



Green & Blue Infrastructure Statement

Proposed Solar Farm in the townlands of Aglish, Currahaly, Farnanes, Farran, Knockavullig, Knocknagoul, Knockshanawee, Loughleigh, Mahallagh, Nettleville Demesne, Rathonoane, Rooves Beg, Rooves More and Shandangan East in County Cork

Client: Aglish Solar Farm Limited

May 2025

Note: This report was submitted to Cork County Council under the Section 34 Planning Application.

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Introduction

1.1 Purpose of Statement

This statement has been prepared further to Cork County Council's issued Request for Further Information in relation to a proposed solar farm development in the townlands of of Aglish, Currahaly, Farnanes, Farran, Knockavullig, Knocknagoul, Knockshanawee, Loughleigh, Mahallagh, Nettleville Demesne, Rathonoane, Rooves Beg, Rooves More and Shandangan East in County Cork.

Specifically, the request of the Council provided for the following:

A Landscape/Green (and Blue) Infrastructure Plan including a Landscape Design Rationale in line with the requirements of objective policy objective GI 14-3 (b) of the CCDP (2022) should be submitted.

This statement has been prepared in collaboration between the design team, planning, landscape and ecology consultants.

Chapter 14 of the Cork County Development Plan 2022-2028 states the following in respect of green infrastructure statements:

'All new developments will be expected to provide a green infrastructure statement outlining how the proposal enhances and contributes to green and blue infrastructure both within its environs as well as within the wider settlement/rural area. This may be part of the typical Design Statement submitted as part of planning applications. Larger developments (in excess of 30 units/medium/large non-residential type proposals) will be expected to prepare a Landscape/Green and Blue Infrastructure Plan including a Landscape Design Rationale (LDR). Such requirements should in general be determined at pre-planning stage. An LDR is an explanation of the thought process from which the design concept is derived'.

This is formalised under objective GI 14-3 of the Plan.

County Development Plan Objective
GI 14-3: Green Infrastructure and Development

- a) Require new development and redevelopment proposals, to contribute to the protection, management and enhancement of the existing green and blue infrastructure of the local area in terms of the design, layout and landscaping of development proposals.
- b) Require all development to submit a green infrastructure statement outlining how the proposal contributes to green and blue infrastructure both within its environs as well as within the wider settlement or rural area. Larger developments (multiple residential developments including Part 8 applications, retail, industrial, mineral extraction, etc) will be expected to prepare a Landscape/ Green (and Blue) Infrastructure Plan including a Landscape Design Rationale. This Plan should identify environmental assets and include proposals which protect, manage and develop green infrastructure resources in a sustainable manner.
- c) Over the lifetime of the Plan the Council will prepare a guidance note/update on best practice in integrating green and blue infrastructure/biodiversity within development proposals.

The submitted Planning and Environment Statement and separate Landscape and Biodiversity Management Plan included focused sections which addressed the policy requirement under GI 14-3. The subject statement further develops the previously identified rationale and approach to Green and Blue Infrastructure development as part of the proposed solar farm project.

Project Strategy

2.1 Green and Blue Infrastructure Principles

The proposed solar farm will benefit from proactive management of both green and blue infrastructure to provide benefits to the environment. A green infrastructure strategy typically prioritizes the protection and development of existing plants and trees in a project, while a blue infrastructure strategy focuses on managing water resources, such as watercourses. By combining the two, this development can sustainably promote biodiversity and ecosystem health, and improve human well-being.

In the case of the subject proposed solar farm, the following principles have been applied:

- **Integration:** The approach to the project has ensured that green and blue infrastructure development is integrated into the development's design, planning, and implementation.
- **Multiple Benefits:** The approach to the project recognises that multiple and mutual benefits can be delivered through climate change adaptation, biodiversity conservation, water resource management, and human health and wellbeing.
- **Connectivity:** The approach to the project recognises and promotes connections through corridors and networks of interconnected system of natural spaces.
- **Maintenance and Management:** The proposed solar farm will be subject to routine maintenance throughout the construction and operational phases to ensure long-term sustainability.

2.2 Key Components

A temporary use in the landscape, the design rationale for the solar farm is to minimize removal of existing hedgerow and tree planting in this rural location, whilst sustainably supporting the integration of the project in the local environment through supplementary landscaping measures.

The key components of the Green and Blue Infrastructure Strategy for the site includes the following:

- » Vegetation / Planting;
- » Biodiversity Development;
- » Surface Water Management.

Vegetation / Planting

The proposed solar farm lands will be retained in productive private agricultural use, with areas within the commercial operating project not accessible to the public.

As per the submitted landscape drawing by Macro Works, the primary environmental assets on the site are the existing mature hedgerows. These and attendant watercourses such as the Cooldrum stream (bounds Parcel 3 to the west) and the Rathonoane stream (bounds Parcel 4 to the east), as well as the River Lee/ Inniscarra Reservoir (located adjacent to the northern boundary of Parcel 2) function as a network of green and blue infrastructure. The existing hedgerows will be subject to significant bolstering (22,285 linear metres, where necessary), supplemented by 1,194 linear metres of new hedgerow planting. Ecology on the site will be further fostered to deliver significant biodiversity gains to the receiving environment through the establishment of focused ecological biodiversity areas and species rich grasslands as set out in the submitted plans.

As per the submitted plans, all planting will be in accordance with the All-Ireland Pollinator Plan. The All-Ireland Pollinator Plan aims to create an Ireland where pollinators can survive and thrive by providing them with diverse and connected habitats, food sources, and other resources. The plan has a ten-year framework that is based on five objectives and aims to increase awareness of the importance of pollinators, provide resources and education to the public and stakeholders, and create habitats for pollinators in urban and rural areas.

The main objective as it relates to the proposed solar farm which is being developed on private agricultural land is to encourage and support the creation and management of pollinator-friendly habitats on the subject lands.

The submitted Landscape Mitigation Plans set out the proposed species of native pollinator plants to be used on site.

Biodiversity Development

The application was supported by the submission of a dedicated Landscaping and Biodiversity Management Plan for the project, as contained in Appendix C of the submitted Ecological Impact Assessment by Greenleaf Ecology (EclA).

Solar farm developments, particularly at sites located within intensive agricultural farmland, such as the proposed Aghlish Solar Farm development site, have an opportunity to include measures that will benefit the local biodiversity. This will include measures to enhance and increase the amount of hedgerow present which will provide cover for foraging, breeding and commuting species. In addition, the plan incorporates new planting of native woodland which will be attractive for a range of flora and fauna species. Transitioning from intensively managed agricultural grassland also predictably sees less disturbance of ground over the lifetime of the solar farm project as well as a localised decline in the application of fertiliser, herbicide and pesticide. In the 'do nothing' scenario it is reasonable to anticipate that such typical agricultural inputs and activities would continue and that associated risks of run-off to watercourses would also prevail.

The proposed solar farm site is located in a landscape dominated by improved agricultural grassland (GA1) which is considered of generally low biodiversity value. Field boundaries and margins tend to hold the greatest concentration of species in this habitat type. The quality and structural diversity of the hedgerow habitat present at the subject site is variable, with significant proportions of intensively managed hedgerow, higher-quality dense hedgerow, treelands and pockets of attendant woodland in evidence. No habitats listed on Annex I of the EU Habitats Directive (92/43/EEC) were recorded within the proposed development site boundary. Botanical species protected under the Flora (Protection) Order 2022, listed in Annex II or IV of the EU Habitats Directive (92/43/EEC), or Red listed in Ireland (Wyse-Jackson et al, 2016) were not recorded during the site visits.

The submitted EclA included dedicated aquatic survey and an assessment of riparian habitat in accordance with Environment Agency's 'River Habitat Survey in Britain and Ireland Field Survey

Guidance Manual 2003' (EA, 2003) and the Irish Heritage Council's 'A Guide to Habitats in Ireland' (Fossitt, 2000). Land Parcels 1, 2, 3 and 4 all ultimately drain to the Kame River and enter Inniscarra Reservoir just upstream of Rooves Bridge (R619) a distance of 10km upstream of the dam. Although Parcel 2 borders Inniscarra Reservoir, there is no direct hydrological connectivity directly between Parcel 2 and the reservoir because there is gently south-sloping topography meaning Parcel 2 drains to the Kame River. There is a broad, mature woodland scarp (40m wide) separating Parcel 2 and the reservoir. Land Parcels 5 and 6 have field boundary drains to the ephemeral "Farran stream" (unmarked on OSI Discovery or EPA watercourse mapping) which ultimately joins the River Bride 2.5km downstream. The proposed solar farm development lands are generally, gently rolling-to-flat with minor field boundary drains (inactive during summer) between the proposed land parcels and EPA delineated watercourses. The ecological approach to the protection of these areas, including their biodiversity benefits, is low intervention with attendant field margin areas to be planted and managed in accordance with BRIDE project EIP techniques. This protects the existing setting, amenity and biodiversity value of these areas.

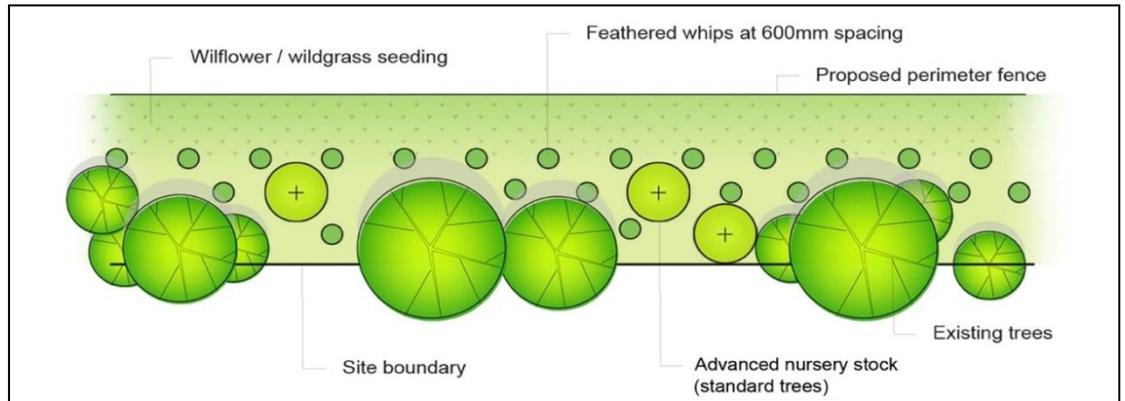
In relation to the landscape mitigation strategy, the main mitigation by avoidance measure employed in this instance is the siting of the proposed development in a robust rolling rural area that benefits from good vegetative screening, so that the proposed development will not be a highly prominent feature within the surrounding landscape.

In addition to mitigation by avoidance measures, retention of existing hedgerow boundaries within and around the site aids visual screening, and maintains the existing field pattern. In this respect, the proposed solar farm (including the substation and grid connection¹) is not perceived to impose itself on the existing landscape pattern. Indeed, the main concept of the landscape strategy is to maintain and enhance, where possible, the existing network of hedgerows within and surrounding the proposed development, which provide ecological corridors throughout the site and wider landscape. In this regard, it is proposed to retain, protect and enhance all existing hedgerows (aside from some small sections of hedgerows that will be removed to facilitate the proposed access tracks) within the site and around the sites perimeter. Furthermore, all built elements of the proposed development will be well offset from the surrounding existing vegetation, whilst tree protection measures will also be implemented around the site where any larger, mature trees occur, which will involve the erection of tree protective fencing. The proposed protective fencing will be erected in compliance with BS 5837 – Trees in Relation to Design, Demolition and Construction.

With regard to retention and enhancement of existing vegetation, it is proposed to retain, protect and enhance some 22,285 linear meters of existing hedgerow within and surrounding the site. Existing hedgerows will be bolstered as necessary with under-planting and inter-planting of whip transplants (i.e. Hedgerow Type 1) in order to ensure dense and consistent screening of the site in perpetuity. This will be undertaken where required to thicken and fill gaps in the existing hedgerow network prior to the construction phase, thus allowing for any growth in the period between a grant of planning permission and construction of the development. Advanced nursery stock in the form of 8-10cm girth trees will be used to fill any noticeable gaps and plant species will be selected to complement the existing broadleaf hedgerow species mix around the site and will be of local provenance. Where not already exceeded by existing vegetation, it is intended to manage hedgerows up to 3-4m in height. This height will be achieved by a combination of allowing lower sections of existing hedgerows to mature, filling obvious gaps with advanced nursery stock and

¹ Planning permission for this infrastructure will be sought under Strategic Infrastructure Development provisions.

providing an additional line of whip planting to selected hedgerows that require densification. Refer to the Landscape Mitigation Plan LD.BLLYSLLGH 3.1-3.3 for details.



Indicative boundary planting detail showing the approach to inter-planting and under-planting of existing hedgerows (where consolidation is needed).

It is also proposed to plant extensive areas of new 'Type 2', with whips and a high proportion of advance nursery stock trees (c.3m planted height), along the boundaries of some of the proposed parcels to further screen the proposed development from some of the nearest surrounding receptors (refer to Landscape Mitigation Plan drawing package LD.BLLYSLLGH-SLR). All of this planting, totalling some 1,194 linear meters, will be allowed to mature up to a maintained height of 3-4m to aid in the screening and softening of the proposed development from nearby dwellings and surrounding local, regional and national roads.

It should also be noted, to avoid fragmentation of habitats, a small gap at the base of the fence will allow wild fauna to continue passage throughout the site. An un-grazed margin between deer fencing and the solar panels will be left for biodiversity enhancement measures, which will further aid in bolstering the sites biodiversity values and enhance surrounding ecological corridors.

The maps below illustrate the network of ecological connectivity that will be delivered as part of the operational solar farm.

Network of Ecological Connectivity

Legend

Habitats

- Buildings and artificial surfaces (BL3)
- Improved agricultural grassland (GA1)
- Mixed broadleaved/conifer woodland (WD2)
- Oak-ash woodland (WN4)
- Scrub (WS1)
- Horticultural (BC2)

Linear habitat

- Earth bank & drainage ditch (BL2 & FW4)
- Earth bank (BL2)
- Hedgerow (WL1)
- Mixed conifer woodland (WD3)
- Scrub (WS1)
- Stream (FW2)
- Treeline (WL2)
- Site
- 33kV interconnectors



All of these landscape and biodiversity measures will result in some localised positive landscape effects and will further protect and enhance the ecological corridors within and throughout the site. As per the submitted biodiversity management plan, over 10% of the lands within the site boundary will be managed for biodiversity enrichment, which comprises a mix enhanced hedgerows, new sections of native hedgerows, areas of native thicket and field margin. Thus, it is considered that the proposed development is in line with the current CDP Objective GI 14-3: Green Infrastructure and Development.

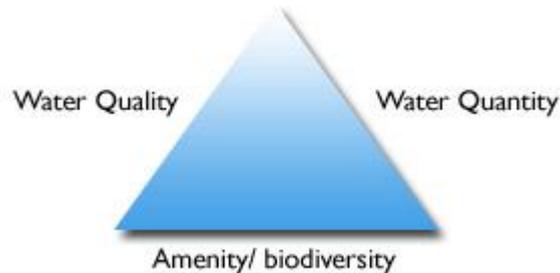
In summary, the proposed biodiversity measures have been informed directly by site survey investigations and include:

- Retention of majority of the linear habitats such as hedgerows, treelines and linear scrub within the proposed development site. The sections of hedgerow removal within the land will be the minimum required in order to facilitate the construction of access tracks around the land parcels.
- Field margins will be managed in accordance with the Bride (EU Life Project). The creation of a 2m field margin will provide a habitat for wildflowers, insects, birds and small mammals. The provision of thick vegetation and a wide field margin will be of benefit to ground nesting birds.
- Solar panels will be excluded from areas within Parcels 3, 4 and 5 at the proposed site. These areas will be excluded from grazing and will be allowed to 'grow out' allowing species present in the existing seed bank grow and, in time, allowing various stages of successional growth to occur, such as rough grassland and scrub. These areas will provide habitat for small mammals, birds and foraging bats and will also provide space for the provision of artificial structures (more below).
- Small parcels of scrub within Parcel 2 and woodland present in Parcels 1, 2, 3 4 will be fenced off from the footprint of the proposed solar farm and excluded from grazing. These areas will provide habitat for birds, bats and mammals.
- The site perimeter fencing is stock proof but has been designed to allow for permeability across the landscape for small mammals such as badger and hedgehog.
- Provision will be made for some artificial structure to include:
 - » Hibernacula log, rock and stone piles designed to create suitable conditions for reptiles and amphibians to hibernate³ will be provided in the biodiversity enhancement area located at the east of Parcel 4, which is adjacent to the Rathonoane watercourse.
 - » Additional invertebrate habitat to be provided by creating log piles, installing small bug or bee hotels or creating solitary bee nest sites. Log piles will consist of a mixture of hard wood and soft wood and left undisturbed to rot down.
- 18. no bat boxes are mounted on existing mature trees at the boundary of Parcels 1, 2, 3 and 4 in consultation with the Ecological Clerk of Works (EcOW) or a bat specialist.
- In order to enhance the site for nesting birds, it is recommended that 15 no. bird boxes are placed throughout the site.
- As set out in the next section, the provision of SuDS measures will also support biodiversity development through the creation of new water-based habitats (i.e. ponds).

Surface Water Management

The key hydrological features in the vicinity of the proposed solar farm development site are the watercourses such as the Cooldrum stream, the Rathonoane stream, as well as the River Lee/ Inniscarra Reservoir. As noted above, Parcels 5 and 6 have field boundary drains to the ephemeral 'Farran stream'.

The proposed solar farm implements sustainable management of water resources on site through the SuDS Triangle:



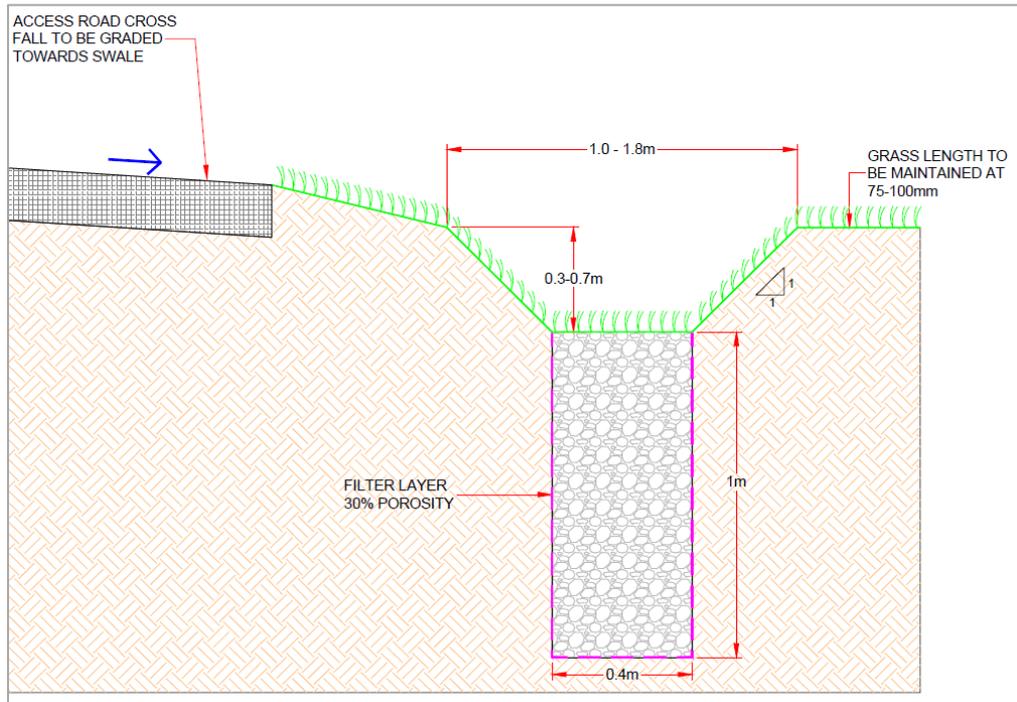
SuDS Triangle

The proposed surface water drainage design includes the use of Sustainable urban Drainage Systems (SuDS). This is in accordance with the Surface Water Drainage / SuDS policies included in the Cork County Development Plan 2022-2028, the Greater Dublin Strategic Drainage Study (GSDS), The SuDS Manual, CIRIA C753 (2015) and also the Sustainable Drainage Design & Evaluation Guide 2021.

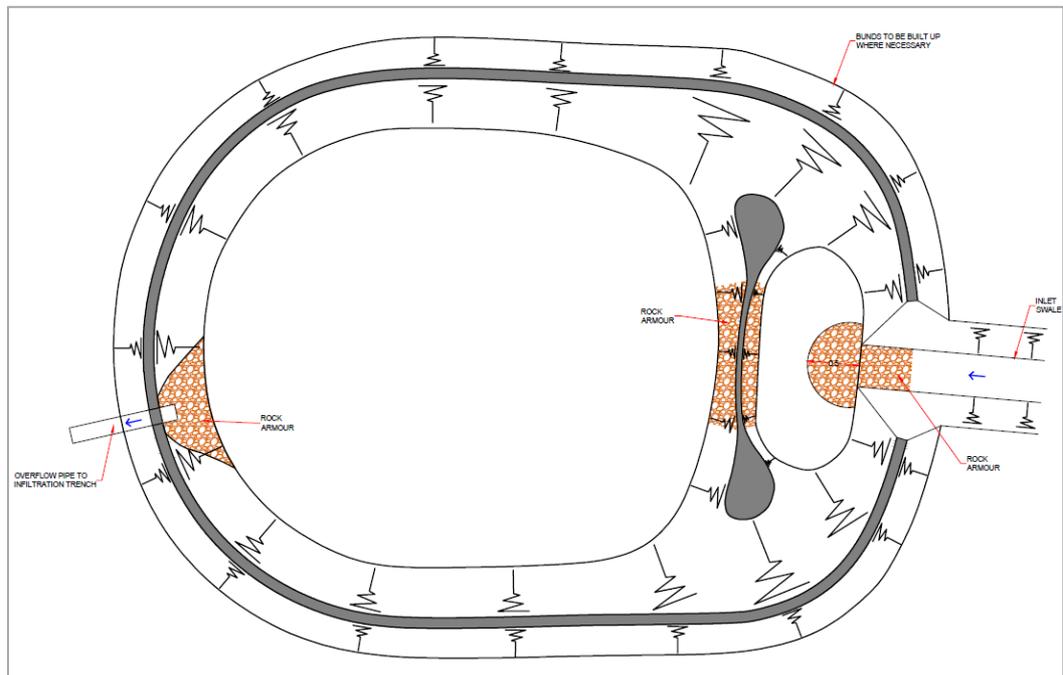
The proposed solar farm development lands are generally, gently rolling-to-flat with minor field boundary drains (inactive during summer) between the proposed land parcels and EPA delineated watercourses. A dedicated Construction Stage Surface Water Management Plan (SWMP) has been prepared for the project² which incorporates SuDS as the principal and sustainable means of managing surface water on site. With the exception of proposed construction phase silt fencing, which will be removed post construction, the other SuDS features will be maintained for the operational phase. Runoff generated from inverters / transformers and access tracks surfaces shall be collected and controlled at source using infiltration based systems with no off site discharge to any existing field drains, streams or rivers within the site boundary.

- Runoff from access roads shall be collected and controlled using shallow grass swales with a minimum depth of 0.3m.
- A 1m filter layer shall be constructed below the swales to allow infiltration to occur directly at source.
- Check dams shall be provided at 5m intervals where swale channel gradients are $>1/30$. A design slope of $1/30$ is utilised to account for the impact of the check dams on steeper slopes.
- Runoff collected in the swales shall discharge into a settlement pond and then spill into a 1m deep infiltration trench. There is no off site discharge from the infiltration trench proposed.

² Refer to Section 8 and associated appendices of submitted Construction and Environmental Management Plan.



Typical Swale Detail



Typical Settlement Pond Detail

The collective suite of measures ensure that water quality in the local areas will be protected.

The proposed solar panel arrays are considered to be a water compatible development. The existing ground beneath the solar panel arrays shall remain a permeable grassy surface and there will be no increase in discharge rate or runoff volume from the panels and therefore will mimic the existing greenfield runoff rates. Therefore, specific surface water management measures are not required for the solar panels.

The proposed SuDS measures such as the swales and settlement ponds will increase the 'blue' surface area on site and contribute to the creation of new ecological habitats to deliver important biodiversity benefits. They will provide shelter, water, food and foraging and breeding opportunities for a variety of wildlife species including plants, amphibians, invertebrates and other mammals. Increased opportunities for wildlife will support increased numbers in the variety and species on site, contributing positively to overall biodiversity targets.



SuDS Benefits to Biodiversity

The prepared construction phase Surface Water Management Plan establishes that the proposed SuDS measures will ensure that that water quality in the local areas will be protected during the temporary construction phase. An ECoW will be based on site, overseeing the implementation of pollution mitigation measures, compliance with any environmental planning conditions, monitoring and reporting on environmental aspects of the development. Regulation and ongoing maintenance of the mitigation measures will be the responsibility of the contractor, as directed by regular observations made by the ECoW to ensure water quality protection measures are being adhered to.

During the operational phase, there is potential for an overall positive impact on aquatic ecology owing to a net reduction in the regular agricultural activities on the solar farm lands which can affect water quality. For example, across the 160ha solar farm site there will be no broad scale ploughing/reseeding of fields; no herbicides to be used in the solar farm management, plus the introduction of swathes of unfertilized species rich grassland buffers.

The project Aquatic Ecologist has recommended the following measures which will be adhered to as part of the operational solar farm project

Objective	Measure	Details of Mitigation
Water quality and Aquatic habitat protection	Buffer zone management	To ensure the continued functioning of buffer zones alongside on-site drains and streams, the riparian vegetation should be protected by exclusion of continual grazing. The biodiversity enhancement proposals for the site detail the maintenance of uncropped tussocky grassland establishment along these stream / drain buffers. The appropriate way to manage these as buffer zones is to exclude uncontrolled grazing. The zones can be occasionally grazed and/or mowed to encourage a rich and diverse sward which enhances the filtering and attenuation function.
Water quality and Aquatic habitat protection	Drainage Maintenance	Access tracks will be embedded in with over-the-edge drainage to vegetated ground. The access tracks and any parallel, vegetated flow paths will be subject to routine maintenance and repair, as required, to ensure no obvious erosion and sediment washout is occurring. Over the course of the operation phase, observations shall be made during regular site visits. If there are any obvious erosion hot-spots on preferential flow paths from access tracks, then necessary surface repairs will be carried out as soon as practicable, with additional check-dams installed (and allowed to revegetate) into the preferential drainage flow path, where required to increase attenuation and slow run-off velocity locally.

Operational Phase Mitigation, Table 5.1.2 of Aquatic EcIA

Aftercare

In addition to generating renewable energy, the above referenced measures will enhance visual character, support environmental resilience, contribute to habitat connectivity and development, creating a diverse, self-sustaining and resilient green and blue infrastructure ecosystem.

Once construction of the solar farm is complete, an Operations and Maintenance Plan will be put in place. This will be agreed with the Planning Authority in advance of implementation. The plan will include for a Habitat Management Plan to monitor the green and blue ecological enhancements, including SuDS management proposals to ensure they are implemented appropriately and in line with proposals in this planning application.

Landscaping for mitigation and screening will be maintained as per the Landscape and Visual Impact Assessment and Landscape Mitigation Plan submitted with the planning application. This will ensure that the solar farm is appropriately screened from receptors where required. Internally, there will be light landscape maintenance in order to maintain the natural biodiversity of the site. Wildgrass and wildflower meadows will be cultivated and internal hedgerows will be lightly trimmed once a year. Insofar as possible, vegetation will be allowed to grow without interference to ensure that the natural biodiversity of the site is retained or improved from its previous agricultural use. No weed killers or chemicals will be used within the solar farm site under any circumstances.

The submitted Landscape Mitigation Plans and Landscape and Biodiversity Management Plan set out a programme of aftercare which will be adhered to in accordance with developer commitments.

Aftercare for Planted Shrubs and Woodland

There will be a programme of aftercare for the newly planted woody vegetation. This will extend to 60 months after the date of completion of all of the initial planting works.

Weeding

Throughout the aftercare period, all shrub planting areas will be weeded regularly. An area of 1 m diameter will be kept clear around each planted tree to help ensure the early establishment. If necessary, an approved herbicide may be used. A minimum of 3-visits per growing season will be required to keep injurious weeds under control. The growth of herbaceous material between the weeded areas will be controlled by twice yearly strimming.

Stakes, Trees, Shrubs and Ties

All stakes, trees and shrubs shall be maintained in firm positions within the ground and with all ties securely fixed and adjusted to allow for the increase in stem girth.

Replacements

Plants that fail to thrive will be removed and replaced with equivalent plants as soon as possible during the following planting season.

- Shrub areas: All dead stock shall be replaced at the end of each growing season to obtain the planned stocking density.
- Cell grown/root trainers and transplant planting: Throughout the aftercare period, all dead stock shall be replaced at the end of each growing season to obtain 90% stock, providing that failures are evenly distributed throughout both planting areas and species.
- Standard trees: Throughout the aftercare period all dead and diseased stock shall be replaced at the end of each growing season.

Drainage

The operations and maintenance plan will also include focused measures for the inspection and maintenance of all drainage systems and SuDS components.

This will include bi-annual completion of the following tasks:

- Review of SuDS components.
- Vegetation management around components
- Silt removal from any catchpits, soakways and cellular storage.
- Remedial maintenance, if need, comprising inlet/outlet repair, erosion repairs, reinstatement of edgings.

Water Quality

Water quality will be monitored by means of the above referenced maintenance of drainage controls.

During the operational phase, the change of land use away from the existing level of agricultural use to a lower intensity land use with associated continuous vegetative cover and management of drain riparian areas as wild tussocky grassland buffer zones will mean that, compared to the baseline situation, operational effects will be at worst imperceptible and may even be slightly positive in terms of improved water quality and hence aquatic habitat improvement.

Conclusion

This Green & Blue Infrastructure Statement has been prepared to satisfy requirements under policy objective GI 14-3 of the Cork County Development Plan 2022-2028. It has been demonstrated that the design of the proposed solar farm is low intervention in the context of existing green and blue infrastructure in the area. A temporary use in the landscape, the design rationale for the solar farm is to minimize removal of existing hedgerow and tree planting in this rural location, whilst sustainably supporting the integration of the project in the local environment through supplementary landscaping and SuDS measures. Once operational, the solar farm will contribute towards an enhanced green and blue infrastructure network in the local area with improved biodiversity benefits, alongside the production of a clean form of green renewable energy.



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Accreditations
ISO 9001:2015
ISO 14001:2015
ISO 45001:2018