European Commission’s guidance document is unambiguous in that it does not permit the inclusion of mitigation at screening stage.

In April 2018, the Court of Justice 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 judgment in *People Over Wind* is further reinforced in EC (2019) and EC (2021) which refers to CJEU Case C-323/17.

2.2.4 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 Bord Pleanála* (“Holohan”) 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.

2.2.5 Conservation Objectives

The conservation objectives (“COs”) 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.

2.2.6 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 the Commission's 2018 Notice (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. Whilst the Directive does not explicitly define which other plans and projects are within the scope of the in-combination provision of Article 6(3), it is important to note that the underlying intention of this provision is to take account of cumulative impacts, and these will often only occur over time.

In addition, 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, 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 –

- 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 PROPOSED PROJECT

3.1 Location

RPS was commissioned by RES to undertake a shadow Habitats Regulations Appraisal of a proposed solar farm development at a site located south of Magheralin and southeast of Dollingstown in Co. Down.

The landholding upon which the development is proposed measures c. 64.43 hectares / 159.23 acres.

For ease of reference the site is described as being made up of four land parcels which from north to south comprise:

- Parcel 1 – Lands accessing onto Springhill Road, immediately northwest of No.22 Springhill Road, Lurgan and immediately to the rear and northeast of 66, 68 and 70-90 Inn Road, Dollingstown (c. 9.3 ha);
- Parcel 2 – Lands c.300m southeast of 15 Springhill Road, Lurgan, c.240m northwest of 117 New Forge Road, Magheralin, Lurgan, and c.400m east of 64 Dromore Road, Lurgan (c.33.3ha);
- Parcel 3 – Lands c 80m northeast of 102 Dromore Road, Waringstown, and immediately adjacent to and west of 108 Dromore Road (c.9.4ha); and
- Parcel 4 – Lands c.660m southeast of 105 Dromore Road, Donaghcloney and extending south/southeast to c.80m north/northeast of 67 Drumlin Road, Craigavon and c.70m to the rear and southwest of 119 Dromore Road, Donaghcloney. (c. 11.5 ha).

Parcels 2 and 3 will be connected via underground cables which will pass through agricultural fields utilising existing agricultural lanes where available. The northernmost land-parcel (Parcel 1) will be connected via an interconnection cable across Springhill Road and intervening agricultural lands and the second interconnection route proceeds northwards from the southern-most land parcel (Parcel 4) across Drumlin Road and through intervening agricultural lands. It is proposed to traverse the River Lagan via horizontal directional drill before crossing Dromore Road to the north, and entering Parcel 3 of the site. The purpose of the interconnecting cables is to transfer energy created from inverter stations to the on-site substation which is located in the centre of the site (Parcel 3). The interconnection cable areas comprise 0.93ha.

Please refer to **Error! Reference source not found.** below.

3.2 Project Description

This EclA is submitted as part of a planning application pack which seeks permission for the:

“Installation and operation of a 29.9MW solar farm including photovoltaic panels, mounting frames, transformer / inverter units, and on-site substation with associated ancillary development including security fencing, pole mounted CCTV, associated landscaping, internal access tracks, new site access, internal cabling and associated site works.” (The Proposed Development)

Project components are listed in the bullet points below. A full description of the Proposed Development can be reviewed within the Planning Statement which forms part of the planning application pack.

- Photovoltaic (PV) Solar Panels erected on steel/aluminium frames set out in south facing arrays;
- 1 Primary 33kV Sub-station typically measuring 10.34m x 5.7m x 6.45m high and a solar control building 8.3m x 3.45m x 4m high;
- 9 No. Inverter Substations typically comprising of inverter measuring 5m x 3m x 2.5m high and a transformer typically measuring 4m x 3m x 2.5m high to be located across the site;

- Perimeter post and wire security fencing with in-built mammal gates to facilitate unimpeded access for mammals (2.4m high);
- A number of strategically located CCTV security cameras (3.5m high);
- New or upgraded access points onto Dromore Road (Centre), Drumlin Road (South), and Springhill Road (North);
- Associated internal service tracks (permeable stone);
- Internal and interconnecting underground cabling. Connecting cables run along the back of each panel to the end of every row where they connect to the main cables which in turn connect to inverter stations and primary on-site substation located in land-parcel 3. Main cables will be undergrounded.
- There are also two interconnection routes the purpose of which is to transfer the energy created from the on-site inverter stations to the on-site substation which is proposed in the centre of the site – Parcel 3.

One interconnection route extends from the northernmost land-parcel (Parcel 1) across Springhill Road and intervening agricultural lands, then along internal tracks within the Proposed Development until it reaches the substation.

The second interconnection route proceeds northwards from the southern-most land parcel (Parcel 4) across Drumlin Road and through intervening agricultural lands. It is proposed to traverse the River Lagan via horizontal directional drill before crossing Dromore Road to the north, and entering Parcel 3 of the site; and

- Temporary construction compounds.

The proposal will have an operational lifespan of 40 years after which it will be fully decommissioned. Proposed planting which would be established within the landscape at that time will be left untouched.

When operational the site will support a dual renewable/farming use and the overwhelming land area will remain agricultural. Sheep grazing will take place across the entire area and will not be impeded by the proposed infrastructure.



Figure 3.1: Site of Proposed Development

3.3 Best Practice Measures

Proposed developments often require the implementation of a range of measures during construction phase of the project to ensure that the potential for accidental spillage of contaminants and sedimentation is reduced to the greatest extent possible throughout construction in line with the control of water pollution.

Such measures often include the timing of works, the use of sediment traps or lagoons, minimal use of stockpiling and the use of appropriate storage for all hazardous contaminants and pollutants within an appropriate compound during the construction. These best practice measures are normal aspects of a construction contract and would be incorporated into any development of this type, whether it be located upstream of a European site or not.

They are typical and environmentally responsible approaches that the employer will require their successful contractor to apply to the execution of any construction contract awarded by the employer. These measures have not been specified because the proposed project is upstream of the European sites, on the contrary they are specified because that is the standard that the employer requires as part its contract with the successful contractor. They are measures that the employer will demand of its contractors carrying out construction activities on its behalf in all circumstances, and as such they have been included in the specification for the works. Their use is not triggered by the downstream presence of European sites.

For the avoidance of any doubt however, these best practice measures are **not relied on** in the stage 1 screening appraisal for appropriate assessment to avoid any possibility whatsoever that they could be construed as being “*measures intended to avoid or reduce the harmful effects of the plan or project*” on a European site and which have been applied to the screening for the appropriate assessment of this project, as such an approach is inconsistent with law and confirmed by the Court of Justice of the European Union (CJEU) in Case C-323/17.

4 STAGE 1 SCREENING APPRAISAL

4.1 Directly connected with or necessary to the management of a European site

The proposed project is not directly connected with or necessary to the management of any site as a European site. As such, it will be subject to an appraisal shadowing the assessment procedure under the Habitats Regulations.

4.2 Establishing an Impact Pathway

This screening exercise considers European sites. The proposed project must be screened against those European sites for which a pathway of effect can be reasonably established between a receptor and the source of an effect.

The possibility of significant effects is considered in this report using the source-pathway-receptor model.

- ‘Source’ is defined as the individual elements of the proposed project 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 feature.
- An ‘Ecological Feature’ is defined as qualifying features the SPA or SAC 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.

The River Lagan crosses through the site running in a North-East to South-West direction. The Lagan is hydrologically connected to a series of watercourse features connected to Belfast Lough at Stranmillis Weir, South Belfast where it becomes estuarine. This area is part of the Belfast Lough SPA and Ramsar site. It is hydrologically located 33km downstream of the site of proposed development.

The site of the proposed development is not located within the boundary any European site but as the site is hydrologically linked to Belfast Lough, it has the potential to carry pollutants and contaminants from the proposed development via a downstream hydrological pathway to the Belfast Lough European sites. These sites are –

- Belfast Lough SPA
- Belfast Lough Ramsar site
- Belfast Lough Open Water SPA

The principal identified pathways of effect upon European sites that could arise as a result of aspects of the proposed project have potential to lead to:

- Diminution of water quality in the riverine environment potentially leading to deterioration of the estuarine environment of Belfast Lough via the hydrological connections to downstream sites; and
- Disturbance of Belfast Lough SPA, Belfast Lough Ramsar site or Belfast Lough Open Water SPA feature species as a result of noise generated at construction phase of the proposed project.

Table 4.1 below provides descriptive details of designated sites connected to the site of proposed development through an identified impact pathway. **Error! Reference source not found.** illustrates the location of these sites along with a key identifying each site referred to.

Table 4.1: European sites and their Qualifying Features

Site	Location	Selection feature	Conservation Objectives
Belfast Lough SPA [UK9020101]	33km NE straight line 45km Hydrological link	<ul style="list-style-type: none"> Redshank <i>Tringa totanus</i> Common tern <i>Sterna hirundo</i> Arctic tern <i>Sterna paradisaea</i> Bar-tailed godwit <i>Limosa lapponica</i> Black-tailed godwit <i>Limosa limosa</i> 	<p>To maintain or restore where appropriate to favourable condition:</p> <ul style="list-style-type: none"> Fixed dunes with herbaceous vegetation Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) Shifting dunes along the shoreline with <i>Ammophila arenaria</i> Embryonic shifting dunes
Belfast Lough Open Water SPA [UK90202901]	33km NE straight line 45km Hydrological link	<ul style="list-style-type: none"> Great crested grebe <i>Podiceps cristatus</i> 	<p>To maintain or restore where appropriate to favourable condition:</p> <ul style="list-style-type: none"> Annual vegetation of drift lines Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) fixed dunes with herbaceous vegetation (grey dunes) Shifting dunes along the shoreline with <i>Ammophila Arenaria</i> (white dunes) Species-rich <i>Nardus</i> grassland, on siliceous substrates in mountain areas (and submountain areas in continental Europe). Vegetated sea cliffs of the Atlantic and Baltic coasts <i>Vertigo angustior</i>
Belfast Lough Ramsar site [UK12992]	33km NE straight line 45km Hydrological link	<ul style="list-style-type: none"> Redshank <i>Tringa totanus</i> 	<p>To maintain or restore where appropriate to favourable condition:</p> <ul style="list-style-type: none"> Dunes with <i>Salix repens</i> ssp. <i>Argentea</i> (<i>Salicion arenariae</i>) Embryonic shifting dunes Fixed dunes with herbaceous vegetation (grey dunes) Humid dune slacks Shifting dunes along the shoreline with <i>Ammophila Arenaria</i> (white dunes) Marsh Fritillary <i>Euphydryas aurinia</i> Petalwort <i>Petakophyllum ralfsii</i>

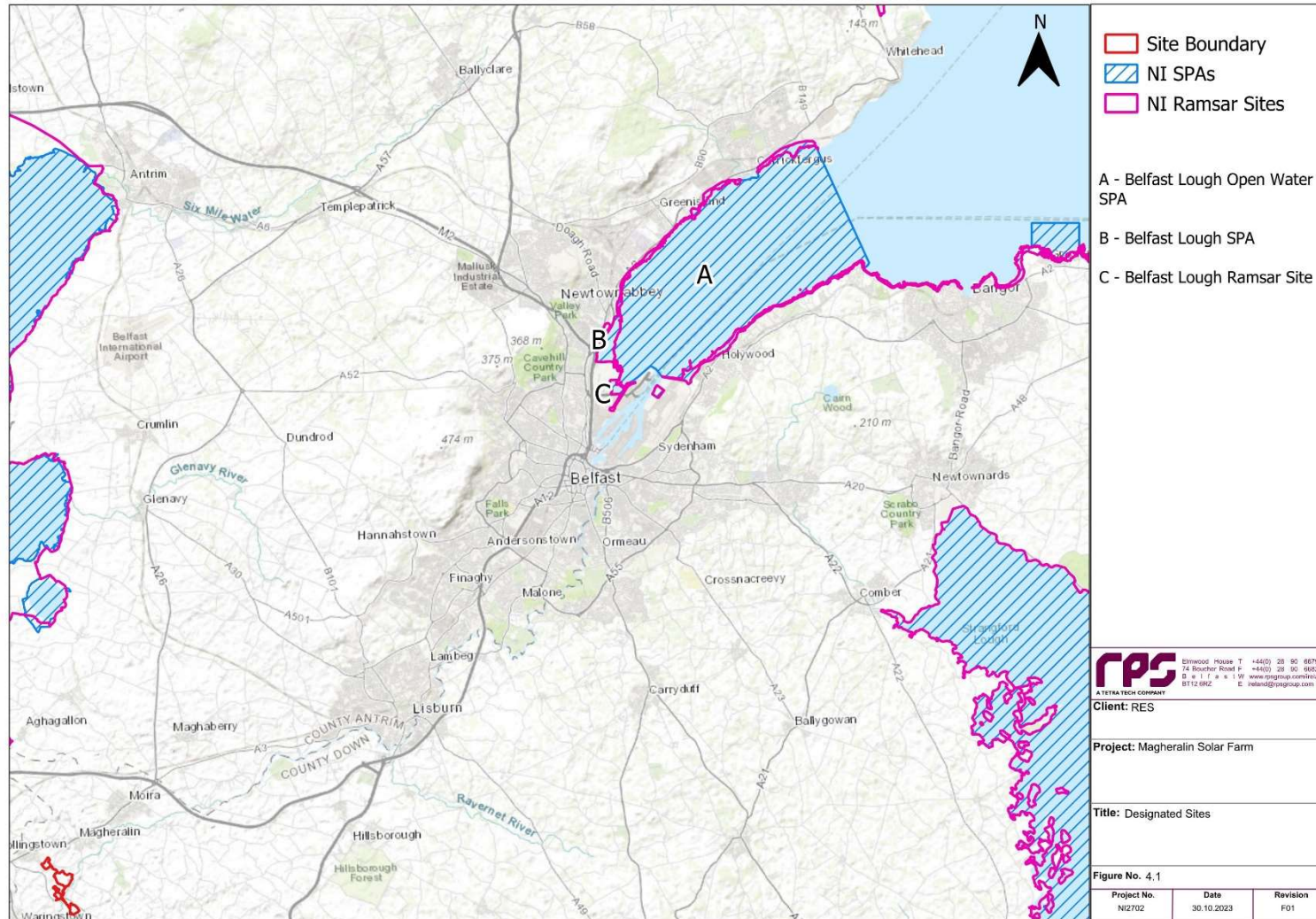


Figure 4.1: European sites

4.3 Potential for Likely Significant Effects

4.3.1 Diminution of Marine Water Quality and Wetland Habitat Deterioration

4.3.1.1 Emissions to Air

Emissions to air from dust may arise from construction phase activities depending on weather and precipitation at that time, although it is noted that significant earth moving and earthworks activities do not occur as part of the construction of a solar PV farm. Dust is defined as solid particles that are suspended in air or have settled out onto a surface after having been suspended in air. The term 'dust' covers all airborne particulates that give rise to soiling, poor health and/or environmental effects.

Emissions to air from particulate matter (PM) will arise from construction activities. PM is a complex assemblage of non-gaseous material of varied chemical composition. It is categorised by the size of the particle (for example PM₁₀ is particles with a diameter of less than 10 microns (mm)). Construction sites with high volumes of emissions from construction-related vehicles (contractor vehicles, Heavy Goods Vehicles (HGVs), diggers, and other diesel-powered vehicles) are a main source of local PM pollution. PM will also arise from road traffic with engine emission and tyre and brake wear being the main sources. Dust deposition and PM can have a direct impact on vegetation or aquatic ecosystems and indirect impacts on fauna (e.g., on foraging habitats). It is noted that the entire construction phase of the proposed development spans 40 weeks and so the potential effects of airborne emissions from construction vehicles will occur only for this duration.

The main emissions to air during the operational phase of the project will be pollutants including nitrogen oxides (NO_x) and particulate matter (PM₁₀) from road traffic associated with operational phase maintenance with potential for air quality impacts only in the immediate locality.. Emissions of total NO_x from combustion sources comprise nitric oxide (NO) and nitrogen dioxide (NO₂). The NO oxidises in the atmosphere to form NO₂.

The Institute of Air Quality Management Guidance (IAQM, 2020) states:

- *"The Design Manual for Roads and Bridges (DMRB) describes the approach for the assessment of the impact of emissions from schemes on the strategic road network. A quantitative air quality assessment is required if European sites are within 200 m of affected roads", and*
- *"Natural England advises that the next step is to identify the spatial distribution of qualifying features within a designated site. If there are no qualifying features sensitive to air pollution within 200 m of a road, then no further assessment is required".*

The nearest European sites are located approximately 45km hydrologically from the site of proposed development, and therefore, is located considerably outside the distances noted above.

In light of all of the above information it is considered that the proposed development would not give rise to any likely significant air quality impact upon any European sites, as a result of airborne dust, PM or other air quality effect during construction or operation of the proposed development.

4.3.1.2 Emissions to Water

During the pre-construction site clearance and construction stage, there is the potential for accidental leaks or spillage and associated release of pollutants such as sediment, silt, concrete, fuel, oils, chemicals or other waste material that would result in point source pollution causing potentially significant adverse effects on the designated sites, their qualifying features and conservation objectives. Pollutants can either directly enter watercourses or indirectly enter watercourses through leaching from impacted soil to groundwater and subsequent migration in groundwater to nearby surface watercourses. The majority of leaks and spills are likely to be relatively small in volume. Long term potential impacts on surface waters are likely to be attenuated through natural processes such as dilution and degradation. Short term impacts may be more significant. Depending on the size and nature of the spillage, this could cause water quality or sediment quality impacts downstream from the site.

Temporary alterations to the surface water flow volumes and rates may occur as a result of trenching, land clearance, access road construction, development of the temporary construction areas and vehicle movements. It is possible that surface water run-off will temporarily increase in the construction areas due to the removal of vegetation, compaction of bare soils and possible exposure of relatively impermeable boulder clay. Increased sediment entering the surface watercourses could result from land clearance, excavation works and erosional processes. The eroded sediment may also have a high nutrient or contaminant content which can contribute to the enrichment and contamination of downstream waters.

Increases in the suspension of organic or inorganic material in the water column increases turbidity and reduces light levels.

Belfast Lough drains a catchment of 900 km². The River Lagan alone drains a catchment of 609km². Significant mixing of seawater occurs in Belfast Lough with freshwater flowing in from the Lagan and smaller streams. If suspended sediments or pollutants managed to reach the river from the site of proposed development and flow downstream, they must then travel 45km along a hydraulic gradient before reaching Belfast Lough. This is simply too great a distance distant from the site of proposed development for suspended sediments or contaminants as a result of accidental pollution to remain in an elevated concentration, all the while being subject to the diluting effects of additional catchment flow mixing into the river system.

Even when sediment and polluting material reaches Belfast Lough, and cognisant of the fact that they are unable to have remained bound in an elevated concentration plume throughout their downstream journey, the estuarine influence of tidal currents, wind and wave climate would further aid mixing and dilution once these substances are in the lough waterbody.

Likely significant water quality diminution effects and deterioration of the wetland habitats of Belfast Lough will not occur. This is the case even in the absence of mitigation measures.

4.3.2 Noise and Disturbance

4.3.2.1 Aerial Noise

The site of proposed development is separated from the intertidal feeding habitats of the nearest part of Belfast Lough SPA and Ramsar site by 33km straight line distance. Although the intertidal flats on the lough shoreline are designated for their overwintering waterbird populations and waterbird assemblage, the proposed development is located at a significant distance from the lough shore and therefore any aerial

noise arising from construction of the proposed development or its operation as a solar farm is not going to lead to disturbance of any feature species.

On this basis it is considered that the proposed project does not have the potential to give rise to likely significant airborne noise related disturbance effects upon the Belfast Lough sites. Likely significant effects **can be excluded** at the screening stage of appraisal. This is the case in the absence of mitigation.

4.3.2.2 Underwater Noise

The North Channel SAC is 49km from the site of proposed development. There is no impact pathway between noise and vibration arising as a result of the construction or operation of the solar farm and any receptors sensitive to acoustic energy in the North Channel SAC. There is no possibility of likely significant underwater noise related disturbance effects upon this European sites. Likely significant effects **can be excluded** at the screening stage of appraisal. This is the case in the absence of mitigation.

4.4 In-combination with Other Plans and Projects

The Habitats Regulations require that in-combination effects with other plans or projects are considered. On this basis, a range of other projects were considered in terms of their potential to have in-combination effects within the proposed project as set out below in Table 4.2.

Table 4.2: Planning History Considered

Reference number	Site address	Proposed development	Decision
LA08/2023/2566/F	116 Swellendam House New Forge Road, Craigavon, BT66 7HW	Retention of extension of domestic curtilage, with retention of private use stable block and sand school, floodlighting and hardstanding area for domestic use, with associated site works	Granted 2023
LA08/2022/1248/O	Lands between 124 and 128 New Forge Road Magheralin BT67 0QW	Proposed site for a dwelling and associated site works.	Granted 2023
LA08/2023/1990/F	Lands approx 80m south-west of No.39 Inn Road, Dollingstown	Erection of 8no. dwellings and associated works	Granted 2023
LA08/2021/0312/F	Dollingstown Football Club Planters Park Dromore Road	Waringstown BT66 7QX. Erection of club house	Granted 2021

Reference number	Site address	Proposed development	Decision
		building and replacement changing rooms	
LA08/2020/1337/O	110m South of No. 47 Springhill Road Magheralin Craigavon	Proposed site for dwelling and garage on a farm	Granted 2021.
LA08/2020/0564/F	60m North of 108 Milltown Road Donacloney BT66 7NF	Proposed erection of dwelling and garage (change of house type)	Granted 2020
LA08/2019/1326/RM	Lands 150m south east of No. 98 Dromore Road Waringstown BT66 7QX	Proposed new dwelling and garage (amended plans)	Granted 2020
LA08/2019/1357/F	Lands between 117 Milltown Road and 105 Dromore Road	Site for infill dwelling. (Amended plans)	Granted 2020.
LA08/2019/1326/RM	Lands 150m south east of No. 98 Dromore Road Waringstown BT66 7QX	Proposed new dwelling and garage (amended plans)	Granted 2020
LA08/2018/0116/F	78 Inn Road Dollingstown BT66 7JW	Proposed ground floor sunroom and first floor extension to dwelling	Granted 2019.
LA08/2018/0457/F	80m SW of 17A Acres Road Magheralin	Proposed new farm dwelling with detached double garage	Granted 2018
LA08/2018/0335/F	Adjacent and north of 34 Springhill Road Magheralin BT66 7JL	Proposed erection of dwelling & garage (change of house type, ref:N/2014/0553/RM)	Granted 2018.
LA08/2015/0751/RM	Adjacent to and South East of 70 Springhill Road Maralin	Proposed new dwelling and detached garage	Granted 2015

The projects listed in **Error! Reference source not found.** were investigated on the NI Planning Portal. 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.

The listed planning history is dominated by one-off housing which is viewed as standard for an area of this type.

It is proposed that due to the nature of the developments listed – mainly one-off housing – there is little to no potential for significant cumulative in-combination effects with the Proposed Development.

4.5 Conclusion of the Stage One Screening Appraisal

The stage one screening appraisal has concluded that:

- The proposed project is not directly connected with or necessary to the management of any European site;
- Likely significant disturbance effects on the feature species of the Belfast Lough European site can be excluded at the screening stage; and
- Even in the absence of mitigation measures, the possibility of likely significant effects on water quality and habitat deterioration for the Belfast Lough European sites can be excluded at the screening stage.

Having regard to the methodology employed and the findings of the screening stage appraisal, it has been concluded that a stage two appraisal of the implications of the proposed project is not required.

5 CONCLUSIONS

This report has been prepared by RPS on behalf of an applicant for planning permission. The purpose of the report is to document evaluation and analysis comprising a Stage 1 screening appraisal that RPS has conducted on behalf of the applicant.

The report was prepared having regard to relevant legislation and methodological guidance outlined in Section 2 and the description of the proposed development as set out in Section 3.

A Stage 1 screening appraisal is documented in Section 4 of this report to determine whether or not Likely Significant Effects on any European sites or European sites can be excluded.

The outcome of the Stage One screening appraisal was that the possibility of likely significant effects in relation to deterioration of water quality can be excluded for the Belfast Lough European sites that are hydrologically connected to the proposed project.

For the avoidance of doubt, those sites are:

- Belfast Lough SPA
- Belfast Lough Ramsar site
- Belfast Lough Open Water SPA

The potential for all other likely significant effects could be excluded, even in the absence of mitigation measures.

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