An Bord Pleanála

Inspector's Report

ABP-305817-19

Development	Development consisting of a ten year permission for a solar farm on a site. A Natura Impact Statement accompanies this application.
Location	Townlands of Rathnaskilloge (E.D. Ballylaneen), Glen West (E.D. Fox's Castle), & Curraheen (E.D. Stradbally), Co. Waterford.
Planning Authority	Waterford City and County Council
Planning Authority Reg. Ref.	19290
Applicant(s)	Highfield Solar Ltd.
Type of Application	Permission
Planning Authority Decision	Grant permission with conditions
Type of Appeal	First & Third Party
Appellant(s)	1. Highfield Solar Ltd. 2. Breda Kiely
Observer(s)	1. JP McElduff 2. Sally & Jim Thompson

3. Alan Connors

Date of Site Inspection	20th November 2020
Inspector	Donal Donnelly

Contents

1.0 Site Location and Description

1.1. The appeal site is located in the townlands of Rathnaskilloge, Glen West and Curraheen in mid Co. Waterford between the villages of Stradbally and Kilmacthomas.

1.2. The solar farm site comprises four arrays extending over a total area of 109 hectares. The central array at Rathnaskilloge will include the proposed substation and grid connection to the Dungarvan-Cullenagh/ Butlerstown 110kV overhead line, which traverses this part of the site. A 220kV also passes to the south of the Glen East array. The Glen East and Glen West arrays located to the north of the site are separated by a local road and the Curraheen array is located further to the south-west. The Rathnaskilloge and Curraheen arrays will be accessed off the R675 Regional Route which forms a section of the main road between Dungarvan and Tramore.

1.3. The surrounding area comprises mostly of agricultural pastureland with coniferous and broad-leaf forest and semi-natural areas. Land in the area is gently sloping at elevations of between 50m and 110m OD. The highest part of the site is to the north at Glen West. The Faha River flows to the east of the Rathnaskilloge array and the Tigh River flows to the south of the Curraheen array. A stream flowing through the Curraheen array forms a tributary of the Tigh River.

1.4. Other features of note in the surrounding area include the Waterford Greenway (c. 500m west of Curraheen array), Stradbally Woods pNHA (c. 500m south-west of Curraheen array) and a national monument (cist) within the Rathnaskilloge array. The nearest European Site is the Mid Waterford Coast SPA, which is approximately 2km to the south. There are one-off residences and farm buildings in close proximity to the Rathnaskilloge and Curraheen arrays and within the Glen East and West arrays.

2.0 Proposed Development

2.1. A ten year planning permission is sought for a solar farm to include the following:

- 1 no. IPP control building and associated compound,
- MV station,

- electrical transformer/inverter station modules,
- battery storage modules,
- solar PV panels ground mounted on steel support structures,
- storage containers,
- CCTV cameras,
- access roads,
- fencing and associated electrical cabling, ducting and ancillary infrastructure.

2.2. The maximum capacity export of the proposed solar farm is expected to be 65-95MW and the applicant is seeking a 35 year operational lifetime. A concurrent application (ABP-304558-19) has been made to An Bord Pleanála for a new 110kV substation to connect the proposed solar farm to the 110kV transmission network which traverses the site.

2.3. The proposed solar farm will comprise of four arrays at Rathnaskilloge (38 ha), Glen East (14.5 Ha), Glen West (17.2 Ha) and Curraheen (39.3 Ha). The overall development is designed around the central array at Rathnaskilloge and the separate Curraheen array will be connected to Rathnaskilloge substation via an underground cable connection along the public road.

2.4. The ground-mounted solar panels will be assembled in rows running east to west across the site and fixed at an angle of 22-30 degrees from horizontal. The highest part of an array will be 3.2m above ground level. The precise solar panel arrangement and rack variant will be established prior to construction. No concrete works are required to support the solar panel mounting frames.

2.5. Access to each of the four arrays will be provided from public roads and approximately 7km of access track will be provided on site. Ducts will be laid along tracks for internal electrical and communications cables. Existing drainage will be used and enhanced where appropriate. The greenfield runoff rate from the site is not expected to increase.

2.6. The planning application is accompanied by a Natura Impact Statement, Glint and Glare Assessment, Archaeological & Cultural Heritage Assessment, Noise Impact

Assessment, Flood Risk & Drainage Impact Assessment and Traffic Management Plan.

3.0 Planning Authority Decision

3.1. Decision

3.1.1. Waterford City & County Council issued notification of decision to grant permission for the proposed development subject to 22 conditions.

3.1.2. Condition 2(a) stated that *"this grant of planning is for a period of 10 years. Upon commissioning of the permitted the operational period of said structures shall be 25 years. The solar farm and ancillary structures shall then be removed unless, prior to the end of the period, permission shall be granted for their retention for a further period."* Condition 2(b) requires the submission of a detailed restoration plan.

3.1.3. There are other conditions attached to the decision relating to sightlines, construction programming and management, screen planting, drainage, archaeology, mammal access and biodiversity management.

3.2. Planning Authority Reports

3.2.1. The recommendation to grant permission in the final Planner's Report reflects the decision of the Planning Authority to grant permission.

Development Principle

3.2.2. Under the planning assessment, the proposal is considered in the context of national, regional and local planning policy and guidance and in particular the Climate Action Plan, 2019; Transition to a Low Carbon Energy Future, 2015-2030 (White Paper); National Renewable Energy Action Plan; Strategy for Renewable Energy 2012; National Landscape Strategy for Ireland, 2015-2025; Food Harvest, 2020; and the Regional Planning Guidelines – South East Regional, 2010-2022. Reference is also made to the Waterford Renewable Energy Strategy 2016-2030 contained within the Development Plan wherein it is noted that Waterford is in the top 15% in Ireland in terms of solar resource.

3.2.3. It is considered that the proposal would assist towards supporting the national objective of achieving 70% of electricity generation from renewable sources by 2030. The proposal is therefore acceptable in principle to the Planning Authority.

Landscape and Visual Impact Assessment

3.2.4. It is considered that the proposed visual analysis is difficult to adequately assess from certain viewpoints given the daylight condition and hedgerow boundaries. Furthermore, additional viewpoints should be provided from the Comeragh Mountains, N25 and R675.

Amenity impacts

3.2.5. The Planning Authority has concerns regarding the separation distance/ buffer area being provided between the proposed solar farm to a number of residential properties and farms across four arrays, in particular at Glen East and Glen West, Curraheen and close to the proposed substation at Rathnaskilloge.

Flood risk

3.2.6. It is noted that the Planning and Flood Risk Guidelines does not specifically mention solar farm developments but the panels and access tracks can be classified as water compatible, whilst the substations and inverters are highly vulnerable. The proposal is located within Flood Zone C and is therefore deemed appropriate. Implementation of specific mitigations measures will result in a net reduction in surface water flow to local sensitive receptors.

Roads

3.2.7. The Roads Department had concerns relating to access to the solar arrays, sightlines, boundary screening, buffer zone screening and construction traffic management.

Grid Connection

3.2.8. It is noted that a new 110kV substation is subject to a separate SID application to the Board. The applicant has applied to Eirgrid for a grid connection agreement for 95MW at the proposed substation location.

Appropriate Assessment

3.2.9. The Heritage Officer indicates agreement with the NIS conclusion that the proposed development will not adversely affect the integrity and conservation status of the Mid Waterford Coast SPA with implementation of mitigation measures. However, a detailed Construction Environmental Management Plan is recommended.

3.2.10. Further information was sought from the applicant on issues of landscape and visual impact assessment; provision of an adequate buffer to existing development in the area; provision of a detailed Construction Environmental Management Plan and surface water management plan; submission of a solar farm maintenance programme; and roads related issues including an investigation of alternative access to the site from local roads only, provision of adequate sightlines, setting back of roadside screening, provision of a minimum 100m buffer along the regional road, and provision of a detailed Construction Traffic Management Plan.

3.2.11. The further information submitted by the applicant was assessed in a subsequent Planner's Report dated 24th October 2019.

3.2.12. In response to the matters raised in relation of landscape and visual impact assessment, the applicant prepared revised viewpoint montages and submitted that the content of the LVIA was thorough and contained sufficient information. Two viewpoints have been revised where the screening relied upon includes commercial forestry and additional screen planting is proposed. An additional ten viewpoints were also submitted. The Planning Authority is now satisfied that the proposed development can be visually accommodated subject to the screen planting measures outlined.

3.2.13. With respect to separation distances/ buffer areas, it is submitted that the blue line boundary extends far beyond the final proposed development boundary. Similar separation distances have been accepted elsewhere by the Board and certain dwellings are owned by landowners connected with the development or are vacant/ derelict. The Planning Authority refers to Board decision PL93.304651 and states that it is satisfied with the separation distances outlined.

3.2.14. Drainage & Environmental Management layouts submitted as further information specify the location of mitigation measures put forward in the CEMP and Natura Impact Statement. The response from the Heritage Officer indicates this information

to be satisfactory. It is recommended that implementation of the Biodiversity Management Plan shall be a condition of permission and subject to the submission of ecological monitoring progress reports in years 3, 6 and 9 post construction. It is stated that these reports shall detail progress with regards to re-wetting of Curraheen Marsh area, pollinator friendly maintenance of grassland vegetation, usage of site by mammals (badger, otter, bats) and any intervention required to enhance biodiversity mitigation measures.

3.2.15. Following discussion with the Area Engineer, the applicant submitted details of 160m sightlines onto the R675 and traffic management plans to access the various arrays. Additional screen planting along the boundary with the public road is also proposed. The Roads Department indicated no objection to the proposal subject to conditions, including the requirement for a bond, a construction programme and traffic management plan, additional screen planting and road drainage measures.

3.2.16. The applicant submitted an overall Operations & Maintenance Plan which includes ongoing maintenance tasks. These details are considered acceptable.

3.2.17. It is concluded that the proposed development would not seriously injure the visual or residential amenities of the area, would be acceptable in terms of traffic safety, would not negatively impact upon ecology or cultural heritage and would not be prejudicial to public health.

3.3. **Prescribed Bodies**

Transport Infrastructure Ireland

3.3.1. Transport Infrastructure Ireland submitted that the proposal shall be undertaken strictly in accordance with the Transport (Traffic Impact) Assessment.

Department of Culture, Heritage and the Gaeltacht

3.3.2. The Department concurs with the recommendations outlined in the Archaeological Assessment Report. It is recommended that conditions are attached requiring the establishment of buffers in the environs of identified monuments, a geophysical survey and a programme of archaeological testing.

Inland Fisheries Ireland

3.3.3. IFI note that the site is within the catchments of both the Tay River and Ballyvooney Stream, and that the Tay system is an important salmon and sea trout fishery. It is requested that adequate mitigation measures are put in place to ensure no deleterious material enters these systems during the construction and operational phases.

3.4. Third Party Observations

3.4.1. A total of 30 no. third party objections to the proposed development were received by the Planning Authority. The Planner's Report lists the following issues raised:

- Visual impact/ impact on tourism;
- Devaluation of property;
- Inadequate road network/ traffic impact;
- Health concerns;
- Water supply and surface water run-off;
- Glint/ glare impact on residences and traffic;
- Construction phase impacts;
- Battery storage – risk assessment on heat and noise;
- Lack of Government policy/ guidance on solar farm development;
- Loss of good agricultural land;
- EIAR requirement;
- Appropriate Assessment inadequacies;
- No grid connection details;
- Conflicts with agricultural zoning of lands.

4.0 Planning History

An Bord Pleanála Ref: ABP-305817-19

4.1. An application has been submitted to the Board for an electrical substation and associated 110kV and MV infrastructure required to connect proposed solar farm to the electricity transmission system with all associated ancillary site development work.

4.2. This case is being assessed concurrently to the solar farm appeal case.

Other Cases in Co. Waterford

Waterford County Council Reg. Ref: 17/564 (ABP-300004-17)

4.3. Permission granted in February 2019 for a 62.8-hectare solar farm and electrical substation at Ballyard, Ballyhane & Clashnagoneen, Cappoquin approximately 20km to the west of the proposed development.

Waterford County Council Reg. Ref: 17/645 (ABP-300267-17)

4.4. Permission granted in February 2018 for a 62.8 hectare solar farm and electrical substation at Carrigalong, Tramore approximately 20km east of the proposed development.

Waterford County Council Reg. Ref: 18/598 (ABP-303576-19)

4.5. Permission granted in May 2019 for a 29.7 hectare solar farm at Poulbautia, Cappoquin approximately 20km west of the proposed development.

Waterford County Council Reg. Ref: 18/598 (ABP-304651-19)

4.6. Permission granted in September 2019 for a solar farm on two parcels (27 and 11 hectares) near the village of Mothel approximately 15km north of the proposed development. The Board also granted permission for the associated grid connection case (ABP-303930-19).

Waterford County Council Reg. Ref: 16/126 (PL93.246902)

4.7. Permission granted in November 2016 for a 28.8 hectare solar farm at Drumroe, Cappoquin approximately 20km west of the proposed development.

Waterford County Council Reg. Ref: 15/770 (PL93.247310)

4.8. Permission granted in February 2017 for a 12 hectare solar farm at Picketstown, Tramore approximately 20km east of the proposed development.

Waterford County Council Reg. Ref: 16/371 (PL93.247677)

4.9. Permission refused in March 2018 for a 12 hectare solar farm near Lismore approximately 30km west of the proposed development.

4.10. It was noted in the reason for refusal that the development would have been within the preferred route corridor for the proposed N72 realignment.

Waterford County Council Reg. Ref: 17/96 (PL93.248413)

4.11. Permission granted in March 2018 for a 10.2 hectare solar farm at Cooltubbrid approximately 2.8km north-east of the proposed development.

Waterford County Council Reg. Ref: 17/113 (PL93.248487)

4.12. Permission granted in March 2018 for a 17.7 hectare solar farm at Keiloge approximately 25km east of the proposed development.

5.0 Legislative and Policy Context

5.1. National Framework Plan, 2018

5.1.1. The National Planning Framework provides policies, actions and investment to deliver 10 National Strategic Outcomes (NSO) and priorities of the National Development Plan. Transitioning to a low carbon and climate resilient society is the main NSO that pertains to the proposed development. It is stated that new energy systems and transmission grids will be necessary for a more distributed, renewables-focused energy generation system.

5.1.2. Chapter 9 of the NPF: Realising Our Sustainable Future recognises the need to accelerate action on climate change for a low carbon energy future. In this regard, National Policy Objective 54 seeks to *"reduce our carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation objectives, as well as targets for greenhouse gas emissions reductions."*

5.1.3. The transition to renewable sources of energy is an integral part of Ireland's climate change strategy as a means of reducing reliance on fossil fuels. Reflecting this, National Policy Objective 55 will *"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."*

5.2. Regional Spatial & Economic Strategy for the Southern Region, 2020

5.2.1. This document is a 12-year strategic regional development framework that will facilitate the delivery of the NPF. The Southern Regional Assembly will support the implementation of the Climate Action Plan, 2019 by prioritising decarbonisation, resource efficiency and climate resilience. It is recognised that there is significant potential to use renewable energy across the Region to achieve climate change emission reduction targets and in this regard the Strategy will support renewable industries and requirements for transmission and distribution infrastructure.

5.3. Waterford County Development Plan, 2011-2017 (as extended)

5.3.1. The subject site is located within a 'Stronger Rural Area'. The R675 and the section of the N25 to the south-west of McGrath's Cross are designated as 'scenic routes' within the Development Plan Scenic Landscape Evaluation. There is a strip between the two local roads running north-south through the site that is shown to be 'visually vulnerable'. The onus is on the applicant to demonstrate that there will be no obstruction or degradation of views towards visually vulnerable features nor significant alterations to the appearance or character of sensitive areas.

5.3.2. It is anticipated in Section 6.9 that the green economy will yield significant results for businesses, particularly in rural areas (farmers, energy producers and businesses). Policy ECD15 seeks *"to facilitate appropriate renewable energy infrastructure and promote the use of renewable energy among businesses and households throughout Waterford County."*

5.3.3. Under Section 7.23 – Energy, Policy NF26 seeks the following:

1. *To facilitate improvements in energy infrastructure and encourage the expansion of the infrastructure at appropriate locations within the County.*

2. *To support and facilitate the future expansion of the natural gas pipeline.*
3. *To facilitate, where appropriate, future alternative renewable energy developments throughout the County that are located in close proximity to the National Grid Strategy improvements so as to minimise the length and visual impact of grid connections.*
4. *To collaborate with EirGrid in accordance with the Grid 25 Strategy to facilitate the delivery of quality connection, transmission and market services to electricity generators, suppliers and customers utilising the high voltage electricity system at appropriate locations within County Waterford.*

5.3.4. Under Section 8.8 – Renewable Energy, Policy ENV10 seeks *"to facilitate and encourage sustainable development proposals for alternative energy sources and energy efficient technologies."*

5.3.5. All land outside designated settlements and land use zoning maps is regarded as *"Agriculture A – to provide for the development of agriculture and to protect and improve rural amenity."* A solar farm or electricity infrastructure are not listed uses within the land use zoning matrix. Uses not covered may be allowed in accordance with the written provisions of the Development Plan.

5.3.6. Variation 2 of the Development Plan incorporates the **Waterford City and County Renewable Energy Strategy 2016-2030**, which examines the renewable energy potential for the city and county and considers the strategic planning factors contributing towards the deployment of such renewable energy. It is noted in this Strategy that Waterford is in the top 15% in terms of solar resource in Ireland and a projection has been set in the Strategy of 84.1MW of solar energy for the county up to 2030, requiring a land mass of 168.2 hectares.

5.4. Climate Action Plan, 2019

5.4.1. This plan puts in place a decarbonisation pathway to 2030 consistent with reaching the EU target of net zero emissions by 2050. It builds on the measures set out in the National Mitigation Plan, Project Ireland 2020 and the draft National Energy and Climate Plan.

5.4.2. It is noted that electricity accounted for 19.3% of Ireland's greenhouse gas emission in 2017; however, 30.1% of electricity produced in 2017 was from renewable sources. The target is to reach 40% by 2020 but there is a very rapid projected growth in electricity demand. The Climate Action Plan therefore seeks to ensure that renewable rather than fossil fuel generation capacity is built to meet this demand. The aim is to have 70% of electricity generated from renewable sources by 2030. The Climate Action Plan acknowledges that increased levels of renewable generation will require very substantial new infrastructure, including wind and solar farms, grid reinforcement, storage development and interconnection.

5.5. National Adaption Framework, 2018

5.5.1. This Framework was developed under the Climate Action and Low Carbon Development Act, 2015. A number of Government Departments are required under the Framework to prepare sectorial adaptation plans to reduce the vulnerability of the country to the negative effects of climate change and to avail of the positive impacts. The Climate Change Adaptation Plan for Electricity and Gas Networks Sector has been prepared under the National Adaption Framework to identify the potential impacts of climate change on energy infrastructure, assess associated risks and set out an action plan for adapting to those impacts.

5.6. Natural Heritage Designations

5.6.1. The following designated sites are within 10km of the proposed solar farm:

Site Name	Site Code	Distance (nearest point to solar farm)	Direction
Mid-Waterford Coast SPA	004193	2.1km	South
Helvick Head to Ballyquin SPA	004192	9.8km	South-west
Dungarvan Harbour SPA	004032	8km	South-west
Comeragh Mountains SAC	001952	5.4km	North-west
Glendine Wood SAC	002324	7.4km	West
Helvick Head SAC	000665	9.8km	South-west

Dungarvan Harbour pNHA	000663	8km	South-west
Helvick Head pNHA	000665	9.8km	South-west
Ballin Lough (Waterford) pNHA	001691	6.8km	East
Ballyvoyle Head to Tramore pNHA	001693	2.2km	South
Stradbally Woods pNHA	001707	480m	South-west
Comeragh Mountains pNHA	001952	5.4km	North-west

5.7. EIA Screening

5.7.1. Solar farms are not listed as a class of development for the purposes of EIA as set out in Parts 1 and 2 of the 5th Schedule of the Planning and Development Regulations, 2001 (as amended) and therefore the submission of a mandatory EIAR is not required.

5.7.2. Different types of installations for the production of energy are listed under "Energy Industry" within Part 2 of Schedule 5. However, I would be of the opinion that none of these installations are applicable to a solar farm development and the Board has reached a similar conclusion on other solar farm cases to date.

5.7.3. Having regard to the above, I am satisfied that the submission of an EIAR is not required for the proposed development. It should be noted that the planning application is accompanied by a Planning and Environmental Report and technical appendices.

6.0 The Appeal

6.1. Grounds of Appeal

6.1.1. A first party appeal was lodged against Condition 2(a) only of the Council's decision for the following reasons:

- Applicant wishes to appeal the operational period of 25 years in isolation and not the planning period of ten years.

- At the core of the Renewable Electricity Support Scheme (RESS) High Level Design published by the Department of Communications, Climate Action and Environment is the requirement for cost effectiveness and value for money.
- Capital investment required to provide for the generation asset is significant and it is prudent to maximise use of this asset.
- Financial arrangements associated with solar energy are based around its operational life and thus landholding agreements, maintenance contracts and other associated operational arrangements are being based around a 35-year timeframe.
- A 35 year operational lifetime should be applied if planning permission is granted to maximise environmental and sustainable energy benefits of the proposed development.
- Longer operational periods are more feasible and analogous consenting periods significantly reduce the cost of capital funding – results in projects similar to that associated with this development bidding into the RESS action at a much lower out-turn price, with the net effect of reducing costs for the electricity consumer.
- UK solar industry body has carried out analysis into the effect of longevity impacting on the levelized cost of electricity which states that “most solar farms are now expected to have an operational life in excess of 30 years, and some as long as 40 years, rather than the 25 years previously considered as an industry standard.”
- Panel degradation is occurring far slower than previously thought and technology associated with photovoltaic cells and solar energy projects have made rapid advances in recent years.
- Grid connected photovoltaic systems in Sweden and Japan installed in 1984 are still generating a stable amount of electricity over 30 years later – expected physical lifetime for modern solar photovoltaic equipment is now in excess of 35 years. Consented lifespan should reflect this.
- It is requested that Condition 2(a) is amended to reference an operational period of 35 years.

6.1.2. A third party appeal was submitted by Breda Kiely, a resident of Kilmacthomas. The grounds of appeal and main points raised in this submission are summarised as follows:

- Connection to the national grid is fundamental to the entire project – cumulative effect of both phases must be assessed to comply with planning law.
- If full project is laid out in one application, it may warrant an EIA – splitting project into two parts downplays the true nature and extent of the proposed development.
- If Appropriate Assessment was completed properly, Condition 9 relating to SUDS drainage management system would not be required.
- Case C-461/17 from the CJEU states that it is not permitted to take non definitive plans into consideration as mitigation – entire NIS is based on non-definitive plans, e.g. final location for temporary intercept drains to be determined on site, detailed desk studies and site investigations in advance of construction for cables. Entire mitigation plan is aspirational or given in outline – AA must be definitive.
- Measures to deal with protection of the aquatic environment rely heavily on the use of silt fencing – no certainty these measures can and will work. Fences are often ineffective due to poor installation and maintenance.
- Battery modules proposed for the site are not described adequately and therefore the impact of this part of the development was not assessed.
- There is no paperwork submitted that shows that re-zoning has taken place or that any additional information was supplied that allows this site to pass the flood risk justification test.
- Flood risk and drainage impact management information cannot be relied on in the context of the flood plain information outlined by the Planning Authority.
- Proposal will give rise to over-intensification of development of this type in areas zoned for agricultural use - Council has permitted 441.8 ha and it is

stated in the Waterford Renewable Energy Strategy 2016-2030 that a land mass of 168.2 ha will be needed.

- Standard of information and drawings submitted do not comply with the normal strict criteria for much lesser scale developments.
- Public notice does not describe the full extent of the development – no mention of vehicular entrances and drawings do not show local wells/ septic tanks.
- Traffic management plan does not show modelled auto-track movements.
- Sightline requirement onto busy R765 has been relaxed.
- Too much high-quality farmland and compliant rural housing applications will be sterilised.
- Board should take notice of direction under leave to appeal case ABP-302037 that development is not subject to and does not require an EIA – stay of development has been placed until this case has been determined.
- Subject development is located with minimal setback, yet quite visible from the scenic Copper Coast drive on the R675. Proposed GIS switching building has a height of some 11.5m and is of rectangular bulk mass.
- Only one elevation of the IPP control building and two elevations of the GIS building have been submitted. Note states that dimensions may vary and buildings may therefore become more obtrusive than already proposed.
- Permission recently refused for 26 hectare solar farm under Ref: PL09.303577 in Co. Kildare – would form a prominent and obtrusive feature in the landscape which would be highly visible in views from its environs and would adversely impact on the character of the local setting. Proposed development is for 109 hectares.
- Proposed industrial development would be widely dispersed and would blot the surrounding environment.
- Red squirrels are resident on this site and proposal would be a colossal disturbance to their habitat.

- There are numerous homes that the developers have not considered in their noise, glint and glare surveys.
- No detail that fire services have the appropriate training for extinguishing possible fires from battery storage units. Fan cooling is required for each battery storage unit and this is likely to give rise to noise pollution.

6.2. Applicant Response

6.2.1. The applicant's agent responded to the third party appeal with the following comments:

- O'Grianna & others v An Bord Pleanála - clarification on this point made previously by the Board, e.g. ABP-302475-18. Inspector's Report for that case states "I also note the reference to O'Grianna v An Bord Pleanála in terms of cumulative environmental impacts and project splitting. This relates to EIA cases only and is not therefore relevant to this case."
- Adequacy of Appropriate Assessment Screening & Natura Impact Assessment – applicant is of the view that sufficient detail has been provided within the planning submission.
- Flooding – reference to site being in Flood Zones A & B relates to a superseded plan originally submitted for pre-planning – boundary was amended such that no part of the development would be located within the flood zone.
- PFRA map clearly indicates that the solar farm and substation are located in lands classed as Flood Zone C – justification test not therefore required.
- Site fencing – use of mammal fencing has previously been included for in grants of permission issued by the Board.

6.3. Observations

6.3.1. Three valid observations on the appeal were received by the Board. The main points raised in each of these submissions, (avoiding repetition where possible) are summarised as follows:

Dr. JP McElduff, Carrigahilla, Stradbally and Kilmacthomas Health Centre

- Historical 24" map of Site Entrance 4 shows a "stepping stone" – no map shows a previous vehicular access point at this location.
- Directly exiting at this point on the regional road would be extremely dangerous as there is quite a significant bend in the road in the direction of Carrickahilla crossroads.
- There is a solid white line on the road starting prior to the proposed access and continuing north-east through the bend in the road.
- Development Plan seeks to discourage the erection of dwellings with direct access onto regional and national roads.
- Proposed access would be considered a significant traffic danger/ blackspot – entrance should be assessed from a road design perspective.
- Cash deposit of €80,000 in 35 years would leave a very significant shortfall in terms of monies needed to reinstate the site of this size.
- A significant percentage of the monies generated by the proposed development should be ringfenced for the affected local communities, e.g. expansion of Stadbally sewage system or undergrounding of cabling within village boundaries.

Sally & Jim Thompson, Woodhouse Estate, Stradbally

- Proposed development is unrelated to any local need or demand, is designated to be exported within Ireland or internationally and is pure speculative and developer driven.
- There is no planning justification for the location of the proposed development within a prime agricultural area overlooking Stadbally Cove SPA and impacting on the Copper Coast Global Geopark.

Development Plan and national policy

- Proposal materially contravenes the agricultural zoning objective for the area. Planner's Report has relied upon national policy in relation to climate action – national policy targets do not supersede the development plan but generally

outline national targets, which are to be achieved sustainably and at appropriate locations.

- Proposal results in a dispersed and random haphazard development stretching across four greenfield development sites with individual entrances located in an area designated and zoned for agricultural use and subject to flood risk.
- Proposal is contrary to the National Planning Framework Policy Objective 53 which seeks “to support the circular and bio economy including in particular through greater efficiency in land management, greater use of renewable resources and by reducing the rate of land use change from urban sprawl and new development.”
- Objective for efficient land use management needs to be considered in light of the cumulative permissions already granted for solar farm development in Co. Waterford (295 ha).
- Use of brownfield sites is particularly suitable for solar energy whereby prime agricultural land is not wasted, and where such sites are located proximate to sources of energy demand and urban settlement.
- There are other specific development plan objectives which militate against a grant of planning permission relating to sightlines, archaeology, scenic and visual amenity, and geology.
- Development Plan renewable energy policies are general in nature and promote renewable energy where appropriate.
- Decision failed to have regard to the sloping topography of the site with differences of 55m in levels – this has profound implications for visual impact, soil erosion and flood risk.
- Images submitted as further information is still of inadequate size and brightness.
- Reliance in LVIA on screening by commercial forestry and hedgerow which are being removed or will be removed in unacceptable.

- Impact of the proposal on scenic rural agricultural landscape and on the character of Woodhouse Estate has not been considered.
- Planning conditions all highlight deficiencies and gaps in detail which should be resolved in the process.
- Drainage has not been adequately cross referenced to the flood risk issue or to potential soil erosion impacts given the topography of the site.
- Applicant has no legal right to install drainage or construct passing bays or carry out other works on the public road.
- Noise impacts from inverters and batteries and substations can be pervasive and tonal, resulting in significant injury to adjacent residential amenities and to the enjoyment of the local environment.

Site context

- Proposed development is located in an area of significant archaeological and heritage interest.
- Woodhouse Country House and Estate (protected structure) is located immediately proximate to the south of the site – setting of house comprises Stradbally Woods pNHA, the Miners Avenue and the River Tay and Stradbally Cove. Proposal would materially impact on the landscape character of the and setting of Woodhouse, Stradbally village, the greenway and walking routes.
- Stradbally SPA (Mid Waterford Coast) is within 500m of the site and site is located within drainage catchment of the Rivers Tay and Fay – there is a high probability the lands are used for foraging by bats and flight paths by protected birds.
- Site is located within Copper Coast – impact on Geopark not assessed in terms of visual impact and sterilisation of lands.
- Cyclists on Waterford Greenway will be impacted by glint/ glare and erosion of rural landscape typology. St. Declan's Way walking route also traverses the area.

Development description

- Description of the proposed development is inadequate – fails to include all elements including underground cabling, building dimensions, fencing, power output, the number of panels is each array and their height, entrance details, etc.

10-year permission

- 10-year permission would jeopardise the proper planning, development and agricultural management of the area over this period.
- Based on unsound legal and planning practice approach of obtaining grid connection subsequent to grant of planning permission.

Grid connection

- Capacity of grid to absorb the peak power generated by the solar farm needs to be considered, particularly in the context of the cumulative impact of over 400 hectares of solar farm development potential in Waterford alone.
- Connection to grid network may give rise to the need for pylons – developers must now assess all works that will form part of the overall project.
- Applicant must have sufficient legal interest to carry out the development – applicant has highlighted that the implementation of the development is outside their control and dependent on the future application to the Board.
- The need to assess the whole project does not only apply to EIA projects but to all projects as there is a fundamental legal inability to implement the project.
- Grid connection application which is subject to EIAR has not included the subject solar farm in its assessment of impacts and is consequently defective.
- Grid network can accommodate up to 20% of variable renewable power input – increases in variable output would require significant upgrade of transmission grid network. Relationship of battery storage to alleviating this variability is not clear.

- Solar power strategies should be integrated with land use planning and should relate to local demand to avoid impacts on the stability of the grid system.
- Current proposal is a random haphazard location for a solar farm unrelated to demand in a rural area and contrary to NPF policy to consolidate development and use brownfield sites in preference to greenfield sites.

Inadequate plans and details

- Site layout plan is not of an appropriate scale to understand the overall context of the site.
- Overall dimensions of the development and solar panels are not given.
- Number of CCTV poles not stated in public notices – these are significant features and an intrusion in the landscape.
- Extent of surface water generation and its management cannot be and has not been assessed on the information submitted.
- Significant earth moving for cabling and trenching could impact on archaeology, soil erosion and flood risk.
- Private access road is in the order of 7km and proposed fencing significant at over 13km.
- Local road network has inadequate capacity in terms of width, alignment and surfacing to accommodate construction delivery, and access and operation to Glen East and West array.
- Sections do not represent a clear understanding of the relationship of the proposed development to the change in ground contour levels across the site and extent of soil excavation, removal or changes in topography are not detailed.
- Construction compounds are inadequately detailed. These areas are substantial, and it is likely that hardstanding will be required for cranes.
- Sustainability of sheep rearing within the shadow of solar panels has not been demonstrated.

- Degradation and overall operational life of the panels has not been given and there are no details on decommissioning, or operation and maintenance, health and safety and fire risk.

Inadequate public notice

- Notice and description of the development only refers to works and not to a material change of use of the land.

Project splitting

- Application as currently framed amounts to project spitting designed to avoid the need for an EIAR.

Need for EIAR

- Class 3(a) of Part 2 of Schedule 5; "Industrial installations for the production of electricity, steam and hot water not included in Part 1 of this Schedule with a heat output of 300 megawatts or more" – class is general in nature and does not have to include all three forms of electricity production. Class 9B "industrial installations for carrying gas, steam and hot water" – not envisaged that this class must encompass all three forms.
- 7th Schedule of Regulations incorporates a case by case examination of the need for EIA by reference to the characteristics of the development, location and impact. Class 3(a) of Annex 11 applies to the subject development.
- Council's Renewable Energy Strategy refers to the need to refer to the 7th Schedule in determining the need for an EIAR for solar farms.
- Scale of proposed development at over 109 hectares, its sensitive location, the change of agricultural land use and the use of natural resources are relevant criteria.
- Rural restructuring is not addressed in the application planning report regarding the need for EIAR – application comprises rural restructuring of farmland.
- Recontouring within a farm holding above 5 hectares requires a consent application under the EIA Agricultural Regulations, 2011 – this amounts to an activity for the purposes of rural restructuring.

- Class 10: Infrastructure projects (dd) *"all private roads which would exceed 2000 metres in length"* – length of proposed private road is c. 7km.
- Class 15 (Part 2) is also relevant: *"any project listed in this Part which does not exceed a quantity, area or other limit specified in this Part in respect of the relevant class of development but which would be likely to have significant effects on the environment, having regard to the criteria set out in Schedule 7."*
- Critical relevant criteria in Schedule 7 are the cumulation with other proposed development, the use of natural resources, landscapes of historical, cultural or archaeological significance, environmental sensitivity or the Mid Coast SPA, and risk of damage of species protected under the Habitats Directive.

Appropriate Assessment

- AA screening does not consider the effect of other plans and projects for solar farms in Co. Waterford.
- Development is not described in a precise manner and it underestimates the surface area and footprint.
- It is important to know in advance if SUDS drainage management including ponds and swales are necessary.
- AA Screening only looks at European Sites within 10km – should be 15km including Dungarvan Harbour SPA.
- AA Screening does not consider all surface water pathways to the Mid Waterford Coast SPA – details of silt fencing are very imprecise.
- AA Screening does not consider bird flight paths to the Dungarvan SPA or Comeraghs SAC.
- Mitigation measures are imprecise and reliant on a construction management plan to be agreed and other details of site management.
- Design of proposed river crossing at Curraheen entrance is not detailed – this is a significant flaw and omission.
- Impact of glare on flight patterns of birds is not identified as a risk to flight movement or collision hazard.

- Impact of solar farms on wildlife is poorly understood. Fencing may prevent movement of mammals, shadows will be cast on vegetation and panels may be mistaken for water by insects.

Glint & Glare Hazard

- Assessment needs to consider impacts upon houses, amenity areas, roads, paths, hiking routes, aviation activities including air rescue, and the flight pattern of birds.
- Artificial light can cause migratory birds to wander off course and solar farms pose a risk of bird collision.
- Report does not differentiate between the glare and glint impact arising from the scale of the development.
- No evidence that the potential impact on Stradbally village, Woodhouse Estate or Stradbally Cove – not evident that there is no impact beyond 1km of the site.
- Glint and glare assessment is subjective to the particular surveyor conducting the study. Potential for impact at 65 of the 103 dwellings surveyed is evidence of the haphazard and dispersed layout of the solar farm.
- 274 of the potential 423 road receptor points are theoretically impacted and following screening, 80 receptor points remain where material impacts could occur.
- Glint and glare has been identified at two sections of road where children get the school bus and no account has been taken of children cycling to school.
- Potential for glint and glare from the Comeraghs has not been considered.

Use of prime agricultural land

- Use of prime agricultural land for solar farms undermines the principles of sustainability and is contrary to BRE UK guidance.
- Since 2010 the law in Germany restricts the use of agricultural land for solar parks.

- In the UK, the subsidy scheme has been removed as a result of concern regarding solar farm blight on the landscape.

Economic viability

- It is an important consideration of sustainability that high capital costs are not passed onto consumers.
- First solar farm in Ireland in Co. Antrim is connected to supplying the needs of Belfast Airport – no such planning rationale for subject application.
- Extent of wind energy generation has placed significant pressure on the stability of the national grid network and it is likely that further solar farm generation will be dependent on the upgrade of the grid network.

Ad hoc speculative development

- Proposal is speculative developer driven development in an energy policy vacuum.
- Submission of application in advance of clarification of policy issues relating to land use, cumulative impact and stability of grid amounts to ad hoc development.
- There are currently 25 applications for solar farm grid connection in Waterford entailing 176MW and encompassing c. 376 Ha of agricultural land – current grid connection applications are more than double the projected figure to 2030. Shows developer driven nature of the investment in solar farm development.
- Subject application of up to 95MW would itself take up the entire solar energy projection for Co. Waterford up to 2030.

Development Plan policies and objectives

- Waterford City and County Development Plan provides that all land outside of designated towns and settlements is zoned for agricultural use.
- Land use matrix does not allow for the development of solar farms within an agricultural zone.

Flood risk

- Nature of electricity use connected to the substation, batteries and inverter stations, etc. are highly vulnerable and incompatible in regard to flood water use.
- Reservation of certain areas free from solar panels does not solve the problems of flood risk, particularly in light of topography and excavation.
- Surface water drainage implications pose further impacts for run-off and residual flood risk in river catchment areas.
- There will be increased run off in the order of 60 Ha. from the solar panels alone.

Waterford Renewable Energy Strategy

- Highlights need to strengthen links between renewable energy and spatial planning.
- Materially contravenes Strategy or relevant planning guidance for sustainable development of large-scale solar farms.

Landscape

- Woodhouse Estate comprises over 200 Ha of woodland comprising Stradbally Woods pNHA and the designated scenic route runs directly south of the Curaheen and Rathnaskilloge arrays.
- Proposal introduces an overly industrial type character to the landscape at variance with landscape character protection.
- Loss of landscape character would materially contravene the aspiration and vision of the national landscape strategy.
- Site is in the heart of an area where the higher topography is such that the impacts would be dominant on the landscape setting and character of the wider area as a result of the extensive scale and dispersed layout.

Visual Impact

- Visual Impact Assessment is misleading in that the cumulative impact of further development with grid connection is not demonstrated or considered.

- Viewpoints are limited in scope and some are too dark and rendering of photomontages in poor.
- Visual impact on the landscape character of Stradbally Woods and Woodhouse Estate, Stradbally Cove the Copper Coast have not been considered.
- Proposal would materially interfere with character or landscape or with a view or prospect of special amenity value for the nearby scenic route.
- Proposed solar farm of significant scale and extent on exposed elevated site would visually dominate the local rural area and existing dwellings.

Archaeology

- Site is within a wider area of significant density and connectedness of archaeological features and recorded monuments.
- National monument WA024-051 is within footprint of site – mitigation is inadequate given the scale of the proposed solar farm.
- Proposal will be overwhelming in term of landscape impact on nearby archaeology.

Human health

- Human health and issues of electromagnetic fields have not been examined.
- There has been no proper assessment of noise – no evidence to suggest proposed set back from nearby residences is sufficient.

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- Objects particularly to the Curraheen array which is located adjacent to observer's land.
- Unclear if works will necessitate works to lands outside the applicant's legal ownership.
- Application states that plans are indicative and precise solar panel arrangement will be established prior to construction – lack of precision is inadequate.

- No assessment of the potential contamination in nearby streams and rivers from run-off.
- Significant earth moving could have implications for archaeology in this area.
- Sections show ground level as completely level and there is no continuous section to show the change in ground levels across the site and the implications arising for excavation or visual impact.
- Only Section Z1/Z4 has ground levels marked as a point notably at 105m and 110m and these are misleading as the contour lines are not linear. Extent of soil excavation, removal or changes in topography is not detailed.
- Suitability of sheep rearing in the shadow of solar panels has not been demonstrated. Impact on general health of livestock grazing in such close vicinity to the solar panels is questionable and contentious.
- Photovoltaic cells contain toxic materials and this is not addressed.
- Visual impact on the Copper Coast was not assessed in terms of the misappropriate land use of the rich agricultural landscape of the area.
- Use of culvert to create new entrance opposite observer's land at Curaheen raises serious concerns – applicant has no legal right to install drainage on the public road.
- There is large marsh to the south of Curraheen – risk of leakage of contaminants into this area is exacerbated and unpreventable given the nature of the wet undulating ground and in wet weather. Observer's cattle have access to drinking water.

7.0 **Assessment**

7.1. Planning permission is sought for the development of a solar farm on a site of 109 hectares near Stadbally, Co. Waterford. A third party appeal has been lodged against Waterford County Council's decision to grant permission and the applicant has submitted a first party appeal against a condition of this permission.

7.2. The proposed solar farm will connect to the grid via a substation and associated infrastructure proposed under a separate SID planning application that is being

assessed by the Board concurrently (ABP-304558-19). It should be noted that, where appropriate, the overall project including solar farm and grid connection are assessed together within documentation accompanying both this appeal case and direct application to the Board. In this regard, I am satisfied that there is sufficient information available to the Board to determine each case.

7.3. Having regard to the nature of the proposed development and the submissions on file, I consider that the following are the key issues to assessing this case:

- Development principle
- Duration of permission
- Requirement for EIA
- Landscape and visual impacts
- Impact on residential amenity
- Drainage and flooding
- Access and traffic
- Archaeology and heritage
- Ecology
- Appropriate Assessment

7.4. **Development Principle**

7.4.1. Under the Waterford County Development Plan, 2011-2017 (as extended), all lands outside designated settlements and land use zoning maps are regarded as *"Agriculture 'A' – to provide for the development of agriculture and to protect and improve rural amenity."* The appeal site is located in a rural area and is predominantly in agricultural use.

7.4.2. A solar farm or electricity infrastructure are not listed uses within the land use zoning matrix. Uses not covered may be allowed in accordance with the written provisions of the Development Plan. Appropriate Development Plan provisions that may allow for the proposed solar farm and associated infrastructure include Policy ECD which seeks *"to facilitate appropriate renewable energy infrastructure and promote the use*

of renewable energy among businesses and households throughout Waterford County." In this regard, it is recognised in the Development Plan that the green economy will yield significant results for businesses, particularly in rural areas including farmers.

7.4.3. The proposed development is also supported by Policy NF26 which *inter alia* seeks *"to facilitate improvements in energy infrastructure and encourage the expansion of the infrastructure at appropriate locations within the County…"* and *"to facilitate, where appropriate, future alternative renewable energy developments throughout the County that are located in close proximity to the National Grid Strategy improvements so as to minimise the length and visual impact of grid connections..."*

7.4.4. The proposed solar farm and associated grid connection is adjacent to the Dungarvan-Cullenagh/ Butlerstown 110kV overhead line, which traverses the site at Rathnaskilloge. Moreover, the Waterford City and County Renewable Energy Strategy 2016-2030 notes that County Waterford is in the top 15% in terms of solar resource in Ireland. Thus, the proposal is situated in an area with good solar potential that minimises the impact of the required grid connection.

7.4.5. The appellant and observers submit that the proposal will give rise to an over-intensification of solar farms in areas zoned for agricultural use. Reference is made to the projection within the Waterford Renewable Energy Strategy of 84.1MW of solar energy for the county up to 2030 that would require a land mass of 168.2 hectares. There is also concern regarding the use of prime agricultural land for a solar farm and the fact that the proposed solar farm may account for all the County's solar energy projection up to 2030.

7.4.6. The projection contained within the Waterford Renewable Energy Strategy is not a limitation, and as noted in Section 4 above, there are permissions for solar farms in the county that in total are already well in excess of this projection. It should also be noted that since the preparation of the Renewable Energy Strategy, the Government's Climate Action Plan has been released with the aim of generating 70% of electricity from renewable sources by 2030. Increased levels of renewable generation will therefore require increased projections and substantial new infrastructure, including solar farms.

7.4.7. With respect to concerns within submissions regarding the use of agricultural lands for solar panels, I note that the solar farm can continue to be used for grazing of sheep during its operational life and that the proposed use is reversible. There are no other permitted solar farms that would be easily viewed from the appeal site and thus the predominant use in the area will continue to be agriculture.

7.4.8. Overall, I would be satisfied that the proposed solar farm is acceptable in principle at this location and in accordance with all local and national policy regarding the essential need to increase renewable energy production. As recognised in the National Planning Framework, the transition to renewable sources of energy is an integral part of Ireland's climate change strategy as a means of reducing reliance on fossil fuels and this is reflected in National Policy Objective 55 which will *"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."* I consider that the proposed development will make an important contribution to the achievement of this objective.

7.4.9. A number of other issues have been raised by the Appellant/ Observers regarding the standard of application material, legal interest, deposit and ringfencing of monies, local need or demand for electricity and grid capacity. I am satisfied that these matters are adequately addressed. Planning application material is up to a required standard and is sufficient for the Board to determine this case. The applicant has sufficient legal interest to make the application and a standard condition can be attached to any grant of permission regarding a cash deposit or bond. It would not be possible for the power generated by new renewable energy developments to be maintained for local use only and it should be noted that the proposed development will generate monies for the local community commensurate with the amount of power it generates. The issue of grid capacity will be agreed between the applicant and EirGrid.

7.5. Duration of Permission

7.5.1. A first party appeal has been lodged against Condition 2(a) of the Council's notification of decision which states that the grant of permission is for a period of 10 years, and upon commissioning of the solar farm, the operational period shall be 25

years. The applicant has appealed the operational period of 25 years and not the permission period of 10 years.

7.5.2. The applicant considers that a 35 year operational lifetime should be applied to the planning permission to maximise environmental and sustainability energy benefits. It is also submitted that panel degradation is occurring at a far slower than previously thought and technology associated with photovoltaic cells and solar energy projects have made rapid advances in recent years. Longer operational periods are therefore considered to be more feasible and analogous permission periods will significantly reduce the cost of capital funding, with the net effect of reducing costs for the electricity consumer.

7.5.3. The Board will note that a condition was attached to a recent solar farm decision in Co. Wexford (ABP-306065-19), permitting the development for a period of 35 years from the date of commissioning. The applicant in this case sought permission for a period of 35 years and the Board granted permission following the Council's notification of decision to refuse permission on unrelated issues of glint and glare. Permission was also granted for a period of 35 years under ABP-305953-19 for a solar farm in Co. Kildare.

7.5.4. It was generally considered in the past that a period of 25 years from the date of commencement was appropriate for solar farm developments given the relatively new nature of the technology and to allow a planning authority to consider the circumstances prevailing at the end of the 25 year period. I would now be satisfied that in the interests of sustainability and having regard to advances in technology, together with the recent decisions of the Board, that an operational period of 35 years is appropriate in this instance.

7.6. **Requirement for EIA**

7.6.1. As noted under Section 5.7 above, solar farms are not listed as a class of development for the purposes of EIA within the Planning and Development Regulations, 2001 (as amended).

7.6.2. Notwithstanding this, the third party appellant and an observer consider that the full project including grid connection may warrant EIA and that the splitting of the project into two parts avoids the need for EIA. The observer also considers that the

proposed solar farm requires EIA under Class 3(a) of Annex II, i.e. *"industrial installations for the production of electricity, steam and hot water (projects not included In Annex I)"*. It is submitted that this class is general in nature and does not have to include all three forms of electricity production. By way of reference, it is submitted that under Class 9B it is not envisaged that *"industrial installations for carrying gas, steam and hot water"* must encompass all three forms.

7.6.3. I refer the Board to a recent judgement which found that solar farms in themselves are not a class of development for the purposes of EIA. Under Sweetman v An Bord Pleanála (IGP Solar Farm, Ballyhea, Co. Cork), Mr. Justice McDonald concluded that the generation of electricity (without the concomitant generation of heat and stream) does not fall within Class 3(a) of the Directive. Class 3(a) does not therefore extend to the generation of electricity unless the project in question also generates heat and steam. If the generation of electricity was covered by Class 3(a), there would be no need to include Class 3(h) [hydroelectric] and 3(i) [wind farms].

7.6.4. The observer makes the argument that elements of the proposed development could fall under other classes of development under Part 1 or Part 2 of Schedule 5. Reference is made to Class 10: Infrastructure projects (dd) *"all private roads which would exceed 2000 metres in length".* It is contended that the proposed solar farm includes private roads with a total length of c. 7km and therefore EIA is required under this Class.

7.6.5. This issue has arisen before with solar farms and the definition of "private roads". The definition of 'road' is that set out in the Road Act, 1992:

> *(a) any street, lane, footpath, square, court, alley or passage,*
>
> *(b) any bridge, viaduct, underpass, subway, tunnel, overpass, overbridge, flyover, carriageway (whether single or multiple), pavement or footway,*
>
> *(c) any weighbridge or other facility for the weighing or inspection of vehicles, toll plaza or other facility for the collection of tolls, service area, emergency telephone, first aid post, culvert, arch, gulley, railing, fence, wall, barrier, guardrail, margin, kerb, lay-by, hardshoulder, island, pedestrian refuge, median, central reserve, channelliser, roundabout, gantry, pole, ramp, bollard, pipe, wire, cable, sign, signal or lighting forming part of the road, and*

(d) any other structure or thing forming part of the road and—

(i) necessary for the safety, convenience or amenity of road users or for the construction, maintenance, operation or management of the road or for the protection of the environment, or

(ii) prescribed by the Minister.

7.6.6. Upgraded and new access tracks will be constructed to a width of approximately 4m with construction depths between 0.25m and 0.75m. Figure 2.6 illustrates the tracks comprising of road stone with geogrid/ geo textile layers where required that tie in with and reuse existing site track material. Interceptor drains are shown upslope and roadside drainage to control surface water flows is shown downslope of the access track. A note on the drawing states that *"final bearing tests to meet technical requirements of turbine/ crane supplier"*, which may suggest a generic drawing used for windfarm access roads. However, solar farm access tracks would not have the same load bearing requirements as windfarm access tracks.

7.6.7. The Board may wish to consider that the proposed access tracks over a total distance of 7km fall under Class 10 and therefore request an EIAR from the applicant. However, in view of the precedent set by other solar farm cases that included access tracks in excess of 2km (ABP-301028-18, ABP-302681-18, PL17.248146), I agree that the proposed access tracks are materially different from a 'road' as defined under the Roads Act, 1993.

7.6.8. The observer also makes the case that the proposed development comprises rural restructuring of farmland and that recontouring within a farm holding above 5 hectares requires a consent application. Notwithstanding that this activity falls under the Environmental Impact Assessment (Agriculture) Regulations, 2011, with any rural restructuring requiring a screening application to the Department of Agriculture, Food and the Marine, the applicant has confirmed within responses on the concurrent application to the Board that widescale recontouring is not required for the proposed solar farm; panels are installed to follow natural contours without need for regrading or recontouring.

7.6.9. Having regard to the above, I am satisfied that the proposed solar farm is not of a class that requires EIAR or screening for EIAR. Furthermore, the associated substation and grid connection application to the Board (ABP-304558-19) is also not

of a class of development listed under Parts 1 or 2 of Schedule 5. As noted by the applicant with respect to O'Grianna V An Bord Pleanála, cumulative environmental impacts and project spitting relate to EIA cases only, and as no EIAR is required, it has no relevance to this case.

7.6.10. The observer also refers to the requirement for case by case examinations of 7th Schedule development by reference to the characteristics, location and impact of the development. Schedule 7 of the Planning and Development Regulation, 2001 (as amended) sets out criteria for determining whether development listed in Part 2 of Schedule 5 should be subject to EIA. As the proposed development and associated substation and grid connection are not listed under Part 2 of Schedule 5, a determination under Schedule 7 does not apply in this case. This also relates to the observer's submission regarding Class 15 of Part 2 which relates to projects listed in this Part.

7.7. Landscape and Visual Impacts

7.7.1. The third party appellant and observers refer to the subject development being located in a rural agricultural area with sloping topography along a scenic route and in view of cycling and walking routes. It is considered that the proposal would be dominant on the landscape setting and character of the wider area because of its extensive scale and dispersed layout. There are also concerns regarding the industrial appearance of the solar farm development, the bulk of the proposed substation building and the reliance of screening by commercial forestry and hedgerow. It is submitted that the visual impact on the landscape character of Stradbally Woods, Woodhouse Estate, Stradbally Cove and the Copper Coast have not been considered.

7.7.2. The planning application is accompanied by a Landscape and Visual Impact Assessment Report, which identifies the likely effects of the proposed solar farm on the landscape character and visual amenity of the area. A 5km study area is applied to the assessment which I consider to be appropriate for this type of development. The assessment is illustrated by a Landscape Character Plan which shows landscape sensitivity (Figure LVIA 1); Long Distance Routes and Tourist Attractions (Figure LVIA 2); a 7.5km Zone of Theoretical Visibility (Figure LVIA 3); and an Aerial

Context of Layout (LVIA 4). A total of 16 Viewpoints were recorded from around the site showing the existing view, a wireframe view, a proposed view without planting, and proposed views with planting (years 1 & 5).

7.7.3. The assessment concludes with a landscape assessment of the potential effects of the proposed development on landscape fabric, landscape character and landscape designations, together with a visual assessment of the potential effects on the visual amenity of receptors in the study area. The LVIA also assesses the cumulative impact of the solar farm and grid connection.

7.7.4. The study sets out the activities and temporary features that would be in place during the 10 month construction phase of the proposed development. There would be limited loss of ground vegetation and ground disturbance would be minimised by good site management and reinstatement. The main elements of the operational phase are described including the solar arrays, substation compound, battery modules, transformer and inverter stations (64 no.), spare parts container, 2.2m high deer fencing and gates, CCTV (max. 5m high poles at 200m intervals around perimeter), internal maintenance tracks (6,300m), seeding between solar panel of with native grasses and landscape enhancement measures, and periodical site visits for maintenance. The decommissioning phase is described as a condensed version of the construction phase.

7.7.5. There were concerns presented in observations regarding the description of the proposed development including that relating to the solar panels, CCTV and the substation building. However, I consider that all proposed works structures on site are adequately described for the purposes of landscape and visual assessment and in general terms for the Board to assess the overall impact of the proposed development.

7.7.6. Overall, I consider that the methods used by the applicant for viewpoint analysis, landscape assessment and visual assessment are satisfactory and in accordance with industry standards. The applicant submitted revised images to the Planning Authority as further information that are brighter and easier to read. The further information also included an additional 10 viewpoints and I consider that this presents a thorough and widespread assessment of the landscape and visual impacts of the proposed development from the most sensitive locations in the

surrounding area. It should be noted that observations were made on the quality of photomontages; I take this to mean those submitted originally and these are now supplemented by the improved and additional images. Observations have been submitted that the visual impact on Stradbally Woods, Woodhouse Estate, Stradbally Cove and the Copper Coast have not been considered. I note, however, from Figure LVIA 3 that views of the proposed development from each of these locations would likely be very limited or non-existent.

7.7.7. In terms of landscape assessment impact, the effects on landscape fabric and character have been addressed in the LVIA, together with the effects on the wider landscape, vulnerable and sensitive landscapes. Impacts on landscape fabric during construction would be limited to small sections of hedgerow and isolated tree removal. During the operational phase, native grass seeding and numerous tree belts and hedgerow would be established as mitigation.

7.7.8. The proposed solar farm would result in adverse change to the character of the site landscape during the operational phase due to the presence of solar panels and associated infrastructure. With respect to the impact on wider landscape, Figure LVIA 1 identifies the various landscape sensitivities in the surrounding area. Most of the site has a normal landscape sensitivity with vegetation serving to partially or fully screen the site from view. The solar farm would therefore only be clearly visible within close proximity and only occasional imperceptible impacts would occur beyond the immediate surroundings of the site within this landscape sensitivity.

7.7.9. There is a strip through the Glen East and Glen West arrays that has a vulnerable landscape sensitivity. However, I would be in agreement, having visited the site, that there is little justification for this designation when compared to other areas designated as such in the County. Notwithstanding, it is stated within the Scenic Landscape Evaluation appended to the Development Plan that *"these areas or features designated as vulnerable represent the principal features which create and sustain the character and distinctiveness of the surrounding landscape. To be considered for permission, development in the environs of these vulnerable areas must be shown not to impinge in any significant way upon its character, integrity or uniformity when viewed from the surroundings. Particular attention should be given to the preservation of the character and distinctiveness of these areas as viewed from scenic routes and the environs of archaeological and historic sites.* Having

regard to the character of this area of landscape, and the magnitude of change that will occur, I am satisfied that there will be no significant adverse effects arising from the proposed development on vulnerable landscape sensitivities. Furthermore, nearby areas designated as a "sensitive landscape sensitivity" have limited to no potential visibility of the proposed development.

7.7.10. With respect to visual impact assessment, receptors that were assessed included settlements, individual residential properties, visitor attractions, public highways and long-distance recreation routes. There will be no potential visibility of the proposed development from Stadbally due to intervening topography. Between one and two of the seven locational markings within the proposed development site, and up to four would be visible from Lemybrien and Faha respectively. However, this is based on bare topography and in reality, there would be no clear views from these settlements.

7.7.11. There are individual properties close to site boundaries. Properties close to the north-western boundary will be screened by proposed belts of mature trees and wide planting belts will be included adjacent to the main infrastructure along the south-eastern boundary. The worst-case impact from nearby properties will be significant immediately post construction decreasing as screen planting matures. It should also be noted that the solar farm design has sought to limit the solar arrays away from many of the most elevated fields.

7.7.12. The proposed development will not be visible from the coast and barely discernible from Mahon Falls car park. The proposed development would be barely discernible from The Copper Coast route further to the south and the overall visibility of the proposed development from Comeragh Drive is considered in the LVIA to be extremely intermittent and long distance. There are a number of cycle routes along local roads that would have similar imperceptible impacts. Only slight to imperceptible impacts on motorists would occur beyond 400m of the site. At closer distances, existing and proposed planting would provide some immediate screening.

7.7.13. Waterford Greenway is relatively low lying and therefore would have very limited visibility of the proposed solar farm. Views from this route are expected at worst to result in slight impact. The proposed development would be entirely screened from

two walking routes from the centre of Stradbally, with only very occasional distant visibility.

7.7.14. In conclusion to this section, I would be satisfied that the proposed development can be accommodated within this landscape without undue visual impact. I accept that the proposed development will be extensive in scale and dispersed; however, this is a low rise development in an undulating landform and the proposal mostly avoids the higher parts of the site. There are also forestry plantations and existing mature roadside boundaries that will screen the proposed development and the applicant has submitted that there are no imminent plans to fell nearby forestry. The overall development is also spread out over four arrays and at no place on the ground would the entire development be visible.

7.7.15. Concern has been expressed regarding the scale and bulk of the proposed substation building. I note, however, that this structure will have a dark green finish and will not appear any more obtrusive in the landscape than a new agricultural building. The substation and several of the battery storage units will be located on the lowest parts of the site and it is noteworthy that there is existing electricity infrastructure in the area. A development of this nature is better placed in proximity to existing overhead lines to avoid the visual impact of a longer grid connection. In this regard, an observer objects to the location of the proposal is a rural area rather than a brownfield site where grid connection infrastructure and land requirements would be more difficult to achieve.

7.7.16. Finally, I note that the R675 is designated as a scenic route and the Waterford Greenford pass close to the site. I consider that this section of the R675 does not display any outstanding scenic features found along other sections of the Waterford coastline or toward the Comeragh Mountains. Views of the proposed development from the greenway or other recreational routes or tourist points would also be extremely limited.

7.8. Impact on residential amenity

7.8.1. A number of issues have been raised in submission concerning the potential impact of the proposed solar farm on residential amenity including visual dominance, glint and glare, noise and human health. As noted above, the visual assessment

considers the impact of the proposed development when viewed from the nearest dwellings. The worst-case impact would be partial views of the solar farm giving rise to a moderate/ slight impact on the visual amenity of residents following mitigation planting. I do not consider that visual dominance will be a significant issue given the low-rise nature of the proposal and the intervening topography and vegetation.

7.8.2. The Planning Authority requested further information on the separation distances between the proposed solar farm and a number of residences and farms. In response, the applicant noted that the landowner's boundary extends far beyond the development boundary. The nearest third party owned dwelling is located c. 175m from the nearest solar panels and it is noted that the Board has granted permission for similar separation distances between residences and solar farms.

Glint and Glare

7.8.3. A Glint and Glare Assessment comprising a study area of 1km from the proposed development has been prepared to accompany the planning application. Areas of theoretical visibility within this zone are established using a Digital Terrain Model (DTM) and a more detailed assessment accounting for buildings and vegetation was carried out using a Digital Surface Model (DSM). This model also identifies where additional screening could be included. Panels are south-facing and the majority of potential glare is experienced from March to September between 6am – 9am and/ or 6pm – 9pm.

7.8.4. The DTM indicated that 65 dwellings within the study area could theoretically experience reflection and the DSM determined that only 10 of these dwellings could be materially affected by glint and glare. All dwellings have a low or very low magnitude of impact in terms of potential reflectance apart from a single house where the magnitude of impact is deemed to be medium. However, the side of this house facing towards the solar farm is largely windowless and there are trees in the garden that will provide additional screening.

7.8.5. The surrounding road network was assessed at 50m intervals whereby 423 points were assessed for glint and glare and 274 of these had potential impacts, reducing to 80 when buildings and vegetation are considered. It should be noted that any effects would only last the period of time it takes to travel along the affected section.

It is considered unlikely that there will be hazardous effects from glint and glare from the proposed solar panels for surrounding road users. There may be fleeting glints that would mostly be at oblique angles to the road user. Notwithstanding this, it is recommended that in specific instances, mitigation measure should be implemented in the form of hedgerow bolstering to form an effective barrier. I consider that this can be required by way of condition.

7.8.6. It is deemed that the proposed solar farm will have no potential for adverse effects on aviation receptors due to the significant distances from the nearest airports (24km to Waterford Airport). It is not therefore necessary to carry out a further assessment as the IAA protocol requires a 10km study area for testing of glint and glare impacts.

7.8.7. An observer submits that the proposed Glint and Glare Assessment should also consider impacts on other road users, amenity areas, paths and hiking routes, air rescue services and flight patterns of birds, together with impacts beyond 1km of the site.

7.8.8. I note that there is no regulations or guidance as to acceptable levels of glint and glare and the applicant has used indicative categories of effect from very high down to very low and none. I would be satisfied that the methodology is appropriate for the assessment of glint and glare in terms of the receptors that could potentially be affected to a significant degree. Residential receptors could be impacted on an ongoing basis and impacts on motorists could give rise to traffic hazard. Impacts on motorists would also apply to other road users and it is unlikely that users of amenity areas, walkers or rescue services would be affected permanently or to a significant degree. As noted in Section 8 below, there is no evidence to suggest that glint or glare from solar arrays of the type and scale proposed would have any effect on migratory bird flights.

7.8.9. Overall, I would be in agreement with the findings of the Glint and Glare Assessment that there is unlikely to be any substantial glint and glare effects experienced by houses surrounding the proposed solar farm or local road users. It should also be noted that PV panels are designed to absorb sunlight rather than reflect it and have shown to have similar reflectance characteristics to water. I would also be satisfied that the report adequately differentiates between glint and glare and carries out an

adequate assessment of the potential impacts for the purposes of implementing any necessary mitigation measures.

Noise

7.8.10. An observer contends that noise impacts from inverters and batteries and substations can be pervasive and tonal, resulting in significant injury to adjacent residential amenities and to the enjoyment of the local environment. It is submitted that there is no evidence to suggest that proposed setback from nearby residences is sufficient.

7.8.11. The planning application is accompanied by a Noise Impact Assessment which analyses construction and operational noise at all noise sensitive receptors within a 1km study area of the site boundary. There is a total of 164 such receptors made up of residential and commercial properties.

7.8.12. Construction works and associated noise will be carried out during the day and is predicted to be below the daytime construction noise limit of 65dB $L_{Aeq, 1hr}$ at all noise sensitive locations. The Noise Impact Assessment also includes mitigation measures that will be incorporated into the construction phase to minimise noise nuisance.

7.8.13. Operational noise prediction modelling was carried out for the inverter/ transformer stations, battery storage modules and substation transformers. It was demonstrated that daytime and evening time limits are in accordance with Noise Guidance (NG4) and night-time limits are exceeded at four receptors. However, solar farms only operate during the daylight and noise emission will be highest at peak output. A number of mitigation measures are proposed that would guarantee compliance at all periods of the day and I consider that these can be implemented by way of an appropriate noise condition should the Board be minded to grant permission.

Human health

7.8.14. A number of issues have been raised within submissions suggesting that the proposed development could have implications for human health through electromagnetic fields, toxic materials and fire risk.

7.8.15. I would be of the opinion that the proposed development would have negligible impacts on human health. The proposed development will be within EU electromagnetic field limits and all components will comply with EU safety legislation. I do not conder that the type of materials used in the solar panels and mounting frame pose a fire hazard, and as noted by the applicant is response to submissions within the accompanying planning application (ABP-304558-19), ESBN and EirGrid employ strict technical standards and requirements to be adhered to, including those relating to fire prevention and fire safety features. It was also submitted that cadmium and telluride are used in thin film solar PV panels which are not proposed within this solar farm development. Notwithstanding this, the Construction and Environmental Management Plan sets out emergency response measures that includes fire detection and suppression at the proposed battery storage units.

7.9. Drainage and flooding

7.9.1. The third party appellant and observers outline their concerns regarding the drainage implications of the proposed development and the potential for flood risk. It is submitted that drainage and excavation have not been adequately cross referenced to the flood risk issue or to potential soil erosion and contamination impacts given the topography of the site. The nature of electricity use connected to the substation, batteries and inverter stations, etc. are highly vulnerable and incompatible in regard to flood water. Furthermore, it is considered that the extent of surface water generation and its management has not been properly assessed.

7.9.2. The applicant notes in response to the third-party appeal that the reference to the site being in Flood Zones A & B relates to a superseded plan originally submitted for pre-planning. The boundary was amended such that no part of the development would be located within the flood zone and the PFRA map clearly indicates that the solar farm and substation are located in lands classed as Flood Zone C. Therefore, it is submitted that the justification test not required.

7.9.3. A Flood Risk and Drainage Impact Assessment carried out for the proposed development concludes that the proposal will not increase flood risk away from the site during construction, operational and decommissioning phases. Furthermore,

specific mitigation measures will result in a net reduction in surface water flow to sensitive receptors. These include filter drains and attenuation storage.

7.9.4. Some areas of the application site to the south of the Curraheen array along the Tigh River and to the east of the Rathnaskilloge array along the Faha River are at risk of fluvial flooding. However, no part of the proposed solar farm will be within these zones. Notwithstanding this, panels and access tracks would be classified as "water compatible development" in the Planning System and Flood Risk Management document, and whilst substations and inverters are classified as "highly vulnerable development", they are located within Flood Zone C throughout the solar farm site.

7.9.5. A conceptual drainage design is proposed to manage surface water run-off and maintain existing greenfield runoff rates. A permanent swale is proposed at the substation compound and roadside drainage and interceptor ditches will be retained for the operational phase where deemed necessary. In response to a further information request, the applicant submitted drainage and environmental management plans for each of the four arrays. These plans included details of roadside drainage, interceptor ditches, piped drain crossings, drainage spreaders, silting ponds and silt curtains. The further information response also included plans of each of the entrances to the site. The applicant has confirmed in response to submission on the concurrent substation application that the Curraheen array is accessed by an existing private agricultural entrance and is owned by one of the development landowners.

7.9.6. It was recommended within the Flood Risk and Drainage Impact Assessment that a Construction and Environmental Management Plan (CEMP) should be produced prior to construction to adequately protect from contamination. The Planning Authority also requested a CEMP as further information. It should be noted, however, that a CEMP has been already been prepared for the proposed development and this document outlines key environmental management issues typically associated with the construction, operation and decommissioning of the solar farm and associated infrastructure. The existing drainage network is assessed, and proposals are included for the new drainage network, earthworks and environmental protection measures. The operational period drainage regime is also set out.

7.9.7. Overall, I would be satisfied that the applicant has submitted comprehensive information to allow the Board to adequately assess the drainage implications and any flood risk arising from the proposed development. I am satisfied that it has been demonstrated that the proposed development will not increase flood risk outside the application site and specific measures will be put in place to contribute to a net reduction in surface water flow to sensitive receptors. Measures will also be put in place to prevent contamination of surface water from soil erosion or during the construction phase of the proposed development.

7.10. Access and traffic

7.10.1. Submissions have been made by the third-party appellant and observers on matters of access and traffic affecting the proposed development and surrounding road network. There are concerns regarding sightlines from site accesses, traffic hazard on the R675 and absence of autotrack movements.

7.10.2. There will be four access points to each of the arrays. The accesses to the Rathnaskilloge and Curraheen arrays will be off the R675 and the Glen East and Glen west arrays will both be accessed of the same local road. The main site entrance is to the Rathnaskilloge array (site entrance 3).

7.10.3. The applicant submitted site entrance plans in response to a further information request showing 160m sight lines at the accesses onto the R675 and 75m sightlines onto the local road. This was acceptable to the Planning Authority subject to conditions relating to the submission of a Construction Stage Management Plan that includes a construction traffic management plan; installation and maintenance of roadside drainage; screen planting to eliminate glint and glare hazard to road users; and confirmation of the size of HGVs accessing the site.

7.10.4. I would be satisfied that the site can be accessed safety and without undue disruption to existing road users during the construction, operational and decommissioning phases of the development. I have inspected the locations of the site accesses and consider that safe and appropriate means of access can be facilitated. I note that traffic volumes to the site during the operational phase will be very low. I am also satisfied that the local road network is capable of accommodating construction delivery.

7.10.5. The Planning Authority has attached suitable conditions to its notification of decision to control access to the site during construction and I propose that the attachment of a condition to any grant of planning permission requiring that access arrangements to the site shall comply with the detailed standards of the Planning Authority. I also agree that construction access including any autotrack analysis, timing and vehicle size and traffic volumes should form part of a construction traffic management plan that can be agreed by way of condition.

7.11. Archaeology and heritage

7.11.1. An Archaeological Assessment of the site and around an area of 1km from the site boundary recorded a total of 48 archaeological sites, one of which is located within the site boundary (cist burial). A national monument (souterrain) and ten ogham stones are located c. 190m south of the Glen East array, and two levelled ringforts are located c. 65m south-east of the Glen East array and c. 100m south-west of the Curraheen array respectively.

7.11.2. Based on the recommendations of the archaeological report, some panels have been removed, in particular at Rathnaskilloge due to the potential visual impact on the national monument. Buffer areas have also been put in place having regard to the potential presence of archaeological remains, and tree planting is proposed to screen views of the proposed development from archaeological sites. Further geophysical studies will be carried out in advance of construction works in proximity to known archaeological sites or locations with archaeological potential. Test trenching will also be carried out.

7.11.3. I note the submission received from by the Board in relation to impact on archaeology. However, a condition is attached to the Council's notification of decision relating to archaeological monitoring, testing and reporting and a similar condition can be attached by the Board to any grant of permission. I would be in agreement that the proposed mitigation measures and pre-construction presence of an archaeologist on site will ensure that potential impacts on archaeological resources are minimised and eliminated.

7.11.4. An observer is concerned that the proposed development may impact on Woodhouse Country House and Estate (protected structure). In my opinion, the

nature of the proposed development and its distance from this house and its curtilage are sufficient to avoid any adverse impacts to the heritage value of the property.

7.12. Ecology

7.12.1. The current appeal and planning application to the Board (ABP-305817-19) for the proposed 110kV substation are accompanied by an Ecological Impact Assessment and Biodiversity Management Plan, which assess the cumulative impact of the proposed development on ecology. An Appropriate Assessment Screening and Natura Impact Statement also assess the in-combination impacts of the solar farm and substation development on European Sites. Ecological matters pertaining to Appropriate Assessment are covered below under Section 8.

7.12.2. Section 4 of the Ecological Impact Assessment sets out the elements of the project that could give rise to ecological impacts on sensitive flora and fauna. Potential impacts during the construction phase include habitat loss and alteration from installation of panels; construction works leading to habitat loss, disturbance to fauna and deterioration of water quality; habitat loss at location of overhead line towers; watercourse crossing works at existing entrance to Rathnaskilloge and new entrance to Curraheen array; noise, vibration and light; sediment and hydrocarbon run-off from excavation and earthworks; and potential spread on non-native invasive species.

7.12.3. During the operational phase, potential impacts could occur through the presence of fencing, routine maintenance and artificial lighting. Site works during the decommissioning phase could also give rise to similar impacts to the construction phase.

7.12.4. An evaluation of the existing environment and potential impacts is carried out in Section 5 of the Ecological Impact Assessment. Designated sites are described and any pathways from the site are identified. European Sites are evaluated in more detail under Section 8.

7.12.5. In terms of nationally designated sites, Stradbally Wood pNHA is located approximately 500m to the south-west of the proposed solar farm and there is a hydrological linkage over a distance of approximately 700m via the River Tigh that flows along the southern boundary of the Curraheen array and onto the River Tay.

The Ballyvoyle Head to Tramore pNHA is located along the coast approximately 1.5km south of the solar farm site. There is hydrological linkage over a river distance of c. 4km downstream of the proposed development.

7.12.6. Standbally Woods pNHA is considered to be of national importance due to the presence of mature woodland along the River Tay. However, significant impacts on the conservation interest of this pNHA are not foreseen as the site is designated for terrestrial habitats. Significant adverse effects on the Ballyvoyle Head to Tramore pNHA are also not foreseen having regard to the nature of the receiving environment comprising coastal habitat supporting bird species.

7.12.7. Multidisciplinary ecological walkover surveys were carried out in March and July 2018 and the site was ecologically mapped in accordance with the Fossitt (2000) classification scheme. The Curraheen array comprises mostly of improved pasture and there is an area of wet grassland/ marsh. The Tigh River drains to the south-west and is lined with willow, with a cobble and stone substrate. The southern landholding of the Rathnaskilloge array comprises cattle grazed improved agricultural grassland and the northern sections consist of a mosaic of flat agricultural grassland and wet grassland. The proposed substation will be located within an area of species poor semi-improved wet grassland. The River Faha along the eastern site boundary is c. 2.5m wide with gorse along the northern bank and grassy verse vegetation along banks. The Glen East and Glen West arrays are dominated by improved agricultural grassland, conifer forestry and immature woodland.

7.12.8. Habitats of higher ecological value throughout the site are hedgerow, marsh and scrub and these will be largely retained throughout the lifetime of the solar farm. The impact associated with direct habitat loss and alternation relates to improved pasture, dry meadows, grassy verges and immature woodland, which are of low ecological value.

7.12.9. Badger activity was recorded on site and marsh and wet grassland habitat may support a diverse range of species, including Snipe and Curlew. The River Faha is considered to provide suitable habitat for Otter. The proposed solar farm occurs within an area of low to moderate suitability for bats. Table 5 of the Ecological Impact Assessment sets out mammal species within the 10km grid square within

which the proposed development occurs. Red squirrel is not included. Overall, the site is deemed in the Ecological Impact Assessment to be of low value to mammal species of conservation concern. The applicant has indicated that the use of mammal fencing has previously been included for in grants of permission issued by the Board and could be condition for the proposed development.

7.12.10. Table 6 of the Ecological Impact Assessment includes the bird species recorded within and surrounding the development site during March and July 2018. Significant bird observations during targeted winter bird surveys are set out in table 7. The only red listed species recorded was the Yellowhammer during the March/ July 2018 surveys and Black-Headed Gull, Curlew and Herring Gull during winter surveys. Annex I species included the Chough and Whooper Swan. Habitat within the site is considered to be of low value to bird species of high conservation concern. Habitat such as treelines, hedgerow and marsh which are deemed to be of most value to birds will remain intact.

7.12.11. Drainage ditches and natural watercourses are likely to provide suitable habitat for frogs and possibly smooth newt. However, this habitat will be avoided and maintained during the operational phase. No invasive alien species were recorded on site. Notwithstanding this, appropriate mitigation measures will be put in place to avoid the spread and introduction of such species.

7.12.12. Section 6 of the Ecological Impact Assessment also include mitigation measures for the construction and operational phases of the proposed development. I am satisfied that these measures will reduce the impact of the proposed development on ecology to non-significant levels. The site layout avoids the parts of the site considered to be of highest biodiversity value and a Biodiversity Management Plan will include measures to enhance the biodiversity value of the site. Lands will be reseeded with native grass species and mowed or grazed by sheep and post decommissioning, the land can return to agricultural or forestry use.

8.0 **Appropriate Assessment**

8.1. The areas addressed in this section are as follows:

- Compliance with Articles 6(3) of the EU Habitats Directive

- Geographical Scope and Main Characteristics
- Screening the need for Appropriate Assessment
- The Natura Impact Statement and associated documents
- Appropriate Assessment of implications of the proposed development on each European Site

8.2. **Compliance with Articles 6(3) of the EU Habitats Directive:** 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.

8.3. The proposed development comprises the construction of a solar farm and associated infrastructure with maximum capacity export of 65-95MW on a 109 hectare site to the north of Stradbally in mid Co. Waterford. A proposed 110kV substation and associated infrastructure which forms the subject of a concurrent application to the Board (ABP-304558-19) is also assessed as part of the overall project. The proposal is not directly connected with or necessary to the management of any European site and is therefore subject to the provisions of Article 6(3).

8.4. **Geographical Scope and Main Characteristics**

8.4.1. The proposed solar farm is located in a rural area comprising mostly of agricultural pastureland with nearby and adjoining forestry. The highest part of the site is to the north at Glen West and in general the surrounding area has a rolling topography with rivers and streams along valleys. Elevations throughout the site are between 50m and 110m OD.

8.4.2. The development is proposed on mostly agricultural lands across four arrays and over a total area of 109 hectares. Solar photovoltaic panels will be laid in rows over the existing surface on metal racks driven into the soil and elevated above the

ground, thereby allowing vegetation to grow beneath. A 20mm gap between panels will allow rainwater to drain between the modules. Existing drainage will be used and enhanced where appropriate and the greenfield runoff rate from the site is not expected to increase.

8.4.3. The Faha River flows to the east of the Rathnaskilloge array and enters the sea at Ballyvooney Cove approximately 4.3km downstream. Ballyvooney Cove is surrounded by the Mid Waterford Coast SPA. The Rathnaskilloge River to the south of the Rathnaskilloge array is also a tributary of the Faha River.

8.4.4. The Tigh River flows parallel to the R675 to the south of the Curaheen array. A stream which flows through the Curraheen array enters the Tigh River and the Tigh River in turn forms a tributary of the Tay River, which enters the sea at Stradbally Cove. The confluence of the steam through the site and the Tigh River is approximately 5km upstream of Stradbally Cove, which is also surrounded by the Mid Waterford Coast SPA.

8.4.5. The solar farm will be provided with c. 7km of maintenance roads comprising 4m wide loose stone tracks with interceptor ditches and roadside drainage. The site will be surrounded by security fencing and the proposal also includes security lighting at the substation and CCTV.

8.4.6. The overall development will also include a GIS substation and compound, 2 no. 110kV overhead line towers and other electrical infrastructure including inverter and transformer stations and battery storage units. Power will be exported from the substation to the national grid via a buried grid connection cable to the 110kV transmission line passing through the site. Shallow trenches (1m deep) will be excavated to accommodate underground wiring and an underground cable along the public road will connect the Curraheen array to the substation at Rathnaskilloge. No instream works are foreseen.

8.4.7. The proposed substation will require the stripping back of vegetated soil over an area of approximately 0.4 hectare. This soil will be stored and reused in landscaping and drainage runs, and settlement ponds will be installed, as necessary. Construction works for the substation will last approximately 6 months and the timeframe for the entire development will be 10 months. A temporary site compound

will be located at the entrance to each array, with the main compound at the Rathnaskilloge array.

8.5. Screening the need for Appropriate Assessment

8.5.1. The first test of Article 6(3) is to establish if the proposed development could result in likely significant effects to a European site. This is considered stage 1 of the appropriate assessment process i.e. *screening.* The screening stage is intended to be a preliminary examination. If the possibility of significant effects cannot be excluded on the basis of objective information, without extensive investigation or the application of mitigation, a plan or project should be considered to have a likely significant effect and Appropriate Assessment carried out.

8.5.2. Having regard to the information and submissions available, the nature, size and location of the proposed development and its likely direct, indirect and cumulative effects, the source pathway receptor principle and sensitivities of the ecological receptors, the European Sites set out in Table 1 below are considered relevant to include for the purposes of initial screening for the requirement for Stage 2 appropriate assessment on the basis of likely significant effects. A 10km study area from the proposed solar farm is applied for this purpose, wherein a total of six European Sites are included (3 SACs & 3 SPAs). An observer considers that a 15km study area is appropriate; however, I consider this to be unnecessary having regard to the nature and scale of the proposed development.

8.5.3. European sites considered for Stage 1 screening:

European site (SAC/SPA)	Site code	Distance to solar farm	Connections (source, pathway, receptor)	Considered further in Screening (Y/N)
Mid-Waterford Coast SPA	004193	2.1 km	Potential connections	Y
Helvick Head to Ballyquin SPA	004192	9.8 km	No pathway	N
Dungarvan Harbour SPA	004032	8 km	No pathway	N
Comeragh Mountains SAC	001952	5.4 km	No pathway	N

European site (SAC/SPA)	Site code	Distance to solar farm	Connections (source, pathway, receptor)	Considered further in Screening (Y/N)
Glendine Wood SAC	002324	7.4 km	No pathway	N
Helvick Head SAC	000665	9.8 km	No pathway	N

Table 1 – Summary Table of European Sites considered in Screening for Appropriate Assessment

8.5.4. Based on my examination of the NIS, together with other supporting information, the NPWS website, aerial and satellite imagery, the scale of the proposed development and likely effects, separation distances and functional relationships between the proposed works and the European sites, their conservation objectives, and taken in conjunction with my assessment of the subject site and the surrounding area, I conclude that a Stage 2 Appropriate Assessment is required for the following European Site in view of the conservation objectives of that site:

- Mid-Waterford Coast SPA

8.5.5. Table 2 below provides a screening summary matrix where there is a possibility of significant effects, or where the possibility of significant effects cannot be excluded without further detailed assessment.

Site name **Qualifying Interest feature**	**Is there a possibility of significant effects in view of the conservation objectives of the site?** **General impact categories presented**		
	Habitat loss/ modification	Water quality and water dependent habitats (pollution)	Disturbance/ displacement barrier effects
Mid-Waterford Coast SPA **Special Conservation Interest:** Cormorant (A017) Peregrine (A103) Herring Gull (A184) Chough (A346)	No	Yes The River Faha drains much of the eastern side of the site and discharges to the SPA c. 3.3km downstream. Watercourses that drain the western part of the proposed solar farm discharge to the River Tigh and River Tay, which also discharge to the SPA. Potential for sediment run-off and impacts on aquatic receptors downstream during construction. Potential run-off of hydrocarbons or other harmful substances leading to deterioration of downstream water quality.	Yes Potential for special conservation interest species being dependent on the solar farm site for foraging resulting in displacement impacts. Potential for collision risk with birds confusing solar panels with water, and with associated infrastructure such as overhead lines.

Table 2 Screening summary matrix: European Sites for which there is a possibility of significant effects (or where the possibility of significant effects cannot be excluded without further detailed assessment)

8.5.6. The remaining sites can be screened out from further assessment because of the scale of the proposed works, the nature of the Conservation Objectives, Qualifying and Special Conservation Interests, the separation distances and the lack of a substantive ecological linkage between the proposed works and the European sites.

8.5.7. There is no potential for the proposed solar farm and associated works to cause direct habitat loss, fragmentation or disturbance in any of the Special Areas of Conservation screened out within the study area due to the location of the works outside of any such European Sites. Indirect terrestrial or aquatic habitat loss or degradation will not occur in all sites screened out due to the absence of hydrological connectivity and the separation distance between construction works, or any operational stage work, and these sites. There is also no potential for indirect/ ex-situ disturbance or displacement of animal species as the qualifying interests in SACs relate to habitats / plant species and rock / cliffs only.

8.5.8. The proposed solar farm and associated grid connection are outside all SPAs. Indirect terrestrial or aquatic loss, reduction or degradation or disturbance effects to the Special Conservation Interests of Helvick Head to Ballyquin SPA and Dungarvan Harbour SPA will not occur due to separation distances, the absence of hydrological connectivity, or the large downstream distance and dilution factors.

8.5.9. It is therefore reasonable to conclude that on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on Comeragh Mountains SAC (site code: 001952), Glendine Wood SAC (site code: 002324), Helvick Head SAC (site code: 000665), Helvick Head to Ballyquin SPA (site code: 004192) and Dungarvan Harbour SPA (site code: 004032) in view of the sites' conservation objectives and a Stage 2 Appropriate Assessment for these sites is not therefore required. I am therefore satisfied that no additional sites other than that assessed in the NIS (Mid-Waterford Coast SPA) need to be brought forward for Appropriate Assessment. I confirm that no mitigation has been taken into account at the screening stage.

8.6. The Natura Impact Statement and Associated Documents

8.6.1. The application was accompanied by a Natural Impact Statement for the proposed solar farm and substation/ grid connection comprising an Appropriate Assessment Screening and a Stage 2: Natura Impact Statement dated April 2019. The NIS forms part of the Planning and Environmental Report submission with the planning application, which also includes an Ecological Impact Assessment, a Biodiversity Management Plan, a Construction and Environmental Management Plan and a Flood Risk and Drainage Impact Assessment.

8.6.2. In general, I am satisfied that the NIS for the proposed solar farm and substation/ grid connection adequately describes the proposed development, the project site and the surrounding area. The Appropriate Assessment Screening concluded that a Stage 2 Appropriate Assessment (NIS) was required. The NIS outlined the methodology used for assessing potential impacts on the habitats and species within the European Sites that have the potential to be affected by the proposed development. It predicted the potential impacts for the site and its conservation objectives, suggested mitigation measures, assessed in-combination effects with other plans and projects and identified any residual effects on the European site and its conservation objectives.

8.6.3. The NIS was informed by the following studies, surveys and consultations:

- Desktop review of existing datasets and published reports
- Two multidisciplinary ecological walkover surveys of the site during March and July 2018
- Ongoing winter bird surveys for the 2018/ 2019 winter period
- Detailed description of the existing ecological environment within and immediately surrounding the proposed development site as presented within the Ecological Impact Assessment.
- A habitat map of the area following the Fossitt (2000) classification scheme.
- Review of conservation objectives, site synopsis and site boundary information for European Sites within the study area (study area taken as 10km from construction works boundary).

- Review of planning documentation relating to the Cooltubbrid West Solar Farm

8.6.4. The NIS concluded that, subject to implementation of mitigation measures, that the proposed solar farm development at Rathnaskilloge will not adversely affect the integrity and conservation status of the Mid-Waterford Coast SPA in view of the conservation objectives for the site in light of best scientific evidence.

8.6.5. Having reviewed the NIS and the supporting documentation, I am satisfied that it provides adequate information in respect of the baseline conditions, clearly identifies the potential impacts, and uses best scientific information and knowledge. Details of mitigation measures are provided, and they are summarised in the NIS. I am satisfied that the information is sufficient to allow for appropriate assessment of the proposed development (see further analysis below).

8.7. Appropriate Assessment of implications of the proposed development on each European Site

8.7.1. The following is an assessment of the implications of the project on the relevant conservation objectives of the European site using the best scientific knowledge in the field. All aspects of the project which could result in significant effects are identified and mitigation measures designed to avoid or reduce any adverse effects are examined and assessed.

8.7.2. I have relied on the following guidance:

- DoEHLG (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, National Parks and Wildlife Service.
- EC (2002) Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EC
- EC (2011) Guidelines on the Implementation of the Birds and Habitats Directives in Estuaries and Coastal Zones
- EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC

8.7.3. **Relevant European site:** The following site is subject to appropriate assessment.

- Mid-Waterford Coast SPA (Site code: 004193)

8.7.4. A description of this site and its Conservation Objectives and Qualifying Interests, including any relevant attributes and targets for this sites, is set out in the NIS and outlined in Tables 3 below. I have also examined the Natura 2000 data forms as relevant and the Conservation Objectives supporting documents for these sites available through the NPWS website (www.npws.ie).

8.7.5. **Aspects of the proposed development:** The main aspects of the proposed development that could adversely affect the conservation objectives of European site include;

- Disturbance/ displacement of foraging birds (ex-situ) during construction works and the operational phase of the proposed solar farm.
- Decrease in water quality via: surface water runoff, sediment entrainment or release; release of fuels/ oils/ chemicals, surface/ ground water quality impacting on the qualifying interests of the Mid-Waterford Coast SPA.
- Collision risk with solar panels and associated infrastructure.

8.7.6. **Table 3** summarises the appropriate assessment and site integrity test. The conservation objectives, targets and attributes as relevant to the identified potential significant effects are examined and assessed in relation to the aspects of the project (alone and in combination with other plans and projects). Mitigation measures are examined, and clear, precise and definitive conclusions reached in terms of adverse effects on the integrity of European sites.

8.7.7. Supplemental to the summary tables, key issues that arose through consultation and through my examination and assessment of the NIS are expanded upon in the text below:

Table 3

Mid-Waterford Coast SPA (Site code: 004193)

Key Issues:

- Water quality impacts
- Displacement impacts
- Collision risk

Conservation Objectives: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO004193.pdf

		Summary of Appropriate Assessment			
Conservation Objective	Targets & Attributes (as relevant)	Potential adverse effects	Mitigation Measures	In-combination effects	Can adverse effects on site integrity be excluded?
To maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: Cormorant (A017) Peregrine (A103) Herring Gull (A184) Chough (A346)	The favourable conservation status of a species is achieved when: - population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and - the natural range of the species is	*Water quality impacts* - River Faha and River Tay provide a potential pathway for harmful pollutants for the proposed solar farm site. - Cormorant may be associated with the freshwater element of both the River Faha and River Tay downstream of downstream of the proposed development and may therefore be potentially impacted by deterioration of water	- Instream works to be undertaken as per guidance within CEMP and outside of salmon spawning season. - Construction compounds located in area removed from sensitive habitats and watercourses. - Refueling to take place on designated areas and fuels to be stored in bunded units. Regular inspection for leaks and fitting of drip trays on plant and machinery.	- Assessed with smaller scale solar development at Cooltubbrid West, c. 2.8km north of proposed development. Above development linked to Mid-Waterford Coast SPA via two small streams - Best practice measures to protect water quality will be implemented and this proposal occurs on agricultural land of low value to SCIs of SPA.	Yes - SPA not designated for aquatic habitats, and in proximity to River Faha discharge points, the SPA comprises dry coastal terrestrial habitat (sea cliffs and dry grasslands). - Negligible impacts in terms of water quality even without mitigation having regard to the receiving environment, assimilation capacity of the marine water body and conservation objectives.

	neither being reduced nor is likely to be reduced for the foreseeable future, and - there is, and will - probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.	quality affecting prey items.	- Concrete washing of machines to take place off site and concrete pouring on dry days. - Stockpiling of materials during construction in designated areas away from watercourses and use of silt traps and silt curtains where necessary. - 50m buffer from watercourses for any concrete works, control buildings, transformer stations, site tracks or construction compounds. - 20m buffer from watercourses for other infrastructure (solar array tables, fencing, security cameras, trenching and cable works. - Sediment control measures to minimize run-off. - Surface water management plan to minimize potential impacts on downstream watercourses during construction and operation. - Existing drainage regime maintained as reasonably as possible. - Drainage design, earthworks, and environmental measures shall ensure that water	- Proposed Rathnaskilloge solar farm will not lead to significant adverse impacts on the SCI of SPA and therefore in-combination impacts will not arise.	

			quality and water levels of on-site drainage channels are not adversely affected.		
		Displacement impacts - Possible that SCIs listed for the SPA utilize habitat within and surrounding the proposed development site considering its scale and proximity to the SPA - Potential displacement impacts from noise and vibration during construction and habitat displacement during the operational phase. - Herring gull may potentially forage within grassland habitat and have been observed flying over site and foraging in suitable habitat in proximity.	No mitigation necessary		Yes - No suitable breeding habitat within or in close proximity to the proposed development site for any of the SCI species. - Absence of suitable habitat for Cormorant and Peregrine and low value habitat for Chough within the site - Farmland populations of Herring Gull are typically associated with ploughing activities and/ or slurry application. Species forage over wide areas and are not dependent on habitat within solar farm site – availability of more suitable habitat in the greater surroundings. No observations of Herring Gull feeding within the proposed development site during bird surveys (2018-2019).
		Collision risk - Potential for bird colliding with solar panels. - Potential that birds may confuse solar farm for open water body.	- Sufficient gaps and breaks between arrays longitudinally and transversely will enable birds flying over to		Yes - Little scientific evidence for fatality risks to birds associated with solar PV arrays (RSPB, 2014).

		- Bird collision more likely to be associated with infrastructure such as overhead lines (Harrison et al., 2016) - Potential impact on migratory bird flights from glint or glare.	differentiate solar array from natural body of water. - Solar PV modules will be industry non-reflective to enable birds to differentiate between the solar array and natural water bodies.		- DeVault *et al.,* (2014) found no obvious evidence of bird casualties arising from collisions with solar panels. - No evidence to suggest that glint or glare from solar arrays of the type and scale proposed would have any effect on migratory bird flights – issues not raised as a concern by RSPB in their policy on solar energy (RSPB, 2014). - Existing 110kV overhead line occurs in proximity to the proposed development site and therefore no new overhead line infrastructure is proposed. - Pole-set replacement with steel towers will not lead to additional collision risk for avifauna.
Overall Conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of the Mid-Waterford Coast SPA in view of the site's conservation objectives. No reasonable scientific doubt remains as to the absence of such effects.					

Relevant European site: Mid-Waterford Coast SPA (Site code: 004193)

8.7.8. According to the Site Synopsis, the Mid-Waterford Coast SPA encompasses the areas of high coast and sea cliffs including land adjacent the cliff edge. Sea cliffs are the prominent habitat of the SPA and these are generally well vegetated by typical sea cliff species, with heath, improved grassland, unimproved wet and dry grassland and woodland occurring above.

8.7.9. It is noted that the site supports an internationally important population of breeding Chough, which is listed on Annex I of the Birds Directive. A survey in 1992 recorded 24 breeding pairs and a 2002/ 2003 survey recorded 20 pairs. Five flocks totalling 59 birds were recorded in 1992 and a flock of 24 birds was recorded in 2002/ 2003. The site also supports a nationally important population of Peregrine (10 pairs in 2002), and as recorded in 1999-2000 Cormorant (79 pairs) and Herring Gull (147 pairs). These four bird species represent the Special Conservation Interests for which the SPA is designated.

Baseline Ecological Conditions

8.7.10. The proposed development site is located as close as 2.1km to the north of the Mid-Waterford Coast SPA, with the farthest point being c. 5km from the SPA. The eastern part of the site drains to the Faha River, which enters the sea at Ballyvooney Cove. The nearest downstream part of the SPA is at a distance of 3.8m from the Rathnaskilloge array. The Curraheen array to the west drains to the Tigh River, a tributary of the Tay River, which in turn enters the sea at Stradbally Cove. The nearest downstream part of the SPA along this hydrological pathway is over a river distance of approximately 4.8km.

8.7.11. Multidisciplinary ecological walkover surveys were undertaken in March and July 2018 and habitat throughout the site was mapped in accordance with the Fossitt (2000) classification scheme. The predominant land classification throughout the site is Improved agricultural grassland (GA1). There are also smaller areas of conifer plantation (WD4), immature woodland (WS2), scrub (WS1), wet grassland (GS4), dry meadow and grassy verges (GS2), hedgerows (WL1), drainage ditches (FW4), treelines (WL2) and depositing/ lowland rivers (FW2).

8.7.12. Targeted monthly bird surveys undertaken during the 2018-2019 winter season included vantage point watches and walked transects. Site walkovers were conducted in March and July 2018 to record bird species.

8.7.13. Most of the bird species during the breeding season were recorded within treelines and hedgerows along the site boundary. Barn swallow, robin, mistle thrush and yellowhammer were among the species observed. The winter bird surveys recorded Herring Gull in low numbers flying over the eastern land holdings (76 observations). It is likely that Herring Gull utilise the farmland surrounding the site for foraging although no such sightings were recorded. Chough was heard on one occasion within the Curraheen array. Other birds of conservation concern recorded on site were Black-Headed Gull (13 observations), Curlew (5 observations) and Whooper Swan (1 observation).

8.7.14. Overall, I consider the surveys are appropriate having regard to the biodiversity of the area and adequate in terms of their content, duration and coverage. The baseline information is suitably up to date having regard to the lodgement dates of the planning application and the appeal submission dates.

Issues raised in submissions

8.7.15. A number of issues were raised within submissions regarding what is considered to be non-definitive mitigation, including that relating to drainage (interceptor drains and usage of ponds and swales), cabling and silt fencing, together with matters relating to screening, in-combination impacts with other solar farms, development description and details (bridge to Curraheen array), flight patterns and collision risk. Appropriate assessment screening is addressed in Section 8.5 above and in-combination effects are covered in Section 8.8 below.

Factors that can adversely affect the achievement of conservation objectives

8.7.16. There are factors arising from the proposed development, in-combination with other plans/ projects, that can adversely affect the achievement of the conservation objective for which the Mid-Waterford Coast SPA is designated. The conservation objective is to maintain or restore the favourable conservation condition of the bird species listed as Special Conservation Interests for this SPA: Cormorant, Peregrine, Herring Gull and Chough.

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

8.7.18. The main potential impacts to the favourable conservation status of Cormorant, Peregrine, Herring Gull and Chough are water quality impacts, displacement impacts and collision risk. As noted above, the appellant and an observer are concerned that water quality impacts could arise through drainage proposals and the use of measures to control the release of sediments and pollution to watercourses. These issues and the potential pathways are clearly identified in the NIS, together with other potential impacts relating to water quality.

8.7.19. It is noted that the Cormorant may use the freshwater element of the Rivers Faha and Tay downstream of the proposed development and may therefore be adversely affected by deterioration of water quality affecting prey items. However, there would be negligible impacts on water quality even without mitigation having regard to the receiving environment and the assimilation capacity of the marine water body. Mitigation is nevertheless proposed in relation to construction works (timing of works, location of compounds, refuelling practice, use of concrete, buffers, sediment control, drainage, and surface water management).

8.7.20. The planning application is accompanied by a Construction Environmental Management Plan which sets out methodologies to minimise the risk of silt release from the construction phase and operational use of the site access tracks and facility. Details are also included on existing and proposed construction and operational drainage regimes, earthworks treatment and installation and protection of necessary environmental protection measures. A dedicated Pollution Prevention Clerk of Works will be employed full time on site to oversee implementation of CEMP environmental protection measures. The CEMP also includes an overview of construction works, a preliminary construction programme, and construction methodology including adequate details on site entrances and watercourse crossings.

8.7.21. The targets and attributes for the Special Conservation Interest species that potentially could be adversely affected by the proposed development are set out in Table 3 above. The above mitigation measures will ensure that the proposed development will not adequately impact on water quality. The SPA is not designated for aquatic habitats and the SPA in proximity to the River Faha discharge point comprises dry coastal terrestrial habitats. Drawings accompanying the planning application show roadside drainage, interceptor drainage and silting pond locations and I consider that the installation of any silt control measures can be managed on site through the measures outlined in the CEMP. I am therefore satisfied that mitigation is clearly defined and appropriate in terms of the potential adverse impact on water quality. The proposed development will not interfere with the population dynamics and natural range of any of the Special Conservation Interest species.

8.7.22. In terms of displacement impacts, it is possible that Special Conservation Interest species utilise the habitat within and surrounding the solar farm site and could therefore be displaced by construction disturbance and by the solar farm itself during the operational phase. However, there is no suitable breeding habitat within or close to the solar farm site. Furthermore, no habitat exists on site for Cormorant and Peregrine, and habitat for Chough is considered to be of low value. Herring Gull may potentially forage within the site and have been observed flying over. However, farmland populations are typically associated with ploughing activities and/ or slurry application. Moreover, this species will forage over a wide area and is not dependent on the habitat within the solar farm site.

8.7.23. The issue of collision risk and impact of glare on the flight patterns of birds was raised within submissions. However, the NIS highlights that there is little scientific evidence of fatality risk to birds from solar PV arrays. Research by DeVault *et al.* (2014) found no obvious evidence of bird casualties arising from collisions with solar panels from over 500 surveys from solar farms. Notwithstanding this, there will be sufficient gaps between arrays and the modules will be non-reflective to enable birds to differentiate between solar arrays and natural water bodies. Bird collision is more likely to be associated with infrastructure and in this regard the proposed development includes the replacement of two wooden polesets with steel towers, which will not increase collision risk to avifauna.

8.7.24. In general, the habitats recorded on site are unlikely to support any of the Special Conservation Interest species for which the Mid-Waterford Coast SPA is designated. Furthermore, there is, and will probably continue to be, a sufficiently large habitat in the wider area and in closer proximity to the SPA to maintain the Special Conservation Interest species on a long-term basis.

8.7.25. In conclusion, I am satisfied that with full and proper implementation of the above mitigation measures, it can be determined, beyond all reasonable and reliable scientific doubt, that the proposed development will not result in adverse effects on the integrity of the Mid-Waterford Coast SPA. The mitigation measures will address the source of any potential impacts and are adequate, in particular, to protect against sedimentation and pollutants arising from surface water run-off to various watercourses that drain to the coast.

8.8. In-Combination Effects

8.8.1. The proposed development comprises the development of a 109 hectare solar farm constructed over four arrays at Rathnaskilloge (38 ha), Glen East (14.5 Ha), Glen West (17.2 Ha) and Curraheen (39.3 Ha). Concurrently, a planning application (ABP-304558-19) has been made to An Bord Pleanála for a new 110kV substation at Rathnaskilloge to connect the proposed solar farm to the 110kV transmission network which traverses the site.

8.8.2. The NIS evaluates the in-combination impacts of the proposed solar farm and 110kV substation on the Mid-Waterford Coast SPA. This includes an assessment of the impact of connecting the separate Curraheen array to the proposed 110 kV substation at Rathnaskilloge via an underground cable along the public road.

8.8.3. In addition, the potential for in-combination impacts with a smaller scale solar farm development at Cooltubbrid, approximately 2.8km to the north of the proposed development is assessed. It is noted in the NIS that this development is also linked to Mid-Waterford Coast SPA via two small streams and best practice measures to protect water quality will be implemented throughout this proposal, which occurs on agricultural land of low value to the Special Conservation Interests of the SPA.

8.8.4. An observer submits that Appropriate Assessment screening does not consider the effect of other plans and projects for solar farms in Co. Waterford. I have analysed

planning application data in the surrounding area, and I am satisfied that there are no other applications that merit in-combination assessment. This is a rural area within limited development taking place and the nearest other solar farms proposals within Co. Waterford are at significant distances from the subject site.

8.8.5. The potential for adverse effects due to in-combination effects with other projects and activities was excluded based on the following:

- Rathnaskilloge solar farm and grid connection will not lead to significant adverse impacts on the Special Conservation Interests of the SPA and therefore in-combination impacts will not arise.
- The proposal is located in a rural area with limited development taking place or proposed.
- The closest permitted solar farm at 2.8km is located on agricultural land of low value to the Special Conservation Interest species of the Mid-Waterford Coast SPA - best practice measures implemented at this site to protect downstream water quality on watercourses linked to the SPA.
- Other solar farms in Co. Waterford are located at significant distances from the subject site that will avoid in-combination effects.

8.9. Appropriate Assessment Conclusions

8.9.1. Having carried out screening for appropriate assessment of the proposed Rathnaskilloge solar farm and 110kV substation, it was concluded that it would be likely to have a significant effect on the Mid-Waterford Coast SPA. Consequently, an appropriate assessment was required of the implications of the project on the qualifying features of this site in light of its conservation objectives.

8.9.2. 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 Mid-Waterford Coast SPA, or any other European site, in view of the sites' Conservation Objectives. No reasonable scientific doubt remains as to the absence of such effects.

8.9.3. This conclusion is based on:

- A full and detailed assessment of all aspects of the proposed project and proposed mitigation measures in relation to the Conservation Objectives of the Mid-Waterford Coast SPA.
- Detailed assessment of in combination effects with other plans and projects.
- Identification and examination of the implications of the proposed development on Special Conservation Interest species found outside the boundaries of the European Site.
- No adverse effects to wintering or breeding Special Conservation Interest bird species of Mid-Waterford Coast SPA following the application of mitigation measures.
- Implementation of a Construction Environmental Management Plan and Biodiversity Management Plan.
- The demonstration, beyond reasonable scientific doubt, that with full and proper implementation of mitigation measures, the proposed development will not result in adverse effects on the integrity of the Mid-Waterford Coast SPA

9.0 **Recommendation**

9.1. I recommend that planning permission should be granted subject to conditions, for the reasons and considerations as set out below.

10.0 **Reasons and Considerations**

Proper Planning and Sustainable Development

Having regard to:

(a) the nature, scale and extent of the proposed development,

(b) the decisions made in respect of an appropriate assessment,

(c) Government target of 70% of national electricity generation to be from renewable sources by 2030,

(d) national and local policy support for developing renewable energy, in particular:

- the Government's Strategy for Renewable Energy,
- the Climate Action Plan 2019,
- the National Planning Framework 2018,
- the Regional Spatial & Economic Strategy for the Southern Region, 2020
- Policy INF 26 of the Waterford County Development Plan 2011 - 2017 as extended,

(e) the location of the proposed development,

(f) the distance to dwellings or other sensitive receptors from the proposed development,

(g) the planning history of the immediate area including proximity to the proposed electrical substation and associated 110kV infrastructure required to connect ground-mounted solar PV generation to the electricity transmission and all associated ancillary site development works (Reference ABP-304558-19),

(h) the submissions made in connection with the planning application and appeal,

(i) the documentation submitted with the application, including the Appropriate Assessment Screening Statement, the Natura impact statement and the Planning and Environmental Report, and

(j) the Inspector's Report,

the Board considered that, subject to compliance with the conditions set out below, the proposed development:

- would not have an unacceptable impact on the character of the landscape,
- would not seriously injure the visual and residential amenities of the area,
- would not have an unacceptable impact on biodiversity,
- would make a positive contribution to Ireland's requirements for renewable energy, and
- would be in accordance with:
  - the Government's Strategy for Renewable Energy,
  - the National Planning Framework, 2018, and

- Policy INF 26 of the Waterford County Development Plan 2011- 2017 as extended.

The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

Appropriate Assessment Stage 1

The Board considered the Screening Report for Appropriate Assessment, the Natura impact statement and all other relevant submissions and carried out an Appropriate Assessment screening exercise and an Appropriate Assessment in 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, and the report of the Inspector.

The Board agreed with the screening assessment and conclusion carried out by the Inspector. The Board concluded that, having regard to the qualifying interests for which the sites were designated, namely the Mid-Waterford Coast Special Protection Area (Site Code: 004193) and having regard to the qualifying interests for which this site is designated, that significant effects could not be ruled out and that the carrying out of an Appropriate Assessment was necessary.

Appropriate Assessment Stage 2

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 Mid-Waterford Coast Special Protection Area (Site Code: 004193) in view of the site's conservation objectives. The Board considered that the information before it was adequate to allow the carrying out of an Appropriate Assessment.

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 Mid-Waterford Coast SPA (Site Code: 004193) or any other European Site in view of the sites' Conservation Objectives.

11.0 **Conditions**

1.	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 submitted to the Planning Authority on 1st October 2019, 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. **Reason:** In the interest of clarity.
2.	The period during which the development hereby permitted may be carried out shall be 10 years from the date of this Order. **Reason:** Having regard to the nature of the proposed development, the Board considered it reasonable and appropriate to specify a period of the permission in excess of five years.
3.	(a) The permission shall be for a period of 35 years from the date of the commissioning of the solar array. The solar array and related ancillary structures shall then be removed unless, prior to the end of the period, planning permission shall have been granted for their retention for a further period. (b) Prior to commencement of development, a detailed restoration plan, including a timescale for its implementation, providing for the removal of the

	solar arrays, including all foundations, anchors, inverter/transformer stations, substation, CCTV cameras, fencing and site access to a specific timescale, shall be submitted to, and agreed in writing with, the planning authority. (c) On full or partial decommissioning of the solar farm, the solar arrays, including foundations/anchors, and all associated equipment, shall be dismantled and removed permanently from the site. The site shall be restored in accordance with this plan and all decommissioned structures shall be removed within three months of decommissioning. **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, and in the interest of orderly development.
4.	The mitigation measures contained in the Natura Impact Statement which was submitted with the appeal shall be implemented in full. **Reason:** In the interest of clarity and the proper planning and sustainable development of the area and to ensure the protection of European Sites.
5.	The Biodiversity Management Plan shall be implemented in full and ecological monitoring progress reports in years 3, 6 and 9 post construction shall be submitted to the Planning Authority for written agreement. **Reason:** In the interest of clarity and the proper planning and sustainable development of the area and to protect the ecology of the area.
6.	(a) No additional artificial lighting shall be installed or operated on site unless authorised by a prior grant of planning permission. (b) CCTV cameras shall be fixed and angled to face into the site and shall not be directed towards adjoining property or the road. (c) Cables within the site shall be located underground. (d) The inverter/transformer stations shall be dark green in colour. The external walls of the storage containers/ modules shall be finished in a neutral colour such as light grey. **Reason:** In the interests of clarity and of visual and residential amenity.

7.	Before construction commences on site, details of the structures of the security fence showing provision for the movement of mammals at regular intervals along the perimeter of the site shall be submitted for prior approval to the planning authority. This shall be facilitated through the provision of mammal access gates designed generally in accordance with standard guidelines for provision of mammal access (National Roads Authority 2008). **Reason:** To allow wildlife to continue to have access across the site, in the interest of biodiversity protection.
8.	Prior to commencement of development, the developer shall submit a finalised Invasive Species Management Plan for the written agreement of the planning authority. This plan shall include updated details of invasive species surveys, the location of such species, and the proposed method of managing these species during the construction and operational phase of the development. **Reason:** To ensure that the spread of invasive species is minimised.
9.	The developer shall facilitate the archaeological appraisal of the site and shall provide for the preservation, recording and protection of archaeological materials or features which may exist within the site. In this regard, the developer shall: (a) notify the planning authority in writing at least four weeks prior to the commencement of any site operation (including hydrological and geotechnical investigations) relating to the proposed development, and (b) employ a suitably-qualified archaeologist prior to the commencement of development. The archaeologist shall assess the site and monitor all site development works. The assessment shall address the following issues: (a) the nature and location of archaeological material on the site, and (b) the impact of the proposed development on such archaeological material.

	A report, containing the results of the assessment, shall be submitted to the planning authority and, arising from this assessment, the developer shall agree in writing with the planning authority details regarding any further archaeological requirements (including, if necessary, archaeological excavation) prior to commencement of construction works. In default of agreement on any of these requirements, the matter shall be referred to An Bord Pleanála for determination. **Reason:** In order to conserve the archaeological heritage of the area and to secure the preservation (in-situ or by record) and protection of any archaeological remains that may exist within the site.
10.	Water supply and drainage arrangements, including the attenuation and disposal of surface water, shall comply with the requirements of the planning authority for such works and services. **Reason:** In the interest of public health.
11.	(a) Existing field boundaries shall be retained, notwithstanding any exemptions available and new planting undertaken in accordance with the plans submitted to the planning authority with the application and by plans submitted to An Bord Pleanála. (b) All landscaping and hedgerow bolstering shall be planted to the written satisfaction of the planning authority prior to commencement of development. Any trees or hedgerow that are removed, die or become seriously 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. **Reason:** In the interests of biodiversity, the visual amenities of the area, and the residential amenities of property in the vicinity.
12.	The applicant 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 National Parks and

	Wildlife Services 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. **Reason:** To protect the environmental and natural heritage of the area.
13.	The construction of the development shall be managed in accordance with a Construction Management Plan, which shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. This plan shall provide details of intended construction practice for the development, including: (a) location of the site and materials compound(s) including area(s) identified for the storage of construction refuse; (b) location of areas for construction site offices and staff facilities; (c) details of site security fencing and hoardings; (d) details of on-site car parking facilities for site workers during the course of construction; (e) 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; (f) measures to obviate queuing of construction traffic on the adjoining road network; (g) measures to prevent the spillage or deposit of clay, rubble or other debris on the public road network; (h) details of appropriate mitigation measures for noise, dust and vibration, and monitoring of such levels; (i) 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; (j) off-site disposal of construction/demolition waste and details of how it is proposed to manage excavated soil;

	(k) details of on-site re-fuelling arrangements, including use of drip trays; (l) details of how it is proposed to manage excavated soil; (m) 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. (n) confirmation of the size of HGVs accessing the site. A record of daily checks that the works are being undertaken in accordance with the Construction Management Plan shall be kept for inspection by the planning authority. **Reason:** In the interest of environmental protection, amenities, public health and safety
14.	(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: 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. 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. (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. **Reason:** To protect the amenities of property in the vicinity of the site.
15.	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. Prior to commencement of development, a road condition survey shall be taken 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.
16.	All other access arrangements to the site shall comply with the detailed standards of the Planning Authority for such works. **Reason:** In order to ensure a satisfactory standard of development.
17.	Prior to commencement of development, the developer shall lodge with the planning authority a cash deposit, a bond of an insurance company, or 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. **Reason:** To ensure satisfactory reinstatement of the site.
18.	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. **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.

Donal Donnelly
Senior Planning Inspector

27th November 2020