



An
Bord
Pleanála

Inspector's Report PL93.247310.

Development	10-year permission for solar photovoltaic array consisting of 33,000m ² of solar panels, exporting 5MW to the National Grid.
Location	Pickardstown, Tramore, Waterford
Planning Authority	Waterford City & County Council
Planning Authority Reg. Ref.	15/770
Applicant(s)	Tornado Electrical Ltd.
Type of Application	Permission
Planning Authority Decision	Permission subject to conditions
Type of Appeal	First Party vs. conditions
Appellant(s)	Tornado Electrical Ltd.
Observer(s)	None
Date of Site Inspection	7 th February 2017
Inspector	Ciara Kellett

1.0 Site Location and Description

- 1.1. The appeal site is located approximately 800m to the north of Tramore, Co. Waterford and approximately 3.5km west of Waterford Airport. It lies to the west of the R675 Waterford to Tramore road. The site is on an elevated position and is screened from the road with a mixture of hedgerows and trees. The site is undulating and rises from a level of circa 42mAOD at the northern and southern sections of the site to a peak of circa 49mAOD in the centre. The site is stated as being 12ha and is accessed directly off the R675 road via an existing private laneway. An existing hardcore road runs through the centre of the site, which is proposed to be retained. The site is currently grassland.
- 1.2. There are two dwellings to the east of the site facing the R675 Road. These dwellings are separated from the site by a large berm and are therefore visually isolated from the site. There are a number of farm buildings within the overall land holding, and external to the landholding, to the south of the site. There are also a number of dwellings to the south including Pickardstown House which is a former Victorian building dating from 1900's, although it is not listed on the Record of Protected Structures or the National Inventory of Architectural Heritage. It appears to be unoccupied at the moment.
- 1.3. Tramore Racecourse is approximately 1km to the south and the nearest residential housing estate is south of the Glen Road and the Garraun Stream, approximately 0.5km away. The Glen Road is elevated in parts and may provide occasional views in the distance of the proposal. However, there are limited options to stop along the road.
- 1.4. Appendix A includes maps and photographs of the area.

2.0 Proposed Development

- 2.1. It is proposed to install a Solar Photovoltaic Array comprising 33,000sq.m of solar panels to export a maximum of 5MW to the National Grid, an associated single storey control building, ancillary equipment, 2.4m high fencing, access road extension and ducting. The site will be used for agricultural usage as the photovoltaic system is designed to enable sheep graze below the equipment.

2.2. Following a request for Further Information, a site layout and a site section was submitted as well as a Landscape and Visual Impact Assessment, Glare and Glint study, a Hydrological Assessment and a Frame and Foundation Scoping study. An Appropriate Assessment Screening Report was also submitted.

3.0 **Planning Authority Decision**

3.1. **Decision**

The planning authority granted permission subject to 10 conditions. Conditions 2, 3 and 4 are the subject of the first party appeal.

Condition 2:

- (a) This grant of planning permission shall be for a period of 5 years following the commissioning of the permitted 5MW solar farm. The 5MW solar farm and ancillary structures shall then be removed unless, prior to the end of the period, permission shall have been granted for their retention for a further period.
- (b) Following commissioning, the developer shall consult with the Waterford Airport Authority concerning any “glare” or “after imaging” and any other safety issues associated with the solar panels on aircraft/aviation movements/ flight patterns. Any mitigating measures required by the Airport Authority to address aviation safety related issues shall be carried out at the expense of the solar farm developer.

Reason: To ensure the solar farm development does not impact detrimentally on Airport function and aircraft aviation safety. To enable the impact of the development to be reassessed, having regard to changes in technology and design during this period.

Condition 3:

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. The relevant Development Contribution Scheme was adopted by Waterford City & County Council on 12th February 2015. The contribution shall be paid prior to the commencement of the development.

Surface Water	€7,500
Recreation and Amenity	€2,500
Community Facilities	€20,000
Transport	€20,000
Total Contributions	€50,000

Reason: It is a requirement of the Planning and Development Act 2000 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.

Condition 4:

Upon termination of the use of the solar farm, the solar farm shall be dismantled and removed from the site and the site restored to its existing condition in consultation with the Planning Authority unless, prior to the end of the period, permission shall have been granted for their retention for a further period. Prior to commencement of development, the developer shall lodge with the Planning Authority a cash deposit of €20,000 to secure the satisfactory reinstatement of the site, coupled with an agreement empowering the Planning Authority to apply such security or part thereof to the satisfactory completion of the reinstatement of the site, including all necessary demolition and removal.

Reason: To ensure satisfactory reinstatement of the site.

3.2. Planning Authority Reports

3.2.1. Planning Reports

The Planner's Report is the basis for the Planning Authority decision. It includes:

- LAP identifies 3 no. Masterplan Special Use Areas of which Pickardstown is one. Areas are to be subject to masterplans for any future planning applications.
- Notes that phase 3 lands are required beyond the life of the LAP, while the Core Strategy identifies that 42ha are needed to service housing needs – phase 1 and 2 land equates to 75.5ha.
- Notes that there is no policy pertaining to Solar photovoltaic (PV) farms in the LAP or Development Plan. Notes that the nearest residential dwelling is 180m away – is satisfied that the site is adequately removed to avoid any nuisance to residential development in the area. Satisfied that the development as proposed would not impede the development of the masterplan lands in the long term and the impact on the green belt buffer will be minimal and confined to the 10-year life of permission sought.
- Requests Further Information in relation to a number of items including: Use of a ramming system to anchor the proposed PV arrays may not be appropriate throughout the site – requests applicant to address this; requests a Glint and Glare study in light of proximity to flight paths to Waterford Airport; requests a Landscape and Visual Impact Assessment, particularly because the R675 is designated a visually sensitive route; requests proposals for managing surface water; requests clarity with respect to access to ESB network and land ownership; and requests that an AA Screening Report is submitted.
- Following the response to the Further Information the applicant was requested to re-advertise the proposal. Accompanying the response to the Further Information request was a Landscape and Visual Impact Assessment, a Frame and Foundation Scoping study, a Glint and Glare study, an Appropriate Assessment Screening Report, a Hydrological Assessment and additional drawings.
- The planner recommended granting permission subject to conditions. The decision was in accordance with the Planner's recommendations.

3.2.2. Other Technical Reports

Water Services Drainage /CFO – File Referred – no response on file.

Heritage Officer – no objections.

3.3. Prescribed Bodies

Irish Water – No objections

Irish Aviation Authority – No response

Waterford Airport – Notes the location of the proposed solar PV array is on the circuit pattern for the western side of the runway. Further Information sought regarding potential reflection caused by panels. Following receipt of same, refers to the Consultant’s conclusions that “low potential for temporary after image” only exists for limited periods during certain times of the year. Notes these hypotheses are as of yet untested on the ground and recommends that a condition be included to ensure applicant undertakes any mitigation that maybe required to address aviation safety issues that may come to the fore when panels are in place.

3.4. Third Party Observations

None

4.0 Planning History

Relevant applications on the site:

WCC Reg. Ref. 09658, ABP ref. PL24.237997 – permission refused in April 2011 for a mixed use urban development on a 19.59 ha site, comprising Retirement complex (64 Bed Nursing Home and 53 Independent living type dwellings), Residential development of 207 No. houses, crèche, recreational leisure uses, 40 allotments and ancillary development.

There were three reasons for refusal relating to the distance of the site from the town of Tramore, its location outside of the town boundary as identified in the Tramore Local Area Plan, 2007 – 2013, and the current quantum of undeveloped zoned land within the town of Tramore. The other two reasons related to the prominent location

of the development on elevated land and the construction of a suburban type development including a four-storey apartment block which would detract from the visual amenities and traffic movements.

In the vicinity:

WCC Reg. Ref. 09207 – Granted in September 2009 for an Arboretum garden centre and Lifestyle Centre with associated restaurant, craft and food market to the east of the site. This site is located between the subject site and the R675 Road. This development has not commenced.

WCC Reg. Ref. 09430 – Granted in September 2009 for the overall change of use from a residential dwelling to a wedding reception and conference centre in Pickardstown House to the south of the site. It would appear that this change of use has not commenced.

5.0 Policy Context

5.1. Development Plan

The site is subject to the policies and objectives of the Waterford County Development Plan 2011 – 2017 and the Tramore Local Area Plan 2014 – 2020.

5.1.1. Tramore LAP 2014 - 2020

Chapter 3 of the Tramore Local Area Plan considers Population, Demographics and Core Strategy. The Plan estimates that an additional 359 dwelling units will be required over the lifetime of the Plan. It further states that allowing for 75% over-zoning and based on an average density of 15 units/ha, this results in a requirement for 42Ha of residentially zoned lands until 2019. The maximum potential for new residential land use zoning of 42Ha could yield 630 houses. The 2007 Plan zoned 284Ha for residential development resulting in 242Ha over-zoning. This over-zoning is to be future phased.

Phase 2 is Strategic Residential Reserve and a percentage of Masterplan lands. These lands will be considered for development on a sequential basis if Phase 1 lands are fully developed/committed. These lands equate to 16% of the total Strategic Residential Reserve and are located within the town boundary. Phase 3 is

Strategic Residential Reserve and a percentage of Masterplan lands and is only likely beyond 2020.

The Plan has identified three Masterplan Special Use Areas in Ballinattin, Pickardstown and Tramore Racecourse. The Plan states that these strategic lands shall be the subject of detailed masterplans, to be prepared for any future planning application on these lands. The Masterplans shall identify the following: Appropriate land uses; Provision of infrastructure and services; Provision of community and social facilities where applicable; Access routes and road layouts; Phasing plan for the overall development of the site; and Landscaping Plan.

It is noted that the subject land is Phase 3 and development is expected beyond 2020.

Policy PDCS1 states:

To ensure the development of Masterplan lands identified in Ballinattin, Pickardstown and Tramore Racecourse in land use zoning map are in accordance with Masterplan's and the requirements of the Water Framework, Floods, Habitats, Birds, SEA and EIA Directives where relevant, so as to ensure their co-ordinated and orderly development. The Masterplan's may be prepared by a single developer or landowner or by a group of developers or landowners acting jointly.

Chapter 5 refers to Infrastructure. Section 5.4 refers to Renewable Energy and includes policies for domestic and micro-renewable forms of energy.

Chapter 8 identifies that the Land is zoned MP2 – Masterplan Zone 2. No particular type of development is specified in the Land Use Zoning Matrix.

Chapter 10, Development Standards, states that the objective for Masterplan areas (MP) is “*To provide for an integrated mix of uses (including Residential, Commercial, Light industrial, Community and Social) or as otherwise specified in the Development Objective for the site set out in the County Development Plan Maps*”.

5.1.2. Waterford County Development Plan 2011 - 2017

The three existing development plans within the amalgamated Council area, Waterford City Development Plan 2013 – 2019, Waterford County Development Plan 2011 – 2017, and the Dungarvan Town Development Plan 2012 – 2018, have had

their lifetime extended, as per Section 11A of the Planning & Development Act 2000, as amended, and will remain in effect until the new Regional Spatial & Economic Strategy is made by the Southern Regional Assembly. Thereafter a new City and County Development Plan will be prepared.

Chapter 7 of the *Waterford County Development Plan* refers to Infrastructure, Chapter 8 refers to Environment and Heritage and Chapter 10 to Development Management Standards.

Chapter 7 does not specifically refer to Solar Power. However, Policy INF26(3) states: *“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”*.

Section 8.8 refers to Renewable Energy. Policy ENV10 states *“To facilitate and encourage sustainable development proposals for alternative energy sources and energy efficient technologies”*.

Table 10.10 in Chapter 10 is the Land Use Zoning Objectives table. The Masterplan areas are *“To provide for an integrated mix of uses (including Residential, Commercial, Light Industrial, Community and Social) or as otherwise specified in the Development Objective for the site set out in the County Development Plan Maps”*.

A variation to the Development Management Standards Chapter was adopted by the Council in September 2016. No further information is provided in relation to large scale solar energy projects.

Appendix A9 to the Plan is Scenic Landscape Evaluation. The R675 is listed as a Scenic Route including the section of road which lies to the east of the site. The Plan states that the policy with respect to Scenic Routes is:

Scenic routes indicate public roads from which views and prospects of areas of natural beauty and interest can be enjoyed. Sightseeing visitors are more likely to be concentrated along these routes. The onus should be on the applicant for permission to develop in the environs of a scenic route, to demonstrate that there will be no obstruction or degradation of the views towards visually vulnerable features nor significant alterations to the appearance or character of sensitive areas.

5.1.3. Waterford City and County Renewable Energy Strategy 2016 – 2030

The *Renewable Energy Strategy 2016 – 2030* forms part of the Waterford County Development Plan 2011 – 2017.

Section 5.0 addresses solar energy. It notes that Waterford is in the top 15% in terms of solar resource in Ireland and has good potential in Waterford.

It notes that the National Renewable Energy Strategy provides a target of 600MW of solar energy for Ireland by 2020. This Renewable Energy Strategy has included a projection of 84.1MW of solar energy for Waterford up to 2030. It projects that this would require just over 168 hectares of land. It does not provide any guidance on the best locations. It refers directly to the subject application as a recent grant of permission at Pickardstown, as well as other projects.

Section 5.1 notes *“Planning permission has recently been granted for a 5MW solar farm on a 10.7ha site in West Waterford (Pd 15/614 refers). This solar farm development equates to 2.14ha approximately of land area per MW output. Permission has also been granted for a 28.8ha solar farm in West Waterford, which is currently on appeal, Pd 16/126 refers. The Planning Authority is currently assessing an application for a 12.6ha solar farm south-east of Lismore, Pd 16/371. Permission has been granted for a **5MW solar farm in Pickardstown, Pd 15/770** refers. A planning application has recently been lodged for a solar farm in Kilmeaden, Pd 16/309 refers. There are a number of pre-planning applications for solar farm development in Waterford which are currently in discussion”.*

It notes the potential disadvantages as land take, impact on crop production, glint/glare issues and possible hydrological effects.

5.2. Development Contribution Scheme 2015 – 2021

The *Development Contribution Scheme 2015 – 2021* sets out contributions for non-residential development including Renewable Energy Installations as follows:

Renewable Energy Developments (i.e.	€1000 per 0.1MW & €0.50 per metre of
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wind & hydro)	transmission line to connect to National Grid
Renewable energy installations (i.e. other than wind & hydro)	<p>Standard non-residential rate to be applied as follows:</p> <p>95% of the relevant rate for 1MW-5MW</p> <p>90% of the relevant rate for 6MW - 10MW</p> <p>85% of the relevant rate for 10MW-20MW</p> <p>75% of the relevant rate for greater than 20MW</p>

5.3. Planning and Development Guidance Recommendations for Utility Scale Solar Photovoltaic Schemes in Ireland October 2016.

This is a research paper which was funded by the SEAI. It does not purport to be a policy document. The report contains a set of planning policy and development guidance recommendations, which it is suggested may contribute to the evidence base that will inform the development of Section 28 planning guidance for Utility Scale Solar Photovoltaic (USSPV) developments in Ireland.

It notes that over a hundred applications for USSPV developments have been lodged with planning authorities by October 2016 and that an estimated 594MW have been granted or are on appeal. The combined site area for these schemes is 1331.9 hectares.

Recommendations include that the development plans set out policy objectives to support USSPV development and put in place development management standards to control development. With respect to glint and glare assessments, it is recommended that a national standard for the undertaking of these assessments is developed. It is also recommended that the deployment of USSPV should not be prohibited in undulating landscapes and that a decommissioning statement should be included as a standard component of a planning application.

It is noted that four out of the seven developments refused planning permission (October 2016) have had glint and glare concerns cited as a ground of refusal. The sensitive receptors are loosely categorised as being: Residential dwellings, Historical Monuments/Heritage Landscapes, Road Networks and **Aviation Infrastructure**. The Report refers specifically to the subject application and notes that a Request for Further Information was sought to clarify the impact on Waterford Airport. It does not provide an opinion or any further information in relation to the study.

The Report notes the work carried out by the Federal Aviation Authority in the U.S.A. and the use of the Solar Glare Hazard Analysis Tool (SGHAT) and the CAA Guidance – Solar Photovoltaic Systems in the UK. Case studies of the location of solar energy infrastructure in airport settings are referred to. These are set out below.

- Gatwick (50kW 150m from runway)
- Heathrow – floating solar PV array on
- Thames QEII reservoir (6.3MW under flightpath)
- Belfast International (4.8MW adjacent to airport)
- Stanstead Airport (2.5MW)
- Photon - Birmingham Airport (50kW on terminal)
- Southend Airport – (120kW on terminal and 5MW under landing flightpath)
- Birmingham Airport (50kW terminal roof)

5.4. **International Guidance**

There are a number of guidance documents produced but the most applicable in this instance (with respect to aircraft safety) is the *Planning guidance for the development of large scale ground mounted solar PV systems* BRE (Building Research Establishment 2013).

With respect to glint and glare it states (my emphasis):

Glint may be produced as a direct reflection of the sun in the surface of the solar PV panel. It may be the source of the visual issues regarding viewer distraction. Glare is a continuous source of brightness, relative to diffused

*lighting. This is not a direct reflection of the sun, but rather a reflection of the bright sky around the sun. Glare is significantly less intense than glint. Solar PV panels are designed to absorb, not reflect, irradiation. However, the sensitivities associated with glint and glare, and the landscape/ visual impact and the **potential impact on aircraft safety**, should be a consideration. In some instances, it may be necessary to seek a glint and glare assessment as part of a planning application. This may be particularly important if 'tracking' panels are proposed as these may cause differential diurnal and/or seasonal impacts. The potential for solar PV panels, frames and supports to have a combined reflective quality should be assessed. This assessment needs to consider the likely reflective capacity of all of the materials used in the construction of the solar PV farm.*

5.5. Natural Heritage Designations

The Tramore Dunes and Backstrand SAC (Site Code 000671) and Tramore Back strand SPA (Site Code 004027) is located just to the south-east of the site on the far side of the R675.

6.0 The Appeal

6.1. Grounds of Appeal

The first party has appealed against conditions of the grant of permission, specifically condition 2a, 2b, 3 and 4.

- Condition 2a – 5-year operational life limit – the applicant cannot develop under these terms – project would not be feasible or economically viable.
- A 10-year permission is requested due to experience with ESB Grid connections – applicant cannot allow permission to lapse while waiting on grid connection – nor could they build it and leave it idle pending a connection.
- Panels guaranteed for 25 years – it may be 20 to 25 years before the project pays for itself. Operational life limit of 5 years is entirely influenced by Waterford Airport letter dated 23rd August 2016. If there was to be an issue with glint and glare, restricting the life to 5 years will not resolve the matter.

- Applicant held meetings with Waterford Airport post notification of decision to grant planning permission from the Council. Further reports prepared by Pager Power (applicant's consultants) outlined four options to eliminate glare occurring in the western circuit which is of concern to the airport. Two options are acceptable to the applicant and they request the Board to consider a condition stipulating that the solar panels are installed at an azimuth angle of 200 degrees at an angle of 40 degrees above the horizontal with lightly textured glass and an anti-reflective coating, or fitting Heavy Textured Glass to the original panel layout be implemented, if the original design which already conforms to Federal Aviation Authority (FAA) regulations is not acceptable to the Board. Many examples of solar farms located close to airports are provided.
- Condition 2B is inappropriate, vague and an unquantifiable financial risk and unenforceable from a planning point of view. Request it is removed.
- Condition 3 relates to Development Contributions. For other forms of renewable energy installation schemes the Scheme applies a standard non-residential rate of 95% of the relevant 1-5MW rate. Applying the 95% rate to a 5MW solar farm would require a development contribution of €47,500.
- Condition 4 relates to a financial bond to reinstate the land should the project fall into disuse. Applicant does not take undue exception to the principle of the bond but would rather it is not levied at the start of the project when funds are tight. The Board is requested to consider attaching a condition that allows the Planning Authority to accumulate it during the life of the business when it is generating an income, for example, €2,000 per annum for the first 10 years of operation.

6.2. Planning Authority Response

The Planning Authority states that it notes the grounds of appeal specifically relate to condition 2a and have no further comment to make. The Planning Authority were provided a further opportunity to comment on the appeal in accordance with Section 132, specifically in relation to the development contribution scheme, but no response was forthcoming.

6.3. Further Responses

In response to the appeal against certain conditions submitted by the First Party, Waterford Airport Authority and Irish Aviation Authority were invited to comment. Waterford Airport submitted a response. In summary, it states:

- Airport Circuit Pattern: The existence of the potential for glare within the airport circuit pattern is of concern to the airport. However, if the potential is reduced to a 'Low Potential' through alterations in the alignment of the solar panels or by other measures, this is acceptable to the airport.
- Approach and Landing Runway 03: The location of a solar photovoltaic array in the vicinity of Waterford Airport which has the potential to produce glare during landing and take-off phase of flights is of serious concern to Waterford Airport. From a safety perspective the Airport Authority wants 'no' potential for glare in these areas.
- Given the location of the proposed solar farm the Airport would accept a situation of 'low potential' provided the planning permission includes a condition that compels the Operator of the solar farm to address safety issues that may arise after the solar panels have been installed.
- The overarching concern of Waterford Airport is the emergence of safety issues after the solar panels have been installed and it considers that an acceptable and enforceable planning condition needs to be in place to deal with such events.
- If a planning condition is not enforceable or cannot be upheld Waterford Airport objects to the development.
- In the event of a grant of permission without the above conditional aspects, it is urged that the inclusion of a condition requiring the orientation and angles of the proposed solar panels to be such that they generate 'no' potential for glint or glare in the approach and take-off areas in the airport.

7.0 Assessment

This is a first party appeal against conditions only. There were no submissions to the planning authority from third parties at application stage or at Further Information stage, which included a re-advertisement, with the exception of Waterford Airport. Waterford Airport (WA) did not submit an appeal to the Board on the granting of permission, however, upon circulation of the appeal WA did comment as referred to in Section 6.3 above.

It is acknowledged that this is a first party appeal against conditions and that the Board has the discretion under S.139 of the Act to wave a *de novo* assessment in favour of one that simply focuses on the contested conditions. However, as this site is located within the LAP Boundary and is highlighted and identified as an area for future growth and to be subject to a Masterplan, I consider it appropriate to consider if the current proposal is in accordance with the proper planning and sustainable development of the area.

I consider the key issues in determining this appeal are as follows:

- Principle of Development
- Landscape and Visual Impact
- Glint and Glare in relation to Waterford Airport and Duration of Permission
- First Party Appeal against conditions (not considered elsewhere):
 - Development Levies
 - Bond
- Appropriate Assessment.

7.1. Principle of Development

The project is listed in the Waterford City and County Council's Renewable Energy Strategy 2016 – 2030, as a granted permission. Notwithstanding this, it is appropriate to consider it for compliance with the land use zoning as identified in the Development Plans for the area.

The area is identified as a *Masterplan Area* in the Tramore Local Area Plan. The masterplan areas are strategic lands which shall be the subject of detailed masterplans, to be prepared for any future planning application on these lands. No specific land uses have been identified for these lands. The Plan states that this particular area is unlikely to be developed until beyond the life of this current Plan.

I note that there is enough land zoned to more than adequately cater for the expected residential growth of the area. The Plan states that an additional 359 dwelling units will be required over the lifetime of the Plan. The Plan has provided for 42Ha of residentially zoned land which could yield 630 houses. The 2007 Plan zoned 284Ha for residential development resulting in 242Ha over-zoning. Therefore, in accordance with the requirement to phase lands sequentially, I am satisfied that the subject lands will not be required for new housing in the near future. I also note that the Board refused permission in 2011 for a mixed use development of dwellings and a retirement complex on the subject lands having regard to (inter alia), the distance of the site from the town of Tramore, its location outside of the town boundary as identified in the Tramore Local Area Plan, 2007 – 2013, and the quantum of undeveloped zoned land within the town of Tramore.

The Land is zoned MP2 – Masterplan Zone 2. No particular type of development is specified in the Land Use Zoning Matrix. The subject proposal has not been accompanied by a masterplan. I consider this to be acceptable in this case because of the nature of the development and am satisfied that sufficient information has been provided to consider the potential effects of the development. Furthermore, it is proposed to graze sheep on the site, thereby ensuring the agricultural function of the land is maintained, as well as the solar farm use. I will address the duration of permission in more detail below, however, I am satisfied that this proposal will not permanently alter the land use and therefore at a future date, there is the potential for other development.

In conclusion, I am satisfied that the principle of the development is in accordance with the proper planning and sustainable development of the area

7.2. Landscape and Visual Impact

A Landscape and Visual Impact assessment was provided by the applicant at Further Information stage. The R675 is identified as a scenic route including the section which runs to the east of the site up to Waterford City. From a review of the Assessment provided by the Applicant and from my site visit, I am satisfied the subject proposal will not be visually prominent from the R675 road. Due to the topography of the area, and the substantial trees and embankments which already exist, the proposal will not have a significantly adverse effect on the scenic route. In accordance with the policy I do not consider that the proposal will cause a significant alteration to the appearance or character of the area.

7.3. Glint and Glare in relation to Waterford Airport and duration of permission

The applicant appealed conditions limiting the life of the permission to 5 years.

Condition 2A limits the *operational life* of the development to 5 years. The applicant requested a 10-year permission to build out the development and did not request a limit on the operational life of the development. I agree with the applicant that it is likely that the planning authority limited the life due to the submissions from Waterford Airport which will be dealt with in Condition 2B below. I also agree with the applicant that should there be an issue with glare and glint on the operation of aircraft, limiting the life of the development to 5 years will not address it.

The applicant has advised the following in relation to a 10-year permission request: Grid connections need to be processed; Tariffs may favour solar projects in the future; and, efficiencies in the manufacturing process may reduce the costs of the panels in the future. Whilst I accept that there are a number of reasons why the 10-year permission has been requested, I would have concerns with a 10-year permission duration, particularly if the operational life is extended to 25 years as has been the case with a number of recent developments permitted by the Board. The area has been identified for future development and while the nature of the potential future use of the lands has not been explicitly stated, it is possible that it may be suitable for development in a 30-year timeframe. If the scheme is to be permitted, then it would be appropriate that it be put in place as soon as possible. There are means of extending the life of planning permissions should that be necessary.

Therefore, I am satisfied that the applicant should be permitted to build out the development in a standard 5-year timeframe.

I note that the applicant has stated that the manufacturer of the panels guarantees the output for 25 years. Therefore, I recommend that Condition 2A is amended to enable the developer build the proposal within a 5-year timeframe and furthermore, the life of the permission shall be 25 years from the day of commissioning. The equipment should then be removed unless, prior to the end of the period, planning permission shall have been granted for their retention. A number of other recent decisions from the Board for similar developments have also included a condition to this effect.

Condition 2B refers to works that may have to be carried out post development should there be any concerns with glare or after-imaging with the solar panels on aircraft/aviation movements.

As part of the appeal documentation, the applicant refers to further meetings with Waterford Airport which took place subsequent to the notification of a decision to grant permission.

The applicant's consultants carried out further studies which considered alternative options with respect to the type of coating on the panels and/or revising the azimuth angle. These studies have been included with the appeal documentation. The applicant notes that installing the Solar PV panels at an azimuth angle of 200 degrees at an angle of 40 degrees above the horizontal, with lightly textured glass and an anti-reflective coating would remove all glare with "potential for a temporary after-image" and would be a viable option. The applicant states that they would be amenable to a condition to this effect, if the original design conforming to the FAA regulations is not acceptable to the Board.

Waterford Airport (WA) did not object to the proposal, nor did they appeal the decision of the Planning Authority. However, it is likely that this was influenced by condition 2B, which afforded the airport the opportunity that in the event of issues post construction, the applicant would be obliged to address them. WA reconfirmed their requirement for the inclusion of a condition requiring the orientation and angles of the proposed solar panels to be such that they generate 'no' potential for glint or glare in the approach and take-off areas in the airport.

As a result, I am not satisfied that the condition should be removed entirely. However, I equally accept the applicant's case that this could be an unquantifiable risk.

There is no guidance available in Ireland with respect to the potential for glare to affect aircraft. A search of available information internationally would indicate that there is a lot of research ongoing into this area, particularly as airports themselves could provide an ideal location for such PV arrays. I have included a list of airports where similar solar arrays are installed, as detailed in the SEAI funded research (see Section 5.3 above) 'Planning and Development Guidance Recommendations for Utility Scale Solar Photovoltaic Schemes' in Ireland October 2016. Furthermore, I have read the various reports provided by the Applicant and note that solar panels are designed to absorb as much light as possible and reflect as little as possible to maximise their electricity generation. I also note that many documents state that the reflectivity of solar panels is similar to that of still water and significantly less than glass and steel.

The applicant concludes the analysis by summarising their considerations, which I consider to be reasonable:

- Formal Guidance – There is no formal guidance pertaining to aircraft flying a circuit – therefore no significant impact is predicted.
- Reflectivity of solar panels – solar panels have reflective properties similar to that of still water – pilots regularly overfly surfaces that could produce stronger reflections - therefore no significant impact is predicted.
- Location of solar panels relative to the circuit – the development is located such that a pilot looking in the direction of the circuit would not be looking directly towards the solar development.
- Real world examples – numerous examples of solar developments co-exist with airports – many cases involve comparable sizes and proximities.

The applicant states that installing the Solar PV panels at an azimuth angle of 200 degrees at an angle of 40 degrees above the horizontal, with lightly textured glass and an anti-reflective coating would remove all glare with "potential for a temporary

after-image". I am satisfied that this measure (or a similar option as suggested by the applicant) should be included as a condition.

7.4. **Development Levies**

Condition no.3 refers to the Development Contribution. The Council have conditioned the applicant to pay a contribution of €50,000. The applicant states that there should be a reduction to 95% of the contribution and is amenable to paying €47,500. The Development Contribution Scheme states that for other renewable energy installations (i.e. other than wind and hydro) there will be a reduction to 95% of the equivalent wind and hydro levy. The wind and hydro fee is €1000 per 0.1MW. This equates to €50,000 for 5MWs. Applying a 95% relevant rate would clearly reduce this to €47,500. Thus, I am satisfied that the Development Contribution Condition no.3 should be amended to read €47,500 fee.

7.5. **Bonds**

Condition no.4 refers to a bond to be paid to secure the satisfactory reinstatement of the site of €20,000 post development. The applicant has stated that they have no objection in principle to the imposition of a bond but request that the Board consider a condition to enable the planning authority to accumulate it over the first 10 years of the life of the project, for example.

The applicant has concerns that the planning authority want the deposit at the start of the project when funds are tightest. I note that there is precedent for conditions to be attached to such developments to include bonds – but there can be options in terms of how the bonds are lodged. I consider a condition to enable the developer to lodge a cash deposit OR a bond of an insurance company OR other security is equally acceptable. I am satisfied therefore, that the wording of the condition could be amended to provide more flexibility to the developer, yet at the same time provide the planning authority the ability to secure the satisfactory reinstatement of the site should there be a need to in the future.

7.6. Appropriate Assessment

An appropriate assessment screening report prepared by Ted Walsh and Associates Ltd. was submitted following a request for Further Information.

I follow the staged approach to screening for appropriate assessment as recommended in both EU Guidance and by the Department of Environment, Heritage and Local Government:-

1. Description of the plan or project and local site or plan area characteristics.
2. Identification of relevant Natura 2000 sites and compilation of information on their qualifying interests and conservation objectives.
3. Assessment of likely significant effects-direct, indirect and cumulative, undertaken on the basis of available information.
4. Screening statement with conclusions.

Project Description and Site Characteristics

The proposed development is as described in the report above and in the application documentation. It is proposed to construct a solar array covering 3.3Ha in a land area of 12Ha. The site has not been farmed intensively in recent years. The site road will measure 750m in length and 5m in width. The ancillary buildings will be 3m in height and the switch gear building will be 5m in height and will occupy 57sq.m.

Relevant Natura 2000 Sites, Qualifying Interests and Conservation Objectives

Six Natura Sites are identified as being within a 15km radius of the site. The sites are:

Site Code, Site Name and Designation	Approx. distance from the site at Pickardstown	Qualifying Habitats and Species
000671 Tramore Dunes and Backstrand SAC	0.5km	Mudflats and Sandflats not covered by seawater at low tide, Annual vegetation of drift lines, Perennial vegetation of stony banks, Salicornia and atlantic salt meadows.
004027 Tramore Back strand SPA	0.7km	Light bellied Brent Goose, Golden Plover, Grey Plover, Lapwing, Dunlin, Black-tailed Godwit, Bar-tailed Godwit, Curlew, Wetlands.

Site Code, Site Name and Designation	Approx. distance from the site at Pickardstown	Qualifying Habitats and Species
004193 Mid Waterford Coast SPA	4.2km	Cormorant, Peregrine, Herring Gull, Chough.
000764 Hook Head SAC	6.2km	Large Shallow inlets and bays, Reefs, Vegetated sea cliffs of the Atlantic and Baltic coasts
002126 River Barrow and River Nore SAC	8.5km	Estuaries, Mudflats and sandflats, Salicornia, Atlantic salt meadows, Mediterranean salt meadows, water courses, European dry heaths, Hydrophilous tall herb fringe communities, Petrifying springs, old sessile oak, Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus</i> <i>Vertigo moulinsiana</i> , <i>Margaritifera margaritifera</i> , <i>Austropotamobius pallipes</i> , <i>Petromyzon marinus</i> , <i>Lampetra planeri</i> , <i>Lampetra fluviatilis</i> , <i>Alosa fallax fallax</i> , <i>Salmo salar</i> , Otter, Killarney Fern, Nore Pearl Mussel
002137 Lower River Suir SAC	12.2km north-east	Atlantic salt meadows , Mediterranean salt meadows, Water courses of plain to montane levels with the <i>Ranunculus fluitans</i> and <i>Callitriche-Batrachion</i> vegetation, Hydrophilous tall herb fringe communities , Old sessile oak woods ,Alluvial forests, <i>Taxus baccata</i> woods of the British Isles, <i>Margaritifera margaritifera</i> (Freshwater Pearl Mussel), White-clawed Crayfish, <i>Petromyzon marinus</i> (Sea Lamprey), <i>Lampetra planeri</i> (Brook Lamprey) <i>Lampetra fluviatilis</i> (River Lamprey), <i>Alosa fallax fallax</i> (Twait Shad) , <i>Salmo salar</i> (Salmon) <i>Lutra lutra</i> (Otter)

Two of the Natura 2000 sites are shown to have linkages with the proposed site – Tramore Dunes and Backstrand SAC and the Tramore Backstrand SPA. The other four are not ecologically linked. The two sites can be considered further.

A Conservation Management Plan for the sites have been published.

The Tramore Dunes and Backstrand SAC (Site Code 000671):

Mudflats and sandflats not covered by seawater at low tide/ Annual vegetation of drift lines/ Perennial vegetation of stony banks/ Salicornia and other annuals colonising mud and sand/ Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)/ Mediterranean salt meadows (*Juncetalia maritimi*)/ Embryonic shifting dunes/ Shifting dunes along the shoreline with *Ammophila arenaria* (white dunes)/ Fixed coastal dunes with herbaceous vegetation (grey dunes):

To maintain the favourable conservation condition of the qualifying feature in Tramore Dunes and Backstrand SAC, which is defined by the list of attributes and targets as defined by NPWS.

The Tramore Backstrand SPA (Site Code 004027):

Brent Goose *Branta bernicla hrota*/ Golden Plover *Pluvialis apricaria*/ Grey Plover *Pluvialis squatarola*/ Lapwing *Vanellus vanellus*/ Dunlin *Calidris alpina alpina*/ Black-tailed Godwit *Limosa limosa*/ Bar-tailed Godwit *Limosa lapponica*/ Curlew *Numenius arquata*:

To maintain the favourable conservation condition of the qualifying features in Tramore Backstrand SPA, which is defined by the list of attributes and targets as defined by NPWS.

Wetlands: To maintain the favourable conservation condition of wetland habitat in Tramore Backstrand SPA as a resource for the regularly occurring migratory waterbirds that utilise it. This is defined by the following attribute and target:

Attribute: Habitat Area (ha).

Target: The permanent area occupied by the wetland habitat should be stable and not significantly less than the area of 676 hectares, other than that occurring from natural patterns of variation.

Notes: The wetland habitat area was estimated as 676ha using OSi data and relevant orthophotographs. For further information see part three of the conservation objectives supporting document

Assessment of likely effects

The site is not within a designated site, thus there would be no direct impacts from the proposed development. The site is directly linked with the Natura 2000 sites via a network of drains exiting the site. These join a watercourse which leads to the Garraun Stream 800m to the south which enters the SAC after a further 500m to the east.

There is a low risk from the mobilisation of inert materials and from grazing. There is also the potential of polluting materials entering the stream when development materials are being brought on site.

A single location within the site has been identified as being vulnerable to the accumulation of standing water. It is adjacent to a minor watercourse and is hydrologically linked with both Natura 2000 sites. It is a potential pathway for the discharge of potentially polluting surface run-off to the catchment. Therefore, surface water must be controlled in this area. A series of protection measures are proposed which are an integral part of the project design and will adequately protect both sites from potentially negative impacts.

The proposed development will not have any likely significant effects, direct or indirect, on the qualifying species or habitats of the Natura 2000 sites listed above.

In terms of cumulative impacts, there are no other similar scale projects in the area and, taken in the context with existing development, is not considered to result in likely significant cumulative effects.

7.7. Screening Statement and Conclusions

In conclusion having regard to the foregoing, it is 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 and in combination with other plans or projects would not be likely to have a significant

effect on any European Site and a Stage 2 Appropriate Assessment (and submission of a NIS) is not therefore required.

8.0 Recommendation

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

9.0 Reasons and Considerations

Having regard to the provisions of the Waterford County Development Plan 2011 - 2017, including the Waterford City and County Renewable Energy Strategy 2016 – 2030, and the Tramore Local Area Plan 2014 – 2020, and the nature and scale of the development proposed, the suitability of the aspect and topography of the site, the pattern of development in the area, it is considered that subject to compliance with the conditions set out below, the proposal would not seriously injure the amenities of the area and would not detract from the visual amenities of the area and would 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, as amended by the further plans and particulars submitted on the 5th August 2016, 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 5 years from the date of this Order, and 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.

Reason: To enable the planning authority to review the operation of the solar array having regard to the circumstances then prevailing and in the interest of orderly development.

3. Prior to commencement of development, a detailed restoration plan, providing for removal of all structures, foundations and access roads to a specific timescale shall be submitted to the planning authority for written agreement. 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, shall be dismantled and removed from the site. The site (including all access roads) shall be restored in accordance with the said plan and all decommissioned structures shall be removed within three months of decommissioning.

Reason: In the interest of orderly development.

4. No works shall commence without the submission for the approval of the planning authority final details for the chosen solar panels.

Reason: In the interest of clarity.

5. The installation and design of the solar array panels shall be such that there is no glare towards Waterford Airport circuit pattern or the approach and landing runway.

Reason: To ensure the solar farm development does not impact detrimentally on Airport function and aircraft safety.

6. No external artificial lighting shall be installed or operated on site, unless otherwise authorised by a prior grant of planning permission.

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

7. Cables from the solar arrays to the inverters and substation shall be located underground.

Reason: In the interest of visual amenity.

8. The site shall be landscaped in accordance with a comprehensive scheme of landscaping, details of which shall be submitted to, and agreed in writing with, the planning authority prior to commencement of development. This scheme shall provide a comprehensive landscape plan to provide for the landscaping of the ridgeline along the eastern site boundary which shall ensure the proposed development is visually screened from views along the R675 road. All planting shall be adequately protected from damage until established. Any plants which die, are removed or become seriously damaged or diseased, within a period of five years from the completion of the development shall be replaced within the next planting season with others of similar size and species, unless otherwise agreed in writing with the planning authority.

Reason: In the interest of residential and visual amenity.

9. Before construction commences on site, details of the structures of the security fence showing provision for the movement of mammals shall be submitted for prior approval to the Planning Authority. This shall be facilitated through the provision of mammal access gates every 100m along the perimeter fence and in accordance with standard guidelines for provision of mammal access (NRA 2008).

Reason: To allow wildlife to continue to have access across the site.

10. The developer shall facilitate an 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.

10. 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 noise management measures and off-site disposal of construction/demolition waste.

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

11. 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.

12. 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. The relevant Development Contribution Scheme was adopted by Waterford City & County Council on 12th February 2015. The contribution shall be paid prior to the commencement of the development.

Surface Water	€7,500
Recreation and Amenity	€2,500
Community Facilities	€20,000
Transport	€20,000
Total Contributions - less <i>Renewable energy installations (i.e. other than wind & hydro) 95% for 1-5MW</i>	€50,000
Total	€47,500

Reason: It is a requirement of the Planning and Development Act 2000 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.

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 upon 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.

Ciara Kellett
Inspectorate

8th February 2016