



An
Bord
Pleanála

Inspector's Report

ABP-303905-19

Development

Solar PV arrays on 10.3ha site, electrical sub-station compound, up to 3 no. inverter/transformer units, access tracks, temporary construction area and ancillary facilities.

Location

Farranmacedmond, Aglish, Mooncoin, Co. Kilkenny.

Planning Authority

Kilkenny County Council

Planning Authority Reg. Ref.

18/814

Applicant(s)

ENGIE Developments (Ireland) Ltd.

Type of Application

Permission

Planning Authority Decision

Refuse permission

Type of Appeal

First Party

Appellant(s)

ENGIE Developments (Ireland) Ltd.

Observer(s)

O'Hanlon family

Date of Site Inspection

21st June 2019

Inspector

Michael Dillon

1.0 Site Location and Description

- 1.1. The site, with a stated area of 10.3ha, is located approximately 1.5km due east of the village of Mooncoin, in south Co. Kilkenny. The N24 Waterford to Limerick road is located approximately 330m to the southwest of the site. The area comprises gently undulating grassland.
- 1.2. The site is broken up into five fields of varying size – surrounded by hedgerows/earth banks. All fields have recently been cut for silage, and were dry under foot on the date of site inspection by this Inspector. There is a small area of scrub woodland (sycamore, elder, hawthorn) on an embankment (and adjacent low-lying area) towards the northern end of the site, within Field 4. The variation in height within the site is approximately 6m – on or about the 30m contour. There are overhead ESB cables traversing the site east-west (fields 2 & 4). There are no watercourses either within or immediately abutting the site. The area is surrounded by similar agricultural land. The access laneway to the site continues along the western boundary of the site, to serve farmland beyond.
- 1.3. Access to the site is from a narrow cul de sac (L74321-4), along which it is not possible to pass two vehicles – except on that portion immediately adjacent to the N24 and in the vicinity of a farmyard complex on the western side of the road. The 80kph speed restriction applies on this road. This cul de sac is paved as far as the aforementioned farmyard complex – beyond which it turns into a hard-cored track with grass growing along the central median. There are no public footpaths and there is no public lighting on this road/track. This cul de sac gives onto the N24, National Primary Route, some 420m to the south of the site. The 100kph speed restriction applies on the N24. Sight distance at the junction with the N24 is good in either direction. There is a broken white line in the centre of the road, on the site side of the N24 at this junction; with an unbroken white line on the opposite site. There are hard shoulders on either side of the N24. This cul de sac road serves as access to four houses and farmland: although I note that the most recently-constructed of the houses (on the western side of the road) does not appear to have any independent access to the cul de sac.

2.0 Proposed Development

2.1. Permission sought on 11th December 2018, to erect a solar PV farm of up to 6MW (5,500MWh annually) as follows-

- Fixed solar PV array (17,640 panels); mounted at 20-25-degree angle on metal frames – with a maximum height of 2.5m.
- Single-storey, electrical sub-station building (approximately 65m²).
- Satellite pole – 4.2m high.
- Up to 3 no. inverter/transformer units – maximum 3.3m high and plan area of 20.5m² each.
- Security/deer mesh-fencing (2.4m high).
- CCTV, pole-mounted units, at 10 no. locations (maximum height 4m).
- 4m wide, hard-core access track through the site (500m length).
- Surface water discharge to 2 no. swales.
- Retention of site boundary and internal hedgerows.
- Construction compound area at southern end of the site (1,200m²).
- Indicative grid connection route to Granagh 38kV sub-station to the east – both over-ground and underground.
- Lifetime of scheme to be 30 years.

2.2. The application was accompanied by the following documentation of note-

- Letter of consent from the landowner – dated October 2018.
- Planning Report & summary of technical reports – dated 12th December 2018.
- Construction Environmental Management Plan – dated November 2018.
- Landscape and Visual Assessment – dated November 2018.
- Ecological Impact Statement – dated November 2018.
- Appropriate Assessment Screening Report – dated November 2018.
- Geology, Hydrology and Hydrogeology Report – dated November 2018.
- Farm Drainage Strategy – dated November 2018.

- Archaeology & Cultural Heritage Report – dated November 2018.
- Description of Proposed Site – dated September 2018.
- RMP and NIAH Descriptions Report – dated November 2018.
- Glint & Glare Study – dated November 2018 (including Glare Analysis Results).
- Glint & Glare A3 series of annotated aerial photographs.
- Traffic & Transport Report – dated November 2018.
- Electric, Magnetic and Electromagnetic Fields Report – dated September 2015 (including ICNIRP Guidelines).
- Series of 4 no. A3 photomontages.

3.0 Planning Authority Decision

By Order dated 12th February 2019, Kilkenny County Council issued a Notification of decision to refuse permission for 4 reasons, which can be summarised as follows-

1. Access to the site is traversed by lands identified for the N24 Mooncoin By-pass. The proposed development is premature pending the determination of this route.
2. The N24 Waterford to Limerick road forms part of a Strategic Inter Urban Network Corridor and is listed as a strategic priority route by TII – that is referenced in the Ireland 2040 National Planning Framework. Development is accessed from a busy National Primary Route – where the 100kph speed restriction applies. The development would adversely affect the operation and safety of a National Route, arising from increased turning movements. The local road connecting the site to the N24 is not suitable to accommodate HGV and LGV movements associated with construction.
3. Glint and glare from the development could result in traffic hazard for users of the proposed Mooncoin By-pass.
4. Site layout plans and details submitted are indicative only, and do not represent the final design of the scheme. The development is, therefore, considered to be premature.

4.0 Planning History

There is no mention made of any recent relevant planning applications pertaining to these lands.

5.0 Policy Context

5.1. National and Regional Policy

5.1.1. **Project Ireland 2040: National Planning Framework**

Chapter 3: Effective Regional Development:

Section 3.4: *Southern Region:*

Key future planning and development and place-making policy priorities for this Region include:

- Harnessing the potential of the region in renewable energy terms across the technological spectrum from wind and solar to biomass and wave energy, focusing in particular on the extensive tracts of publicly owned peat extraction areas in order to enable a managed transition of the local economies of such areas in gaining the economic benefits of greener energy.

Chapter 9: Realising Our Sustainable Future:

National Policy Objective 55:

- 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.

Chapter 10: Implementing the National Planning Framework:

Section 10.3: *Public Capital Investment – The National Development Plan and National Strategic Outcomes:*

National Strategic Outcome 8: Transition to Sustainable Energy:

- New energy systems and transmission grids will be necessary for a more distributed, more renewables focused energy generation system, harnessing both the considerable on-shore and off-shore potential from energy sources such as wind, wave and solar and connecting the richest sources of that

energy. State-owned commercial enterprises are significant players in the energy market, which is subject to an EU regulatory framework. Promotion of renewable energy is supported by policy in the form of a public service obligation levy.

- The diversification of our energy production systems away from fossil fuels and towards green energy such as wind, wave, solar and biomass, together with smart energy systems and the conversion of the built environment into both generator/consumer of energy and the electrification of transport fleets will require the progressive and strategic development of a different form of energy grid.
- The development of onshore and offshore renewable energy is critically dependent on the development of enabling infrastructure including grid facilities to bring the energy ashore and connect to major sources of energy demand. We also need to ensure more geographically focused renewables investment to minimise the amount of additional grid investment required, for example through co-location of renewables and grid connections.

5.1.2. **National Development Plan 2018-2027**

At page 41 it is stated- “The following sections of the national road network will be progressed through pre-appraisal and early planning during 2018 to prioritise projects which are proceeding to construction in the National Development Plan”: amongst 22 of which is, the N24 Waterford to Cahir route and the N24 Cahir to Limerick Junction route.

5.1.3. **The Government White Paper ‘Ireland’s Transition to a Low Carbon Energy Future 2015–2030’**

The White Paper sets out a framework to guide energy policy between now and 2030. It includes an objective to *accelerate the development and diversification of renewable energy generation* and increase the country’s output of electricity from renewable sources. It states that this will be achieved through a number of means including wind, solar PV and ocean energy.

Section 137: Solar photovoltaic (PV) technology is rapidly becoming cost competitive for electricity generation, not only compared with other renewables but also compared with conventional forms of generation.

The deployment of solar in Ireland has the potential to increase energy

security, contribute to our renewable energy targets, and support economic growth and jobs. Solar also brings a number of benefits like relatively quick construction and a range of deployment options, including solar thermal for heat and solar PV for electricity. It can be deployed in roof-mounted or ground-mounted installations. In this way, it can empower Irish citizens and communities to take control of the production and consumption of energy. Solar technology is one of the technologies being considered in the context of the new support scheme for renewable electricity generation which will be available in 2016.

5.1.4. **National Mitigation Plan: 2017**

Chapter 3 of this document outlines the vision for decarbonising electricity generation, and states- *As solar costs become more competitive, solar (both roof top and ground mounted) and micro generation technologies will further contribute to the renewable generation portfolio.* In 2015, 25.3% of Ireland's energy was produced from renewable sources. This is below the target set for 2020 of 40%.

5.1.5. **Regional Planning Guidelines for the South-East Region, 2010-2022**

Chapter 6: Communications/Energy/Regional Climate Change Strategy:

Section 6.2: *Energy:*

PPO 6.3: It is an objective of the Regional Authority that local authorities, the private sector, energy production and supply companies are encouraged to formulate sustainable energy policies and practices which seek to:

- Ensure security of energy supply in order to support economic and social development;
- Source energy at a price that does not adversely affect competitiveness;
- Develop variable and alternative sources of energy generation;
- Maximise the use of renewable energy technologies;
- Promote a culture of energy conservation by all users;

- Assist the development of indigenous sustainable energy enterprises;
- Support and promote sustainable indigenous Bio-energy industries including the Bio-ethanol industry.

Section 6.2.6: *Renewable Energy Technology:*

PPO 6.8: The Regional Authority will support the sustainable development and deployment of renewable energy technology and the development of District Heating Systems.

5.2. Development Plan

The relevant document is the Kilkenny County Development Plan 2014-2020.

Chapter 10 deals with renewable energy. Section 10.8.3 deals with solar electricity but does not contain any specific policies or objectives in relation to Solar PV.

- Section 11.7.6 states that the Council, with the support of the NRA [sic] is progressing/developing a number of schemes within County Kilkenny – amongst which is the N24 Mooncoin By-pass.
- Roads Objective 11H states- *To preserve free from development proposed road realignment/improvement lines and associated corridors where such development would prejudice the implementation of National Roads Authority or County Council plans (See Figure 11.1).* Figure 11.1 is an OS Discovery series map extract which shows the county outlined in purple, mentions the Mooncoin By-pass, but does not give any indication of a line for this by-pass.
- Section 4.6.4 states- *Rural areas have a vital contribution to make to the achievement of balanced regional development. This involves utilising and developing the economic resources of rural areas, particularly in agriculture and food, marine, tourism, forestry, renewable energy...*
- Section 6.1 states – *The Council recognises the need to manage rural change and to guide development and will work to: Promote a broad concept of rural development and not one based solely on agriculture or other dominant natural resource and encourage the sustainable development of resources in such sectors as agriculture, tourism including agri-tourism, forestry, farm diversification, and renewable energy resources.*

- Appendix H of the Plan contains a List of Protected Views. There is one such, V17, which may be impacted by the development – *Views south, southwest and west over the Suir valley on Templeorum/Barrabehy Road No. PL1040.*

5.3. Natural Heritage Designations

The site is neither within nor immediately abutting any natural heritage designation. The closest such is the Lower River Suir SAC (Site code 002137) – located some 3.25km to the southeast and southwest (as the crow flies).

6.0 The Appeal

6.1. Grounds of Appeal

6.1.1. The appeal from McCarthy Keville O’Sullivan Ltd, agent on behalf of the applicant, ENGIE Developments (Ireland) Ltd, received by An Bord Pleanála on 11th March 2019, can be summarised in bullet point format as follows-

- Development of Solar PV arrays is supported by the National Planning Framework 2040, sustainable energy policy, the Government White Paper on Ireland’s Transition to a Low Carbon Energy Future 2015-2030, the National Mitigation Plan 2017, Ireland’s Climate Strategy to 2020 and Beyond, the National Renewable Energy Action Plan and the Regional Planning Guidelines for the Southeast Region 2010-2022.
- The development is supported by Kilkenny County Development Plan policies in relation to renewable energy and the green economy.
- The Mooncoin By-pass is referenced in Section 11 of the Development Plan, but since the expiration of the Mooncoin Local Area Plan 2003-2009, the by-pass is suspended.
- The applicant has made provision to ensure that the development will not impact on any future by-pass – the line of which is to the south of the site.
- The entirety of the road which connects the site to the N24 has been taken-in-charge by KCC – road no. L74321-4.
- The existing junction of the L74321-4 and the N24 has operated safely in the past ten-year period for which records are available. It has visibility splays for

all vehicular movements in accordance with TII standards. The impact during the sixteen-week construction phase will be modest, and the junction will operate well within capacity.

- A Glint & Glare assessment accompanied the application to KCC. The development will not impact on the local road network or the proposed N24 Mooncoin By-pass. There are significant difficulties in assessing the impact on a road which has not yet been built, and for which no plans have been completed. The Board has previously concluded that levels of glint & glare from solar PV arrays would be minimal. A number of solar PV arrays have been built in proximity to roads in the UK, and there is no evidence of any increase in road accidents in their proximity.
- Due to the nature of solar array developments, it is standard practice that the layout plans and elevations that accompany a planning application are based on informed assumptions of the most likely options for equipment and its positioning. PAs can condition the submission of a final layout of the arrays for written agreement.

6.1.2. The appeal is accompanied by the following documentation of note-

- Appendix B – Letter from McCann Fitzgerald, Solicitors (dated 7th March 2019), in relation to the line of the Mooncoin By-pass and the taking-in-charge of the L74321-4 county road. Out of an abundance of caution, the applicant has set back the solar PV arrays a further 50m from the protected corridor of the by-pass. The L74321-4 passes through the access corridor for the Mooncoin By-pass. Other lands rely on this county road for access – and, if the by-pass is constructed, provision will have to be made for access, in order to ensure that no lands become land-locked – whether lands are used for agriculture or solar PV arrays. There is nothing remarkable about the proposed development which would require any special form of road access. It appears that the Mooncoin By-pass proposal is ‘suspended’ – as indicated by TII. It makes perfect sense to protect the route corridor free of development – even for a ‘suspended’ road. The Board has previously refused development for a solar PV array in Co. Waterford, on the basis that the lands were bisected by the N72 Lismore to Cappoquin road (which was also ‘suspended’). In this instance, there is no need to refuse permission to

preserve the line of the 'suspended' route. Property owners have a right to some certainty, in relation to the development of their lands. Members of the public who may also become involved in the planning process, have some rights to clarity in relation to planning. Even if it were accepted that the southern part of the site might be affected by the Mooncoin By-pass, this cannot be said of the northern part of the site. It is noted that reason no. 1 for refusal makes no reference to "material contravention of the development plan". It follows that the provisions of section 37(2) of the Act are not engaged. In particular, the Board is not in any way limited by the criteria set out at section 37(2)(b).

- Appendix C – Letter from Alan Lipscombe, Traffic & Transport Consultants (dated 5th March 2019) in relation to reason for refusal no. 2. The junction of the L-74321-4 with the N24, is adequate to deal with traffic volumes generated during the sixteen-week construction phase. AM and PM peak hour traffic flows were extracted from the TII database for the N24. The likely construction year is 2020. During the construction phase, 22 HGV and 100 LGV movements would be generated on the busiest day, not all of which would be at peak hours. PICADY was used for priority junction analysis. No queues are forecast for right-turning traffic off the N24 into the L74321-4 at peak times. Sight visibility for all traffic types is acceptable at the junction. Forward visibility of 215m is available for right-turning traffic into the L74321-4 – in line with requirements for a road on which the 100kph speed restriction applies. There were no accidents reported at this junction for the past ten-year period. It is acknowledged that the L74321-4 leading to the site is narrow, and that there are points at which two vehicles cannot pass. It is, however, wide enough to provide for agricultural traffic. This constraint will be mitigated by the following-
 - A Construction Traffic Management Plan will be prepared for the written agreement of KCC.
 - The maximum size vehicle used during construction will be a small articulated HGV – with a maximum length of 10.7m.
 - Temporary traffic measures will be put in place during the construction phase, which will include a 'flagman' at the junction.

- Traffic leaving the site will be controlled, so that two vehicles do not meet on the cul de sac.
- Warning signage will be erected on the N24 and L74321-4.
- General site workers will be transported to and from the site by minibus at AM and PM peak hours

Traffic generation during the operational phase will be minimal (2 car or LGV movements per month).

- Appendix D – List of examples of existing and proposed solar arrays in close proximity to road networks in the UK; including aerial and ground level photographs and photomontages.
- Appendix E – letter from KCC (dated 24th May 2017, which indicates that the access road to the site from the N24 is taken-in-charge by the Roads Authority – no. L74321-4.

6.2. Planning Authority Response

6.2.1. The response of Kilkenny County Council, received by An Bord Pleanála on 5th April 2019, can be summarised in bullet point format as follows-

- The applicant has correctly advised that the status of the Mooncoin By-pass is presently 'suspended'. One of the reasons for the suspension is that the scheme now forms part of a much larger scheme – the N24 Waterford to Cahir Major Project. This project is identified in the Ireland 2040 National Development Plan as a key priority. The Project Appraisal Plan for the major scheme has recently been submitted to TII and the Department of Transport, Tourism and Sport, for approval and permission to move on to the next stages of the project. As such, although a route corridor has been identified for the Mooncoin By-pass project, it is now potentially subject to change. Although it is expected that the major scheme will be within the corridor of the Mooncoin By-pass, this cannot be confirmed at this stage. Importantly, the horizontal and vertical alignment of the route is not yet determined. For these reasons, the first reason for refusal still stands.

- The information submitted by the applicant by way of appeal of reason for refusal no. 2, should have included a revised swept path analysis for the 10.7m length HGV now being proposed for construction deliveries.
- The PA acknowledges that there is difficulty in assessing glint & glare for a road that has not yet been built. This points up the prematurity of the development, pending the production of drawings for the new N24 major scheme.

6.2.2. The response is accompanied by an enlarged OS Discovery Series map extract for the area – showing the line of the Mooncoin By-pass – Drg. No. TEMP/1001.

6.3. Observations

There is one observation from Finbarr Gannon & Co. Ltd, Consulting Engineers, agent on behalf of the O'Hanlon family, Farranmacedmond, received by An Bord Pleanála on 8th April 2019, which can be summarised in bullet point format as follows-

- The principal objection to this development is the difficulty in accessing the site for construction traffic.
- There have been a number of traffic accidents on the stretch of the N24 near the junction with the access cul de sac, in the past 15 years – including one fatality less than 100m from the lane entrance. There have been a number of fatalities at other turn-off points from the N24, within 2 miles either side of the access junction to the cul de sac serving the appeal site.
- The cul de sac is effectively single lane traffic width. In the past, articulated trucks have had to undertake a number of manoeuvres to get past the right-angled bend in the laneway.
- Even smaller trucks using this laneway effectively implement a one-way system, which disrupts other users of the laneway.
- The use of smaller trucks by the developer will exponentially increase the amount of construction traffic trips.
- The observer family farms in this area. The farmyard on this lane is divided into two parts, with the lane itself being used as the link between them. The development will seriously impact on farming activities.

- A proper construction schedule for this development would be spread over 40 weeks. The developer seems to consider that there will be unrestricted access to this laneway at all times during the 16-week construction period. This laneway is shared with other users – particularly in relation to farming activity. There are dairy cattle moved four times per day on this laneway.
- The application does not contain any detailed layouts.
- There has been no confirmation of the grid connection.
- The Mooncoin By-pass will be located approximately 7-8m above the level of the solar PV farm – resulting in greater impact from glint & glare.
- There is no indication of the types of construction vehicles and machinery which will be required for this development.
- Tractors & trailers currently experience difficulty exiting the access laneway onto the N24, due to the tight angle and the volume and speed of traffic on the main road.
- Artificial lighting will be required during the construction phase.
- There is no indication given of the amount, and method of removal, of waste from this site.
- A surface water management plan should have formed part of the detailed planning application.
- There are no sediment control plans outlined.

7.0 Assessment

The principal issues of this appeal relate to the principle of development; impact on the road reservation line for the N24 Mooncoin By-pass; roads & traffic safety; appropriate assessment screening; visual impact & landscape considerations; residential amenity; and glint & glare.

7.1. Principle of Development

- 7.1.1. The development of solar energy will aid in the achievement of Ireland's international, European and national obligations with regard to the reduction of greenhouse gas emissions and provision of energy from renewable sources. The

Government's White Paper entitled 'Ireland's Transition to a Low Carbon Energy Future, 2015-2030', sets out a framework for the transition to a low carbon energy system, which will provide for a secure supply of competitive and affordable energy. More particularly, Paragraph 137 of the paper specifically states- *Solar photovoltaic PV technology is rapidly becoming cost effective for electricity generation . . . and has the potential to increase energy security, contribute to our renewable energy targets and support economic growth and jobs.* The proposed development would be in accordance with the aspirations of Paragraph 137.

- 7.1.2. The National Planning Framework: 'Project Ireland 2040' aims to reduce the national carbon footprint by integrating climate action into the planning system in support of national targets for climate policy mitigation and adaptation, as well as targets for reductions in greenhouse gas emissions. National Policy Objective 55, aims to- *Promote renewable energy use and generation at appropriate locations within the built and natural environment to meet national objectives towards achieving a low carbon economy by 2050.* These objectives are given further expression within the 'Regional Planning Guidelines for the South-East Region, 2010-2022'; which seek to support the sustainable development and deployment of renewable energy technology.
- 7.1.3. The Kilkenny County Development Plan 2014-2020, whilst it contains a chapter dealing with renewable energy (and solar electricity in particular), does not contain any specific policies or objectives in relation to solar PV farms – instead stressing solar units mounted on buildings. Therefore, a development of this nature must be assessed on its planning merits/demerits.
- 7.1.4. With regard to the siting of the proposed development on lands which are currently used for agricultural grazing/silage; whilst the UK's 'Planning guidance for the development of large scale ground mounted solar PV systems', advocates an approach whereby such developments should ideally utilise previously-developed land, brownfield land, contaminated land, industrial land or lower-quality agricultural land (based on a grading system defined by the Agricultural Land Commission), there is no policy provision within this country which serves to preclude the development of solar farms on agricultural lands of any quality. I would note that the solar arrays will not cover the entire site, and it will still be possible to graze animals amongst the solar PV arrays – so the use of the land is not entirely changed.

7.1.5. There is, therefore, a positive presumption in favour of developments such as that proposed, in light of Ireland's international, European and national commitments, with regard to reduction of greenhouse gas emissions and provision of energy from renewable sources. Any such applications should be assessed on their individual merits and subject to normal planning considerations.

7.2. Design & Layout

7.2.1. The area of the site is stated to be 10.3ha. Of this area, approximately 6.7ha will be used for solar arrays and other associated new infrastructure. All boundary and internal hedgerows/earth banks are to be retained. Documentation submitted with the appeal continually refers to plans being indicative only – to be completed in detail should the scheme receive planning permission. The fourth reason for refusal related to this absence of certainty, as to what was being proposed by the developer. The applicant refers to the 4m wide access track through the site being within 20m of what is shown on drawings: the same is the case for solar arrays (following geotechnical investigation) and for the inverter/transformer units. Documentation also refers to up to 3 no. inverter/transformer units throughout the site – and plans submitted do indeed show three such units. Elsewhere in documentation submitted, it is stated that only two such inverter/transformer units will be required. Solar arrays will be mounted on metal frames – erected using pile-driving construction methods. These fixed arrays will be arranged in rows east/west – facing south and tilted at an angle of 20-25 degrees. There will be space for animals to graze between and beneath the arrays. Some 17,640 panels will be erected on the site – with an average height of 2.5m above ground level. The electricity sub-station is to be located at the extreme southern end of the site – beside the only vehicular access to the site; which will be gated. The sub-station will be located within a compound surrounded by 2.4m high palisade fencing. The site will be surrounded by 2.4m high metal mesh fencing, with up to 10 no. pole-mounted CCTV cameras (4m high) for security purposes. The fencing will also protect the site from roving deer. Security lighting will not be required, as CCTV cameras will be fitted with infra-red for night-time operation. Cables throughout the site will be run underground in trenches of not more than 0.5m deep. The position of a construction compound is identified at the southern end of the site (1,200m²). The site will be decommissioned after 30 years (unless permission is sought to re-power, with new generating infrastructure), with

elements of the infrastructure recycled (aluminium frames, glass semi-conductor material, steel and copper). Access roads will be retained, to serve future agricultural use.

- 7.2.2. I consider that the minor relocation of equipment/access tracks within this overall site, by up to 20m, would not, in any way, be significant. Such micro-siting is often found necessary in relation to wind turbines for reasons of foundation stability or impact on telecommunications. The slight alteration of equipment within the boundaries of this site will not have any visual, ecological, archaeological or human impact – the principle and quantum of development will remain the same. A condition could be attached to any grant of permission to issue from the Board, in relation to a maximum allowance of 20m for micro-siting of elements of plant, equipment or access tracks. I note that there are no houses immediately abutting the site.

7.3. Impact on Road Reservation for the N24 Mooncoin By-pass

- 7.3.1. The first reason for refusal related to the impact of the development on the N24 Mooncoin By-pass. Drawings submitted indicate the line of the by-pass running immediately to the south of the appeal site – bisecting the L74321-4 access road/track. No part of the road reservation line encroaches on the appeal site. The County Development Plan indicates that the road line is an objective – as listed in Figure 11.1. However, Figure 11.1, whilst it is an OS Discovery Series map extract, does not show any line on the map – merely the mention of the ‘Mooncoin By-pass’.
- 7.3.2. The applicant has argued that Transport Infrastructure Ireland (TII) has indicated that the road scheme has been ‘suspended’ [as was verified by this Inspector through search of the TII website]; claiming that work towards progressing the scheme halted in 2005. Notwithstanding this, TII, in a submission to KCC, recommended refusal of permission on grounds that- “The site of the proposed development is located in close proximity to the preferred and/or approved route of a national road scheme. The proposed development could prejudice plans for the delivery of this scheme. A grant of permission, in this instance, is considered to be at variance with the provisions of the DoECLG Spatial Planning and National Roads Guidelines for Planning Authorities (January 2012), section 2.9 refers”.

- 7.3.3. KCC, in its response to the 1st Party grounds of appeal, states that one of the reasons for the suspension of the Mooncoin By-pass, is that the scheme now forms part of a much larger scheme – the N24 Waterford to Cahir Major Project. “This project is identified in the Ireland 2040 National Development Plan, as a key priority. The Project Appraisal Plan for the major scheme has recently been submitted to TII and the Department of Transport, Tourism and Sport, for approval and permission to move on to the next stages of the project. As such, although a route corridor has been identified for the Mooncoin By-pass project, it is now potentially subject to change. Although it is expected that the major scheme will be within the corridor of the Mooncoin By-pass, this cannot be confirmed at this stage. Importantly, the horizontal and vertical alignment of the route is not yet determined”. The National Development Plan 2018-2027 indicates at Figure 5.2, that the entire Waterford to Limerick Junction road scheme is at ‘Pre-Appraisal/Early Planning’ stage.
- 7.3.4. The applicant argues that the proposed development does not impact on the road reservation. Even if the by-pass scheme does progress, access will still be required to the L74321-4 and agricultural lands served by it. The appeal site will still have to be accessed for agricultural purposes. Such access would likely be via a continuation of the L74321-4 to the Waddingstown Road to the northwest. The applicant indicates that drawings submitted are indicative, and is supportive of a condition, upon grant of permission, requiring the submission of final designs for approval prior to commencement of development.
- 7.3.5. I do not see that the proposed development would in any way affect the design of the Mooncoin By-pass, unless for some reason the route corridor was to be relocated further to the north. I note that the applicant has indicated that no part of the solar PV array or its associated equipment is located within 50m of the road reservation line. Micro-siting could allow for tolerance of up to 20m for equipment – so as to facilitate any by-pass requirements. It is not reasonable to sterilise an entire swathe of land between Waterford City and Limerick Junction for a road line which may or may not be progressed. There is no indication on any map of just how wide the reservation line of the Waterford to Cahir and the Cahir to Limerick Junction projects might be – route options often being kilometres apart. The appeal site does not infringe in any way on the line of the Mooncoin By-pass (suspended), and this should be a sufficient level of projection for any road scheme linking Waterford and Cahir.

7.4. Roads & Traffic Safety

- 7.4.1. The application is accompanied by a Traffic & Transport Assessment – dated November 2018. There is only one access to the site – via the L74321-4 county road. This cul de sac currently serves as access to four houses, farmland and a large farmyard complex. The distance between the junction with the N24 and the site entrance is approximately 420m. Of this, only the first 260m is metalled – thereafter the access becomes a hard-core track with grass growing in its centre. It is possible to pass two vehicles only on that portion of the L74321, adjacent to the N24 junction and at the farmyard complex. The remainder of the road/track only allows for one vehicle passage. The track continues on further to the north past the site, to serve other agricultural land.
- 7.4.2. There is an observation from the owner of the farmyard and house on the west side of the L74321-4, claiming that the construction phase will hinder the farming operation, where the L74321-4 is in continual use for movement of farm animals and machinery. It is contested that the 16-week construction period is too short, and that this would result in major disruption to farming activities, arising from the quantum of HGV and LGV traffic which would be arriving and departing the site during the construction phase.
- 7.4.3. The Roads Design Report of KCC, questions whether the road has been taken in charge by the Council, and suggests that consent would be required from the owner of the unmetalled part of the road for access to the site. The applicant has submitted a letter from KCC – indicating that the road is taken-in-charge by the Council. Whatever the status of this road/track, it does not appear to be a matter of contention that the owner of the appeal site has right of access along the its length to access his lands. The application is accompanied by a copy of a letter from the landowner, consenting to the making of the application. I would be satisfied that the applicant has sufficient interest in the road to permit of access to this site.
- 7.4.4. The observer states that there is a right-angled bend on the L74321-4, which would hinder access by certain types of construction vehicles. There is one dog-leg bend on the road. This dog-leg bend currently allows for movement of farm machinery along the road to the farmyard of the observers, and also to serve surrounding agricultural land. By way of 1st Party appeal, the applicant has indicated that

articulated vehicles would be limited in length to 10.7m, in order to negotiate this bend. I would be satisfied that such vehicles would be able to negotiate this bend.

7.4.5. KCC was concerned that sight visibility at the junction of the L74321-4 with the N24 was substandard, and that the alignment of the junction would necessitate large vehicles having to swing across into the lane of oncoming traffic, to execute a left turn into the L74321-4 or a left turn out of the L74321-4. The swept path analysis (Figure 10 – 2) for HGVs arriving and leaving (as submitted by the applicant), indicates that such vehicles arriving from the direction of Mooncoin, or leaving in the direction of Waterford, would have to cross into the lane of oncoming traffic, to execute the turning manoeuvre. This is undesirable from a traffic safety point of view, even if linesmen were present on the N24 during the construction phase. It would be possible to attach a condition to any grant of planning permission requiring that all HGV traffic entering the site does so from the direction of Waterford; and all departing HGV traffic does so in the direction of Mooncoin. The applicant has indicated that most of the solar PV array materials would be imported through Dublin or Rosslare ports – and so, would be approaching along the N24 from the direction of Waterford, in any case.

7.4.6. The applicant has indicated that sight visibility at the junction of the L74321-4 with the N24 is good in either direction for traffic leaving the L-74321-4. There is a hard shoulder on the N24 at this point, which helps to improve sight visibility, at a point where the 100kph speed restriction applies. The applicant has also indicated that 215m forward visibility is available for traffic turning right into the L74321-4 from the N24. I would be satisfied that sight visibility at this junction is acceptable. KCC has granted planning permission in the recent past for houses on the L74321-4 – utilising the same junction. The response of KCC to the grounds of appeal indicates that the applicant should have submitted revised, swept path analysis for the shorter (10.7m) articulated vehicles now being proposed for construction purposes. I would be satisfied that the shorter vehicles would perform within the swept path analysis parameters for the larger vehicles, and that a condition requiring access from Waterford direction and departure in the direction of Mooncoin, would ensure that there will be no traffic hazard.

7.4.7. The applicant has indicated that the carrying capacity of the N24 can permit of the volume of construction traffic which would be generated by the development during the sixteen-week delivery period – particularly at the AM and PM peaks. There will

be a maximum of 22 daily HGV movements and 100 LGV movements. This would give rise to a 4% increase in traffic movements on the N24, at most. An Outline Construction Traffic Management Plan is included with the application – and it sets out the principal construction phases; access routes for traffic; scheduling of HGV deliveries and departures outside of peak hours on the N24 (0700-0900 and 1600-1800 Monday to Friday); pre-construction survey of the L74321-4 (and repair of any damage caused by construction traffic); liaison with local residents; site signage; appointment of construction traffic operators (including on-road linesmen); and wheel-washing of trucks departing the site. Whilst there will be some level of disturbance for existing residents and farmers using the L74321-4 during the construction phase – the disruption will be of limited duration. If the mitigation measures set out in the Outline Construction Management Plan (Annex 1 of Technical Appendix 10 – Volume 2) are adhered to, disruption to residents and farmers should be minimised.

- 7.4.8. I would not have any concern in relation to sight visibility lines at the actual sight access from the L74321-4, and the swept path analysis for HGVs at this location. The track at this location is only wide enough for one vehicle, and is used only by agricultural-related vehicles. A system of management for this track will have to be put in place during the construction phase. Such a system will necessarily involve control of vehicles along the track (which will be travelling at very low speeds) and other agricultural movements. The management will involve the presence of personnel to control vehicle/animal movements, which will ensure that there will be no traffic hazard arising.
- 7.4.9. The Road Design Section of KCC expressed concern in relation to the structural stability of the L74321-4 road – in relation to the construction phase of development. The Traffic & Transport Technical Appendix which accompanied the application indicated that the applicant would undertake a structural survey of this road prior to commencement of development, and would make good any necessary repairs upon completion of the development. A condition requiring a bond to be lodged with the Council to cover such repairs, should the applicant be unable or unwilling to effect them, should be attached to any grant of permission to issue from the Board.

7.5. Appropriate Assessment

7.5.1. The application was accompanied by a Stage 1 Appropriate Assessment Screening Report – dated November 2018. In assessing the application, KCC carried out an appropriate assessment screening exercise. The site is located neither within nor immediately adjacent to any European site. The closest such is the Lower River Suir SAC (Site code 002137) – located some 3.25km to the southeast and southwest of the site – as the crow flies. There are no watercourses within the site or along site boundaries. There are no drainage ditches located along the earth banks which form the field boundaries in the area. There is one, low-lying area of the site within Field 4, which was dry under foot on the date of site inspection. There is no proposal to erect any solar arrays on this part of the site. The closest watercourse (the Mill Stream) is located to the southeast of the site – where the N24 crosses over it at Ballynamountain Bridge – some 0.45km distant. The Lower River Suir SAC is located some 5.0km further downstream of this road crossing. The appeal site is not in hydrological connectivity with this European site. The proposed development is not directly connected with or necessary for the management of an European site.

7.5.2. To firstly carry out screening for appropriate assessment, six steps will be followed-

Step 1 – Identify European Sites which could potentially be affected by the development (source-pathway-receptor model)

The closest such is the Lower River Suir SAC (Site code 002137) – located some 3.25km to southeast and southwest of the site. There is no hydrological connectivity with this European site. There are no watercourses within or immediately abutting the site. The closest such is the Mill Stream at Ballynamountain Bridge on the N24 – some 0.45km from the site. This is the direction in which overland surface flows from the site are likely to go. This watercourse discharges into the aforementioned SAC, some 5.0km downstream of Ballynamountain Bridge. The separation from the SAC, via overland flow to Ballynamountain Bridge, and from thence to the SAC, is 5.45km.

Step 2 – Identify the Conservation Objectives of the relevant site(s)

The qualifying interests of the Lower River Suir SAC are as follows-

- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*).

- Mediterranean salt meadows (*Juncetalia maritimi*).
- Water courses of plain to montane levels with the *Ranunculion fluitantis* and Callitriche-Batrachion vegetation.
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels.
- Old sessile oak woods with *Ilex* and *Blechnum* in the British Isles.
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [Annex I].
- *Taxus baccata* woods of the British Isles [Annex I].
- *Margaritifera margaritifera* (Freshwater Pearl Mussel).
- *Austropotamobius pallipes* (White-clawed Crayfish).
- *Petromyzon marinus* (Sea Lamprey).
- *Lampetra planeri* (Brook Lamprey).
- *Lampetra fluviatilis* (River Lamprey).
- *Alosa fallax fallax* (Twaite Shad).
- *Salmo salar* (Salmon).
- *Lutra lutra* (Otter).

The conservation objectives for the 7,097ha site are:- to maintain the favourable conservation condition of- Water courses of plane to montane levels, Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels, White-clawed crayfish, and Otter; and to restore the favourable conservation condition of- Atlantic salt meadows, Mediterranean salt meadows, Old sessile oak woods, Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*, *Taxus baccata* woods, Freshwater pearl mussel, Sea lamprey, Brook lamprey, River lamprey, Twaite shad, and Atlantic salmon.

Step 3 – Identify the potential- a) likely, and b) significant, effects of the project with reference to the site’s Conservation Objectives, in light of best scientific knowledge

The principal impacts which may occur (both negative and positive), largely relate to water quality and impact on aquatic or aquatic-dependent species, such as Brook lamprey, River lamprey, Atlantic salmon, Twaité shad, White-clawed crayfish, Otter: and include the following-

- Accidental spillages of hydrocarbons or lubricants, entering groundwater during the construction/operational/decommissioning phases.

None of the habitats, which constitute conservation interests of the SAC, are located within the zone of influence of the application site – being located a significant distance downstream of the proposed development.

Step 4 – As above, but considering in-combination effects with other plans or projects

The only other project of consideration in the area, is the Mooncoin By-pass, which, as indicated elsewhere in this report, is currently ‘suspended’. There will be no in-combination impacts on the SAC – where the details of the road scheme are not known at present.

Step 5 – Identify any construction/operational practices which may be put in place/undertaken to reduce/lessen likely significant impacts on hydrology and ecology of the area

Best practices to be undertaken during construction, operational and decommissioning phases include-

- Construction-
 - Storage of plant and equipment on hard-stand areas within a dedicated construction compound.
 - Spill kits will be available on site.
 - Fuel to be stored within a bunded area.

- Refuelling and maintenance will take place within designated refuelling areas of hard-stand.
 - Chemicals will be stored within a dedicated bunded area.
 - Construction waste will be stored on site and disposed to licensed disposal facilities.
 - Limiting construction phase to sixteen weeks – to limit impact on ecology of the area.
- Operation-
 - Surface water attenuation to be provided for by way of two swales within the site.
 - Arrangements to allow for certain mammals to penetrate the site.
 - Decommissioning-
 - Same precautions as for the construction phase. Dismantled equipment will be recycled, insofar as possible. Only the access track will remain on the site.

Step 6 – Determine whether likely significant effects, either individually or in combination with other plans or projects, on European sites, can reasonably be discounted, on the basis of objective scientific information

The applicant deemed that it was possible to discount any likely significant effects (particularly on aquatic species of conservation interest), and so determined that the submission of an NIS to Kilkenny County Council was not required. This was reasonable, given the location of the application site within an existing agricultural area; where surface water is to be attenuated on the site, and where the site is located 0.45k from the closest watercourse.

- 7.5.3. It is reasonable to conclude, 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 European site no. 002137, or any other European site, in view of the site's Conservation Objectives, and a Stage 2 Appropriate Assessment is not, therefore, required.

7.6. Visual Impact and Landscape Considerations

- 7.6.1. The application is accompanied by a Landscape and Visual Assessment (Technical Appendix 4), and an annotated aerial photograph, showing the Zone of Theoretical Visibility (ZTV). This latter indicates that the principal views of the site will be in the immediate vicinity, from lands to the south, and from higher ground to the north. A series of 5 photomontages assess the impact of the site from these vantage points.
- 7.6.2. The construction of large-scale commercial solar PV arrays necessitates development sites of considerable size and extent and, therefore, such schemes may appear visually prominent in the surrounding landscape. Accordingly, in order to assess the visual impact of the solar PV farm, it is necessary to consider the site context, having regard to the site location and the wider sensitivity and landscape value of the surrounding area.
- 7.6.3. In a local context, the proposed development is sited within gently undulating agricultural land – fields being separated largely by low earth banks, with smaller amounts of hedgerow, and a limited number of mature hedgerow trees. The landform generally falls from higher ground to the north towards the Suir River to the south. The area is interspersed with individual farmsteads and one-off rural housing – criss-crossed by a road network. In terms of a broader landscape classification, it is of relevance to note that the subject site is not located within any identified scenic or sensitive landscape designation, such as along a ridgeline; and that the wider area forms part of the ‘South Kilkenny Lowlands’ landscape character unit (G), as detailed in Figure 8.2: ‘Landscape Character Assessment’ of the Kilkenny County Development Plan, 2014-2020. Figure 8.3: Landscape sensitivities – indicates that the appeal site does not come within the compass of such designated areas. The Landscape Character Area is described in Appendix C of the Kilkenny County Development Plan 2008-2014; where it is stated that- “The smooth terrain and the generally gentle topography of lowlands is characteristic of this landscape character unit, allowing vistas over long distances. As a result, development can have a disproportionate visual impact in areas, due to an inherent inability to be absorbed either visually or physically”. The Landscape Character Area is not indicated as being ‘Highly scenic/Visually pleasing’. This inability to absorb development can be related to the large scale of flat fields – particularly those used for arable crops. This does not apply in relation to the appeal site, which is made up of five smaller field units – separated by earth banks/hedgerows. The hedgerows within the site and on

the boundary are of varying quality. There are some mature trees within field boundaries, and a further clump located on the edge of Field 4. The documentation submitted with the application recommends planting along the southwestern boundary earth bank – to help to screen the development. No drawings to show how this would be effected, have been submitted. It would be possible to attach a condition to any grant of permission, requiring planting of an hedgerow of native species along this boundary, within the first planting season following commencement of construction.

- 7.6.4. There is a Protected View (V17), located some 6km to the north-northwest of the appeal site. This view is from a county road – looking across to the Suir River valley to the south. This separation distance will ensure that the proposed development will not have any impact on this Protected View.
- 7.6.5. The proposed development will be visible to some extent, from surrounding roads and lands. However, having regard to the surrounding topography, the site context, and the presence of intervening features such as roadside boundary hedgerows/earth banks, in addition to the mitigation to be provided by way of the planting/landscaping proposals for the southwestern boundary, I would be satisfied that the overall visual impact of the proposal will be within acceptable limits and will not be unduly visible in the landscape. The application site cannot be considered to be elevated or exposed, and although longer distance views of the proposed development will be available from certain vantage points along roadways to the north of the site (and potentially from any new Mooncoin By-pass, depending on road levels), intervening features such as existing buildings and roadside vegetation will serve to limit any such views. From positions closer to the site, the overall scale and extent of the development will not be readily apparent whilst any views of the arrays will be obscured for the most part by hedgerows/earth banks. Solar PV arrays can provide a point of interest within a landscape – particularly arising from their rarity. I would not accept that it is a requirement to screen such developments from view from all public areas – much the same as would apply for a development of greenhouses or poly-tunnels.
- 7.6.6. The site is located a sufficient distance (more than 3.0km) from the County Waterford boundary, to ensure that there will be no impact on the landscape or views & prospects within that county.

7.6.7. The impact of the development on the landscape is reversible – after a period of 25 years – when the infrastructure on the site could be removed, and the use returned to agriculture.

7.7. **Impact on Residential Amenity**

7.7.1. Drawings submitted with the application indicate the location of houses within a 1km radius of the site. The closest such is the cluster, immediately to the south – accessed from the L74321-4 county road. The closest house within this cluster is 240m from the southernmost point of the site.

7.7.2. Given the overall design, height and nature of the proposed development, its operation is unlikely to give rise to any significant impact on the residential amenity of nearby properties by reason of overshadowing, noise, or nuisance. The mitigation to be provided, by way of the setback distances proposed, the retention of screen buffers (boundary hedgerows/earth banks) will serve to alleviate concerns as regards the potential for glint & glare.

7.7.3. With regard to the potential impact of the construction of the proposed development on the residential amenities of surrounding property, whilst the works involved could give rise to some degree of disturbance/inconvenience to local residents (particularly on the L-74321-4); given the limited nature and scale of the development, and as any constructional impacts will be of an interim nature (16 weeks), I would be satisfied that such matters could be satisfactorily mitigated by way of condition attached to any grant of permission.

7.8. **Glint and Glare**

7.8.1. In assessing the potential for glint & glare attributable to the proposed development, it should be noted, that the proposal does not incorporate ‘tracking panels’, and that the arrays will be mounted in a fixed position and orientated to face due south. Furthermore, solar PV panels, given the nature of their design, need to absorb (as opposed to reflect) solar radiation and are, therefore, finished in an anti-reflective coating.

7.8.2. The application is accompanied by a Glint & Glare Study (Technical Appendix 9-1 – dated November 2018). This study focuses on that area within 1.0km of the site boundaries. Receptors were considered to be houses, roads, railways and airports

(within 15km). The level of reflection is considered to be the same as from water; and much less than for snow – 5% for the former and 80% for the latter. Linear strips of clear plastic, used within arable fields (to speed up crop growth), have the same reflective value as solar PV panels – and the use of such plastic is ubiquitous throughout the country. There is currently no Irish guidance in relation to glint & glare. There are 75 houses identified within the study area: those which may be impacted are located to the east and to the west of the solar PV farm site. A further 52 points were selected on the local road network; 13 from the railway line to the north; and Waterford Airport (15km from the site) were all included in the analysis. It was concluded that neither the railway line nor the airport runways had geometrical potential to experience any glare. The application was referred to the Irish Aviation Authority by KCC; and the IAA indicated that it had no objection to the proposal.

7.8.3. The proposal provides for 17,640 panels – erected on frames at an angle of 20-25 degrees towards the southern sun. The assessment proceeds to detail the methodology and the results of geometric reflection calculations undertaken as part of prediction modelling, which determined that some degree of reflection would theoretically be possible for some of the identified dwellings within the Zone of Theoretical Visibility (8 no. houses to the east [H51-H58] and 8 no. houses to the west [H1-H4 & H8-H11] of the solar PV farm), in the absence of any screening and on the assumption of ‘bare ground’. Houses to north and south cannot experience glint & glare – those to the north because of the angle at which the array is mounted; and those to the south because of separation distances, topography and geometry of sun angles. Potential effects will occur in the morning or evening. Arising from cloud cover for over 50% of the time, exposure to potential glint & glare is further reduced. Table 3 of the Study lists the impact on all 75 houses. The study has concluded that, given the presence of intervening screening, and the separation distances to the closest houses to east and west; in all instances no effects are predicted.

7.8.4. In relation to the roadways, the N24 is located some 320m to the south of the site, with minor county roads to east and west. The L74321-4 itself does not extend in metalled fashion as far as the appeal site. Just as for housing receptors, the potentially affected areas of road are to the east and west of the solar PV farm. Of the 52 points selected for inclusion, 14 could potentially experience some degree of reflection, in the absence of any screening and on the assumption of ‘bare ground’. These points are R1-R3, R28-R37 and R52. The study has concluded that, given

the presence of intervening screening, and the separation distances to the closest roads to east and west; in all instances no effects are predicted.

- 7.8.5. There is the potential for the proposed development to give rise to instances of glint and/or glare which could serve to distract passing motorists on any new Mooncoin By-pass. This is indicated in Figure 9-4a of the series of A3 annotated aerial photographs which accompany⁷ the application. Of the 16 points identified along the now 'suspended' route of the Mooncoin By-pass, it is indicated that points 1-6 and 12-16 could potentially experience some degree of glint & glare – assuming 'bare ground' and the absence of screening. When screening is taken into consideration, only points 4-6 (to the southwest of the site) could be impacted by glint & glare. But as the levels of this road are not known, it is not possible to definitively establish the potential for glint & glare. To screen the development for visual amenity purposes, the applicant proposes to plant an hedgerow along the southwestern boundary of the site. Given the early stages of road studies, it is unlikely that any by-pass will be built in the short-term. It is possible that the new hedgerow will have grown by the time any such road is built. It is also open to the roads designers to erect screens or barriers if there is concern that the solar PV farm may result in a hazard for road users, arising from glint and/or glare. I further note that solar PV farms exist on roadside sites in countries throughout Europe, where there is no intervening screening.
- 7.8.6. I would be satisfied that the findings of the 'Glint and Glare Study', in relation to no significant impact on the residential amenity of nearby properties or on the safety of road users travelling along those routes identified to the east and west of the application site, are reasonable. Furthermore, I would accept that the effects of glint & glare will only occur during suitable weather conditions, whilst any such impacts will be of limited duration, and will be reliant upon specific circumstances such as motorists looking towards the development and away from their direction of travel. It is not possible to calculate the impact of the development on the Mooncoin By-pass, where the line and levels of such road have not been fixed. However, I would be satisfied that the proposal to plant an hedgerow of native species on the southwestern boundary of the site (for visual amenity purposes), and the possibility that mitigation measures could be undertaken in the design of the road itself, will ensure that the proposed development will not result in a traffic hazard.

7.9. Other Issues

7.9.1. Development Contribution

The Development Contribution Scheme for County Kilkenny 2016-2017, would appear to be the current one. Category 14 relates to 'Renewable Energy Developments > 0.1MW – with a rate of €10,000 per MW. The Planner's Report contains a calculation cost of the contribution required for this scheme at €602,790. This would appear to be based on a charge of €10,000 per 0.1MW – although the scheme clearly states that the cost is per MW. The amount of €2,790 is for the sub-station building and inverter/transformer units. The proposed development would not appear to qualify for any exemptions or reductions under the Scheme. A condition requiring payment of a development contribution, in accordance with the terms of the Scheme, should be attached to any grant of permission to issue from the Board – with a further referral to An Bord Pleanála in default of agreement.

7.9.2. Grid Connection

The application documentation indicates potential grid connection routes to Granagh 38kV sub-station (approximately 3.3km to the east-southeast) – both over-ground and underground. Classes 26 & 27 of Part 1 of Schedule 2 of the Planning and Development Regulations, 2001 (as amended), provide that underground and over-ground placing/erection of electricity cables is exempted development in certain circumstances. The O'Grianna case is not of relevance in this instance, as EIA is not required for the solar PV farm.

Given that the grid connection does not form part of the subject application (and it has not been considered as part of the applicant's screening exercise for the purposes of appropriate assessment), and as the nature of any such connection (i.e. its route, construction and methodology) has not been finalised, I do not propose to comment further; other than to clarify that any grant of permission for the subject development should not be construed as any form of consent or agreement to a connection to the national grid, or to the routing or nature of any such connection.

7.9.3. Permission Period

The applicant has stated that the solar farm will have a lifespan of 30 years. It has been the practice of the Board to grant 25-year permissions for alternative energy proposals, in light of the rate of change in the technologies governing the sector. In

this instance it would be appropriate to attach such a 25-year condition. It is open to the developer to seek an extension of the permission from the PA – should such be required.

7.9.4. Archaeology & Cultural Heritage

The application was accompanied by an Archaeology and Cultural Heritage Report and a shorter report relating to items included on the Record of Monuments and Places (RMP) of the OPW, in this area. A site visit was undertaken in September 2018. The application was referred to the Department of Culture, Heritage and the Gaeltacht for comment, by KCC. The response of the Department indicated that there was no objection, subject to compliance with the Archaeological Impact Assessment submitted with the application. There are no Recorded Monuments or known features of archaeological significance within the appeal site, although a number of items of archaeological interest have previously been recorded in the wider area.

With regard to the potential for unrecorded sub-surface archaeological features on the site, given the limited ground disturbance associated with the use of directly-driven piles to support the metal framework for the solar panels; thereby removing the need for deeper foundations (i.e. no concrete works will be required to support the mounting frames), the proposal to undertake archaeological monitoring of all excavation works associated with the proposed cabling, sub-station, access road, temporary compound area, and any additional subsurface groundworks (with provision for the full excavation and recording of any archaeological features or deposits that may be exposed during said monitoring), is acceptable and provides for a satisfactory level of mitigation. The proposed development, subject to the implementation of suitable mitigation measures, is unlikely to have any significant impact on items of archaeological interest.

The application is accompanied by a survey of items included on the National Inventory of Architectural Heritage (NIAH). There are no Protected Structures either within or immediately abutting the site. The proposed development will not have any impact on architectural heritage.

7.9.5. Ecological Considerations

Technical Appendix 5-1 of the application documentation comprises an Ecological Impact Statement. The site was visited on 7th March 2018. A disused badger sett

was noted during the site survey. Bats are likely to commute along hedgerows (such as they are). Existing hedgerows will be retained. Having regard to the current use of the subject site for agricultural grazing/silage, the lands are of low ecological value, with limited significance from a biodiversity perspective. A small scrub area and adjacent low-lying ground (within Field 4) are to be retained, and no solar arrays will be erected within this area. This is likely to be the most bio-diverse area of the overall site. There are no natural heritage designations in the immediate vicinity of the site. Hedgerows are limited in this area – many fields being divided by earth banks alone. I would accept the necessity of providing for the movement of mammals (badgers, hedgehogs, hares and foxes amongst others) across the site, by ensuring the provision of suitable openings at appropriate intervals within the perimeter boundary fencing. The impact of the development will be broadly reversible – with the possibility that the site will be returned to agricultural use after 25 years.

Mitigation measures proposed, include the following-

- Hedgerows will be retained.
- New hedgerow proposed for the southwestern boundary of the site.
- Artificial lighting during the construction phase will be minimised.
- Spread of invasive species will be avoided.
- Area will be reseeded with native grasses and wildflowers, following completion of the construction phase.

I am in broad agreement with the contents of the ecological impact assessment which has accompanied the application, and would be satisfied that the development will not have any significant impact on the ecology of the area.

7.9.6. Water

The site will not be permanently occupied, and so, does not require a potable water supply. As the facility will not be staffed, there is no need for any provision for foul effluent disposal. Foul effluent during the construction period will be tankered off the site; where portable toilets will be used. The disposal of surface water on site is stated to be to soakways, although no drainage drawings have been submitted with the application. The site is not located within an area liable to flooding. The application is accompanied by a Farm Drainage Strategy (Technical Appendix 6-2).

The site slopes generally in a southwesterly direction, and towards a low point within Field 4. Greenfield run-off calculations for the site indicate 60 litres/per second for a 1-in-100 rainfall event. Due to the limited footprint of the solar PV arrays, rainwater can still percolate to ground around and beneath them. A vegetated swale is proposed for storage of 209m³ and 126m³ of run-off for the two parts of the site. It is stated that the location of these swales is indicated at Appendix D of the Strategy – but there is no Appendix D within the documentation submitted to the Board. The Roads Design Report of KCC expresses concern in relation to localised flooding on the N24 at Ballynamountain Bridge – to the southeast of the site. It would appear that this flooding is caused by a restriction on the capacity of the culverts beneath the N24. I would be satisfied that the proposed development would not result in increased run-off from this site, if proposals for the creation of two swales of 209m³ and 126m³ are carried out. A condition could be attached to any grant of permission requiring these swales to be constructed prior to commissioning of the solar PV array. An existing low-point within Field 4 where surface water gathers is not to be changed in any way, and this area is to remain free of development. There are no watercourses either within or immediately adjoining the site boundaries.

The development will not have any impact on the hydrogeology of the area. Swales to be put in place will ensure that most surface water generated on the site will be retained to percolate to groundwater, as occurs at present.

7.9.7. Electric & Magnetic Fields

The application is accompanied by a report entitled “Overview of Scientific Assessments of Research on ELF EMF and Health, and Epidemiologic Studies, 2007-2015”. There is no known impact of human health of the operation of developments such as this one. All link cables associated with the development will be buried. The site is surrounded by agricultural land. The closest house is located 240m to the south of the southernmost point of the site and the closest solar PV array is located a further 50m to the north. I note that solar PV arrays are erected on the roofs of houses throughout the country and in Northern Ireland in particular.

7.9.8. Environmental Impact Assessment

The application is accompanied by a series of environmental reports – many of which are similar to what would be contained within an EIAR. The construction of a solar PV array does not involve a class of development which is prescribed for the

purposes of Section 176 of the Planning and Development Act, 2000 (as amended), as set out in Parts 1 & 2 of Schedule 5 of the Planning and Development Regulations, 2001 (as amended). Accordingly, there is no requirement for the applicant to submit an Environmental Impact Assessment Report in this instance.

7.9.9. Signage

There are no proposals for any signage associated with this development.

8.0 **Recommendation**

I recommend that permission be granted for the Reasons and Considerations set out below, and subject to the attached Conditions

9.0 **Reasons and Considerations**

Having regard to the provisions of the current development plan for the area and to national policy objectives, it is considered that, subject to compliance with the conditions set out below, the proposed solar PV farm would not seriously injure the visual and residential amenities of the area, would not impact on the identified line of the by-pass of Mooncoin, or on the ecology of the area, and would be acceptable in terms of pedestrian and traffic safety and convenience. The proposed development would, therefore, be in accordance with the proper planning and sustainable development of the area.

10.0 **Conditions**

1. The development shall be carried out and completed in accordance with the plans and particulars lodged with the application and by the further particulars received by An Bord Pleanála on the 11th day of March 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. Prior to commencement of development, the developer shall inform the planning authority of any deviations required as a result of micro-siting of any element of the development (of not more than 20m, as measured from drawings submitted with this application).

Reason: In the interest of safeguarding residential amenity.

3. (a) The permission shall be for a period of 25 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, sub-station, CCTV cameras, satellite dish and fencing, 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, or if the solar farm ceases operation for a period of more than one year, 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. This permission shall not be construed as any form of consent or agreement to a connection to the national grid or to the routing or nature of any such connection.

Reason: In the interest of clarity.

5. All of the mitigation measures outlined in the Technical Appendices (Volume 2), which accompanied the planning application documentation

submitted to Kilkenny County Council) shall be undertaken during the construction, operational and decommissioning phases of the development.

Reason: In the interest of orderly development and residential amenities of the area.

6. Details of the two swales of 209m³ and 126m³ capacity, referred to in Technical Appendix 6-2 of Volume 2, submitted with the planning application to Kilkenny County Council, shall be submitted for the written agreement of the Planning Authority prior to commencement of development. The proposed development shall not be commissioned until such time as these two swales are in place and fully operational.

Reason: To avoid any excessive surface water run-off from this site, to protect the farming interests of adjacent landowners, and to lessen any impact which this development might have on flows within the Mill Stream at Ballynamountain Bridge on the N24, to the southeast of the site.

7.
 - a) Existing field boundaries shall be retained, notwithstanding any exemptions available.
 - b) A hedgerow of native species shall be planted along the entire southwestern boundary of the site with the farm access track.
 - c) All landscaping 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 PV farm, 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 interest of biodiversity, the visual amenities of the area, and the residential amenities of property in the vicinity.

8.
 - a) No 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 lands or the access track.
 - 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 proposed sub-station shall be finished in a neutral colour such as light-grey or off-white, and the roof shall be of black slate or tiles.

Reason: In the interest of clarity, and of visual and residential amenity.

9. Mammal access gates, designed generally in accordance with standard guidelines for provision of mammal access (National Roads Authority, 2008), shall be provided within the perimeter fence of the site.

Reason: To allow wildlife to continue to have access across the site, in the interest of biodiversity protection.

10. 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:

- i. the nature and location of archaeological material on the site, and
- ii. 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.

11. The construction of the development shall be managed in accordance with a Construction Environmental 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 but not limited to, hours of working, noise and dust management measures, surface water management proposals, the management of construction traffic and off-site disposal of construction waste.

Reason: In the interests of public safety, residential amenity and protection of the environment.

12. All HGV trips arriving at the site shall be from the direction of Waterford along the N24. All HGV trips leaving the site shall be in the direction of Mooncoin on the N24.

Reason: To obviate the need for HGVs to cross into the lane of oncoming traffic on the N24, in order to execute turning movements into or out of the L74321-4, in the interest of traffic safety.

13. 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.

14. 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 any damage to the L74321-4 access road which may occur arising from the use of this road by machinery and plant associated with the construction phase 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 access road.

15. 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 the 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.

Michael Dillon
Planning Inspectorate.

26th June 2019.