



An
Bord
Pleanála

Inspector's Report

ABP-312712-22

Development	A 10-year permission and 35-year operation for a solar farm on four land parcels.
Location	Ballyvalode, Garryduff, Gortnakistin, Gortyvahane, Keelogs, Kilmacogue, Moanoola and Moanroe, Co. Limerick
Planning Authority	Limerick City and County Council
Planning Authority Reg. Ref.	211565
Applicant(s)	Harmony Solar Limerick Ltd.
Type of Application	Permission
Planning Authority Decision	Refuse Permission
Type of Appeal	First Party
Appellant(s)	Harmony Solar Limerick Ltd.
Observer(s)	William Ryan, Jack Ryan, Paul Purcell, Tracy & Thomas Hourigan, and John Grammel
Date of Site Inspection	31 st May 2022 and 19 th October 2022.
Inspector	Jimmy Green

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1.0 Introduction

- 1.1. This appeal relates to the provision of a solar farm/array on four parcels of land within Co. Limerick. Since this appeal was made (received by An Bord Pleanála February 2022), the same applicant (Harmony Solar Limerick Ltd.) has lodged (May 2022) a direct application with An Board Pleanála under Section 182A of the Planning and Development Act, 2000 (as amended) (“the Act”) in relation to a 110kV substation which will facilitate the connection of the solar farm/array to the national grid. Both the Section 182A application (ABP-313667-22) and the subject appeal (ABP-312712-22) are being considered concurrently by the Board.

2.0 Site Location and Description

- 2.1. The site has a stated area of 141.8 hectares and is arranged over four land parcels which are arranged in a broadly linear north-south pattern over an approximate straight-line distance of 3.85km from the Dead River in the townland of Gortraskin to the north, to its southern most point which is located approximately 400m north-north-east of the settlement of Oola, Co. Limerick. The site lies to the north of the N24 (the Limerick to Waterford national route). The four land parcels are all connected within a single red-line planning application boundary and are arranged as follows:

- The North Parcel is in the townland of Gortnakistin and has a stated area of approximately 23.78 hectares. This parcel is on agricultural farmland and is predominantly level, with the northernmost part of this parcel approximately at the 49m contour and gently rising to the south where it reaches the 56m contour. This parcel extends up to the bank of the Dead River on its northernmost extremity. The R507 regional road runs generally in a north-south direction to the west of this part of the site (onto which it has frontage), however, access to the site is via the L5040 local road which runs in a north-west south-east direction and forms the southwestern boundary of this parcel. The local and regional road therefore separates this northern portion from the remainder of the proposed development site. There is a Rath (LI02267/LI024-061) located within this parcel and existing rural one-off dwellings arranged along the L5040 local road and regional

road in the vicinity. The north parcel is joined to the Central parcel via the R507 which is included within the red line application boundary to accommodate the connecting underground cable works.

- The Central Parcel is in the townlands of Ballyvalode and Keeloges with a stated area of approximately 43.49 hectares, is accessed via a corridor onto the R507, and incorporates agricultural lands. The topography on this parcel is gently sloping from the north, which is at a level of approximately 61m, rising to the south, extending above the 70m contour. The local road L5040 provides the northern boundary of this parcel and it is traversed by a 110kV overhead line running in a northwest to southeast direction. The substation, which is subject to a concurrent Section 182A application to An Bord Pleanála under 313667-22 is within this parcel. Tributaries of the Dead River (including the Garryfrask stream) drain this parcel.
- The South-Central Parcel is in the townlands of Gortyvahane and Moanroe with a stated area of approximately 34.7 hectares. One of the Dead River's tributaries (Portane Stream) extends to this parcel. The lands are agricultural and read as being generally flat although there is a gentle rise throughout from the 61m contour in the north to over the 69m contour in the south. There are 4 recorded features in the southern field, all of which (LI08722/LI025-053, LI0873/LI025-054, LI08724/LI025-055 and LI08725/LI025-056) relate to cropmarks of ditch-barrow features. There are some adjacent fields under commercial forestry, and the 110kV overhead line continues in a northwest-southeast direction through this parcel. The south-central parcel is connected via a narrow link of the red line application boundary (again to facilitate internal underground cabling) along an extant agricultural road to the south parcel.
- The South Parcel is in the townlands of Garryduff, Moanroe, Moanoola and Kilmacogue, and has a stated area of 39.27 hectares. The lands are agricultural in nature, read as generally flat only undulating slightly but predominantly arranged around the 69m contour, rising to the 74m contour on its western extents. This parcel drains into the Dead River via drains and a tributary. There are also recorded monuments in this parcel,

LI08568/LI025-042 (Barrow- ring barrow), LI08567/LI025-41 (Barrow – ring-barrow), LI02267/LI024-088 (Earthwork).

Internal field boundaries throughout the site consist of typical treelines and hedgerows of varying character, height, and extent, the site boundaries generally follow field/road boundaries however the internal road/cable corridors connecting the central and south central and south parcels predominantly follow established tracks within larger fields. There is a typical rural settlement pattern in the vicinity providing a range of farmyards and rural dwellings, the majority of which are arranged along the road network in the vicinity. The settlement of Oola lies approximately 320m south of the site and the county boundary with Tipperary lies approximately 1.1km to the east of the site.

3.0 Proposed Development

3.1. The Proposed Development subject to this appeal constitutes the provision of a solar farm over four land parcels (which have been described above). The Solar farm constitutes the provision of the following:

- 755,000m² of solar photovoltaic panels on ground mounted steel frames.
- 58 no. enclosed Inverter/transformer units on 26 no. hardstanding areas.
- Provision of 1 no, Ring Main Unit (RMU) – in the north parcel.
- Underground power and communications cables and ducts.
- Boundary deer-proof perimeter security fencing of approximately 15,500m including mammal gaps, (Fencing is to be provided inside the established hedgerows along the site perimeter).
- Approximately 7,500m of new and upgraded Internal access tracks and associated drainage infrastructure.
- Associated drainage infrastructure for the construction and operational phases.
- Site entrances to the proposed development off the L5040 (Northern Parcel) and R507 (into the central parcel to access the remainder of the proposed development) public roads.

- CCTV cameras (passive infrared cameras) and all associated site services and works (including 2m high deer-proof perimeter fencing inside perimeter hedgerows incorporating mammal access gaps, screening and ecology/biodiversity enhancement areas including ongoing management of existing internal and perimeter hedgerows and grass land).
- Internal network cabling comprising trenches for medium voltage cables.
- All ancillary/associated works including temporary site compounds (one of 400m² in the northern parcel, and two of 1,600m², one in the central parcel and the other in the south-central parcel).

The four land parcels will be joined by internal cabling and private access tracks except for the connection to the northern parcel which will be via the regional and local road network and a cable of approximately 1.9km in length.

- 3.2. The solar panels will be arranged in module units which are typically set out either in portrait (4 x 1m x 2m) or landscape (8 x 1m x 2m) arrangements. These will be set out in multiple rows to 3.2m in height and typically separated by 2m, will be connected to inverters and transformer modules, and will be orientated to the south and are typically orientated towards the sun at an angle of 15° from ground (although the glint and glare assessment considers a range of configurations of 10, 15, 20 and 25° angles). Manufacturers specifications can vary, and the figures are stated as being indicative in nature.
- 3.3. There are options for anchoring the solar panel frames in position, this will be achieved by either steel pile fixings, earth screws or concrete shoes. The panels will not move but will be arranged in a manner tilted towards the sun and all cabling on site will be underground.
- 3.4. The proposed development also incorporates significant planting and landscaping plans which include:
 - Maintaining and enhancing existing hedgerows and treelines.
 - New hedgerow planting.
 - The provision/maintenance of two biodiversity ponds in the South-Central parcel.

- Scattered tree planting throughout Northern, Central, and South-Central parcels.
 - Riparian enhancement – planting of trees and shrubs along riversides.
- 3.5. During construction a suite of drainage provisions are proposed which include settlement ponds, silt fencing/traps, interceptor drains, cross drains and roadside swales which will be used to mitigate and manage surface water runoff.
- 3.6. A ten-year permission and a 35-year operational period have been sought in relation to the proposed development.
- 3.7. The documentation accompanying the application includes a Planning and Environmental Report (PER), Stage 1 Screening Report for Appropriate Assessment (SRAA), Natura Impact Statement (NIS), Ecological Impact Assessment (EcoIA), Aquatic Ecological Impact Assessment (AEIA), Floodrisk Assessment (FRA), Construction and Environmental Management Plan (CEMP), Glint and Glare Assessment (GGA), Photomontages, Landscape and Visual Assessment, Landscape Management plan, and an Archaeological Assessment.

4.0 Planning Authority Decision

4.1. Decision

In their decision dated 14th January 2022, Limerick City & County Council (LCCC) refused permission for the proposed development for the following reason:

“The proposed development is located within the Yellow Option Corridor of the N24 Cahir to Limerick Junction Road Project. The proposed development is considered premature pending the determination of the route selection for this project and therefore materially contravenes objective IN 013 of the Limerick County Development Plan 2010 to 2016 (as extended) and is contrary to the proper planning and sustainable development of the area”.

4.2. Reports

4.2.1. Planning Report

4.2.2. The planning report prepared by LCCC recommended the refusal of the proposed development (without recourse to a further information request) noted the internal reports, submissions and prescribed bodies reports made in relation to the proposed development as well as summarising the relevant third-party submissions. The Planning Report also notes the following:

- The output of the proposal has not been specified and this should be sought by further information.
- There are no designated scenic views/prospects in the vicinity of the proposed development.
- In relation to the visual impact of the proposed development on the 17 viewpoints of the modelled proposed development contained in the visual impact assessment (with mitigation) 8 no. have an imperceptible impact, 3 no. have a slight/imperceptible impact, 4 no. have a slight impact and 2 no. have a moderate/slight impact.
- In relation to Residential Amenity and Human Health the report notes that the following should be sought by Further Information (FI).
 - Increased landscape buffers between H362 and H311 (as numbered in the glint and glare assessment).
 - Detail in relation to electromagnetic field impacts.
 - Notes the requirements of the Councils Environmental Scientist who requested additional background noise assessment.
- Acknowledges the Archaeology Reporting on site, however, notes the County Archaeologist (CA) report requiring further information for additional geophysical and archaeological testing.
- Considers a 10-year permission and 35-year operational period to be appropriate in the context of a development of the nature, scale and scope proposed.
- The planners report notes that a detailed restoration plan should be submitted for decommissioning and that a financial bond for this would be required in the event of favourable consideration.

- Notes that the southern parcel falls within the study area of the yellow corridor option of the N24 Cahir to Limerick Junction Road Project, notes that this is a substantial proportion of the overall development site (approx. 30%) and recommends refusal on that basis.

4.2.3. **Other Technical and Prescribed Bodies Reports**

4.2.4. **Roads** – Report dated 6/01/2022 (updates an earlier report dated 8/12/2022) seeks further information in relation to roads and drainage issues such as sightlines, stopping distances, surface water disposal, cable route and lighting, details sought include the following:

- The sightlines submitted were on ordnance survey mapping and therefore not sufficiently accurate or detailed, concerns that sightlines go into neighbouring properties and that a detailed topographical survey of entrances is required showing vegetation and any impediments of 90m on local road and 160m on regional road to be set back behind sight distance.
- Sight stopping distances are also sought by FI.
- Further details are requested in relation to the underground electrical cabling, regarding suitability of ground, locations of underground services.
- Traffic/construction management plan and traffic assessment requested and details of haulage route and its suitability to cater for the traffic required.
- Auto-tracking shown on ordnance survey mapping not sufficiently accurate and additional topographical surveys are required.
- Additional surface dressing required on county roads at entrance points to accommodate additional intensity of movement and provide details of road markings at entrances.
- Confirmation of accessibility to rivers for maintenance if required (e.g. by OPW).
- Additional details of drainage requirements including cross-sections of Sustainable Drainage System (SuDs) components, attenuation, pipe gradients, and details of infiltration levels.
- Lighting plan for the substation.

- 4.2.5. **Planning, Environment and Place-Making Section (Flooding)** - report dated 11/01/2022 - no objection raised provided regular maintenance to be carried out where development is proposed within flood zones A and B.
- 4.2.6. **Planning, Environment and Place-Making Section (Environmental Scientist)** - report dated 17/12/2022 (updates an earlier report dated 3/12/2022) seeking further information in relation to the glint and glare report, noting that there was an inconsistency in the numbers of dwellings which are considered to experience glint and glare, and requesting additional mitigation measures to reduce the magnitude of impact at all residential properties to very low, and to ensure no impacts at Road interceptor points. A background noise survey was also sought at sites representative of H223 and H29 to ensure impacts of operational noise can be properly considered (i.e. establishing whether the receiving environment is a low noise environment).

Concern is raised that earlier flowering plants and breeding amphibians may have been missed due to the timing of the site survey.

A more detailed otter survey using camera traps was advised as well as a wintering bird survey as there are reports that snipe use fields in this area for foraging. The recommendation of a pre-construction badger survey was highlighted as not being appropriate in the absence of a baseline badger survey to inform the planning decision.

The methodology of controlling the giant Hogweed on site should be agreed with the Planning Authority three months in advance of any construction activities.

- 4.2.7. **County Archaeologist** – Report dated 7/01/2022, noting the 4 no. recorded features on site, 5 no. in proximity, and further significant sites and potential areas of archaeological significance in the wider landscape. The Archaeology Report notes the commitment to carry out further prior to commencement geophysical and on-site testing, however states that *“The potential archaeological resource throughout the site is too extensive not be more clearly established prior to the decision on planning permission.”* The report goes on to request further information requiring targeted geophysical assessment and an additional programme of archaeological testing to inform and confirm design/mitigation measures that are set out.

- 4.2.8. **Mid-West National Roads Design Office (NRDO)** – report dated 14/12/2021, noting that the proposed development is within the yellow option corridor for the N24 Cahir to Limerick Junction Project and stating that the application was deemed to be premature and recommended that permission should be refused.
- 4.2.9. **Transport Information Ireland (TII)** – report dated 10/12/2021 noting that the proposed development is located within an area under consideration as a route option for a national road improvement scheme and the application is therefore premature pending the determination of the route, and a grant of permission would be considered at variance with the provisions of DoECLG Spatial Planning and National Roads Guidelines for Planning Authorities (January 2012), section 2.9.
- 4.2.10. **Irish Water** – Report dated 9/12/2021 – no objection.

4.3. Third Party Observations

There were 14 no. separate submissions lodged in relation to the proposed development. The issues raised by third parties in the submissions to LCCC included the following points of concern:

- Visual Impact, inappropriate scale of the proposal, industrial development in this rural landscape.
- Omission of permitted dwelling(s) from application drawings and associated assessments.
- Depreciation of property values.
- Adverse glint and glare impacts including on road users, and aviation.
- Adverse impacts arising from noise.
- Prematurity pending development of solar farm guidelines.
- Prematurity pending a decision on the N24 route selection.
- Flood risk.
- Poor consultation with the public.
- Precedents of previous refusals in other counties.
- Construction impacts and construction traffic impacts.

- Impact on biodiversity, Water quality, Mulcair river and River Shannon SAC.
- Proximity to dwellings.
- Inappropriate duration of permission and operational life.
- Impact on health (Noise, light and radiation).
- Impact on water quality.
- Impacts on dwellings and farmyard and farm animals.
- Land contamination.
- Risk of noxious weeds.
- Loss of agricultural lands.
- Fire hazard, and
- Lack of information on solar panels, materials, and their efficiency.

5.0 Planning History

5.1. The relevant recent planning history of the site and lands in the immediate vicinity are set out below:

ABP-313667-22 – Section 182A application on a smaller site within the extents of the current proposal for a 10-year permission for construction of a 110kV substation and all associated works. This application is by the same applicant and is proposed to facilitate the connection of the subject solar array to the national grid. The substation application has been lodged following pre-application consultation with the Board (ABP-308422-20) under Section 182E of the Act, who confirmed that the development as proposed fell within the scope of section 182A of the Act. Both the subject appeal 312712-22, and the substation proposed under section 182A of the Act (313667-22) are being considered concurrently by the Board.

Pl. Ref. 21/1509: Planning permission granted by LCCC in April 2022 for a dwelling house and all associated works on a site which slightly overlaps (sightlines) with the red line boundary of the current proposal at the entrance to the central parcel of the proposed development.

Other consents in the vicinity of the proposed development include:

- Pl. Ref. 22/140, permission granted for a dwelling house on a site approximately 180m northwest of the site entrance (off the regional road) to the central parcel. At time of site inspection dwelling was not commenced.
- Pl. Ref. 20/941, permission granted for dwelling house to the northwest of the central parcel. At time of site inspection this dwelling was under construction.
- Pl. Ref. 18/1246 and 21/496, which refer to the grant of permission for a dwelling house (May 2019) and domestic garage (July 2021), respectively, along the local road to the north the Central Parcel.

6.0 Legislative and Policy Context

6.1. The Climate Action and Low Carbon Development (Amendment) Act 2021

- 6.1.1. The Climate Action and Low Carbon Development (Amendment) Act 2021 (Climate Act, 2021), commits Ireland to a legally binding 51% reduction in overall greenhouse gas emissions by 2030 and to achieving net zero emissions by 2050. As part of its functions the Board must, in so far as practicable, perform its functions in a manner that is consistent with the most recent approved climate action plan, most recent approved national long term climate action strategy, national adaptation framework, sectoral plans, furtherance of the national climate objective and the objective of mitigating greenhouse gas emissions and adapting to the effects of climate change in the State¹.

6.2. Climate Action Plan 2023

- 6.2.1. The Climate Action Plan 2023 (CAP 23) follows the commitment in the Climate Act, 2021 and sets out the range of emissions reductions required for each sector to achieve the committed to targets. CAP 23 supports the acceleration of the delivery of renewable energy onto the national grid with a target of achieving 80% of electricity demand being met from renewable energy by 2030. Towards this end

¹ Section 15(1) of the Climate Action and Low Carbon Development Act 2015 (as amended) refers.

CAP 23 sets a target of providing 5GW of solar energy by 2025, and a longer-term target of 8GW by 2030.

6.3. National Planning Framework

6.3.1. The National Planning Framework 2018-2040 (NPF) sets ten strategic outcomes, one of which (No. 8), is to Transition to a Low Carbon and Climate resilient society. In discussing this outcome the NPF states *“New energy systems and transmission grids will be necessary for a more distributed, renewables-focused energy generation system, harnessing both the considerable on-shore and off-shore potential from energy sources such as wind, wave and solar and connecting the richest sources of that energy to the major sources of demand.”* The NPF states that this transition to a low carbon economy requires:

- A shift from predominantly fossil fuels to renewable energy sources,
- Increasing efficiency and upgrades of appliances, buildings, and systems.
- Decisions around development and deployment of new technologies relating to wind, smart grids, electric vehicles, buildings, ocean energy and bioenergy, and
- Legal and regulatory frameworks to meet the relevant demands and challenges.

6.3.2. The NPF states that the future planning and development of our communities at local level will be refocused to tackle Ireland’s higher than average carbon-intensity per capita and enable a national transition to a competitive, low carbon, climate resilient and environmentally sustainable economy by 2050 through harnessing our country’s prodigious renewable energy potential. National Policy Objective 55 seeks to *“Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050.”* The NPF goes on to note the following in relation to the role of rural areas:

“In meeting the challenge of transitioning to a low-carbon economy, the location of future national renewable energy generation will, for the most part, need to be accommodated on large tracts of land that are located in a

rural setting, while also continuing to protect the integrity of the environment and respecting the needs of people who live in rural areas.”

6.4. National Development Plan 2021-2030

- 6.4.1. The National Development Plan 2021-2030 (NDP) sets out Governments investment strategy and budget up to 2030. The NDP commits to increasing the share of renewable energy up to 80% by 2030 and acknowledges that this will require world-leading levels of wind and solar electricity penetration onto the national grid.

6.5. Framework and Principles for Protection of Archaeological Heritage, 1999

- 6.5.1. This document was prepared by the Department of Arts, Heritage, Gaeltacht, and the Islands and sets out the basic principles of national policy on the protection of the archaeological heritage. Section 3.0 of the Framework notes that: - archaeological heritage is a non-renewable resource; the first option should be a presumption in favour of avoidance of developmental impacts and that preservation in-situ is the preferred option; if removal cannot be avoided, preservation by record should be applied; carrying out an archaeological assessment where appropriate is the first step in ensuring that preservation in-situ and by record take place; and monitoring is another method of ensuring that preservation takes place.

6.6. NMS – Solar Farm Developments - Internal Guidance Document

- 6.6.1. The National Monuments Service produced an internal guidance document (IGD) specifically in relation to solar farm development as a supplement to the 1999 document set out above. This document acknowledges that solar development can occupy a large site but also have potentially relatively low levels of ground impact over much - but not all - of the development site. The IGD notes that any solar farm development application should be accompanied by an archaeological statement (including a field assessment of the entire site). It also notes that blanket requests for geo-physical surveys or test trenching by further information should not issue just due to the size of the site area, the document also notes that it may be acceptable to deal with areas of unclear archaeological potential by way of

conditions on any grant of development requiring geo-physical survey and/or testing followed by avoidance or appropriate mitigation.

6.7. Food Vision 2030

- 6.7.1. Food Vision 2030 is a strategy produced by the Department of Agriculture, Food and Marine in August 2021; it sets out the 2030 vision for Ireland's Agri-Food sector which aims for Ireland to become a world leader in Sustainable Food Systems (SFS). The Agri-food sector grew substantially between 2010 to 2020 with Irish food and drink exports increasing by 60% from €8.9 billion in 2010 to €14.2 billion in 2020. Agriculture is recognised as having a key role in protecting Ireland's climate and environmental credentials as the sector is the largest contributor to Ireland's greenhouse gas emissions. The strategy notes that facing into the decade to 2030 the agri-food sector can make significant and urgent improvements in its environmental footprint. To realise this vision the strategy has adopted four high level missions for the sector to work towards in the period to 2030. Mission 1 of the strategy is to create *"A climate smart, environmentally sustainable Agri-food sector"*. To achieve this mission seven goals have been created, the first of these is to *"Develop a Climate Neutral Agri-Food System by 2050"*. The ten actions identified to achieve this goal includes Action 7 which states the sector must *"Scale up renewable energy (RE) sources especially anaerobic digestion, biorefining and biomass supply, and solar PV, focus on energy efficiency and examine potential barriers to the roll-out of RE at farm level, including necessary support for microgeneration and access to the grid."*

6.8. Floodrisk Management Guidelines

- 6.8.1. These Guidelines seek to avoid inappropriate development in areas at risk of flooding and avoid new developments increasing flood risk elsewhere and they advocate a sequential approach to risk assessment and a justification test.

6.9. Regional Planning Policy

- 6.9.1. The Regional Spatial and Economic Strategy for the Southern Assembly (RSES) notes that the region is particularly rich in renewable energy resources. The RSES

supports renewable industries and its associated requirements for transmission and distribution infrastructure. RPO 100 states that it is an objective to support the integration of indigenous renewable energy production and grid injection. The RSES also supports the development of a regional renewable energy strategy (RPO 98), the implementation of the national renewable energy action Plan as well as leveraging the region as a lead and innovator in sustainable energy generation (RPO 95). RPO 219 also states that it is an objective to support the provision of new energy infrastructure subject to suitable environmental assessments and the planning process to ensure the energy needs of the future population and economic expansion are met in a sustainable manner.

6.10. Limerick County Development Plan 2010-2016

6.10.1. When LCCC issued their decision on this application the relevant county development plan was the Limerick County Development Plan 2010-2016 (2010 CDP). This has since been replaced by the new Limerick Development Plan 2022-2028. The 2010 CDP contained a number of policies and objectives which supported the sustainable development of renewable energy at appropriate locations while also ensuring the protection of the landscape, the natural environment and amenities of the area (Objectives INO56 and INO57 refer). INO13 of the 2010 CDP is of particular relevance as it formed the basis of the LCCC decision to refuse permission, it referred to reservation of corridors for major road improvements and stated:

“It is an objective of the Council to support major improvements by reserving such corridors of any such proposed routes free of developments that would interfere with such improvements.”

6.11. Limerick Development Plan 2022-2028

6.11.1. The Limerick County Development Plan 2022 – 2028 (LDP) was adopted on the 17th of June and came into force from the 29th of July 2022. The following are the relevant provisions of the LDP in relation to solar/renewable energy:

“CAF O8: Renewable Energy Objective - It is an objective of the council to promote and support development of renewable energy sources, which will

achieve low carbon outputs including on land and offshore renewable energy production which support tidal, turbine, PV, community energy companies, and battery technology subject to adequate environmental and ecological protection.”

“CAF P6: Renewable Energy - *It is a policy of the Council to support renewable energy commitments outlined in national and regional policy, by facilitating the development and exploitation of a range of renewable energy sources at suitable locations throughout Limerick, where such development does not have a negative impact on the surrounding environment landscape, biodiversity, water quality or local amenities, to ensure the long-term sustainable growth of Limerick.”*

“CAF O27: Renewable Energy Production - *It is an objective of the Council to encourage and facilitate the production of energy from renewable sources, such as from bioenergy, solar, hydro, tidal, geothermal and wind energy, subject to appropriate levels of environmental assessment and planning considerations.”*

6.11.2. Specifically in relation to Solar development of the nature proposed in the current appeal the LDP states:

“Limerick has experienced significant interest in the development of solar energy in the form of large scale photovoltaic solar farms, which is an emerging technology in Ireland, with a number of proposed largescale developments granted approval. Normal planning considerations, including impact on landscape, urban design, biodiversity, ecological impact, on-site water management, access to grid, security fencing, decommissioning issues and residential amenity, including potential glint and glare will require assessment.”

6.11.3. The LDP goes on to state that the Council will support utility scale solar PV development at suitable locations where it can be demonstrated that there are no significant impacts.

6.11.4. Policy CAF P1 of the LDP relates to Climate Action and states:

“It is a policy of the Council to implement international and national objectives, to support Limerick’s transition to a low carbon economy and support the climate action policies included in the Plan.”

- 6.11.5. Policy CAF P2 states that it is Council policy to support the transition to a low carbon climate resilient economy, by way of reducing greenhouse gases, increasing renewable energy, and improving energy efficiency. CAF O14 of the LDP notes that it is an objective to support the local production of renewable energy and the provision of infrastructure for its transmission to the grid, subject to fulfilling technical and environmental requirements.
- 6.11.6. The LDP does not contain any spatial map in relation to locating solar energy proposals, the only map provided in relation to renewable energy production refers to wind energy, which notes the location of the Proposed Development as being in a “Preferred Area”.
- 6.11.7. The LDP also notes under its 5th strategic objective that it will promote diversification in the rural economy. Objective ECON O37 notes that it is an objective to favourably consider proposals for farm diversification on the open countryside where the proposal *“(a) would not negatively affect public health or agricultural operation on neighbouring farms; (b) is of a size and scale which is sympathetic to and which does not negatively impact on the character and amenity of the surrounding area; and (c) demonstrates that it has taken into account traffic environmental and amenity considerations and is in accordance with the policies requirements and guidance contained in this plan. All development in the countryside will be required to respect the appearance and character of the rural landscape.”*
- 6.11.8. Under the LDP (and consistent with the previous 2016 County Plan) the site of the proposed development lies within the Agricultural Lowlands LCA (Map 6.1 of the LDP refers), and there are no views or prospects located proximate to, or in the vicinity of, the proposed development (Map 6.2 of the LDP refers). The LDP notes this landscape is a farming landscape and is defined by a series of regular field boundaries which are often allowed to grow to maturity. The well-developed hedgerow system has been identified as one of this landscape type’s main characteristics. The landscape is generally flat with some locally prominent hills and

ridges. The specific objectives for this rural landscape character area include encouraging the retention of existing landscape features such as hedgerows and trees and their incorporation into landscaping for new developments as well as discouraging development of locally prominent sites.

- 6.11.9. Policy TR P6 of the LDP states that the Council will support the delivery of transport infrastructure identified within the NPF, National Development Plan and the RSES and to support enhanced inter-urban connectivity within the regions and enhanced connectivity in Limerick. The N24 Cahir to Limerick Junction is identified as a key project which is critical to enabling sustainable mobility and economic growth in Limerick (LDP Section 7.4 refers). Objective TR032 states that:

“It is an objective of the Council to support the delivery of the N24 Cahir to Limerick Road Scheme, in accordance with all environmental and planning assessments.”

- 6.11.10. Section 11.7.2.2 of the LDP lists the criteria against which solar farm development will be assessed, these include, location, design, landscape character, visual impact, glint and glare, ecological impact, landscaping, construction impacts, any future Section 28 guidance, lighting, security measures, drainage, decommissioning, impacts from lighting/construction grid access, decommissioning, archaeological and heritage impacts.

- 6.11.11. Section 6.5 of the Plan refers to Archaeology and Built Heritage with EH O36 stating it is an objective to seek the preservation of all known sites and features of historical and archaeological interest, with the preferred option being preservation insitu. EHO37 provides a similar objective in relation to the preservation of unrecorded or newly discovered archaeological features, while EHO39 states that development should not have an impact on the setting of any archaeological monument.

6.12. Natural Heritage Designations

- 6.12.1. The Lower River Shannon Special Area of Conservation (SAC) is the most proximate Natura 2000 site and is located approximately 200m to the north of the subject site. An Appropriate Assessment of the proposed development has been

carried out in Section 9 of this report below in relation to the potential for impacts to arise on the Natura 2000 network.

- 6.12.2. The closest proposed Natural Heritage Areas are Knockanavar Wood [000961] and Kilbeg Marsh [001848] which are both located approximately 5 km to the northeast of the proposed development. The most proximate Natural Heritage Area is Grageen Fen and Bog [002186] located approximately 10km northwest of the proposed development.

6.13. EIA Consideration

- 6.13.1. The requirements for Environmental Impact Assessment (EIA) are outlined in Part X of the Act and Part 10 of the Planning and Development Regulations 2001, as amended (“the Regulations”). Schedule 5 of the Regulations sets out the various classes and thresholds of development which require mandatory EIA. Part 1 of Schedule 5 lists projects for which mandatory EIA is required on the basis of their type while Part 2 of the same schedule lists projects which require EIA on the basis of their relevant scale/size threshold.
- 6.13.2. The proposed development which constitutes the provision of a Solar Farm does not fall into a class of development contained in Schedule 5, Parts 1 or 2. Class 15 of the Schedule 5 states that EIA can be required in the case of a development listed in Part 2 that does not exceed a limit specified if it is considered that it that would be likely to have significant effects on the environment having regard to the criteria set out in Schedule 7 of the Regulations (Sub-threshold EIA). As the proposed development is not of a class listed there is no threshold for EIA and accordingly a subthreshold EIA is not applicable.
- 6.13.3. Furthermore, having regard to the nature and scale of the proposed development it is considered that any issues arising from the proximity to European Sites can be adequately dealt with under the Habitats Directive (Appropriate Assessment).

7.0 The Appeal

7.1. Grounds of Appeal

A First Party Appeal has been lodged by Fehily Timoney Consultants on behalf of the Applicant, Harmony Solar Limerick Ltd. The primary grounds raised in the appeal are as follows (please note that references to plan policies refer to the now replaced 2010 CDP):

- The proposed development does not merit refusal for the reason cited as the objective referenced in the refusal reason (IN O13) relates to the historically preferred route for the N24 and that this route does not overlap with the Proposed Development.
- In the event of the Board considering that the intent of the CDP objective is to protect any potential future routes of the N24 then options are proposed which would facilitate both the protection of the route selection corridors and the Proposed Development. In this regard, the applicant requests the Board to consider either (a) delaying deciding on this case pending the determination of the preferred route for the N24 realignment, and/or (b) should the route which overlaps with the site of the Proposed Development (the yellow route overlaps with the southern parcel) be selected as the preferred option the applicant suggests that the southern parcel could be omitted and a revised layout plan has been submitted in this regard. The appellant clarifies that the project would remain viable in the absence of the southern parcel, furthermore the southern parcel can be severed from the overall development without loss of critical infrastructure.
- The appeal also includes a glint and glare assessment setting out the potential impacts arising from the Proposed Development on the various route options for the proposed N24 Road realignment.
- In relation to ecology the appellant states that targeted surveys for badger, otter, and potential bat roosting habitat were identified as necessary and undertaken, furthermore, it is contended that the actual land-loss under the development footprint is small with hedgerows and treelines retained insofar as practicable. It is argued that the level of ecological surveying carried out

on site is appropriate and sufficient having regard to the nature of the proposed development notwithstanding the comments in the LCCC planning report.

- In relation to birds it is stated that the site is of low suitability for waterbirds and waders, including snipe. Furthermore, a wintering bird survey was undertaken in February (post the LCCC decision issuing) within a portion of the southern parcel (due to the presence of wet grassland in one of the fields at this location) and no wintering waterbirds, waders or ground nesting birds were recorded. Applicants therefore state that the level of survey undertaken at the proposed site to inform the EclA is appropriate in relation to the nature of the site and the Proposed Development.
- In relation to water quality the appellant states that the Proposed Development is not expected to adversely impact on the hydrological regime of the site as set out in Section 4.3.2 of the aquatic EclA originally submitted.
- It is noted that the substation will be subject to a future direct S182A approval application to An Bord Pleanála, (this application has since been submitted and is being assessed by the Board).
- In relation to surface water drainage it is stated that the proposed development will not alter the overall surface water run-off conditions on site and there is potential for these to be improved as normal farming activities will not be continuing on site and long-grass conditions will be promoted within the solar array development.
- In terms of Archaeology the appellant/applicant is seeking a condition to be imposed by the Board to carry out additional geophysical surveys in line with the County Archaeologists requirements, and that the results of this survey and any further additionally required archaeological assessment would be used to inform the final solar array layout. The applicant has committed to carrying out these works in advance of construction in order to finalise the design of the proposed development and to confirm appropriate archaeological mitigation.

- Additional detail is provided in relation to site access, sightlines, site investigations and haul route information in response to queries raised by the LCCC Roads Department in their reporting.
- In relation to Glint and Glare the applicant has stated that inaccuracies identified by LCCC result from a simple transcription error and notes that only 1 dwelling out of 363 assessed had an impact of medium-low (the others having an impact recorded as being low). The applicant states that the levels of glint and glare predicted are similar to levels that have been deemed acceptable on other projects and that the results set out are typical of the low degree of impact both in terms of the number of affected houses and the magnitude of effects.
- The levels of noise arising are stated as being low and will not give rise to adverse impacts nor affect residential amenity.
- EMF will be generated from the proposed inverters/transformer stations (similar to all electrical devices), however, levels generated are anticipated to be substantially under safe level/limits.
- It is requested that in the event of favourable consideration that a condition be imposed in relation to the provision of a lighting plan for the site.
- In relation to maximum MW generating capacity for the proposed development, it is requested that in the event of favourable consideration, given the 10-year duration of the permission and likelihood of technology improvements, that a condition requiring the applicant to confirm generating capacity in advance of construction be imposed.
- The appeal document is supported by, inter alia, updated drawings providing for the omission of the southern parcel should it be considered appropriate, additional access/sightline drawings, glint and glare addendum, ecology and archaeology technical notes.

7.2. Planning Authority Response

There has been no further submission from Planning Authority beyond its original reporting.

7.3. Observations

Five observations have been lodged in relation to the current appeal, the issues raised are set out and summarised below:

7.3.1. Observation by William Ryan:

The observer is a local farmer and the submission objects to the proposed development for the following reasons:

- Due to the proximity of the proposed development to the observer's home and farmyard which is at an elevated location overlooking the development site (particularly at Keeloges and Gortnakistin – these being the northern and central parcels) the observer is concerned that the proposed development will depreciate the value of their home and have an adverse impact on the local landscape and views from their dwelling.
- Concerns are raised that the proposed development will cause irreversible damage to the land arising from soil compaction, nutrient leaching, chemical leakage, and machinery leakage during construction thus having an adverse impact on the health of the soil on the land and neighbouring farmland.
- Spread of noxious weeds and impact on animal health.
- Loss of high-quality farmland.
- Potential for risk to human and animal health.
- Damage to local flora and fauna and queries whether an EIA has been carried out.
- Adverse impacts arising from glint and glare on dwellings, animals and security monitoring cameras. The observer is a farmer in the local area and has significant concerns that the development as proposed will impact on his animals and farm practices.
- Adverse impacts arising from noise pollution on people and animals as wind passes through the solar panels during the operational phase and also during construction.

- Adverse impacts on road users (both residents and commuters) during the construction phase.
- Lack of national guidance in relation to the provision of solar farm developments is a concern.
- Adverse impact on the proposed M24 road scheme route selection.
- Concerns are raised as to whether the proposed development will have an adverse impact on surface water runoff and how this may impact the local drainage environment.
- Inappropriate levels of public consultation and discussions with residents in the area.

7.3.2. Jack Ryan

The observer is a local resident and their submission objects to the proposed development for the same reasons and points listed in the observation above, albeit the observers dwelling is noted as being proximate to the Ballyvalode (Central) parcel, and the concerns raised in relation to impacts on farmers and farm animals are arising from concerns for farmers in the area.

7.3.3. Paul Purcell

The observer is a local resident, and their submission includes a copy of a petition submitted to LCCC during their consideration of the proposed development. The petition contains in excess of 70 signatures and raises concerns in relation to contamination of water table, industrialization of agricultural land, devaluation of properties, land contamination from solar panels, environmental impact on farm animals and wildlife including bats, concerns about electrical cabling, crime, impact of construction traffic on local roads, noise, light and radiation pollution, fire hazard during lightning storms, adverse visual impact and inappropriate high security fencing. The observation notes that there has been no consultation by the applicant with residents with the exception of an article in a local weekly newspaper directing residents to a website along with phone calls and email correspondence. Furthermore, the observation notes the lack of guidelines for the development of large-scale solar farm proposals.

7.3.4. Tracy and Thomas Hourigan

The observers are local dairy farmers, whose land neighbours part of the proposed development site and the submission objects to the proposed development for the following reasons:

- Leaching of contamination into the local water supply and rivers.
- Industrialization of prime agricultural land in proximity to dwellings and local secondary roads.
- Devaluation of property.
- Land contamination.
- Potential for environmental impact on farm animals.
- Concerns regarding provision of electrical cabling and potential for increasing crime in the area.
- Impact on local roads arising from construction traffic.
- Noise, light, and radiation pollution leading to damage to human health.
- Fire hazard during lightning storms.
- Adverse visual impact and inappropriate nature of high security fencing.

7.3.5. John Grammel

The observer is a local resident living adjacent to the proposed development and their submission objects to the proposed development due to concerns of rodent infestation and lack of engagement with locals combined with limited information being supplied regarding solar radiation. They also have concerns regard glint and glare arising from the proposed development.

8.0 Planning Assessment

Having inspected the subject site, application details and documentation as well as considering the national and local planning policy context and guidance, I consider the main issues to be considered in this appeal are as follows:

- Principle of the Proposed Development.

- N24 Cahir to Limerick Junction Route Corridor/Southern Parcel.
- Biodiversity.
- Duration of Consent and Operational Period.
- Construction.
- Noise.
- Glint and Glare.
- Residential Amenities.
- Archaeological Heritage.
- Visual Impact.
- Substation.
- Site Access and Roads.
- Drainage/Flooding.
- Other issues.

8.1. Principle of the Proposed Development.

- 8.1.1. There is significant policy support for the provision of additional renewable energy development (including solar) across all national, regional and local planning policy documents, which translates from broad cross-sectoral government support to move towards a low carbon future, reduction in use of fossil fuels, and increased penetration of renewable energy onto the national grid. Objective no. 55 of the NPF seeks to *“Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050.”*
- 8.1.2. One of the key actions identified in the Climate Action Plan 2023 is to increase the proportion of renewable electricity to up to 80% including a target of 8GW of solar energy by 2030. The Government policy statement on security of supply (November 2021) notes the commitment that 80% of electricity consumption will come from renewable sources by 2030, with an overall aim of achieving net zero emissions.

- 8.1.3. I acknowledge the observations on file that note the lack of national guidelines in relation to solar energy development, however, there is broad support at strategic, regional, and local level for the increased deployment of renewable energy technologies including solar development, (as set out in Section 5 of this report above). The LDP provides significant local policies and objectives to support the sustainable development of the City and County, which provide significant protections for sensitive environmental receptors including residential amenity in relation to all development proposals. I also note that the Board have considered dozens of solar farm applications in the absence of national guidance and have considered each in the context of the proper planning and sustainable development of the relevant areas. While the LDP does not provide any mapping indicating suitable locations for the provision of large-scale solar farm developments it does require such applications to be assessed on their own merits on the basis a variety of factors including inter alia, their location, potential for environmental effects, impact on landscape, water management, access to grid, security fencing, decommissioning, as well as residential amenity (including glint and glare). In relation to renewable energy I would draw the Board's attention to the wind energy spatial plan provided within the 2022 LDP under which the proposed site is noted as being a "preferred area for such development", and while I acknowledge that this provision does not relate to solar development it does point to the robust nature of the landscape and receiving environment to accommodate renewable energy.
- 8.1.4. In relation to the principal of the proposed development I note that the observations on the appeal have raised concerns in relation to the loss of agricultural land, the overlap with a future potential road line corridor, the broader industrialisation of the rural landscape and the general lack of national guidelines in relation to solar development. In this regard I note that the LDP, RSES, NPF and government policy all provide significant policy support and context within which to consider the merits of the proposed development in terms of the proper planning and sustainable development of the area. Furthermore, the NPF acknowledges that future renewable energy developments will by their very nature require to be located on tracts of rural land.
- 8.1.5. National agricultural strategy (Food Wise 2030) aims for Ireland to become a world leader in Sustainable Food Systems; however it also recognises that agriculture

has a key role to play in protecting Ireland's climate and environmental credentials and states that the sector must scale up renewable energy sourced including solar PV. The agricultural sector has been subject to significant expansion over the last decade, and this productivity must be balanced with the similar significant national, regional and local policies seeking to increase the penetration of renewable energy (including solar) onto the national grid and the need to decarbonise the national economy and energy sector. The installation of large-scale solar energy arrays will require the use of rural/agricultural lands. The current proposed development is large in scale and occupies a significant site area which is currently under agricultural use (predominantly grazing for cattle). Having regard to the current use of the lands I do not consider that the proposed development would be likely to compromise the national agricultural productivity, nor prejudice the return to agricultural use of these lands in the future. In this regard I note that the proposed development is presently intended to be decommissioned after 35 years, at which time the lands could be reinstated as farmland (unless consent is achieved for continued or an alternative use). Overall, the proposed development can be carried out with minimal construction impacts/ground disturbance and following decommissioning there is no reason that agricultural activity could not resume if required or necessary. (I note that the substation element is proposed to be a permanent feature as articulated under ABP-313667-22, however, if consented, this would form part of the national grid infrastructure and ultimately does not occupy a significant area of ground to the extent that it would impact national agricultural policy or objectives).

- 8.1.6. The proposed development will not result in the permanent loss of a significant portion of agricultural land and the relevant policy framework acknowledges that rural areas are generally suitable locations in principle for the provision of renewable energy developments provided significant effects across a range of environmental media and receptors are mitigated/minimised. I, therefore, consider that the principle of the proposed development at this location will not have a significant adverse impact on agricultural activities or preclude agricultural practices returning to the site in the event of decommissioning.
- 8.1.7. In relation to site selection for the proposed development I note the following in relation to the principle of the location of the Proposed Development:

- The provisions of the LDP which supports farm diversification subject to compliance with a range of criteria, including impact on neighbouring operations, protection of amenities and the environment and respecting the character of the landscape (these items are considered in later sections of this report).
- A solar farm by its very nature requires a significant site area in order to generate renewable energy, and to ensure a proposed development can be commercially viable. In this regard, rural areas provide an important resource for such sites.
- The proposed site is traversed by an existing 110kV transmission line and it is proposed to connect to the national grid by looping into and out of this line through the provision of a new 110kV substation and associated cabling. The national grid is very proximate to the Proposed Development thereby minimising the infrastructure needed to facilitated connection.
- While I note that there are dwellings in the vicinity of the proposed development the site is not located in an area with a high population density.
- The site is not subject to any specific environmental designations and the proposed development has been designed to minimise impacts and protect sensitive receptors in the wider area.
- The site is not located in a visually vulnerable landscape and is not open to long-distance views.

Taking account of the above and following site inspection, I consider that the location of the proposed development (subject to the further detailed considerations discussed below in relation to residential amenity, road corridor, environmental effects etc.) is acceptable in principle at this location.

8.2. N24 Cahir to Limerick Junction Route Corridor/Southern Parcel

- 8.2.1. The sole reason for refusal that issued from LCC in relation to the proposed development concerned the fact that it partially overlapped with one of the option corridors (Yellow Option) for the N24 Cahir to Limerick Junction Road Project. I also

note that this matter has been raised in a number of the submissions/observations lodged on this appeal.

- 8.2.2. In response to the LCCC decision the first party appeal makes a number of arguments. First, that the relevant LDP objective (IN 013) when framed in 2010 was referring to the relevant road route as published in 2001 and not that set out in the range of corridor options under consideration at the time of the LCCC decision on this application, furthermore, the LDP could not have envisioned the full range of corridor options under consideration as these post-dated the development plan policy, thus refusal on the basis of contravention of this objective may not be justified. Secondly, the appellant argues that it is only the southern portion of the overall development (the southern parcel) that actually overlaps with one of the route corridors (yellow corridor) and that there is an option for the Board to omit this portion of the proposal from the proposed development as it would still remain a viable solar farm with the southern parcel omitted. In this regard the appellant requests that the Board defer its decision pending the identification of the emerging preferred route corridor for the new road and in the event of this being the yellow route option, that the omission of the southern parcel from the project should be considered. Additional layout maps have been provided setting out the relevant area that could be omitted to ensure there was no overlap with a route corridor option.
- 8.2.3. The section of the existing N24 under consideration in the new road project, is between the M8 motorway, north of Cahir in Co. Tipperary, with a tie-in point in County Limerick, it also traverses Tipperary Town and the villages of Bansha, Limerick Junction, Monard and Oola (the subject Solar Farm development being located to the north of Oola). Since the decision issued from LCCC on the solar farm, the design of the N24 Cahir to Limerick Junction Road has moved from Phase 2 (option selection) to Phase 3 (Design and Environmental Evaluation). The purpose of Phase 3 is to develop the design of the Preferred Transport Solution identified in Phase 2 and to undertake an environmental evaluation of the design to a sufficient level of detail to establish land-take requirements. The preferred route option that emerged from Phase 2 was put on public display from 27th May to 17th

June 2022² (post the decision of LCCC in relation to the current proposal). It established an approx. 300m wide corridor running to the south of Oola, the existing N24, and the railway line to the south of the N24 in the vicinity of the proposed development and does not follow the yellow corridor option. The site of the proposed development is located to the north of Oola, the existing N24 and railway line and there is no overlap between the two with the preferred route option corridor being located approximately 470m southwest of the site of the current proposal at its nearest point. This corridor has been further refined in design update no. 1 which issued in January 2023 which shows a more focused 100m wide corridor established broadly centrally within the preferred option corridor in the vicinity of the proposed development. The design of the new road is being progressed within this corridor.

- 8.2.4. In consideration of the LDP policy I am of the opinion that it is in line with the principles of proper planning and sustainable development and consistent with the provisions of the LDP to protect infrastructure route corridor options in relation to new national road infrastructure. However, the preferred route which has been published and updated since the decision of LCCC does not overlap with any part of the proposed development site. It should also be noted (and is discussed further below in section 8.7 of this report) that the first party appeal documentation includes a glint and glare assessment of the various road route options, which shows that the Proposed Development will not give rise to significant adverse effects on the future road line options.
- 8.2.5. I note that the preferred route has now been published, and the public consultation period has now closed (since June 17th, 2022), and that the final route is currently being designed and environmentally assessed along a corridor that is located to the south and distant from the site of the proposed development³. The option selection report is being finalised by the design team and it is due to be published in Q1 of 2023. Accordingly, I consider that the proposed development no longer conflicts with the proposed road scheme and that as the design process of the new road has moved on since the decision issued from LCCC that the refusal reason that issued

² [N24 – N24 Cahir to Limerick Junction \(n24cahirlimerick.ie\)](https://n24cahirlimerick.ie) refers.

³ [N24 – N24 Cahir to Limerick Junction \(n24cahirlimerick.ie\)](https://n24cahirlimerick.ie)

relating to conflict with one of the route corridor options (that has not been selected) is no longer relevant.

8.2.6. Notwithstanding the above I note that the proposed new road line has not yet been approved and finalised and accordingly the Board could form the opinion that it still remains premature to grant permission for the proposed development in the absence of a finally approved road scheme. In this event, I would remind the Board that it is only the southern parcel of the proposed development that conflicted/overlapped with one of the early route corridor options and this southern parcel is severable from the remainder of the array (without loss of project-critical infrastructure) while retaining project viability. Accordingly, should the Board consider it appropriate to preserve these original options for the road corridor it is not necessary to refuse permission for the entire development. The omission of the southern parcel as set out in the amended layout drawing P20-142-0100-0110 included within the first party appeal, will ensure there is no overlap with any of the originally proposed road option corridors while also ensuring the provision of all infrastructure required to facilitate the proposed development.

8.2.7. In the event of the Board concurring with my consideration that the southern parcel of the proposed development is appropriate and will not conflict with the future road design I wish to draw further attention to field no. 7 (as numbered in the archaeological report). This is the northern-most field in the southern parcel. There remain certain issues in relation to the development of this field within the overall solar farm. There are no details provided as to how this field can be accessed for construction purposes from within the red line boundary and furthermore the existing gated access to this field does not connect to the delineated red line boundary. There may be an option for accessing this field from along its southern boundary which would necessitate the removal of extant mature hedgerow as well as traversing a drainage ditch, the details of which have not been supplied. The extant gate and access to this field (which lies outside the red line boundary of the application) was significantly wet during site visit which was carried out in generally dry weather conditions in late May. I also note that this field is the only one classified as Wet Grassland (GS4), and it could not be accessed by the project archaeologist in January due to the presence of deep standing water at the location of the extant entrance. I would therefore consider that additional study and detail of

access construction to this field would be necessary prior to a grant of permission for works at this location. Should the existing field entrance be the proposed access point this would necessitate additional works outside the extant red line boundary and further drainage requirements - the details of which have not been set out within the application documentation or assessments. These are not matters which in my opinion can be dealt with by condition and accordingly should the Board be minded to grant permission for the southern parcel of the proposed development arising from the current status of the new road line I recommend that field no. 7 be omitted from the proposed development in the interests of clarity and to ensure proper planning and sustainable development.

8.3. Biodiversity

8.3.1. Habitats

8.3.1.1. The site of the proposed development is predominantly on habitat classified as Improved Agricultural Grassland (GA1⁴) with the remainder of the site of the proposed development being proposed on Wet Grassland (GS4 – one field, no. 7 from archaeological report). There are also linear form habitats throughout the site associated with rivers (Depositing lowland river and treeline FW2 and WL2), Drains (drainage ditch - FW4), and Hedgerows (WL1). Other habitats within the site include:

- Scrub (WS1) – associated with overgrown/untouched archaeological features, which will not be impacted by the proposed development due to set back distances being employed on site,
- Recolonising bare ground (ED3), and dry meadows and grass verges (GS2), these habitats occupy the links between the central parcel and the south-central parcel, and south-central parcel to the southern parcel respectively. It is proposed that access tracks will be provided at these locations.

⁴ Fossitt, 2000 classifications used throughout.

- Two small parcels of scrub and pond (WS1 and FL8) are also present, it is proposed to retain these two pond/scrub features within the proposed development with set-backs to any construction activities.
- There is also a small pocket of conifer plantation (WD4) within the site which is proposed to be developed to provide an access track between fields 4 and 38.
- The habitat along the underground cabling between the northern parcel and the remainder of the solar farm has not been classified within the EcolA submitted, however, this is being provided along the public road corridor which satisfies the buildings and artificial surfaces habitat type (BL3) under Fossit.

8.3.1.2. Of the habitats on site, I consider the most important in relation to local ecology to be those associated with hedgerows, rivers/drainage ditches, scrub, ponds, and treelines. The scrub and pond areas are being retained within the overall development with appropriate setbacks, while hedgerows are being preserved and augmented where possible, and riparian zones are also being respected and augmented where practicable. Where drains or watercourses are proposed to be crossed, the CEMP and application documentation provides for a suite of mitigation measures to minimise potential impacts. The other main habitat affected (Improved Agricultural Grassland) is predominantly highly managed and present areas of low-ecological value which are species poor. I have previously recommended that the field of Wet Grassland habitat be omitted from the scheme, however, I note that while there is a larger portion of reeds within this area the field is also subject to grazing and is managed for agricultural purposes. I note that both wet grassland and improved agricultural grassland areas may be of import to local avifauna and small mammals as foraging habitat, however, due to the nature of the proposed development, I consider that this value will be largely retained arising from the site management process proposed during the operational period and the predominantly reversible form of the proposed development.

8.3.1.3. No protected flora or annex I habitat has been identified on the site of the proposed development and having completed a site inspection and reviewed the submitted

documentation I consider that the surveys conducted are sufficient to fully inform a decision in this instance.

8.3.1.4. In relation to treelines and hedgerows there are approximately 20,170m of hedgerows throughout the site, with c.350m of hedgerow proposed to be removed to accommodate entrances and access tracks. The detailed landscaping scheme/mitigation plan shows that the proposed development will enhance approximately 7,600m of the extant hedgerows and plant approximately 1,000m of new hedgerow as well as providing wildflower meadows and scattered tree planting throughout, this will result in improvements and active management as well as the retention of hedgerows and trees. I consider this to be of an overall net gain for local ecology and habitats arising from the proposed development.

8.3.1.5. Giant Hogweed has been recorded on the banks of the Dead River, and an Invasive Species Management Plan (ISMP) has been included within the application documentation (Appendix C of the EcolA refers). The ISMP has identified stands of Giant Hogweed in the northern parcel and sets out appropriate mitigation measures to eradicate these extant stands. Furthermore, all on-site machinery will be certified and monitored to ensure further spread throughout the site does not arise during construction. The ISMP also states that invasive species monitoring will be carried out in years 1, 3, and 5 of the operational phase of the project and that ongoing maintenance measures and landscaping will be informed by the results of these surveys. I consider that such monitoring and further control of any invasive species are appropriate. In this regard, I note that the suitable targeted herbicide treatment of invasive species, where appropriate, is a long-term process that requires revisiting for many years to prevent regeneration and ensure effectiveness. I also agree with the Planning Authority in that the method of control of the Hogweed should be agreed in advance of construction. Accordingly, I recommend in the event of favourable consideration of this appeal that the Board require any future proposed development to be subject to the provisions of the Invasive Species Management Plan (ISMP), and that the monitoring for (and continued control of invasive species if necessary) be carried out in order to ensure the continued application of appropriate mitigation measures and control any invasive species throughout the site which may arise.

8.3.1.6. In conclusion, in relation to habitats, having considered the nature of the proposed development, the subject site and the application documentation I consider that the proposed development is being proposed in a robust environmental location and it will not give rise to significant adverse impacts on any unique habitats of ecological significance either during the construction or operational phases. Construction activities will cause changes however, the habitats of local ecological importance (hedgerows/treelines/ponds) are being retained and will be augmented through additional planting, while site management during the operational phase will result in a reduced intensity of grazing and agricultural activities/interventions. I also consider that there will be reduced potential impacts arising from the decommissioning phase when compared to the construction phase due to the nature of works to be carried out. In this regard I recommend that a decommission phase of works and programme be submitted for the written agreement of the Planning Authority in advance of any construction activities, to ensure appropriate care is taken during that phase of the Proposed Development.

8.3.2. **Aquatic Ecology**

8.3.2.1. In relation to aquatic habitats there are a number of watercourses on or in the vicinity of the site (the Dead River, Garryfrask Stream, Ballyvalode Stream, Portane Stream, Oolahills Stream, Oolahills West and Garryduff Stream), all of which ultimately feed into the Mulkear River. The watercourses on site are of varying quality and importance in relation to fisheries and aquatic ecology, however, from review of the application documentation and site inspection I consider that the design of the proposed development and construction practices adopted will afford sufficient protection to all watercourses from adverse impacts arising from the proposed development.

8.3.2.2. During the construction phase there is potential for impacts on watercourses to arise via sediment release from excavations in works areas, hydrocarbon/concrete spillage or inappropriate concrete washout. These risks could be exacerbated where watercourse crossings are proposed. The CEMP and Aquatic Ecological Impact Assessment (AEcol) submitted provide a comprehensive suite of mitigation measures to be applied during the construction period, these include specific measures to be adopted with the agreement of Inland Fisheries in relation to the

watercourse crossings, minimising instream works to those strictly necessary, (and being subject to detailed mitigation measures) and bridges being constructed using pre-cast slabs in lieu of poured concrete.

- 8.3.2.3. The development as proposed includes a minimum set back of 20m from the Dead River, 10m setbacks from the Oolahills stream and 5m setbacks from other minor internal watercourses. These buffer areas are proposed to be managed and maintained with perennial grasses, wildflowers, and planting of native trees where appropriate to enhance the riparian zone and provide additional filtering areas between the proposed development and watercourses.
- 8.3.2.4. Construction phase mitigation to protect water courses are set out in the PER (table 7.2 of the PER refers) and AEcol (table 5.1 of the AEcol refers), the mitigation measures (which include controlled timing of specific works, provision of notice to IFI, monitoring by Ecological Clerk of Works (EcoW), management of excavations, removal of suspended solids, three stage treatment of water in the drainage system, concrete management, and management of refuelling procedures) will provide fisheries protection, control the loss of sediment, provide for attenuation of runoff and solids settlement, avoid concrete loss to water and avoid hydrocarbon loss. I consider the suite of mitigation measures proposed to be appropriate and their implementation will ensure the protection of watercourses and aquatic ecology. I therefore consider that the proposed development will not have an adverse impact on aquatic ecology during the construction phase.
- 8.3.2.5. The less-intensive use of the lands during the operational period (vegetation management by low intensity grazing) will ensure there is no soil disturbance during the operational period. Furthermore, the CEMP clarifies that water only will be used for cleaning of the panels and accordingly no detergents or chemicals are necessary. I am satisfied on the basis of the documentation submitted and the nature of the proposed works that the development as proposed will not give rise to significant adverse impacts on aquatic ecology during the operational phase.
- 8.3.2.6. The decommissioning phase will require certain works/activities, but these will not be as significant as those required for construction and similar mitigation measures will ensure that significant adverse impacts will not arise, notwithstanding this

however, I recommend that a decommissioning plan be agreed prior to the commencement of development, in the event of favourable consideration.

8.3.3. Avifauna

8.3.3.1. Site survey identified 4 bird species from the Amber list and one (Snipe) on the red list (as designated in the Birds of Conservation Concern in Ireland) during site walkovers. The proposed development is located on habitat which is predominantly classified as improved agricultural grassland and is heavily grazed, such habitat is not suitable to support waterbirds and in my opinion their development does not represent a significant loss of unique habitat nor a significant impact on avifauna. There is one field within the site designated as “wet grassland” (Field no. 7 as identified in the submitted archaeological report), and a wintering bird survey was undertaken in February 2022 to identify any further species. No wintering waterbirds, waders or ground nesting birds were identified. The most valuable habitat on site in relation to avifauna and from review of the surveys conducted are the treeline and hedgerow habitats. These are to be retained insofar as practicable and augmented and improved through the provision of a landscaping mitigation plan. The submitted PER notes that “where feasible” no scrub clearance tree felling, or other removal of vegetation will occur during the bird nesting season (1st March to 31st August). I consider that in the interests of minimising impacts on avifauna that in the event of favourable consideration scrub clearance and tree felling and/or other removal of vegetation should be strictly conditioned to only occur outside the bird nesting season as there is no necessity for these activities to occur within the season.

8.3.4. I do not consider that there is significant risk arising from the “lake effect”, (whereby reflective solar panels are mistaken for a waterbody by water birds) in the case of the current development, due to its location distant from significant waterbodies and its setting within a landscape of improved agricultural lands. Furthermore, the proposed development does not give rise to the need for additional overhead power lines. I am therefore of the opinion that the proposed development will not give rise to significant adverse effects on Avifauna.

8.3.5. Fauna

- 8.3.5.1. Drainage ditches and ponds on site provide suitable habitat for amphibians. The proposed development maintains separation distances to watercourses/drains and is retaining two ponds on site. Additional planting in riparian zones is also proposed, I therefore consider that the proposed development will not have an adverse impact on amphibians.
- 8.3.5.2. A badger survey was carried out on the site of the proposed development over 3 days in September 2020 (the LCCC internal environmental report incorrectly concludes that a badger survey was not carried out). While Badger have been recorded in the vicinity of the site, no badger setts or other evidence/signs of badger activity were identified on site during the survey. As Badger have been recorded in the vicinity of - but not on - site, combined with the fact that project fencing has been designed to facilitate mammal access at regular intervals I consider that the development as proposed will not have an adverse impact on badgers. In the event of the Board considering a grant of permission in this case, however, having regard to the ten-year duration of the sought-after permission and the relative frequency of new badger sett-construction, I recommend that a further survey be carried out in advance of construction to re-confirm badger presence/absence and in the event of a new sett or paths/features being identified appropriate set-back and mitigation being applied to avoid any potential construction impacts.
- 8.3.5.3. Otter has been recorded in the wider area, however, no signs of otter activity were recorded on the site of the proposed development, although I note on-site minor streams may support commuting/foraging. The poor fisheries potential of the watercourses at the site suggest that they would not provide a steady food source for otter. The proposed development is designed to minimise impact on watercourses and drains by design and takes all reasonable measures to ensure water quality will not be adversely affected. On this basis and in consideration of the application documentation submitted I do not consider that the proposed development will have an adverse impact on otter or otter commuting/activity.
- 8.3.5.4. In relation to bats the on-site features that are of primary importance are the hedgerows and treelines that offer commuting and foraging opportunities. The only on-site features which were considered to offer potential moderate suitability for roosting bats are 5 no. mature trees in the southern and south-central parcel

(although no evidence of bats were recorded on inspection/survey). There are no works proposed to these trees and they are to be retained at the site. The site and its associated hedgerows are of moderate suitability for commuting and foraging bats, in this regard I note that the hedgerows will be predominantly retained and augmented. I am aware that that some portions of hedgerow/treelines will be removed (to provide access etc.) within the proposed development, however, these are not significant and on the basis of the documentation on file I consider that the proposed development will not have an adverse impact on bats.

8.3.5.5. I note that the presence of other species cannot be completely ruled out, (albeit site surveys did not identify their presence - i.e. Red Squirrel, Hedgehog, Pine Martin), however, having regard to the nature of the majority habitat on site (predominantly highly managed improved agricultural grassland) and given the nature of the proposed development (solar panels), combined with the fact that hedgerows and mature planting will be retained and augmented throughout the site, and long grass conditions will be encouraged under the proposed panels, I consider that the Proposed Development will not have an adverse impact on fauna, provided the mitigation measures set out are implemented in full.

8.3.5.6. The application documentation and project design incorporate various ecological enhancement opportunities (Section 6 of the Ecological Impact Assessment Report refers). These include:

- the detailed landscaping and planting measures set out in the application drawings,
- Hedgerow management (cutting on a three-year cycle in lieu of annually),
- Site to be subject to sheep grazing at a low stocking rate so grassland obtains structural diversity, and
- Provision of structures/features (hibernacula – [rock, log, and stone piles to provide suitable hibernation locations for reptiles/amphibians], log piles/bug/bee hotels for invertebrate habitat, bat, and bird boxes.

In the event of the Board granting permission in this instance I recommend that the provision of the items listed in Section 6 of the EcoIA be included as a condition of the construction and operational processes.

8.3.6. Conclusion on Biodiversity.

- 8.3.6.1. Arising from my consideration of habitats, aquatic ecology, avifauna, and fauna set out above, I consider that the proposed development is appropriate at this location and construction, operational and decommissioning activities can be adequately managed with appropriate mitigation applied to ensure that significant adverse effects do not arise.

8.4. Duration of Consent and Operational Period.

- 8.4.1. A ten-year permission is sought for the solar farm and a 35-year operational period. It is considered that these timeframes are acceptable and appropriate having regard to the nature and scale of the proposed development. In the event of favourable consideration the solar farm will have to undertake further engagement with ESBN/Eirgrid, financing and the financial support/auction mechanisms before it could be implemented. A ten-year permission is therefore considered appropriate as these issues generally complicate and prolong the delivery of renewable projects. I also consider the proposed 35-year operational period to be appropriate, having regard to the technological improvements in the industry, the longevity of the panels, the minimal maintenance required, and the identified need to secure long-term replacement of carbon intensive fuels in energy generation. Any consent in relation to the proposed development should include an appropriate decommissioning condition in the interests of orderly development and to ensure that in the event of cessation of operations the site is reinstated.
- 8.4.2. In recommending both a 10-year operational period and 35-year operational period I note previous decisions by the Board which have also permitted permissions and operational periods of this length:
- ABP 305953-19, solar farm in County Kildare.
 - ABP 306065-19, solar farm in County Wexford.
 - ABP 309401-21, solar farm in Co. Meath.
 - ABP 311760-21, solar array in Co. Meath, and
 - ABP 312288-21, Solar farm in Co. Kerry.

8.5. Construction

- 8.5.1. The construction period for the Proposed Development is estimated to be approximately 19 months, and 3 no. temporary construction compounds will be provided (one each in the northern, central, and south-central parcels), each of the compounds are located remote from residential properties and any environmentally sensitive areas. They will accommodate solar panels when they are no longer needed for construction purposes. The construction hours proposed in the CEMP are 07:00 to 19:00 Monday to Saturday inclusive, which I do not consider appropriate within this low noise location which has a local although dispersed population in place. Standard construction hours are generally taken as being 08:00 to 19:00 Mondays to Fridays and 08:00 to 14:00 on Saturdays, and I do not consider it appropriate to deviate from this general construction standard for a development of the nature proposed in order to protect residential amenities. I do note, however, that certain specific works or processes may require alternative timeframes to be agreed, should this be the case specific exceptions to the construction hours could be agreed with the Planning Authority in advance to ensure proper development and the protection of residential amenities.
- 8.5.2. Potential negative impacts and nuisance can arise on the local population during any construction project, however, the application of good on-site management and co-ordination of construction activities can mitigate these impacts. A Construction and Environmental Management Plan (CEMP) has been provided within the application documentation which demonstrates how the proposed development can be provided while minimising and mitigating environmental impact and protecting the amenities of the local population. The CEMP includes details of surface water management, noise, vibration, dust controls, soil, ecological, waste and traffic management, as well as reinstatement, decommissioning, environmental management, training, health and safety, emergency response plan, and also provides an outline construction methodology for the underground cabling to connect the northern portion to the central parcel. The CEMP of any project is a live document that needs to be updated as a project progresses. I acknowledge that in the event of favourable consideration a contractor will be appointed who will take over the implementation of the CEMP as part of the construction process. Accordingly, in the event of favourable consideration I recommend that the Board

include a condition requiring the preparation of an updated CEMP to be agreed with LCCC prior to commencement. The updated CEMP should incorporate all the details, methodologies and mitigation measures set out in the current application documentation as a minimum and incorporate any technological improvements or design alterations necessitated through the application of or adherence to any further conditions that may be imposed.

- 8.5.3. The construction period will result in increased traffic and noise in the locality; however, this will be short term and temporary in nature and is inevitable for any construction project. The mitigation measures and design features within the project and as detailed in the CEMP will minimise impacts and I therefore consider that while there will be impacts arising during construction that these will not be significant.

8.6. Noise

- 8.6.1. In considering the potential for noise impacts to arise the construction and operational aspects of the proposed development must be considered. The proposed development is not located in a densely populated area, however, there is an established dispersed rural settlement pattern in the vicinity of the site. A noise survey was not conducted to assess the baseline or background noise levels, however, the submitted PER has assumed a low baseline noise level in the area, (which I consider an appropriate approach) and adopted the applicable noise levels threshold limits set in BS5228-1:2009. The PER has modelled the predicted noise levels at the various locations in consideration of the likely equipment to be used in each activity (site traffic, site preparatory works, access road and drainage, solar panel foundations, installation of inverters, substation construction, internal cabling connection). The modelling results demonstrate that construction noise levels predominantly remain below the proposed $65\text{dBL}_{\text{Ae}2\text{q},1\text{hr}}$ limit adopted. I do note that exceedances may arise for short periods in relation to the trenching works required along the roadways required to connect the northern parcel to the central parcel substation. While exceedances could occur along this route, due to the proximity of dwellings to the works areas, I note that these will be short term in duration and that construction phase noise mitigation measures will also be incorporated as set out in section 10.6.1 of the PER. On this basis I am satisfied that the proposed

development will not give rise to significant adverse noise effects during the construction period.

- 8.6.2. In relation to operational noise, solar farm developments are not significant producers of noise. The main sources of noise during the operational period will be from the transformer/inverter stations throughout the site (there being no mechanical movement of the solar panels) as well as from the transformer within the substation compound (subject to the separate consent process under ABP-313667-22), and noise levels will be naturally reduced at night-time due to the nature of the proposed development. The two residential dwellings which are predicted to potentially receive the highest noise levels are located to the south of the northern parcel and east of the southern parcel with each located more than 100m from the closest proposed inverter/transformer. The predicted potential noise levels at these receptors are stated as being 43.2 and 43.1 dB_{L_{Aeq}}, respectively, which is below the daytime noise level of 45dB_{L_{Aeq}} adopted in the assessment.
- 8.6.3. I note that two permitted (but not constructed) dwellings have not been considered in the noise assessment submitted with this appealed application. These permitted dwellings (Pl. Ref.'s 21/1509 and 22/140) are located further distant from the proposed operational noise sources (i.e. from the transformer/inverter stations throughout the site) than the nearest dwellings that have been identified and accordingly I consider that the proposed development will not give rise to significant adverse noise impacts on these consented dwellings. One of the permitted dwellings (Pl. Ref. 21/1509) is located immediately south of the site entrance off the regional road into the central parcel, and it is acknowledged that temporary construction noise at this dwelling could give rise to nuisance levels during the construction period. Accordingly, in the event of favourable consideration I recommend that additional mitigation be provided along the boundary between this consented dwelling and the proposed development in the form of site hoarding should this dwelling be complete and occupied prior to or at the time of construction of the solar farm/array.
- 8.6.4. On the basis of the above, having regard to the design of the proposed development, the separation distances between dwellings and elements of the proposed development that could generate noise, consideration of the mitigation measures that can be provided during the construction period and the nature of the

proposed development I consider that the proposed development will not give rise to significant adverse effects in the area in relation to noise. I do recommend that in the event of favourable consideration that the proposed development be made subject to standard construction hours, good construction practices and noise limits to ensure significant impacts do not arise.

8.7. Glint and Glare

- 8.7.1. While photovoltaic solar panels are not a highly reflective surface, glint and glare can arise from the development of solar farms. The application documentation includes a detailed Glint and Glare Assessment (GGA) which has been further augmented by additional details in the submitted first party appeal. The GGA considers the potential of glint/glare to arise across a number of scenarios (bare-earth, with no screening, with existing screening, and with augmented screening/landscaping as proposed within the application documentation) and also considers a number of tilt angles of the panels (10, 15, 20 and 25 degrees). I note that there are no guidelines in place for the assessment of glint and glare or thresholds established in relation to acceptable levels of impact. I also note that solar arrays by their very nature do not present highly reflective surfaces, that modelling is theoretical and therefore must assume that the sun is always shining at full intensity notwithstanding the mean duration of sunshine, weather patterns, or the general climate and accordingly presents a highly conservative worst-case scenario. I also note that in the submitted GGA assessment in relation to dwellings for cases where the model calculates a maximum total of less than 5 minutes per day or where the total minutes per year does not exceed 60 a “none” impact categorisation is assigned.
- 8.7.2. In the current case the key receptors to be considered in relation to Glint and Glare can be classified into four categories - aviation, traffic (roads), transport (rail), and residential.
- 8.7.3. In relation to aviation, no submissions have been received on the file and the closest IAA aerodrome identified to the proposed development is the Coonagh flying club which is located in excess of 29km to the northwest. Informed by Irish Aviation Authority (IAA) and Dublin Airport Authority (DAA) requirements for consultation of solar for projects within 10km and 15km of aerodromes respectively,

I do not consider that the proposed development will generate glint or glare which could have an adverse effect on aviation.

- 8.7.4. In relation to traffic (roads) the glint and glare assessment/analysis has reviewed all the roads in the immediate vicinity (as well as the proposed N24 road line option corridors). The assessment of the proposed road-lines submitted within the appeal documentation shows that there is one location, P12 (on the pink route corridor option) proximate to the existing Cluggin crossroads, north of the existing railway line (and not within the corridor of the subsequently identified 100m design update corridor from January 2023 which is broadly located centrally within the former Green Corridor option in the vicinity of the Proposed Development) which has potential to experience glare (4 mins per day for 17 days of the year – end of May and Mid-July in and around 7am) should no additional screening be provided. With the introduction of the mitigation screening which has been designed into the overall scheme there is no potential for glare to arise at this location. Accordingly, I do not consider that the proposed development will have an adverse impact on the proposed new road corridor as currently identified (nor any of the previously identified corridors).
- 8.7.5. A total of three locations on the existing road network were identified as having the potential to experience glare following mitigatory screening. Two of these are on the R507 which runs roughly north/south to the west of the central parcel. These points have the potential to experience glare after the additional mitigation screening is applied, up to 40 and 93 days (for an average of 5 and 7 minutes per day) respectively. (These figures do not include periods where potentially glaring panels are within 10 degrees of the sun – as the sun will be the stronger contributor in that context). The GGA concludes that there will be no impact on this route as the potential for glare arises from panels which are offset from the direction of travel by over 20 degrees in both instances thus not impeding drivers' safe visibility of the road ahead.
- 8.7.6. The third location which could be subject to potential glint/glare arising is on a local road further west from the site (in the 10- or 25-degree tilt solar panel configurations) across 8 days of the year for up to a maximum of 2 minutes. Neither the location and/or source of potential glare is mapped for this point in Appendix D of the GGA, and there is no mitigatory design statement provided, although it is

noted that this local road is narrow and would not be subject to high-speed traffic, which I have verified during site inspection. Accordingly, having regard to the nature of the proposed development, its overall low reflectance, distances to potential source of glaring panels, transitory/fleeting and minimal nature of the potential glare, and ability to refine the proposed installation in terms of the final technology and angle frames, I do not consider that the proposed development presents a significant adverse impact to road traffic on the existing network.

- 8.7.7. There is one location on the rail line (located to the south of the N24) that has been identified which could potentially receive glare. The originating panels in this instance lie to the north of the rail line, in excess of 500m distant and are offset from the line/view of the direction of travel for the driver. This in combination with the nature of the proposed development and its low reflectance, distance to receptor and fleeting nature of the potential impact has informed my opinion that the proposed development does not present a significant adverse impact for rail travel.
- 8.7.8. In relation to residential dwellings the GGA modelling considers in excess of 135 dwellings in the vicinity of the proposed development within 1 kilometre which could potentially experience glint or glare (for clarity the dwelling numbering system runs to H362, as some dwellings within 1km were found to be outside of the areas that could potentially experience glint or glare – {particularly dwellings to the south of the proposed development} and were discounted from the need for further assessment).
- 8.7.9. Three dwellings in proximity to the proposed development have not been indicated on the application layout plans submitted. The first of these, permitted under Pl. Ref. 20/941, was under construction on site inspection and while not shown on layout drawings it has been considered in the submitted GGA (dwelling is labelled as H362). This dwelling was shown to not receive any glint/glare due to the presence of extant screening. Accordingly, and on consideration of the site layout and location of the dwelling following site inspection, I do not consider that this dwelling will be subject to significant adverse effects arising from Glint and Glare.
- 8.7.10. The second dwelling not shown on layout drawings (permitted under Pl. Ref. 18/1246 and associated garage under Pl. Ref. 21/496) is located to the east of that discussed above. At time of site inspection this dwelling was constructed. While this

dwelling was not shown on layouts it was considered within the submitted GGA as house reference H363. In the “with screening” and “with added screening” across the configurations assessed in the submitted GGA the modelling suggests that there is the potential for reflectance to occur at the ground floor of this dwelling from the solar array for a maximum of 6 minutes (25° tilt) over potentially 20 days of the year (15° tilt). This is the worst-case scenario with existing screening and would be classified as a “very low” impact under the magnitude of effects set out in table 2.1 of the GGA. There is negligible alteration to the figures in the “with additional screening” scenario. In light of the submitted assessment, and on consideration of the site layout and location of the dwelling following site inspection, I do not consider that this dwelling will be subject to significant adverse effects arising from Glint and Glare.

8.7.11. A third dwelling proximate to the proposed development is neither indicated on the application layouts nor included in the submitted GGA. This dwelling (PI. Ref. 21/1509) has been granted permission (April 2022) to the immediate south of the vehicular entrance to the central solar farm parcel, however, on inspection no works had commenced. On review of the application documents on PI. Ref. 21/1509 I note that the elevation addressing the solar farm has no upper floor windows, and that the planning application documentation (for the dwelling) provides for two rows of native hedging along the relevant boundaries which address the solar farm, furthermore the proposed development provides for additional landscaping (riparian enhancement species and advanced nursery stock) between the site of this consented dwelling and any proposed solar panels (albeit at a set-back). Accordingly, I do not consider that this dwelling will experience adverse impact from glint and glare due to the design features of the dwelling, orientation of the site, on-site landscaping consented and the design and landscaping of the proposed development.

8.7.12. A further dwelling has been permitted (April 2022) under PI. Ref. 22/140 at a location c. 170 metres west of the entrance to the central parcel and c. 590m southwest of the northern parcel of the proposed solar array. This dwelling was not assessed in the GGA. Having reviewed the design (nature of the windows facing the solar array e.g. upper floor only has a bathroom window addressing the central array area) and location of this permitted dwelling (situated to the south of the

northern parcel – which will therefore not contribute to glare), I consider that the proposed development will not have a significant adverse impact on the amenity of this permitted dwelling arising from glint/glare.

- 8.7.13. When extant and proposed screening/landscaping mitigation measures are considered (excluding the individual dwellings which I have discussed above) the submitted GGA states that there are seven dwellings which have the potential to still receive a level of glint/glare from the proposed development. Of these the potential for impacts to arise are categorised as being low (5 no. dwellings), very low (1 no. dwelling), and medium low (1 no. dwelling). The dwelling with a medium-low impact is located to the south of the northern parcel and has the potential to receive reflectance onto its upper floor primarily in the early mornings (prior to 8 am) from March to September, this dwelling does not have significant windows on its upper eastern elevation, although there are windows on its northern elevation directly addressing the solar site. Having regard to the application documentation submitted and following site inspection I do not consider that the proposed development will give rise to a significant adverse impact on the amenity of this dwelling arising from glint or glare.
- 8.7.14. I note two consented (but not yet commenced/constructed) dwellings have not been included within the submitted GGA, however, as set out above I do not consider significant adverse effects will arise on these dwellings from glint and glare from the proposed development.
- 8.7.15. Having completed a review of the planning documentation, completed site inspection, as well as on consideration of the design of the proposed development, permitted and existing dwellings in the vicinity and combined with the fact that solar PV panels are designed to not highly reflective, I consider that the development as proposed will not give rise to significant adverse impacts on dwellings in the vicinity from glint/glare.
- 8.7.16. In relation to glint and glare I note the ten-year duration of the consent that has been sought, as well as the scale of the application site and on-going farming practices being carried out which could potentially affect hedgerows as they are currently in place. The importance of the existing hedgerows throughout and along the perimeter of the proposed development site has been emphasised throughout

the submitted GGA and the importance of their retention and continued maintenance is an important factor in ensuring the protection of both the general visual and residential amenities of the area. In this regard in the event of favourable consideration I am recommending conditions to ensure that existing hedgerows are maintained and enhanced (through the proposed additional landscaping and planting). The standard condition requiring the development to be carried out in accordance with the plans and details submitted will require that the characteristics of the proposed development (i.e. height, orientation, extent etc. of the panels themselves) will be in accordance with the parameters assessed.

8.8. Residential Amenities

- 8.8.1. The proposed development is located in a rural location with a low population density, however, there is an established rural settlement pattern in the vicinity with over 350 existing dwelling houses (including the settlement of Oola) located within approximately 1km of the site boundaries. Impacts on residential amenity could potentially arise on dwellings in the vicinity from noise, construction activities, glint and glare as well as the potential impacts that could be felt from the physical and visual presence of the proposed solar development.
- 8.8.2. The majority of the dwellings in the vicinity of the proposed development are arranged along the local county and regional roads in the vicinity of the proposed development as well as along the N24 National Route (which also functions as the main street of Oola). The proposed development is provided over four separate parcels of land.
- The settlement pattern in the vicinity of the northern parcel has dwellings arranged along the local road which runs along its southern boundary. A significant landscaping/planting buffer is proposed along the southern boundary of the northern parcel where dwellings are most proximate to the proposed development. This buffer is predominantly 30m wide and provides for hedgerow maintenance/enhancement (in the height range of 3-5.5m) as well as accommodating wild grass zones interspersed with spots of woodland mix including nursery stock and native whips. The southernmost field in the northern parcel is to be left free of solar panels but will also incorporate a 10m strip of wild grass seeding. As a result of the landscaping

proposed there will be no solar panels provided within approximately 50m of any dwelling houses, and furthermore the strong mature hedgerows throughout the site and around its perimeter will be retained, managed and augmented.

- The central parcel has the R507 regional road running in a north south direction to its west, and a local road running east-west along its northern boundary. The proposed development is generally (with the exception of its vehicular access point) set back off the Regional Road, with no existing (or permitted) dwellings along the regional road being located within approximately 150m of any proposed solar panels. Hedgerow maintenance and augmentation along the existing field boundaries is proposed, with hedging being maintained/proposed in the height range of 3-5.5m. Along the county road northern boundary of the central parcel there are two existing dwellings proximate. These are numbered H305 and H362 respectively. H305 is most proximate to the proposed development and a significant planted buffer is proposed along the common site boundary to the dwelling. The hedgerow along this boundary will also be maintained and managed. Similarly the boundary of the site most proximate to H362 (dwelling under construction) is provided with riparian enhancement and a wild grass seeding area/buffer between it and any proposed solar panels. Other dwellings and farm buildings to the east of the southern parcel will also benefit from hedgerow maintenance and augmentation as well as wild grass seeded areas.
- The Central parcel also accommodates the substation, which will be one of the more visible components of the project. To the immediate north and east of the substation it is proposed to provide a significant stand of woodland mix comprising advanced nursery stock and native whips which the applicant has confirmed (in response to the FI request on the substation application) will be provided and maintained permanently in the event of favourable consideration.
- The South-central parcel does not have significant residential development in the vicinity, one dwelling (H315) is located approximately 120m to the east and is separated from the proposed development by commercial forestry.

Hedgerow maintenance and augmentation is also proposed along this eastern boundary.

- The southern parcel does not have a significant number of residential units in its immediate vicinity with dwelling no's H223 and H85 being most proximate and being offset from the site boundary by approximately 60m and 120m respectively. Hedgerow maintenance and augmentation is provided along both relevant boundaries with an additional wild grass seeded area provided to the eastern boundary closest to H223. The northern edge of the settlement of Oola lies approximately 300m to the south of the southernmost point of the site of the proposed development, this separation distance, combined with the general topography, nature of the landscape, orientation, and arrangement of buildings within Oola ensures that residential amenities will not be significantly impacted.

8.8.3. Having regard to the design of the proposed development, which provides for setbacks to solar panels where there are proximate dwellings, in combination with the significant mitigatory planting that is proposed and having regard to the nature of the proposed development (solar panels with a maximum height of 3.2m above existing ground levels), I consider that it will not give rise to significant adverse impacts on the amenities enjoyed by residents in the vicinity. I acknowledge that the proposed development will be visible from dwellings in the area and that there will be a change in the character of views of the site, however, I do not consider that views of the development will prove a significant detriment to residential amenity.

8.8.4. Matters in relation to noise, glint and glare, and construction have been discussed in greater detail previously above, and as noted I conclude that the proposed development will not result in significant adverse impacts. Accordingly, I similarly conclude that the amenity of the residential properties in the vicinity will not be significantly adversely affected. Furthermore it follows that as I do not consider the proposed development to give rise to significant adverse effects on residential amenities similarly the proposed development will not, in my opinion result in significant devaluation of property in the vicinity.

8.9. Archaeological Heritage

- 8.9.1. The application documentation includes a detailed archaeological assessment which has been informed by a desktop survey and site visits. The study area for the archaeological report comprises the lands within the red-line application boundary as well as lands within 500m of any proposed works. The archaeological assessment gave each field within the proposed development site a numerical identifier and where field numbers are referenced within this report it is consistent with the numbering system within the submitted assessment.
- 8.9.2. The Archaeological Survey of Ireland identified 34 recorded archaeological sites within the study area. Four of these are within the site, while the Zones of Notification of another four recorded sites encroach on the red line boundary. The submitted archaeological assessment also identified several previously unrecorded potential archaeological features.
- 8.9.3. The National Monuments Service – Internal Guidance Document in relation to Solar Farms (November 2016) notes that while solar developments can have large sites they present relatively low levels of ground impact and that by their very nature they also have design flexibility to avoid impacts. [This includes the ability to avoid intrusive groundworks by providing concrete “shoes” as anchoring systems for the solar panels in lieu of driven metal frames or standard foundations, as well as omitting areas of solar panels]. The guidance also notes that FI requests should not take the form of blanket geo-physical surveys across entire sites and that any such surveying and testing could be targeted and, dependent on the case, can be made subject to a condition of planning permission and/or avoidance.
- 8.9.4. The County Archaeologist (CA) sought further information seeking additional targeted geophysical surveys and archaeological testing across a number of the fields within the proposed development to further inform the final design of the proposed development. The additional surveys and assessments were sought as the CA considered that the potential archaeological resource throughout the site was too extensive and needed to be more clearly established prior to a decision issuing. Specifically, the CA requested additional geophysical investigation as well as potential archaeological testing which may require redesign on the fields identified as 1, 2, 4-8, 11, 13-15, 17, 20-22, 27-29, 30-31 and 42 within the

submitted archaeological assessment. Further discussion on these fields and their respective features of interest insofar as they relate to the proposed development are set out in Table 1 below:

Table 1: Summary of Archaeological Assessment/Findings

Field No.	Location	Summary and Assessment Commentary
1-2	North Parcel	Adjacent to identified Ringfort (LI024-061), with zone of notification of this monument extending within both these fields. Field 1 also has additional potential earthworks/cropmarks identified. The design of the proposed development maintains the identified Ringfort and zone of notification free from any proposed works. The low oval relief earthwork is at a location where a substantial landscaping buffer is being provided while the potential feature to the north of field 1 is to be subject to the provision of solar panels. I conclude that sufficient study, analysis, and project design has been incorporated at this location to recommend that a condition requiring additional geophysical and archaeological testing to inform the final design and any appropriate mitigation be attached in the event of the Board considering granting permission in this instance.
4-8	4 - South central, 5-8 in Southern parcel	<p>Field 4 has been amalgamated and historically had a small farmstead and osiery in place. Several other features with potentially high archaeological merit were also identified in field 4 (possible enclosure, possible funerary barrow activity, potentially multiple circular ring barrow features), other depression features within field 4 may be natural depressions but due to the presence of the other archaeological items of merit they cannot be dismissed without further study. On review of the application documentation and the layout of the proposed development I consider it necessary to ensure additional pre-construction geophysical and archaeological testing in Field 4 to ensure appropriate archaeological mitigation is incorporated into the final design</p> <p>Fields 5 and 6 are proposed to be traversed by an access track (which - though rarely used and overgrown at time of site inspection – remains in place) and an enclosure is identified in the northwest corner of field 5. Neither this feature nor its surrounding zone are within the red line planning application boundary, as the works in this area consist of the upgrading of an existing track, I recommend that the proposed within these fields is appropriate provided archaeological monitoring of any groundworks is carried out.</p> <p>Field 7 was found to have “heightened potential for the presence of burnt mound type activity” within the archaeological assessment submitted and was recorded as being inaccessible to the archaeologist at the second site visit. Solar panels are proposed within the entirety of this field under the current proposals. Due to the uncertainty provided in the archaeological report, combined with access issues and points raised previously in section 8.2 of this report, I consider that further detailed survey and study of this field would be required prior to a decision being made in relation to the suitability of this field to accommodate development (furthermore I am recommending that this field be</p>

Field No.	Location	Summary and Assessment Commentary
		<p>omitted from the proposed development for reasons previously outlined at 8.2.7 above)</p> <p>There are 4 no. items of interest in relation to field 8, two recorded ring barrows and the zones of notification of a further two ring barrows. These features and their zones have been buffered out from any proposed development and therefore I am satisfied that from an archaeological perspective additional geophysical survey and testing as appropriate should be carried out to proof the final design and ensure adequate mitigation is applied as necessary.</p>
11	Southern Parcel	<p>This field has a possible circular crop mark within the interior as well as a number of linear features visible on aerial image, and three roughly circular mounds are evident in a triangular formation. This field has archaeological potential and accordingly in the event of favourable consideration additional geophysical survey and testing as appropriate should be carried out to proof the final design and ensure adequate mitigation is applied as necessary</p>
13 - 15	Southern Parcel	<p>Field 13 has an identified enclosure and its attendant zone of interest. The solar panel layout avoids the provision of infrastructure within this area. A potential "D" shaped enclosure was also identified along the north-western boundary of this field.</p> <p>Field 14 – zone of notification for two ring barrows (located to the south outside the red-line boundary) comes into this field and all proposed infrastructure is kept outside of these zones.</p> <p>Field 15 – no potential features have been identified; however, the archaeological report considers that it has a heightened potential for the presence of burnt mound type archaeological activity.</p> <p>Fields 13, 14 and 15 have solar panels arranged throughout (with the exception of the areas already identified as being within a zone of notification of archaeological features) as part of the proposed development.</p> <p>Having considered the reporting and extant features identified in the vicinity I am satisfied that in the event of favourable consideration prior to commencement geophysical and archaeological testing could confirm the extent and nature of the development permissible within these field boundaries and to provide updated mitigation if necessary.</p>
17	Southern Parcel	<p>Field 17 is considered to have heightened archaeological potential due to the landform and presence of features in the wider area. This field is proposed to accommodate solar panels throughout. In this regard I would only be satisfied to recommend development to proceed at this location in the event of further geophysical study and archaeological testing to confirm/proof the final design and mitigation.</p>
20 - 22	Northern Parcel	<p>Field 20 – low relief undulations are evident on this field; however, they appear to be of natural origin. Solar panels are proposed throughout.</p> <p>Field 21 – similar to field 20, low level undulations are present which appear to be of natural origin. Solar panels proposed throughout.</p> <p>Field 22 – similar to fields 20 and 21, with low level undulations, however, with the presence of watercourses there is a heightened</p>

Field No.	Location	Summary and Assessment Commentary
		<p>potential for these to be related to burnt mound archaeological activity.</p> <p>I consider that the detailed design of the proposed development/layout within fields 20 and 21 should be informed by further geophysical survey and archaeological review to inform appropriate mitigation as necessary prior to any construction activity.</p>
27-29	Central Parcel	<p>No recorded archaeological features have been identified in these fields; however, certain topographic features could have an archaeological origin. There is a small rectangular earthwork at the centre near the northern boundary of field no. 27 which may have an archaeological origin, and there is a heightened potential for the presence of burnt mound type archaeological activity in fields 28 and 29. Accordingly I would recommend that further survey and testing inform the final design in the event of permission being considered. It should also be noted that the substation element of the proposal (which is subject to a concurrent S182A application to the Board) is located in field 29 with solar panels and associated infrastructure proposed in field no.'s 27 and 28.</p>
30-31	(30 not within red line application boundary) 31 Central parcel	<p>No works are proposed in field no. 30, and it is not within the red line boundary of the current appeal site. Field no. 31 has frequent low relief undulations which could potentially have archaeological origin, albeit the archaeological report considers that for the most part they appear to be natural. Accordingly, in my opinion further survey and testing should be conditioned to inform the final design of the solar panels in field 31.</p>
42	Central Parcel	<p>Solar panels are proposed throughout this field apart from at the location of an extant pond/water feature, to the east of this there is a potential archaeological feature. I am of the opinion on the basis of the information submitted that in the event of favourable consideration further survey and archaeological testing should be conditioned to inform the final design of solar panels at this location.</p>

- 8.9.5. Further to the above should the Board grant permission for the proposed development I recommend that geophysical survey and additional testing be conditioned within these fields to determine effective design and/or proof of mitigation as appropriate.
- 8.9.6. As evidenced in the layouts provided and documented in the archaeological assessment included within the application documentation submitted, the overall design of the proposed development has been fully informed by the archaeological context, with any areas of recorded sensitivity being omitted from works areas. The application and first party appeal documentation submitted commits the applicant to carrying out additional geophysical and archaeological trench testing to further

inform and confirm archaeological mitigation measures and confirm the development design. I note that in areas of potential archaeological sensitivity mitigation by layout design (avoidance) and construction design (deployment of concrete shoe supports for solar panels in lieu of earth piling or screws) can be implemented. Furthermore, the solar panels are not proposed as a permanent feature as they will have an operational lifespan of 35 years (unless a further consent is sought and permitted).

- 8.9.7. In relation to archaeology and in consideration of the application documentation and archaeological guidance, I conclude that the proposed development is appropriate provided that the final design and mitigation measures are fully proofed through carrying out additional geophysical testing, which will inform further archaeological test trenching in field no.'s 1, 2, 4, 5, 6, 7, 8, 11, 13, 14, 15, 17, 20, 21, 22, 27, 28, 29, 31 and 42. (As field no. 30 lies outside the red line boundary of the current application it is not included within the additional archaeological surveying being recommended). I further note that the Board have adopted similar approaches in relation to other solar projects for example ABP-302475-18, ABP-305953-19 and 311760-21. (The Board should note in my recommended conditions below I have not specified additional archaeological review of field no. 7 as my recommendation is to omit this field from the proposed development. Should the Board consider development in this field to be appropriate then field no. 7 should be included in the archaeological condition. Furthermore, the Board should note that field no.'s 7, 8, 13, 14, 15, and 17 are in the southern parcel, should the Board require the omission of the southern parcel for road corridor reasons, these fields will not require further investigation.)

8.10. Visual Impact

- 8.10.1. A Landscape and Visual Impact Assessment (LVIA) has been provided within the application documentation, furthermore, a detailed landscape mitigation plan which provides for additional maintenance and augmentation of the existing mature hedgerows throughout and within the proposed development site has been included within the project design. The site of the proposed development is located within the "Agricultural Lowlands" LCA as designated in the LDP. This is the largest LCA in the County and is characterised by its mature hedgerows and its agricultural

activities. The overall landscape at this location is rural in character and the predominant landuse is pastoral agriculture, although there are established plantations of commercial forestry in the immediate vicinity of the proposed development. The specific objectives of the LDP in relation to the Agricultural Lowlands of relevance include encouraging the retention of existing landscape features such as hedgerows and trees and their incorporation into landscaping for new developments as well as discouraging development of locally prominent sites.

8.10.2. Although the entirety of the proposed development is located within the functional area of Limerick City and County Council, I note that the site is located approximately 1 kilometre to the west of the county boundary with Tipperary. From review of the landscape character assessment contained within Tipperary's 2022 County Development Plan, the most proximate LCA in Tipperary to the site is the "River Suir Central Plain" within the "Plains" landscape archetype. This LCA has a dominant sensitivity rating of "Class 1 – Normal", which is described as a working landscape with no sensitivities and established patterns of use and settlement. The proposed development is not proximate to any designated scenic views or routes identified within the Tipperary County Development Plan.

8.10.3. The site gives the impression of being flat, however, there are gentle undulations throughout, these undulations in topography are localised and could not be considered to represent ridges or higher ground within the landscape. In general, the landform rises to the south of the site (Oola Hills – approximately 200m to the south-west) with the higher Slieve Felim mountains rising further to the north. The site itself constitutes a generally low-lying area with significant screening in place in the form of the mature hedgerows and ditches which are characteristic of the landscape. There are no protected views or visually sensitive landscapes, the closest being approximately 12km northeast (from just outside Moroe). In my opinion the landscape is a working agricultural landscape with a typically rural settlement pattern, it is a robust landscape in terms of visual sensitivity.

8.10.4. The LVIA includes a zone of theoretical visibility (ZTV) map for 5km around the proposed development which is based on a bare earth (worst case) scenario where localised screening and features are not included. A Digital Surface Model (DSM) is also included which provides a finer grain analysis within 1km of the proposed development. The DSM takes into account existing elements such as buildings and

hedgerows and is more reflective of the actual situation on the ground as confirmed during site inspection. Within 1km of the site the DSM models demonstrates that (with the exception of parcels of higher ground to the southwest) from the vast majority of the study area where views of the proposed development will be achievable it will only be possible to view 1-20% of the solar panels. Furthermore, the DSM clarifies that there will be no visibility of the proposed development from the settlement of Oola.

8.10.5. The LVIA also provides 17 photomontages which show the existing landscape and the proposed development both with and without the mitigatory planting being incorporated. Viewpoints selected are proximate to the proposed development and highlight the low-profile nature of the proposed development, the effective screening that can be provided through the maintenance of existing field boundaries/hedges, and how this can be augmented through the provision and maintenance of the landscaping scheme that has been developed for the site. I consider that the viewpoints selected are appropriate and provide a suitable range of vantage points for the purposes of informing the consideration of the potential visual impacts.

8.10.6. In consideration of the viewpoints the LVIA concludes that in the pre-mitigatory planting scenario significance of the visual impact is, imperceptible from 2 no. viewpoints (12 and 17), slight-imperceptible in relation to 2 viewpoints (7 and 11) slight in relation to 5 viewpoints (1, 3, 5, 13, and 16), moderate-slight in relation to 6 viewpoints (no.'s 2, 4, 6, 8, 9, and 10) and moderate in relation to 2 viewpoints (14 and 15). Viewpoints 14 and 15 are taken from the higher ground to the south of the proposed development. In a post mitigation planting scenario all impacts are reduced with the most significant impacts (no. 14 and 15) being considered moderate-slight. Having reviewed the application documentation and completed a site inspection I consider the findings of the LVIA to be reasonable and I am in agreement with same having regard to the site context and the characterisation of visual impact.

8.10.7. I acknowledge that the proposed development will be introducing a large-scale built form of development into the landscape that was not previously present, however, following site inspection and on consideration of the character of the landscape, application documentation and mitigatory planting proposed I am of the opinion that

the solar farm will not be visually dominant, nor will it present a significant visual intrusion at this location. There are certainly areas from which the solar panels will be visible, but due to the limited height of the panels (maximum 3.2m), the nature of the site (generally flat with local undulations but set at a low elevation) the significant visual screening that is in place in terms of existing hedgerows and the detailed mitigatory landscaping that is incorporated into the design⁵, I consider that the proposal will not have an adverse visual impact on the landscape, the amenities of the area or the established character and is an appropriate form of development at this location.

- 8.10.8. The application documentation provides for significant planting and screening to be provided and in the event of favourable consideration I would recommend that conditions be imposed to ensure implementation and maintenance of the landscaping and planting scheme for the duration of the operational period.

8.11. Substation

- 8.11.1. The substation and 110kV works required to provide the electrical connection from the solar array to the national grid are not included within the scope of the current planning application. These elements have been subject to pre-application consultations with An Bord Pleanála under the provisions of ABP-308422-20, who determined by letter dated the 22nd of February 2021 confirmed that the substation and associated works connecting to the extant overhead line fell within the scope of S182A of the Planning and Development Act. As required, the applicant has lodged a separate application under Section 182A directly with An Bord Pleanála (ABP-313667-22 refers) which is under the concurrent consideration of the Board. This appeal application contains details of the substation insofar as they are relevant to the consideration of the current application for the solar array, in terms of its location, nature and details, all have been cumulatively considered as part of the overall proposed development as necessary, so all potential impacts have been considered.

⁵ Comprehensive landscape mitigation plan is detailed on drawings LD.BLYVLD1.1, 1.2, 1.3 & 1.4, which will be implemented using hedgerow types 1 (underplanting and inter-planting of existing hedgerows), and 2 (introduction of new boundary planting) with use of indigenous species mix.

8.12. Drainage/Flooding

Surface Water Drainage

- 8.12.1. The site of the proposed development is within Hydrocatchment Area No. HA 25D - Lower Shannon, and within the Mulkear (Northern, most of Central and part of the South-Central Parcels) and Dead (Southern, most of South Central and small part of central Parcels) sub-catchments. The Garryfrask stream runs along the eastern boundary of the Northern parcel while the Dead River runs along its northern boundary. The Garryfrask and Ballyvalode streams extend into the Central Parcel, while the Portane stream extends to the south-central parcel. The Southern Parcel is drained by the Garryduff stream, and Oolahills (also known as the Moanoola) River, all of which ultimately drain into the Dead River which is itself a tributary of the river Mulkear. The Mulkear (Limerick) _010 river and the Garryfrask stream are classified as having a status of “Not at Risk”⁶, while the Dead River catchment draining the southern and south-central portions of the proposed development have been identified as “At Risk” and having a “moderate” status.⁷ The significant pressure on this catchment arises from agriculture and domestic wastewater. The proposed development will reduce the intensity of agricultural practices throughout the site and does not provide for any on-site wastewater treatment (the substation application will provide a monitored sealed tank for foul drainage and is subject to a different application).
- 8.12.2. Design measures have been incorporated to ensure adverse impacts do not arise on surface water. From review of the application documentation the proposal has been designed to minimise the potential for impact by providing set-backs from watercourses and incorporating silt fencing protection measures as appropriate. Construction and on-site drainage design provide a good practice suite of mitigation measures including settlement ponds, silt fencing/traps, sensitive construction techniques where watercourse crossings are required, interceptor cut off drains and diffuse outflows. The proposed development will not increase the rate of discharge from the site because there are limited impermeable areas being provided, access tracks will be made from permeable material, and the solar panels orientation and

⁶ 3rd Cycle Lower Shannon and Mulkear Catchment Report (HA 25D), EPA, August 2021

⁷ Ibid

design features will allow rainwater to continue to penetrate to the land over a dispersed area. Furthermore, the promotion of long-grass conditions and vegetation under the panels will limit surface water flows across the site and promote infiltration.

- 8.12.3. In relation to surface water run-off, having regard to the site conditions, and following review of the application drawings I am satisfied that the proposed solar farm/array will not give rise to any significant adverse impacts, furthermore the proposed development will result in a reduction in intensity of agricultural practices throughout the site which will reduce the pressure arising on this water sub-catchment from such activities. Should the Board be minded to grant permission in this instance I would recommend the inclusion of the standard CEMP condition to ensure that the appointed contractor agree the final details of the location and range of specific drainage design features be agreed in advance of construction.

Groundwater

- 8.12.4. The groundwater vulnerability under the site is classified predominately as being of “Low vulnerability”, with other areas designated as being of “Moderate”, “High” and “Extreme” vulnerability. The proposal solar farm is a low impact form of development with shallow excavations which are proposed in predominantly improved pastoral lands. There are no exposed bedrock or karst features in areas where works are proposed. I note that there are two ponds in localised depressions in the south-central parcel, which may be local expressions of groundwater with some exposed bedrock at lower levels. These are to be retained as ecological features and fenced-off from livestock with an appropriate set back/buffer to works areas and accordingly I do not consider that there is any significant risk arising to groundwaters from the proposed development.

Flooding

- 8.12.5. The majority of the site and most significant pieces of infrastructure are located within Floodzone C. Small portions of the site in the northern and southern portions have been identified as being at risk of flooding i.e. within Floodzone A/B. Where infrastructure is proposed within such areas access tracks are at existing ground level to ensure impacts on flow pathways are not affected and panels are to be provided at appropriate levels to ensure that a minimum freeboard of 0.3m above

the 1% Annual Exceedance Probability (AEP) of the Mid-Range-Future Scenario (MRFS). I consider the provision of solar panels in floodzone areas A/B as being a water compatible/non-sensitive usage due to the design adopted which will ensure that solar panels are provided at a level above any modelled flood level (providing for climate change) and should flooding occur the only infrastructure affected would be the support frameworks. Critical pieces of infrastructure such as access roads, (and substation - which forms part of a separate application) are located within floodzone C which I consider to be appropriate for access, maintenance and emergency purposes. In relation to this issue I note that my consideration of the panels being water compatible/non-sensitive uses is consistent with the Boards approach to other solar farms where solar panels have been permitted within flood zones (ABP-305992-19 Co. Westmeath, ABP-301994-18 Co. Cork and ABP-311460-21 Co. Meath, refer).

- 8.12.6. Three of the proposed watercourse crossings are located within the 1% AEP flood extent, these have been designed to ensure no impact arises on extant/predicted flood extents. The design of the proposed development and levels provided/proposed have taken into account predicted climate change factors. The Planning Authority's Planning, Environment and Place-Making (PEMP) (Flooding) Section have not raised any objection to the proposed development. Accordingly, on the basis of the information on file and following site inspection, I consider that the proposed development is appropriate at this location, is in accordance with the floodrisk guidelines and will ensure that there is no loss of flood storage. In this regard I note that the application documentation commits the applicant to carry out regular maintenance to avoid vegetation and/or material build-up around support structures within flood zones A and B is carried out, this will further ensure that any extant flood flow paths are not altered and no adverse impact will arise on adjoining lands. This inclusion of the standard condition requiring development to be carried out in accordance with plans and details submitted will ensure implementation of this measure.

8.13. Site Access and Roads

- 8.13.1. The first party appeal submitted contains additional detail in relation to the roads and access issues raised by the Roads Section of LCCC. Adequate sightlines (of

90m onto the Local Road and 160m onto the regional road and stopping distances) have been provided. The applicant has not carried out detailed topographical surveys of the road as they consider the available mapping sufficient considering the nature of the roads and their vertical and horizontal alignment. Following sight inspection and on review of the submitted documentation I am satisfied that the appropriate sight lines are available, can be provided and maintained. I also note that a dwelling house has been consented immediately south of the site entrance to the central parcel off the regional road (Pl. Ref. 21/1509), this does not impact or infringe on sight lines. The applicant has confirmed that the sightlines are all within the public roadway or on lands that are either in their ownership or control. I consider the requirement of the planning authority to set back service poles behind the clear sight distance triangle to be reasonable as there are poles in place along this frontage, accordingly I recommend that this measure be conditioned in the interests of traffic safety in the event of favourable consideration from the Board.

8.13.2. The appeal documentation confirms that the applicant will upgrade the surfaces of the public roads for 15m on each side of the access points with appropriate Hot Rolled Asphalt (HRA) in accordance with LCCC roads requirements and the relevant recommendations for site development works and NRA specifications. I consider this acceptable and will ensure construction turning movements will not physically impact on the extant road network.

8.13.3. In relation to the underground electrical connection from the northern parcel to the rest of the site I consider the information supplied to be adequate to inform a decision. The underground cabling proposed along the roadway at this location is common throughout the country. The submitted CEMP and application documentation provides a detailed methodology for construction and mitigation measures. In the event of favourable consideration of this appeal it will be necessary to undertake a detailed road opening licence application process at which time the Roads Section will be provided with additional detail in relation to any proposed cable trenching along the public road. However, I consider that the construction practices and methodologies set out in the application documentation provide adequate information to inform the planning decision in this regard.

8.13.4. The appeal documentation includes details of the road widths within the autotrack modelling that has been submitted which demonstrates that construction vehicles

can safely and adequately access the site. On review of the information lodged I consider that the applicant has demonstrated that the site can be adequately accessed by construction traffic, furthermore I note the delivery/haul route details provided in the CEMP and PER and am satisfied that the construction activities can be carried out without significant adverse impacts on the road network or road users. Should the Board consider granting permission for the proposed development I recommend that the provision of a detailed traffic management plan be required prior to commencement in order to ensure impacts are minimised insofar as practicable during the construction phase particularly in relation to the 10-year duration of the permission being sought.

8.13.5. In relation to water crossings, the application and appeal documentation contains comprehensive details of the approaches and methodologies being adopted to facilitate construction. The appeal documentation also clarifies that where crossings are required in relation to watercourses in the control of the OPW section 50 applications must be sought. I consider this approach acceptable and in accordance with best practice.

8.13.6. In relation to construction traffic the application documentation has specified the construction haul route which predominantly uses the national (N24) and regional (R507) road networks. A small portion of the local road L5040 will be used to gain access to the northern parcel. The average traffic movements associated with the 19-month construction period (both HGV and LGV incl. lunch break traffic etc) have been estimated as follows:

- 42 (rising to 55 at peak) average daily increase for the northern parcel (considering an average workforce of 14 people)
- 62 (rising to 84 at peak) average daily increase for the southern parcel (considering an average workforce of 17 people) and
- 30 (rising to 35 at peak) average daily increase for the internal network cable parcel (considering an average workforce of 10 people)

In total it is estimated that the project will give rise to an additional 5,884 HGV loads (11,767 HGV round trips to site). I consider the access/haul route to be both robust and sufficient to accommodate the construction, operational and decommissioning traffic proposed subject to the requirements of a traffic management plan,

specifying standard construction hours being applicable to deliveries and the provision/agreement of a traffic management plan. In the event of favourable consideration I recommend that construction traffic access the site strictly in accordance with the haul route as set out in the application documentation.

8.14. Other issues

- 8.14.1. In relation to public engagement while observers have raised concerns in relation to this, I note that there is no legal or legislative requirement for the applicant to engage in discussions prior to the lodgement of a planning application and that the planning application process itself has facilitated wide engagement with and by third parties. While observers have noted their dissatisfaction with the level of public engagement, third parties have not been precluded from engagement in the process as evidenced in the observations and submissions that have been made to the appeal and the planning file.
- 8.14.2. LCCC stated that the application documentation did not provide any detail in relation to Electromagnetic fields and this matter has also been raised in third party observations. Electromagnetic fields (EMF) are produced by all electrical equipment and the EPA confirms that there is no scientific evidence that exposure to low levels of EMF of any frequency causes damage to human health⁸ and that current scientific evidence does not support long-term health effects due to exposure to high or low frequency EMF. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) regularly issues recommended exposure levels, and the electrical works proposed will be subject to the standard health and safety requirements and technical specifications ensuring that works will not give rise to adverse health impacts. I therefore consider that the proposed development will not give rise to adverse impacts arising from exposure to EMF.
- 8.14.3. In relation to lighting requirements for the proposed development I note that the Planning Application documents do not specify details of lighting on the application drawings, albeit the appeal document suggests that a lighting plan can be submitted for written agreement prior to commencement in the event of favourable consideration. In this regard I note that the submitted application drawings do not

⁸ [EMF Guidelines | Environmental Protection Agency \(epa.ie\)](https://www.epa.ie/guidelines/non-ionising/radiation/emf/)

refer to lighting stands although CCTV stands (using passive infrared – section 3.1.6 of the CEMP refers) are indicated. I consider such CCTV stands appropriate in terms of providing site security, however, in the absence of justification for the provision of on-sight lighting within the solar farm and in consideration of the adverse impacts that could arise on wildlife and the potential for light pollution which could adversely affect the residents in the area, I consider it inappropriate to provide lighting throughout the site having regard to the extent of the proposed development site. I note that the applicant states that lighting will be required in relation to the substation element, however, this is subject to the separate Section 182A planning application (ABP-313667-22) and would relate to a smaller site area.

8.14.4. In relation to the generating capacity of the proposed development, I note that LCCC requested clarity in relation to the MW capacity of the proposed development. In response to this issue the applicant has clarified that due to the constantly improving technology and need to finalise the electrical design for Eirgrid approval as part of the Enduring Connection Process (ECP) an accurate statement of MW generating capacity cannot be made at this stage. I note in this regard that in the S182A discussions relating to the 110kV infrastructure (substation and attendant works) a capacity of 160MW of the solar project was discussed. In consideration of the nature of the proposed development (which will be providing solar panels on frames within stated parameters and in accordance with conditions imposed) any increases in generating capacity can only be achieved through improvements to the solar panel and electrical technology itself, which will not manifest in any external differences and will not give rise to any additional impacts other than those that have been identified already within this current assessment as being appropriate. The proposed lifespan of the application is also of relevance, a ten-year permission is sought during which time technological improvements in solar panel technology are likely, such improvements may potentially be appropriate at this location subject to compliance with the range of conditions which could be imposed in the event of favourable consideration. Furthermore, I note that alterations to the final overall panel layout/design may be necessitated should the Board choose to omit certain elements of the proposed development in its decision and/or arising from any further archaeological investigations or mitigation required in advance of construction. On this basis I consider it unnecessary to require a

stated figure for the generating capacity to be specified in advance of the planning decision. I do note that prior to commencement a figure will be required to ensure the appropriate development contribution is provided in accordance with the relevant development contribution scheme. The Limerick City and County Council Development Contribution Scheme 2022 requires renewable energy charges to be calculated at €15,000 per MW installed above 0.5MW. Accordingly, in the event of favourable consideration the inclusion of the standard development contribution condition will necessitate the developer to state the installed capacity of the project. This will therefore require the developer to declare and provide details of the installed capacity to LCCC in order to agree the development contribution addressing this matter in full. In this regard I note that the Board have previously omitted similar conditions from previous solar farm decisions following recommendations that one be included, (ABP ref's 311760-21 and 312723-22 refer), and furthermore the OPRs Practice Note PN03 relating to Planning Conditions does not list such a condition as part of any standard requirements for a solar farm permission.

- 8.14.5. Third party observations on the appeal have raised concerns in relation to fire hazard arising from the proposed development. In this regard I note that the type of materials used in solar panels and the supporting frames should not be considered as constituting a fire hazard and all the works carried out, and components used in construction as well as all electrical equipment will have to comply with the relevant EU safety legislation. In this regard I am of the opinion that the proposed solar farm/array development will not endanger public safety or the built environment by reason of fire hazard.
- 8.14.6. Observers to this appeal have also raised concern that the proposed development could potentially give rise to devaluation of property. While no firm evidence has been presented in this regard, I note that it is possible for devaluation of property to occur in the event of a proposed development having a significant negative impact on the amenity of property in the vicinity. The potential effects arising from the Proposed Development have been set out in full previously in this report, and as set out I consider that no unacceptable or significant effects are arising on the amenities of property in the vicinity which could be considered to represent an adverse impact on property valuations.

8.14.7. I note that potential adverse impacts arising on livestock or farming activities in the vicinity has been raised in appeal observations, however, no specific evidence has been provided or issue identified. In this regard I note that solar farm development is an accepted technology in rural locations worldwide, and while it is acknowledged that to date there hasn't been a significant number of solar developments constructed in Ireland, there have been numerous grants of permission issued by both local authorities and An Bord Pleanála. Livestock are frequently used on solar farm developments as a means of controlling grass levels and as set out previously in this report the development as proposed will not give rise to significant adverse impacts, furthermore the installation of solar panels will have a defined operational period, which may or may not be extended, however, should the need arise the lands could in the future be returned to agricultural use, as such in my opinion the development as proposed will not adversely affect any ongoing farming activities or practices in the vicinity.

9.0 Appropriate Assessment

9.1. Appropriate Assessment Screening

9.1.1. Compliance with Article 6(3) of the Habitats Directive

9.1.1.1. The requirements of Article 6(3) as related to Appropriate Assessment of a project under part XAB, section 177U of the Planning and Development Act 2000 (as amended) are considered fully in this section.

9.1.2. Background on the Application

9.1.2.1. The applicant has submitted a Natura Impact Statement (NIS) as well as a Screening Report for Appropriate Assessment (SRAA) (Appendix A of the NIS refers) both prepared by Greenleaf Ecology and dated the 25th of September 2021. The applicants Stage 1 AA Screening Report has been prepared in line with current best practice guidance and provides a description of the proposed development and identifies European Sites within a possible zone of influence of the development. The AA Screening Report (and NIS) considers both the proposed solar farm development as well as the proposed 110kV substation and associated

works (which is subject to a separate but concurrent S182A application ABP 313667-22). The application documentation also includes a CEMP, Planning and Environmental Report, Ecological Impact Assessment as well as an Aquatic Ecological Impact Assessment. The applicants AA Screening Report concluded that *“In the absence of mitigation measures to control surface water pollution during construction of the proposed Ballyvalode Solar Farm, Co. Limerick, the potential for likely significant effects to the QI⁹ of the Lower River Shannon SAC cannot be ruled out.”*

- 9.1.3. Having reviewed the documents and submissions received from interested parties, I am satisfied that the information allows for a complete examination and identification of any potential significant effects of the development, alone, or in combination with other plans and projects on European sites.

9.2. Screening for Appropriate Assessment- Test of likely significant effects

- 9.2.1. The project is not directly connected with or necessary to the management of a European Site and therefore it needs to be determined if the development is likely to have significant effects on any European site(s).
- 9.2.2. The proposed development is examined in relation to any possible interaction with European sites designated Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) to assess whether it may give rise to significant effects on any European Site.

9.3. Brief description of the development

- 9.3.1. The applicant provides a description of the project on pages 9 to 11 of the Screening Report for AA and elsewhere in pages 6-8 of the NIS, Section 3.1 to 3.3 of the CEMP, Section 2 of the Planning and Environmental Report (PER) and Section 1.2 of the Ecological Impact Assessment (EcolA). A summary of the main elements of the proposed development is outlined in Section 2 of this report.
- 9.3.2. The development site is described in Section 3.2 (pages 11 to 13) of the SRAA, Section 4 (pages 35 to 44) of the NIS, Section 3 (pages 13 to 27) of the EcolA and

⁹ Qualifying Interests

Section 3 of the AEIA. Habitat and species surveys were conducted by qualified ecologists employed by the applicant and the site is described as comprising predominantly of fields of improved agricultural grassland (GA1) with one field of wet grassland (GS4). There are hedgerows (WL1), treelines (WL2), depositing lowland river (FW2) and drainage ditches (FW4) throughout and along some of the site perimeters. Other smaller habitats on site include Scrub (WS1), Recolonising bare ground (ED3), Buildings and Artificial surfaces (BL3), Dry meadows and grass verges (GS2) and two ponds (FL8) are also present (these two pond features are to be retained on site with appropriate set-backs to any construction activities). The main features of the predominant habitats are set out below:

- The majority of the site is improved agricultural grassland associated with cattle farming (fertilisation and management of grassland) although there are localised concentrations of rushes in these areas.
- Wet grassland is restricted to one field (field no. 7), and this has a higher proportion of rushes to meadow grass although there is significant evidence of continued grazing.
- The agricultural grassland fields have significant and mature hedgerow habitats along the majority of their boundaries, species present include Hawthorn, Blackthorn, Elder, Ash, Grey Willow, Dog Rose, Holly and Bramble. Earth banks associated with the hedgerows are present throughout. The Garryfrask stream has an associated treeline consisting predominantly of Poplar, Grey Willow, Hawthorn, and Blackthorn. The hedgerows and treelines provide a corridor for mammals and avifauna throughout the site.

9.3.3. The Dead River (which forms the northern boundary of the northern parcel and is a significant tributary of the Mulkear River which is itself a tributary of the Lower Shannon) and the Garryfrask stream (which rises in the Central Parcel and runs along an eastern boundary of both it and the northern parcel before merging with the Dead River) are depositing lowland rivers. Both the Dead River and Garryfrask stream have been subject to modification as a result of drainage and maintenance. The Dead River has habitats that are conducive to salmonoid spawning and nursery, and juvenile lamprey, although high levels of silt, algal cover and impaired

water quality was noted in the AEIA. The Garryfrask has been classified as being of low fisheries significance with impaired water quality in the AEIA. The Ballyvalode Stream (tributary of the Garryfrask) in the central parcel is classified as a drainage ditch (FW4) as it has been highly modified to enhance drainage. The Portane Stream drains the south-central parcel and the AEIA states that it has little or no fisheries significance and is unsuitable for salmonoids owing to impaired water quality. The Oolahills stream (and its tributaries - the Garryduff and Oolahills West Streams) in the south parcel have been modified and have been classified as FW4 (Drainage ditch). The AEIA finds that the Garryduff has no fisheries value although it is likely to provide habitat for newt and frog. Oolahills West dries out periodically with no significant fisheries or aquatic habitat. The Oolahills Stream has been modified, however, it does not appear to be regularly maintained and has recovered some semi-natural instream habitat and has therefore some fisheries potential. There are other drains on site associated with hedgerows. Ultimately all the watercourses on site drain to the Dead River which enters the Lower Shannon SAC approximately 200m north of the subject site and continues to flow to the Mulkear River approximately 4.2km (direct line) to the northeast of the proposed development. There are 6 no. Watercourse Crossings (WCC) associated with the proposed development:

- WCC (proposed piped culvert) over a Ballyvalode stream tributary for the access track from the regional road to access the central parcel of the proposed development (crossing is located approximately 110m east of the regional road access point). This is numbered as wcc 1 on the submitted layout drawings.
- WCC (proposed bridging structure) over the Ballyvalode Stream approximately 80m east of the crossing mentioned above facilitating the same access track. This is numbered as wcc 6 on the submitted layout drawings.
- WCC (proposed bridging structure) over the Garryfrask stream to the east of the location of the substation site (ABP-313667-22) facilitating the access track from field 29 to 33. This is numbered as WCC 5 on the submitted layout drawings.

- WCC (proposed bridging structure) over the Oolahills Stream facilitating the access track from field 8 to 16. This is numbered as WCC 2 on the submitted layout drawings.
- WCC (proposed bridging structure) over the Oolahills Stream (further upstream than the WCC referenced above) facilitating the access track from field 17 to 15. This is numbered as WCC 3 on the submitted layout drawings.
- WCC (proposed bridging structure) over the Garryduff Stream facilitating the access track from field 15 to 14. This is numbered as WCC 4 on the submitted layout drawings.

9.3.4. Taking account of the characteristics of the proposed development in terms of its location and the scale of works, the following issues are considered for examination in terms of implications for likely significant effects on European sites:

- Construction related - uncontrolled surface water/silt/ construction related pollution.
- In-combination effects with other projects including the proposed 110kV substation proposed under ABP-313667-22.

9.4. Submissions and Observations

9.4.1. No submissions or observations were received in relation to specific AA issues. Observations have been lodged as described in Section 6.3 above in relation to general concerns that the proposed development may have an adverse impact on local wildlife. The Planning Authority in their consideration felt that additional ecological surveying should have been undertaken to inform decisions. On review of the documentation submitted and nature of the proposed development, I consider that the level of ecological surveys undertaken are sufficient to allow a full assessment to be undertaken.

9.5. European Sites

9.5.1. The development site is not located in or immediately adjacent to a European site. The closest European site is the Lower River Shannon SAC (Site Code: 002137), within 0.2km of the proposed development.

9.5.2. A summary of European Sites that occur within a possible zone of influence of the proposed development is presented in the table below. Where a possible connection between the development and a European site has been identified, these sites are examined in more detail.

9.5.3. Table 8.1 provides a summary of European Sites within a possible zone of influence of the proposed development. Table 9.1 below includes my consideration of the River Shannon and River Fergus Estuaries SPA (004077), which was not considered in the applicant's AA Screening. I have included this out of an abundance of caution within the screening process and to clarify that it has been considered despite its significant separation distance to the proposed development due to the presence of a hydrological link.

Table 9.1 Summary of European Sites within a possible zone of influence

European Site (Code)	List of Qualifying Interest/Special Conservation Interest	Distance from Proposed Development (km)	Connections (Source, pathway, receptor)	Considered further in screening. Y/N
Lower River Shannon SAC (002165)	<p>Sandbanks which are slightly covered by sea water all the time [1110]</p> <p>Estuaries [1130]</p> <p>Mudflats and sandflats not covered by seawater at low tide [1140]</p> <p>Coastal lagoons [1150]</p> <p>Large shallow inlets and bays [1160]</p> <p>Reefs [1170]</p> <p>Perennial vegetation of stony banks [1220]</p> <p>Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]</p> <p>Salicornia and other annuals colonising mud and sand [1310]</p> <p>Atlantic salt meadows (Glauco-Puccinellietalia maritimae) [1330]</p>	Approx. 0.2km northwest of the Northern parcel	Yes – Hydrological Connection, SAC is 200m downriver via the Dead River, all the watercourses on site drain to the Dead River which ultimately drains into the SAC from the site of the proposed development.	Y – due to the hydrological connectivity.

European Site (Code)	List of Qualifying Interest/Special Conservation Interest	Distance from Proposed Development (km)	Connections (Source, pathway, receptor)	Considered further in screening. Y/N
	<p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260]</p> <p>Molinia meadows on calcareous, peaty, or clayey-silt-laden soils (<i>Molinion caeruleae</i>) [6410]</p> <p>Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i>, <i>Alnion incanae</i>, <i>Salicion albae</i>) [91E0]</p> <p>Margaritifera (Freshwater Pearl Mussel) [1029]</p> <p><i>Petromyzon marinus</i> (Sea Lamprey) [1095]</p> <p><i>Lampetra planeri</i> (Brook Lamprey) [1096]</p> <p><i>Lampetra fluviatilis</i> (River Lamprey) [1099]</p> <p><i>Salmo salar</i> (Salmon) [1106]</p> <p><i>Tursiops truncatus</i> (Common Bottlenose Dolphin) [1349]</p> <p><i>Lutra lutra</i> (Otter) [1355]</p>			
Lower River Suir SAC (002137)	<p>Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>) [1330]</p> <p>Mediterranean salt meadows (<i>Juncetalia maritimi</i>) [1410]</p> <p>Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation [3260]</p> <p>Hydrophilous tall herb fringe communities of plains and</p>	Approx. 8.3km east of the South-central parcel	No – no connection from the site to SAC.	N – outside the zone of influence of the development due to (a) the lack of ecological connections to the specific habitat type and species for which the site is designated and (b) being

European Site (Code)	List of Qualifying Interest/Special Conservation Interest	Distance from Proposed Development (km)	Connections (Source, pathway, receptor)	Considered further in screening. Y/N
	<p>of the montane to alpine levels [6430]</p> <p>Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]</p> <p>Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]</p> <p>Taxus baccata woods of the British Isles [91J0]</p> <p>Margaritifera (Freshwater Pearl Mussel) [1029]</p> <p>Austropotamobius pallipes (White-clawed Crayfish) [1092]</p> <p>Petromyzon marinus (Sea Lamprey) [1095]</p> <p>Lampetra planeri (Brook Lamprey) [1096]</p> <p>Lampetra fluviatilis (River Lamprey) [1099]</p> <p>Alosa fallax (Twaite Shad) [1103]</p> <p>Salmo salar (Salmon) [1106]</p> <p>Lutra (Otter) [1355]</p>			within a different WFD Catchment.
Moanour Mountain SAC (002257)	<p>Northern Atlantic wet heaths with Erica tetralix [4010]</p> <p>European dry heaths [4030]</p>	Approx. 12km south of the southern parcel.	No – No connection between the proposed development and the SAC.	N – outside the zone of influence of the development due to a lack of ecological connections to the specific habitat type and species for which the site is designated and being within a

European Site (Code)	List of Qualifying Interest/Special Conservation Interest	Distance from Proposed Development (km)	Connections (Source, pathway, receptor)	Considered further in screening. Y/N
				different WFD Catchment.
Anglesea Road SAC (002125)	Species-rich Nardus grasslands, on siliceous substrates in mountain areas (and submountain areas, in Continental Europe) [6230]	Approx. 14.2km northeast of the northern parcel.	No – no connection between the proposed development and the SAC.	N – outside the zone of influence of the development due to a lack of ecological connections to the specific habitat type and species for which the site is designated and being within a different WFD Catchment.
Slievefelim to Silvermines Mountains SPA (004165)	Hen Harrier (Circus cyaneus) [A082]	Approx. 6.8 km north from northern parcel	No – no connection between the proposed development and the SPA.	N – outside the zone of influence of the development due to the lack of ecological connections to the specific species for which the SPA is designated.
Philipston Marsh SAC (001847)	Transition mires and quaking bogs [7140].	Approx. 5.7km northeast of south-central parcel.	No, the SAC is in the same ground water body topographical review indicates ground water does not flow from the proposed development site towards the SAC.	N – outside the zone of influence of the development due to the lack of connection to the specific habitats for which the site is designated.
Clare Glen SAC (000930)	Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0] Trichomanes speciosum (Killarney Fern) [1421]	Approx. 14.5km northwest of northern parcel.	No – no connection between the proposed development and the SAC.	N – outside the zone of influence of the development due to the lack of connection to the specific habitats for

European Site (Code)	List of Qualifying Interest/Special Conservation Interest	Distance from Proposed Development (km)	Connections (Source, pathway, receptor)	Considered further in screening. Y/N
				which the site is designated.
Glenstal Wood SAC (001432)	Trichomanes speciosum (Killarney Fern) [1421]	Approx. 13.1 km northwest of northern parcel.	No – no connection between the proposed development and the SAC.	N – outside the zone of influence of the development due to the lack of connection to the specific habitats for which the site is designated.
River Shannon and River Fergus Estuaries SPA (004077)	<p>Cormorant (Phalacrocorax carbo) [A017]</p> <p>Whooper Swan (Cygnus cygnus) [A038]</p> <p>Light-bellied Brent Goose (Branta bernicla hrota) [A046]</p> <p>Shelduck (Tadorna tadorna) [A048]</p> <p>Wigeon (Anas penelope) [A050]</p> <p>Teal (Anas crecca) [A052]</p> <p>Pintail (Anas acuta) [A054]</p> <p>Shoveler (Anas clypeata) [A056]</p> <p>Scaup (Aythya marila) [A062]</p> <p>Ringed Plover (Charadrius hiaticula) [A137]</p> <p>Golden Plover (Pluvialis apricaria) [A140]</p> <p>Grey Plover (Pluvialis squatarola) [A141]</p> <p>Lapwing (Vanellus vanellus) [A142]</p> <p>Knot (Calidris canutus) [A143]</p> <p>Dunlin (Calidris alpina) [A149]</p>	Approx. 26.6km northwest of northern parcel.	The proposed development does have a hydrological link to this SPA via the Dead – Mulkear – Shannon Rivers.	N – outside the zone of influence of the proposed development due to the significant straight line separation distance involved and the inability of the proposed development to impact on the QI for which the SPA is designated.

European Site (Code)	List of Qualifying Interest/Special Conservation Interest	Distance from Proposed Development (km)	Connections (Source, pathway, receptor)	Considered further in screening. Y/N
	Black-tailed Godwit (<i>Limosa limosa</i>) [A156] Bar-tailed Godwit (<i>Limosa lapponica</i>) [A157] Curlew (<i>Numenius arquata</i>) [A160] Redshank (<i>Tringa totanus</i>) [A162] Greenshank (<i>Tringa nebularia</i>) [A164] Black-headed Gull (<i>Chroicocephalus ridibundus</i>) [A179] Wetland and Waterbirds [A999]			

9.6. Identification of likely effects

- 9.6.1. I consider that effects could arise from the proposed development due to the potential for construction activities to impact on water quality on the downstream and proximate Lower River Shannon SAC (and on the species in the QI which rely on water quality to maintain their habitats) from potential sediment or hydrocarbon release, similarly, impacts could arise for the same reason from decommissioning. I am satisfied that there is very limited scope for impacts to arise during the operational period, however, it will be necessary to ensure this through proper management and upkeep of the proposed development throughout its operational life.
- 9.6.2. A summary of the outcomes of the screening process is provided in the screening matrix Table 9.2 below.

Table 9.2 Screening Matrix Summary

Summary Screening Matrix				
European Site	Distance to proposed development/ Source, pathway receptor	Possible effect alone	In combination effects	Screening conclusions:
Lower River Shannon SAC (002165)	Approx. 0.2km of northern parcel, direct hydrological connectivity to the SAC from the site	Potential for effect on water quality which could in turn effect aquatic /semi aquatic impacts to arise from construction activities from project construction and decommissioning, as well as on-site activities during operational period.	No likely significant in combination effects, beyond those that could arise in relation to the provision of the 110kV substation proposed under ABP-313667-22.	Potential impacts could arise on water quality in the absence of mitigation measures.
Lower River Suir SAC (002137)	Approx. 8.3km east of the South-central parcel – No connection to the SAC from the site of the proposed development.	No possibility of effects due to the distance from and lack of connection to the habitat for which this site is designated.	No effect.	Screened out for need for AA.
Moanour Mountain SAC (002257)	Approx. 12km south of the southern parcel - No connection to the SAC from the site of the proposed development.	No possibility of effects due to the distance from and lack of connection to the habitat for which this site is designated.	No effect.	Screened out for need for AA.
Anglesea Road SAC (002125)	Approx. 14.2km northeast of the northern parcel- No connection to the SAC from the site of the proposed development.	No possibility of effects due to the distance from and lack of connection to the habitat for which this site is designated.	No effect.	Screened out for need for AA.
Slievefelim to Silvermines Mountains SPA (004165)	Approx. 6.8 km north from northern parcel - No connection to the SAC from the site of the proposed development.	No possibility of effects due to the distance from and lack of connection to the habitat for which this site is designated.	No effect.	Screened out for need for AA.
Philipston Marsh SAC (001847)	Approx. 5.7km northeast of south-central parcel - No	No possibility of effects due to the distance from and	No effect.	Screened out for need for AA.

Summary Screening Matrix				
European Site	Distance to proposed development/ Source, pathway receptor	Possible effect alone	In combination effects	Screening conclusions:
	connection to the SAC from the site of the proposed development.	lack of connection to the habitat for which this site is designated.		
Clare Glen SAC (000930)	Approx. 14.5km northwest of northern parcel - No connection to the SAC from the site of the proposed development.	No possibility of effects due to the distance from and lack of connection to the habitat for which this site is designated.	No effect.	Screened out for need for AA.
Glenstal Wood SAC (001432)	Approx. 13.1 km northwest of northern parcel - No connection to the SAC from the site of the proposed development.	No possibility of effects due to the distance from and lack of connection to the habitat for which this site is designated.	No effect.	Screened out for need for AA.
River Shannon and River Fergus Estuaries SPA (004077)	Approx. 26.6km northwest of northern parcel. Long hydrological link in place.	No possibility of effects due to the separation distance from the site (hydrological link more than 26km) and lack of connection to the species for which this site is designated	No effect	Screened out for need for AA.

9.7. Mitigation measures

- 9.7.1. No measures designed or intended to avoid or reduce any harmful effects of the project on a European Site have been relied upon in this screening exercise.

9.8. Screening Determination

- 9.8.1. The proposed development was considered in light of the requirements of Section 177U of the Planning and Development Act 2000 as amended. Having carried out Screening for Appropriate Assessment of the project, it has been concluded that the project individually (or in combination with other plans or projects) could have a

significant effect on the European Site: Lower River Shannon SAC (002165) in view of the site's Conservation Objectives, and Appropriate Assessment is therefore required.

9.9. Appropriate Assessment Stage II

9.9.1. The requirements of Article 6(3) as related to appropriate assessment of a project under Part XAB, Section 177V of the Planning and Development Act 2000 (as amended) are considered fully in this section. The areas addressed in this section are as follows:

- Compliance with Article 6(3) of the EU Habitats Directive,
- The Natura Impact Statement and associated documents,
- Appropriate assessment of implications of the proposed development on the integrity of the relevant European site.

9.10. Compliance with Article 6(3) of the EU Habitats Directive

9.10.1. The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) of this Directive 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. The competent authority must be satisfied that the proposal will not adversely affect the integrity of the European site before consent can be given.

9.10.2. The proposed development is not directly connected to or necessary to the management of any European site and therefore is subject to the provisions of Article 6(3).

9.11. The Natura Impact Statement

9.11.1. The application includes a "Natura Impact Statement" (NIS) prepared by Greenleaf Ecology dated 25th September 2021, which examines and assesses potential

adverse effects of the proposed development on the Lower River Shannon SAC. The NIS focuses on potential impacts such as the release of water borne pollutants to the watercourses that support connectivity to the Dead River and the SAC. The NIS draws on the AEIA prepared by Greenleaf Ecology, September 2021 (and its associated fisheries habitat assessment and white-clawed crayfish survey) and the CEMP prepared by Fehily Timoney. The submitted NIS considers both the currently proposed Solar Farm development and other projects (such as the proposed 110kV substation ABP-313667-22) and plans in the wider area in terms of the potential for in combination effects on the integrity of the SAC and the conservation objectives of the site. The applicant's NIS was prepared in line with current best practice guidance and contains, inter alia, a statement of competence, project description, sets out the zone of influence, legislative background, detailed commentary on the Lower River Shannon SAC, review and assessment of direct and indirect effects that could arise considering cumulative and in-combination effects, consideration of mitigation measures and their effectiveness, and conclusion. Accordingly, I consider the information within the submitted NIS to be sufficient to allow the Board to complete an AA in relation to the proposed development.

9.11.2. The applicants NIS concluded that “... *with the implementation of best practice and the recommended mitigation measures there will be no potential for direct, indirect or cumulative impacts arising from the proposed Ballyvalode Solar Farm, Co. Limerick either alone or in combination with any other plans or projects. The integrity of the Lower Shannon SAC will not be adversely affected. No reasonable scientific doubt remains as to the absence of such adverse impacts.*”

9.11.3. The observations submitted in relation to the current appeal have raised generalised concerns in relation to the potential for impact on local ecology but have not cited any perceived or specific issue in relation to the submitted NIS. The Planning Authority's Environment and Place-Making Section did seek additional information in relation to the Ecological Impact Assessment and Natura Impact Assessment on the basis that they considered that an additional year of surveying should be carried out, concern was also raised in relation to the absence of a badger survey, a lack of a wintering bird survey and additional surveying for otter¹⁰

¹⁰ Otter is a QI of the Lower River Suir SAC

was requested using camera traps. The Planning Authority did not seek additional information in this regard moving instead to refuse permission for the sole reason of part of the site conflicting with a proposed route corridor for the realignment of the N24. It is noted that in refusing permission the planning authority did not cite any concerns in relation to AA. As part of their appeal documentation the applicants have submitted a wintering bird survey (in relation to the one field which has been classified as Wet Grassland). It should also be noted that contrary to the report of the planning authority that a Badger survey (which is not a QI of the European site) was undertaken and that in relation to Otter (which is a QI) no signs or evidence of this species was noted along the Dead River at the site, furthermore the other watercourses on site do not support sufficient habitat or food sources for otter albeit that these watercourses are generally large enough to support commuting and foraging. I note that the nature and design of the proposed development will not provide any barriers to such activities and provides appropriate setbacks to drains and watercourses in the vicinity.

- 9.11.4. Having reviewed the documents, and submissions, I am satisfied that the information allows for a complete assessment of any potential adverse effects of the development, on the conservation objectives of the Lower Shannon SAC alone, or in combination with other plans and projects:

9.12. Appropriate Assessment of implications of the proposed development

- 9.12.1. The following is a summary of the objective scientific assessment of the implications of the project on the qualifying interests (QI) of the European site using the best scientific knowledge in the field. All aspects of the project which could result in significant effects are assessed and mitigation measures designed to avoid or reduce any adverse effects are considered and assessed.

9.13. European Site

- 9.13.1. In the interests of clarity the following site is subject to Appropriate Assessment:

- Lower Shannon SAC (002165)

- 9.13.2. A description of the site and its Conservation and Qualifying Interests/Special Conservation Interests, including any relevant attributes and targets for these sites,

are set out in the NIS, and summarised in table 9.3 of this report as part of my assessment. I have also examined the Natura 2000 data forms as relevant and the Conservation Objectives supporting documents for this site available through the NPWS website (www.npws.ie).

9.14. Aspects of the proposed development that could affect Conservation Objectives.

- 9.14.1. The main aspects of the proposed development that could adversely affect the conservation objectives of the European Site in my opinion arise from the potential for water pollution and sediment release to occur from construction activities, the operational period and during decommissioning given the existing hydrological link between the proposed development site and the conservation site. Sediment and/or hydrocarbon release during construction activities could occur in the absence of appropriate mitigation during these periods and I also consider that should the site not be appropriately managed and maintained during the operational period (e.g., drainage maintenance, site upkeep/cleaning and invasive species management) there is potential for adverse impacts or releases to watercourses which drain to the European site.
- 9.14.2. Table 8.3 summarises the AA and site integrity test. The conservation objectives for the European site have been examined and assessed with regard to the identified potential significant effect and all aspects of the project both alone and in combination with other plans and projects. Mitigation measures proposed to avoid and reduce impacts to a non-significant level have been assessed, and clear, precise, and definitive conclusions reached in terms of adverse effects on the integrity of the European site.

Table 9.3 – NIS Summary and Assessment

Table 9.3 Lower River Shannon SAC [002165]: Summary of Key issues that could give rise to adverse effects: ▪ Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf					
Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
Sandbanks which are slightly covered by sea water all the time [1110]	To maintain the favourable conservation condition of Sandbanks which are slightly covered by sea water all the time in the Lower River Shannon SAC	No - no potential for adverse effects to this habitat due to the separation distance in excess of 98km (straight line distance), combined with the nature of the QI and character of the proposed development. Not within zone of influence (Zol) of the proposed development.	N/A	None Arising – no likely significant in-combination effects	Yes
Estuaries [1130]	To maintain the favourable conservation condition of Estuaries in the Lower River Shannon SAC,	No – no potential for adverse effects to this habitat due to the separation distance in excess of 26km (straight line distance) combined with the nature of the QI and character of the proposed development. Not within Zol of the proposed development	N/A	None arising – no likely significant in-combination effects	Yes
Mudflats and sandflats not covered by	To maintain the favourable conservation	No – no potential for adverse effects to this habitat due to the separation distance in excess of 26.5km (straight	N/A	None arising – no likely significant in-combination effects	Yes

Table 9.3 Lower River Shannon SAC [002165]: Summary of Key issues that could give rise to adverse effects: <ul style="list-style-type: none"> Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf					
Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
seawater at low tide [1140]	condition of Mudflats and sandflats not covered by seawater at low tide in the Lower River Shannon SAC	line distance) combined with the nature of the QI and character of the proposed development Not within ZOI of the proposed development			
Coastal lagoons [1150]	To restore the favourable conservation condition of Coastal lagoons in the Lower River Shannon SAC	No – no potential for adverse effects to this habitat due to the separation distance in excess of 40km (straight line distance) to the closest lagoon within the SAC combined with the nature of the QI and character of the proposed development. Not within ZOI of the proposed development	N/A	None arising – no likely significant in-combination effects	Yes
Large shallow inlets and bays [1160]	To maintain the favourable conservation condition of Large shallow inlets and bays in the Lower River Shannon SAC	No – no potential for adverse effects to this habitat due to the separation distance in excess of 80km (straight line distance) combined with the nature of the QI and character of the proposed development. Not within ZOI of the proposed development	N/A	None arising – no likely significant in-combination effects	Yes

Table 9.3 Lower River Shannon SAC [002165]: Summary of Key issues that could give rise to adverse effects: <ul style="list-style-type: none"> Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf					
Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
Reefs [1170]	To maintain the favourable conservation condition of Reefs in the Lower River Shannon SAC	No – no potential for adverse effects to this habitat due to the separation distance in excess of 56km (straight line distance) combined with the nature of the QI and character of the proposed development. Not within Zol of the proposed development	N/A	None arising – no likely significant in-combination effects	Yes
Perennial vegetation of stony banks [1220]	To maintain the favourable conservation condition of Perennial vegetation of stony banks in the Lower River Shannon SAC	No – no potential for adverse effects to this habitat due to the separation distance in excess of 80km (straight line distance) combined with the nature of the QI and character of the proposed development. Not within Zol of the proposed development	N/A	None arising – no likely significant in-combination effects	Yes
Vegetated sea cliffs of the Atlantic and Baltic coasts [1230]	To maintain the favourable conservation condition of Vegetated Sea cliffs in the Lower River Shannon SAC	No – no potential for adverse effects to this habitat due to the separation distance in excess of 78km (straight line distance) combined with the nature of the QI and character of the proposed development. Not within Zol of the proposed development	N/A	None arising – no likely significant in-combination effects	Yes

Table 9.3 Lower River Shannon SAC [002165]:

Summary of Key issues that could give rise to adverse effects:

- **Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases**

Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf

Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
Salicornia and other annuals colonising mud and sand [1310]	To maintain the favourable conservation condition of Salicornia and other annuals colonising mud and sand in the Lower River Shannon SAC	No – no potential for adverse effects to this habitat due to the separation distance in excess of 90km (straight line distance) combined with the nature of the QI and character of the proposed development. Not within ZOI of the proposed development.	N/A	None arising – no likely significant in-combination effects	Yes
Atlantic salt meadows (Glauco-Puccinellietalia maritima) [1330]	To restore the favourable conservation condition of Atlantic salt meadows (Glauco-Puccinellietalia maritima) in the Lower River Shannon SAC	No – no potential for adverse effects to this habitat due to the separation distance in excess of 37km (straight line distance) combined with the nature of the QI and character of the proposed development. Not within ZOI of the proposed development.	N/A	None arising – no likely significant in-combination effects	Yes
Mediterranean salt meadows (Juncetalia maritimi) [1410]	To restore the favourable conservation condition of	No – no potential for adverse effects to this habitat due to the separation distance in excess of 50km (straight line distance) combined with the	N/A	None arising – no likely significant in-combination effects	Yes

Table 9.3 Lower River Shannon SAC [002165]:

Summary of Key issues that could give rise to adverse effects:

- **Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases**

Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf

Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
	Mediterranean salt meadows (<i>Juncetalia maritimi</i>) in the Lower River Shannon SAC	nature of the QI and character of the proposed development. Not within ZOI of the proposed development.			
Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation [3260]	To maintain the favourable conservation condition of Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation in the Lower River Shannon SAC	No – this habitat type was not recorded within any receiving watercourses within the ZOI of the proposed development.	N/A	None arising – no likely significant in-combination effects	Yes
<i>Molinia</i> meadows on calcareous, peaty, or clayey-	To maintain the favourable conservation	No, none of this habitat type has been identified on the site and they	N/A	None arising – no in-combination effects	Yes

Table 9.3 Lower River Shannon SAC [002165]: Summary of Key issues that could give rise to adverse effects: <ul style="list-style-type: none"> Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf					
Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
silt-laden soils (Molinion caeruleae) [6410]	condition of Molinia meadows on calcareous, peaty or clayey-silt laden soils (Molinion caeruleae) in the Lower River Shannon SAC	are not present within the Zol of the proposed development			
Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) [91E0]	To restore the favourable conservation condition of Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae) in the Lower River Shannon SAC	No – no potential for adverse effects as there is no connectivity between the areas of this habitat and the proposed development (locations of habitat are all upriver in the SAC from where the site drains). Not within Zol of the proposed development.	N/A	None arising – no in-combination effects	Yes
Margaritifera (Freshwater Pearl Mussel) [1029]	To restore the favourable conservation condition of Freshwater Pearl	No – no potential for adverse effects to the Freshwater Pearl mussel, habitat, or catchment as it lies outside the Zol of the proposed development and there is no suitable	N/A	None arising – no likely significant in-combination effects	Yes

Table 9.3 Lower River Shannon SAC [002165]:

Summary of Key issues that could give rise to adverse effects:

- **Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases**

Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf

Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
	Mussel in the Lower River Shannon SAC	habitat to support this species in the watercourses on site.			
Tursiops truncatus (Common Bottlenose Dolphin) [1349]	To maintain the favourable conservation condition of Bottlenose Dolphin in the Lower River Shannon SAC	None – the proposed development will not affect the coastal/estuarine preferred areas of this species, nor introduce any barriers to their range, nor will population be affected. This species is not within the Zol of the proposed development.	N/A	None arising – no likely significant in-combination effects	Yes
Petromyzon marinus (Sea Lamprey) [1095]	To restore the favourable conservation condition of Sea Lamprey in the Lower River Shannon SAC	Yes - Potential for effects on juveniles, spawning habitat and water quality arising from excessive sedimentation and discharges during construction activities in relation to Sea Lamprey, Brook Lamprey, River Lamprey and Salmon.	<ul style="list-style-type: none"> • Works will be carried out in accordance with the CEMP • An EcoW will monitor construction mitigation measures • Fundamental best practice methods and measures will be used throughout the construction process. • Adherence to best management practice in relation to Sediment control. • Cable trenching works will be carried out in small sections and trenches will be backfilled immediately following cable installation • Clay plugs/low permeable material will be used in trenches to avoid the creation of preferential flow 	None arising post mitigation	Yes
Lampetra planeri (Brook Lamprey) [1096]	To maintain the favourable conservation condition of Brook Lamprey in the Lower River Shannon SAC				

Table 9.3 Lower River Shannon SAC [002165]:

Summary of Key issues that could give rise to adverse effects:

- **Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases**

Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf

Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
Lampetra fluviatilis (River Lamprey) [1099]	To maintain the favourable conservation condition of River Lamprey in the Lower River Shannon SAC,	No evidence of Otter identified on site or along site watercourses. Applying the precautionary principle there is potential for the proposed development to have an indirect effect due to contaminants/discharges from construction activities impacting on fish stocks available to otter downstream. The proposed development will not affect otter	<p>paths which could avoid the drainage measures treatment train.</p> <ul style="list-style-type: none"> • Earthworks will not be carried out or scheduled during extreme weather events. • All excavated soils to be retained over 10m from drains/watercourses and where temporary storage is required, they will be placed in a vegetated area and surrounded by silt fencing. • Surplus soils to be reseeded or used on site landscaping – surplus soil not to be spread within 50m of a watercourse, will be rolled immediately. • Where works must cross extant drains/watercourses silt traps, check dams, and bunds (to be provided in advance) will be used to prevent sediment release. • Dewatering, if required, water will be treated by best practice settling systems prior to discharge. There will be no direct pumping to receiving water bodies. • Best Practice Sediment control will be adopted on site. A three-stage drainage system: swale – stilling pond – diffuse outflow will be employed on site as set out in the CEMP. During construction of the drainage features temporary stilling ponds and check dams will be provided. 		
Salmo salar (Salmon) [1106]	To restore the favourable conservation condition of Salmon in the Lower River Shannon SAC				
Lutra (Otter) [1355]	To restore the favourable conservation condition of Otter in the Lower River Shannon SAC				

Table 9.3 Lower River Shannon SAC [002165]:

Summary of Key issues that could give rise to adverse effects:

- **Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases**

Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf

Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
		commuting activity due to the design and nature of the proposal providing adequate buffers to watercourses and drains which may facilitate commuting patterns.	<ul style="list-style-type: none"> • All erosion controls (silt traps, silt fencing, swales, stilling ponds and diffuse overflows will be maintained. • CEMP will incorporate appropriate Emergency Response Plans (ERP) • Best Practice in bulk liquid concrete management will be employed, secure shuttering, form work and adequate curing times applied. • Uncured/Waste Concrete will be disposed of using approved waste disposal. • Activities which result in the creation of cement dust will be controlled by dampening. • Temporary parking and refuelling areas will be designated within the site compounds and will be at least 50m from watercourses and/or drains. Refuelling will only occur in bunded areas. Drip trays and spill kits will be available on site. • Oil Storage will be in accordance with best practice. • No storage of any polluting chemicals or fuels will occur within 50m of watercourses/drains or surface water features. • Fuel storage will be bunded to 110% capacity of the tank(s). • Single Span structures will be used to cross watercourses where appropriate to minimise bank 		

Table 9.3 Lower River Shannon SAC [002165]:

Summary of Key issues that could give rise to adverse effects:

- Water Quality Impacts due to release of sediment/soil, pollutants during construction and decommissioning phases

Conservation Objectives: see https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO002165.pdf

Summary of Appropriate Assessment					
Qualifying Interest feature	Conservation Objectives Targets and attributes	Potential adverse effects	Mitigation measures	In-combination effects	Can adverse effects on integrity be excluded?
			disturbance, and instream works will be minimised and works scheduled to adhere to fisheries seasonal restrictions. • construction teams will undertake environmental awareness training		

Overall conclusion: Integrity test

Following the implementation of mitigation, the construction, operation and decommissioning of this proposed development will not adversely affect the integrity of the Lower River Shannon SAC, either alone or in combination is European site and no reasonable doubt remains as to the absence of such effects.

9.15. Mitigation Measures

- 9.15.1. Details of the proposed mitigation measures are set out Section 6 of the submitted NIS and throughout the CEMP which has been appended to the NIS. Mitigation measures have also been set out in Table 8.3 above. Best Practice construction methods are to be used, and water quality mitigation is provided through the drainage system to be provided throughout the site.
- 9.15.2. Mitigation measures are set out in tabular form in section 6 of the NIS to provide Best Practice in: Sediment Control, Concrete and Hydrocarbons on site and during construction activities. These detail a variety of measures which shall be implemented to eliminate the risk of negative effects on the SAC site from hydrocarbons (incl. fuel) and other polluting chemicals, and concrete, as well as from sediments and siltation during construction. These measures include bunded areas, proper training, buffer distances from any watercourses, designated refuelling areas, spill kits, certain activities being scheduled to minimise impacts (e.g., weather or IFI stated periods), surface drainage and silt control measures, criteria, and methods for temporary storage of excavated material, and methodologies for watercourse crossings and using silt fences where required.
- 9.15.3. In the event of favourable consideration, the contractor will prepare a finalised CEMP (incorporating any conditions which may be imposed in the event of favourable consideration) to be agreed with the relevant authorities and which will include all the fundamental best practice methods and measures set out in the submitted CEMP. All mitigation measures will be monitored for effectiveness and implementation by an Ecological Clerk of Works.
- 9.15.4. The mitigation measures will be applied throughout the site of the proposed development as well as any future attendant works (such as the provision of the 110kV substation - ABP-313667-22).
- 9.15.5. In my opinion the proposed mitigation measures in relation to construction and protection of water quality are well established and have proven to be good practice for solar farm development and the provision of infrastructure projects for protection of water courses. I also consider that the proposed construction methodologies and details supplied are sufficiently comprehensive to remove any lack of clarity

regarding the potential for adverse effects to arise and that the measures set out are robust and capable of successful implementation and monitoring.

Operational Phase

- 9.15.6. There have been no significant effects identified from the operational phase of the proposed development. The site is currently under active agricultural management and following construction the standard farming activities will cease and long grass conditions will be promoted under the solar panels, with low intensity grazing by sheep, thus increasing natural attenuation of surface water. The operational stage will continue to benefit from the drainage measures that will be provided during the construction stage (with the exception of temporary construction stage measures such as silt fences etc.). There will be no works resulting in significant release of sediment during the operational stage with site maintenance works being minor in nature. I consider that the proposed solar farm will not have a significant effect on the Natura Site when operational.

Decommissioning

- 9.15.7. Decommissioning will require additional construction activities; however, these will not be of the same significance. The roadways, drainage and underground cabling trench will be left in place on decommissioning and the level of soil disturbance will be minimal, it is proposed that access tracks, and hardstands will be top-soiled over and re-seeded, although tracks (and their drainage works) may remain in place as agricultural access tracks, and there will be no works required proximate to water courses. The decommissioning works will not have a significant effect on the Natura Site.

In-combination effects

- 9.15.8. Relevant existing and proposed plans and projects which may contribute to an adverse in-combination effect are set out in Section 5.4 of the submitted NIS. These include the Limerick County Development plan (2010-2016), River Basin Management Plan (2018-2021), Inland Fisheries Corporate plan 2018-2021, WWTP discharges at Oola, Discharges from the Spaight Timber preservatives Ltd. (3.3km southeast) as well as consideration of the Local Planning Applications under consideration. I note that the submitted NIS does not consider the NPF, RSES or the Limerick County Development Plan 2022-2028 (which I acknowledge was in draft

form at time of writing the NIS). In the interests of clarity, I have considered these plans within my assessment of in-combination effects, and in this regard I see no issues arising, as these plans have been prepared to inform and direct proper planning and sustainable development within a plan hierarchy and in accordance with the relevant European Directives and have been informed by the relevant environmental considerations and SEA. I also note that the NIS has not listed the N24 Cahir to Limerick Junction Road Project as an in-combination project to consider. In this regard I note that at time of application this project had as yet not selected its preferred route corridor, this process is currently being finalised, however, the final design, studies and assessments of this project have not yet been completed or made public. Notwithstanding this, I consider that having regard to the nature of the proposed development (including its 10-year duration and 35-year operational period) and the mitigation measures that are being proposed, combined with the fact that the roads project will be subject to the full rigours of the planning system and relevant environmental reporting and assessment in its own right, that there will be no significant in-combination effects arising. The NIS does consider the separate elements of the proposed development (i.e. the solar farm and the proposed 110kV substation ABP-313667-22). I consider that with the implementation of the mitigation measures as set out that there will be no significant in-combination effects arising from the proposed development.

Integrity Test

- 9.15.9. Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of the Lower River Shannon SAC in view of the Conservation Objectives of this site. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

9.16. Appropriate Assessment Conclusion

- 9.16.1. The Ballyvalode Solar Farm has been considered in light of the assessment requirements of Sections 177U and 177V of the Planning and Development Act 2000 as amended. Having carried out screening for Appropriate Assessment of the project, it was concluded that it may potentially have a significant effect on Lower

River Shannon SAC (Site Code 002165). Consequently, an Appropriate Assessment was required of the implications of the project on the qualifying features of that site in light of its conservation objectives.

9.16.2. Following an Appropriate Assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of the European site Code No. 002165, or any other European site, in view of the site's Conservation Objectives. This conclusion is based on a complete assessment of all aspects of the proposed project and there is no reasonable doubt as to the absence of adverse effects.

9.16.3. This conclusion is based on:

- A full and detailed assessment of all aspects of the proposed project including proposed mitigation measures and ecological monitoring in relation to the Conservation Objectives of the Lower River Shannon SAC.
- Detailed assessment of in combination effects with other plans and projects including historical projects, current proposals and future plans.
- No reasonable scientific doubt as to the absence of adverse effects on the integrity of the Lower River Shannon SAC.

10.0 Recommendation

10.1. I recommend that permission be granted.

11.0 Reasons and Considerations

11.1. Having regard to:

- European, national, regional, and county level support for renewable energy development as follows:
 - (i) The governments Climate Action Plan 2023,
 - (ii) The governments Project Ireland 2040 National Planning Framework,
 - (iii) The Regional Spatial and Economic Strategy for the Southern Assembly

(iv) The Limerick City and County Development Plan 2022-2028, as adopted by Limerick City and County Council

- the nature, scale, and extent of the proposed development,
- the documentation submitted with the planning application, including the Natura Impact Statement, Planning and Environmental Report, Construction and Environment Management Plan Planning, Ecological Impact Assessment, Aquatic Ecological Impact Assessment, Floodrisk Assessment, Glint and Glare Assessment, Landscape and Visual Assessment, Landscape Management plan, and Archaeological Assessment,
- the nature of the landscape and its capacity to visually accommodate the proposed development without significant adverse effects,
- mitigation measures proposed for the construction, operation, and decommissioning of the site, and
- the submissions and observations on file including those from prescribed bodies, the planning authority and other third parties.
- the location of the proposed development within an ecologically robust landscape,
- the ongoing selection and assessment process for the N24 Cahir to Limerick Junction Road scheme,
- the separation distances between the proposed development and dwellings or other sensitive receptors,
- the planned connection of the proposed development to the national electricity grid (ABP-313667-22 refers),
- the likely consequences for the environment and the proper planning and sustainable development of the area in which it is proposed to carry out the proposed development and the absence likely significant effects of the proposed development on European Sites.

It is considered that, subject to compliance with the conditions set out below, the proposed development would be in accordance with European, national, and regional renewable energy policies and with the provisions of the Limerick City and County Development Plan 2022-2028, would not seriously injure the visual or residential immunities of the area or otherwise of property in the vicinity or have an

unacceptable impact on the character of the landscape are on cultural or archaeological heritage, would not have a significant adverse impact on ecology, would be acceptable in terms of traffic safety, public health and would make a positive contribution to Ireland's renewable energy and security of energy supply requirements. The proposed development would therefore be in accordance with the proper planning and sustainable development of the area.

11.2. Appropriate Assessment Stage I

11.2.1. The Board considered the Screening Report for Appropriate Assessment and all other relevant submissions and carried out an appropriate assessment screening exercise relation to the potential effects of the proposed development on designated European sites. The Board noted that the proposed development is not directly connected with or necessary for the management of a European Site and considered the nature, scale, and location of the proposed development, as well as the report of the Inspector. The Board agreed with the screening report submitted with the application and with the screening exercise carried out by the Inspector. The Board concluded that, having regard to the qualifying interests for which the sites were designated and in the absence of connections to and distance between the application site and the European Sites; the Lower River Suir SAC (002137), Moanour Mountain SAC (002257), Anglesea Road SAC (002125), Slievefelim to Silvermines Mountains SPA (004165), Philipston Marsh SAC (001847), Clare Glen SAC (000930), Glenstal Wood SAC (001432) and River Shannon and River Fergus Estuaries SPA (004077) could be screened out from the further consideration and that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effects on these European Sites or any other European Sites in view of the sites' conservation objectives and that a Stage 2 appropriate assessment is therefore not required in relation to these European Sites.

11.3. Appropriate Assessment Stage 2

11.3.1. The Board considered the Natura Impact Statement and all other relevant submissions and carried out an appropriate assessment of the implications of the proposed development for the Lower River Shannon SAC (002165) in view of the

sites' conservation objectives. The Board considered that the information before it was adequate to allow the carrying out of an Appropriate Assessment as well as the report of the Inspector.

In completing the assessment, the Board considered the likely direct and indirect impacts arising from the proposed development both individually or in combination with other plans or projects, the mitigation measures which are included as part of the current proposal and the Conservation Objectives for this European Site. In completing the Appropriate Assessment, the Board accepted and adopted the Appropriate Assessment carried out in the Inspector's report in respect of the potential effects of the proposed development on the aforementioned European Site, having regard to the sites' Conservation Objectives. In overall conclusion, the Board was satisfied that the proposed development would not adversely affect the integrity of the Lower River Shannon SAC (002165) or any other European Site in view of the sites' Conservation Objectives.

12.0 Conditions

1.	<p>The development shall be carried out and completed in accordance with the plans and particulars lodged with the application as amended by the further plans and particulars received by An Bord Pleanála on the 10th day of February 2022, except as may otherwise be required in order to comply with the following conditions. Where such conditions require details to be agreed with the planning authority, the developer shall agree such details in writing with the planning authority prior to commencement of development and the development shall be carried out and completed in accordance with the agreed particulars.</p> <p>Reason: In the interests of clarity and of proper planning and sustainable development of the area.</p>
2.	<p>Field no. 7 within the southern parcel as identified in the submitted archaeological report shall be omitted from the proposed development. An updated site layout plan showing the omission of all proposed development</p>

	<p>from this field shall be submitted for the written agreement of the Planning Authority prior to the commencement of development.</p> <p>Reason: To facilitate orderly development, in the interests of clarity, and the proper planning and sustainable development of the area.</p>
3.	<p>The period during which the development hereby permitted may be carried out shall be 10 years from the date of this order.</p> <p>Reason: Having regard to the nature of the development, the Board considers it appropriate to specify a period of validity of this permission in excess of five years.</p>
4.	<p>This permission shall not be construed as any form of consent or agreement to a connection to the national grid or to the routing or nature of any such connection.</p> <p>Reason: In the interest of clarity.</p>
5.	<p>Surface dressing, signage, sightlines and stopping distances at the location of the proposed entrances to the site off the regional and local roads will be upgraded in accordance with details received by An Bord Pleanála on the 10th of February 2022, to include the provision of Hot Rolled Asphalt (HRA) surfacing outside each access point for a minimum distance of 15m on each side of entrances, the depth of bound material will be a minimum of 100mm. Roadside poles shall be set back behind the sight-lines indicated. In this regard an updated/revised layout plan of the access arrangements at an appropriate scale shall be submitted for the written agreement of the Planning Authority prior to the commencement of development and works will be provided in accordance with same.</p> <p>Reason: In the interests of traffic safety, and protection of existing public roadways.</p>
6.	<p>(a) All of the environmental, construction, ecological and heritage-related mitigation measures, as set out in the Planning and Environmental Report, the Natura Impact Statement, the Ecological Impact Assessment, Aquatic Ecological Impact Assessment and the</p>

	<p>Construction and Environmental Management Plan, and other particulars submitted with the application, shall be implemented by the developer in conjunction with the timelines set out therein, except as may otherwise be required in order to comply with the conditions of this Order.</p> <p>(b) Prior to commencement of development a badger survey shall be undertaken, and in the event of badger sett(s) being identified appropriate mitigation and avoidance will be agreed in writing with the Planning Authority.</p> <p>(c) There shall be no felling or scrub clearance within the bird nesting season (1st March to 31st August).</p> <p>(d) A finalised Invasive Species management plan detailing the methodology of control of Invasives and monitoring to be agreed with the Planning Authority prior to commencement of development.</p> <p>(e) Prior to commencement of development confirmation of methodology of installation and maintenance of an appropriate number of rock, log and stone piles to provide suitable hibernation locations for reptiles/amphibians), log piles/bug/bee hotels for invertebrate habitats, Bat and bird boxes in appropriate numbers and suitable locations throughout the site as committed to in the application documentation shall be submitted for the written approval of the Planning Authority and works shall be provided in accordance with same.</p> <p>Reason: In the interests of clarity and of the protection of the environment during the construction and operational phases of the development.</p>
7.	<p>(a) The permission shall be for a period of 35 years from the date of the first commissioning of the solar array. The solar panels and related ancillary structures shall then be removed, and the site reinstated unless, prior to the end of the period, planning permission shall have been granted for their retention for a further period.</p>

	<p>(b) Prior to commencement of development, a detailed site restoration plan, providing for the removal of the solar arrays, including all foundations, anchors, inverter/transformer stations, CCTV cameras, fencing and a timescale for its implementation, shall be submitted to and agreed in writing with the planning authority.</p> <p>(c) On full or partial decommissioning of the solar farm, or if the solar farm ceases operation for a period of more than one year, the solar arrays, and all ancillary structures shall be removed permanently from the site. The site shall be restored in accordance with the agreed Site Restoration Plan and all decommissioned structures shall be removed from the site within the timeframe agreed with the Planning Authority.</p> <p>Reason: To enable the planning authority to review the operation of the solar farm over the stated time period, having regard to the circumstances then prevailing, in the interest of landscape restoration and orderly development.</p>
8.	<p>(a) No artificial lighting shall be installed or operated on site unless authorised by a separate grant of planning permission.</p> <p>(b) CCTV cameras shall be fixed and angled to face into the site and shall not be directed towards adjoining property or the road.</p> <p>(c) Cables within the site shall be located underground unless otherwise agreed with the Planning Authority.</p> <p>(d) The inverter/transformer stations control units and all fencing shall be dark green in colour unless otherwise agreed with the Planning Authority prior to commencement of development.</p> <p>Reason: In the interests of clarity and of visual and residential amenity.</p>
9.	<p>Before any development takes place on the site, details of the structures of the perimeter fence showing provision for the movement of mammals at regular intervals along the perimeter of the site shall be submitted for the prior written agreement of the planning authority. This shall be facilitated</p>

	<p>through the provision of mammal access gates designed generally in accordance with standard guidelines for mammal access (NRA 2008).</p> <p>Reason: To allow wildlife to continue to have access across the site, in the interest of Biodiversity protection.</p>
10.	<p>(a) All mitigation measures in relation to archaeology as set out in the archaeological assessment carried out by John Cronin and Associates submitted with the application documentation and technical note included in the first party appeal (February 2022) by the same author shall be implemented in full, except as may otherwise be required in order to comply with other conditions here specified.</p> <p>(b) The developer shall engage a suitably qualified archaeologist to carry out an Archaeological Impact Assessment (AIA) in advance of any site preparation works and groundworks, including site investigation works/topsoil stripping/site clearance, and/or construction works. The AIA shall involve an examination of all development layout/design drawings, completion of documentary/cartographic/ photographic research and fieldwork, the latter to include, geophysical survey and archaeological testing (consent/licensed as required under the National Monuments Acts), in particular in relation to field no.'s 1, 2, 4, 5, 6, 8, 11, 13, 14, 15, 17, 20, 21, 22, 27, 28, 29, 31 and 42 (as referenced in the application archaeological assessment). The archaeologist shall prepare a comprehensive report, including an archaeological impact statement and mitigation strategy, to be submitted for the written agreement of the planning authority in advance of any site preparation works, groundworks and/or construction works. Where archaeological remains are shown to be present, preservation in-situ, establishment of 'buffer zones', preservation by record (archaeological excavation) or archaeological monitoring may be required and mitigatory measures to ensure the preservation and/or recording of archaeological remains shall be included in the AIA. Any further</p>

	<p>archaeological mitigation requirements specified by the planning authority, following consultation with the National Monuments Service, shall be complied with by the developer. The planning authority and the National Monuments Service shall be furnished with a final archaeological report describing the results of any subsequent archaeological investigative works and/or monitoring following the completion of all archaeological work on site and the completion of any necessary post-excavation work. All resulting and associated archaeological costs shall be borne by the developer.</p> <p>(c) The developer shall engage a suitably qualified archaeologist to monitor (licensed under the National Monuments Acts) all site clearance works, topsoil stripping, groundworks, and/ or the implementation of agreed preservation in-situ measures associated with the development. The use of appropriate machinery to ensure the preservation and recording of any surviving archaeological remains shall be necessary. Should archaeological remains be identified during the course of archaeological monitoring, all works shall cease in the area of archaeological interest pending a decision of the planning authority, in consultation with the National Monuments Service, regarding appropriate mitigation [preservation in-situ/excavation]. The developer shall facilitate the archaeologist in recording any remains identified. Any further archaeological mitigation requirements specified by the planning authority, following consultation with the National Monuments Service, shall be complied with by the developer. Following the completion of all archaeological work on site and any necessary post-excavation specialist analysis, the planning authority and the National Monuments Service shall be furnished with a final archaeological report describing the results of the monitoring and any subsequent required archaeological investigative work/excavation required. All resulting and associated archaeological costs shall be borne by the developer.</p>
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	<p>Reason: To ensure the continued preservation either insitu or by record of sites, features or other objects of archaeological interest.</p>
11.	<p>(a) All existing hedgerows (except at access track openings and proposed watercourse crossings) shall be retained and allowed to grow out prior to construction notwithstanding any exemptions available and new planting undertaken in accordance with the plans submitted to the planning authority with the application.</p> <p>(b) All landscaping works shall be completed, within the first planting season following commencement of development in accordance with the details received to the written satisfaction of the planning authority as part of the first phase of development and prior to the installation of any solar panels. Any trees or hedgerow that are removed, die or become damaged or diseased during the operative period of the solar farm as set out by this permission, shall be replaced within the next planting season by trees or hedging of similar size and species, unless otherwise agreed in writing with the planning authority.</p> <p>(c) The stand of woodland mix comprising advanced nursery stock and native whips which are shown to be provided along the northern and eastern boundary of the proposed substation location (as shown on Drawing No. LD.BLLYVLD 1.2) shall be provided and maintained for the duration of the operational period of the substation.</p> <p>(d) Landscaping and planting will not interfere with the sight line and stopping distances shown at vehicular entrances to the site on drawings received by An Bord Pleanála on the 10th day of February 2022.</p> <p>Reason: In the interests of biodiversity, the visual amenities of the area, and the residential amenities of property in the vicinity.</p>
12.	<p>The construction of the development shall be managed in accordance with a Construction and Environmental Management Plan, which shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. This plan shall incorporate all mitigation</p>

	<p>measures set out in the application documentation and provide details of intended construction practice for the development, including:</p> <ul style="list-style-type: none"> (a) Location of the site and materials compound(s) including area(s) identified for the storage of construction refuse, site offices, construction parking and staff facilities, re-fuelling arrangements security fencing and hoardings; (b) a comprehensive construction phase traffic management plan including details of the timing and routing of construction traffic to and from the construction site and associated directional signage, to include proposals to facilitate the delivery of abnormal loads to the site; (c) measures to prevent the spillage or deposit of clay, rubble or other debris on the public road network; (d) details of appropriate mitigation measures for noise, dust, and vibration, and monitoring of such levels; (e) containment of all construction-related fuel and oil within specially constructed bunds to ensure that fuel spillages are fully contained; such bunds shall be roofed to exclude rainwater; (f) off-site disposal of construction/demolition waste and details of how it is proposed to manage excavated soil; (g) means to ensure that surface water run-off is controlled such that no deleterious levels of silt or other pollutants enter local surface water drains or watercourses. (h) Surface Water Mitigation measures set out in Section 5.1.2 of the submitted floodrisk assessment to be applied. (i) Surface water discharge from compounds will be via a class 1 oil interceptor. (j) An audit list of all construction and operational mitigation measures, their timelines for implementation and responsibility for reporting.
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	<p>(k) The provision of construction site hoarding along the boundary of the site of the proposed development with that of the dwelling house permitted under Pl. Ref. 21/1509, should that dwelling be provided and occupied during the construction phase of the solar farm development here consented.</p> <p>A record of daily checks that the works are being undertaken in accordance with the Construction and Environmental Management Plan shall be kept for inspection by the planning authority.</p> <p>Reason: In the interest of environmental protection, amenities, public health and safety</p>
13.	<p>(a) During the operational phase of the proposed development, the noise level arising from the development, as measured at the nearest noise sensitive location shall not exceed:</p> <ul style="list-style-type: none"> i. An LAeqT value of 55 dB(A) during the period 0800 to 2200 hours from Monday to Saturday inclusive. [The T value shall be one hour.] ii. An LAeqT value of 45 dB(A) at any other time. [The T value shall be 15 minutes]. The noise at such time shall not contain a tonal component. <p>At no time shall the noise generated on site result in an increase in noise level of more than 10 dB(A) above background levels at the boundary of the site.</p> <p>(b) All sound measurement shall be carried out in accordance with ISO Recommendation R 1996 “Assessment of Noise with respect of Community Response” as amended by ISO Recommendations R 1996 1, 2 or 3 “Description and Measurement of Environmental Noise” as applicable.</p> <p>Reason: To protect the amenities of property in the vicinity of the site</p>
14.	<p>No instream works shall be carried out from October 1st to June 30th, fish removal will take place within cofferdams prior to dewatering and Inland Fisheries Ireland to be notified in advance of any works. The Ecological Clerk of Works will ensure all mitigation detailed in application documentation</p>

	<p>relative to watercourse crossings are employed and watercourse crossings shall not lose material to the rivers.</p> <p>Reason: In the interests of environmental protection.</p>
15.	<p>The developer shall appoint a suitably qualified ecologist to monitor and ensure that all avoidance/mitigation measures relating to the protection of flora and fauna are carried out in accordance with best ecological practice and to liaise with consultants, the site contractor, the NPWS and Inland Fisheries Ireland. A report on the implementation of these measures shall be submitted to the planning authority and retained on file as a matter of public record.</p> <p>Reason: To protect the environmental and natural heritage of the area.</p>
16.	<p>Site development and building works shall be carried out only between the hours of 0800 to 1900 Mondays to Fridays inclusive, between 0800 to 1400 hours on Saturdays and not at all on Sundays and public holidays. Deviation from these times will only be allowed in exceptional circumstances where prior written approval has been received from the planning authority.</p> <p>Reason: In order to safeguard the amenities of property in the vicinity.</p>
17.	<p>Drainage arrangements, including the attenuation and disposal of surface water, shall comply with the requirements of the planning authority for such works and services.</p> <p>Reason: In the interest of public health.</p>
18.	<p>All road surfaces, culverts, watercourses, verges, and public lands shall be protected during construction and, in the case of any damage occurring, shall be reinstated to the satisfaction of the planning authority at the developer's expense. Prior to commencement of development, a road condition survey shall be carried out to provide a basis for reinstatement works. Details in this regard shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development.</p> <p>Reason: In order to ensure a satisfactory standard of development.</p>
19.	<p>Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or</p>

	<p>such other security as may be acceptable to the planning authority, to secure the satisfactory reinstatement of the site on cessation of the project coupled with an agreement empowering the planning authority to apply such security or part thereof to such reinstatement. The form and amount of the security shall be as agreed between the planning authority and the developer or, in default of agreement, shall be referred to An Bord Pleanála for determination.</p> <p>Reason: To ensure satisfactory reinstatement of the site.</p>
20.	<p>The developer shall pay to the planning authority a financial contribution in respect of public infrastructure and facilities benefiting development in the area of the planning authority that is provided or intended to be provided by or on behalf of the authority in accordance with the terms of the Development Contribution Scheme made under section 48 of the Planning and Development Act 2000, as amended. The contribution shall be paid prior to commencement of development or in such phased payments as the planning authority may facilitate and shall be subject to any applicable indexation provisions of the Scheme at the time of payment. Details of the application of the terms of the Scheme shall be agreed between the planning authority and the developer or, in default of such agreement, the matter shall be referred to An Bord Pleanála to determine the proper application of the terms of the Scheme.</p> <p>Reason: It is a requirement of the Planning and Development Act 2000, as amended, that a condition requiring a contribution in accordance with the Development Contribution Scheme made under section 48 of the Act be applied to the permission.</p>

Jimmy Green
Senior Planning Inspector

13th April 2023